



**PRELIMINARY GEOTECHNICAL ENGINEERING
SERVICES
750 QUINCE STREET PROPERTY
FLORENCE, OREGON**

JANUARY 15, 2008

**FOR
WYNDHAM VACATION OWNERSHIP, INC.**

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Preliminary Geotechnical Engineering Services
750 Quince Street Property
Florence, Oregon
File No. 12708-016-01

January 15, 2008

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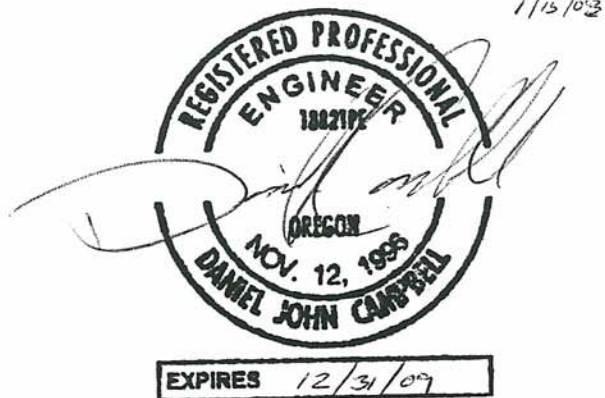


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**PRELIMINARY GEOTECHNICAL ENGINEERING SERVICES
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INTRODUCTION

This report presents the results of our preliminary geotechnical engineering services for the Quince Street Property located at 750 Quince Street in Florence, Oregon. The Subject Property encompasses tax lot 900 in Florence. The location of the Subject Property is shown on the Vicinity Map, Figure 1. The preliminary footprint of the proposed buildings with respect to existing Subject Property features is shown on the Site Plan, Figure 2. This site plan is based on a preliminary site plan developed by the Myhre Group dated December 4, 2007.

Our studies were completed at the request of Wyndham Vacation Ownership, Inc. (Wyndham). We understand that Wyndham is interested in purchasing the property for us as a vacation facility. We further understand that the results of our Preliminary Geotechnical Assessment will be used by Wyndham as part of their evaluation of potential environmental liabilities associated with ownership and redevelopment of the property. This assessment was conducted concurrently with a Sensitive Areas Assessment and Phase I ESA and Limited Subsurface Assessment for the property, both by GeoEngineers.

The purpose of our preliminary geotechnical services is to evaluate subsurface conditions at the Subject Property as a basis for providing preliminary conclusions and general recommendations for development of the Subject Property as planned. Our evaluations included 1) review of available subsurface information, and 2) exploration of Subject Property subsurface soil conditions by completing three borings. Our services were completed in general accordance with our proposal dated November 29, 2007. We have also completed a Phase I environmental site assessment (ESA) and a wildlife and sensitive areas assessment for this property, the results of which are presented in separate reports.

PROJECT DESCRIPTION

The Subject Property is approximately 8.1 acres in size and triangular in shape, and includes an existing unused school building. The northwestern half of the Subject Property, which contains the existing building and cleared areas, is an upland terrace situated higher in elevation than the east and southeastern portion of the Subject Property, which consists of a low-lying wetland area along the north side of the Siuslaw River. We understand that Wyndham is interested in constructing a resort consisting of three four-high-story condominium buildings. The development plans for the Subject Property are preliminary at this time, and as such, structural loads are unknown at this time. We anticipate the loading to be similar to those of other three- to four-story residential structures.

FIELD EXPLORATIONS AND LABORATORY TESTING

FIELD EXPLORATIONS

The subsurface soil and ground water conditions near the proposed building locations were evaluated by drilling three borings with subcontracted mud rotary drilling equipment owned and operated by Subsurface Technologies of North Plains, Oregon. The approximate locations of the borings completed

for this project are shown the Site Plan, Figure 2. Details of the field explorations and logs of the explorations are presented in Appendix A.

LABORATORY TESTING

Soil samples were collected during drilling and taken to GeoEngineers' laboratory for further evaluation. Representative samples were tested to determine their gradation characteristics. A description of the laboratory testing and the test results are presented in Appendix B.

SITE CONDITIONS

GEOLOGY

Published geologic information for the project vicinity includes the U.S. Geological survey of Oregon (Walker and MacLeod, 1991). Mapped soils in the project vicinity consist of dune deposits with younger alluvial deposits adjacent to the river banks.

TOPOGRAPHY AND SURFACE CONDITIONS

The Subject Property is located just north of the Siuslaw River and approximately 3 miles southeast of where the mouth of the Siuslaw River enters the Pacific Ocean. The Siuslaw River is located approximately 850 feet south of the Subject Property. The majority of the Subject Property consists of a relatively level upland area situated about 45 feet higher than the lower wetland area adjacent to the Siuslaw River. The upland area is roughly triangular in shape, with the upland area about 150 feet wide east to west at the southern end, about 300 to 325 feet wide east to west near the northern end, and about 700 feet long in the north-south direction. The Subject Property slopes down gradually to the north of the existing vacant school building with abrupt downward slopes east and south of the building. Between the upland and lower wetland area, the ground surface slopes moderately to steeply down to the lower portion of the Subject Property. Munsel Creek flows south through the northeastern portion of the Subject Property directly to the Siuslaw River.

A vacant school building currently occupies about half of the upland area, with the school and associated parking situated near Quincy Street. The remainder of the upland area is mostly covered with grass and scattered scotchbroom. The slopes that exist within the Subject Property are generally less than 45 feet high. The slope gradient between the upland and wetland area varies from about 30 percent on the south-southeastern slopes to 60 percent on the northeastern slopes. The slopes are vegetated with coniferous and deciduous trees, with undergrowth. We observed no evidence of slope instability or mass-wasting processes occurring on the slopes during our field reconnaissance.

SUBSURFACE CONDITIONS

Based on the three borings completed for this project, the subsurface conditions generally consist of upper loose to medium dense sand dune deposits underlain by denser sand deposits. GEI-1, situated in the northern portion of the Subject Property, encountered 10 to 12 feet of loose fine sand. At a depth of about 12 feet, the sand grades to medium dense, becoming dense to very dense below a depth of about 20 feet. GEI-2 and GEI-3 encountered medium dense sand with looser zones to a depth of about 20 to 25 feet, below which the sand grades to dense to very dense. These deposits were encountered to the maximum depth explored (52 feet).

GROUNDWATER CONDITIONS

Ground water was encountered at a depth of about 45 feet in GEI-3, which corresponds closely to the elevation of the lower wetland area. No groundwater was encountered in the remaining borings. We anticipate that groundwater levels will fluctuate as a result of season, precipitation and other factors.

GEOLOGIC HAZARD/SENSITIVE AREA CONSIDERATIONS

GENERAL

Sensitive areas with respect to steep slopes are discussed in this section. Sensitive areas pertaining to streams and wetlands are described in a separate report. The City of Florence regulates development on slopes inclined greater than 12 percent. Specifically, Florence Code Title 10, Chapter 7, Section 3G states:

Slopes greater than 12 percent and development on steep slopes, a foundation design and grading provision for retaining walls or excavated banks shall be carried out according to plans prepared by a registered engineer and approved by the City of Florence (FCC 10-7-2).

The City further regulates development on steep slopes that are defined as slopes inclined at gradients of 25 percent or steeper (City of Florence Development Code, Draft #2-April 2007). Based on a telephone conversation with a City of Florence representative in the planning department, there is no codified setback from steep slopes. However, the City typically requires a 50-foot setback from steep slopes, similar to the standard buffer for other sensitive areas. Other sections of the Code refer to a "Hazard Map"; however, we were unable to locate the City of Florence hazard map at the time this report was prepared.

The slopes at the Subject Property were evaluated for slope percentage using a hand held slope inclinometer instrument. Our initial reconnaissance of the slope indicates that the slopes are inclined from about 30 to 60 percent, with the majority of the slopes inclined between 30 and 50 percent. We observed no evidence of slope instability or mass-wasting processes occurring on the slopes during our field reconnaissance.

It is our opinion that specific construction methods consisting of appropriate foundations and setbacks, erosion control measures, and drainage enhancements can be utilized at the Subject Property to mitigate potential hazards that might be associated with the steep slopes.

SLOPE STABILITY EVALUATION

The stability of the slopes adjacent to the seasonal watercourse was evaluated using the computer program SlopeW version 5.20 (GEO Slope International, Ltd, 2004). We evaluated both static conditions and seismic conditions. The seismic conditions were evaluated for a horizontal coefficient of acceleration equal to two thirds of the peak ground acceleration (PGA) according to the United States Geologic Survey (USGS). The analysis was primarily carried out to determine the setback distance for the buildings from the top of the slope.

The slope geometry was constructed from our inclinometer measurements of the slope. A slope inclination of 55 percent was used for our analyses. Soil parameters and water levels used in our analyses are based on our subsurface explorations and our geologic reconnaissance. Stability analyses for existing and anticipated loading conditions, including seismic loading, were performed.

The results of our analysis indicate that, locally, the slopes at the Subject Property are stable against deep seated failures (factor of safety greater than 1.5 for static conditions and 1.1 for seismic conditions). Potential for deep-seated slope instability that would affect the structural integrity of the proposed buildings is low, provided the slopes are maintained and the structures are supported as recommended in subsequent sections. Our stability analyses show shallow surface failures could develop on the steeper portions of the slope surfaces during extreme wet weather conditions or during the design earthquake events.

SLOPE SETBACK

The preliminary site plan shows the proposed buildings located about 35 to 50 feet from the approximate crest of the slope. Based on our understanding of the proposed locations of the new buildings in relation to the existing slope and other Subject Property features, it is our opinion that from a geotechnical standpoint, the buildings may be located closer than 50 feet from the top of the slope provided the foundations for the buildings extend a sufficient depth below grade to provide a suitable horizontal setback to the face of the slope to protect the structures in the event of shallow slope failures. We recommend that shallow foundations be set back at least 20 feet from the crest of the slope (measured horizontally from the face of the foundation). This recommendation assumes that the construction of the proposed development will not result in an increased discharge of water over the slope face and that drainage recommendations presented in the following section are incorporated into the design and construction of the project. If the buildings are situated within 30 feet of the crest of the slope, GeoEngineers should review the foundation layout and plans to verify that all foundations are setback the recommended distance.

SLOPE MAINTENANCE AND SURFACE DRAINAGE

Although the Subject Property slopes are considered stable against deep-seated failure, excessive disturbance and/or poor Subject Property drainage can destabilize the near surface soils. At no time should loose uncontrolled fill or debris (including organic debris) be cast over or placed on the slope. Excavated or import material should not be stockpiled on or near the top of the slopes. At this time, we do not anticipate that the project will include any construction activity on the slope. However, if any slope areas are disturbed during construction, we recommend that disturbed slope areas be protected by placing plastic sheeting on the slope face until the slope can be replanted. Final landscaping should include deep rooted low growing plants to provide stability to the surface soils. Proper maintenance of vegetation on steep slopes will further reduce the potential for surface soil movement.

Proper drainage is imperative for long-term slope stability. The influx of water is a major factor in the destabilization of slopes. At no time during or after construction should surface water be discharged to or near slopes or retaining structures. Surface water from downspouts, foundation drains, upslope retaining wall drains and runoff from the driveway and other surfaces should be collected and tightlined to the bottom of the steep slope or other approved location. Curbs or other appropriate measures should be used to direct surface water runoff to collection points. Drain lines, catch basins and other drainage features should be inspected and maintained on a regular basis. Preferably, drainage should not be infiltrated on this Subject Property; if infiltration facilities are required, we should be consulted to evaluate the potential of infiltration on the stability of the existing slopes.

CONCLUSIONS AND RECOMMENDATIONS

GENERAL

We conclude that the proposed development can be successfully completed from a geotechnical perspective provided the considerations presented in this report are incorporated into the project planning and design. Building foundation loads are expected to be relatively light. We anticipate that most of the buildings can be supported on conventional spread footings bearing on a zone of structural fill underlain by the native sand deposits. As discussed previously, the buildings will need to be set back an appropriate distance from the existing slope.

EARTHQUAKE ENGINEERING

GeoEngineers evaluated the Subject Property for seismic hazards including liquefaction, lateral spreading, fault rupture and earthquake-induced slope instability. Our evaluation indicates that the Subject Property has a low risk of seismic hazards.

We recommend the IBC 2006 seismic design parameters for Average Field Standard Penetration Resistance, Site Class, short period spectral response acceleration (S_S), 1-second period spectral response acceleration (S_1), and Seismic Coefficients F_A and F_V presented in Table 1.

Table 1. IBC Seismic Parameters

2006 IBC Parameter	Recommended Value
Site Class	D
Short Period Spectral Response Acceleration, S_S (percent g)	141
1-Second Period Spectral Response Acceleration, S_1 (percent g)	69
Seismic Coefficient, F_A	1.0
Seismic Coefficient, F_V	1.5

The spectral response values are based on the 2002 United States Geologic Survey Seismic Hazard Maps available at <http://earthquake.usgs.gov/research/hazmaps/interactive/index.php>.

Liquefaction Evaluation

Liquefaction refers to a condition where vibration or shaking, usually from earthquake forces, results in the development of excess pore water pressures in saturated soils causing loss of soil strength. In general, soils susceptible to liquefaction include loose to medium dense saturated cohesionless soils, but can occur in soils with grain sizes varying from silt to gravel. Ground settlement, lateral spreading and/or sand boils may result from soil liquefaction. Structures supported on liquefied soils could suffer foundation settlement or lateral movement that could cause structural damage.

Our subsurface explorations conducted at the Subject Property indicate deposits of loose sand to a depth of about 20 feet below the topsoil. However, groundwater was encountered at a depth of about 45 feet, and based on the presence of free-draining sand at the Subject Property, we do not anticipate that groundwater will typically be within the upper 20 feet of the surface. Thus, in our opinion there is a low risk of liquefaction at the Subject Property.

Fault Rupture

The nearest mapped active fault to the Subject Property is located about 20 miles from Florence. Because no known active faults are situated in the vicinity of the Subject Property, the risk of fault rupture is low in our opinion.

Earthquake Induced Slope Instability

As previously discussed, we evaluated the stability of the steep slope that separates the upland and lowland areas of the Subject Property under seismic conditions consistent with those described in Table 1. Our analyses indicate sufficient safety factors under earthquake induced loading for deep-seated failure surfaces; shallow failures could develop on the slope surfaces under seismic conditions with factors of safety less than 1.1.

FOUNDATIONS

Based on the soil conditions encountered at the Subject Property, we believe it is feasible to support three- to four-story buildings on conventional spread footings across the Subject Property. Due to the loose to medium dense condition of the native sand in the upper 20 feet across the Subject Property, we recommend that the proposed buildings be supported on shallow spread footings founded on a zone of properly compacted structural fill. In addition, foundations located along the top of steep slopes must be located at a depth such that the horizontal distance from the face of the foundation to the face of the slope is at least 20 feet.

We recommend that all spread foundations be founded on a thickness of structural fill equal to half of the footing width, or 2 feet, whichever is greater. The zone of structural fill should extend laterally beyond the footing edges a horizontal distance at least equal to the thickness of the fill. Exterior footings should be founded a minimum of 18 inches below the lowest adjacent grade. Interior footings should be founded a minimum of 12 inches below slab subgrade. Continuous wall footings should have minimum widths of 16 inches, and column footings should have a minimum width of 24 inches. All footing subgrades should be compacted to at least 95 percent maximum dry density (MDD) as determined in accordance with ASTM D-1557, after the footing excavation is complete and prior to placing reinforcing steel and concrete.

An allowable soil bearing value of 3,000 psf (pounds per square feet) may be used for footings supported on a zone of structural fill as described above. This allowable soil bearing value applies to the total of dead and long-term live loads and may be increased by up to one-third for wind or seismic loads.

We estimate that post-construction settlement of footings founded as recommended above will be less than 1 inch and differential settlements will be less than ½ inch over a 25-foot length of continuous wall footing or between comparably loaded column footings.

Loose or disturbed soil not removed from the footing excavations prior to pouring concrete will result in increased settlement. We recommend that the footing subgrades be observed by a representative of GeoEngineers, Inc. prior to placement of concrete to confirm that the foundation subgrade has been adequately prepared and the zone of structural fill is placed and compacted in accordance with our recommendations.

Lateral Resistance

Lateral loads can be resisted by passive resistance on the sides of the footings and by friction on the base of the footings. Passive resistance should be evaluated using an equivalent fluid density of 300 pcf where footings are surrounded by structural fill compacted to at least 95 percent of MDD, as recommended. The structural fill should extend out at least a distance equal to two and one-half times the depth of the foundation element from its face. Resistance to passive pressure should be calculated from the bottom of

adjacent floor slabs and paving or below a depth of 1 foot where the adjacent area is unpaved, as appropriate. Frictional resistance can be evaluated using 0.30 for the coefficient of base friction against footings. The above values incorporate a factor of safety of about 1.5.

If soils adjacent to footings are disturbed during construction, the disturbed soils must be recompacted, otherwise the lateral passive resistance value must be reduced.

SLAB-ON-GRADE FLOOR

Properly compacted structural fill prepared as recommended in the Earthwork Section of this report will provide satisfactory support for on-grade slabs. We recommend that there should be at least 12 inches of properly compacted structural fill below on-grade slabs. We recommend that a GeoEngineers representative evaluate all slab subgrades before placing structural fill. As discussed in the "Subgrade Preparation" section of this report, the subgrade soils, if disturbed by construction activities, should be recompacted, if possible, or excavated and replaced with structural fill to provide firm support of the floor slab. A 6-inch layer of imported clean washed gravel with a maximum particle size of 1-1/2 inches and negligible sand and silt should be placed directly below the slab to provide uniform support and form a capillary break beneath the slab. Prior to placing structural fill or the gravel layer, the subgrade should be proofrolled and compacted as described below in the "Earthwork" section of this report.

If water vapor migration through the slabs is objectionable, the gravel should be covered with a heavy plastic sheet, such as 10-mil plastic sheeting, to act as a vapor retarder. This will be desirable where the slabs will be surfaced with tile or will be carpeted. The contractor should be made responsible for maintaining the integrity of the vapor barrier during construction. It may also be prudent to apply a sealer to the slab to further retard the migration of moisture through the floor.

EARTHWORK

General

Based on the subsurface soil conditions encountered in our subsurface explorations, we expect that the soils at the Subject Property may be excavated using conventional construction equipment. Ideally, earthwork should be undertaken during extended periods of dry weather when the surficial soils will be less susceptible to disturbance and provide better support for construction equipment. Dry weather construction will help reduce earthwork costs.

Clearing and Subject Property Preparation

Areas to be developed or graded should be cleared of surface and subsurface deleterious matter including organic-rich topsoil, debris, shrubs, trees and associated stumps and roots. Vegetation, including the root mass and organic-rich topsoil, should be stripped and removed from the building and paving areas.

All unsuitable soils should be removed from below the building footprints to expose undisturbed native soils. If unsuitable soil is identified during grading, it should be removed and replaced with structural fill.

All existing utilities should be removed from the building footprints and rerouted if needed. All utility trenches leading into the structures should be backfilled with structural fill. Existing building foundations within the new planned building areas should be removed.

Subgrade Preparation

Prior to placing structural fill to support foundations or on-grade floor slabs, all subgrade areas should be evaluated by probing with a steel probe rod to locate any soft or pumping soils. If soft or pumping soils are observed they should be removed and replaced with structural fill.

After evaluating the exposed subgrade areas, the subgrade areas should be recompacted to a firm and unyielding condition, if possible. We recommend that the upper 12-inch thickness of all subgrade areas be recompacted to at least 95 percent of MDD.

Subgrade disturbance or deterioration may occur if the subgrade is wet and can not be dried. If the subgrade deteriorates during compaction, it may become necessary to modify the compaction criteria, soil material, or contractor's methods. The geotechnical engineer should evaluate the subgrade areas.

Structural Fill

All fill, whether existing on-site soil or imported soil, that will support floor slabs or foundations, or be placed as backfill in utility trenches, should generally meet the criteria for structural fill presented below. The suitability of soil for use as structural fill depends on its gradation and moisture content. We recommend all-weather structural fill consist of either crushed or well-graded sand and gravel containing less than 5 percent fines (material pass U.S. Standard No. 200 sieve) by weight relative to the fraction of the material passing the 3/4 inch sieve. During dry weather conditions, soils with a higher fines content may be suitable for use as structural fill. The fill material should be free of rock fragments larger than 4 inches, debris and organic material. We recommend that the suitability of structural fill material from proposed borrow sources be evaluated by the Geotechnical Engineer before the earthwork contractor is allowed to transport any material to the Subject Property.

Import and on-site soils planned for use as structural fill must be protected from moisture, and soil stockpiles should be covered with plastic sheeting.

Reuse of On-site Native Soils

Based on our explorations, most of the soils excavated for this project will be fine sand with less than 5 percent fines, if the upper siltier sod layer is carefully stripped and separated from the underlying sand. We anticipate that the sand deposits will be suitable for reuse for structural fill during dry and wet weather, although the sand may need to be moisture conditioned to achieve the required compaction.

Fill Placement and Compaction Criteria

Structural fill should be mechanically compacted to a firm, non-yielding condition. Structural fill should be placed in loose lifts not exceeding 8 to 10 inches in thickness. The actual thickness will be dependent on the structural fill material used and the type and size of compaction equipment. Each lift should be conditioned to the proper moisture content and compacted to the specified density before placing subsequent lifts. Structural fill should be compacted to the following criteria:

1. Structural fill in new pavement and hardscape areas, including utility trench backfill, should be compacted to at least 95 percent of the MDD estimated in accordance with ASTM D 1557.
2. Structural fill placed to support floor slabs and foundations should be compacted to at least 95 percent of the MDD estimated in accordance with ASTM D 1557.
3. Structural fill placed as crushed surfacing base course to support new pavements should be compacted to at least 95 percent of the MDD estimated in accordance with ASTM D 1557.
4. Non-structural fill, such as fill placed in landscape areas, should be compacted to at least 90 percent of the MDD estimated in accordance with ASTM D 1557. In areas intended for future development, a higher degree of compaction should be considered to reduce the settlement potential of the fill soils.

We recommend that a representative from our firm be present during placement of structural fill. Our representative will evaluate the adequacy of the subgrade soils and identify areas needing further work, perform in-place moisture-density tests in the fill to evaluate if the work is being done in accordance with the compaction specifications, and advise on any modifications to procedure that may be appropriate for the prevailing conditions.

Temporary Excavations

We anticipate that construction of utility, drainage, or sewer lines will require open excavations 3 to 5 feet deep. Vertical unsupported cuts should be limited to a 4 foot depth. This maximum depth may need to be reduced to a depth of 3 feet or less if sloughing occurs within zones of loose sand. All excavations should be designed to meet requisite shoring regulations. For planning purposes, excavations deeper than 3 to 4 feet should be inclined at 1½H:1V (horizontal to vertical) or flatter.

Foundation or utility excavations should be protected against any significant change in moisture content and disturbance by construction activity. These disturbed areas should be overexcavated and brought to design elevation with compacted structural fill or concrete. The bottom of the excavation should be free of all soft, loose, or disturbed material, and water prior to placement of concrete.

DRAINAGE CONSIDERATIONS

Design of Subject Property drainage should provide rainfall runoff and avoid ponding of water. We recommend that the ground surface be sloped to drain away from the proposed buildings such that surface water runoff is collected and routed to suitable discharge points.

Retaining wall and perimeter building footing drains should consist of perforated pipe, a minimum of 4 inches in diameter, and enveloped within a minimum thickness of 6 inches of washed gravel drain rock. A nonwoven geotextile fabric such as Mirafi 140N should be placed between the drain rock and on-site soils to prevent movement of fines into the drainage material. We recommend that the drain pipe consist of either heavy-wall solid pipe (SDR-35 PVC, or equal) or rigid corrugated smooth interior polyethylene pipe (ADS N-12, or equal). We also recommend against using flexible tubing for footing drain pipes. The drains should be sloped to drain by gravity, if practicable, and tightlined to a suitable discharge point, preferably a storm drain. We recommend that the cleanouts be covered and placed in flush mounted utility boxes. Water collected in roof downspout lines must not be routed to the footing drain lines. Collected downspout water should be routed to appropriate discharge points in a separate pipe system. Any collected water or runoff must be routed away from the top of the existing slope.

EROSION CONTROL

As previously discussed, weathering, erosion, and the resulting surficial sloughing and shallow soil movement are natural processes that affect steeply sloped areas. To reduce the risk of and slow these natural processes on the sloping portion of the Subject Property, we recommend the following:

- No discharge of concentrated surface water or sheet flow onto the slope area.
- Collect groundwater seepage from areas encountered during construction and route to a pipe system away from the slopes.
- No infiltration of surface water.
- Enhance vegetation along the top and face of the steep slopes. The vegetation should consist of ground cover, grass, shrubs, and low-growing (dwarf) trees which are indigenous to this area.

Temporary erosion control should be provided during construction activities and maintained until permanent erosion control measures are functional. Surface water runoff should be properly contained and channeled using drainage ditches, berms, swales, temporary ponds, and/or silt fences. To the extent practicable, construction techniques that minimize disturbance and removal of vegetation are recommended.

The removal of natural vegetation should be minimized and limited to active construction areas or areas where debris removal is necessary. Permanent measures for erosion control should include reseeded or replanting the disturbed areas as soon as possible and protecting those areas until new vegetation has been established. Permanent Subject Property grading should be accomplished in such a manner that stormwater runoff is not concentrated and not directed to steeply sloping areas. Catch basins and tightlines should be used where necessary to direct storm or other surface water away from sloped areas. Surface water should be directed to appropriate stormwater disposal facilities in portions of the Subject Property away from slopes. Sheet flow from impervious surfaces should be directed to catch basins and the storm drainage system. Roof downspouts should be tightlined to stormwater disposal systems.

RECOMMENDED ADDITIONAL GEOTECHNICAL SERVICES

Throughout this report, recommendations are provided where we consider additional geotechnical services to be appropriate. These additional services are summarized below:

- GeoEngineers, Inc. should be retained to review the project plans and specifications when complete to confirm that our design recommendations have been implemented as intended.
- During construction, GeoEngineers should observe temporary cut slopes, observe removal of unsuitable soils from below building areas, evaluate the suitability of the foundation subgrades, evaluate the suitability of floor slab and hardscape subgrades, observe installation of subsurface drainage measures, observe and test structural backfill, and provide a summary letter of our construction observation services. The purpose of GeoEngineers construction phase services would be to confirm that the subsurface conditions encountered during construction are consistent with those observed in the explorations and for other reasons described in Appendix C titled Report Limitations and Guidelines for Use.

LIMITATIONS

We have prepared this report for the exclusive use of Wyndham Vacation Ownership Inc and their authorized agents for the proposed buildings at 750 Quince Street in Florence, Oregon.

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.

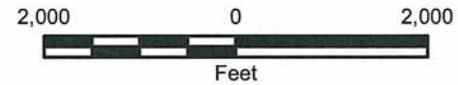
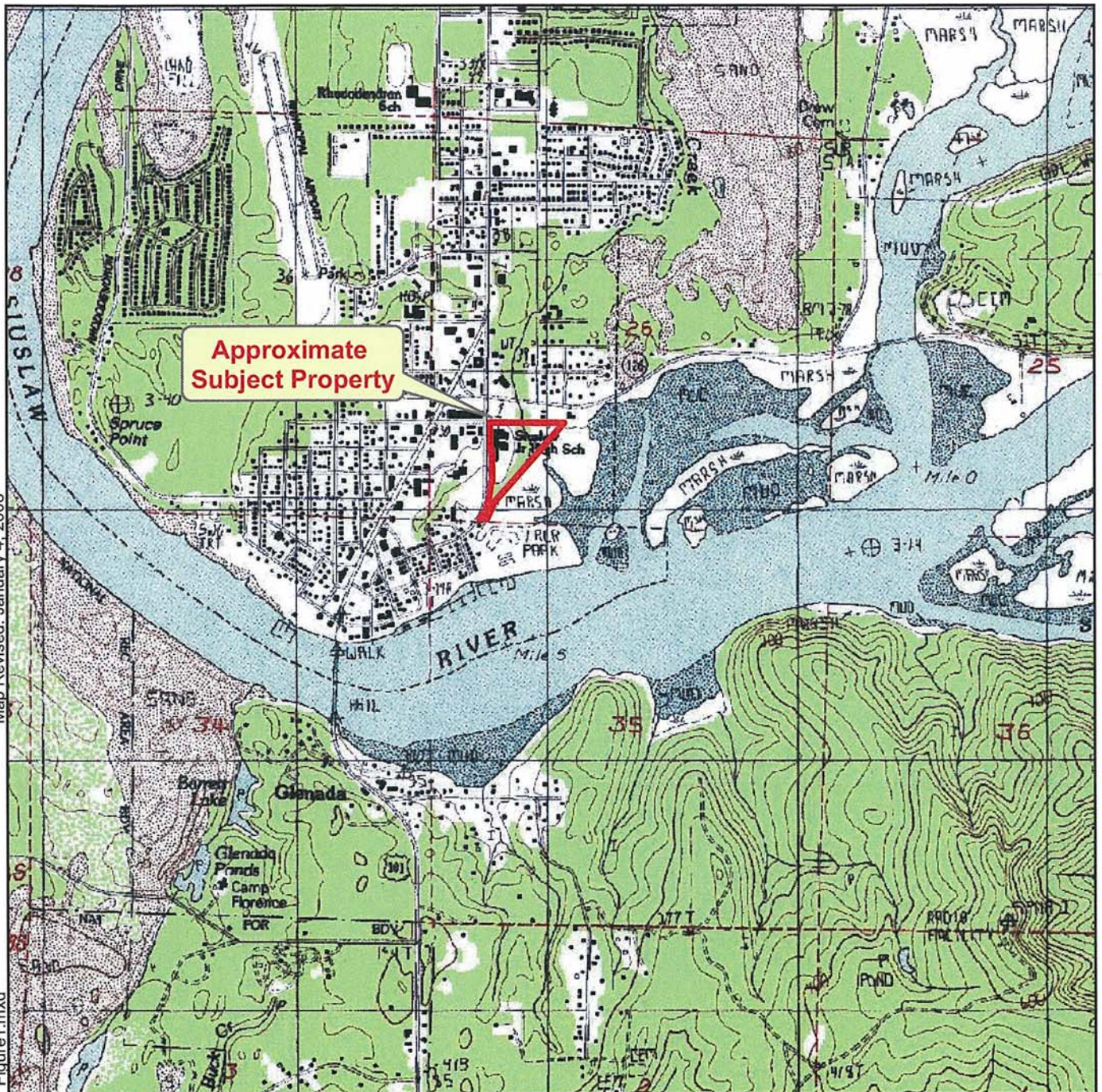
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Please refer to Appendix C titled "Report Limitations and Guidelines for Use" for additional information pertaining to use of this report.

Map Revised: January 4, 2008

Path: P:\1212708016\02\GIS\1270801602\Figure1.mxd

Office: PORT



Notes:

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. can not guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.
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Data Sources: ESRI Data & Maps, Street Maps 2005
 US Topographic map from National Geographic Society
 Transverse Mercator, Zone 10 N North, North American Datum 1983
 North arrow oriented to grid north

Vicinity Map

Quince Street Property
Florence, Oregon



Figure 1

\REDMOND\PROJECTS\12\12708016\0\CAD\12708016\F2.DWG\TAB:F2 MODIFIED BY LKNOWLTON ON JAN 14, 2008 - 11:55



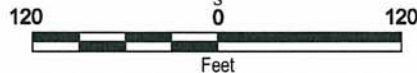
Legend

GEI-1  Boring Location Completed on 12/17/2007

Notes:

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. can not guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Reference: Aerial image from PDF file converted to a image provided by Mvhre Group entitled Site Plan



Site Plan	
750 Quince Street Property Florence, Oregon	
GEOENGINEERS 	Figure 2



APPENDIX A
FIELD EXPLORATIONS



APPENDIX A FIELD EXPLORATIONS

Subsurface conditions were explored at the Subject Property by drilling three borings. The borings were completed to depths ranging from about 36 to 52 feet below the existing ground surface by Subsurface Technologies of North Plains, Oregon on December 17, 2007. The locations of the explorations were located in the field by measuring distances from existing Subject Property features. The approximate locations of the borings are shown on the Site Plan, Figure 2.

Borings GEI-1, GEI-2, and GEI-3 were completed using truck-mounted, continuous-flight, mud rotary drilling equipment. The borings were continuously monitored by an engineer from our firm who examined and classified the soils encountered, obtained representative soil samples, observed groundwater conditions, and prepared a detailed log of each exploration.

The soils encountered in the borings were sampled at 2½- or 5-foot vertical intervals with a 2-inch outside diameter split-barrel standard penetration test (SPT) sampler. The samples were obtained by driving the sampler 18 inches into the soil with a 140-pound auto-hammer free-falling 30 inches. The number of blows required for each 6 inches of penetration was recorded. The blow count ("N-value") of the soil was calculated as the number of blows required for the final 12 inches of penetration. This resistance, or N-value, provides a measure of the relative density of granular soils and the relative consistency of cohesive soils. Where very dense soil conditions preclude driving the full 18-inches, the penetration resistance for the partial penetration was entered on the logs. The blow counts are shown on the boring logs at the respective sample depths.

Soils encountered in the borings were visually classified in general accordance with the classification system described in Figure A-1. A key to the boring log symbols is also presented in Figure A-1. The logs of the borings are presented in Figures A-2 and through A-4. The boring logs are based on our interpretation of the field and laboratory data and indicate the various types of soils and groundwater conditions encountered. The logs also indicate the depths at which these soils or their characteristics change; although, the change may actually be gradual. If the change occurred between samples, it was interpreted. The densities noted on the boring logs are based on the blow count data obtained in the borings and judgment based on the conditions encountered.

Observations of groundwater conditions were made during drilling. The groundwater conditions encountered during drilling are presented on the boring logs. Groundwater conditions observed during drilling represent a short term condition and may or may not be representative of the long term groundwater conditions at the Subject Property. Groundwater conditions observed during drilling should be considered approximate.

SOIL CLASSIFICATION CHART

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

Sampler Symbol Descriptions

	2.4-inch I.D. split barrel
	Standard Penetration Test (SPT)
	Shelby tube
	Piston
	Direct-Push
	Bulk or grab

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.

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

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.

ADDITIONAL MATERIAL SYMBOLS

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

	Measured groundwater level in exploration, well, or piezometer
	Groundwater observed at time of exploration
	Perched water observed at time of exploration
	Measured free product in well or piezometer

Stratigraphic Contact

	Distinct contact between soil strata or geologic units
	Gradual change between soil strata or geologic units
	Approximate location of soil strata change within a geologic soil unit

Laboratory / Field Tests

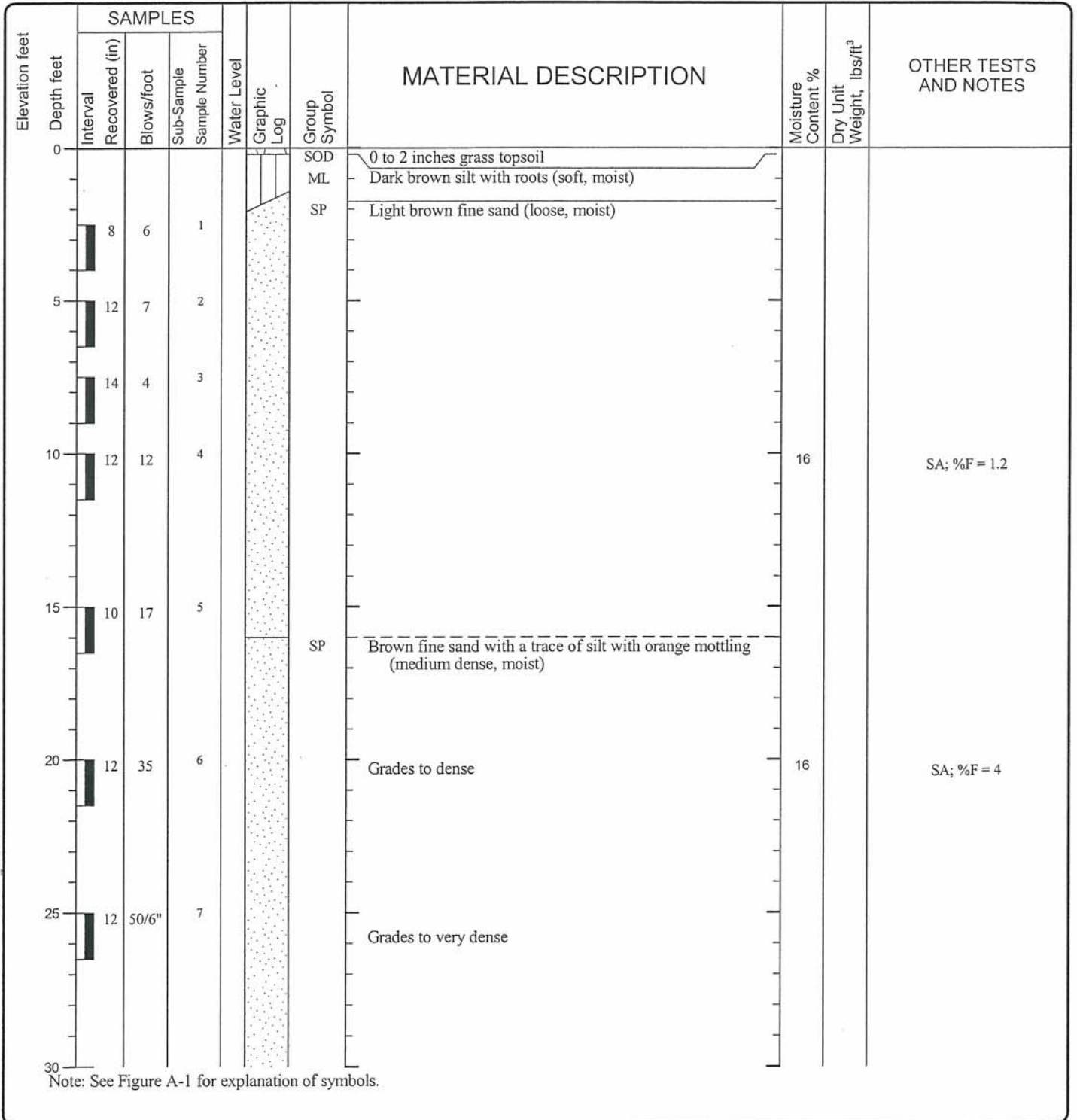
%F	Percent fines
AL	Atterberg limits
CA	Chemical analysis
CP	Laboratory compaction test
CS	Consolidation test
DS	Direct shear
HA	Hydrometer analysis
MC	Moisture content
MD	Moisture content and dry density
OC	Organic content
PM	Permeability or hydraulic conductivity
PP	Pocket penetrometer
SA	Sieve analysis
TX	Triaxial compression
UC	Unconfined compression
VS	Vane shear

Sheen Classification

NS	No Visible Sheen
SS	Slight Sheen
MS	Moderate Sheen
HS	Heavy Sheen
NT	Not Tested

KEY TO EXPLORATION LOGS

Date(s) Drilled	12/17/07	Logged By	MCL	Checked By	NLT
Drilling Contractor	Subsurface Tech	Drilling Method	Mud Rotary	Sampling Methods	SPT
Auger Data	6 inches ID	Hammer Data	140 lb hammer/30 in drop automatic	Drilling Equipment	Truck Mounted
Total Depth (ft)	41.5	Surface Elevation (ft)	NA	Groundwater Level (ft. bgs)	Not Encountered
Vertical Datum		Datum/System		Easting(x): Northing(y):	



LOG OF BORING GEI-1



Project: Quince Street Property
 Project Location: Florence, Oregon
 Project Number: 12708-016-01

Figure A-2
 Sheet 1 of 2

V6_GTBORING_P:1121270801601_FINALS\1270801601.GPJ_GEIV6_1.GDT_1/14/08

V6_GTBORING_P\1121270801B01\FINALS\1270801B01.GPJ GEIV6 1.GDT 1/14/08

Elevation feet	SAMPLES					Water Level	Graphic Log	Group Symbol	MATERIAL DESCRIPTION	Moisture Content %	Dry Unit Weight, lbs/ft ³	OTHER TESTS AND NOTES
	Depth feet	Interval Recovered (in)	Blows/foot	Sub-Sample Sample Number								
30		12	55	8								
35		10	50/4"	9			SP-SM	Light gray fine sand with silt (very dense, moist)				
40		10	50/4"	10								
45												
50												
55												
60												
65												

LOG OF BORING GEI-1 (continued)



Project: Quince Street Property
 Project Location: Florence, Oregon
 Project Number: 12708-016-01

Figure A-2
 Sheet 2 of 2

Date(s) Drilled	12/17/07	Logged By	MCL	Checked By	NLT
Drilling Contractor	Subsurface Tech	Drilling Method	Mud Rotary	Sampling Methods	SPT
Auger Data	6 inches ID	Hammer Data	140 lb hammer/30 in drop automatic	Drilling Equipment	Truck Mounted
Total Depth (ft)	36.5	Surface Elevation (ft)	NA	Groundwater Level (ft. bgs)	Not Encountered
Vertical Datum		Datum/System		Easting(x): Northing(y):	

Elevation feet	SAMPLES					Water Level	Graphic Log	Group Symbol	MATERIAL DESCRIPTION	Moisture Content %	Dry Unit Weight, lbs/ft ³	OTHER TESTS AND NOTES
	Depth feet	Interval Recovered (in)	Blows/foot	Sub-Sample Number	Sample Number							
0								SOD ML	0 to 2 inches grass topsoil Dark brown silt with roots (soft, moist)			
12			15	1				SP	Light brown fine sand (medium dense, moist)			
5			14	2								
8			4	3								
10			6	4								
15			8	5								
20			18	6								
25			12	7				SP-SM	Dark brown fine sand with silt (dense, moist)			
								SP	Light brown fine sand with orange mottling (dense, moist)			
30												

Note: See Figure A-1 for explanation of symbols.

V6_GTBORING_P1121270801601_FINAL.S11270801601.GPJ GEI-2 1/14/08

LOG OF BORING GEI-2



Project: Quince Street Property
 Project Location: Florence, Oregon
 Project Number: 12708-016-01

Figure A-3
 Sheet 1 of 2

V6 GTBORING P:\1212708016\01\FINALS\1270801601.GPJ GEIV6_1.GDT 1/14/08

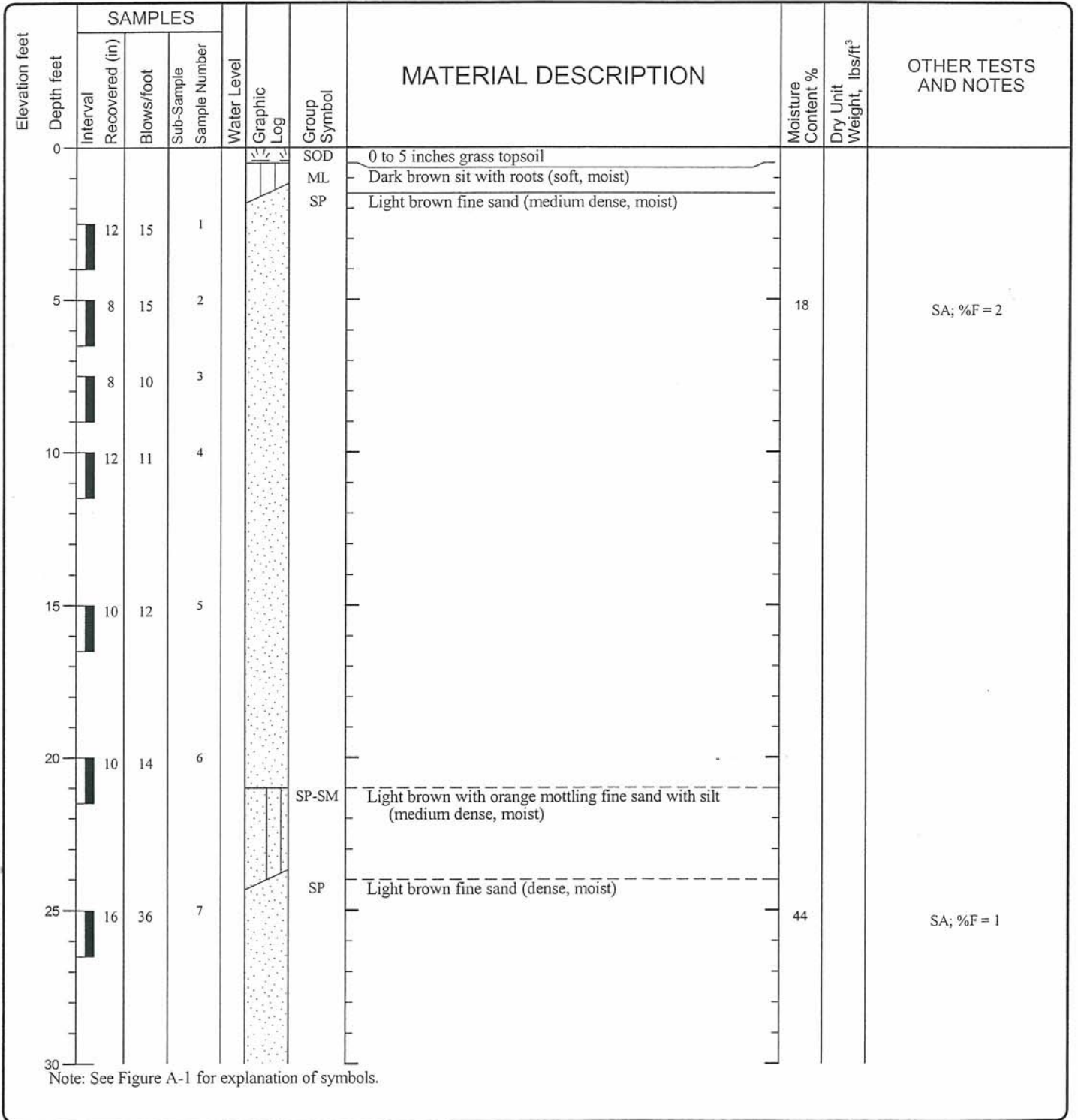
Elevation feet	SAMPLES				Water Level	Graphic Log	Group Symbol	MATERIAL DESCRIPTION	Moisture Content %	Dry Unit Weight, lbs/ft ³	OTHER TESTS AND NOTES
	Depth feet	Interval Recovered (in)	Blows/foot	Sub-Sample Sample Number							
30	12	60	8			SP-SM	Gray fine sand with silt (very dense, moist)				
35	4	50/4"	9			SP	Light brown fine sand (very dense, moist)				
40											
45											
50											
55											
60											
65											

LOG OF BORING GEI-2 (continued)



Project: Quince Street Property
 Project Location: Florence, Oregon
 Project Number: 12708-016-01

Date(s) Drilled	12/17/07	Logged By	MCL	Checked By	NLT
Drilling Contractor	Subsurface Tech	Drilling Method	Mud Rotary	Sampling Methods	SPT
Auger Data	6 inches ID	Hammer Data	140 lb hammer/30 in drop automatic	Drilling Equipment	Truck Mounted
Total Depth (ft)	51.5	Surface Elevation (ft)	NA	Groundwater Level (ft. bgs)	45
Vertical Datum		Datum/System		Easting(x): Northing(y):	



LOG OF BORING GEI-3



Project: Quince Street Property
 Project Location: Florence, Oregon
 Project Number: 12708-016-01

Figure A-4
 Sheet 1 of 2

V6_GTBORING P:1121270801601_FINALS\1270801601.GPJ GEI\6_1.GDT 1/14/08

V6 GTBORING P:\12127080\16101\FINALS\1270801601.GPJ GEIV6_1.GDT 1/14/08

Elevation feet	SAMPLES				Water Level	Graphic Log	Group Symbol	MATERIAL DESCRIPTION	Moisture Content %	Dry Unit Weight, lbs/ft ³	OTHER TESTS AND NOTES
	Depth feet	Interval Recovered (in)	Blows/foot	Sub-Sample Sample Number							
30		16	37	8							
35		12	74	9		SP	Light gray fine sand (very dense, moist)				
40		12	66	10		SP	Brown fine sand (very dense, moist to wet)				
45		18	46	11		SP-SM	Light brown to gray fine sand with silt (dense, wet)				
50		18	50/4"	12							
55											
60											
65											

LOG OF BORING GEI-3 (continued)



Project: Quince Street Property
 Project Location: Florence, Oregon
 Project Number: 12708-016-01

Figure A-4
 Sheet 2 of 2

APPENDIX B
LABORATORY TESTING



APPENDIX B LABORATORY TESTING

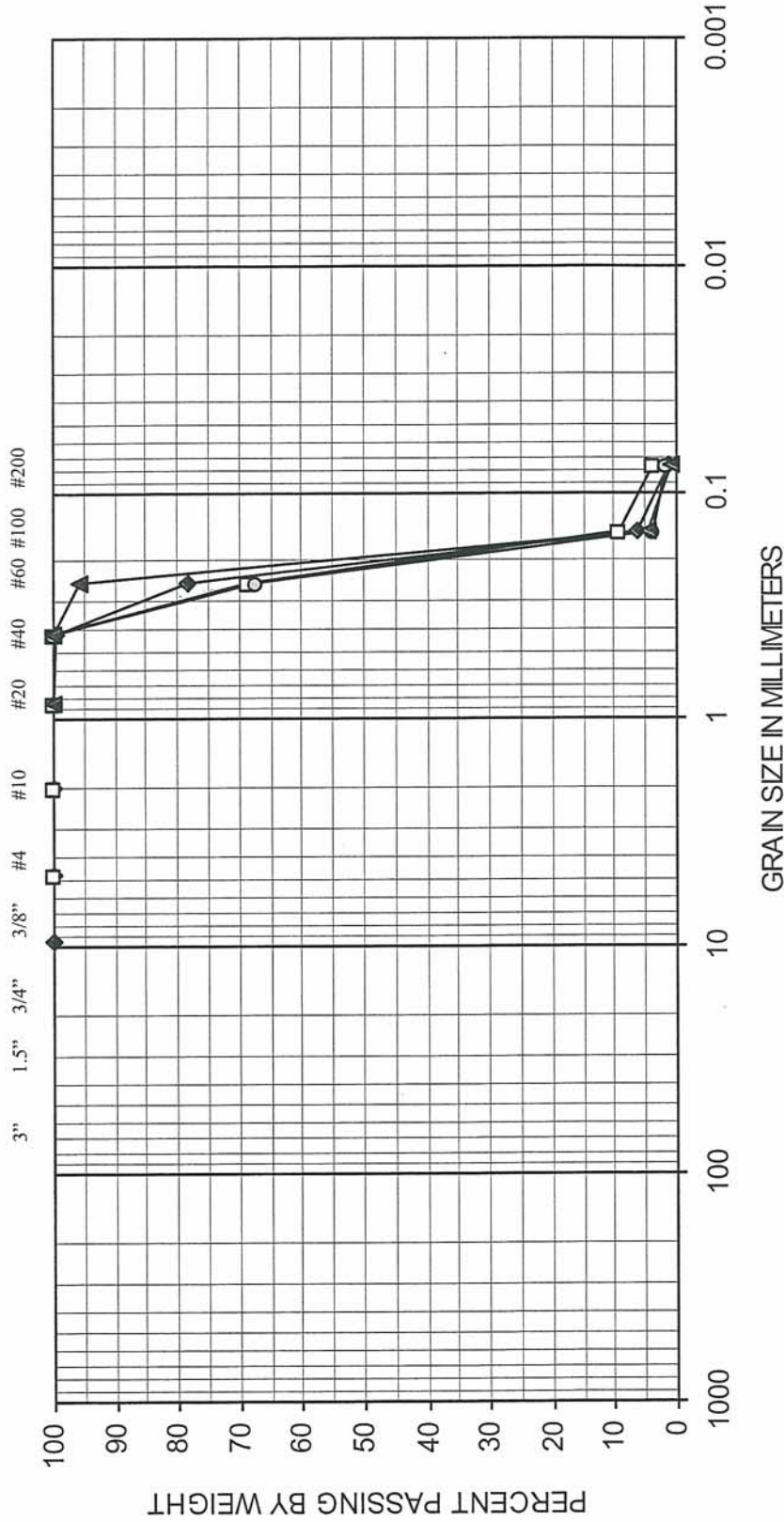
GENERAL

Soil samples obtained from the borings were transported to our laboratory and examined to confirm or modify field classifications, as well as to evaluate engineering and index properties of the soil samples. Representative samples were selected for laboratory testing consisting of moisture content and grain size distribution determination. The tests were performed in general accordance with test methods of the American Society for Testing and Materials (ASTM) or other applicable procedures.

FULL SIEVE ANALYSES

Full sieve analyses were performed on four selected samples in general accordance with ASTM-D 422. The wet sieve analysis method was used to determine the percentage of soil greater than the U.S. No. 200 mesh sieve. The results of the sieve analyses were plotted, were classified in general accordance with the Unified Soil Classification System (USCS), and are presented in Figure B-1. The fines content (material pass U.S. Standard No. 200 sieve) for each sieve analyses performed are shown on the exploration logs at the respective sample depth.

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

SOIL CLASSIFICATION	
SYMBOL	EXPLORATION NUMBER
◆	B-1
□	B-1
○	B-3
▲	B-3
DEPTH (ft)	10-11.5'
	20-21.5'
	5-6.5'
	25-26.5'



APPENDIX C
REPORT LIMITATIONS AND GUIDELINES FOR USE



APPENDIX C REPORT LIMITATIONS AND GUIDELINES FOR USE¹

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

GEOTECHNICAL SERVICES ARE PERFORMED FOR SPECIFIC PURPOSES, PERSONS AND PROJECTS

This report has been prepared for the exclusive use of Wyndham Vacation Ownership, Inc. and his authorized agents for this project. This report is not intended for use by others, and the information contained herein is not applicable to other sites.

GeoEngineers structures our services to meet the specific needs of our clients. For example, a geotechnical or geologic study conducted for a civil engineer or architect may not fulfill the needs of a construction contractor or even another civil engineer or architect that are involved in the same project. Because each geotechnical or geologic study is unique, each geotechnical engineering or geologic report is unique, prepared solely for the specific client and project Subject Property. Our report is prepared for the exclusive use of our Client. No other party may rely on the product of our services unless we agree in advance to such reliance in writing. This is to provide our firm with reasonable protection against open-ended liability claims by third parties with whom there would otherwise be no contractual limits to their actions. Within the limitations of scope, schedule and budget, our services have been executed in accordance with our Agreement with the Client and generally accepted geotechnical practices in this area at the time this report was prepared. This report should not be applied for any purpose or project except the one originally contemplated.

A GEOTECHNICAL ENGINEERING OR GEOLOGIC REPORT IS BASED ON A UNIQUE SET OF PROJECT-SPECIFIC FACTORS

This report has been prepared for the proposed project at 750 Quince Street in Florence, 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, do not 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
- project ownership.

If important changes are made after the date of this report, GeoEngineers should be given the opportunity to review our interpretations and recommendations and provide written modifications or confirmation, as appropriate.

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

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 manmade events such as construction on or adjacent to the site, or by natural events such as floods, earthquakes, slope instability or groundwater fluctuations. Always contact GeoEngineers before applying a report to determine if it remains applicable.

MOST 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 subsurface conditions only at those points where subsurface tests are conducted or samples are taken. GeoEngineers reviewed field and laboratory data and then applied our professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ, sometimes significantly, from those indicated in this report. Our report, conclusions and interpretations should not be construed as a warranty of the subsurface conditions.

GEOTECHNICAL ENGINEERING REPORT RECOMMENDATIONS ARE NOT FINAL

Do not over-rely on the preliminary construction recommendations included in this report. These recommendations are not final, because they were developed principally from GeoEngineers' professional judgment and opinion. GeoEngineers' recommendations can be finalized only by observing actual subsurface conditions revealed during construction. GeoEngineers cannot assume responsibility or liability for this report's recommendations if we do not perform construction observation.

Sufficient monitoring, testing and consultation by GeoEngineers should be provided during construction to confirm that the conditions encountered are consistent with those indicated by the explorations, to provide recommendations for design changes should the conditions revealed during the work differ from those anticipated, and to evaluate whether or not earthwork activities are completed in accordance with our recommendations. Retaining GeoEngineers for construction observation for this project is the most effective method of managing the risks associated with unanticipated conditions.

A GEOTECHNICAL ENGINEERING OR GEOLOGIC REPORT COULD BE SUBJECT TO MISINTERPRETATION

Misinterpretation of this report by other design team members can result in costly problems. You could lower that risk by having GeoEngineers confer with appropriate members of the design team after submitting the report. Also retain GeoEngineers to review pertinent elements of the design team's plans and specifications. Contractors can also misinterpret a geotechnical engineering or geologic report. Reduce that risk by having GeoEngineers participate in pre-bid and preconstruction conferences, and by 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. To prevent errors or omissions, the logs included in a geotechnical engineering or geologic report should never be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, but recognize that separating logs from the report can elevate risk.

GIVE CONTRACTORS A COMPLETE REPORT AND GUIDANCE

Some owners and design professionals believe they can make contractors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give contractors the complete geotechnical engineering or geologic report, but preface it with a clearly written letter of transmittal. In that letter, advise contractors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with GeoEngineers and/or to conduct additional study to obtain the specific types of information they need or prefer. A pre-bid conference can also be valuable. Be sure contractors have sufficient time to perform additional study. Only then might an owner be in a position to give contractors the best information available, while requiring them to at least share the financial responsibilities stemming from unanticipated conditions. Further, a contingency for unanticipated conditions should be included in your project budget and schedule.

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 to adjacent properties.

READ THESE PROVISIONS CLOSELY

Some clients, design professionals and contractors may not recognize that the geoscience practices (geotechnical engineering or geology) are far less exact than other engineering and natural science disciplines. This lack of understanding can create unrealistic expectations that could lead to disappointments, claims and disputes. GeoEngineers includes these explanatory "limitations" provisions in our reports to help reduce such risks. Please confer with GeoEngineers if you are unclear how these "Report Limitations and Guidelines for Use" apply to your project or site.

GEOTECHNICAL, GEOLOGIC AND ENVIRONMENTAL REPORTS SHOULD NOT BE INTERCHANGED

The equipment, techniques and personnel used to perform an environmental study differ significantly from those used to perform a geotechnical or geologic study and vice versa. For that reason, a geotechnical engineering or geologic report does not usually relate any environmental findings, conclusions or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. Similarly, environmental reports are not used to address geotechnical or geologic concerns regarding a specific project.

BIOLOGICAL POLLUTANTS

GeoEngineers' Scope of Work specifically excludes the investigation, detection, prevention, or assessment of the presence of Biological Pollutants in or around any structure. Accordingly, this report includes no interpretations, recommendations, findings, or conclusions for the purpose of detecting, preventing, assessing, or abating Biological Pollutants. The term "Biological Pollutants" includes, but is not limited to, molds, fungi, spores, bacteria, and viruses, and/or any of their byproducts.

