Exhibit 17

INSIGHT GEOLOGIC, INC.

Geotechnical & Stormwater Evaluation

Proposed Retail Development
1401 & 1551 Kingswood Drive SW

Prepared For:

Kingswood Capital, Inc.

INSIGHT GEOLOGIC, INC.

April 19, 2011

Pacland
606 Columbia Street NW, Suite 106
Olympia, WA 98501

Attention: Nick Taylor

Report
Geotechnical and Stormwater Evaluation
Proposed Retail Development
Kingswood Drive
Tumwater, Washington
File No. 519-001-01

INTRODUCTION

Insight Geologic, Inc. is pleased to provide this report of our evaluation of site soil conditions as they relate to geotechnical properties and infiltration and disposal of stormwater from the retail developments to be located at the properties currently identified as 1401 and 1551 Kingswood Drive SW in Tumwater, Washington.

The Kingswood Drive properties consist of two parcels comprising approximately 9 acres. We understand that the proposed development project will include several single-story commercial buildings, paved parking and driveway areas and appurtenant stormwater facilities. No excess loads for the buildings are anticipated. We understand that stormwater from the proposed development is to be infiltrated to the subsurface through an infiltration facility located on the northeastern portion of the property.

Our proposal was requested by Pacland in their Request for Proposal dated February 4, 2011 and authorized by Pacland on March 24, 2011.

SCOPE OF SERVICES

The purpose of our services was to evaluate subsurface soil conditions as they relate to foundation and pavement design as well as the infiltration and disposal of stormwater from the proposed development. The specific tasks performed are outlined below.

1. Conduct a Phase I Environmental Site Assessment for the property in general accordance with ASTM methodology. This report is being provided under separate cover.
2. Conduct a site reconnaissance to evaluate and mark proposed test pit and boring locations at the site.

3. Provide for clearing needed to access the property and test pit locations.
4. Perform utility location at the site to evaluate the presence of subsurface obstructions.
5. Excavate as many as 19 exploratory test pits at the site using a small, track-mounted excavator. The test pits extended to a depth of about 10 feet below ground surface.
6. Drill 3 exploratory borings in the area of the proposed stormwater infiltration pond and underground gallery. The borings were drilled to a depth of 24 feet or five times the depth of the proposed structure as required under the City of Tumwater 2009 Drainage Manual.
7. Collect representative soil samples from the borings for evaluation of grain size distribution.
8. Maintain logs of the soil encountered in the test pits and borings in general accordance with the Unified Soil Classification System.
9. Conduct appropriate laboratory testing on soil samples collected from the test pits and borings to evaluate design infiltration rates and geotechnical properties including bearing capacity and suitability of site soils for use as fill.
10. Prepare a report containing the results of our assessment and including recommendations for site preparation, evaluation of site soils for use as fill, recommended stripping depths, building slab and foundation recommendations, building drainage, cut and fill slope recommendations, and light- and heavy-duty pavement preparation and design as well as design stormwater infiltration rates and identified seasonal high groundwater elevations.

SITE CONDITIONS

GENERAL

The site is located east of Littlerock Road SW and south of Kingswood Drive within the City of Tumwater. The site is shown relative to surrounding physical features in Figure 1. The site is bordered to the east by a Home Depot store and to the north by a WalMart store currently under construction. Properties to the west and south are occupied by single and multi-family housing.

A Bonneville Power Administration (BPA) high-voltage transmission line traverses the northern third of the property within an easement area. Four metal towers are located on the property.

A groundwater monitoring well (MW-1) is located adjacent to Littlerock Road between the western-most power line towers. This groundwater monitoring well appears to have been installed during a previous geotechnical investigation centered on the Walmart Property to the north. Monitoring well MW-1 was used to calculate historic high groundwater elevations for the property and will be discussed later.

Historically a number of residences were located on the western parcel of property fronting Littlerock Road. Additionally, the central portion of the properties was used as a borrow source for topsoil to depth of about 12 feet. The excavation remaining after the borrow operations was filled with a mixture of debris including bricks, concrete, metal, composite shingles and wood waste. This uncontrolled fill material was then covered with soil and moderately compacted. A discussion of this uncontrolled fill is included later in this report.

Several piles of fill material are also located on the property. The origin of the fill is unknown. The soils in the piles appear to be somewhat high in the percentage of fines, but appear to be suitable for use as fill, or in landscape areas at the site.

The property is roughly rectangular in shape and comprises approximately 9 acres. The site is generally flat with an elevation ranging between approximately 188 and 180 feet above mean sea level (MSL) measured to the NGVD 29 datum. The property is currently undeveloped.

SURFICIAL SOIL CONDITIONS

Surficial soil conditions were evaluated by reviewing the U.S. Department of Agriculture Soil Survey of Thurston County, Washington dated 1979. According to the soil survey report, the site is underlain by Nisqually loamy fine sand. This soil exhibits rapid permeability, slow water runoff and a slight hazard of erosion.

SUBSURFACE EXPLORATIONS

GENERAL

Subsurface conditions at the site were explored by advancing 3 borings and 19 test pits at the approximate locations shown in Figure 2 on March 28 and 29 2011. The test pits were excavated using a small, track-mounted backhoe. The test pits were completed to depths ranging between 5 and 11 feet below ground surface. Borings were conducted using a truck mounted probe rig to obtain subsurface samples continuously to the total depth of the borehole.

A geologist from Insight Geologic, monitored the excavation of the test pits and borings and maintained logs of the soils encountered. The soils were visually classified in general accordance with the system described in ASTM D2487-06. Logs of the exploratory test pits and borings are contained in Attachment A of this report.

The exploratory test pits were backfilled using the soil removed from the test pit. Backfilled soil was tamped in place using the bucket of the backhoe. The backfilled soil was not compacted as structural fill and should be expected to settle over time. If structures are intended to be placed over the test pit areas, the soil should be over-excavated and compacted.

SUBSURFACE CONDITIONS

Native soil exposed in the test pits consisted of about 1 foot of dark brown silty fine to medium sand (SM) overlying fine to medium sand (SP) with trace amounts of silt. We encountered fill soil in the middle and north central portions of the site that consisted of between 2 and 7 feet of light brown fine to coarse sand with silt and cobbles overlying waste materials consisting of brick, concrete, metal, composite shingles, wood-waste and other debris that is unsuitable for construction at the site. Our estimate of the volume of unsuitable fill material at the site is approximately 80,000 cubic yards based on a nominal thickness of 14 feet, although it is likely that much of this material may be screened and reused as structural fill. Unsuitable fill materials such as trash and wood debris should be excavated and removed from the site. Overlying material and some material within the fill such as brick and concrete debris may be reused as structural fill provided they meet the requirements of structural fill as detailed later in this report. The general area of unsuitable and uncontrolled fill found at the site is shown in Figure 2.

Groundwater was encountered in the borings at a depth of about 15 feet below existing grade. Given the time of year the borings were drilled, this depth may be considered as the seasonal high groundwater level for the purposes of stormwater system design.

LABORATORY TESTING

Four soil samples from the borings in the area of the proposed stormwater infiltration structure and two soil samples from test pits TP-6 and TP-9 were submitted for gradation analysis in general accordance with ASTM methodology. The results of the gradation analyses are contained in Attachment B.

The gradation analyses indicated that the soils exposed in boring B-2 at depths of between 0 and 10 feet consisted of poorly graded sand with silt and gravel (SP-SM) and silty sand with gravel (SM). This soil appears to be imported fill material and not soil native to the site. The sample from boring B-2 representative of the 10 to 25 foot interval consisted of poorly graded sand (SP). The sample from boring B-3 collected from a depth between 7 and 15 feet also consisted of poorly graded sand (SP). These materials appear to be representative of native soils on the site.

The samples from test pit TP-6 and TP-9 were collected from stockpiled soils on the site. The sample from TP-6 consists of silt (ML) and the sample from TP-9 was classified as silty sand (SM).

Four soil samples collected from native as well as stockpiled soils were tested for moisture-density relationships using the Modified Proctor Method (ASTM D1557). Testing indicates that the maximum dry density of native soils is 114 pounds per cubic foot at a moisture content of 11 percent. Laboratory results for Proctor tests are included in Attachment B.

CONCLUSIONS AND RECOMMENDATIONS

GENERAL

The test pits and borings conducted for our study revealed the presence of native silty sand and poorly graded sand to the maximum depth explored. These soils appear to be suitable for the proposed commercial development planned for the site.

Our explorations also revealed the presence of a large area of uncontrolled, undocumented fill that will be unsuitable for bearing structures or parking areas on. We encountered fill soil in the middle and north central portions of the site that consisted of between 2 and 7 feet of light brown fine to coarse sand with silt and cobbles overlying waste materials consisting of brick, concrete, wood-waste and other debris that is unsuitable for construction at the site. Our estimate of the volume of unsuitable fill material at the site is approximately 80,000 cubic yards based on a nominal thickness of 14feet.

Unsuitable fill materials such as trash and wood debris should be excavated and removed from the site. Overlying material and some material within the fill such as brick and concrete debris may be reused as structural fill provided they meet the requirements of structural fill as detailed later in this report. The general area of unsuitable and uncontrolled fill found at the site is shown in Figure 2.

EARTHWORK

General

We expect that site grading may be accomplished using conventional earthmoving equipment. The soils in the upper 2 feet of the site contain a moderate amount of fines and organics and may be moisture sensitive during wet weather. These materials may be difficult to operate on or compact during wet weather. Operation of heavy equipment at the site under wet conditions or when the soils are above optimum moisture content can be expected to result in considerable disturbance to the exposed subgrade soils. We recommend that earthwork be undertaken during periods of dry weather to reduce grading costs.

Clearing and Site Preparation

All areas to be graded should be cleared of surface and subsurface deleterious materials including trees, sod, brush, debris and other unsuitable or organic materials. We expect that stripping depths of between 6 and 12 inches will be required at the site to remove the surficial soils containing substantial amounts of organic material. Deeper stripping depths will be required in areas of heavy vegetation or, if the clearing operations cause excessive disturbance to the surficial soils, or if additional unsuitable soils are exposed during stripping operations.

We recommend that any trees be removed by overturning so that a majority of the tree roots are removed. Excavations from tree removal operations should be backfilled with structural fill compacted to the densities indicated in the “Structural Fill” section of this report.

The stripped material may be stockpiled and used later in nonstructural applications (e.g. landscape areas). Materials that cannot be used for landscaping should be removed from the project site and wasted.

Removal of Uncontrolled Fill

Significant quantities of uncontrolled and unsuitable fill were encountered in test pits and borings conducted in the north-central portion of the site extending to depths of 14 feet. The unsuitable fill materials consisted of brick, concrete, wood-waste, construction debris and trash. Uncontrolled fill, particularly fill containing significant quantities of wood and wood-waste such as logs and stumps, can be expected to settle over time as the wood decays. Long-term settlement can result in pavement distress or failure, utility disruption or deflection of floor slabs.

We recommend that the unsuitable fill material be removed and replaced with appropriate structural fill. Properly screened fill soil may be used as structural fill as long as it meets the specifications in the “Structural Fill” section of this report. All organic materials and refuse removed during the remediation process should be hauled from the site and disposed of at an approved facility. Masonry brick and concrete materials encountered during removal may be reused as structural fill provided they are reduced to fragments 3 inches or smaller in diameter. Oversize material that is screened out during the process should be hauled to an approved landfill and disposed of.

It should be noted that during a previous geotechnical investigation focused on the property immediately north of the subject site, soil samples collected and analyzed for the presence of heavy metals indicated the presence of chromium and lead at concentrations exceeding the Washington State Department of Ecology (Ecology) Model Toxics Control Act (MTCA) Method A cleanup levels for unrestricted land use (WAC 173-340-740). Therefore, it is possible that other soils imported to the site for use as fill may contain concentrations of hazardous or potentially hazardous materials. We recommend that additional sampling and appropriate laboratory testing be undertaken to evaluate the potential of hazardous materials on the property prior to the commencement of grading efforts.

Subgrade Preparation

We recommend that a representative of Insight Geologic be present to observe and evaluate the exposed subgrade conditions after stripping is completed and prior to placement of any structural fill. The exposed subgrade soil should be evaluated by proof rolling with heavy rubber tired equipment during dry weather or by probing with a ½ inch diameter steel rod during wet weather.

Any soft, loose or otherwise unsuitable areas delineated during proof rolling or probing should be recompacted, if practical, or over-excavated and replaced by structural fill.

After completing the proof rolling, the subgrade areas should be recompacted to a firm and unyielding condition. We recommend that Insight Geologic or a qualified testing firm evaluate the compaction effort and any compacted soils. A full and complete record of all observations and compaction measurements should be retained by the client. We recommend that all subgrade areas beneath roadways be compacted to at least 95 percent of the soil maximum dry density (MDD) in accordance with ASTM D1557 test procedure.

STRUCTURAL FILL

General

All fill that is placed at the site beneath structures and/or pavements should be placed as structural fill. We recommend that structural fill be free of debris, significant organic materials and rock fragments larger than about 6 inches. The workability of materials for use as structural fill depends on the gradation and moisture content of the soil. As the amount of fines increases, soil becomes increasingly more sensitive to small changes in moisture content. Compaction of native soils in accordance with the recommendations provided in this report then becomes difficult or impossible to achieve if the soil is above the optimum moisture content.

All fill and backfill beneath buildings should be compacted to at least 95 percent of soil MDD, based on ASTM D1557 (modified Proctor) testing procedure. Pavement subgrade soils and utility trench backfill should be compacted to at least 90 percent of the MDD up to within 2 feet of design grades; the upper 2 feet should be compacted to at least 95 percent of the MDD.

The lift thickness used during placement and compaction of structural fill will depend on the moisture and gradation characteristics of the soil and the type of equipment being used. If necessary, the material should be moisture conditioned to near-optimum moisture content prior to compaction. During fill and backfill placement, sufficient testing of in-place density should be performed to verify that adequate compaction is being achieved. The required frequency of density testing should be determined by the on-site testing professional. We recommend a lift thickness of no greater than 6 inches be placed and compacted for each compaction run.

Suitability of On-Site Materials as Fill

During dry weather construction, any non-organic (generally less than 30 percent organics) onsite soil may be considered for use as structural fill, provided it meets the criteria described in the Structural Fill section of this report and can be compacted as recommended. If the native material is over optimum moisture content when excavated, it will be necessary to aerate or dry the soil prior to placement as structural fill.

The site soils which contain moderate amounts of silt may be moisture sensitive. These materials may not be suitable for use as fill under wet weather conditions.

Cut Slopes

Temporary cut slopes are anticipated for construction of underground utilities. All temporary cut slopes and shoring must comply with the provisions of Washington Administrative Code (WAC) Title 296, Part N, “Excavation, Trenching and Shoring.” The contractor performing the work has the primary responsibility for protection of workers and adjacent improvements, deciding whether to use shoring, and for establishing the safe inclination for open-cut slopes.

Temporary unsupported cut slopes more than 4 feet high may be inclined to 1.5H:1V maximum steepness in the native soils. Cut slopes in the unconsolidated fill should be 2H:1V or flatter. This guideline assumes that all surface loads are kept at a minimum distance of at least one half the depth of the cut away from the top of the slope and that significant seepage is not present in the slope face. Flatter slopes will be necessary where significant seepage occurs. Some sloughing and raveling of the cut slopes should be expected over time. Temporary covering with heavy plastic sheeting should be used to protect these slopes during periods of wet weather.

Cut slopes for long term structures such as stormwater ponds should be inclined to 2H:1V or flatter for long term stability.

FOUNDATION SUPPORT

The soils at the site are generally in a loose condition. Spread footings are appropriate for the soils encountered if anticipated footing loads do not exceed 2,000 pounds per square foot (psf) for combined dead and long-term live loads, exclusive of the weight of the footing and overlying backfill. This value may be increased by one third for transient loads such as those induced by seismic events or wind loadings. If higher loads are anticipated, deep foundations or removal of unsuitable soil and replacement with structural fill should be considered.

We estimate that settlement of footings designed as recommended will be less than 1 inch for the anticipated load conditions, with differential settlements of less than 1 inch between comparably loaded footings. Most of the settlements should essentially occur as loads are being applied. However, disturbance of the foundation subgrade during construction or the presence of loose or soft soils below the foundation could result in larger settlements than predicted.

Footing Depths and Widths

For frost and erosion protection, the base of all exterior footings should bear at least 24 inches below adjacent outside grades. To limit post-construction settlements, continuous (wall) and isolated (column) footings should be at least 18 and 24 inches wide, respectively.

Bearing Subgrades

At least 12 inches of structural fill, compacted to a density of at least 95 percent (based on ASTM:D-1557), should underlie spread footings on this site that bear on the silty sand (SM) and poorly graded sand (SP) soils.

Lateral Overexcavation

Because foundation stresses are transferred outward as well as downward into the bearing soils, all structural fill placed under footings, up to 3 feet in thickness, should extend horizontally outward from the edge of each footing a distance equal to the depth of placed fill. Fill should extend a minimum of 12 inches below the footing base and should also extend a minimum of 12 inches outward from the footing edges.

Subgrade Observation

All footing subgrades should consist of either firm, unyielding, native soils or suitable structural fill materials. Footings should never be cast atop loose, soft, or frozen soil, slough, debris, existing uncontrolled fill, or surfaces covered by standing water. We recommend that the condition of all subgrades be observed by a representative of Insight Geologic or other qualified testing firm before any concrete is placed.

Bearing Pressures

In our opinion, for static loading, footings that bear on properly prepared, structural fill subgrades can be designed for a maximum allowable soil bearing pressures of 2,000 psf.

Footing Settlement

We estimate that total post-construction settlements of properly designed footings bearing on properly prepared subgrades will not exceed 1 inch. Differential settlements for comparably loaded elements may approach one-half of this value over horizontal distances of approximately 50 feet.

Footing and Stemwall Backfill

To provide erosion protection and lateral load resistance, we recommend that all footing excavations be backfilled on both sides of the footings, retaining walls, and stemwalls after the concrete has cured. Either imported structural fill or non-organic (generally less than 30 percent organics) on-site soils can be used for this purpose, contingent on a suitable moisture content at the time of placement. Regardless of soil type, all footing backfill soil should be compacted to a density of at least 90 percent (based on ASTM:D-1557).

BUILDING FLOOR SLABS

The maximum allowable soil bearing pressure for site soils is 2,000 psf. We recommend that preparations for the floor slabs for the proposed commercial structures adhere to the subgrade preparation and structural fill recommendations presented in this report. The slab base section should consist of a minimum 6-inch thick layer of crushed base course per WSDOT Standard Specification Section 9-03.9(3). The slab base material should be compacted to a minimum of 95 percent of their modified proctor maximum dry density per ASTM D1557.

To reduce the transmission of water vapor through the floor slab, we recommend the use of suitable vapor retarders such as plastic sheeting placed between the slab base and the floor slab and/or specially formulated concrete mixtures. At a minimum, a sheet of 6-mil polyethylene sheeting should be placed on top of the prepared base course and 2 inches of builders sand be placed atop the plastic sheeting and compacted to 90 percent MDD.

The identification of alternatives to prevent vapor transmission is outside of our expertise. A qualified architect or building envelope consultant can make recommendations for reducing vapor transmission through the slab based on the building use and flooring specifications. Our investigation addresses present subgrade conditions for slab support only and does not evaluate future potential conditions unless specifically stated otherwise.

PAVEMENT

All pavement designs were developed assuming a 20-year design life and a usage factor of 7-days-a-week.

Our pavement design recommendations were developed using the AASHTO method for flexible and rigid pavement designs. Our pavement sections are based on the following assumptions and design information:

- An assumed subgrade CBR of 20

- Standard-Duty Paving Equivalent Single Axle Loading (ESAL) 54,000
- Heavy-Duty Paving ESAL 270,800
- Pavement sections should be placed on a subgrade that has been proof-rolled, determined by a qualified person to be firm and unyielding and is compacted to at least 95 percent of the modified proctor MDD in accordance with ASTM D1557.
- All asphalt edges shall be supported by adjacent structure, curb, or compacted gravel shoulder
- Paved surfaces should be adequately sloped to direct surface water runoff away from the building.

The standard-duty pavement section shall consist of subgrade material compacted to 95 percent MDD overlain by 8 inches of gravel base course conforming to section 9-03.10 of the WSDOT Standard Specifications and compacted to 95 percent MDD. A minimum of 2 inches of crushed surfacing Top Course conforming to Section 9-03.9(3) of the WSDOT Standard Specifications shall be placed atop the prepared base course and compacted to a minimum density of 95 percent MDD. The wearing course shall consist of a minimum of 3 inches of Commercial Hot Mix Asphalt sloped to provide adequate drainage.

Heavy-duty pavement areas shall consist of subgrade material compacted to 95 percent MDD overlain by 8 inches of gravel base course conforming to section 9-03.10 of the WSDOT Standard Specifications and compacted to 95 percent MDD. A minimum of 2 inches of crushed surfacing Top Course conforming to Section 9-03.9(3) of the WSDOT Standard Specifications shall be placed atop the prepared base course and compacted to a minimum density of 95 percent MDD. The wearing course shall consist of a minimum of 5 inches of Commercial Hot Mix Asphalt sloped to provide adequate drainage.

SEISMIC AND GEOLOGIC HAZARDS

IBC Seismic Design Criteria

The subject property is located in an area designated as Site Class D is appropriate for design based on the 2006 IBC. Based on our experience in this area, a 100-foot boring was not required in order to provide a recommended Site Classification.

Seismicity and Faulting

The Puget Lowland is located in an area of frequent earthquakes of moderate to strong intensity. It lies over an active subduction zone, where the oceanic Juan de Fuca plate is being subducted beneath the North American plate. Areas adjacent to subduction zones are capable of generating very high magnitude earthquakes. Three earthquakes within the Puget Sound area in the last 55 years have caused significant damage. The April 13, 1949 earthquake is the largest recorded earthquake in the region having a moment magnitude

(Mm) of 7.1. Other lesser, but still significant earthquakes in 1965 and 2001 were had magnitudes of 6.5 and 6.8, respectively.

Moment magnitude is only one measure of earthquake intensity. Even moderate earthquakes can produce structural damage on poorly consolidated soils.

No mapped active faults are located within 5 miles of the project site; therefore, we estimate the ground rupture hazard at the site to be low.

Liquefaction

The probability of liquefaction occurring on the site during a design-level earthquake is low, based on the granular nature of the soils and on the depth to groundwater beneath the site.

Other Geologic Hazards

No other potential geologic hazards such as landslides or subsidence were identified on, or near the subject site.

DRAINAGE CONSIDERATIONS

The native soils on the site classify as Hydrologic Group A soils to a depth of 60 inches below existing grade. Foundation drains should be used where (1) crawl spaces or basements will be below a structure, (2) a slab is below the outside grade, or (3) the outside grade does not slope downward from a building. Drains should also be placed at the base of all earth-retaining walls. These drains should be surrounded by at least 6 inches of 1-inch-minus, washed rock and then wrapped in non-woven, geotextile filter fabric. At its highest point, a perforated pipe invert should be at least 6 inches below the bottom of a slab floor, and it should be sloped for drainage. All roof and surface water drains must be kept separate from the foundation drain system. Final site grading in areas adjacent to the buildings should slope away at least 2 percent for a distance of at least 10 feet, except where the area is paved.

STORMWATER INFILTRATION

Stormwater runoff from the site is proposed to be infiltrated into a pond or subsurface infiltration structure located in the northeastern portion of the site. Soil samples collected from the exploratory borings in this area and subjected to gradation analysis indicate the presence of fill soils (SP-SM and SM) overlying native SP soils at about 7 feet in depth.

We utilized the “Simple Method” identified in Table A.2 of the City of Tumwater Drainage Design and Erosion Control Manual (2009) to develop the design (long-term) infiltration rate for the proposed infiltration facility. Based on our gradation analyses, the native soils have a D_{10} of about 0.10 millimeters and a corresponding design infiltration rate of 2.0 inches per hour. This infiltration rate includes a safety factor of 2. We recommend that any fill soils removed from this area as a part of grading efforts be replaced with suitably coarse material having a D_{10} grain size that is 0.10 millimeters or greater.

Seasonal high groundwater can be expected to occur at a depth of about 15 feet below ground surface in this portion of the site based on groundwater observed in the borings. This seasonal high groundwater elevation provides a vertical separation of greater than three feet between the base of the proposed infiltration structure and seasonal high groundwater assuming an infiltration structure depth of 5 feet below existing grade in accordance with Tumwater's design guidelines. The seasonal high groundwater elevation should not be confused with the historic high groundwater elevation, which is discussed in detail below.

HISTORIC HIGH GROUNDWATER ELEVATIONS

The proposed project sites lie within an area designated by the City of Tumwater as an area of high groundwater concern due to flooding in 1996 and 1999. Tumwater promulgated Ordinance No. O2004-003 "Site Development Standards for New Development in the Salmon Creek Basin and other High Groundwater Areas in 2004. These standards outline the steps necessary to evaluate the effect of stormwater infiltration on proposed development prior to beginning construction.

The first step in the evaluation is to estimate the depth to historical high groundwater beneath the site. Sites with historic high groundwater levels within 6 feet of the base of a proposed infiltration facility require further evaluation and modeling. We have reviewed the figure titled "Estimated Depth to Water, Winter 1999" contained in the report "Salmon Creek Drainage Basin Conceptual Hydrogeologic Model" dated June 2001, to evaluate the depth to high groundwater beneath the proposed project site. The estimated depth to the historic groundwater table beneath the site appears to be less than 6 feet below ground surface and therefore requires further evaluation to resolve the high groundwater issue.

A groundwater monitoring well located on the western portion of the property (MW-1) was installed by Kleinfelder and Associates in 2005 as a part of a study that included the WalMart property to the north of Kingswood Drive. As a part of the WalMart project, Pacific Groundwater Group (PGG) conducted an analysis of the groundwater data collected by Kleinfelder to establish the historic high groundwater elevation beneath the property.

While data from MW-1 was not used for the WalMart project, PGG performed the required regression analysis of the collected data and established a historic high groundwater elevation at the location of MW-1 of 173.2 feet (NGVD 29) or approximately 11 feet below ground surface. The regression analysis was performed by plotting groundwater elevation data for the City's reference well (LRS-O1A) against monitoring data obtained from Kleinfelder for MW-1. A line of best fit was generated for each data set. The equation of the best-fit line and the R-squared value were also generated.

The historic high groundwater elevations for each monitoring well were calculated by using the known 1999 high groundwater elevation for the reference wells in the linear equations generated in the regression analyses. The depth to the calculated historic high groundwater table was obtained by subtracting the calculated groundwater elevation from the surveyed ground surface elevation at each monitoring well. PGG's Technical Memorandum dated March 5, 2010 prepared for the proposed WalMart store immediately north of the subject property and including data for the subject site is included in Attachment C to this report. The data derived by PGG and presented in their technical memorandum will be used to complete the necessary mounding analysis.

LIMITATIONS

We have prepared this geological report for use by Pacland and their client, Kingswood Capital for the proposed commercial development to be located at 1401 and 1551 Kingswood Drive SW in Tumwater, Washington.

Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted practices in the field of geological engineering and in accordance with the City of Tumwater's Drainage Manual at the time this report was prepared. No warranty or other conditions express or implied, should be understood.

◆

We appreciate the opportunity to assist you with this project. Please contact us if you have questions regarding the information presented in this report or if we can provide additional services.

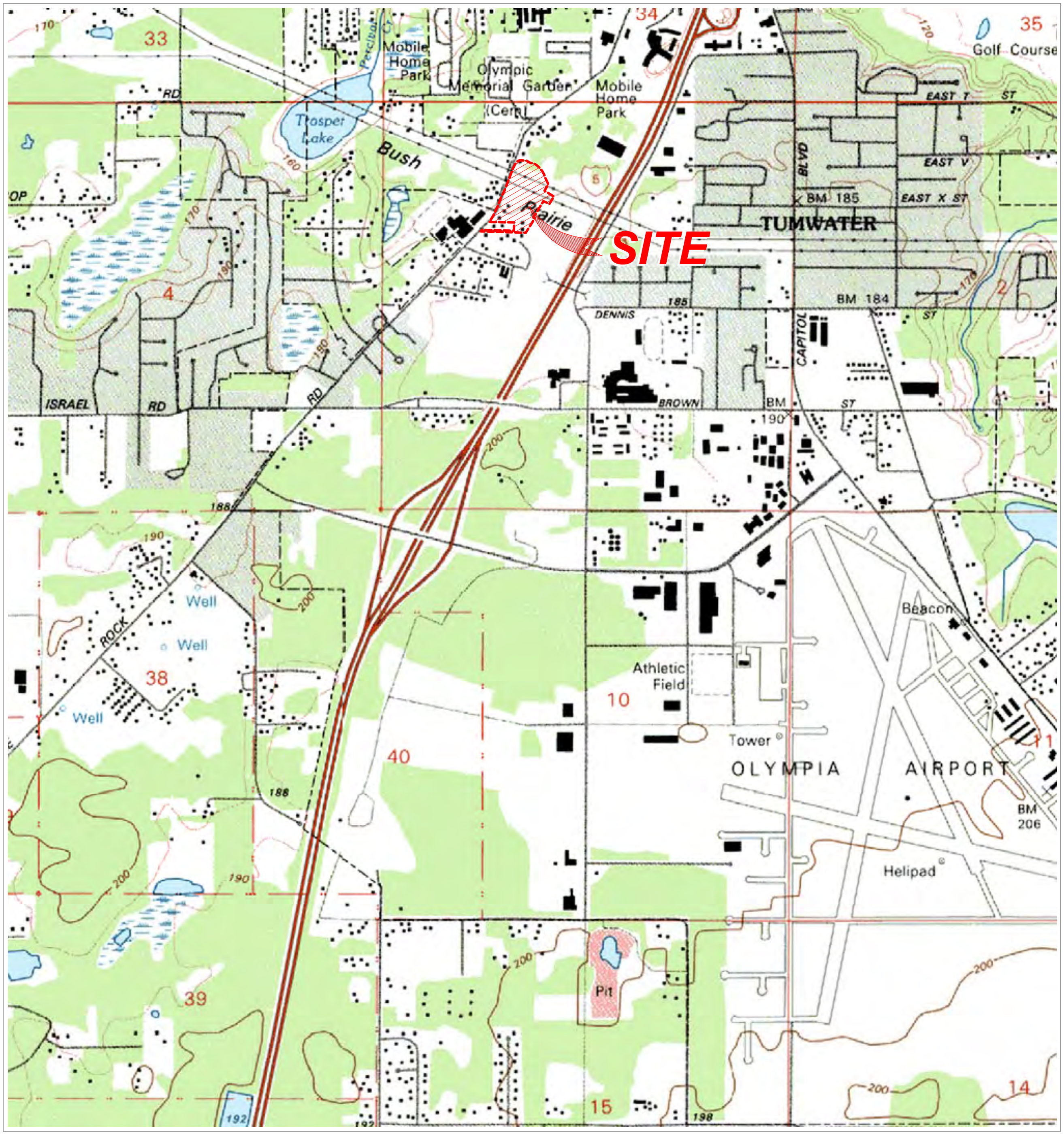
State of Washington
Engineering Geologist
816
Licensed Geologist
William E. Halbert

Very truly yours,
INSIGHT GEOLOGIC, INC.

William E. Halbert, L.G., L.E.G.
Principal

Attachments

FIGURES



Source: Maptech, Inc. (C) 1997

MAYTOWN, WASHINGTON
7.5 MINUTE QUADRANGLE
Year Created 1990

SCALE: 1: 24000

KINGSWOOD CAPITAL

TUMWATER, WASHINGTON

INSIGHT GEOLOGIC, INC.

Figure 1
Vicinity Map

FILE INFO: \\Ig-s01\company\Insight\519-001-01 Kingswood Capital\Figures\Figure 1 - Vicinity Map.dwg PLOTTED: Apr 08, 2011 4:47pm BY:reneeb

Source: U.S. Geological Survey & PacLand (c) 2011

KINGSWOOD CAPITAL

TUMWATER, WASHINGTON

INSIGHT GEOLOGIC, INC.

Figure 2
Site Plan

FILE INFO: \\Ig-s01\company\Insight\519-001-01 Kingswood Capital\Figures\Geo Rpt - Figure 2 - Site Plan.dwg PLOTTED: Aug 22, 2011 12:02pm BY:reneeb

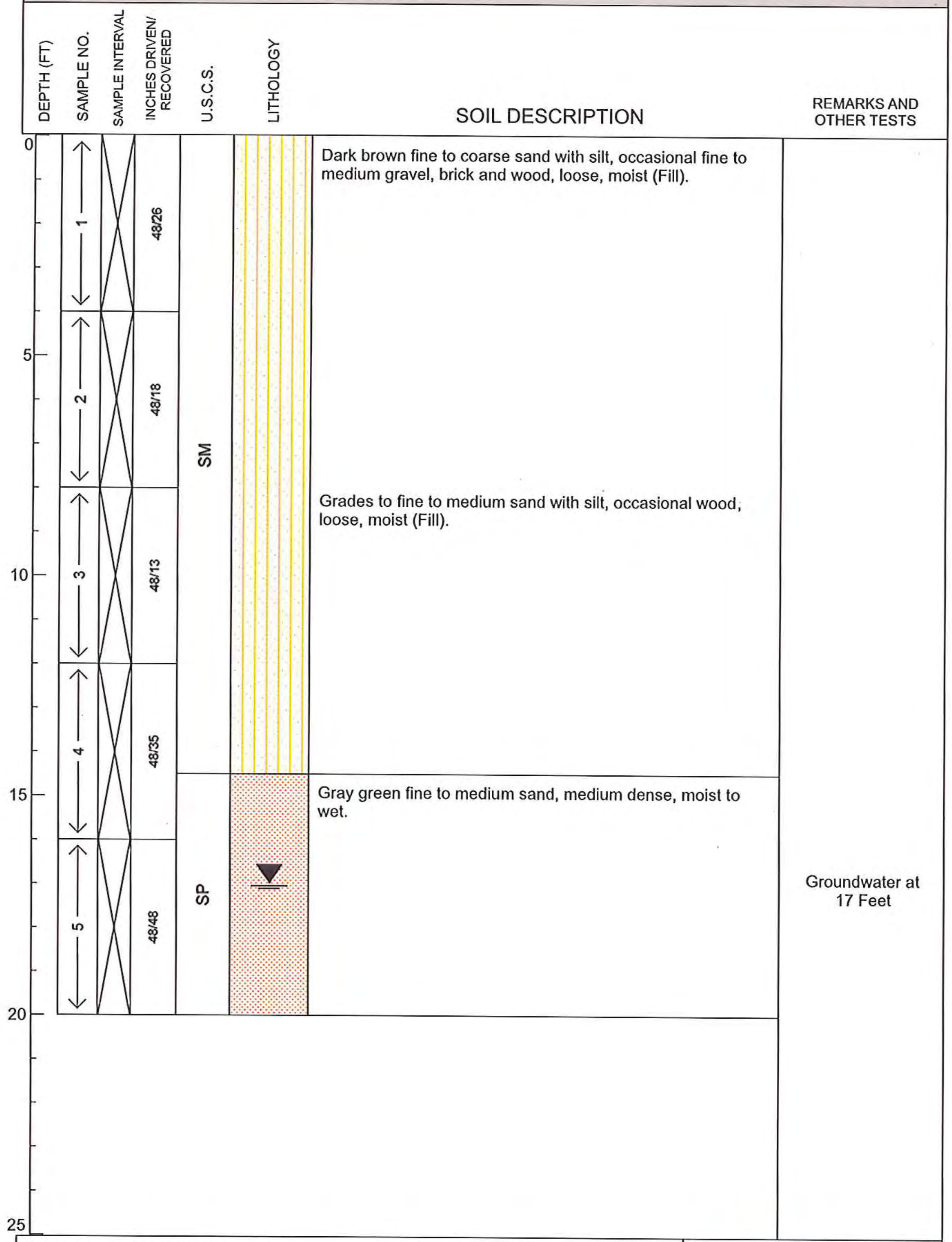
ATTACHMENT A

EXPLORATION LOGS

PROJECT: **Kingswood Capital**
PROJECT NO.: **519-001-01**
LOCATION: **1401 & 1551 Kingswood Drive SW, Tumwater, WA**

B-1

DATE: **3/28/11**
TOTAL DEPTH: **20 Feet**



Dark brown fine to coarse sand with silt, occasional fine to medium gravel, brick and wood, loose, moist (Fill).

Grades to fine to medium sand with silt, occasional wood, loose, moist (Fill).

Gray green fine to medium sand, medium dense, moist to wet.

Groundwater at 17 Feet

Drilling Contractor: **NW Probe**
Drilling Equipment: **AMS Power Probe 9630**
Logged By: **Kevin V.**
Driller: **Jason R.**
Drilling Method: **Direct Push**

INSIGHT GEOLOGIC, INC.

PROJECT: **Kingswood Capital**
PROJECT NO.: **519-001-01**
LOCATION: **1401 & 1551 Kingswood Drive SW, Tumwater, WA**

B-2

DATE: **3/28/11**
TOTAL DEPTH: **24 Feet**

DEPTH (FT)	SAMPLE NO.	SAMPLE INTERVAL	INCHES DRIVEN/ RECOVERED	U.S.C.S.	LITHOLOGY	SOIL DESCRIPTION	REMARKS AND OTHER TESTS
0	1	☒	48/36	**SP-SM**		Dark brown fine to coarse sand with silt, occasional fine gravel, loose, moist (Fill).	
5	2	☒	48/12	**SM**		Dark brown fine to coarse silty sand with fine to medium gravel, loose, moist (Fill).	
	3	☒	48/30				
10				**SP**		Light gray fine to medium sand, trace silt, medium dense, moist to wet.	
15	4	☒	48/46				
	5	☒	48/48		▼		Groundwater at 17 Feet
20	6	☒	48/48				
25							

Drilling Contractor: **NW Probe**
Drilling Equipment: **AMS Power Probe 9630**
Logged By: **Kevin V.**

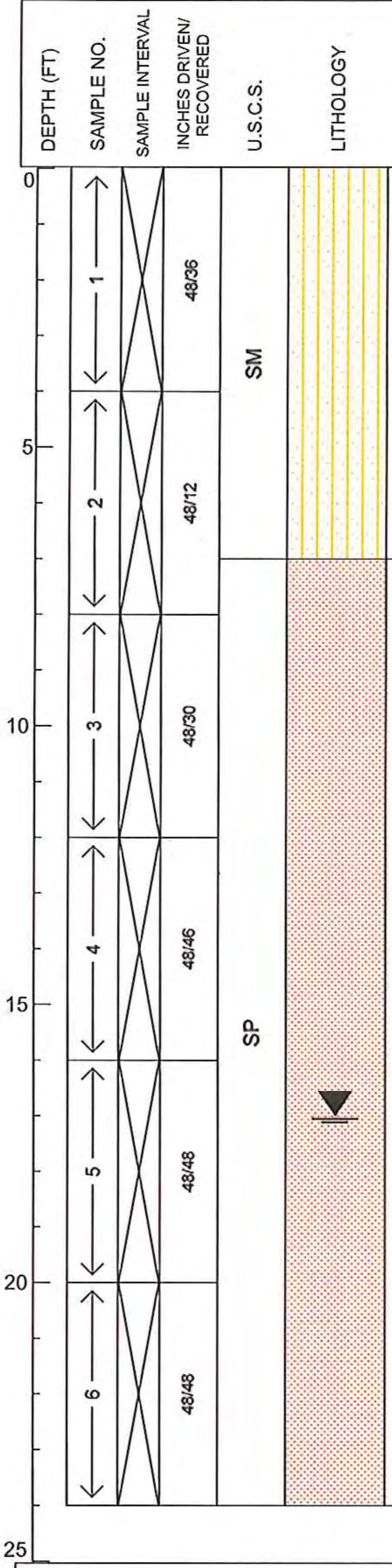
Driller: **Jason R.**
Drilling Method: **Direct Push**

INSIGHT GEOLOGIC, INC.

PROJECT: **Kingswood Capital**
PROJECT NO.: **519-001-01**
LOCATION: **1401 & 1551 Kingswood Drive SW, Tumwater, WA**

B-3

DATE: **3/28/11**
TOTAL DEPTH: **24 Feet**



SOIL DESCRIPTION	REMARKS AND OTHER TESTS
Dark brown silty fine to coarse sand, occasional fine to medium gravel and wood, loose, moist (Fill).	
Gray green fine to coarse sand with trace silt, occasional fine gravel, medium dense, moist to wet.	
Grades to fine to medium sand with trace silt, medium dense, wet.	Groundwater at 17 Feet

Drilling Contractor: **NW Probe**
Drilling Equipment: **AMS Power Probe 9630**
Logged By: **Kevin V.**

Driller: **Jason R.**
Drilling Method: **Direct Push**

INSIGHT GEOLOGIC, INC.

PROJECT: **Kingswood Capital**
PROJECT NO.: **519-001-01**
LOCATION: **1401 & 1551 Kingswood Drive SW, Tumwater, WA**

TP-1

DATE: **3/28/11**
TOTAL DEPTH: **10 Feet**

DEPTH (FT)	U.S.C.S.	LITHOLOGY	SOIL DESCRIPTION	REMARKS AND OTHER TESTS
0	**SM**	▥	Dark brown silt with fine to medium sand, loose, moist.	
	SP	░	Light brown fine to medium sand with silt, loose, moist. Grades to light gray fine to medium sand with trace silt, loose, moist.	
5				
10				
15				

Contractor: **Hill Excavating**
Equipment: **Trackhoe**
Logged By: **Kevin V.**

INSIGHT GEOLOGIC, INC.

PROJECT: **Kingswood Capital**
PROJECT NO.: **519-001-01**
LOCATION: **1401 & 1551 Kingswood Drive SW, Tumwater, WA**

TP-2

DATE: **3/28/11**
TOTAL DEPTH: **10 Feet**

DEPTH (FT)	U.S.C.S.	LITHOLOGY	SOIL DESCRIPTION	REMARKS AND OTHER TESTS
0	SM	▥	Light brown fine to coarse sand and silt, occasional cobbles, loose, moist (Fill). Grades to dark brown fine to medium sand and silt, loose, moist.	
5	SP	▒	Light brown fine to medium sand and silt, loose, moist. Grades to light gray fine to medium sand and trace silt, loose, moist.	
10				
15				

Contractor: **Hill Excavating**
Equipment: **Trackhoe**
Logged By: **Kevin V.**

INSIGHT GEOLOGIC, INC.

PROJECT: **Kingswood Capital**
PROJECT NO.: **519-001-01**
LOCATION: **1401 & 1551 Kingswood Drive SW, Tumwater, WA**

TP-3

DATE: **3/28/11**
TOTAL DEPTH: **9.5 Feet**

DEPTH (FT)	U.S.C.S.	LITHOLOGY	SOIL DESCRIPTION	REMARKS AND OTHER TESTS
0	SM	▨	Light brown fine to coarse sand and silt with fine to coarse gravel, occasional cobbles, medium dense, moist (Fill).	
			Grades to gray fine to coarse sand and silt with fine to coarse gravel, occasional cobbles, wood and brick debris, medium dense, moist (Fill).	
5				
10				
15				

Contractor: **Hill Excavating**
Equipment: **Trackhoe**
Logged By: **Kevin V.**

INSIGHT GEOLOGIC, INC.

PROJECT: **Kingswood Capital**
PROJECT NO.: **519-001-01**
LOCATION: **1401 & 1551 Kingswood Drive SW, Tumwater, WA**

TP-4

DATE: **3/28/11**

TOTAL DEPTH: **6 Feet**

DEPTH (FT)	U.S.C.S.	LITHOLOGY	SOIL DESCRIPTION	REMARKS AND OTHER TESTS
0	SM	▥	Light brown fine to coarse sand and silt with fine to coarse gravel, occasional cobbles, medium dense, moist (Fill).	
5	SP	▨	Gray fine to coarse sand and silt with wood and construction debris, medium dense, moist (Fill).	
10				
15				

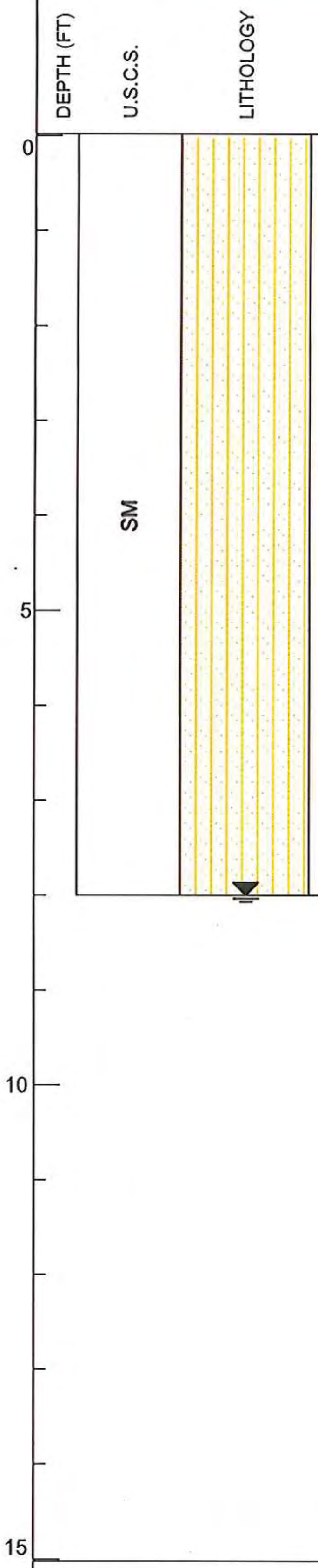
Contractor: **Hill Excavating**
Equipment: **Trackhoe**
Logged By: **Kevin V.**

INSIGHT GEOLOGIC, INC.

PROJECT: **Kingswood Capital**
PROJECT NO.: **519-001-01**
LOCATION: **1401 & 1551 Kingswood Drive SW, Tumwater, WA**

TP-5

DATE: **3/28/11**
TOTAL DEPTH: **8 Feet**



SOIL DESCRIPTION

Light brown to light gray silty fine to coarse sand and gravel, dense, moist (Fill).

Grades to gray silt with fine to coarse sand and fine to coarse gravel with wood debris (Fill).

REMARKS AND OTHER TESTS

Groundwater at 8 Feet

Contractor: **Hill Excavating**
Equipment: **Trackhoe**
Logged By: **Kevin V.**

INSIGHT GEOLOGIC, INC.

PROJECT: **Kingswood Capital**
PROJECT NO.: **519-001-01**
LOCATION: **1401 & 1551 Kingswood Drive SW, Tumwater, WA**

TP-6

DATE: **3/28/11**
TOTAL DEPTH: **10 Feet**

DEPTH (FT)	U.S.C.S.	LITHOLOGY	SOIL DESCRIPTION	REMARKS AND OTHER TESTS
0	**SM**	▥	Dark brown silty fine to medium sand with fine to medium gravel, occasional cobbles, loose, moist (Fill).	
	SP	▒	Brown fine to coarse sand with fine to medium gravel, medium dense, moist (Fill).	
5	**ML**	▥	Gray silt with fine to medium sand, trace fine to medium gravel, occasional wood debris, medium dense, moist (Fill).	
10				
15				

Contractor: **Hill Excavating**
Equipment: **Trackhoe**
Logged By: **Kevin V.**

INSIGHT GEOLOGIC, INC.

PROJECT: **Kingswood Capital**
PROJECT NO.: **519-001-01**
LOCATION: **1401 & 1551 Kingswood Drive SW, Tumwater, WA**

TP-7

DATE: **3/29/11**
TOTAL DEPTH: **11.5 Feet**

DEPTH (FT)	U.S.C.S.	LITHOLOGY	SOIL DESCRIPTION	REMARKS AND OTHER TESTS
0	SM	▥	Dark brown silty fine to medium sand, loose, moist. Grades to light brown silty fine to coarse sand, occasional fine to coarse gravel, medium dense, moist (Fill).	
5	SP	▒	Dark brown silty fine to medium sand, loose, moist. Grades to light brown fine to coarse sand with silt, loose, moist.	
10				
15				

Contractor: **Hill Excavating**
Equipment: **Trackhoe**
Logged By: **Kevin V.**

INSIGHT GEOLOGIC, INC.

PROJECT: **Kingswood Capital**
PROJECT NO.: **519-001-01**
LOCATION: **1401 & 1551 Kingswood Drive SW, Tumwater, WA**

TP-8

DATE: **3/29/11**
TOTAL DEPTH: **11.5 Feet**

DEPTH (FT)	U.S.C.S.	LITHOLOGY	SOIL DESCRIPTION	REMARKS AND OTHER TESTS
0	SM	▥	Dark brown silty fine to medium sand, loose, moist.	
5				
	SP	▨	Light brown fine to medium sand with silt, loose, moist.	
			Grades to light gray fine to coarse sand with trace silt, loose, moist.	
10				
15				

Contractor: **Hill Excavating**
Equipment: **Trackhoe**
Logged By: **Kevin V.**

INSIGHT GEOLOGIC, INC.

PROJECT: **Kingswood Capital**
PROJECT NO.: **519-001-01**
LOCATION: **1401 & 1551 Kingswood Drive SW, Tumwater, WA**

TP-9

DATE: **3/29/11**
TOTAL DEPTH: **12 Feet**

DEPTH (FT)	U.S.C.S.	LITHOLOGY	SOIL DESCRIPTION	REMARKS AND OTHER TESTS
0		▨	Brown fine to coarse silty sand with fine to coarse gravel, loose, moist (Fill).	
			Grades to dark brown silty fine to medium sand, loose, moist.	
5	SM			
			Grades to light brown fine to coarse sand with silt, loose, moist.	
10				
15				

Contractor: **Hill Excavating**
Equipment: **Trackhoe**
Logged By: **Kevin V.**

INSIGHT GEOLOGIC, INC.

PROJECT: **Kingswood Capital**
PROJECT NO.: **519-001-01**
LOCATION: **1401 & 1551 Kingswood Drive SW, Tumwater, WA**

TP-10

DATE: **3/29/11**
TOTAL DEPTH: **11.5 Feet**

DEPTH (FT)	U.S.C.S.	LITHOLOGY	SOIL DESCRIPTION	REMARKS AND OTHER TESTS
0	**SM**	▥	Dark brown silty fine to medium sand, loose, moist.	
	SP	▩	Light brown fine to coarse sand with trace silt, loose, moist.	
5				
10				
15				

Contractor: **Hill Excavating**
Equipment: **Trackhoe**
Logged By: **Kevin V.**

INSIGHT GEOLOGIC, INC.

PROJECT: **Kingswood Capital**
PROJECT NO.: **519-001-01**
LOCATION: **1401 & 1551 Kingswood Drive SW, Tumwater, WA**

TP-11

DATE: **3/29/11**
TOTAL DEPTH: **9 Feet**

DEPTH (FT)	U.S.C.S.	LITHOLOGY	SOIL DESCRIPTION	REMARKS AND OTHER TESTS
0	SM	▥	Dark brown silty fine to medium sand, loose, moist.	
5	SP	░	Light brown fine to coarse sand with trace silt, loose, moist.	
10				
15				

Contractor: **Hill Excavating**
Equipment: **Trackhoe**
Logged By: **Kevin V.**

INSIGHT GEOLOGIC, INC.

PROJECT: **Kingswood Capital**
PROJECT NO.: **519-001-01**
LOCATION: **1401 & 1551 Kingswood Drive SW, Tumwater, WA**

TP-12

DATE: **3/29/11**
TOTAL DEPTH: **9 Feet**

DEPTH (FT)	U.S.C.S.	LITHOLOGY	SOIL DESCRIPTION	REMARKS AND OTHER TESTS
0	SM		Brown silty fine to medium sand, occasional fine to medium gravel, loose, moist (Fill).	
	SP		Light brown fine to coarse sand with fine to coarse gravel and silt, occasional cobbles and boulders, medium dense, moist (Fill).	
5			Grades to fine to coarse sand with silt, loose, moist.	
10				
15				

Contractor: **Hill Excavating**
Equipment: **Trackhoe**
Logged By: **Kevin V.**

INSIGHT GEOLOGIC, INC.

PROJECT: **Kingswood Capital**
PROJECT NO.: **519-001-01**
LOCATION: **1401 & 1551 Kingswood Drive SW, Tumwater, WA**

TP-13

DATE: **3/29/11**
TOTAL DEPTH: **8 Feet**

DEPTH (FT)	U.S.C.S.	LITHOLOGY	SOIL DESCRIPTION	REMARKS AND OTHER TESTS
0	SM	▥	Brown silty fine to medium sand, occasional fine to medium gravel, loose, moist (Fill).	
	SP	▨	Light gray to brown fine to coarse sand with fine to coarse gravel and silt, occasional cobbles and boulders, medium dense, moist (Fill).	
5	SM	▥ ▼	Blue gray silt with fine to medium sand, loose, moist. Grades to fine to coarse sand with fine to coarse gravel and wood debris, loose, moist (Fill).	Note: wood debris created void containing water at 5 feet
10				
15				

Contractor: **Hill Excavating**
Equipment: **Trackhoe**
Logged By: **Kevin V.**

INSIGHT GEOLOGIC, INC.

PROJECT: **Kingswood Capital**
PROJECT NO.: **519-001-01**
LOCATION: **1401 & 1551 Kingswood Drive SW, Tumwater, WA**

TP-14

DATE: **3/29/11**
TOTAL DEPTH: **10 Feet**

DEPTH (FT)	U.S.C.S.	LITHOLOGY	SOIL DESCRIPTION	REMARKS AND OTHER TESTS
0	SP	▨	Brown to dark brown fine to coarse sand with fine to coarse gravel and wood, concrete, metal and plastic debris, loose, moist (Fill).	
5				
10				
15				

Contractor: **Hill Excavating**
Equipment: **Trackhoe**
Logged By: **Kevin V.**

INSIGHT GEOLOGIC, INC.

PROJECT: **Kingswood Capital**
PROJECT NO.: **519-001-01**
LOCATION: **1401 & 1551 Kingswood Drive SW, Tumwater, WA**

TP-15

DATE: **3/29/11**
TOTAL DEPTH: **9 Feet**

DEPTH (FT)	U.S.C.S.	LITHOLOGY	SOIL DESCRIPTION	REMARKS AND OTHER TESTS
0	SP	▨	Gray fine to coarse sand with fine to coarse gravel and silt, occasional wood, concrete, and boulder debris, medium dense, moist (Fill).	
5				
10				
15				

Contractor: **Hill Excavating**
Equipment: **Trackhoe**
Logged By: **Kevin V.**

INSIGHT GEOLOGIC, INC.

PROJECT: **Kingswood Capital**
PROJECT NO.: **519-001-01**
LOCATION: **1401 & 1551 Kingswood Drive SW, Tumwater, WA**

TP-16

DATE: **3/29/11**
TOTAL DEPTH: **10 Feet**

DEPTH (FT)	U.S.C.S.	LITHOLOGY	SOIL DESCRIPTION	REMARKS AND OTHER TESTS
0		▨	Brown fine to coarse sand with fine to coarse gravel and silt, occasional wood debris, loose, moist (Fill).	
5	SP	▨		
		▨	Grades to light brown fine to coarse sand with trace silt, loose, moist.	
10				
15				

Contractor: **Hill Excavating**
Equipment: **Trackhoe**
Logged By: **Kevin V.**

INSIGHT GEOLOGIC, INC.

PROJECT: **Kingswood Capital**
PROJECT NO.: **519-001-01**
LOCATION: **1401 & 1551 Kingswood Drive SW, Tumwater, WA**

TP-17

DATE: **3/29/11**
TOTAL DEPTH: **10 Feet**

DEPTH (FT)	U.S.C.S.	LITHOLOGY	SOIL DESCRIPTION	REMARKS AND OTHER TESTS
0	**SM**	▥	Dark brown silty fine to medium sand, loose, moist.	
5	**SP**	░	Light brown fine to coarse sand with trace silt, loose, moist.	
10				
15				

Contractor: **Hill Excavating**
Equipment: **Trackhoe**
Logged By: **Kevin V.**

INSIGHT GEOLOGIC, INC.

TP-18

PROJECT: **Kingswood Capital**
PROJECT NO.: **519-001-01**
LOCATION: **1401 & 1551 Kingswood Drive SW, Tumwater, WA**

DATE: **3/29/11**
TOTAL DEPTH: **6 Feet**

DEPTH (FT)	U.S.C.S.	LITHOLOGY	SOIL DESCRIPTION	REMARKS AND OTHER TESTS
0	**SM**		Dark brown silty fine to medium sand, loose, moist.	
5				
10				
15				

Contractor: **Hill Excavating**
Equipment: **Trackhoe**
Logged By: **Kevin V.**

INSIGHT GEOLOGIC, INC.

PROJECT: **Kingswood Capital**
PROJECT NO.: **519-001-01**
LOCATION: **1401 & 1551 Kingswood Drive SW, Tumwater, WA**

TP-19

DATE: **3/29/11**
TOTAL DEPTH: **5 Feet**

DEPTH (FT)	U.S.C.S.	LITHOLOGY	SOIL DESCRIPTION	REMARKS AND OTHER TESTS
0	SP	▨	Gray brown fine to coarse sand with fine to coarse gravel and silt, occasional wood, brick and concrete debris, loose, moist (Fill).	
5				
10				
15				

Contractor: **Hill Excavating**
Equipment: **Trackhoe**
Logged By: **Kevin V.**

INSIGHT GEOLOGIC, INC.

ATTACHMENT B

LABORATORY ANALYSES

Gradation Analysis Summary Data

Job Name: Kingswood Capital
Job Number: 519-001-01
Date Tested: 3/28/11
Tested By: Kevin V.

Boring #: B-2
Sample #: B-2 0' - 4'
Depth: 0 - 4 Feet

Moisture Content (%) 14.4%

Sieve Size	**Percent Passing**
3.0 in. (75.0)	100.0
1.5 in. (37.5)	100.0
3/4 in. (19.0)	94.8
3/8 in. (9.5-mm)	85.1
No. 4 (4.75-mm)	79.6
No. 10 (2.00-mm)	75.7
No. 20 (.850-mm)	71.2
No. 40 (.425-mm)	58.8
No. 60 (.250-mm)	34.7
No. 100 (.150-mm)	16.2
No. 200 (.075-mm)	7.9

Size Fraction	**Percent by Weight**
Coarse Gravel	5.2
Fine Gravel	15.2
Coarse Sand	3.9
Medium Sand	16.9
Fine Sand	50.9
Fines	7.9
Total	**100.0**

LL	- -
PL	- -
PI	- -
D_{10}	0.091
D_{30}	0.230
D_{60}	0.460
D_{90}	15.000
Cc	1.264
Cu	5.055

ASTM Classification
Group Name: **Poorly Graded Sand with Silt and Gravel**
Symbol: **SP-SM**

INSIGHT GEOLOGIC, INC.

Gradation Analysis Summary Data

Job Name: Kingswood Capital
Job Number: 519-001-01
Date Tested: 3/28/11
Tested By: Kevin V.

Boring #: B-2
Sample #: B-2 4' - 10'
Depth: 4 - 10 Feet

Moisture Content (%) 10.1%

Sieve Size	Percent Passing
3.0 in. (75.0)	100.0
1.5 in. (37.5)	100.0
3/4 in. (19.0)	85.5
3/8 in. (9.5-mm)	74.7
No. 4 (4.75-mm)	67.8
No. 10 (2.00-mm)	62.1
No. 20 (.850-mm)	55.4
No. 40 (.425-mm)	42.6
No. 60 (.250-mm)	28.4
No. 100 (.150-mm)	19.3
No. 200 (.075-mm)	12.7

Size Fraction	Percent by Weight
Coarse Gravel	14.5
Fine Gravel	17.7
Coarse Sand	5.7
Medium Sand	19.5
Fine Sand	29.9
Fines	12.7
Total	**100.0**

LL - -
PL - -
PI - -

D_{10} 0.000
D_{30} 0.275
D_{60} 1.600
D_{90} 24.000

Cc - -
Cu - -

ASTM Classification
Group Name: **Silty Sand with Gravel**
Symbol: **SM**

INSIGHT GEOLOGIC, INC.

Gradation Analysis Summary Data

Job Name: Kingswood Capital
Job Number: 519-001-01
Date Tested: 3/28/11
Tested By: Kevin V.

Boring #: B-2
Sample #: B-2 10' - 24'
Depth: 10 - 24 Feet

Moisture Content (%) 14.7%

Sieve Size	Percent Passing
3.0 in. (75.0)	100.0
1.5 in. (37.5)	100.0
3/4 in. (19.0)	100.0
3/8 in. (9.5-mm)	100.0
No. 4 (4.75-mm)	100.0
No. 10 (2.00-mm)	100.0
No. 20 (.850-mm)	99.9
No. 40 (.425-mm)	96.3
No. 60 (.250-mm)	61.5
No. 100 (.150-mm)	16.3
No. 200 (.075-mm)	4.9

Size Fraction	Percent by Weight
Coarse Gravel	0.0
Fine Gravel	0.0
Coarse Sand	0.0
Medium Sand	3.7
Fine Sand	91.4
Fines	4.9
Total	**100.0**

LL	- -
PL	- -
PI	- -
D_{10}	0.130
D_{30}	0.180
D_{60}	0.250
D_{90}	0.350
Cc	0.997
Cu	1.923

ASTM Classification
Group Name: **Poorly Graded Sand**
Symbol: **SP**

Gradation Analysis Summary Data

Job Name:	Kingswood Capital	**Boring #:**	B-3
Job Number:	519-001-01	**Sample #:**	B-3 7' - 15'
Date Tested:	3/28/11	**Depth:**	7 - 15 Feet
Tested By:	Kevin V.		

Moisture Content (%) 12.4%

Sieve Size	**Percent Passing**
3.0 in. (75.0)	100.0
1.5 in. (37.5)	100.0
3/4 in. (19.0)	100.0
3/8 in. (9.5-mm)	100.0
No. 4 (4.75-mm)	100.0
No. 10 (2.00-mm)	100.0
No. 20 (.850-mm)	99.7
No. 40 (.425-mm)	93.7
No. 60 (.250-mm)	42.6
No. 100 (.150-mm)	10.4
No. 200 (.075-mm)	3.4

Size Fraction	**Percent by Weight**
Coarse Gravel	0.0
Fine Gravel	0.0
Coarse Sand	0.0
Medium Sand	6.3
Fine Sand	90.3
Fines	3.4
Total	**100.0**

LL - -
PL - -
PI - -

D_{10} 0.160
D_{30} 0.220
D_{60} 0.299
D_{90} 0.400

Cc 1.012
Cu 1.869

ASTM Classification
Group Name: **Poorly Graded Sand**
Symbol: **SP**

INSIGHT GEOLOGIC, INC.

Gradation Analysis Summary Data

Job Name: Kingswood Capital
Job Number: 519-001-01
Date Tested: 3/28/11
Tested By: Kevin V.

Boring #: TP-6
Sample #: TP-6 3' - 10'
Depth: 3 - 10 Feet

Moisture Content (%) 18.6%

Sieve Size	Percent Passing
3.0 in. (75.0)	100.0
1.5 in. (37.5)	100.0
3/4 in. (19.0)	100.0
3/8 in. (9.5-mm)	100.0
No. 4 (4.75-mm)	99.7
No. 10 (2.00-mm)	99.3
No. 20 (.850-mm)	98.8
No. 40 (.425-mm)	98.5
No. 60 (.250-mm)	97.9
No. 100 (.150-mm)	95.2
No. 200 (.075-mm)	85.5

Size Fraction	Percent by Weight
Coarse Gravel	0.0
Fine Gravel	0.3
Coarse Sand	0.5
Medium Sand	0.7
Fine Sand	13.1
Fines	85.5
Total	**100.0**

LL - -
PL - -
PI - -

D_{10} 0.000
D_{30} 0.000
D_{60} 0.000
D_{90} 0.110

Cc - -
Cu - -

ASTM Classification
Group Name: **Silt**
Symbol: **ML**

INSIGHT GEOLOGIC, INC.

Gradation Analysis Summary Data

Job Name: Kingswood Capital
Job Number: 519-001-01
Date Tested: 3/28/11
Tested By: Kevin V.

Boring #: TP-9
Sample #: TP-9 0' - 4'
Depth: 0 - 4 Feet

Moisture Content (%) 17.9%

Sieve Size	Percent Passing
3.0 in. (75.0)	100.0
1.5 in. (37.5)	100.0
3/4 in. (19.0)	100.0
3/8 in. (9.5-mm)	99.0
No. 4 (4.75-mm)	97.5
No. 10 (2.00-mm)	95.9
No. 20 (.850-mm)	94.6
No. 40 (.425-mm)	88.0
No. 60 (.250-mm)	65.1
No. 100 (.150-mm)	46.3
No. 200 (.075-mm)	31.0

Size Fraction	Percent by Weight
Coarse Gravel	0.0
Fine Gravel	2.5
Coarse Sand	1.6
Medium Sand	7.9
Fine Sand	57.0
Fines	31.0
Total	**100.0**

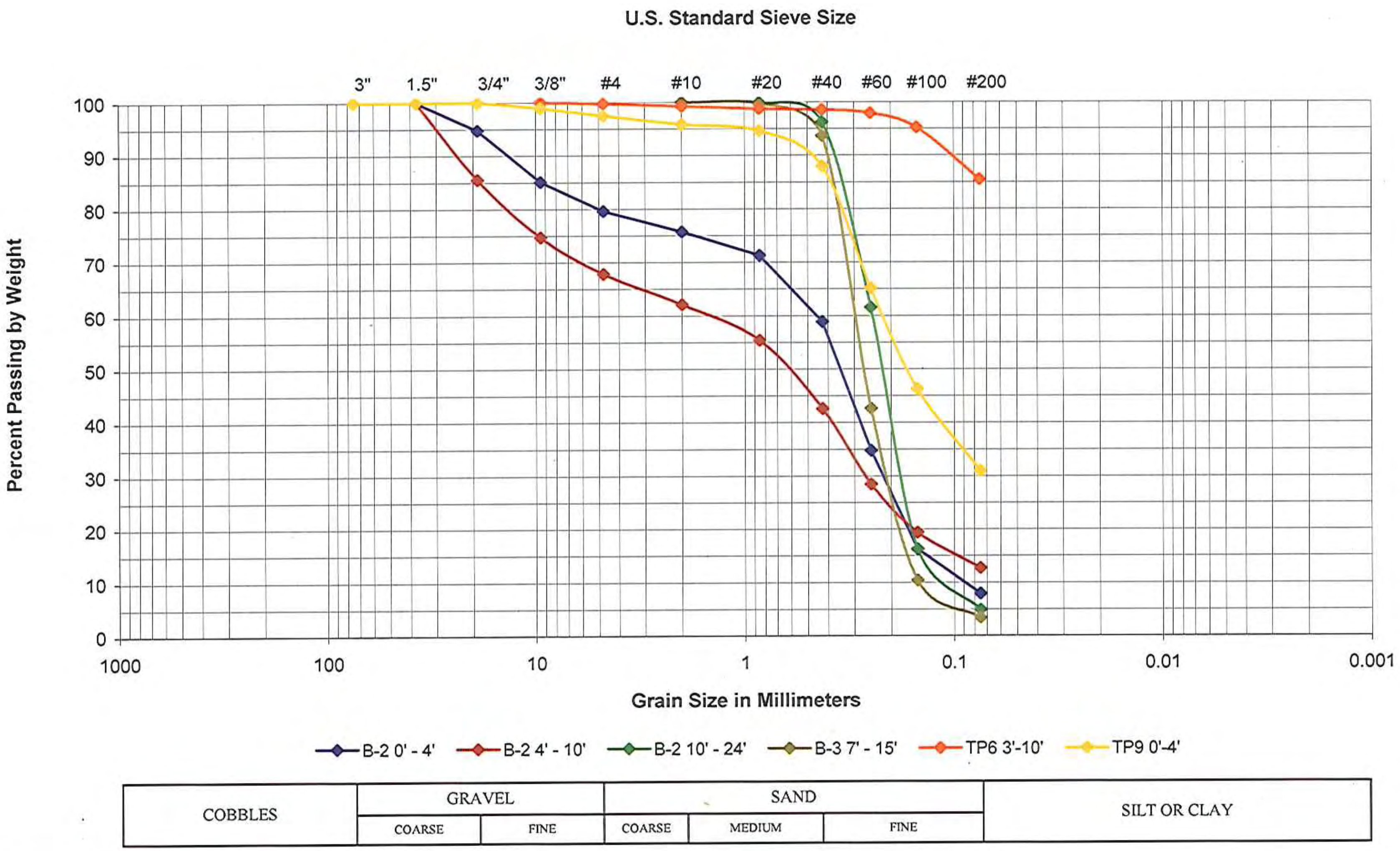
LL - -
PL - -
PI - -

D_{10} 0.000
D_{30} 0.000
D_{60} 0.230
D_{90} 0.480

Cc - -
Cu - -

ASTM Classification
Group Name: **Silty Sand**
Symbol: **SM**

INSIGHT GEOLOGIC, INC.



INSIGHT GEOLOGIC, INC.

Gradation Analysis Results
Graph 1

ATTACHMENT C

PACIFIC GROUNDWATER GROUP – TECHNICAL MEMORANDUM

PACIFIC groundwater GROUP

Technical Memorandum

To: Nick Tayor, Pacland Engineering
From: Pony Ellingson, Pacific Groundwater Group
Re: Design Groundwater Elevation at proposed Walmart Store 3850
Date: March 5, 2010

State of Washington Licensed Geologist
Hydrogeologist
631
Charles Ellingson

This memo summarizes Pacific Groundwater Group's recommended design groundwater elevation for the indicated project, and opinions on the extent to which the hydrogeologic work performed to obtain the water level data conform to the letter, and intent, of Tumwater City Ordinance O2005-003. Our work was authorized by Pacland Engineering on March 1, 2010.

DESIGN GROUNDWATER ELEVATION

Design groundwater elevations were calculated for the following wells and infiltration galleries:

Table 1. Design Groundwater Elevations Compared to Preliminary Gallery Bottoms

Well/Gallery Pair	Recommended design groundwater elevations at wells and nearby galleries, feet NGVD29	Predicted minimum depth to water below proposed infiltration surface in gallery, feet (see note)
MW-2/Gallery 2	171.5 / 171.5	-1.5
MW-3/Gallery 3	170.4 / 169.9	-0.9
MW-4/Gallery 1	172.2 / 173.2	-2.6

Note negative depth to water indicates water is above the bottom of the infiltration gallery.

The elevations are an estimate of the maximum historic groundwater elevation at these locations, based on correlation of the on-site groundwater level data to Thurston County Control wells (Table 2, Figure 1). County control well LRS-01A was the only control well used because it is the closest well (~7000 feet southwest of Walmart) and the only well to have current data, continuous data throughout the 1999 high water event, and to have not been flooded during 1999. The predicted maximum groundwater elevations at the wells are 4.5 to 5.5 higher than the maximum elevations recorded in on-site wells on February 18, 2006. The calculations indicate that the design groundwater elevations estimated for the gallery locations are 0.9 to 2.6 feet *above* the bottoms of the infiltration galleries based on the preliminary designs provided to us (Grading and Drainage Plan C-20, issued 9/18/09).

The materials provided to PGG indicate that the site survey by ALTA was to the NGVD29 datum, but no specific reference for the datum used for wellheads was provided, thus we assumed the wellheads were also surveyed to NGVD29. The wellhead survey datum should be confirmed.

Table 2. Correlations to County Control Well Data

On-site Well	Correlation Eqn	Max groundwater elevation at LRS-01A (NGVD29)	Predicted max groundwater elevation at site well (NGVD29)	Groundwater elevation adjustment for off-set between well and gallery (ft)		Predicted max groundwater elevation at nearest gallery (NGVD29)	Infiltration surface elevation of nearest gallery (NGVD29)	Minimum depth to groundwater below gallery (ft)
MW-1	y = 0.6485x + 51.782	187.19	173.2	not applicable				
MW-2	y = 0.6515x + 49.551	187.19	171.5	0.0	(gallery 2)	171.5	170.0	-1.5
MW-3	y = 0.6415x + 50.352	187.19	170.4	-0.5	(gallery 3)	169.9	169.0	-0.9
MW-4	y = 0.6674x + 47.303	187.19	172.2	1.0	(gallery 1)	173.2	170.7	-2.6
MW-5	y = 0.6386x + 50.038	187.19	169.6	not applicable				
	y = on-site elevation							
	x = LRS-01A elevation							

CONFIDENCE IN CALCULATIONS

City ordinance O2005-003 refers to well installation, survey, and measurement guidance that should maximize confidence in these calculations. Table 3 below summarizes our comparison of key aspects of the guidance to this project's data, and our opinion on the impact to confidence. Although the letter of the guidance was not met, our opinion is that the data are sufficient to meet the intent of the ordinance. Any model used to calculate groundwater mounding will require the thickness of the upper aquifer to be specified. That information will have to be generated by data from surrounding wells and projects.

Table 3. Comparison of Project Data to City Guidance

Topic (not comprehensive)	**City Guidance (not comprehensive)**	**Project Data**	**Opinion / Confidence**
Well Drilling	Drill to 50 feet depth or to till, whichever is shallower. Screen at the water table.	Numerous borings and test pits. Maximum depth 31.5 ft. No till encountered. Screens at water table.	Good wells. Bottom of upper aquifer not documented (no till). Till can be interpreted from other nearby well logs.
Survey and Precision	Survey to NGVD29 with wellhead precision of 0.01 ft. Measure and record water level data to 0.01 ft precision.	Metadata for wellhead survey not provided. Water level data recorded to 0.1 ft precision but derived water elevation improperly reported to 0.01 ft precision.	Confirm NGVD29 survey of wellheads (monitoring point), and precision. Precision of 0.1 ft is probably OK.
Water Level Monitoring	Twelve monthly measurements or weekly for four months over winter, spring.	Eight measurements over 12 months, not equally spaced.	Documented 4.5 to 5 feet of on-site groundwater fluctuation. Five of eight measurements in generally high water table months although one value much higher than other s (Figure 1). Highly correlated to County data. Conclude data meet intent but not letter of the ordinance.

COMPARISON TO SIMILAR CALCULATIONS NEARBY

As a reality check on the design groundwater elevations, we compared the elevations for this project to those for nearby projects. The Walmart site lies about 1500 feet north of the northernmost well at which previous calculations are known to us (We are not aware of similar calculations performed at Home Depot directly south of Walmart). The elevation at that prior location (Mountain View Church of the Nazarene) is 177.5 ft. or about 4 feet higher than the maximum design elevation calculated at Walmart (Table 2, Well 1). Given the northerly groundwater gradient in this vicinity, the lower elevation at Walmart is expected.

The Thurston County GeoData Center website does not indicate the presence of nearby areas that were flooded with groundwater during the high water table events of 1997 and 1999.

water level memo v1

JE1002

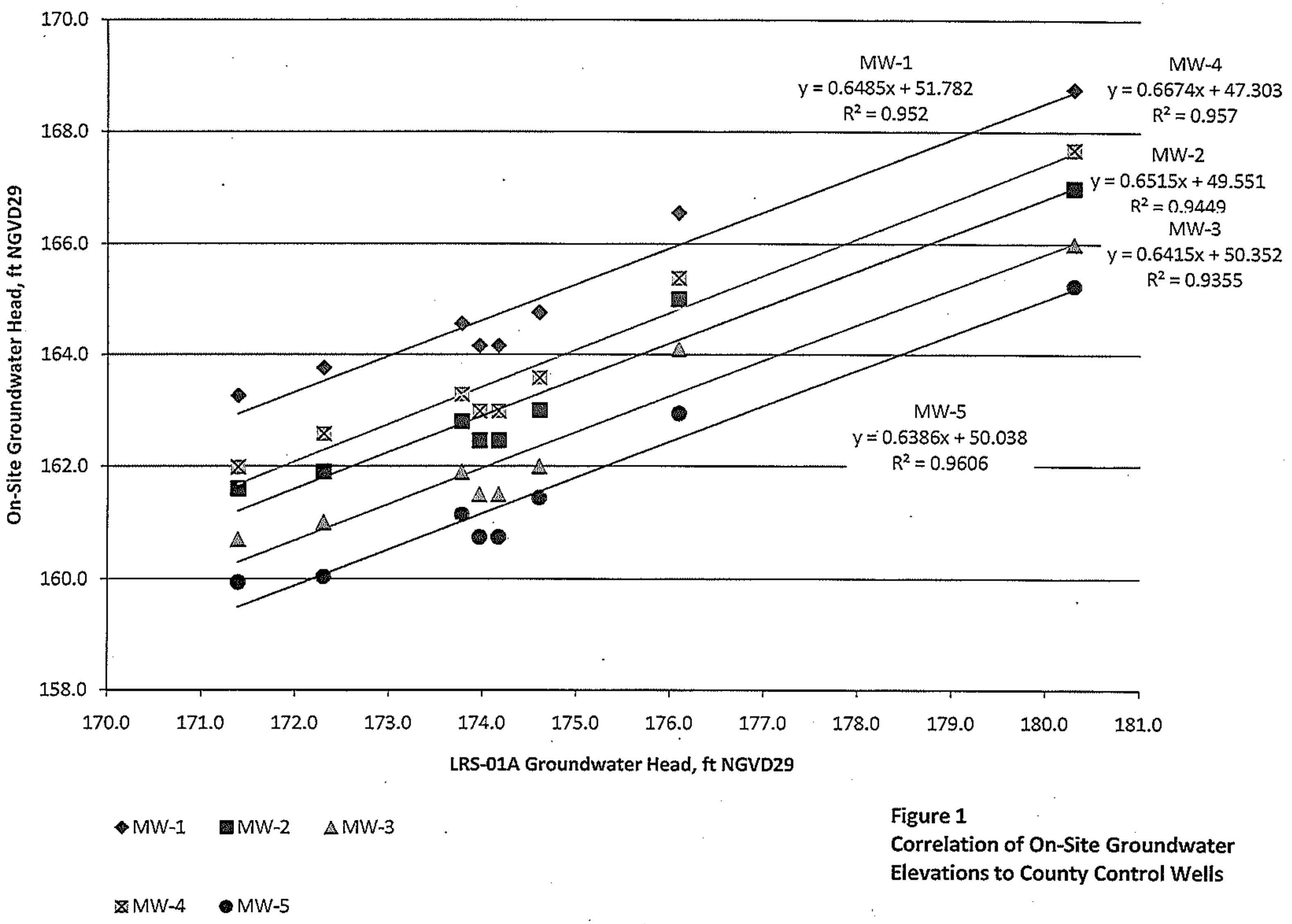
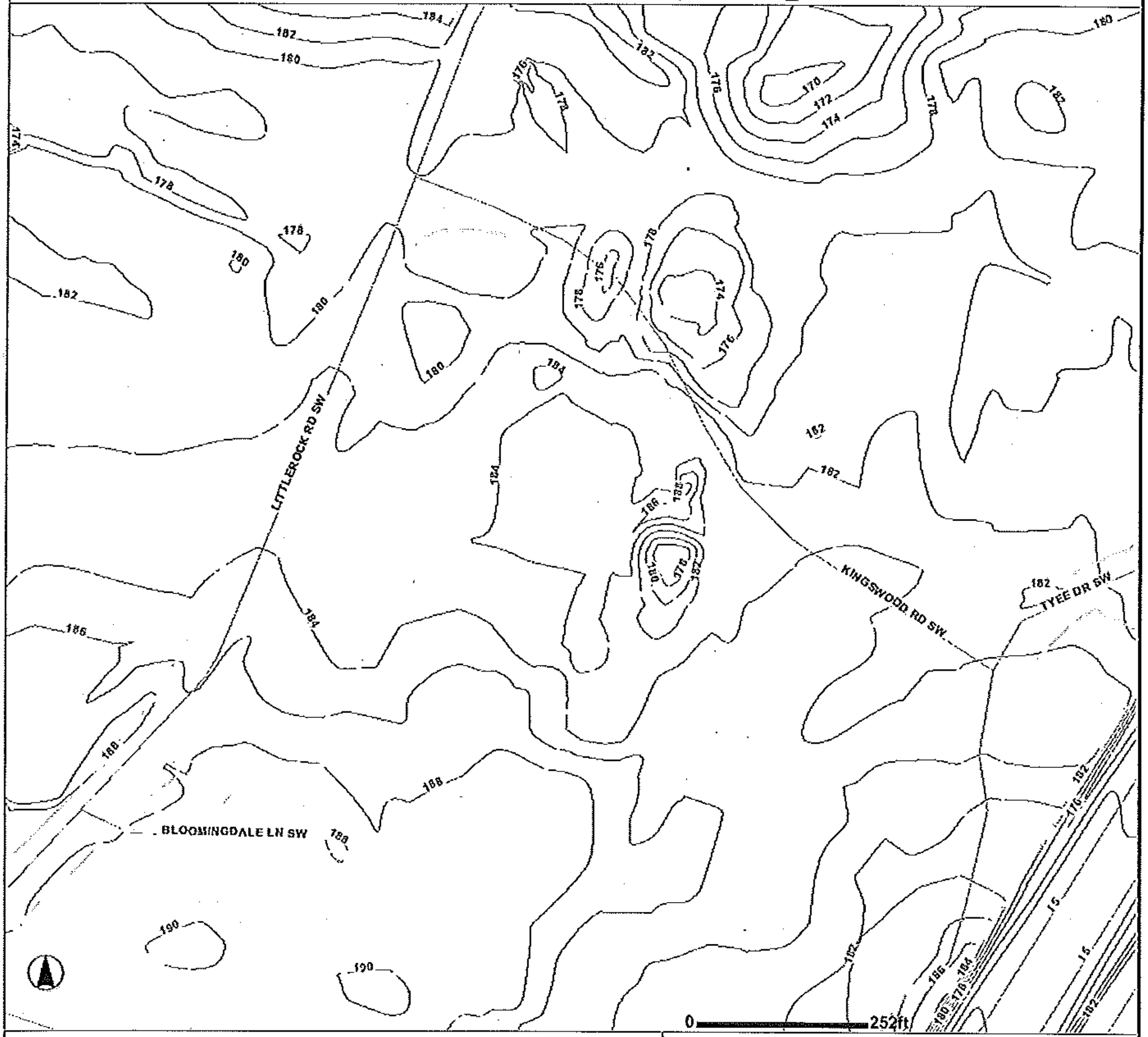


Figure 1
Correlation of On-Site Groundwater Elevations to County Control Wells

Thurston County Map



929 Lakeridge Drive SW, Suite 216, 3rd Floor
Olympia, WA 98502-6031

LEGEND

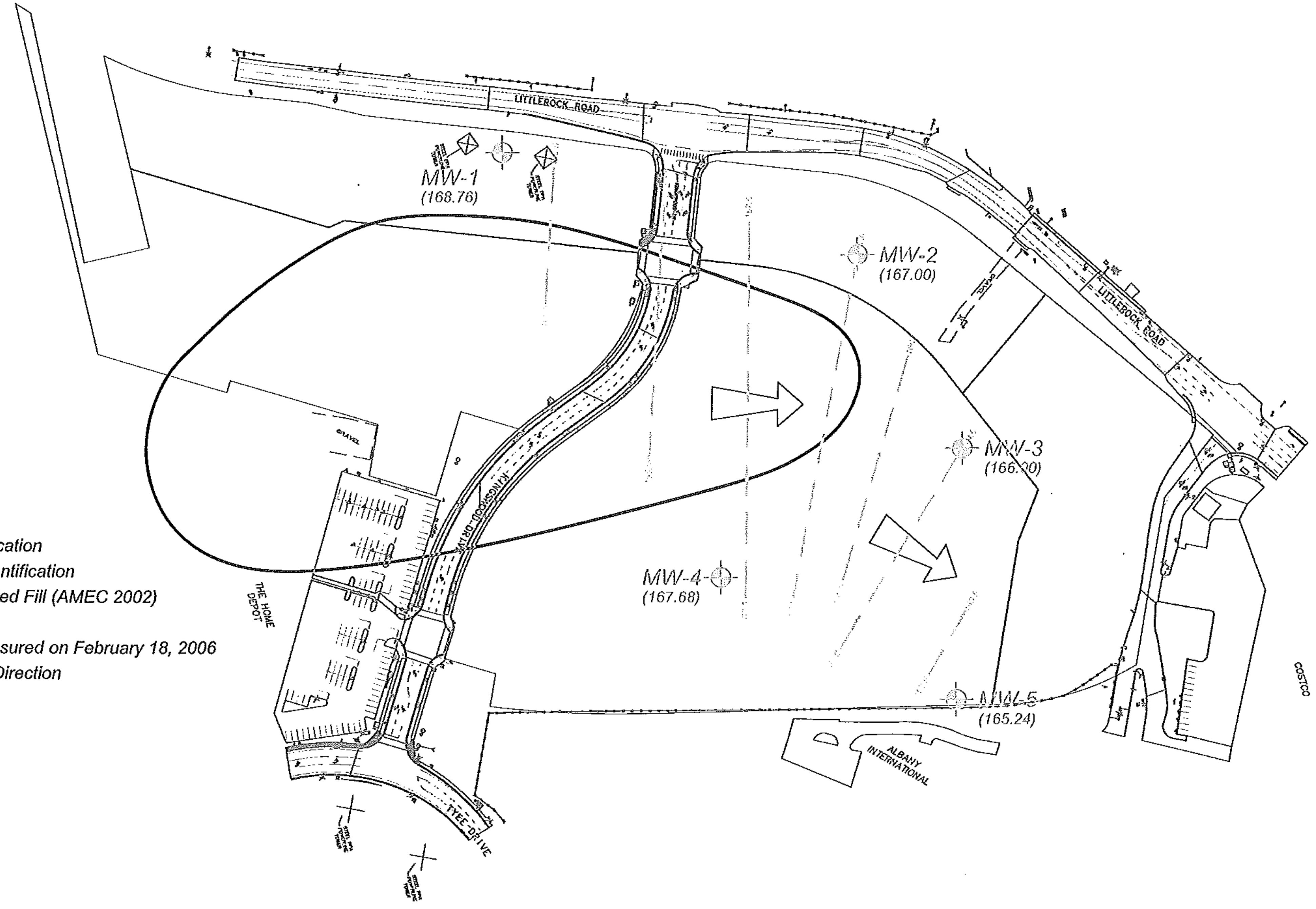
- Major Roads
- Roads
- Streams
- Contours
- Wetlands
- Wetland Buffers
- Flood Zones
- Water Bodies
- Zoning
- Cities
- Parcels

Table 1
Depth to Water Measurements
Proposed Commercial Site
East of Littlerock Road S.W.
Tumwater, Washington

Groundwater Monitoring Well	Well Elevation from Top of PVC Well Casing (Feet)	Dates Water Level Measured	Depth to Water from Below Top of PVC Well Casing (Feet)	Water Level Elevation (Feet)	Groundwater Flow Direction	Comments
MW-1	184.46	3/3/2005	20.3	164.16	Northeast	First Water Level Measurement
		3/10/2005	20.3	164.16	Northeast	Obtained During GPR Investigation
		4/8/2005	19.9	164.56	Northeast	Second Water Level Measurement
		6/8/2005	19.7	164.76	Northeast	Third Water Level Measurement
		8/15/2005	20.7	163.76	North-Northeast	Fourth Water Level Measurement
		12/15/2005	21.2	163.26	Northeast	Fifth Water Level Measurement
		1/19/2006	17.9	166.56	Northeast	Sixth Water Level Measurement
		2/18/2006	15.7	168.76	Northeast	Seventh Water Level Measurement
MW-2	185.30	3/3/2005	22.9	162.46	Northeast	First Water Level Measurement
		3/10/2005	22.9	162.46	Northeast	Obtained Druing GPR Investigation
		4/8/2005	22.5	162.80	Northeast	Second Water Level Measurement
		6/8/2005	22.3	163.00	Northeast	Third Water Level Measurement
		8/15/2005	23.4	161.90	North-Northeast	Fourth Water Level Measurement
		12/15/2005	23.7	161.60	Northeast	Fifth Water Level Measurement
		1/19/2006	20.3	165.00	Northeast	Sixth Water Level Measurement
		2/18/2006	18.3	167.00	Northeast	Seventh Water Level Measurement
MW-3	175.50	3/3/2005	14.0	161.50	Northeast	First Water Level Measurement
		3/10/2005	14.0	161.50	Northeast	Obtained Druing GPR Investigation
		4/8/2005	13.6	161.90	Northeast	Second Water Level Measurement
		6/8/2005	13.5	162.00	Northeast	Third Water Level Measurement
		8/15/2005	14.5	161.00	North-Northeast	Fourth Water Level Measurement
		12/15/2005	14.8	160.70	Northeast	Fifth Water Level Measurement
		1/19/2006	11.4	164.10	Northeast	Sixth Water Level Measurement
		2/18/2006	9.5	166.00	Northeast	Seventh Water Level Measurement
MW-4	184.38	3/3/2005	21.4	162.98	Northeast	First Water Level Measurement
		3/10/2005	21.4	162.98	Northeast	Obtained Druing GPR Investigation
		4/8/2005	21.1	163.28	Northeast	Second Water Level Measurement
		6/8/2005	20.8	163.58	Northeast	Third Water Level Measurement
		8/15/2005	21.8	162.58	North-Northeast	Fourth Water Level Measurement
		12/15/2005	22.4	161.98	Northeast	Fifth Water Level Measurement
		1/19/2006	19.0	165.38	Northeast	Sixth Water Level Measurement
		2/18/2006	16.7	167.68	Northeast	Seventh Water Level Measurement
MW-5	181.54	3/3/2005	20.8	160.74	Northeast	First Water Level Measurement
		3/10/2005	20.8	160.74	Northeast	Obtained Druing GPR Investigation
		4/8/2004	20.4	161.14	Northeast	Second Water Level Measurement
		6/8/2005	20.1	161.44	Northeast	Third Water Level Measurement
		8/15/2005	21.5	160.04	North-Northeast	Fourth Water Level Measurement
		12/15/2005	21.6	159.94	Northeast	Fifth Water Level Measurement
		1/19/2006	18.6	162.94	Northeast	Sixth Water Level Mearuement
		2/18/2006	16.3	165.24	Northeast	Seventh Water Level Measurement

Note: Depth to water measurements were obtained after the monitoring wells were developed on February 28, 2005.

February 18, 2006



Legend

-◎- Groundwater Monitoring Well Location
MW-1 Groundwater Monitoring Well Identification
—— Approximate Limits of Uncontrolled Fill (AMEC 2002)
- - - Water Level Contour (Ft.)
(168.76) Groundwater Elevation (Ft.) measured on February 18, 2006
⇨ Generalized Groundwater Flow Direction

N

0 200 400
Scale1" = 200'

Source: PacLand (March 2005)

KLEINFELDER

Proposed Commercial Site
East of Littlerock Road S.W.
Tumwater, Washington
Project: 50431 February 2006

Well Locations with
Groundwater Elevations

FIGURE
1

ATTACHMENT D

REPORT LIMITATIONS AND GUIDELINES FOR USE

ATTACHMENT D

REPORT LIMITATIONS AND GUIDELINES FOR USE[1]

This attachment 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 our client and their authorized agents. This report may be made available to regulatory agencies for review. This report is not intended for use by others, and the information contained herein is not applicable to other sites.

Insight Geologic Inc. 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 site. 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

Insight Geologic, Inc. considered a number of unique, project-specific factors when establishing the scope of services for this project and report. Unless Insight Geologic 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:

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

- 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, Insight Geologic should be given the opportunity to review our interpretations and recommendations and provide written modifications or confirmation, as appropriate.

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 ground water fluctuations. Always contact Insight Geologic 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. Insight Geologic 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 Insight Geologic's professional judgment and opinion. Insight Geologic's recommendations can be finalized only by observing actual subsurface conditions revealed during construction. We recommend that Insight Geologic be retained to perform construction monitoring. Alternatively, if Insight Geologic is not retained for construction observation, a full and complete record of construction activity including compaction measurements by a qualified individual should be retained by the client.

Sufficient monitoring, testing and consultation by Insight Geologic or other qualified individual 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 Insight Geologic 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 Insight Geologic confer with appropriate members of the design team after submitting the report. Also retain Insight Geologic 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 Insight Geologic participate in pre-bid and pre-construction 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 Insight Geologic 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. Insight Geologic includes these explanatory "limitations" provisions in our reports to help reduce such risks. Please confer with Insight Geologic 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.