

SITE OBSERVATION FORM: DNV Landslide Risk Assessment
LOCATION: 2307 Berkley Avenue
INSPECTION DATE: (mm/dd/yy) 11/09/05
WEATHER: Raining, heavy rain for several days prior to visit.



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500 - 1045 Howe Street
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 Canada V6Z 2A9

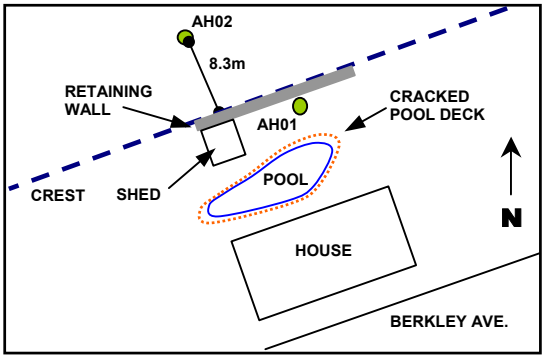
| THICKNESS OF LOOSE MATERIALS | <1 m | 1-2 m | 2-3 m | >3 m |
|------------------------------|------|-------------------------------------|-------------------------------------|------|
| CREST LINE | | | <input checked="" type="checkbox"/> | |
| 8.3 m DOWNSLOPE FROM FENCE | | <input checked="" type="checkbox"/> | | |

| SLOPE BELOW FENCE/ RETAINING STRUCTURE | SLOPE = 36° | | |
|---|-------------|--------|---------|
| | CRACKS | SLIDES | EROSION |
| OBSERVATIONS: Slope thickly covered by brush, no cracks, slides, or erosion evident | | | |

| TREES BELOW FENCE/ RETAINING STRUCTURE | STRAIGHT | PISTOL-BUTT | LEANING |
|--|-------------------------------------|-------------|---------|
| PERCENT CONIFER: <25% | <input checked="" type="checkbox"/> | | |
| OBSERVATIONS: Few trees immediately below crest, mostly shrubs and brush | | | |

| RETAINING STRUCTURES | YES <input checked="" type="checkbox"/> | NO | HEIGHT= 1.4m |
|---------------------------------------|--|----------|--------------|
| TYPE | BLOCKS | CONCRETE | TIMBER CRIB |
| DEFORMATION | UNDEFORMED <input checked="" type="checkbox"/> | CRACKED | SETTLED |
| OBSERVATIONS: No deformation observed | | | |

| DEFORMATION IN BACKYARD | YES | NO <input checked="" type="checkbox"/> |
|-------------------------|-----|--|
| LOCATION: | | |
| DESCRIPTION: | | |



| POOLS | YES <input checked="" type="checkbox"/> | NO |
|--|---|----|
| DESCRIPTION: Settlement around pool, cracked pool deck | | |

| SEEPAGE/ SPRINGS IN OR BELOW FILL | YES | NO <input checked="" type="checkbox"/> |
|-----------------------------------|-----|--|
| OBSERVATIONS: None observed | | |

HOUSE DISTANCE TO CREST = 11.5 m

| RECEIVES SURFACE RUNOFF FROM | BACKYARD | ½ ROOF | FULL ROOF | FRONT YARD | STREET |
|------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|------------|--------|
| | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | |
| OBSERVATIONS: | | | | | |

| CONNECTED TO STORM SEWER | YES | NO <input checked="" type="checkbox"/> | UNSURE |
|--|-----|--|--------|
| OWNERS COMMENTS: DNV reports that this property is not connected to storm sewer. | | | |

GENERAL OBSERVATIONS

- Oversteepening of slope at west side of crest due to compost deposit
- Slope below property is not visible due to very dense shrubs



Figure 1. 2307 Berkley Avenue – Front of the house



Figure 2. 2307 Berkley Avenue – Settling around pool deck



Figure 3. 2307 Berkley Avenue – Backyard and settlement around pool

INSPECTION LOCATION # 2307 Berkley

Project : DNV Landslide Risk Assessment

Project No. : 0404-002-01

Location : 2307 Berkley
Drill Method : Dutch Hand Auger
Inspection Date : 09 Nov 05
Logged by : SF/JB
Reviewed by : MJP

| Depth (m) | Lithologic Description | Depth To Water Table | Depth (m) | Lithologic Description | Depth To Water Table |
|-----------|--|----------------------|-----------|---|----------------------|
| | <p>AUGERHOLE: BGC05-2307BER-AH01 on Slope Crest FINAL DEPTH OF AUGERHOLE: 3.15 m THICKNESS OF LOOSE MATERIALS: 2.60 m</p> | | | <p>AUGERHOLE: BGC05-2307BER-AH02 8.3 m Downslope FINAL DEPTH OF AUGERHOLE: 1.15 m THICKNESS OF LOOSE MATERIALS: 1.15 m minimum</p> | |
| -0.0 | ORGANIC COMPOST MATERIAL Silt sized material, trace fine to medium sand, non plastic, dark brown, moist, homogeneous [FILL] | | -0.0 | ORGANICS Silt, very loose, dark brown, leaves, roots, bark, greasy | |
| -0.5 | SILT (ML) Gravel sized clasts of silt, non plastic, soft, brown and dark brown, homogeneous, non dilatant [FILL] | | -0.5 | SILT (ML) Trace fine to coarse sand, trace fine gravel, low plastic, very soft grades to soft, max particle size = 15 mm, brown, homogeneous, non dilatant [FILL] | |
| -1.0 | SAND (SW) Fine to coarse sand, some silt, trace fine to coarse gravel, loose, max particle size = 25 mm, sub-rounded, brown, moist, homogeneous, charcoal present [FILL] | | -1.0 | | |
| -1.5 | | | -1.5 | | |
| -2.0 | 1.90 m - 2.05 m: Buried soil / charcoal layer | | -2.0 | | |
| -2.5 | 2.50 m - 2.60 m: Soil gradually changes into unit at 2.60 m | | -2.5 | 1.15 m: EOH - Refusal on wood | |
| -3.0 | SILT (ML) Trace fine to medium sand, fine gravel sized silt clasts, non plastic, firm to stiff, light grey with some orange mottling, moist, homogeneous [COLLUVIUM] | | -3.0 | | |

(Continued on next page)

BGC05-2307BER-AH01

BGC ENGINEERING INC.
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Vancouver, BC Phone: (604) 684 5900

Client: District of North Vancouver

INSPECTION LOCATION # 2307 Berkley

Project : DNV Landslide Risk Assessment

Project No. : 0404-002-01

Location : 2307 Berkley
Drill Method : Dutch Hand Auger
Inspection Date : 09 Nov 05
Logged by : SF/JB
Reviewed by : MJP

| Depth (m) | Lithologic Description | Depth To Water Table | Depth (m) | Lithologic Description | Depth To Water Table |
|---|--|----------------------|---|---|----------------------|
| | <p>AUGERHOLE: BGC05-2307BER-AH01 on Slope Crest FINAL DEPTH OF AUGERHOLE: 3.15 m THICKNESS OF LOOSE MATERIALS: 2.60 m</p> | | | <p>AUGERHOLE: BGC05-2307BER-AH02 8.3 m Downslope FINAL DEPTH OF AUGERHOLE: 1.15 m THICKNESS OF LOOSE MATERIALS: 1.15 m minimum</p> | |
| <p>3.5</p> <p>4.0</p> <p>4.5</p> <p>5.0</p> <p>5.5</p> <p>6.0</p> | <p>3.15 m: EOH - Refusal on dense sediments</p> | | <p>3.5</p> <p>4.0</p> <p>4.5</p> <p>5.0</p> <p>5.5</p> <p>6.0</p> | | |

BGC05-2307BER-AH01

SITE OBSERVATION FORM: DNV Landslide Risk Assessment
LOCATION: 2321 Berkley Avenue
INSPECTION DATE: (mm/dd/yy) 11/09/05
WEATHER: Raining, heavy rain for several days prior to visit.



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| THICKNESS OF LOOSE MATERIALS | <1 m | 1-2 m | 2-3 m | >3 m |
|------------------------------|------|-------------------------------------|-------|------|
| CREST LINE | | <input checked="" type="checkbox"/> | | |
| 10 m DOWNSLOPE FROM FENCE | | <input checked="" type="checkbox"/> | | |

| SLOPE BELOW FENCE/ RETAINING STRUCTURE | SLOPE = 37° | | |
|--|-------------|--------|-------------------------------------|
| | CRACKS | SLIDES | EROSION |
| OBSERVATIONS: Minor slope erosion. | | | <input checked="" type="checkbox"/> |

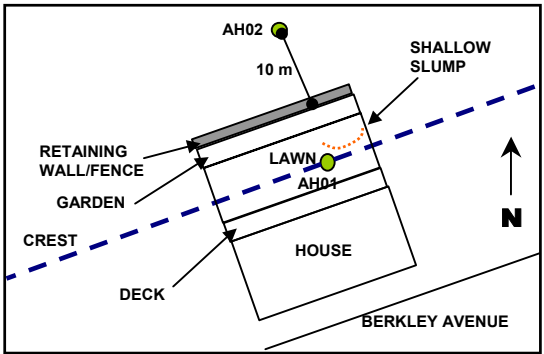
| TREES BELOW FENCE/ RETAINING STRUCTURE | STRAIGHT | PISTOL-BUTT | LEANING |
|---|-------------------------------------|-------------|---------|
| PERCENT CONIFER: 100% | <input checked="" type="checkbox"/> | | |
| OBSERVATIONS: Few trees immediately below crest, mostly shrubs and brush. | | | |

| RETAINING STRUCTURES | YES <input checked="" type="checkbox"/> | NO | HEIGHT= 1.3 m |
|--|---|-------------|--|
| TYPE | BLOCKS CONCRETE | TIMBER CRIB | OTHER: |
| DEFORMATION | UNDEFORMED | CRACKED | SETTLED <input checked="" type="checkbox"/> BULGING |
| OBSERVATIONS: Part of retaining wall is slightly sagging. Possible older retaining wall down slope of existing wall (covered by brush) | | | |

| DEFORMATION IN BACKYARD | YES <input checked="" type="checkbox"/> | NO |
|--|---|----|
| LOCATION: North end of crest line. | | |
| DESCRIPTION: Shallow slump in lawn sloping 12° towards garden. | | |

| POOLS | YES | NO <input checked="" type="checkbox"/> |
|-----------------------------|-----|--|
| DESCRIPTION: None observed. | | |

| SEEPAGE/ SPRINGS IN OR BELOW FILL | YES <input checked="" type="checkbox"/> | NO |
|--|---|----|
| OBSERVATIONS: Evidence of minor seepage 10 m down slope. | | |



HOUSE DISTANCE TO CREST = 5.3 m

| RECEIVES SURFACE RUNOFF FROM | BACKYARD | ½ ROOF | FULL ROOF | FRONT YARD | STREET |
|------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|------------|--------|
| OBSERVATIONS: | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | |

| CONNECTED TO STORM SEWER | YES | NO <input checked="" type="checkbox"/> | UNSURE |
|--|-----|--|--------|
| OWNERS COMMENTS: DNV reports that this property is not connected to storm sewer. | | | |

GENERAL OBSERVATIONS

- Crest of slope begins 5.3 m from house in middle of backyard



Figure 1. 2321 Berkley Avenue – View of front of the house



Figure 2. 2321 Berkley Avenue – View looking north along crest



Figure 3. 2321 Berkley Avenue – Settled retaining wall

INSPECTION LOCATION # 2321 Berkley

Project : DNV Landslide Risk Assessment

Project No. : 0404-002-01

Location : 2321 Berkley
Drill Method : Dutch Hand Auger
Inspection Date : 09 Nov 05
Logged by : MB/ES
Reviewed by : MJP

| Depth (m) | Lithologic Description | Depth To Water Table | Depth (m) | Lithologic Description | Depth To Water Table |
|-----------|--|----------------------|-----------|---|----------------------|
| | <p>AUGERHOLE: BGC05-2349BER-AH01 on Slope Crest FINAL DEPTH OF AUGERHOLE: 1.47 m THICKNESS OF LOOSE MATERIALS: 1.47 m</p> | | | <p>AUGERHOLE: BGC05-2349BER-AH02 10 m Downslope FINAL DEPTH OF AUGERHOLE: 1.50 m THICKNESS OF LOOSE MATERIALS: 1.30 m</p> | |
| 0.0 | SILT (ML) Sandy, fine to medium, non plastic, soft, dark brown, moist, organic odour and organics [TOPSOIL] | | 0.0 | SAND (SM) Fine sand, silty, poorly graded, loose, dark brown, no odour, moist, homogeneous, no cementation, trace rootlets [TOPSOIL] | |
| 0.5 | SAND (SP) Fine to medium sand, trace silt, trace fine to medium gravels, poorly graded, loose, max particle size = 20 mm, sub rounded, brown, moist, homogeneous, [FILL] | | 0.5 | SAND (SM) Fine to coarse sand, silty, trace fine to medium gravel sized silt clasts, max particle size = 10 mm, poorly graded, loose, brown, no odour, moist, homogeneous, no cementation, trace rootlets [FILL] | |
| 1.0 | SILT (ML) Some fine sand, trace fine to medium gravel, non plastic, soft, brown, moist, charcoal and bark, gravel max particle size = 20 mm, sub rounded [FILL] | | 1.0 | SILT (ML) and SAND (SP) Fine sand, gravel sized clasts of silt, low plastic, soft, grey brown with some orange mottling, no odour, moist, homogeneous, no cementation, slow dilatency, trace rootlets [FILL/ COLLUVIUM] | |
| 1.5 | GRAVEL (GP) and SAND (SP) Medium gravel, fine to medium sand, poorly graded, loose, maximum particle size = 20 mm, sub angular to sub rounded, orange brown, moist, homogeneous [FILL] | | 1.5 | SAND (SP) Fine sand, some silt, stiff, light brown to grey with orange mottling, no odour, wet, homogeneous, no cementation [Weathered GLACIOMARINE] | ▼ |
| 2.0 | SILT (ML) Non plastic, firm, light grey, gravel sized silt clasts with orange staining, dry, homogeneous, orange mottling decreases with depth [Weathered GLACIOMARINE] | | 2.0 | 1.5 m - EOH Refusal on stiff material Groundwater encountered at 1.3 m | |
| 2.5 | 1.47 m - EOH Refusal on stiff material No groundwater encountered | | 2.5 | | |
| 3.0 | | | 3.0 | | |

BGC05-2349BER-AH01

SITE OBSERVATION FORM: DNV Landslide Risk Assessment
LOCATION: 2335 Berkley Avenue
INSPECTION DATE: (mm/dd/yy) 11/10/05
WEATHER: Raining, heavy rain for several days prior to visit.



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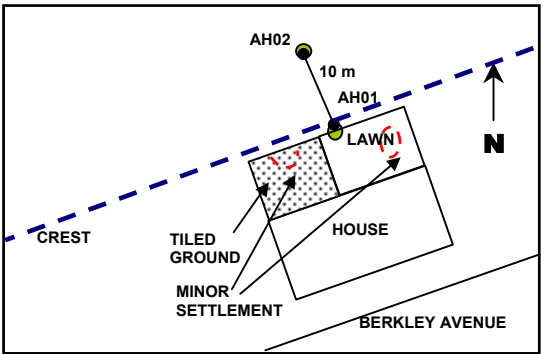
| THICKNESS OF LOOSE MATERIALS | <1 m | 1-2 m | 2-3 m | >3 m |
|---------------------------------|------|-------------------------------------|-------------------------------------|------|
| CREST LINE | | | <input checked="" type="checkbox"/> | |
| 10 m DOWNSLOPE FROM SLOPE CREST | | <input checked="" type="checkbox"/> | | |

| SLOPE BELOW FENCE/ RETAINING STRUCTURE | SLOPE = 36° | | |
|--|-------------|--------|---------|
| | CRACKS | SLIDES | EROSION |
| OBSERVATIONS: None observed; slope is heavily vegetated. | | | |

| TREES BELOW FENCE/ RETAINING STRUCTURE | STRAIGHT | PISTOL-BUTT | LEANING |
|---|-------------------------------------|-------------|---------|
| PERCENT CONIFER: 95% | <input checked="" type="checkbox"/> | | |
| OBSERVATIONS: Many very old and large conifers. | | | |

| RETAINING STRUCTURES | YES | NO <input checked="" type="checkbox"/> | HEIGHT= n/a |
|------------------------------|------------|--|-------------|
| TYPE | BLOCKS | CONCRETE | TIMBER CRIB |
| DEFORMATION | UNDEFORMED | CRACKED | SETTLED |
| OBSERVATIONS: None observed. | | | |

| DEFORMATION IN BACKYARD | YES | NO <input checked="" type="checkbox"/> |
|--|-----|--|
| LOCATION: | | |
| DESCRIPTION: Minor localized settlement near house (<10 cm). | | |



HOUSE DISTANCE TO CREST = 16 m

| POOLS | YES | NO <input checked="" type="checkbox"/> |
|-----------------------------|-----|--|
| DESCRIPTION: None observed. | | |

| SEEPAGE/ SPRINGS IN OR BELOW FILL | YES | NO <input checked="" type="checkbox"/> |
|-----------------------------------|-----|--|
| OBSERVATIONS: None observed. | | |

| RECEIVES SURFACE RUNOFF FROM | BACKYARD | 1/2 ROOF | FULL ROOF | FRONT YARD | STREET |
|------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|------------|--------|
| | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | |
| OBSERVATIONS: | | | | | |

| CONNECTED TO STORM SEWER | YES | NO <input checked="" type="checkbox"/> | UNSURE |
|--|-----|--|--------|
| OWNERS COMMENTS: DNV reports that this property is not connected to storm sewer. | | | |

GENERAL OBSERVATIONS

- Water dripping from deck causes lawn to be saturated near house.
- Minor settlement in tiles by garden and lawn by house.
- Compost and garden waste deposited on crest and behind fence.



Figure 1. 2335 Berkley Avenue – Front of the house



Figure 2. 2335 Berkley Avenue – View looking north along fenceline

INSPECTION LOCATION # 2335 Berkley

Project : DNV Landslide Risk Assessment

Project No. : 0404-002-01

Location : 2335 Berkley
Drill Method : Dutch Hand Auger
Inspection Date : 10 Nov 05
Logged by : SF/JB
Reviewed by : MJP

| Depth (m) | Lithologic Description | Depth To Water Table | Depth (m) | Lithologic Description | Depth To Water Table |
|-----------|---|----------------------|-----------|---|----------------------|
| | <p>AUGERHOLE: BGC05-2335BER-AH01 on Slope Crest FINAL DEPTH OF AUGERHOLE: 2.35 m THICKNESS OF LOOSE MATERIALS: 2.30</p> | | | <p>AUGERHOLE: BGC05-2335BER-AH02 10 m Downslope FINAL DEPTH OF AUGERHOLE: 0.90 m THICKNESS OF LOOSE MATERIALS: 0.90 m minimum</p> | |
| 0.0 | SILT (ML) Some fine to coarse sand, trace fine gravel, very soft, dark brown, homogeneous, moist, non plastic, roots, organics [TOPSOIL] | | 0.0 | ORGANICS Silty, trace fine sand, very loose, dark brown, moist, homogeneous, roots, bark [TOPSOIL] | |
| 0.5 | SAND (SW) Fine to coarse sand, silty, some fin to coarse grained gravel, well graded, very loose, max particle size = 40 mm, angular to sub rounded, brown, moist, homogeneous, trace charcoal, roots [FILL] | | 0.5 | SILT (ML) Trace fine sand, gravel sized silt clasts, non plastic, very soft, light grey and brown, homogeneous, non dilatant [FILL] | |
| 1.0 | ORGANICS Partially decomposed wood, dark brown, moist, very loose [FILL] SAND (SW) Fine to coarse sand, silty, some fine to coarse grained gravel, well graded, very loose, max particle size = 40 mm, angular to sub rounded, brown, moist, homogeneous, trace charcoal, roots [FILL] | | 1.0 | SILT (ML) Some fine to coarse sand, trace fine gravel, non plastic, very soft, light to dark orange brown, homogeneous, charcoal present, some roots [FILL] SILT (ML) Trace fine to medium sand, gravel sized silt clasts, non plastic, soft, homogeneous, trace roots [COLLUVIUM] | |
| 1.5 | SILT (ML) Fine gravel sized silt clasts, non plastic, soft, moist, homogeneous, light yellow to grey [FILL] SILT (ML) Some fine to coarse sand, some fine to coarse gravel, non plastic, soft, brown, organics, roots, max particle size = 25 mm, angular to sub-rounded, homogeneous [FILL] | | 1.5 | SAND (SW) Fine to coarse sand, gravelly, fine gravel, trace silt, well graded, loose to compact, max particle size = 5 mm, sub angular, moist, homogeneous [COLLUVIUM] 0.90 m: EOH - Refusal on root. Three attempts made, all refused on roots. | |
| 2.0 | | | 2.0 | | |
| 2.5 | SILT (ML) Trace fine sand, low plastic, firm to stiff, light grey with trace mottling, moist, homogeneous [FILL or COLLUVIUM] 2.30 m - Material becomes compact 2.35 m: EOH - Refusal as material is too compact to auger through. | | 2.5 | | |
| 3.0 | | | 3.0 | | |

BGC05-2335BER-AH01

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY
Vancouver, BC Phone: (604) 684 5900

Client: District of North Vancouver

SITE OBSERVATION FORM: DNV Landslide Risk Assessment
LOCATION: 2349 Berkley Avenue
INSPECTION DATE: (mm/dd/yy) 11/10/05
WEATHER: Raining, heavy rain for several days prior to visit.



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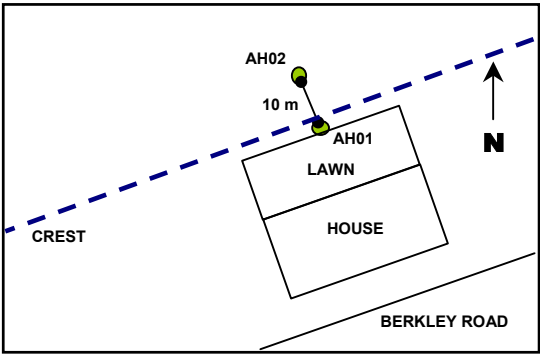
| THICKNESS OF LOOSE MATERIALS | <1 m | 1-2 m | 2-3 m | >3 m |
|---------------------------------|------|-------------------------------------|-------|------|
| CREST LINE | | <input checked="" type="checkbox"/> | | |
| 10 m DOWNSLOPE FROM SLOPE CREST | | <input checked="" type="checkbox"/> | | |

| SLOPE BELOW FENCE/ RETAINING STRUCTURE | SLOPE = 35° | | |
|--|-------------|--------|-------------------------------------|
| | CRACKS | SLIDES | EROSION |
| OBSERVATIONS: Evidence of erosion below trees | | | <input checked="" type="checkbox"/> |

| TREES BELOW FENCE/ RETAINING STRUCTURE | STRAIGHT | PISTOL-BUTT | LEANING |
|---|-------------------------------------|-------------------------------------|---------|
| PERCENT CONIFER: 90% | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | |
| OBSERVATIONS: Some pistol butted trees in upper 10m of slope, generally straight below 10m | | | |

| RETAINING STRUCTURES | YES <input checked="" type="checkbox"/> | NO | HEIGHT = 0.45 m |
|---|---|-----------------|---|
| TYPE | BLOCKS | CONCRETE | TIMBER CRIB |
| | | | OTHER: Wooden beams behind vertical metal spikes |
| DEFORMATION | UNDEFORMED | CRACKED | SETTLED |
| | | | BULGING |
| OBSERVATIONS: Fence above the retaining structure is tilted downslope. | | | |

| DEFORMATION IN BACKYARD | YES <input checked="" type="checkbox"/> | NO |
|---|---|----|
| LOCATION: Backyard | | |
| DESCRIPTION: Settlement: yard dips downslope within 1.5m of retaining wall. Shed settling on west side | | |



| POOLS | YES | NO <input checked="" type="checkbox"/> |
|-----------------------------------|-----|--|
| DESCRIPTION: None observed | | |

| SEEPAGE/ SPRINGS IN OR BELOW FILL | YES | NO <input checked="" type="checkbox"/> |
|------------------------------------|-----|--|
| OBSERVATIONS: None observed | | |

HOUSE DISTANCE TO CREST = 14.2m

| RECEIVES SURFACE RUNOFF FROM | BACKYARD | ½ ROOF | FULL ROOF | FRONT YARD | STREET |
|---|-------------------------------------|-------------------------------------|-------------------------------------|------------|--------|
| | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | |
| OBSERVATIONS: Front yard dips towards road | | | | | |

| CONNECTED TO STORM SEWER | YES | NO <input checked="" type="checkbox"/> | UNSURE |
|---|-----|--|--------|
| OWNERS COMMENTS: DNV reports that this property is not connected to storm sewer. | | | |

GENERAL OBSERVATIONS

- Large amount of compost/debris pushed over edge of crest



Figure 1. 2349 Berkley Avenue – Front of the house



Figure 2. 2349 Berkley Avenue – View down-slope from crest



Figure 3. 2349 Berkley Avenue – Retaining wall/fence near crest

INSPECTION LOCATION # 2349 Berkley

Project : DNV Landslide Risk Assessment

Project No. : 0404-002-01

Location : 2349 Berkley
Drill Method : Dutch Hand Auger
Inspection Date : 10 Nov 05
Logged by : MB/ES
Reviewed by : MJP

| Depth (m) | Lithologic Description | Depth To Water Table | Depth (m) | Lithologic Description | Depth To Water Table |
|-----------|--|----------------------|-----------|---|----------------------|
| | <p>AUGERHOLE: BGC05-2349BER-AH01 on Slope Crest FINAL DEPTH OF AUGERHOLE: 2.20 m THICKNESS OF LOOSE MATERIALS: 1.75 m</p> | | | <p>AUGERHOLE: BGC05-2349BER-AH02 10 m Downslope FINAL DEPTH OF AUGERHOLE: 1.70 m THICKNESS OF LOOSE MATERIALS: 1.40 m</p> | |
| 0.0 | <p>SAND (SM) Fine to medium sand, silty, poorly graded, loose, dark brown, no odour, moist, homogeneous, no cementation [TOPSOIL]</p> | | 0.0 | <p>SAND (SM) Fine sand, silty, trace fine gravel, poorly graded, loose, dark brown, no odour, moist, homogeneous, no cementation, trace rootlets [TOPSOIL]</p> | |
| -0.5 | <p>SAND (SM) Fine to medium sand, silty, trace fine to coarse gravel, poorly graded, loose, brown, no odour, moist, homogeneous, no cementation, trace rootlets, trace garbage and charcoal, trace fine gravel sized clasts of silt [FILL]</p> | | -0.5 | <p>SAND (SM) Fine sand, silty, trace fine to medium gravel, max particle size = 10 mm, poorly graded, loose, dark brown, no odour, moist, homogeneous, no cementation, trace rootlets [FILL]</p> | |
| -1.0 | | | -1.0 | <p>SILT (ML) and SAND (SP) Fine sand, trace fine to medium gravel, poorly graded, max particle size = 10 mm, low plastic, loose to compact, light brown with some orange mottling, no odour, moist, homogeneous, no cementation, slow dilatency, trace rootlets [COLLUVIUM]</p> | |
| -1.5 | <p>1.60 - 1.75 m - Organic layer</p> | | -1.5 | <p>SILT (ML) Sandy, fine sand, trace fine gravel, low plastic, stiff, light brown to grey with some orange mottling, no odour, moist, homogeneous, no cementation [Weathered GLACIOMARINE]</p> | |
| -2.0 | <p>1.75 m - Charcoal rich</p> <p>SILT (ML) Sandy, fine, low plastic, stiff, grey and brown with trace orange mottling, no odour, dry to moist, homogeneous, no cementation, non dilatent [Weathered GLACIOMARINE]</p> | | -2.0 | <p>1.7 m - EOH Refusal on stiff material No groundwater encountered</p> | |
| -2.5 | <p>2.2 m - EOH Refusal on stiff material No groundwater encountered</p> | | -2.5 | | |
| -3.0 | | | -3.0 | | |

BGC05-2349BER-AH01

SITE OBSERVATION FORM: DNV Landslide Risk Assessment
LOCATION: 2363 Berkley Avenue
INSPECTION DATE: (mm/dd/yy) 11/10/05
WEATHER: Raining, heavy rain for several days prior to visit.



BGC ENGINEERING INC.
 AN APPLIED EARTH SCIENCES COMPANY

500 - 1045 Howe Street
 Vancouver, BC
 Canada V6Z 2A9

| THICKNESS OF LOOSE MATERIALS | <1 m | 1-2 m | 2-3 m | >3 m |
|---------------------------------|------|-------------------------------------|-------|------|
| 2 m BACK FROM FENCE/CREST LINE | | <input checked="" type="checkbox"/> | | |
| 10 m DOWNSLOPE FROM SLOPE CREST | | <input checked="" type="checkbox"/> | | |

| SLOPE BELOW FENCE/ RETAINING STRUCTURE | SLOPE = 38° | | |
|--|-------------|-------------------------------------|-------------------------------------|
| | CRACKS | SLIDES | EROSION |
| | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| OBSERVATIONS: Site of previous landslide. Considerable surficial erosion. | | | |

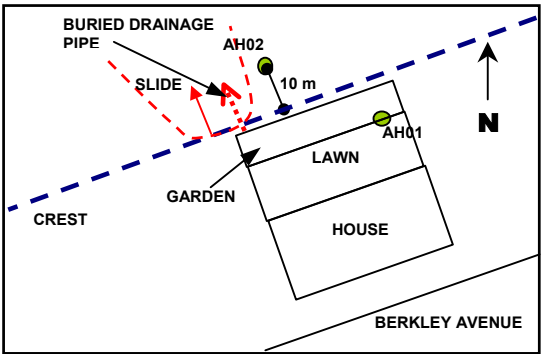
| TREES BELOW FENCE/ RETAINING STRUCTURE | STRAIGHT | PISTOL-BUTT | LEANING |
|---|-------------------------------------|-------------------------------------|---------|
| PERCENT CONIFER: 40% | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | |
| OBSERVATIONS: Slight pistol butt in some trees; most trees are straight. | | | |

| RETAINING STRUCTURES | YES | NO <input checked="" type="checkbox"/> | HEIGHT= n/a |
|-------------------------------------|------------|--|-------------|
| TYPE | BLOCKS | CONCRETE | TIMBER CRIB |
| DEFORMATION | UNDEFORMED | CRACKED | SETTLED |
| OBSERVATIONS: None observed. | | | |

| DEFORMATION IN BACKYARD | YES | NO <input checked="" type="checkbox"/> |
|--|-----|--|
| LOCATION: | | |
| DESCRIPTION: Garden on west side of backyard dips towards slope | | |

| POOLS | YES | NO <input checked="" type="checkbox"/> |
|--|-----|--|
| DESCRIPTION: Evidence of a removable aboveground pool. Currently not setup. | | |

| SEEPAGE/ SPRINGS IN OR BELOW FILL | YES <input checked="" type="checkbox"/> | NO |
|--|---|----|
| OBSERVATIONS: Buried pipe empties a considerable amount of water onto slope | | |



HOUSE DISTANCE TO CREST = 12.8 m

| RECEIVES SURFACE RUNOFF FROM | BACKYARD | 1/2 ROOF | FULL ROOF | FRONT YARD | STREET |
|---|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|--------|
| | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | |
| OBSERVATIONS: Water collected from roof possibly drains into buried pipe mentioned above. Driveway slopes towards backyard, although a drain is present. | | | | | |

| CONNECTED TO STORM SEWER | YES | NO <input checked="" type="checkbox"/> | UNSURE |
|---|-----|--|--------|
| OWNERS COMMENTS: DNV reports that this property is not connected to storm sewer. | | | |

GENERAL OBSERVATIONS

- A high-flow drainage pipe empties on to top of slope at south end of yard.
- Site of a recent landslide between 2363 and 2349 Berkley Road.
- Balcony to crest distance is 9.8 m



Figure 1. 2363 Berkley Avenue – Front of the house



Figure 2. 2363 Berkley Avenue – View looking north along crest



Figure 3. 2363 Berkley Avenue – View looking south along crest

INSPECTION LOCATION # 2363 Berkley

Project : DNV Landslide Risk Assessment

Project No. : 0404-002-01

Location : 2363 Berkley
Drill Method : Dutch Hand Auger
Inspection Date : 10 Nov 05
Logged by : MB/ES
Reviewed by : MJP

| Depth (m) | Lithologic Description | Depth To Water Table | Depth (m) | Lithologic Description | Depth To Water Table |
|-----------|---|----------------------|-----------|---|----------------------|
| | <p>AUGERHOLE: BGC05-2363BER-AH01 2 m back from Slope Crest FINAL DEPTH OF AUGERHOLE: 2.00 m THICKNESS OF LOOSE MATERIALS: 1.30 m</p> | | | <p>AUGERHOLE: BGC05-2363BER-AH02 10 m Downslope FINAL DEPTH OF AUGERHOLE: 1.40 m THICKNESS OF LOOSE MATERIALS: 1.40 m minimum</p> | |
| 0.0 | SAND (SM) Fine sand, silty, poorly graded, loose, dark brown, no odour, moist, homogeneous, no cementation, trace rootlets [TOPSOIL] | | 0.0 | SILT (ML) and SAND (SP) Fine sand, trace fine to medium gravel, trace cobbles, some gravel sized silt clasts, low plastic, soft, brown with trace orange brown mottling, no odour, moist, homogeneous, no cementation, trace rootlets, trace charcoal [FILL/ COLLUVIUM] | |
| 0.5 | SILT (ML) and SAND (SP) Fine sand, poorly graded, some gravel sized silt clasts, low plastic, soft, grey and brown with some orange mottling, no odour, moist, homogeneous, no cementation, [FILL] | | 0.5 | | |
| 1.0 | SAND (SM) Fine to coarse sand, silty, trace fine gravel, poorly graded, loose, maximum particle size = 3 mm, sub-rounded, brown, no odour, moist, homogeneous, no cementation, trace rootlets and wood [FILL] | | 1.0 | 0.60 m: Material density grades to 'loose to compact' | |
| | 1.15 - 1.30 m: Organic rich layer | | | | |
| 1.5 | SILT (ML) Sandy, fine, some fine to coarse gravel sized silt clasts, low plastic, firm, grey with orange mottling, no odour, moist, homogeneous, no cementation, slow dilatent, trace rootlets [COLLUVIUM] | ▼ | 1.5 | 1.40 m: EOH - Refusal on cobbles | |
| 2.0 | SAND (SP) Fine sand, trace silt, poorly graded, compact, grey to light brown with orange mottling, no odour, moist, homogeneous, no cementation [Weathered GLACIOMARINE] | | 2.0 | | |
| | 2.00 m: EOH - Refusal on compact material Groundwater encountered at 1.70 m | | | | |
| 2.5 | | | 2.5 | | |
| 3.0 | | | 3.0 | | |