APPENDIX F

SLOPE STABILITY ANALYSES

APPENDIX F-1

ALL SLOPE STABILITY ANALYSES EXCLUDING LIQUEFACTION

Newby Island Landfill Deep Foundation Failure Through Older Bay Alluvium
Sta. 22+00 2004-0049 Static Analysis
Sta. 22+00 OBA.gsz
Date: 6/4/2008
Time: 2:38:48 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 700 to 9910

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste-Static (2)
Wt: 80 to 105
Phi: Strength Fn: 1
C: Strength Fn: 1

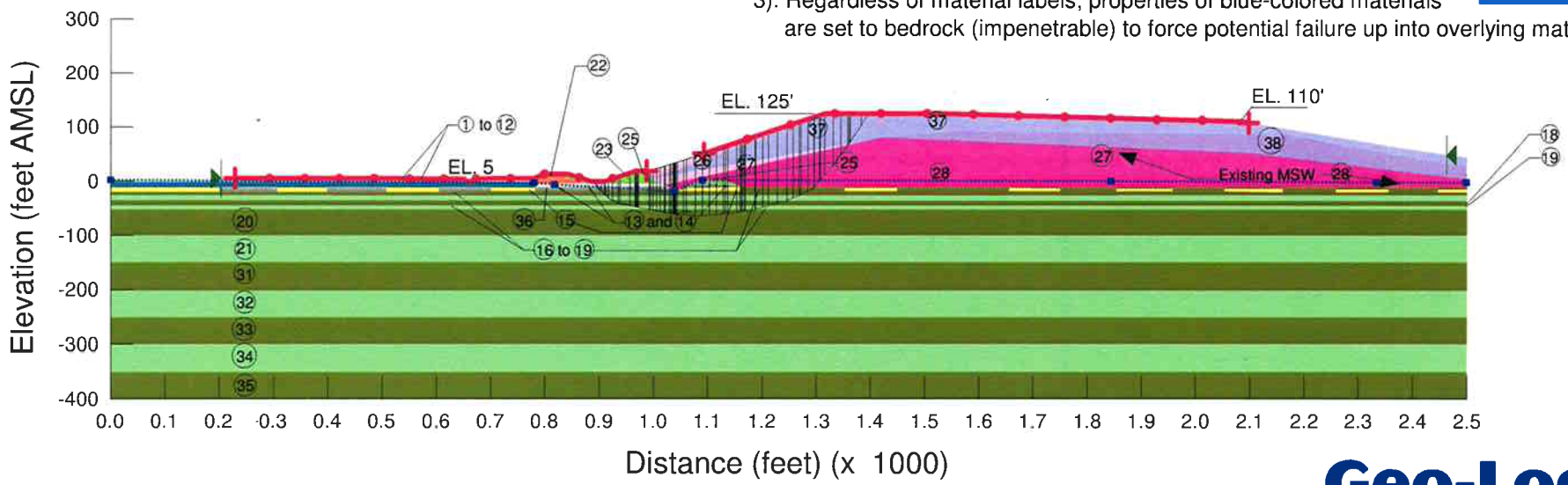
Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 113
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 300

Material #: 37 and 38
Municipal Solid Waste--Static (5)
Wt: 80 to 90
Phi: Strength Fn: 1
C: Strength Fn: 1

Material #: 39
Bedrock (Impenetrable)

1.681

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Deep Foundation Failure Through Older Bay Alluvium
Sta. 22+00 2004-0049 Pseudo-Static Analysis
Sta. 22+00 OBA_eq.gsz
Date: 6/4/2008
Time: 5:33:45 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0.146

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 700 to 9910

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste-Dynamic (2)
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

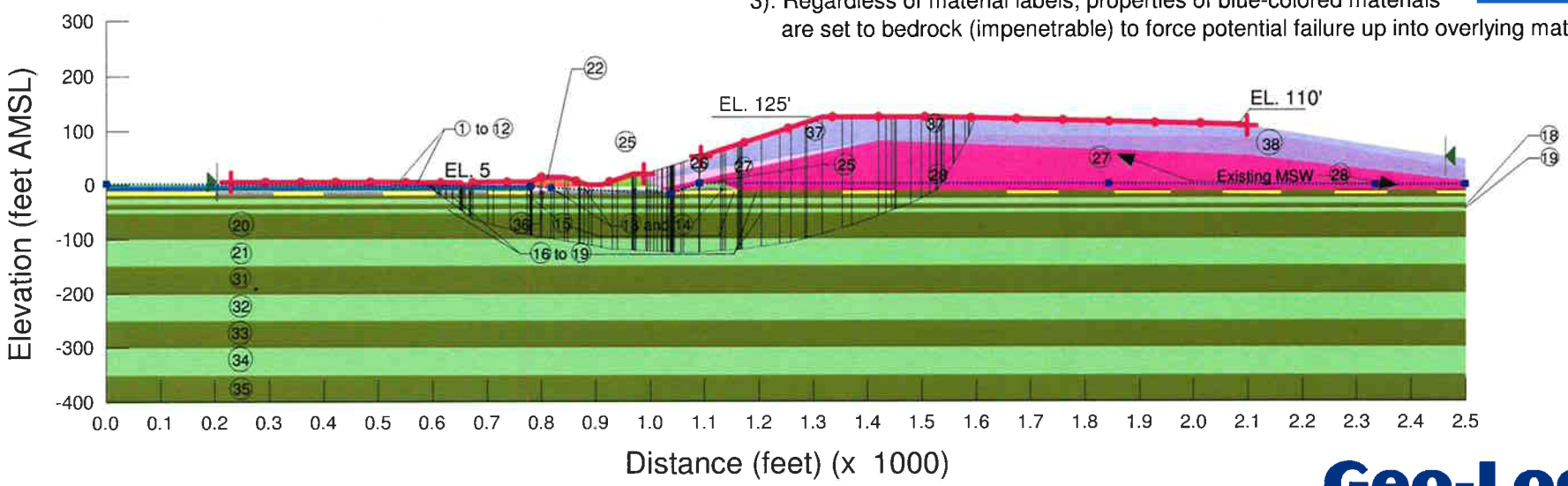
Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 113
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 300

Material #: 37 and 38
Municipal Solid Waste--Dynamic (5)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 39
Bedrock (Impenetrable)

1.001

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Through MSW & OBA
Sta. 22+00 2004-0049 Static Analysis
Sta. 22+00 MSW & OBA.gsz
Date: 6/4/2008
Time: 6:53:31 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 700 to 9910

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade/Fill
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

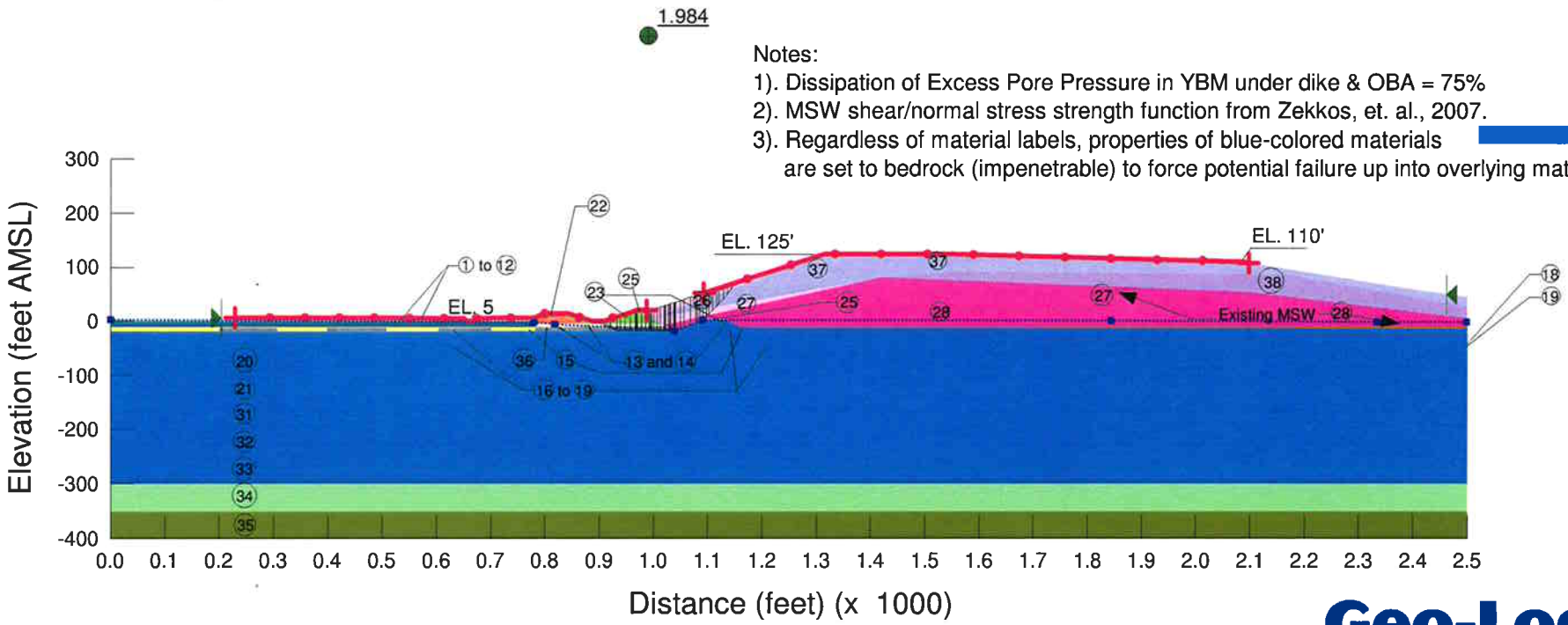
Material #: 26 to 28
Municipal Solid Waste-Static (2)
Wt: 80 to 105
Phi: Strength Fn: 1
C: Strength Fn: 1

Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 113
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 300

Material #: 37 and 38
Municipal Solid Waste--Static (5)
Wt: 80 to 90
Phi: Strength Fn: 1
C: Strength Fn: 1

Material #: 39
Bedrock (Impenetrable)

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Through MSW & OBA
Sta. 22+00 2004-0049 Pseudo-Static Analysis
Sta. 22+00 MSW & OBA_eq.gsz
Date: 6/4/2008
Time: 7:39:24 PM
Method: Morgenstern-Price
Slip Surface Option: Fully-Specified
Optimization: No
Horz Seismic Load: 0.244

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 700 to 9910

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade/Fill
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

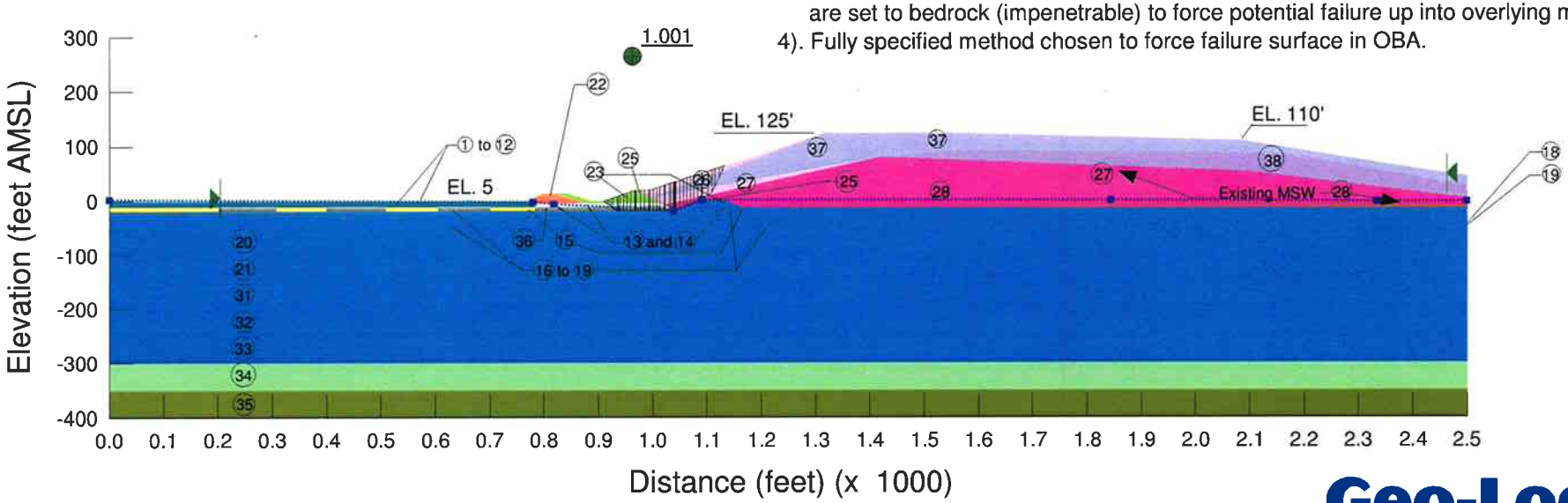
Material #: 26 to 28
Municipal Solid Waste-Dynamic (2)
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 113
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 300

Material #: 37 and 38
Municipal Solid Waste--Dynamic (5)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 39
Bedrock (Impenetrable)

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials [redacted] are set to bedrock (impenetrable) to force potential failure up into overlying materials
4). Fully specified method chosen to force failure surface in OBA.



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Through MSW & YBM
Sta. 22+00 2004-0049 Static Analysis
Sta. 22+00 MSW & YBM.gsz
Date: 6/4/2008
Time: 8:04:56 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 700 to 9910

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade/Fill
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

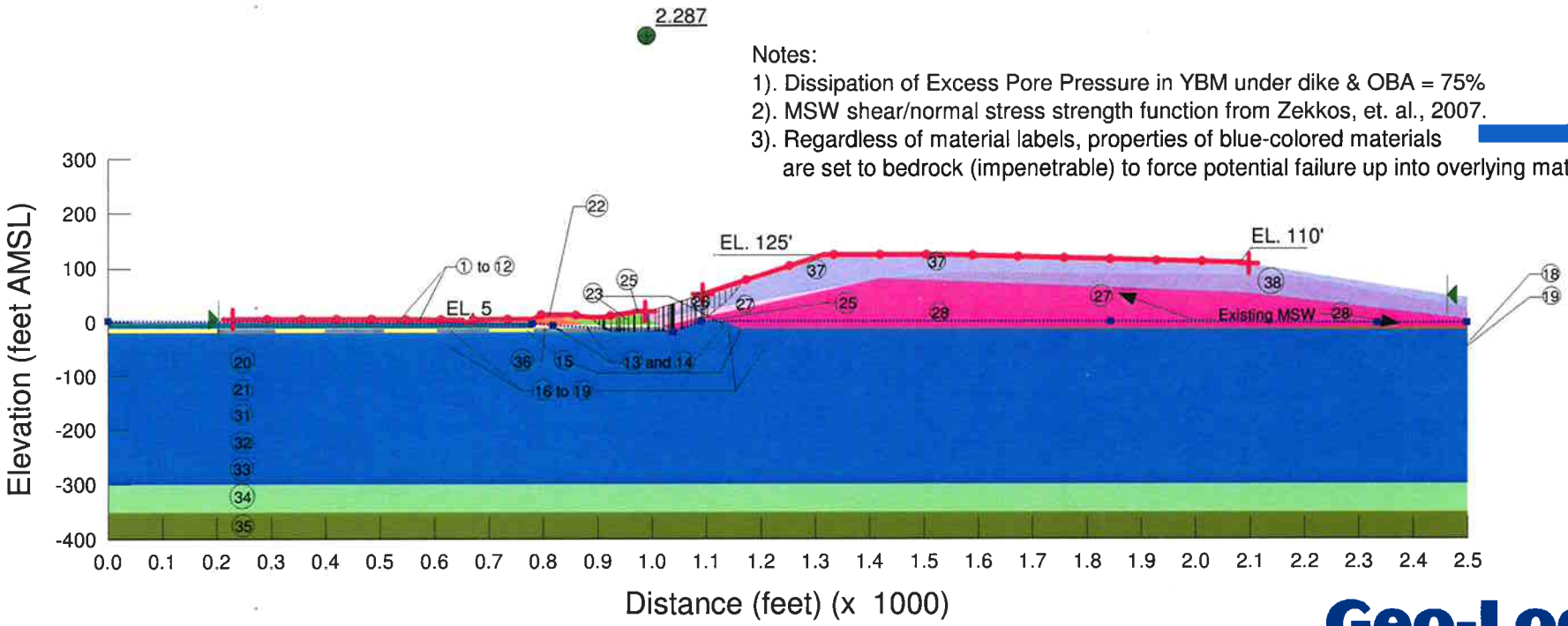
Material #: 26 to 28
Municipal Solid Waste-Static (2)
Wt: 80 to 105
Phi: Strength Fn: 1
C: Strength Fn: 1

Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 113
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 300

Material #: 37 and 38
Municipal Solid Waste--Static (5)
Wt: 80 to 90
Phi: Strength Fn: 1
C: Strength Fn: 1

Material #: 39
Bedrock (Impenetrable)

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Through MSW & YBM
Sta. 22+00 2004-0049 Pseudo-Static Analysis
Sta. 22+00 MSW & YBM_eq.gsz
Date: 6/4/2008
Time: 7:59:50 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0.17

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 700 to 9910

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade/Fill
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste-Dynamic (2)
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

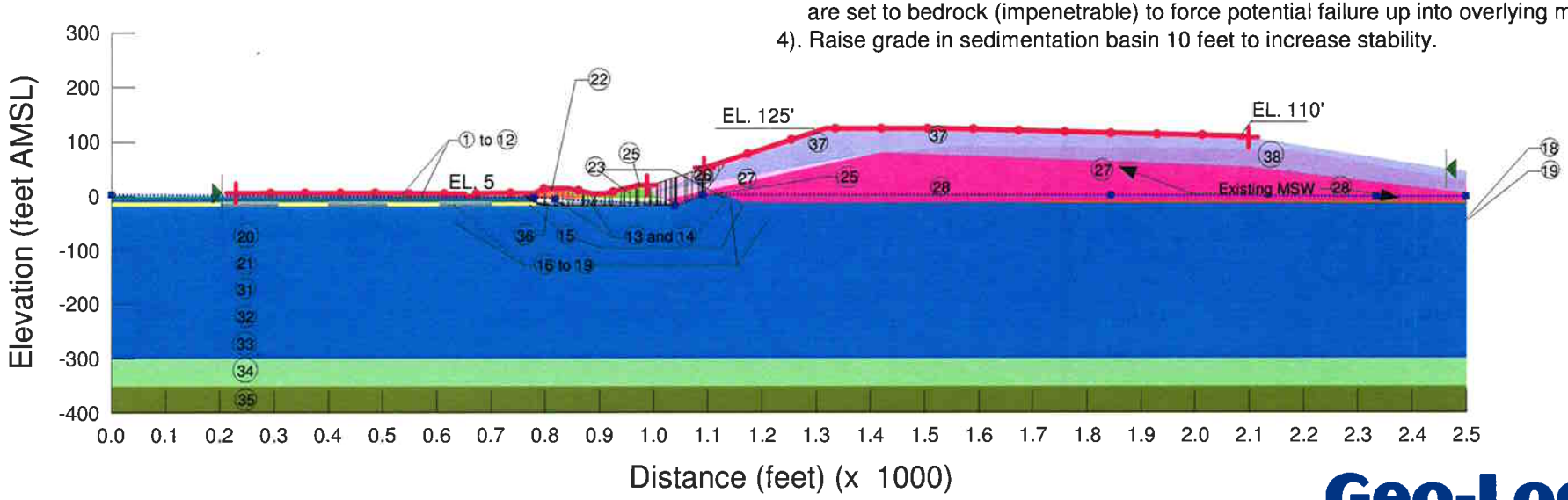
Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 113
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 300

Material #: 37 and 38
Municipal Solid Waste--Dynamic (5)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 39
Bedrock (Impenetrable)

1.000

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials
4). Raise grade in sedimentation basin 10 feet to increase stability.



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Along Liner
Sta. 22+00 2004-0049 Static Analysis
Sta. 22+00 Liner.gsz
Date: 6/4/2008
Time: 8:16:05 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 700 to 9910

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

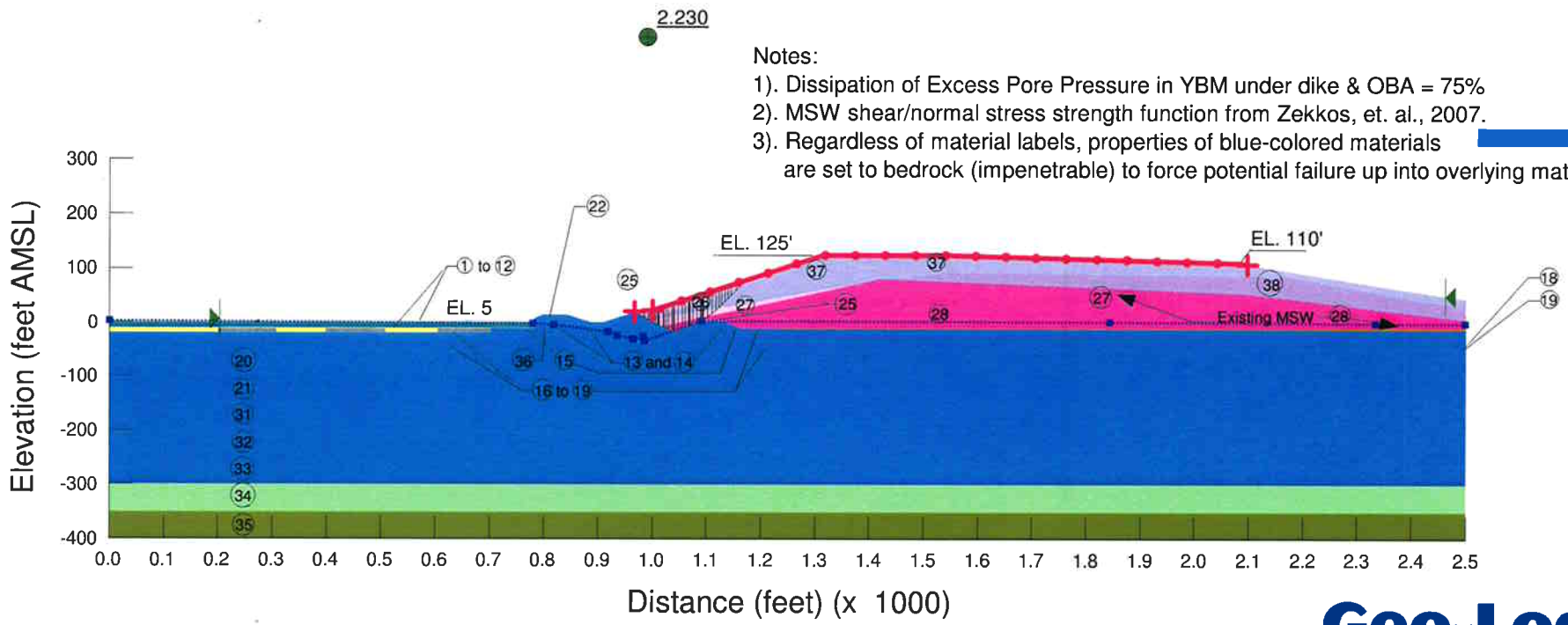
Material #: 26 to 28
Municipal Solid Waste--Static (2)
Wt: 80 to 105
Phi: Strength Fn: 1
C: Strength Fn: 1

Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 113
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 300

Material #: 37 and 38
Municipal Solid Waste--Static (5)
Wt: 80 to 90
Phi: Strength Fn: 1
C: Strength Fn: 1

Material #: 39
Bedrock (Impenetrable)

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Along Liner
Sta. 22+00 2004-0049 Static Analysis
Sta. 22+00 Liner_eq.gsz
Date: 6/4/2008
Time: 2:56:21 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0.327

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 700 to 9910

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste--Dynamic (2)
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

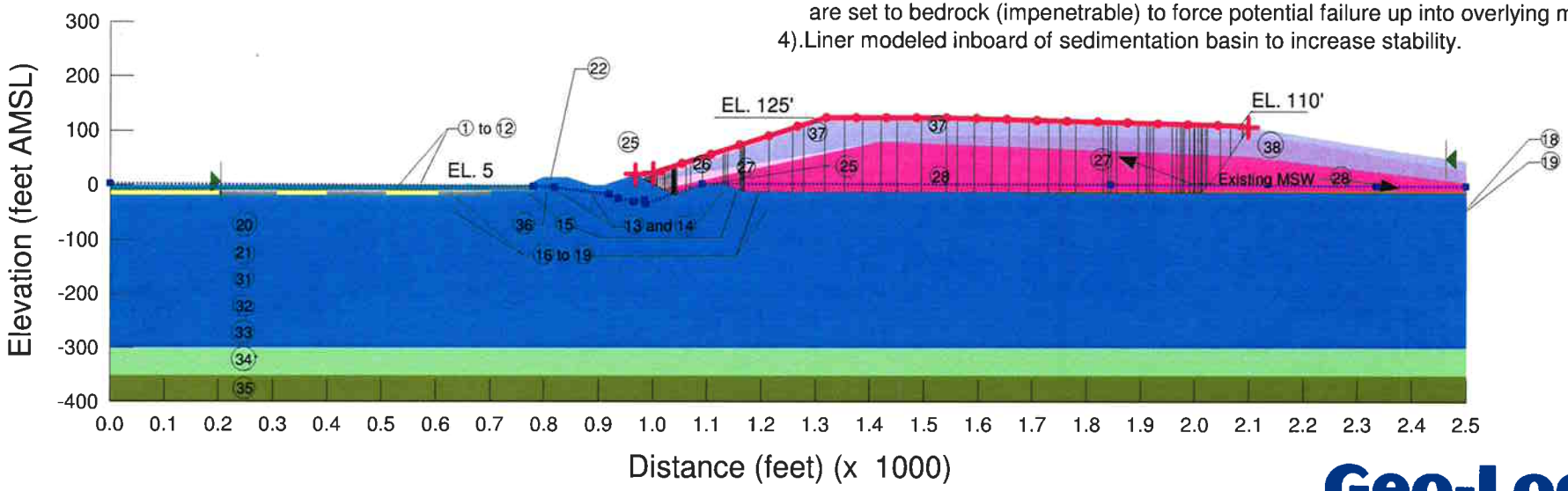
Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 113
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 300

Material #: 37 and 38
Municipal Solid Waste--Dynamic (5)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 39
Bedrock (Impenetrable)

1.002

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials
4).Liner modeled inboard of sedimentation basin to increase stability.



Geo-Logic ASSOCIATES

Newby Island Landfill Deep Foundation Failure Through Older Bay Alluvium
Sta. 25+93 2004-0049 Static Analysis
Sta. 25+93 OBA.gsz
Date: 6/3/2008
Time: 2:52:24 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 730 to 9880

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
MSW-Static (80 pcf)
Wt: 80 to 105
Phi: Strength Fn: 1
C: Strength Fn: 1

Material #: 29
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 30
Organic Layer beneath Dike
Wt: 100
Phi: 20
C: 100

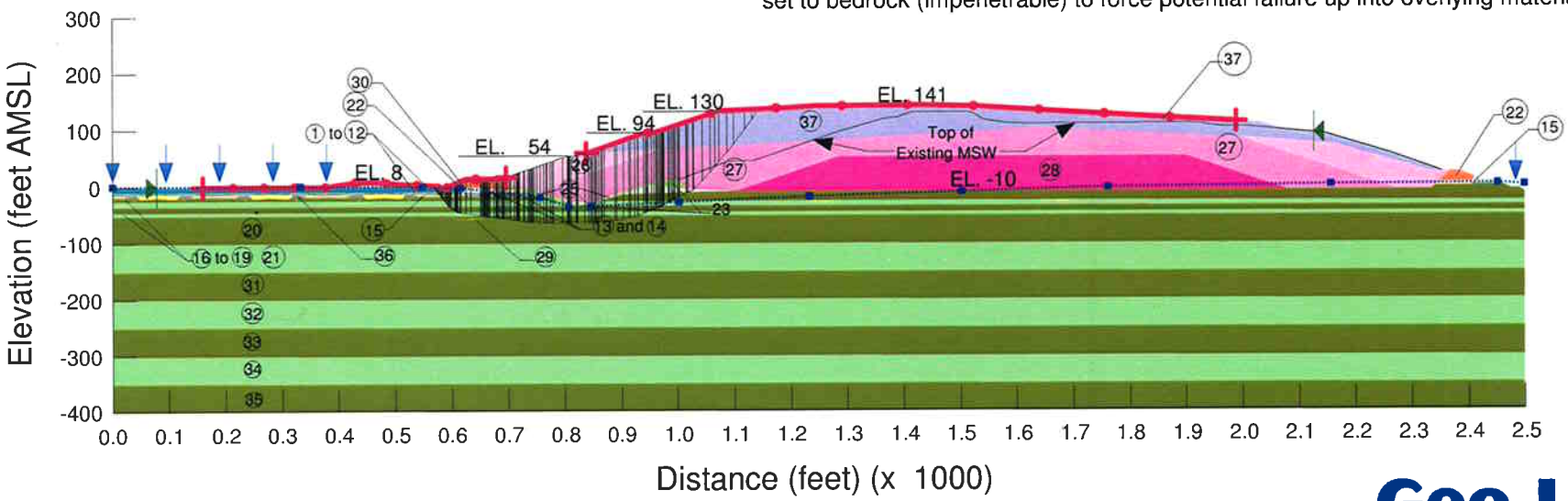
1.932

Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 113
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 300

Material #: 37 and 38
MSW abover Permit-Static (80 pcf)
Wt: 80 to 90
Phi: Strength Fn: 1
C: Strength Fn: 1

Material #: 39
Bedrock (Impenetrable)

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Deep Foundation Failure Through Older Bay Alluvium
Sta. 25+93 2004-0049 Pseudo-Static Analysis
Sta 25+93 OBA_eq.gsz
Date: 6/3/2008
Time: 3:28:57 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0.162

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 730 to 9880

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
MSW-Dynamic (80 pcf)
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 29
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 30
Organic Layer beneath Dike
Wt: 100
Phi: 20
C: 100

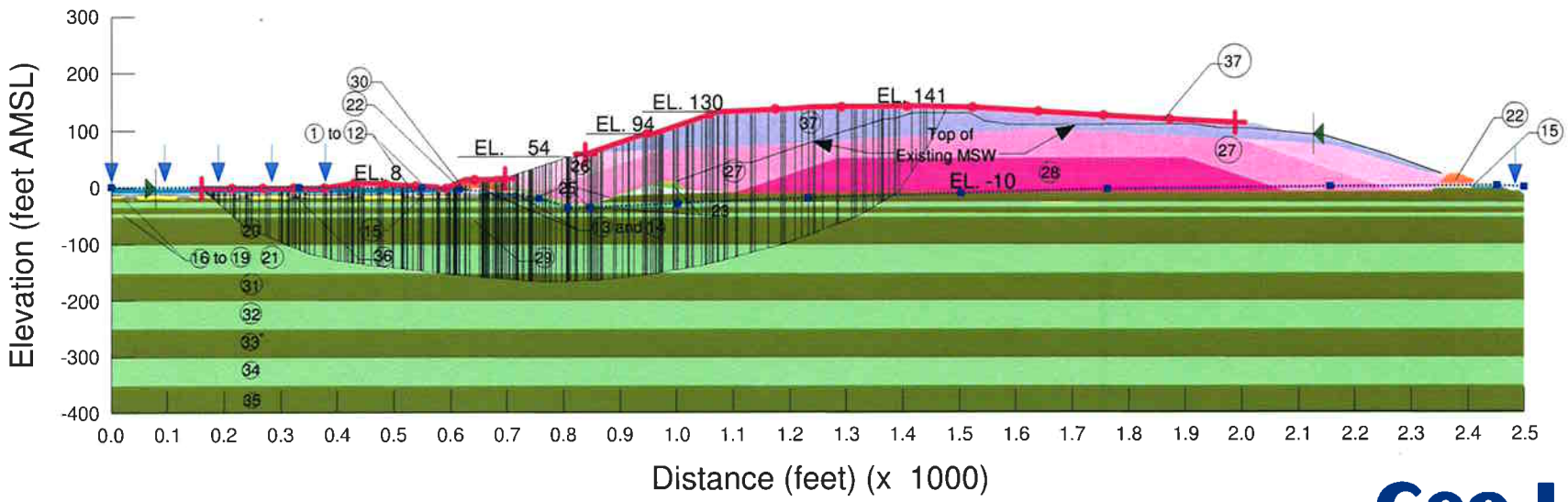
0.999

Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 113
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 300

Material #: 37 and 38
MSW abover Permit-Dynamic (80 pcf)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 39
Bedrock (Impenetrable)

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Through MSW & OBA
Sta. 25+93 2004-0049 Static Analysis
Sta. 25+93 MSW & OBA.gsz
Date: 6/3/2008
Time: 3:35:08 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 730 to 9880

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
MSW-Static (80 pcf)
Wt: 80 to 105
Phi: Strength Fn: 1
C: Strength Fn: 1

Material #: 29
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 30
Organic Layer beneath Dike
Wt: 100
Phi: 20
C: 100

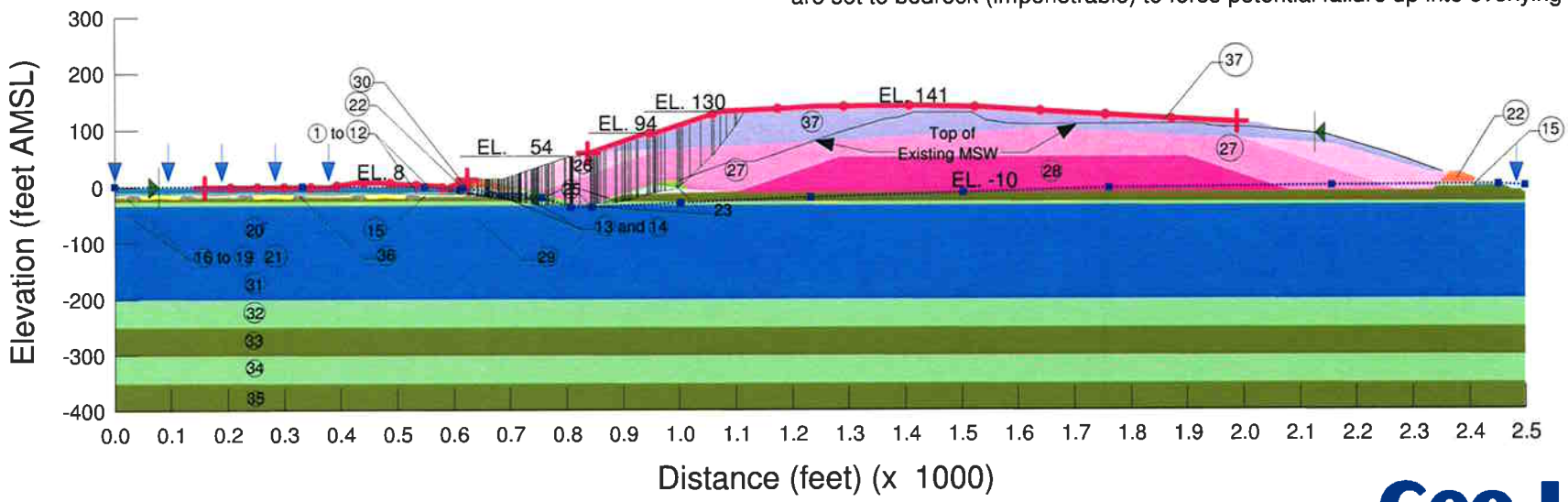
1.962

Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 113
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 300

Material #: 37 and 38
MSW abover Permit-Static (80 pcf)
Wt: 80 to 90
Phi: Strength Fn: 1
C: Strength Fn: 1

Material #: 39
Bedrock (Impenetrable)

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials
are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Through MSW & OBA
Sta. 25+93 2004-0049 Pseudo-Static Analysis
Sta. 25+93 MSW & OBA_eq.gsz
Date: 6/3/2008
Time: 3:54:29 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0.2175

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 730 to 9880

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
MSW-Dynamic (80 pcf)
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 29
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 30
Organic Layer beneath Dike
Wt: 100
Phi: 20
C: 100

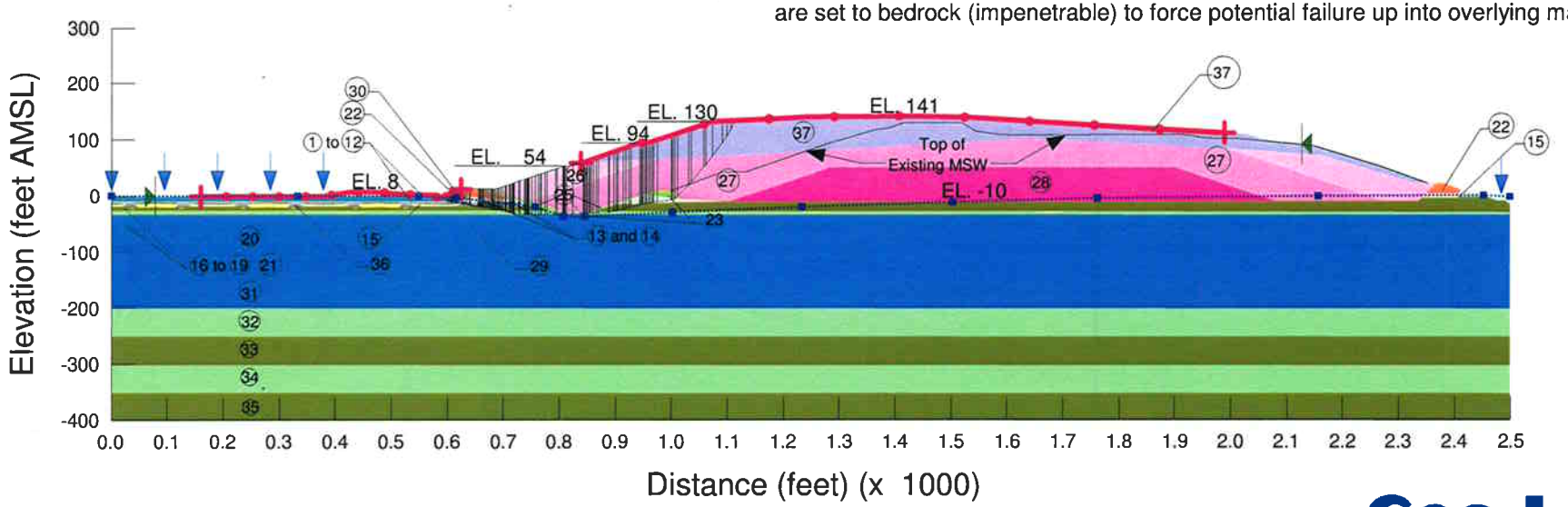
1.000

Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 113
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 300

Material #: 37 and 38
MSW abover Permit-Dynamic (80 pcf)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 39
Bedrock (Impenetrable)

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Through MSW & YBM
Sta. 25+93 2004-0049 Static Analysis
Sta. 25+93 MSW & YBM.gsz
Date: 6/3/2008
Time: 3:59:45 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 730 to 9880

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
MSW-Static (80 pcf)
Wt: 80 to 105
Phi: Strength Fn: 1
C: Strength Fn: 1

Material #: 29
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 30
Organic Layer beneath Dike
Wt: 100
Phi: 20
C: 100

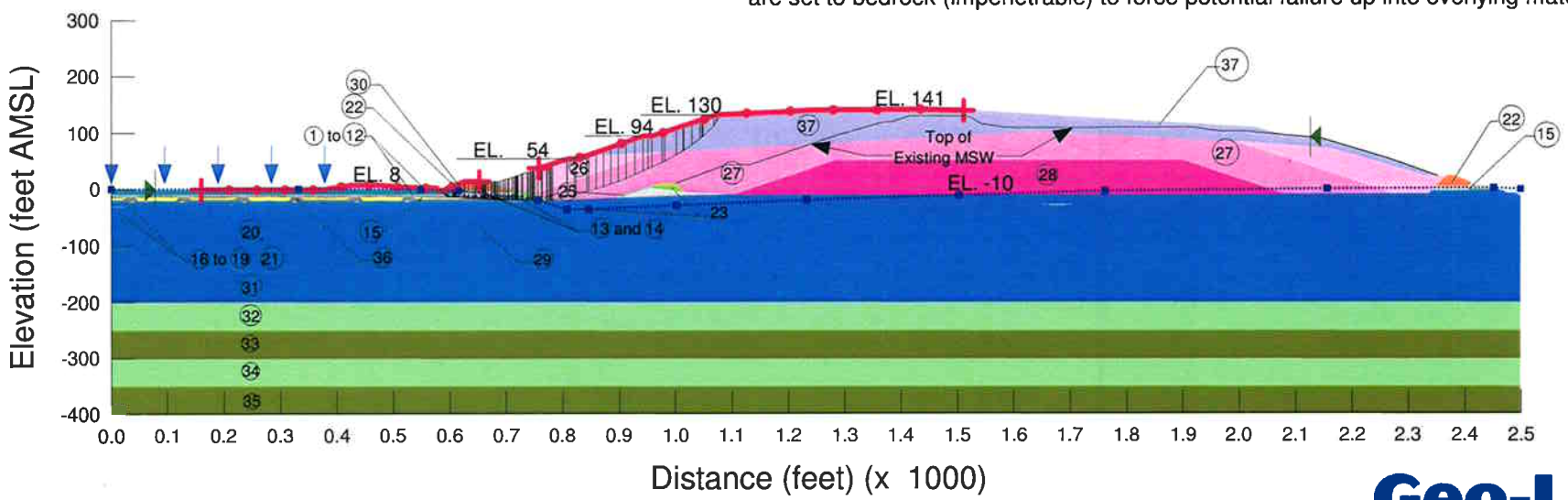
2.677

Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 113
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 300

Material #: 37 and 38
MSW abover Permit-Static (80 pcf)
Wt: 80 to 90
Phi: Strength Fn: 1
C: Strength Fn: 1

Material #: 39
Bedrock (Impenetrable)

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Through MSW & YBM
Sta. 25+93 2004-0049 Pseudo-Static Analysis
Sta. 25+93 MSW & YBM_eq.gsz
Date: 6/3/2008
Time: 4:19:16 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0.26

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 730 to 9880

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
MSW-Dynamic (80 pcf)
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 29
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 30
Organic Layer beneath Dike
Wt: 100
Phi: 20
C: 100

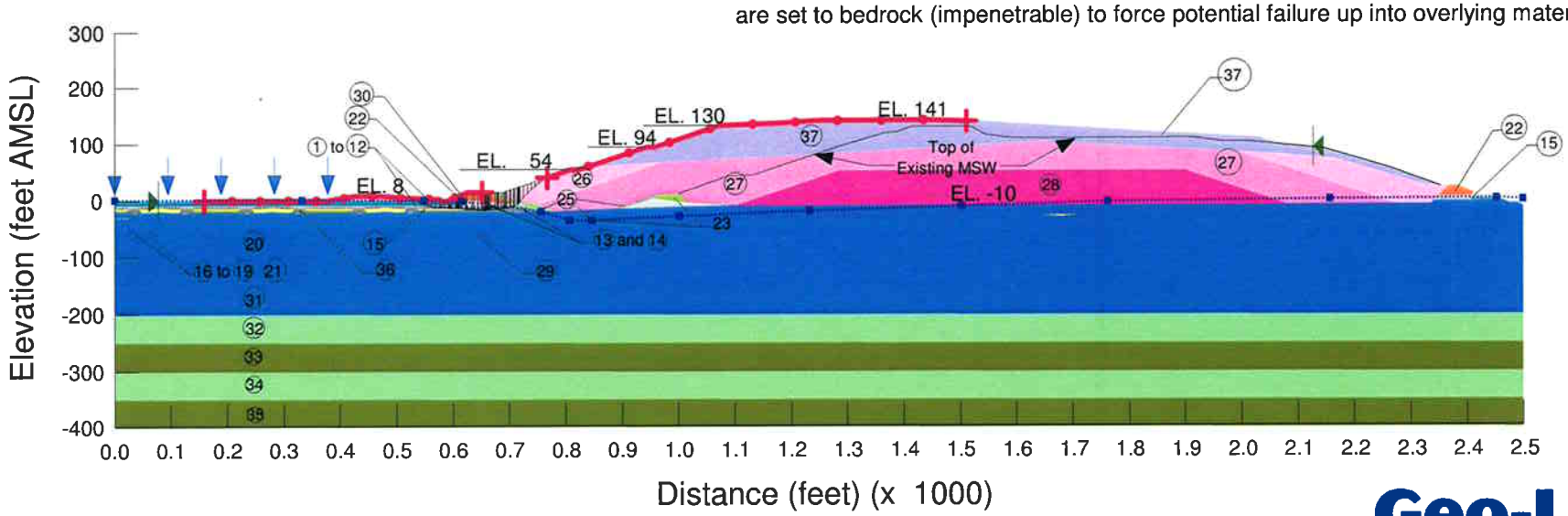
1.007

Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 113
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 300

Material #: 37 and 38
MSW abover Permit-Dynamic (80 pcf)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 39
Bedrock (Impenetrable)

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Along Liner
Sta. 25+93 2004-0049 Static Analysis
Sta. 25+93 Liner.gsz
Date: 6/3/2008
Time: 4:23:28 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 730 to 9880

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
MSW-Static (80 pcf)
Wt: 80 to 105
Phi: Strength Fn: 1
C: Strength Fn: 1

Material #: 29
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 30
Organic Layer beneath Dike
Wt: 100
Phi: 20
C: 100

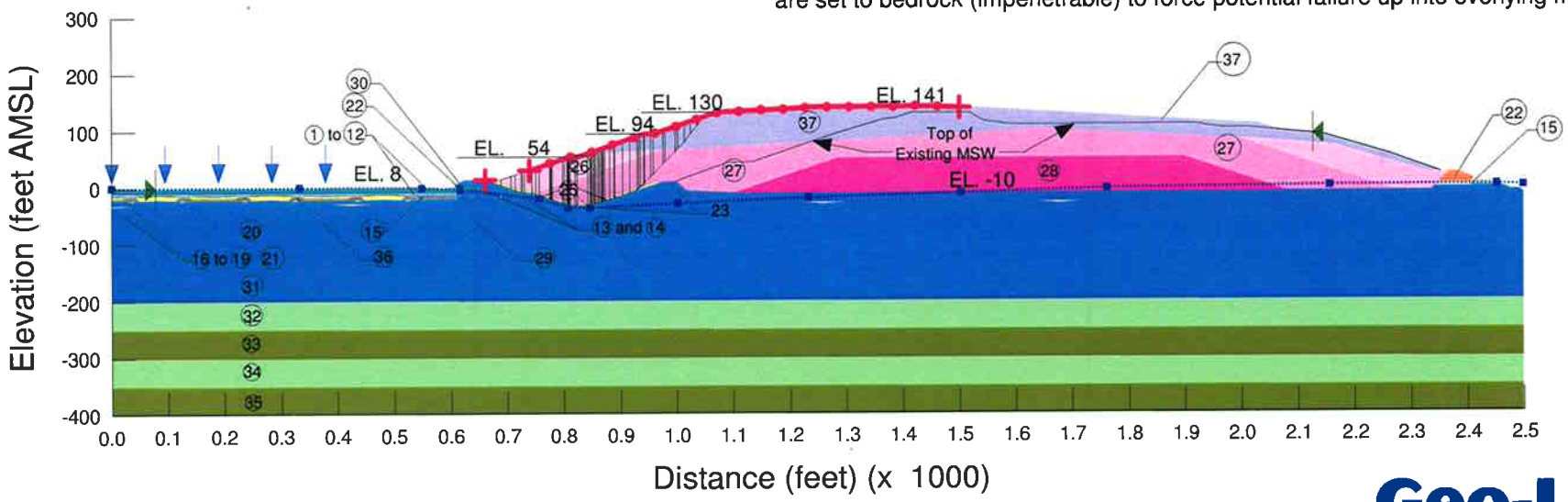
1.845

Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 113
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 300

Material #: 37 and 38
MSW abover Permit-Static (80 pcf)
Wt: 80 to 90
Phi: Strength Fn: 1
C: Strength Fn: 1

Material #: 39
Bedrock (Impenetrable)

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials [redacted]
are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Along Liner
Sta. 25+93 2004-0049 Pseudo-Static Analysis
Sta. 25+93 Liner_Rev1_eq.gsz
Date: 6/4/2008
Time: 8:27:34 PM
Method: Morgenstern-Price
Slip Surface Option: Fully-Specified
Optimization: Yes
Horz Seismic Load: 0.18

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 730 to 9880

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
MSW-Dynamic (80 pcf)
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 29
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

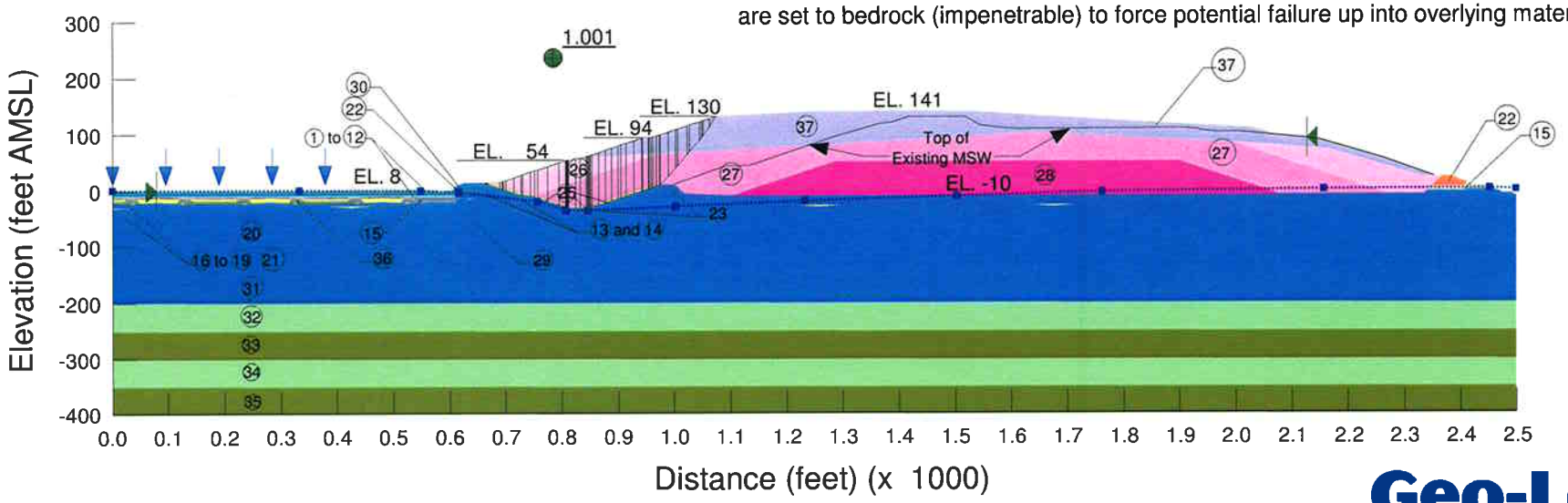
Material #: 30
Organic Layer beneath Dike
Wt: 100
Phi: 20
C: 100

Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 113
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 300

Material #: 37 and 38
MSW abover Permit-Dynamic (80 pcf)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 39
Bedrock (Impenetrable)

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Deep Foundation Failure Through Older Bay Alluvium
Sta. 33+00 2004-0049 Static Analysis
Sta. 33+00 OBA.gsz
Date: 5/28/2008
Time: 4:19:29 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 440

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 700 to 9910

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste-Static (2)
Wt: 80 to 105
Phi: Strength Fn: 1
C: Strength Fn: 1

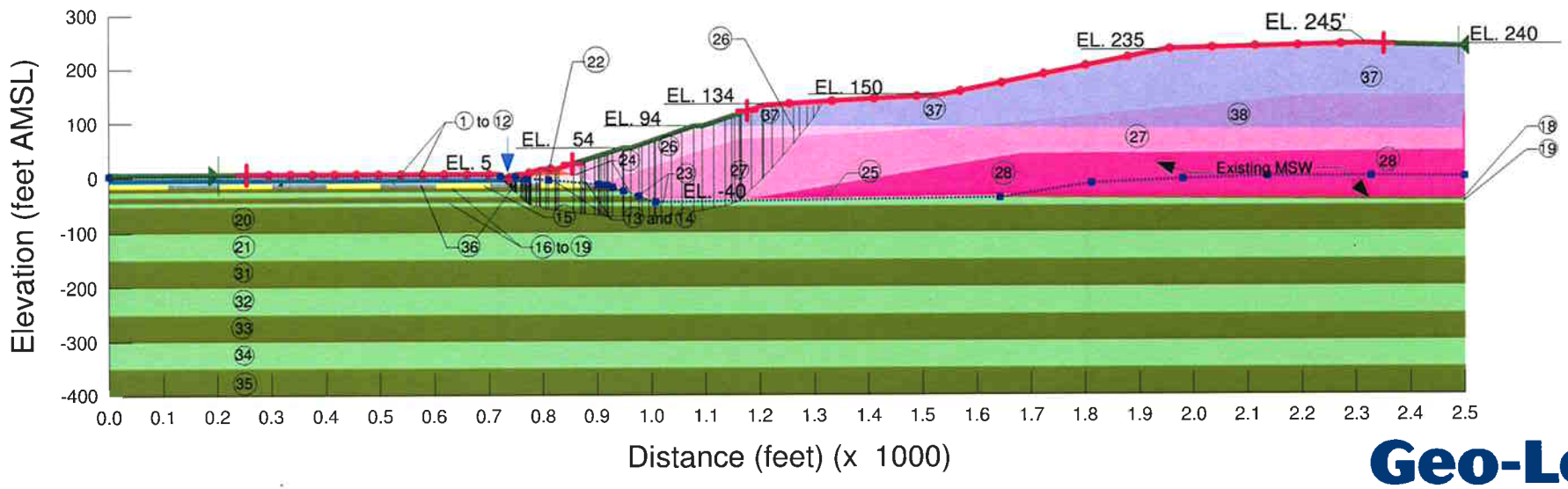
Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 112
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 300

Material #: 37 and 38
Municipal Solid Waste-Static (5)
Wt: 80 to 90
Phi: Strength Fn: 1
C: Strength Fn: 1

Material #: 39
Bedrock (Impenetrable)

2.070

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials.



Geo-Logic ASSOCIATES

Newby Island Landfill Deep Foundation Failure Through Older Bay Alluvium
Sta. 33+00 2004-0049 Pseudo-Static Analysis
Sta. 33+00 OBA_eq.gsz
Date: 6/1/2008
Time: 10:01:02 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0.151

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 700 to 9880

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste-Dynamic (2)
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

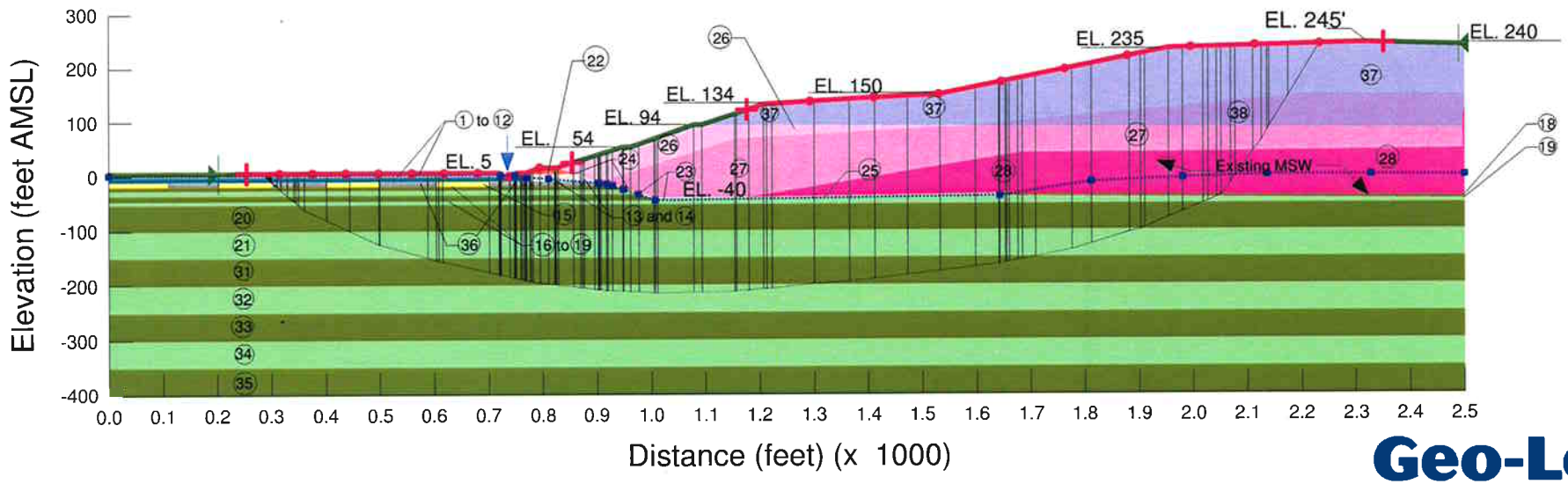
Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 113
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 300

Material #: 37 and 38
Municipal Solid Waste-Dynamic (5)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 39
Bedrock (Impenetrable)

1.002

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials.



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Through MSW & OBA
Sta. 33+00 2004-0049 Static Analysis
Sta. 33+00 MSW & OBA.gsz
Date: 6/1/2008
Time: 10:08:01 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 700 to 9880

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste-Static (2)
Wt: 80 to 105
Phi: Strength Fn: 1
C: Strength Fn: 1

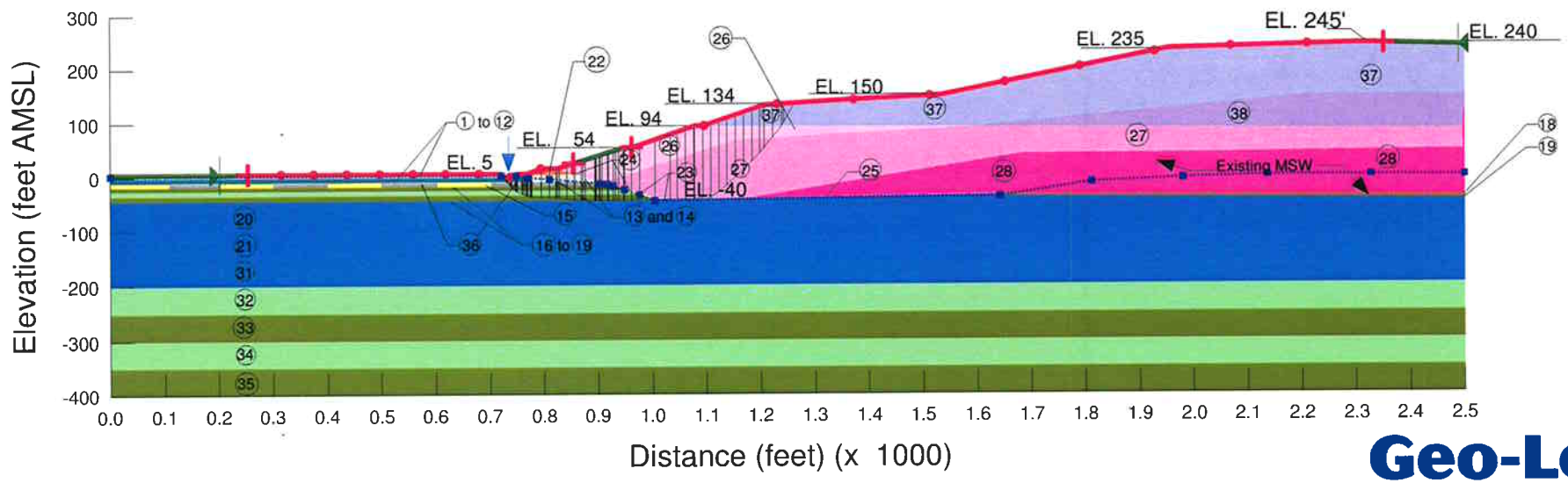
Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 113
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 300

Material #: 37 and 38
Municipal Solid Waste-Static (5)
Wt: 80 to 90
Phi: Strength Fn: 1
C: Strength Fn: 1

Material #: 39
Bedrock (Impenetrable)

2.122

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials.



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Through MSW & OBA
Sta. 33+00 2004-0049 Pseudo-Static Analysis
Sta. 33+00 MSW & OBA_eq.gsz
Date: 6/1/2008
Time: 10:11:35 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0.2

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 700 to 9880

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste-Dynamic (2)
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

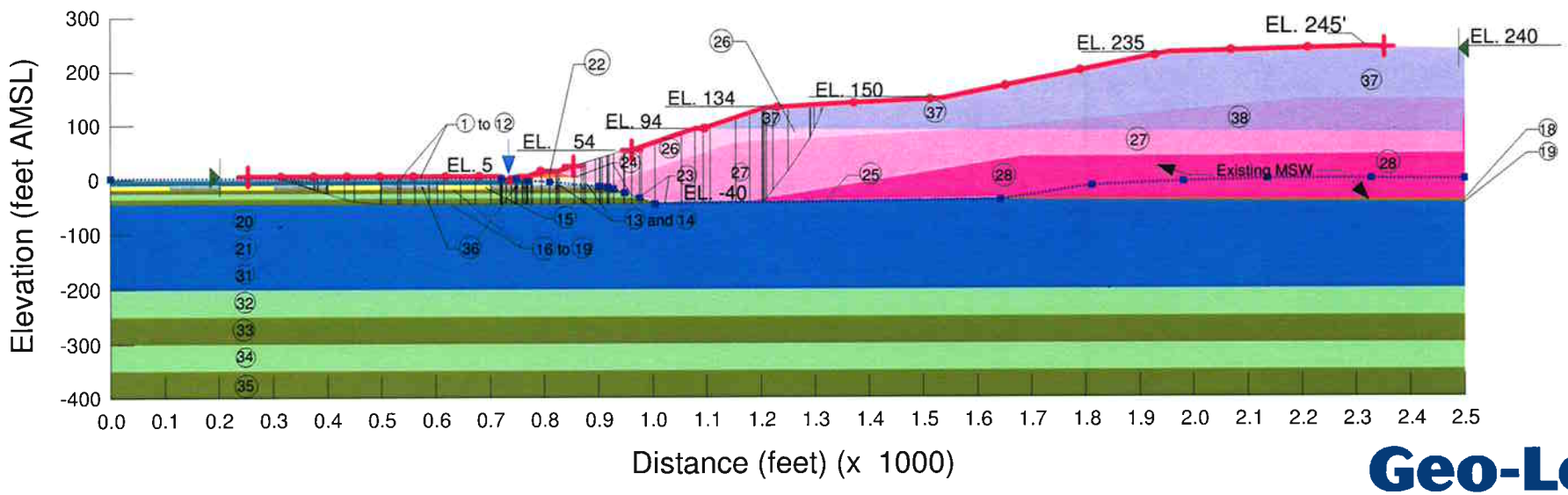
Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 113
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 300

Material #: 37 and 38
Municipal Solid Waste-Dynamic (5)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 39
Bedrock (Impenetrable)

1.003

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials.



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Through MSW & YBM
Sta. 33+00 2004-0049 Static Analysis
Sta. 33+00 MSW & YBM.gsz
Date: 6/1/2008
Time: 10:20:09 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 700 to 9880

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste-Static (2)
Wt: 80 to 105
Phi: Strength Fn: 1
C: Strength Fn: 1

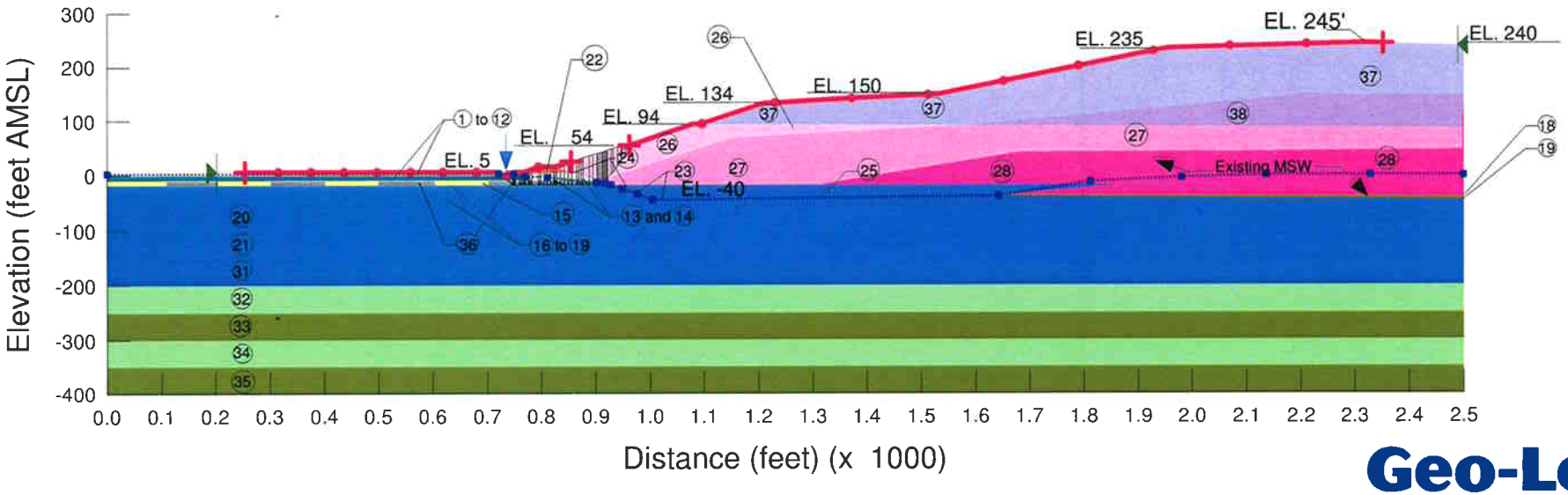
Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 113
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 300

Material #: 37 and 38
Municipal Solid Waste-Static (5)
Wt: 80 to 90
Phi: Strength Fn: 1
C: Strength Fn: 1

Material #: 39
Bedrock (Impenetrable)

2.182

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials.



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Through MSW & YBM
Sta. 33+00 2004-0049 Pseudo-Static Analysis
Sta. 33+00 MSW & YBM_eq.gsz
Date: 6/1/2008
Time: 10:28:47 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0.184

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 700 to 9880

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste-Dynamic (2)
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

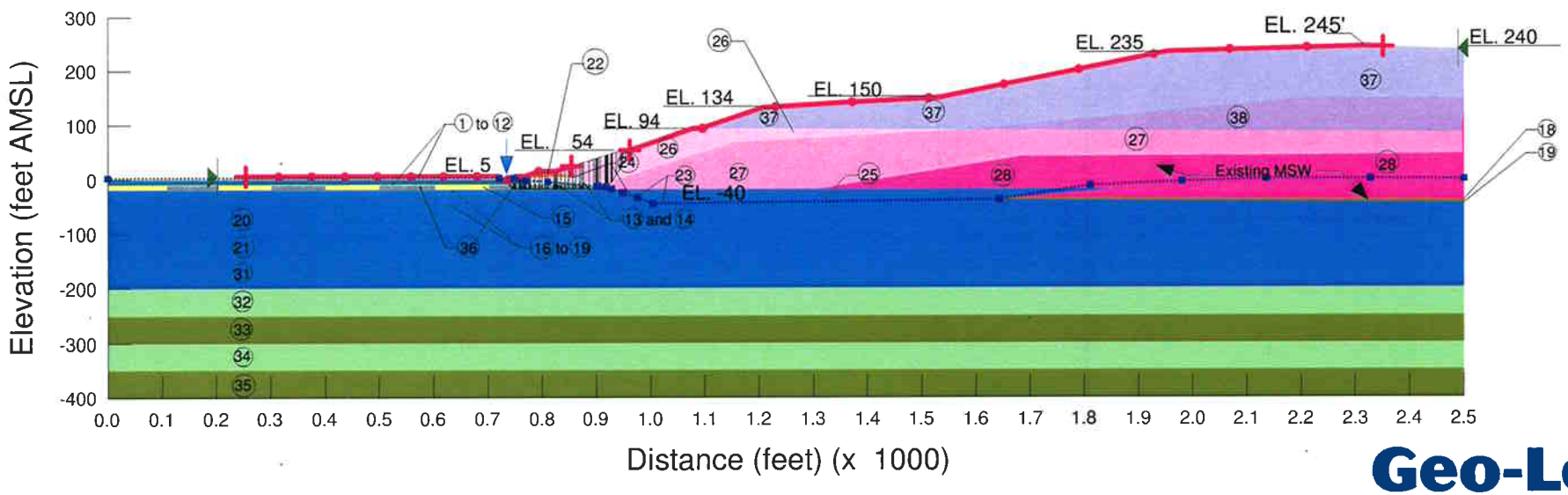
Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 113
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 300

Material #: 37 and 38
Municipal Solid Waste-Dynamic (5)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 39
Bedrock (Impenetrable)

1.005

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials.



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Along Liner
Sta. 33+00 2004-0049 Static Analysis
Sta. 33+00 Liner.gsz
Date: 6/1/2008
Time: 10:35:37 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 700 to 9880

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste-Static (2)
Wt: 80 to 105
Phi: Strength Fn: 1
C: Strength Fn: 1

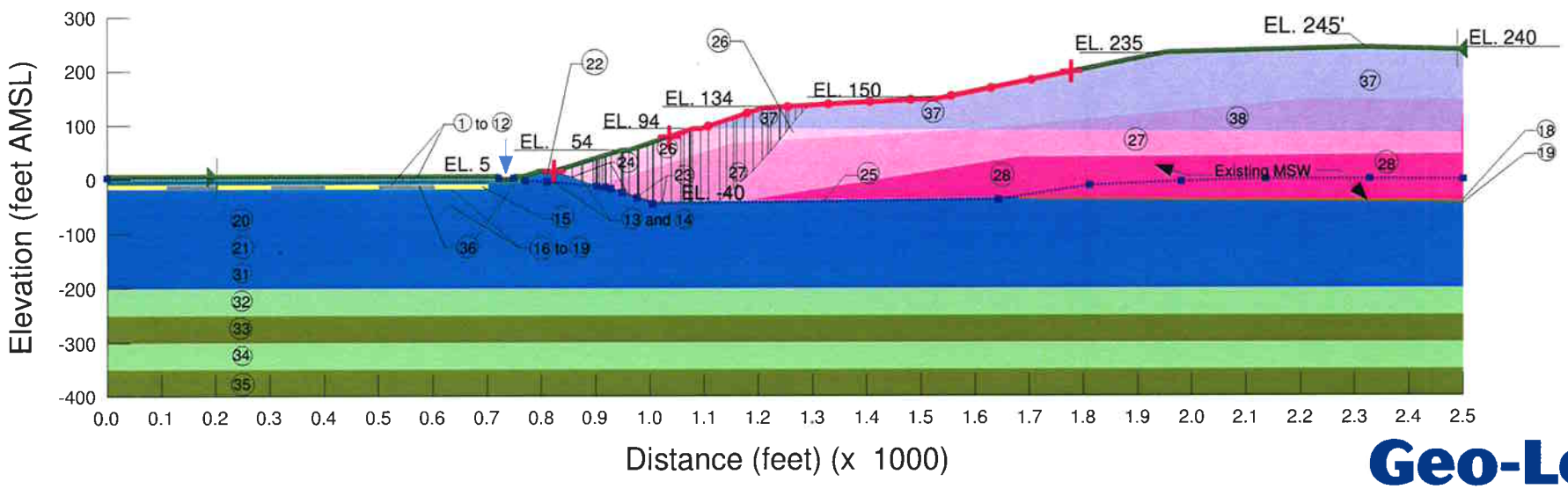
Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 113
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 300

Material #: 37 and 38
Municipal Solid Waste-Static (5)
Wt: 80 to 90
Phi: Strength Fn: 1
C: Strength Fn: 1

Material #: 39
Bedrock (Impenetrable)

2.120

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials.



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Along Liner
Sta. 33+00 2004-0049 Pseudo-Static Analysis
Sta. 33+00 Liner_eq.gsz
Date: 6/1/2008
Time: 10:40:13 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0.217

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 700 to 9880

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste-Dynamic (2)
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

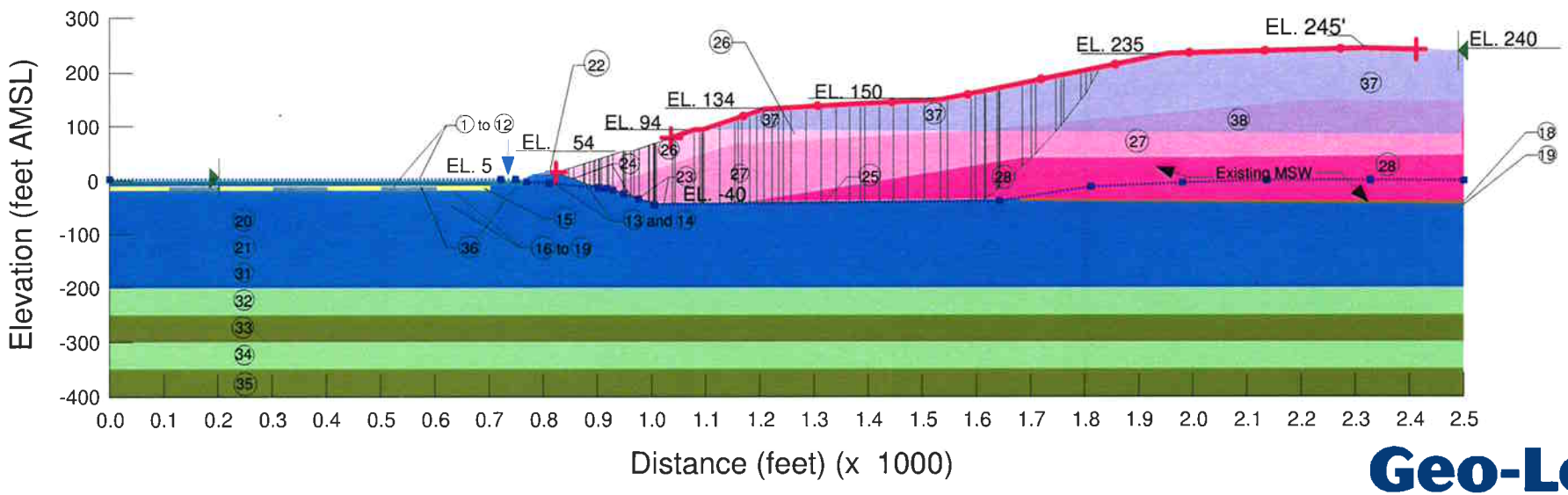
Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 113
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 300

Material #: 37 and 38
Municipal Solid Waste-Dynamic (5)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 39
Bedrock (Impenetrable)

1.000

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials.



Geo-Logic ASSOCIATES

Newby Island Landfill Deep Foundation Failure Through Older Bay Alluvium
Sta. 45+00 2004-0049 Static Analysis
Sta. 45+00 OBA.gsz
Date: 6/1/2008
Time: 11:29:00 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand (non-liquefied)
Model: Mohr-Coulomb
Unit Weight: 125 pcf
Phi: 32 °
Cohesion: 50 psf

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 730 to 9880

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
MSW-Static
Wt: 80 to 105
Phi: Strength Fn: 1
C: Strength Fn: 1

Material #: 29
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 113
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 300

Material #: 37 and 38
MSW abover Permit-Static (80 pcf)
Wt: 80 to 90
Phi: Strength Fn: 1
C: Strength Fn: 2

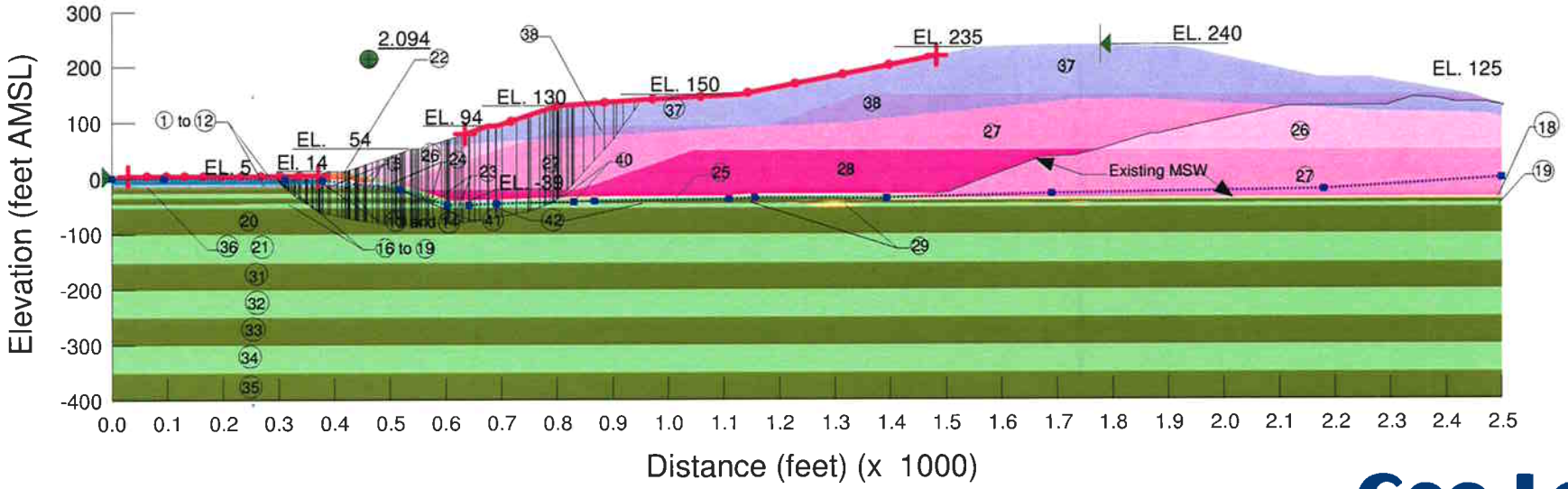
Material #: 39
Bedrock (Impenetrable)

Material #: 40
Drainage Gravel
Wt: 125
Phi: 38
C: 0

Material #: 41
Sand (non-liquefied) (2)
Model: Mohr-Coulomb
Unit Weight: 125 pcf
Phi: 32 °
Cohesion: 50 psf

Material #: 42
Sand (non-liquefied) (3)
Model: Mohr-Coulomb
Unit Weight: 125 pcf
Phi: 32 °
Cohesion: 50 psf

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials.



Geo-Logic ASSOCIATES

Newby Island Landfill Deep Foundation Failure Through Older Bay Alluvium
Sta. 45+00 2004-0049 Pseudo-Static Analysis
Sta. 45+00 OBA_eq.gsz
Date: 6/1/2008
Time: 11:43:02 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0.16

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand (non-liquefied)
Model: Mohr-Coulomb
Unit Weight: 125 pcf
Phi: 32 °
Cohesion: 50 psf

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 730 to 9880

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
MSW-Dynamic
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 29
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 113
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 300

Material #: 37 and 38
MSW above Permit-Dynamic (80 pcf)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

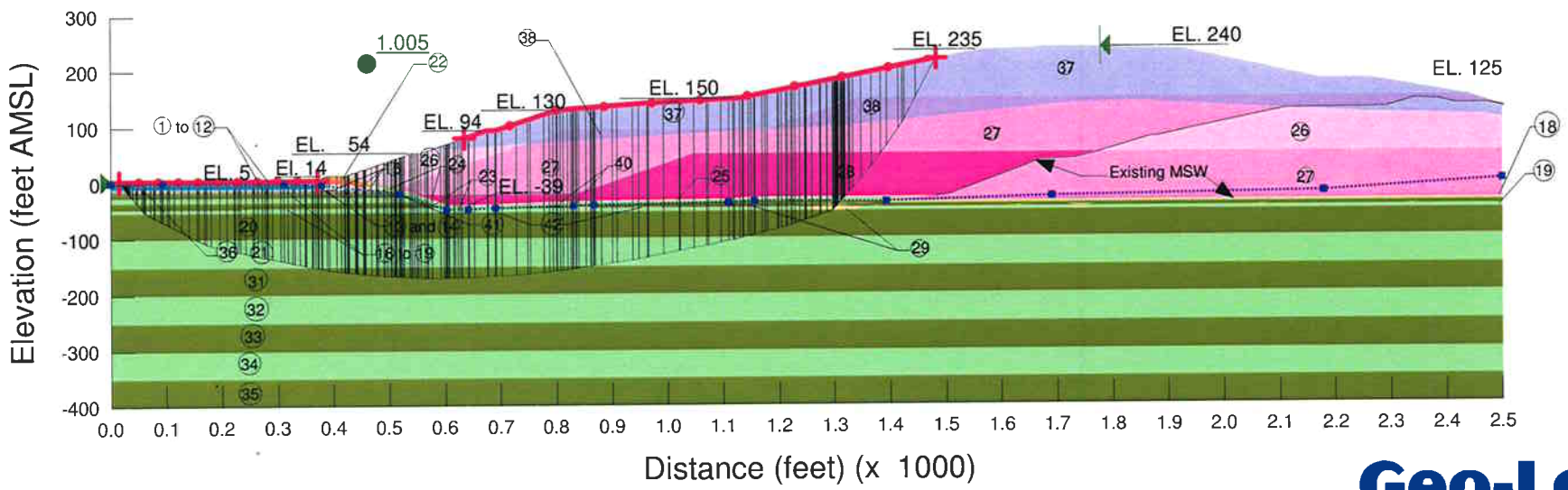
Material #: 39
Bedrock (Impenetrable)

Material #: 40
Drainage Gravel
Wt: 125
Phi: 38
C: 0

Material #: 41
Sand (non-liquefied) (2)
Model: Mohr-Coulomb
Unit Weight: 125 pcf
Phi: 32 °
Cohesion: 50 psf

Material #: 42
Sand (non-liquefied) (3)
Model: Mohr-Coulomb
Unit Weight: 125 pcf
Phi: 32 °
Cohesion: 50 psf

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials.



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Through MSW & OBA
Sta. 45+00 2004-0049 · Static Analysis
Sta. 45+00 MSW & OBA.gsz
Date: 6/1/2008
Time: 11:50:30 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand (non-liquefied)
Model: Mohr-Coulomb
Unit Weight: 125 pcf
Phi: 32 °
Cohesion: 50 psf

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 730 to 9880

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
MSW-Static
Wt: 80 to 105
Phi: Strength Fn: 1
C: Strength Fn: 1

Material #: 29
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 113
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 300

Material #: 37 and 38
MSW abover Permit-Static (80 pcf)
Wt: 80 to 90
Phi: Strength Fn: 1
C: Strength Fn: 2

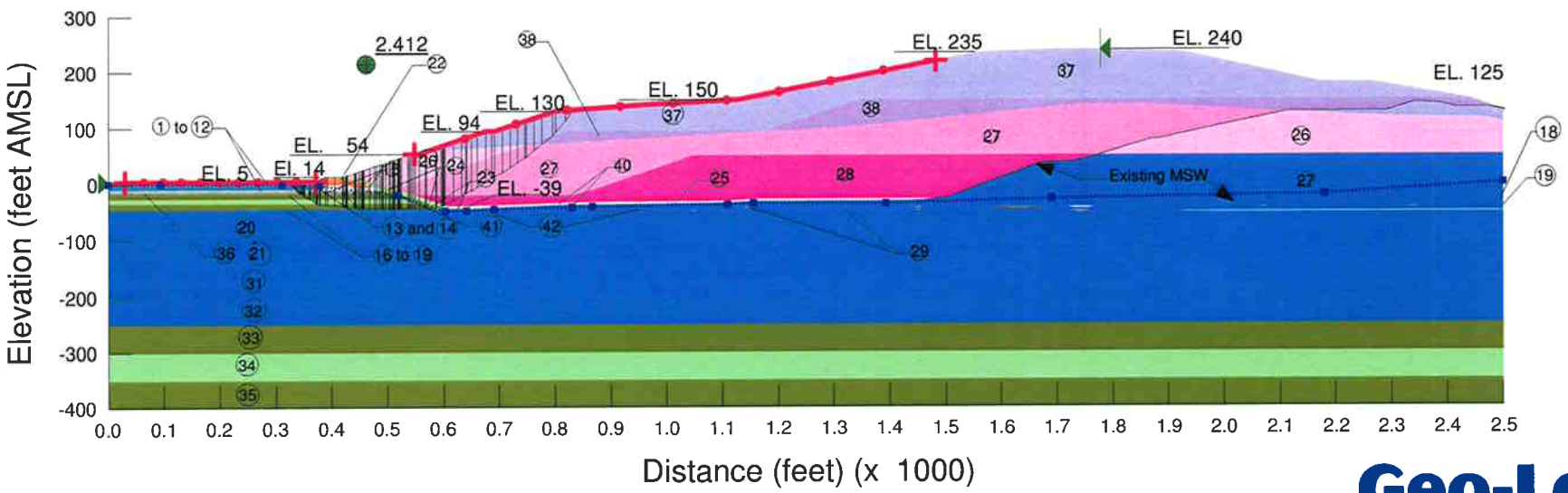
Material #: 39
Bedrock (Impenetrable)

Material #: 40
Drainage Gravel
Wt: 125
Phi: 38
C: 0

Material #: 41
Sand (non-liquefied) (2)
Model: Mohr-Coulomb
Unit Weight: 125 pcf
Phi: 32 °
Cohesion: 50 psf

Material #: 42
Sand (non-liquefied) (3)
Model: Mohr-Coulomb
Unit Weight: 125 pcf
Phi: 32 °
Cohesion: 50 psf

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Through MSW & OBA
Sta. 45+00 2004-0049 Pseudo-Static Analysis
Sta. 45+00 MSW & OBA_eq.gsz
Date: 6/2/2008
Time: 12:11:58 AM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0.227

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand (non-liquefied)
Model: Mohr-Coulomb
Unit Weight: 125 pcf
Phi: 32 °
Cohesion: 50 psf

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 730 to 9880

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
MSW-Dynamic
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 29
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 113
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 300

Material #: 37 and 38
MSW abover Permit-Dynamic (80 pcf)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

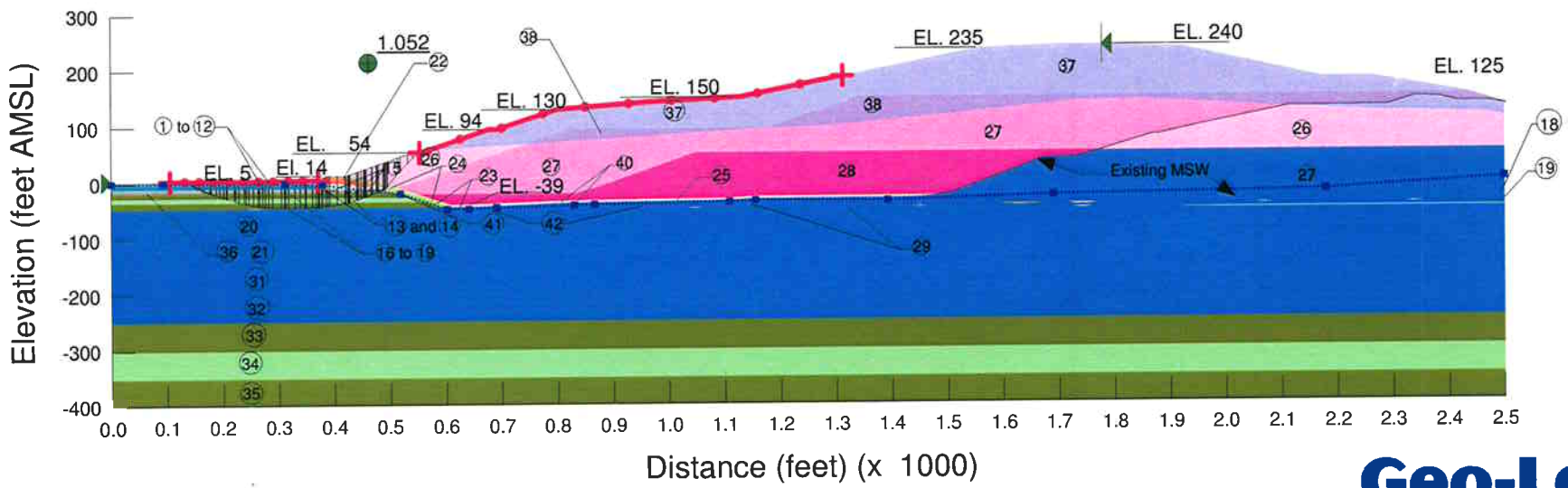
Material #: 39
Bedrock (Impenetrable)

Material #: 40
Drainage Gravel
Wt: 125
Phi: 38
C: 0

Material #: 41
Sand (non-liquefied) (2)
Model: Mohr-Coulomb
Unit Weight: 125 pcf
Phi: 32 °
Cohesion: 50 psf

Material #: 42
Sand (non-liquefied) (3)
Model: Mohr-Coulomb
Unit Weight: 125 pcf
Phi: 32 °
Cohesion: 50 psf

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials
are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Through MSW & YBM
Sta. 45+00 2004-0049 Static Analysis
Sta. 45+00 MSW & YBM.gsz
Date: 6/2/2008
Time: 12:21:42 AM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand (non-liquefied)
Model: Mohr-Coulomb
Unit Weight: 125 pcf
Phi: 32 °
Cohesion: 50 psf

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 730 to 9880

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
MSW-Static
Wt: 80 to 105
Phi: Strength Fn: 1
C: Strength Fn: 1

Material #: 29
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 113
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 300

Material #: 37 and 38
MSW abover Permit-Static (80 pcf)
Wt: 80 to 90
Phi: Strength Fn: 1
C: Strength Fn: 2

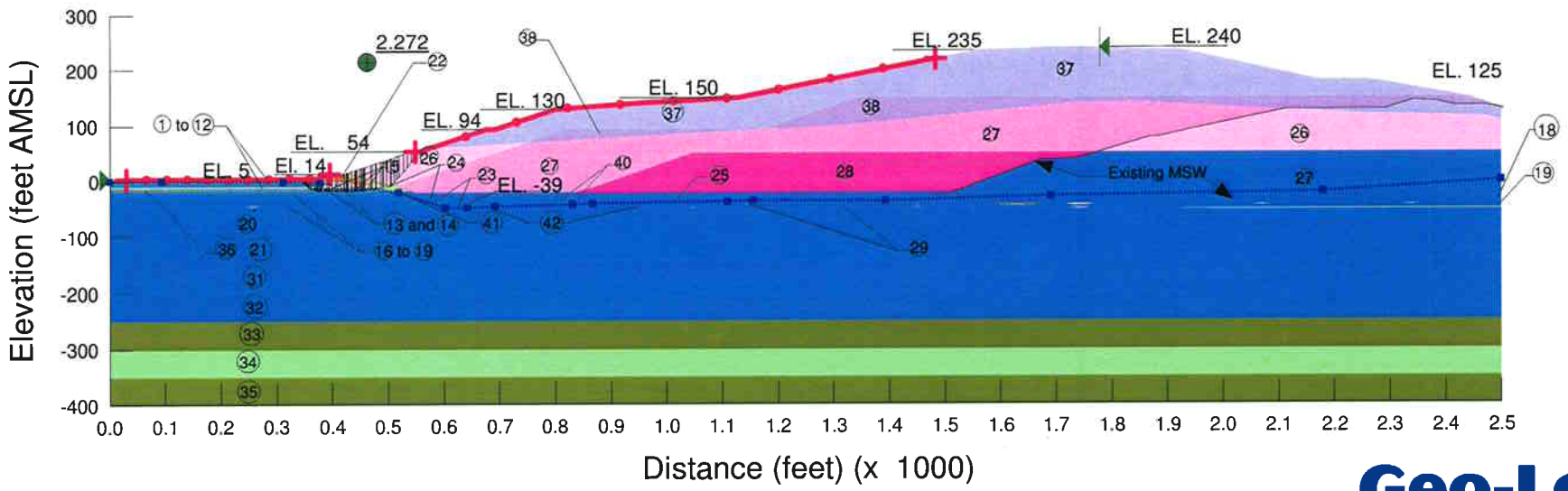
Material #: 39
Bedrock (Impenetrable)

Material #: 40
Drainage Gravel
Wt: 125
Phi: 38
C: 0

Material #: 41
Sand (non-liquefied) (2)
Model: Mohr-Coulomb
Unit Weight: 125 pcf
Phi: 32 °
Cohesion: 50 psf

Material #: 42
Sand (non-liquefied) (3)
Model: Mohr-Coulomb
Unit Weight: 125 pcf
Phi: 32 °
Cohesion: 50 psf

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials
are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Through MSW & YBM
Sta. 45+00 2004-0049 Pseudo-Static Analysis
Sta. 45+00 MSW & YBM_eq.gsz
Date: 6/2/2008
Time: 12:29:12 AM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0.182

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand (non-liquefied)
Model: Mohr-Coulomb
Unit Weight: 125 pcf
Phi: 32 °
Cohesion: 50 psf

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 730 to 9880

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
MSW-Dynamic
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 29
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 113
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 300

Material #: 37 and 38
MSW abover Permit-Dynamic (80 pcf)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

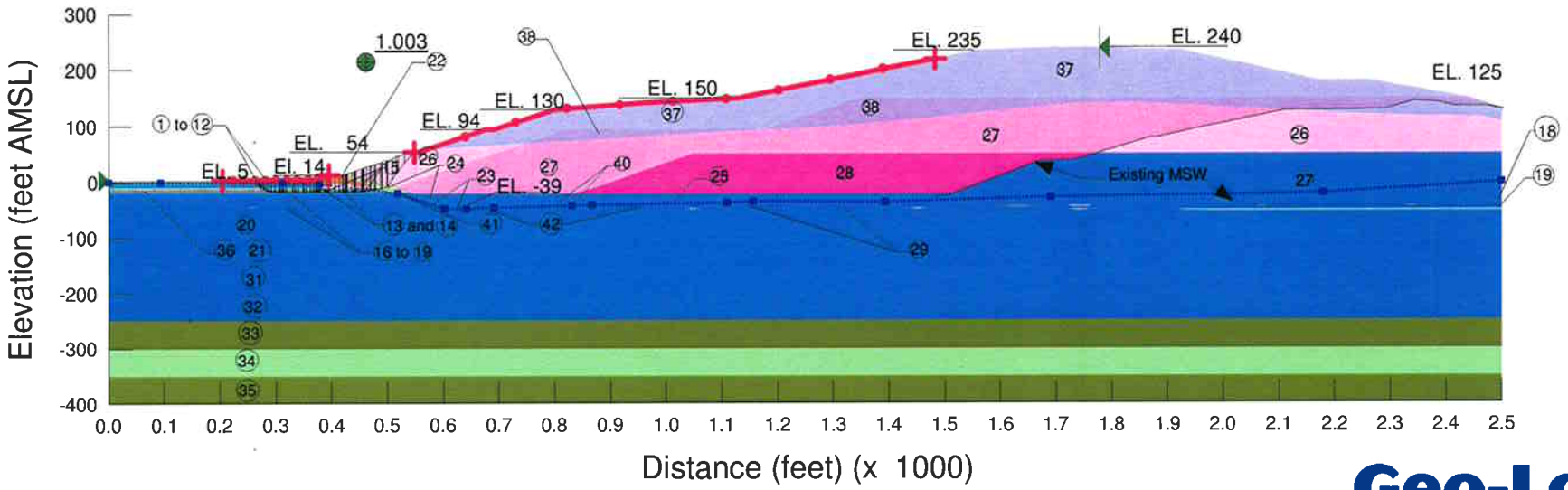
Material #: 39
Bedrock (Impenetrable)

Material #: 40
Drainage Gravel
Wt: 125
Phi: 38
C: 0

Material #: 41
Sand (non-liquefied) (2)
Model: Mohr-Coulomb
Unit Weight: 125 pcf
Phi: 32 °
Cohesion: 50 psf

Material #: 42
Sand (non-liquefied) (3)
Model: Mohr-Coulomb
Unit Weight: 125 pcf
Phi: 32 °
Cohesion: 50 psf

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Along Liner
Sta. 45+00 2004-0049 Static Analysis
Sta. 45+00 Liner.gsz
Date: 6/2/2008
Time: 12:33:16 AM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand (non-liquefied)
Model: Mohr-Coulomb
Unit Weight: 125 pcf
Phi: 32 °
Cohesion: 50 psf

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 730 to 9880

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
MSW-Static
Wt: 80 to 105
Phi: Strength Fn: 1
C: Strength Fn: 1

Material #: 29
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 113
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 300

Material #: 37 and 38
MSW abover Permit-Static (80 pcf)
Wt: 80 to 90
Phi: Strength Fn: 1
C: Strength Fn: 2

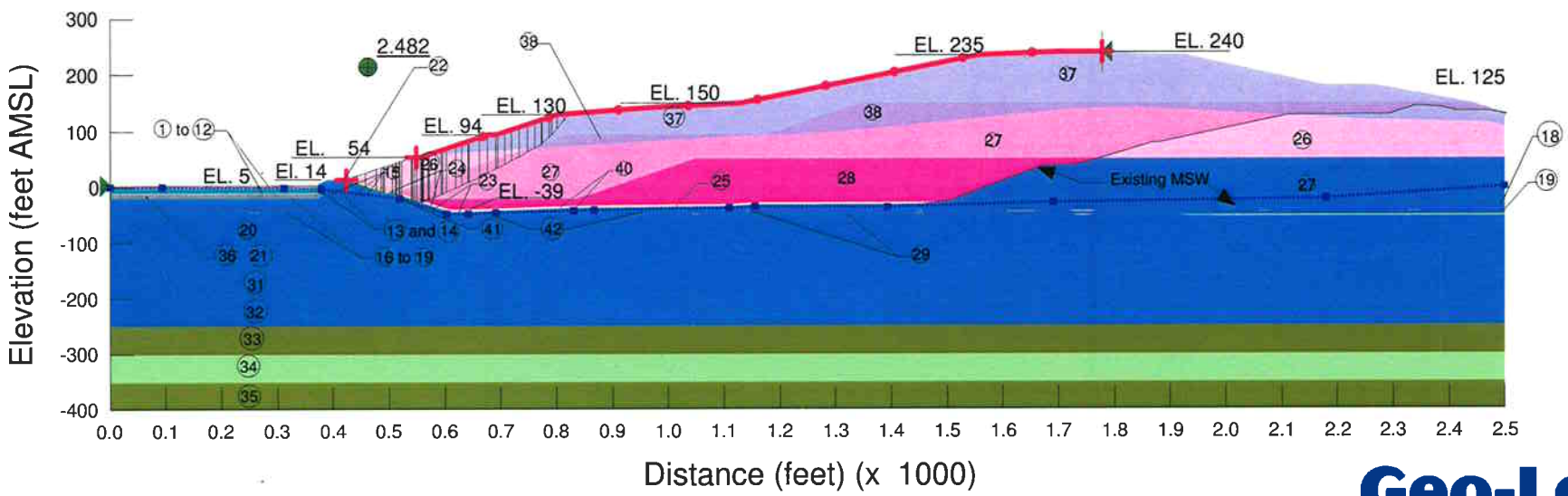
Material #: 39
Bedrock (Impenetrable)

Material #: 40
Drainage Gravel
Wt: 125
Phi: 38
C: 0

Material #: 41
Sand (non-liquefied) (2)
Model: Mohr-Coulomb
Unit Weight: 125 pcf
Phi: 32 °
Cohesion: 50 psf

Material #: 42
Sand (non-liquefied) (3)
Model: Mohr-Coulomb
Unit Weight: 125 pcf
Phi: 32 °
Cohesion: 50 psf

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials [redacted] are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Along Liner
Sta. 45+00 2004-0049 Pseudo-Static Analysis
Sta. 45+00 Liner_eq.gsz
Date: 6/2/2008
Time: 12:41:48 AM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0.244

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand (non-liquefied)
Model: Mohr-Coulomb
Unit Weight: 125 pcf
Phi: 32 °
Cohesion: 50 psf

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 730 to 9880

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
MSW-Dynamic
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 29
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 113
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 300

Material #: 37 and 38
MSW abover Permit-Dynamic (80 pcf)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

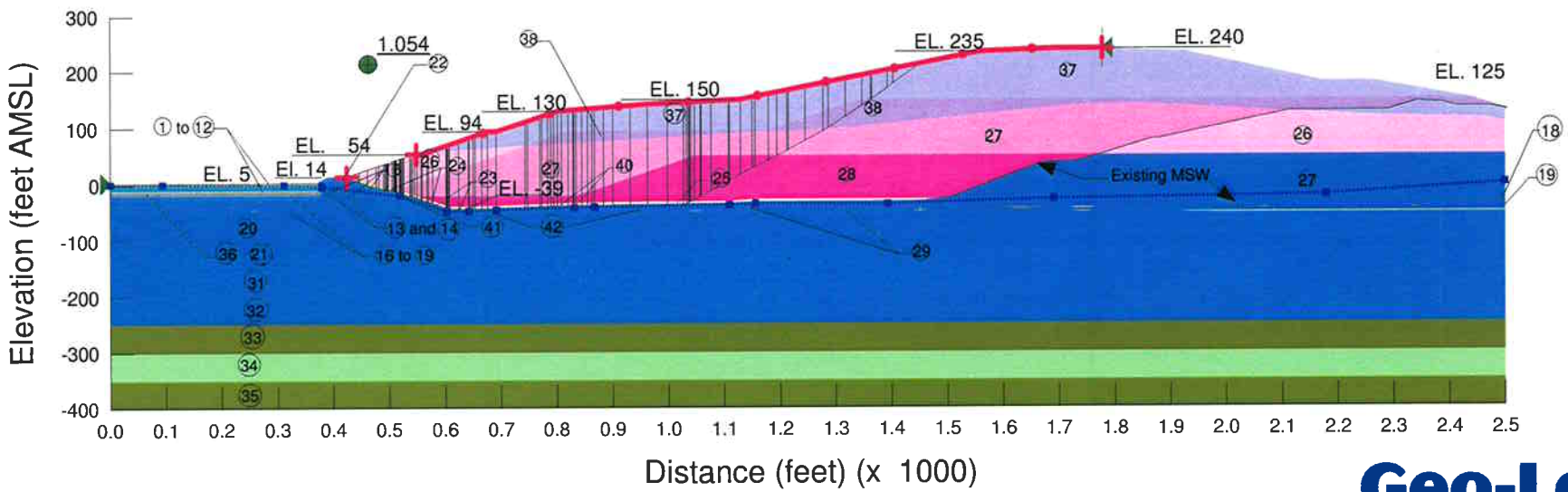
Material #: 39
Bedrock (Impenetrable)

Material #: 40
Drainage Gravel
Wt: 125
Phi: 38
C: 0

Material #: 41
Sand (non-liquefied) (2)
Model: Mohr-Coulomb
Unit Weight: 125 pcf
Phi: 32 °
Cohesion: 50 psf

Material #: 42
Sand (non-liquefied) (3)
Model: Mohr-Coulomb
Unit Weight: 125 pcf
Phi: 32 °
Cohesion: 50 psf

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials [redacted] are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Deep Foundation Failure Through Older Bay Alluvium
Sta. 50+46 2004-0049 Static Analysis
Sta. 50+46 OBA.gsz
Date: 6/3/2008
Time: 11:47:30 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand (non-liquefied)
Model: Mohr-Coulomb
Unit Weight: 125 pcf
Phi: 32 °
Cohesion: 50 psf

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 730 to 9880

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
MSW-Static
Wt: 80 to 105
Phi: Strength Fn: 1
C: Strength Fn: 1

Material #: 29
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 113
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 360

Material #: 37 and 38
MSW above Permit-Static (80 pcf)
Wt: 80 to 90
Phi: Strength Fn: 1
C: Strength Fn: 1

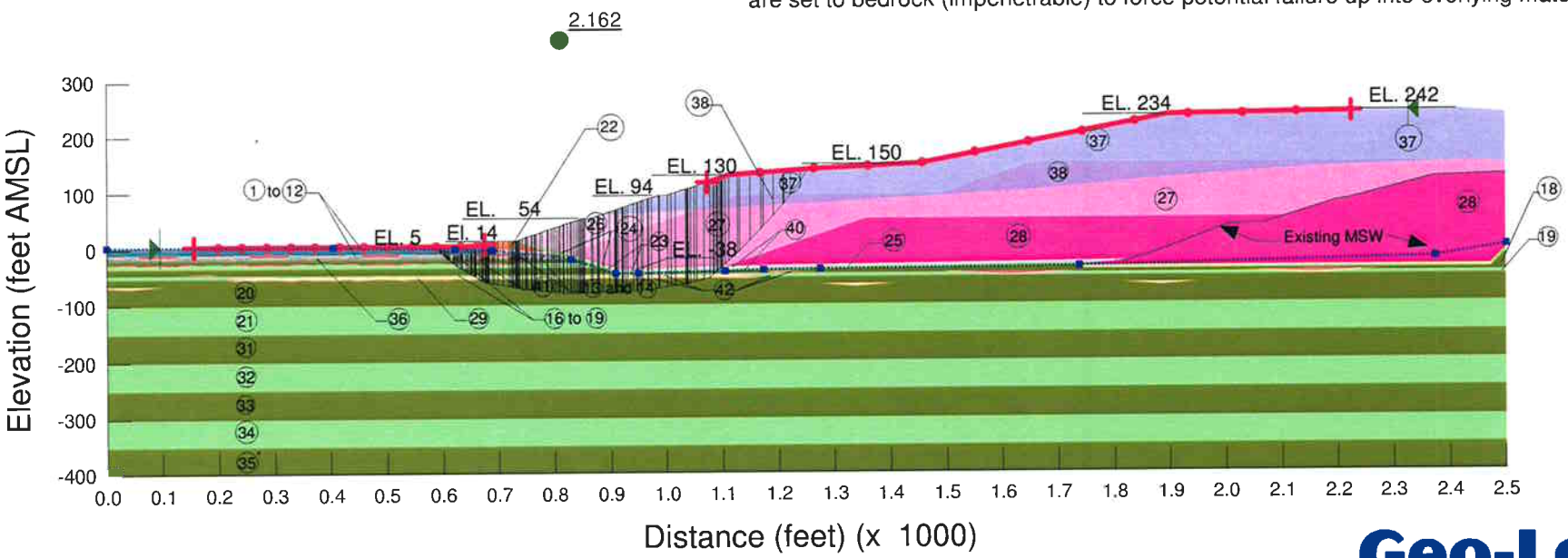
Material #: 39
Bedrock (Impenetrable)

Material #: 40
Drainage Gravel
Wt: 125
Phi: 38
C: 0

Material #: 41
Sand (non-liquefied) (2)
Model: Mohr-Coulomb
Unit Weight: 125 pcf
Phi: 32 °
Cohesion: 50 psf

Material #: 42
Sand (non-liquefied) (3)
Model: Mohr-Coulomb
Unit Weight: 125 pcf
Phi: 32 °Cohesion: 50 psf

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Deep Foundation Failure Through Older Bay Alluvium
Sta. 50+46 2004-0049 Pseudo-Static Analysis
Sta. 50+46 OBA_eq.gsz
Date: 6/3/2008
Time: 11:37:18 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0.156

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand (non-liquefied)
Model: Mohr-Coulomb
Unit Weight: 125 pcf
Phi: 32 °
Cohesion: 50 psf

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 730 to 9880

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
MSW-Dynamic
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 29
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 113
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 360

Material #: 37 and 38
MSW above Permit-Dynamic (80 pcf)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

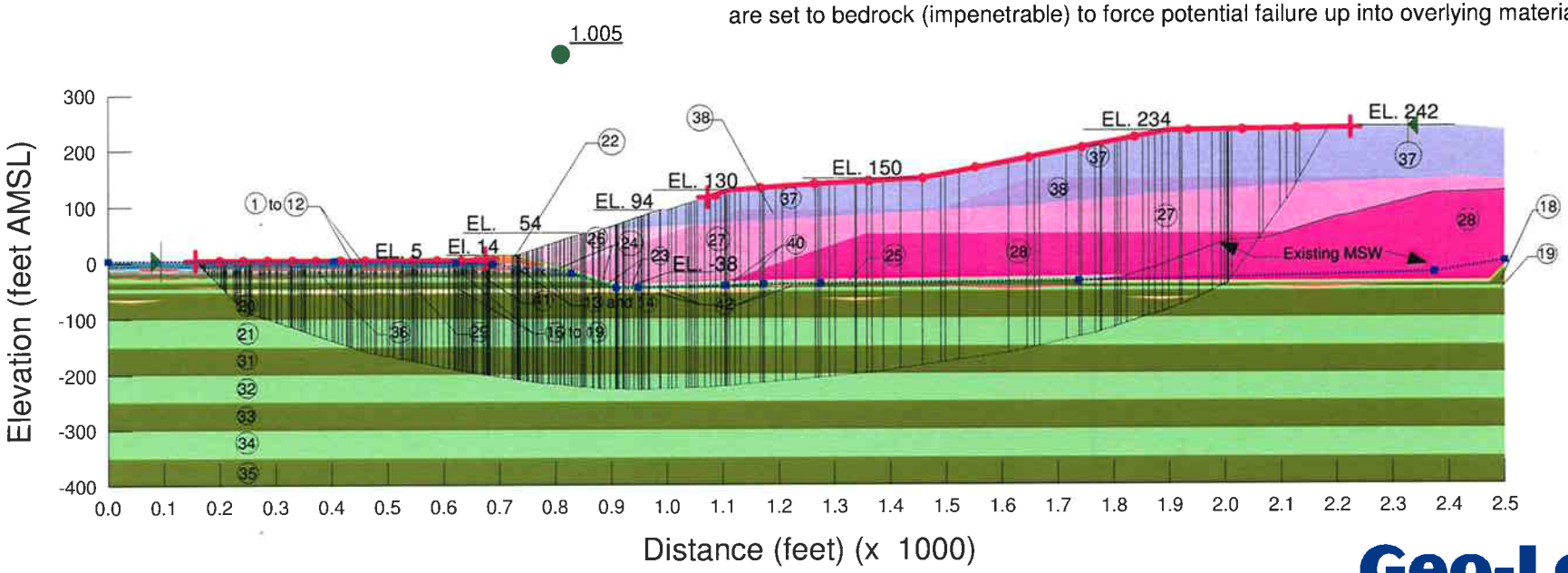
Material #: 39
Bedrock (Impenetrable)

Material #: 40
Drainage Gravel
Wt: 125
Phi: 38
C: 0

Material #: 41
Sand (non-liquefied) (2)
Model: Mohr-Coulomb
Unit Weight: 125 pcf
Phi: 32 °
Cohesion: 50 psf

Material #: 42
Sand (non-liquefied) (3)
Model: Mohr-Coulomb
Unit Weight: 125 pcf
Phi: 32 °Cohesion: 50 psf

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Through MSW & OBA
Sta. 50+46 2004-0049 Static Analysis
Sta. 50+46 MSW & OBA.gsz
Date: 6/4/2008
Time: 12:16:55 AM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand (non-liquefied)
Model: Mohr-Coulomb
Unit Weight: 125 pcf
Phi: 32 °
Cohesion: 50 psf

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 730 to 9880

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
MSW-Static
Wt: 80 to 105
Phi: Strength Fn: 1
C: Strength Fn: 1

Material #: 29
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 113
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 360

Material #: 37 and 38
MSW above Permit-Static (80 pcf)
Wt: 80 to 90
Phi: Strength Fn: 1
C: Strength Fn: 1

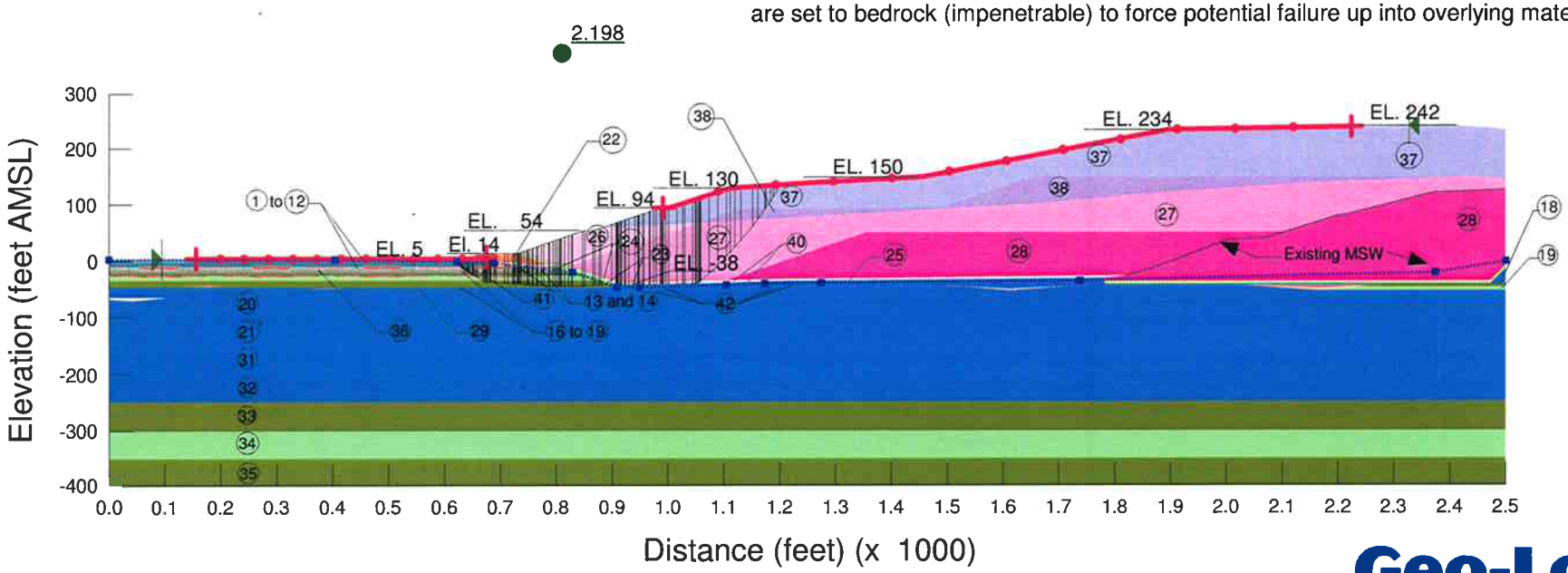
Material #: 39
Bedrock (Impenetrable)

Material #: 40
Drainage Gravel
Wt: 125
Phi: 38
C: 0

Material #: 41
Sand (non-liquefied) (2)
Model: Mohr-Coulomb
Unit Weight: 125 pcf
Phi: 32 °
Cohesion: 50 psf

Material #: 42
Sand (non-liquefied) (3)
Model: Mohr-Coulomb
Unit Weight: 125 pcf
Phi: 32 °Cohesion: 50 psf

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Through MSW & OBA
Sta. 50+46 2004-0049 Pseudo-Static Analysis
Sta. 50+46 MSW & OBA_eq.gsz
Date: 6/4/2008
Time: 12:12:17 AM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0.235

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand (non-liquefied)
Model: Mohr-Coulomb
Unit Weight: 125 pcf
Phi: 32 °
Cohesion: 50 psf

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 730 to 9880

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
MSW-Dynamic
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 29
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 113
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 360

Material #: 37 and 38
MSW above Permit-Dynamic (80 pcf)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

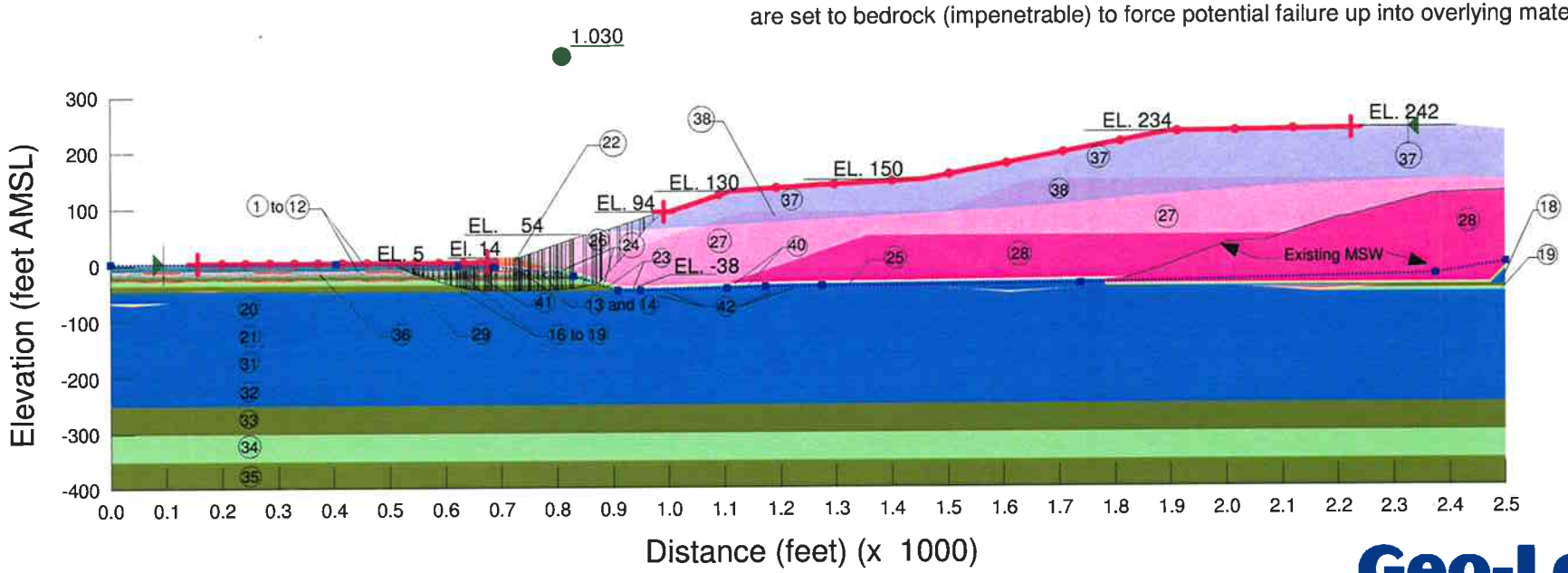
Material #: 39
Bedrock (Impenetrable)

Material #: 40
Drainage Gravel
Wt: 125
Phi: 38
C: 0

Material #: 41
Sand (non-liquefied) (2)
Model: Mohr-Coulomb
Unit Weight: 125 pcf
Phi: 32 °
Cohesion: 50 psf

Material #: 42
Sand (non-liquefied) (3)
Model: Mohr-Coulomb
Unit Weight: 125 pcf
Phi: 32 °Cohesion: 50 psf

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Through MSW & YBM
Sta. 50+46 2004-0049 Static Analysis
Sta. 50+46 MSW & YBM.gsz
Date: 6/6/2008
Time: 8:04:29 AM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand (non-liquefied)
Model: Mohr-Coulomb
Unit Weight: 125 pcf
Phi: 32 °
Cohesion: 50 psf

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 730 to 9880

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
MSW-Static
Wt: 80 to 105
Phi: Strength Fn: 1
C: Strength Fn: 1

Material #: 29
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 113
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 360

Material #: 37 and 38
MSW above Permit-Static (80 pcf)
Wt: 80 to 90
Phi: Strength Fn: 1
C: Strength Fn: 1

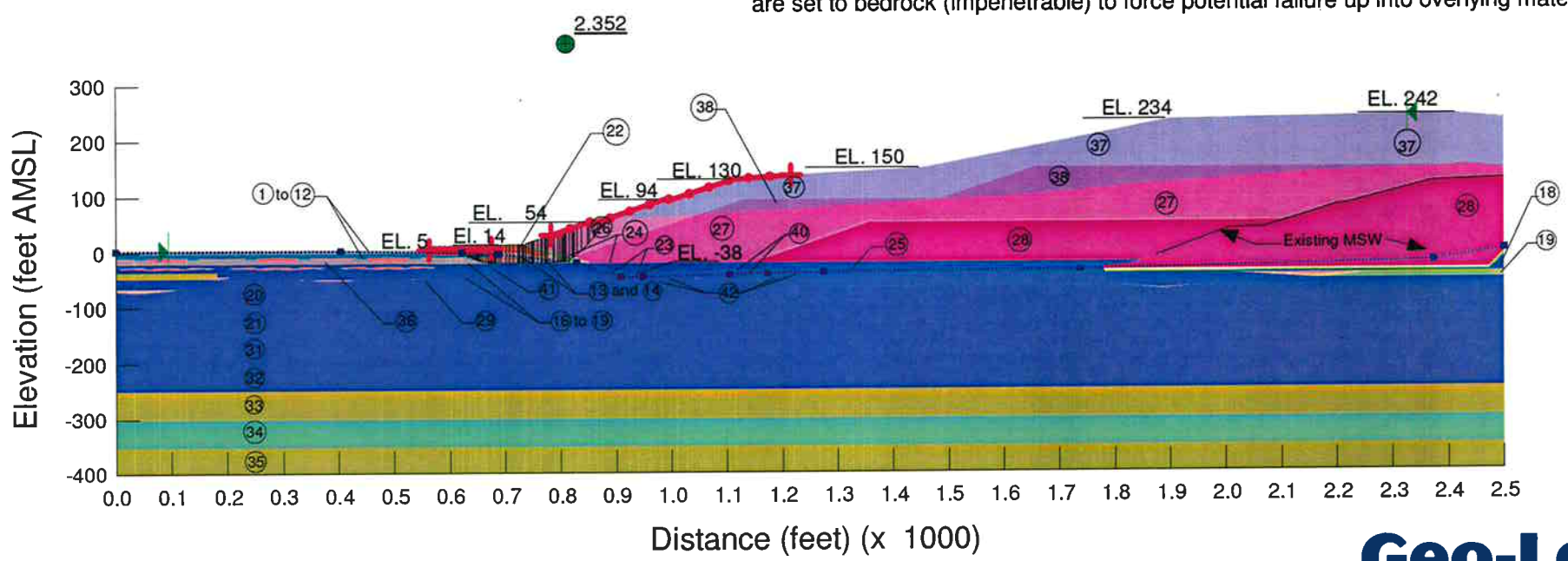
Material #: 39
Bedrock (Impenetrable)

Material #: 40
Drainage Gravel
Wt: 125
Phi: 38
C: 0

Material #: 41
Sand (non-liquefied) (2)
Model: Mohr-Coulomb
Unit Weight: 125 pcf
Phi: 32 °
Cohesion: 50 psf

Material #: 42
Sand (non-liquefied) (3)
Model: Mohr-Coulomb
Unit Weight: 125 pcf
Phi: 32 °Cohesion: 50 psf

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials [redacted] are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Through MSW & YBM
Sta. 50+46 2004-0049 Pseudo-Static Analysis
Sta. 50+46 MSW & YBM_eq.gsz
Date: 6/6/2008
Time: 7:56:29 AM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0.18

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand (non-liquefied)
Model: Mohr-Coulomb
Unit Weight: 125 pcf
Phi: 32 °
Cohesion: 50 psf

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 730 to 9880

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
MSW-Dynamic
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 29
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 113
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 360

Material #: 37 and 38
MSW above Permit-Dynamic (80 pcf)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

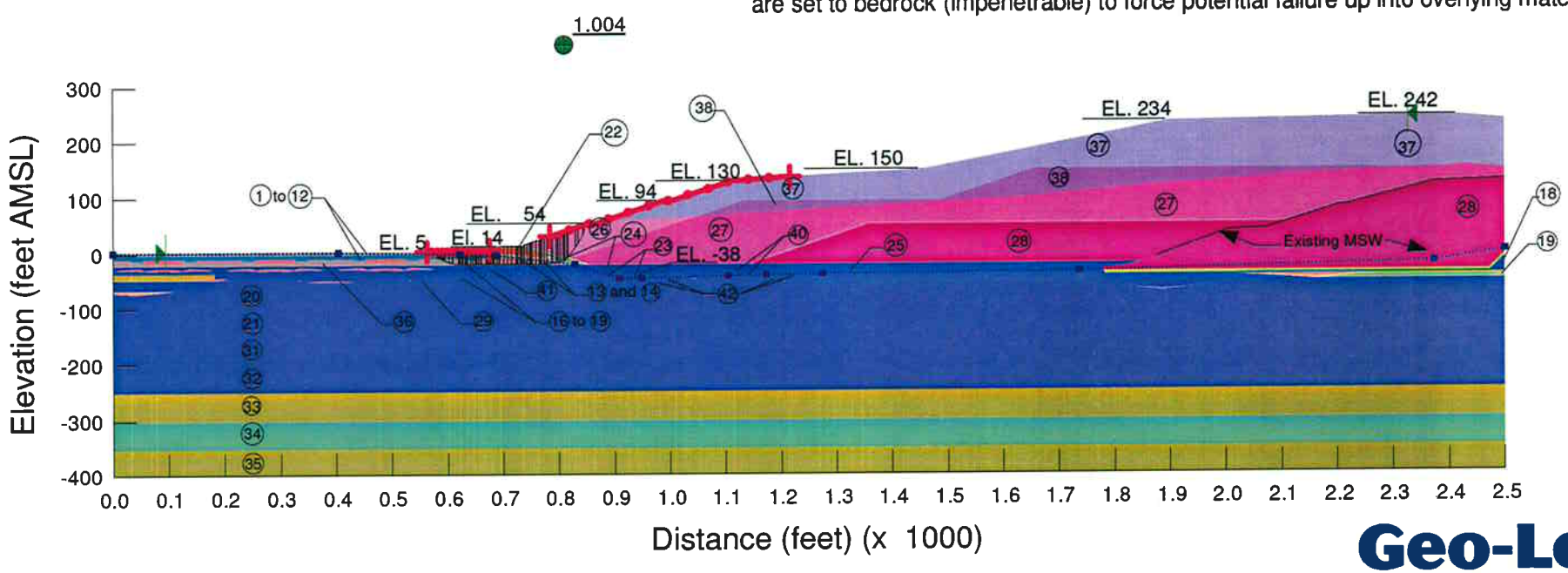
Material #: 39
Bedrock (Impenetrable)

Material #: 40
Drainage Gravel
Wt: 125
Phi: 38
C: 0

Material #: 41
Sand (non-liquefied) (2)
Model: Mohr-Coulomb
Unit Weight: 125 pcf
Phi: 32 °
Cohesion: 50 psf

Material #: 42
Sand (non-liquefied) (3)
Model: Mohr-Coulomb
Unit Weight: 125 pcf
Phi: 32 °Cohesion: 50 psf

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Along Liner
Sta. 50+46 2004-0049 Static Analysis
Sta. 50+46 Liner.gsz
Date: 6/4/2008
Time: 12:24:40 AM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand (non-liquefied)
Model: Mohr-Coulomb
Unit Weight: 125 pcf
Phi: 32 °
Cohesion: 50 psf

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 730 to 9880

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
MSW-Static
Wt: 80 to 105
Phi: Strength Fn: 1
C: Strength Fn: 1

Material #: 29
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 113
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 360

Material #: 37 and 38
MSW above Permit-Static (80 pcf)
Wt: 80 to 90
Phi: Strength Fn: 1
C: Strength Fn: 1

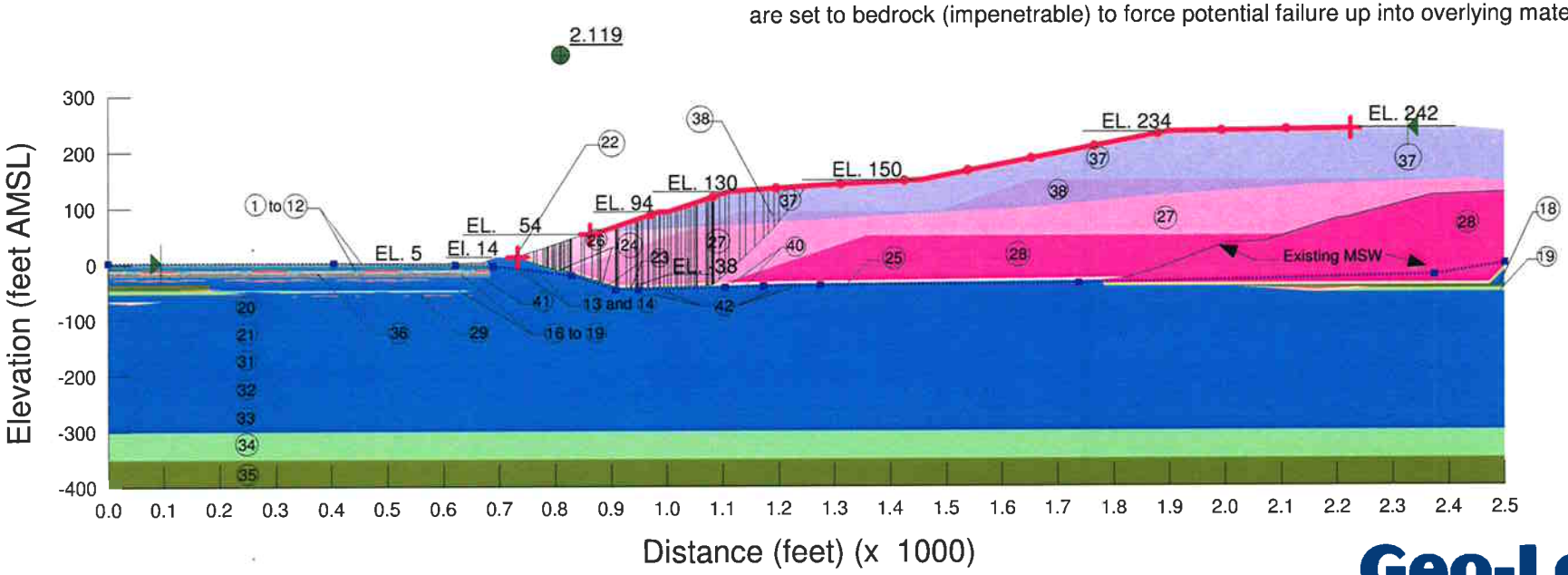
Material #: 39
Bedrock (Impenetrable)

Material #: 40
Drainage Gravel
Wt: 125
Phi: 38
C: 0

Material #: 41
Sand (non-liquefied) (2)
Model: Mohr-Coulomb
Unit Weight: 125 pcf
Phi: 32 °
Cohesion: 50 psf

Material #: 42
Sand (non-liquefied) (3)
Model: Mohr-Coulomb
Unit Weight: 125 pcf
Phi: 32 °Cohesion: 50 psf

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials
are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Along Liner
Sta. 50+46 2004-0049 Pseudo-Static Analysis
Sta. 50+46 Liner_eq.gsz
Date: 6/4/2008
Time: 12:21:22 AM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0.237

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand (non-liquefied)
Model: Mohr-Coulomb
Unit Weight: 125 pcf
Phi: 32 °
Cohesion: 50 psf

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 730 to 9880

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
MSW-Dynamic
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 29
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 113
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 360

Material #: 37 and 38
MSW above Permit-Dynamic (80 pcf)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

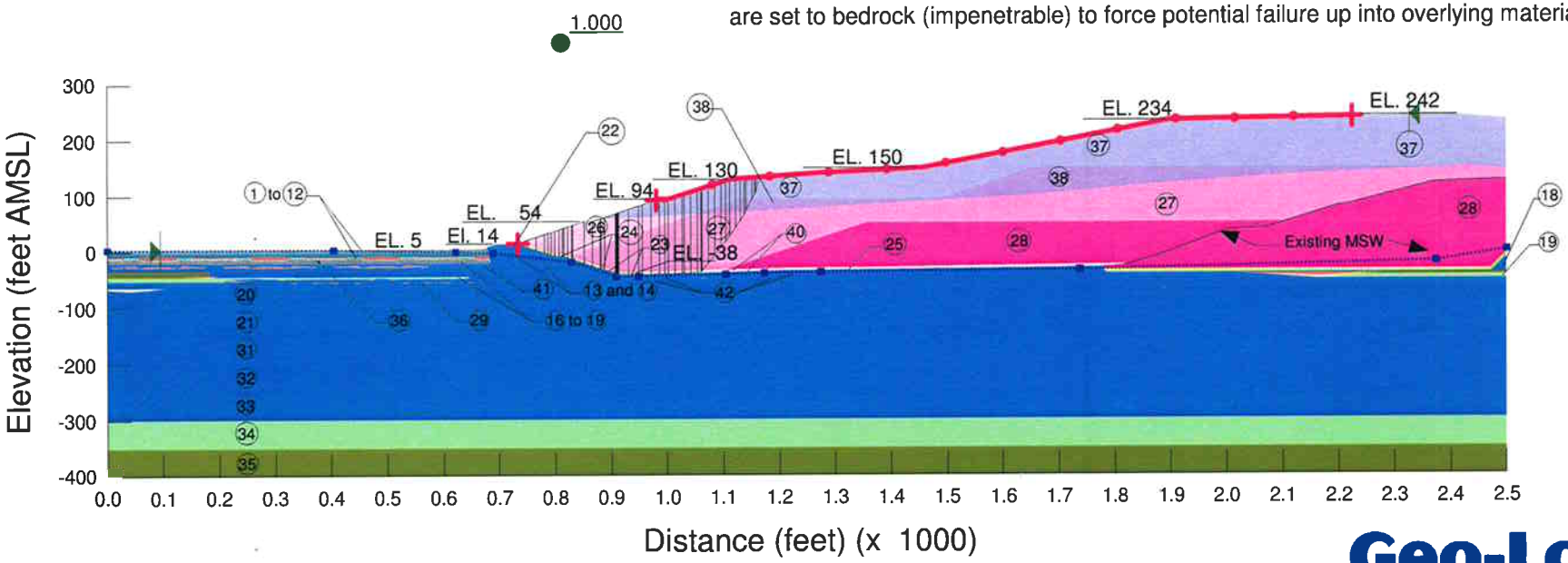
Material #: 39
Bedrock (Impenetrable)

Material #: 40
Drainage Gravel
Wt: 125
Phi: 38
C: 0

Material #: 41
Sand (non-liquefied) (2)
Model: Mohr-Coulomb
Unit Weight: 125 pcf
Phi: 32 °
Cohesion: 50 psf

Material #: 42
Sand (non-liquefied) (3)
Model: Mohr-Coulomb
Unit Weight: 125 pcf
Phi: 32 °Cohesion: 50 psf

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Deep Foundation Failure Through Older Bay Alluvium
Sta. 65+00 2004-0049 Static Analysis
Sta. 65+00 OBA.gsz
Date: 6/2/2008
Time: 10:54:05 AM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 700 to 9880

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste-Static (2)
Wt: 80 to 105
Phi: Strength Fn: 1
C: Strength Fn: 1

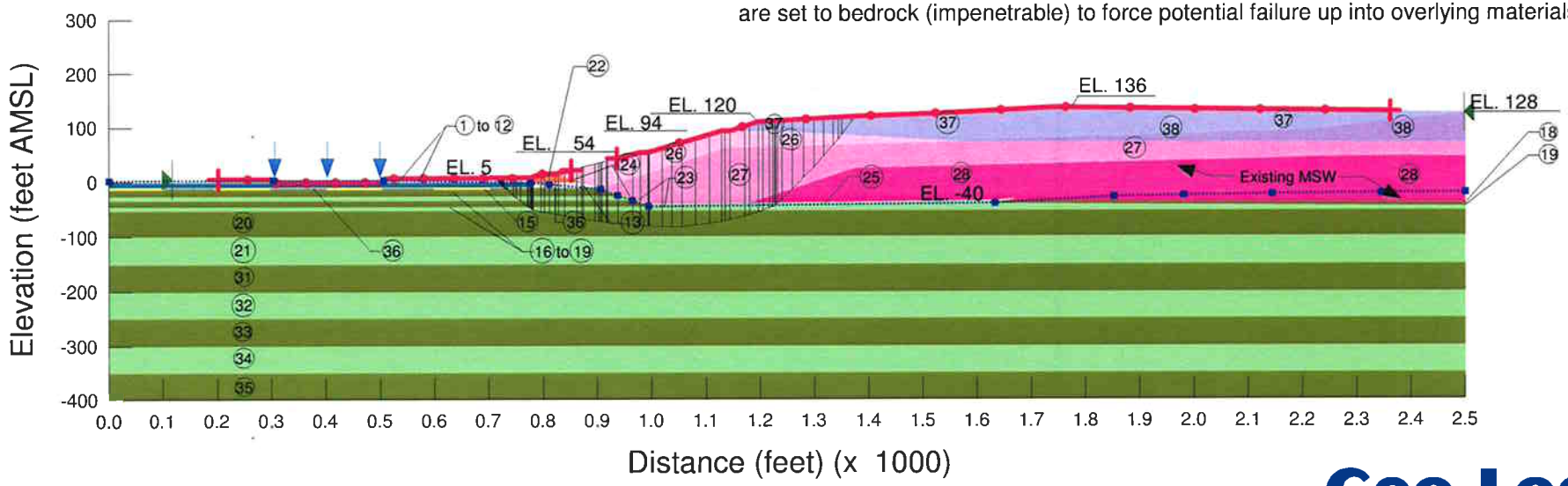
Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 112
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 300

Material #: 37 and 38
Municipal Solid Waste-Static (5)
Wt: 80 to 90
Phi: Strength Fn: 1
C: Strength Fn: 1

Material #: 39
Bedrock (Impenetrable)

2.525

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Deep Foundation Failure Through Older Bay Alluvium
Sta. 65+00 2004-0049 Pseudo-Static Analysis
Sta. 65+00 OBA_eq.gsz
Date: 6/2/2008
Time: 11:01:58 AM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0.173

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 700 to 9880

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste-Dynamic (2)
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

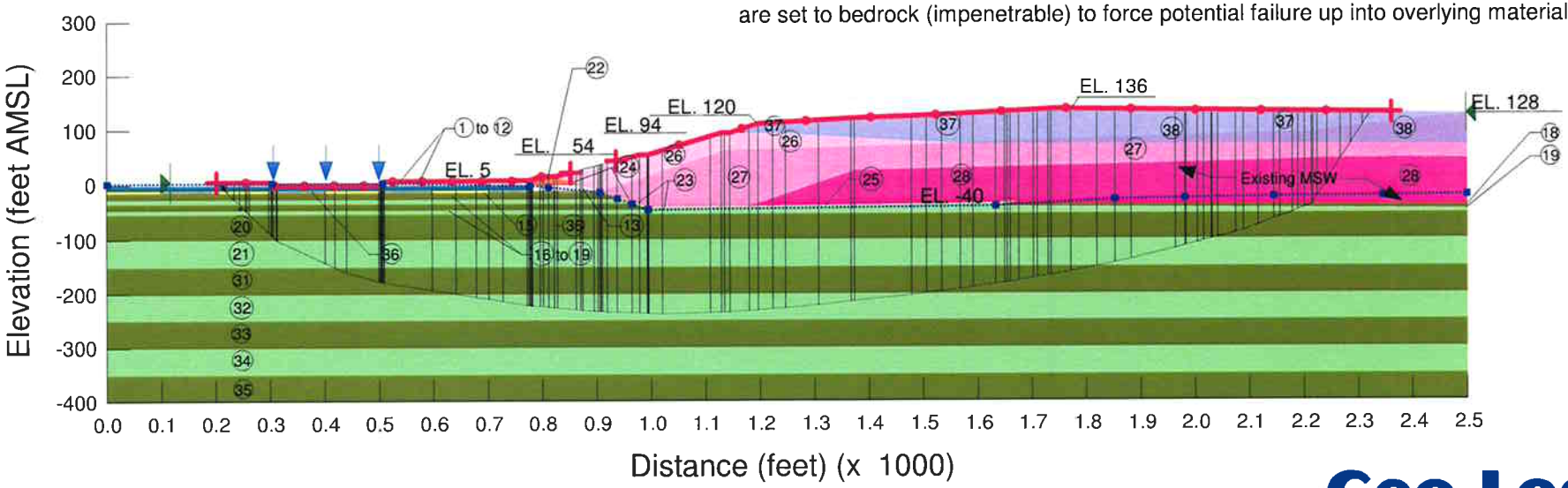
Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 112
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 300

Material #: 37 and 38
Municipal Solid Waste-Dynamic (5)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 39
Bedrock (Impenetrable)

1.009

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Through MSW & OBA
Sta. 65+00 2004-0049 Static Analysis
Sta. 65+00 MSW & OBA.gsz
Date: 6/2/2008
Time: 11:07:45 AM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 700 to 9880

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste-Static (2)
Wt: 80 to 105
Phi: Strength Fn: 1
C: Strength Fn: 1

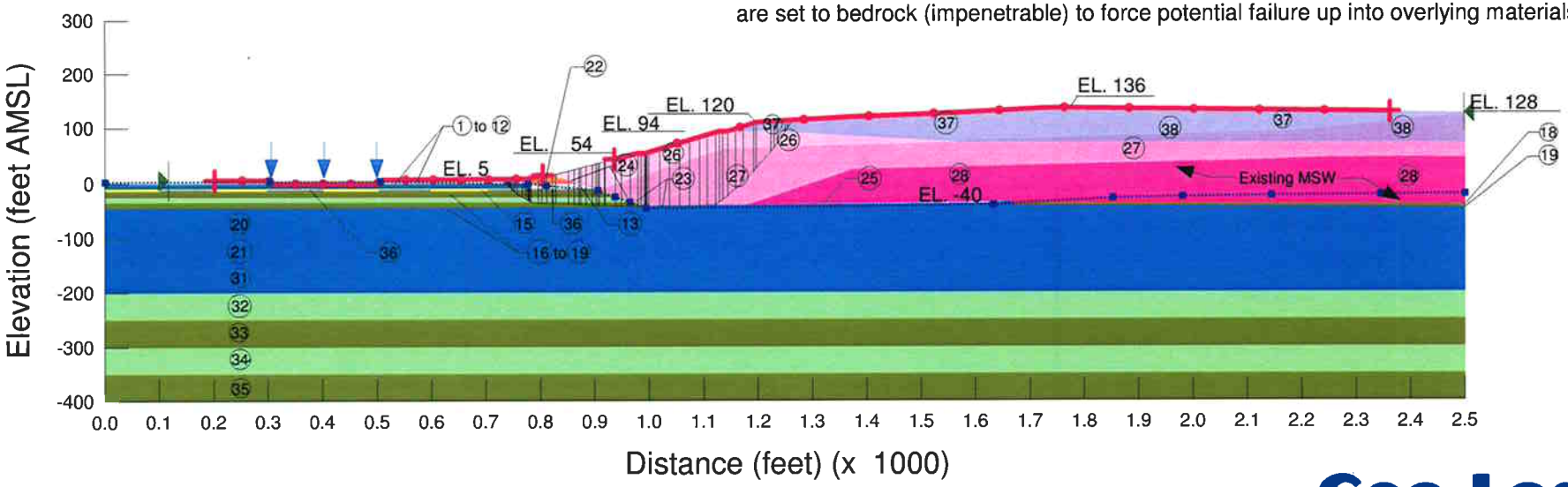
Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 112
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 300

Material #: 37 and 38
Municipal Solid Waste-Static (5)
Wt: 80 to 90
Phi: Strength Fn: 1
C: Strength Fn: 1

Material #: 39
Bedrock (Impenetrable)

2.536

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Through MSW & OBA
Sta. 65+00 2004-0049 Pseudo-Static Analysis
Sta. 65+00 MSW & OBA_eq.gsz
Date: 6/8/2008
Time: 12:24:49 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0.22

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 700 to 9880

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste Dynamic (2)
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

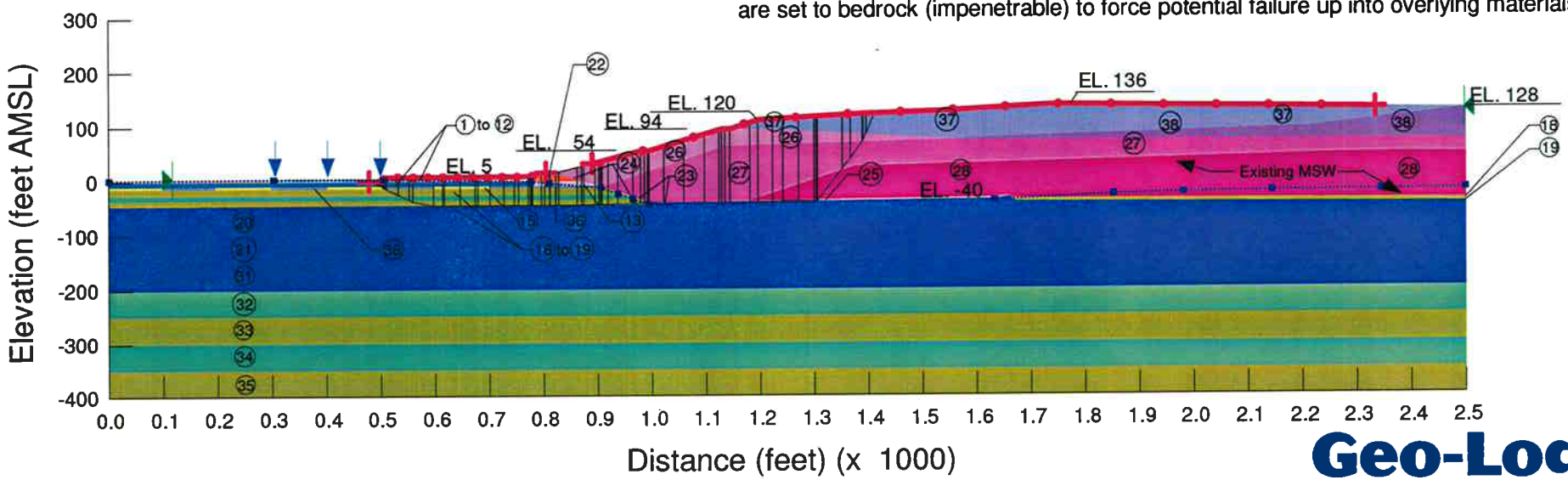
Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 112
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 300

Material #: 37 and 38
Municipal Solid Waste-Dynamic (5)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 39
Bedrock (Impenetrable)

1.000

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Through MSW & YBM
Sta. 65+00 2004-0049 Pseudo-Static Analysis
Sta. 65+00 MSW & YBM.gsz
Date: 6/8/2008
Time: 3:31:34 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 700 to 9880

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste-Static (2)
Wt: 80 to 105
Phi: Strength Fn: 1
C: Strength Fn: 1

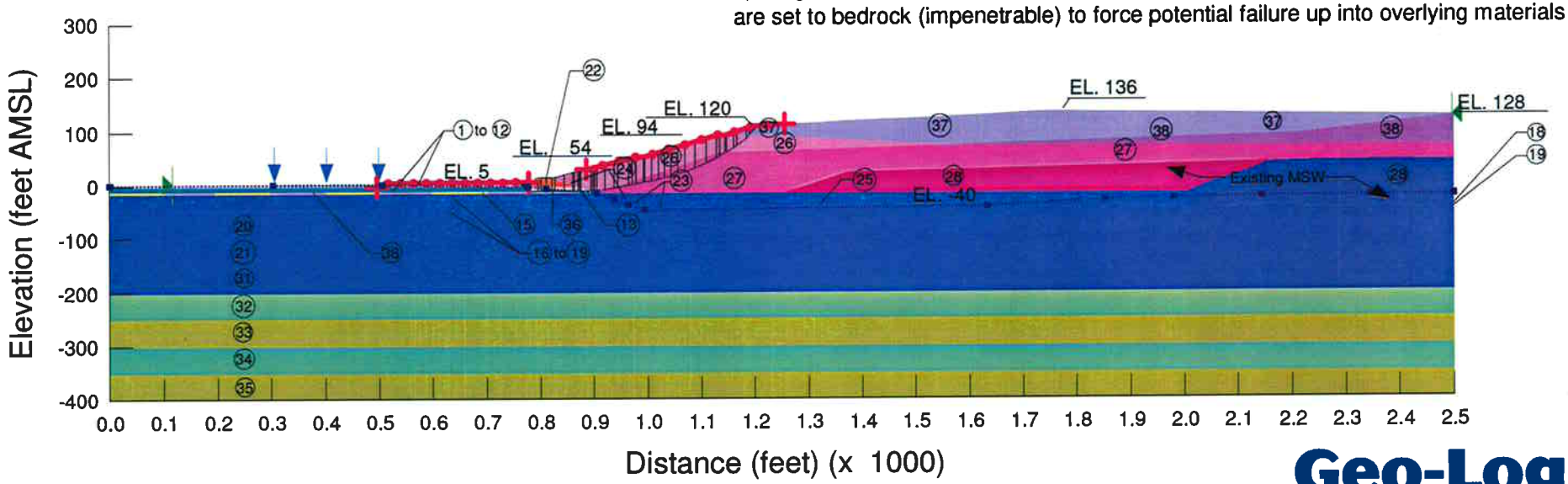
Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 112
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 300

Material #: 37 and 38
Municipal Solid Waste-Static (5)
Wt: 80 to 90
Phi: Strength Fn: 1
C: Strength Fn: 1

Material #: 39
Bedrock (Impenetrable)

3.359

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Through MSW & YBM
Sta. 65+00 2004-0049 Pseudo-Static Analysis
Sta. 65+00 MSW & YBM_eq.gsz
Date: 6/8/2008
Time: 11:53:20 AM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0.23

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 700 to 9880

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste-Dynamic (2)
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

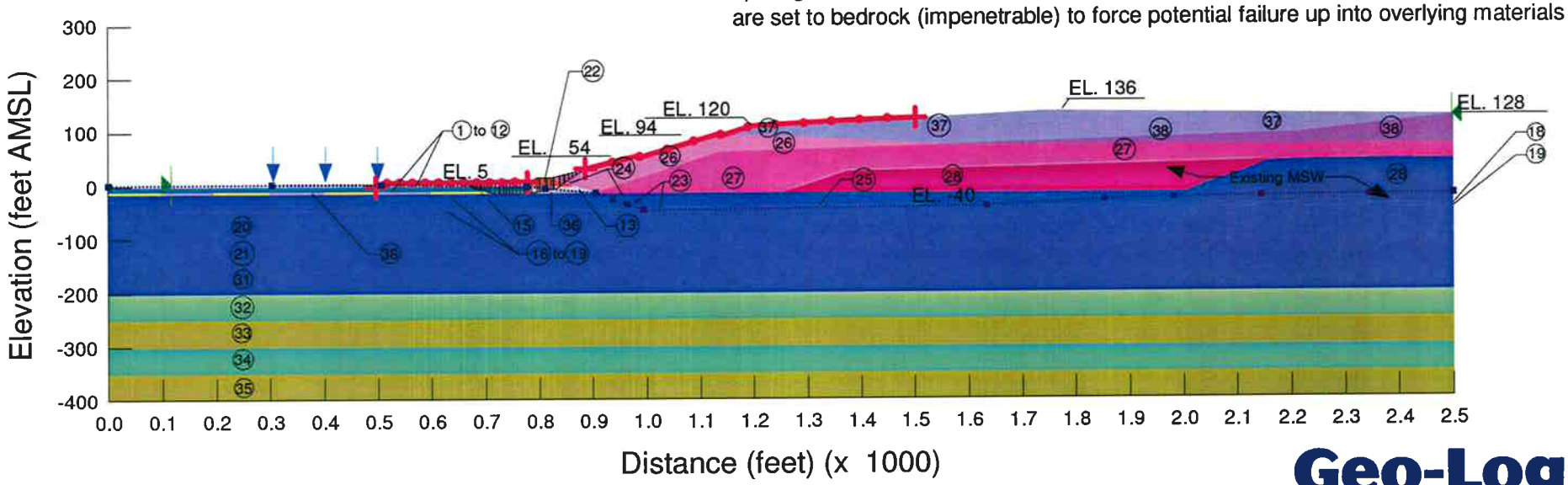
Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 112
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 300

Material #: 37 and 38
Municipal Solid Waste-Dynamic (5)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 39
Bedrock (Impenetrable)

1.010

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Along Liner
Sta. 65+00 2004-0049 Static Analysis
Sta. 65+00 Liner.gsz
Date: 6/2/2008
Time: 11:52:02 AM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 700 to 9880

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste-Static (2)
Wt: 80 to 105
Phi: Strength Fn: 1
C: Strength Fn: 1

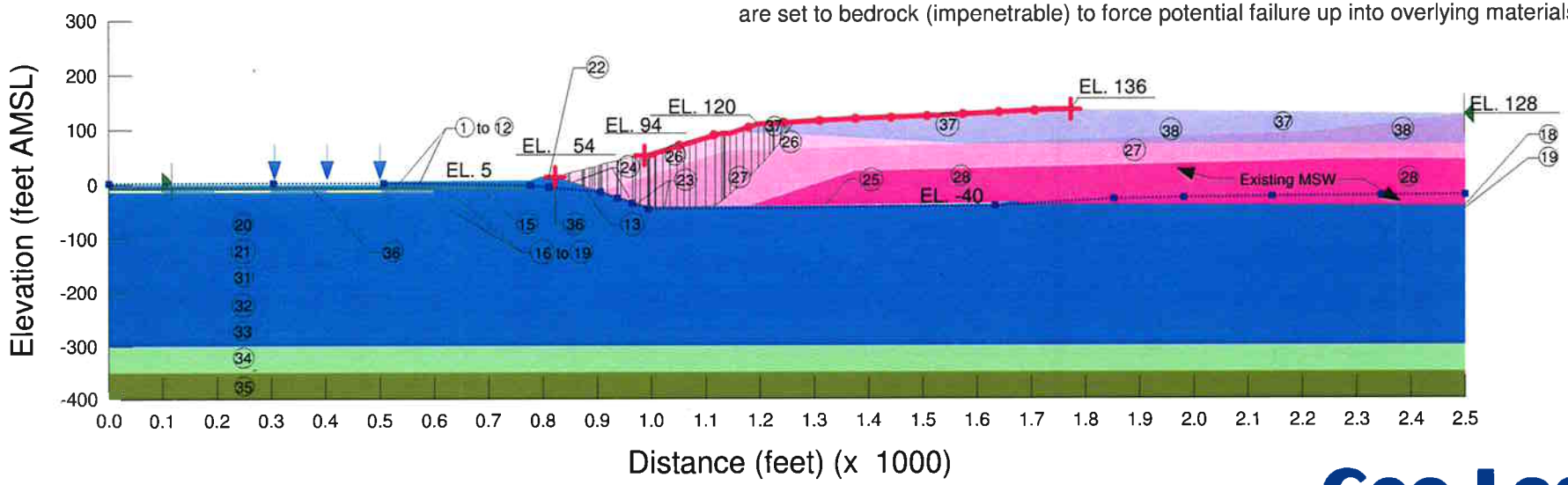
Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 112
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 300

Material #: 37 and 38
Municipal Solid Waste-Static (5)
Wt: 80 to 90
Phi: Strength Fn: 1
C: Strength Fn: 1

Material #: 39
Bedrock (Impenetrable)

2.397

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Along Liner
Sta. 65+00 2004-0049 Pseudo-Static Analysis
Sta. 65+00 Liner_eq.gsz
Date: 6/2/2008
Time: 11:56:24 AM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0.233

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 700 to 9880

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste-Dynamic (2)
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

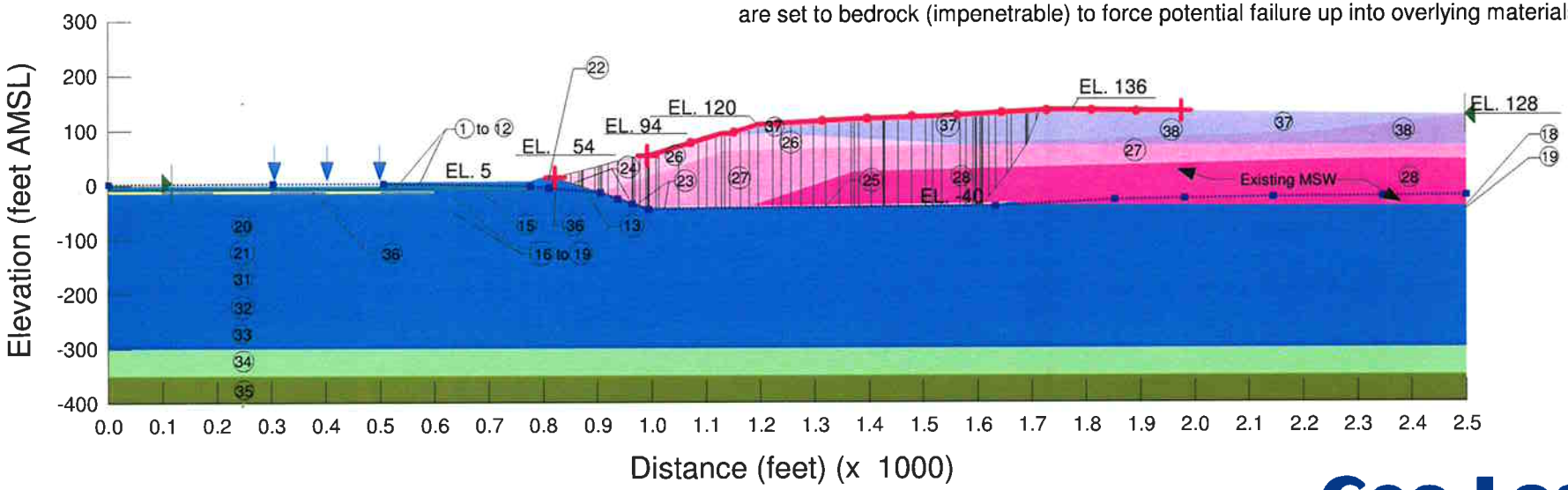
Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 112
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 300

Material #: 37 and 38
Municipal Solid Waste-Dynamic (5)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 39
Bedrock (Impenetrable)

0.999

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Deep Foundation Failure Thru Older Bay Alluvium
Sta. 96+00 2004-0049 Static Analysis
Sta.96+00 OBA.gsz
Date: 6/2/2008
Time: 2:16:10 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud
OCR=1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 660

Material #: 15
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 750 to 9950

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste-Static (2)
Wt: 80 to 105
Phi: Strength Fn: 1
C: Strength Fn: 1

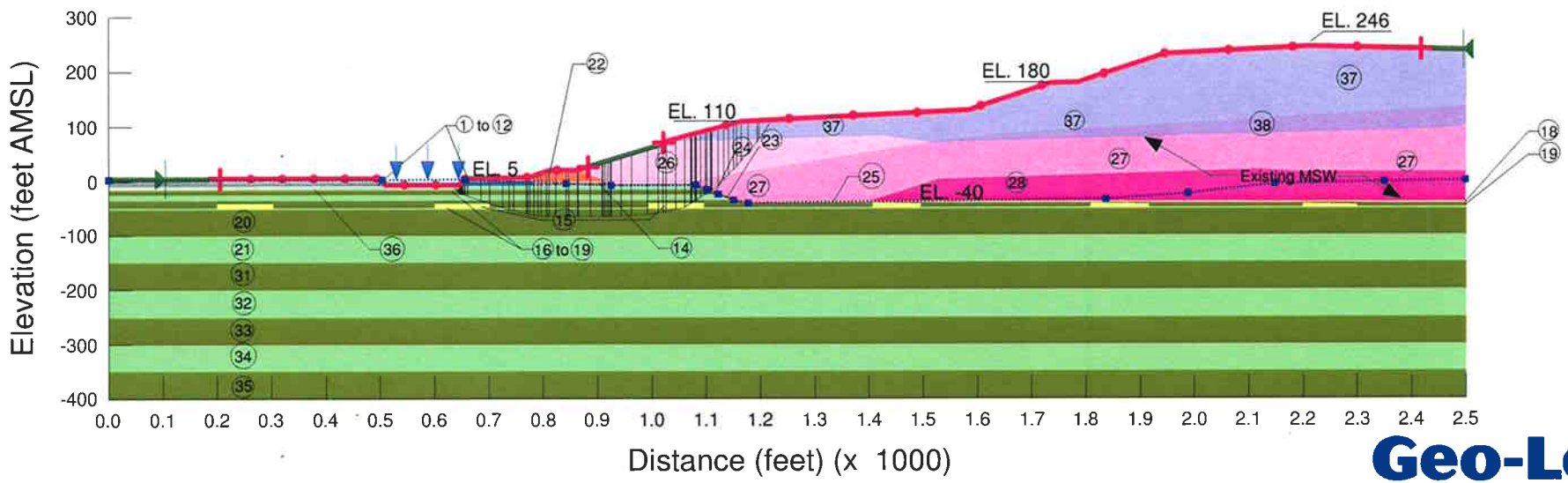
Material #: 36
Older Bay Alluvium
OCR = 2.0
Wt: 127
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 450

Material #: 37 and 38
Municipal Solid Waste-Static (5)
Wt: 80 to 90
Phi: Strength Fn: 1
C: Strength Fn: 1

Material #: 39
Bedrock (Impenetrable)

2.268

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Deep Foundation Failure Thru Older Bay Alluvium
Sta. 96+00 2004-0049 Pseudo-Static Analysis
Sta.96+00 OBA_eq.gsz
Date: 6/2/2008
Time: 2:23:59 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0.154

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud
OCR=1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 660

Material #: 15
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 750 to 9950

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste-Dynamic (2)
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

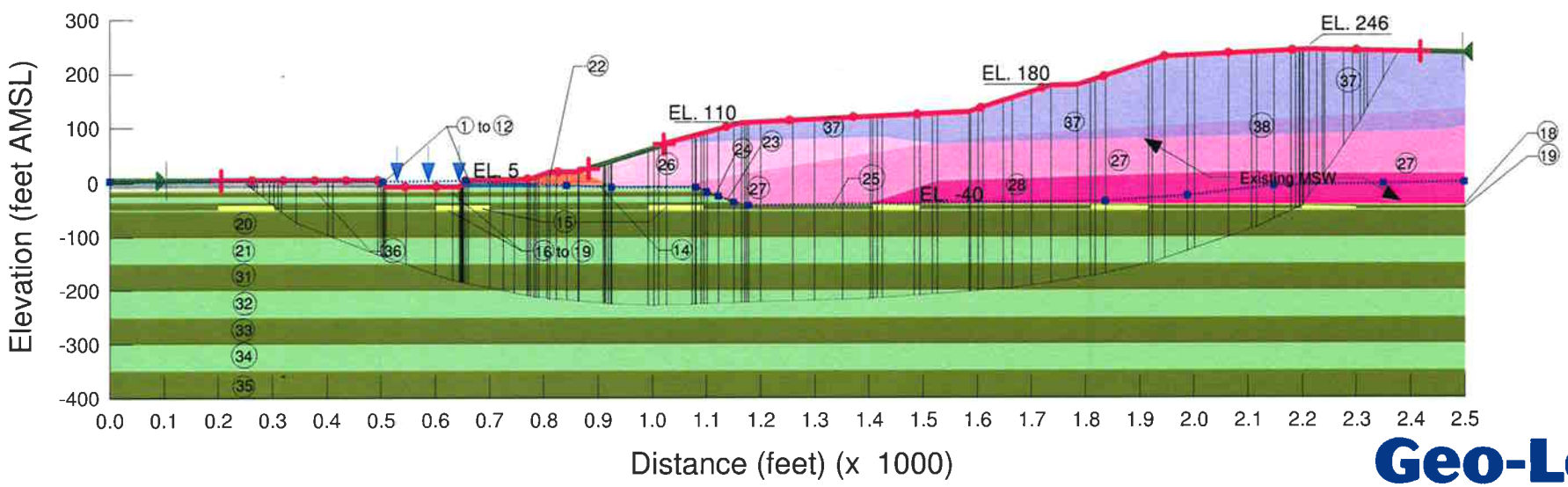
Material #: 36
Older Bay Alluvium
OCR = 2.0
Wt: 127
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 450

Material #: 37 and 38
Municipal Solid Waste-Dynamic(5)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 39
Bedrock (Impenetrable)

1.001

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Through MSW & OBA
Sta. 96+00 2004-0049 Static Analysis
Sta.96+00 MSW & OBA.gsz
Date: 6/2/2008
Time: 2:40:53 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud
OCR=1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 660

Material #: 15
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 750 to 9950

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste-Static (2)
Wt: 80 to 105
Phi: Strength Fn: 1
C: Strength Fn: 1

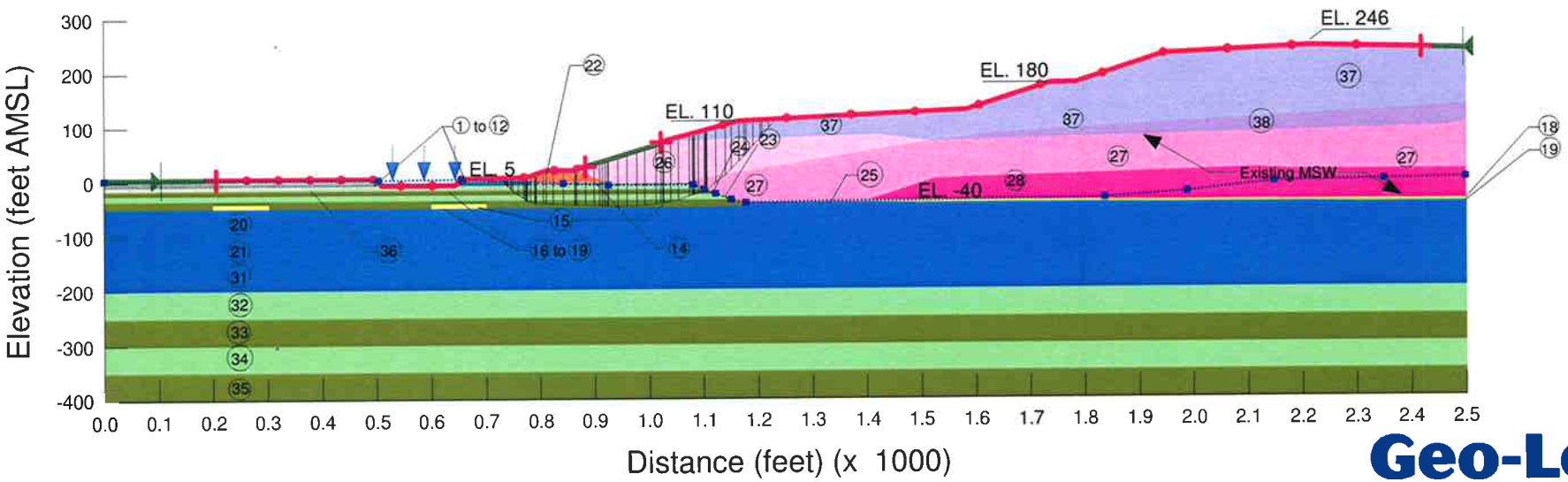
Material #: 36
Older Bay Alluvium
OCR = 2.0
Wt: 127
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 450

Material #: 37 and 38
Municipal Solid Waste-Static (5)
Wt: 80 to 90
Phi: Strength Fn: 1
C: Strength Fn: 1

Material #: 39
Bedrock (Impenetrable)

2.325

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Through MSW & OBA
Sta. 96+00 2004-0049 Pseudo-Static Analysis
Sta.96+00 MSW & OBA_eq.gsz
Date: 6/2/2008
Time: 2:52:17 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0.2072

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud
OCR=1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 660

Material #: 15
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 750 to 9950

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste-Dynamic (2)
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

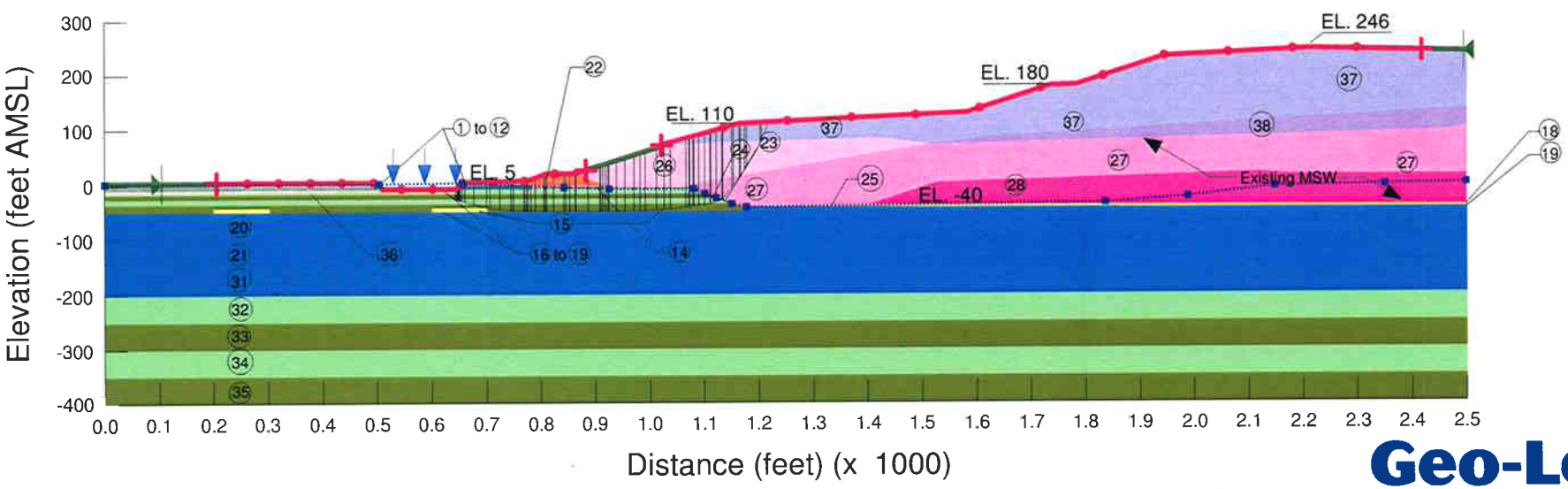
Material #: 36
Older Bay Alluvium
OCR = 2.0
Wt: 127
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 450

Material #: 37 and 38
Municipal Solid Waste-Dynamic (5)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 39
Bedrock (Impenetrable)

0.999

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Through MSW & YBM
Sta. 96+00 2004-0049 Static Analysis
Sta.96+00 MSW & YBM.gsz
Date: 6/2/2008
Time: 3:11:32 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud
OCR=1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 660

Material #: 15
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 750 to 9950

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste-Static (2)
Wt: 80 to 105
Phi: Strength Fn: 1
C: Strength Fn: 1

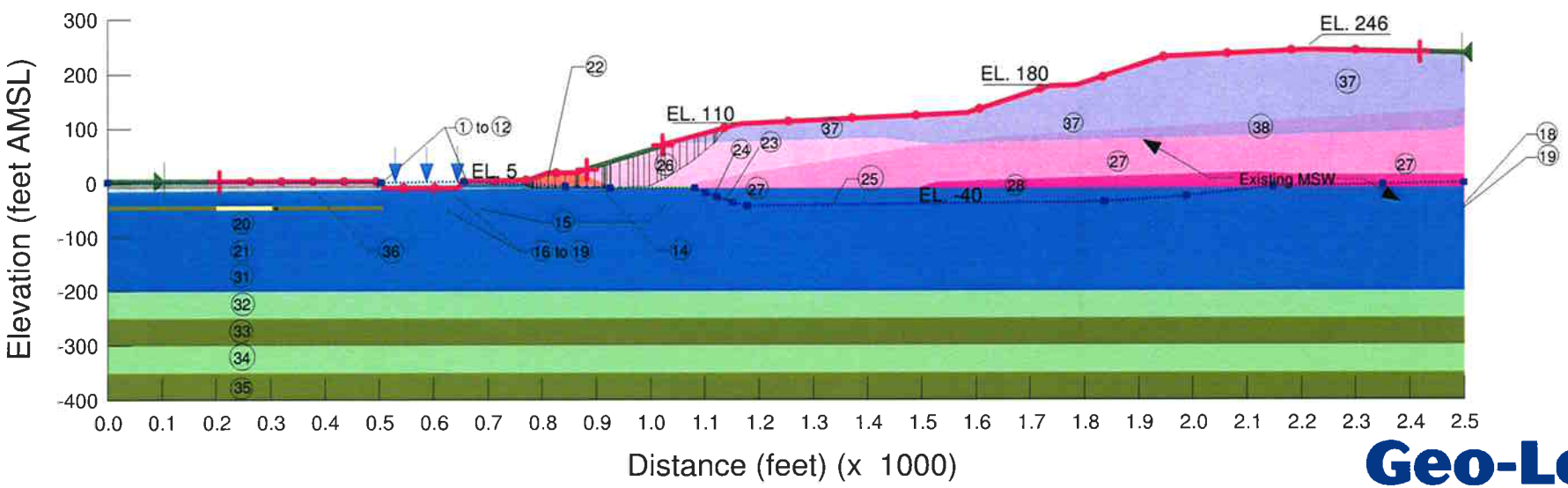
Material #: 36
Older Bay Alluvium
OCR = 2.0
Wt: 127
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 450

Material #: 37 and 38
Municipal Solid Waste-Static (5)
Wt: 80 to 90
Phi: Strength Fn: 1
C: Strength Fn: 1

Material #: 39
Bedrock (Impenetrable)

2.685

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Through MSW & YBM
Sta. 96+00 2004-0049 Pseudo-Static Analysis
Sta.96+00 MSW & YBM_eq.gsz
Date: 6/8/2008
Time: 12:14:03 PM
Method: Morgenstern-Price
Slip Surface Option: Fully-Specified
Optimization: Yes
Horz Seismic Load: 0.225

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud
OCR=1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 660

Material #: 15
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 750 to 9950

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste-Dynamic (2)
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

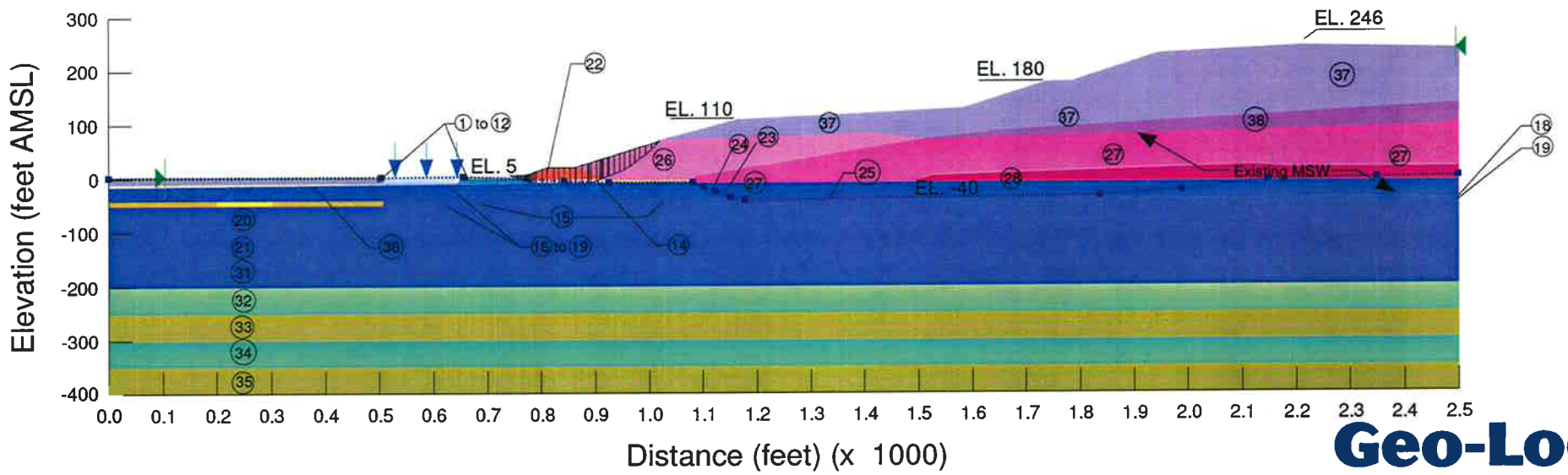
Material #: 36
Older Bay Alluvium
OCR = 2.0
Wt: 127
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 450

Material #: 37 and 38
Municipal Solid Waste-Dynamic (5)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 39
Bedrock (Impenetrable)

1.002

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Deep Foundation Failure Through Older Bay Alluvium
Sta. 120+00 2004-0049 Static Analysis
Sta.120+00 OBA.gsz
Date: 6/2/2008
Time: 3:34:11 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 660

Material #: 15
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 750 to 9950

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste-Static (2)
Wt: 80 to 105
Phi: Strength Fn: 1
C: Strength Fn: 1

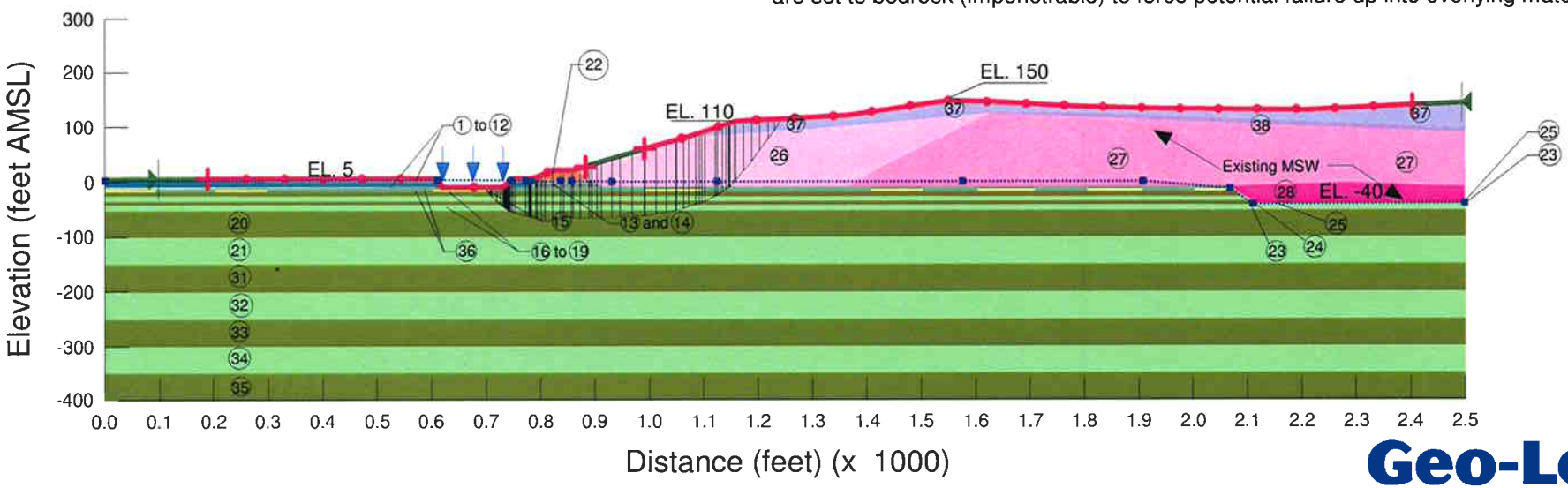
Material #: 36
Description: OBA (top El. -10 OCR=2)
Wt: 127
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 450

Material #: 37 and 38
Municipal Solid Waste-Static (5)
Wt: 80 to 90
Phi: Strength Fn: 1
C: Strength Fn: 1

Material #: 39
Bedrock (Impenetrable)

1.957

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Deep Foundation Failure Through Older Bay Alluvium
Sta. 120+00 2004-0049 Pseudo-Static Analysis
Sta.120+00 OBA_eq.gsz
Date: 6/2/2008
Time: 3:40:21 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0.15

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 660

Material #: 15
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 750 to 9950

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste-Dynamic (2)
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

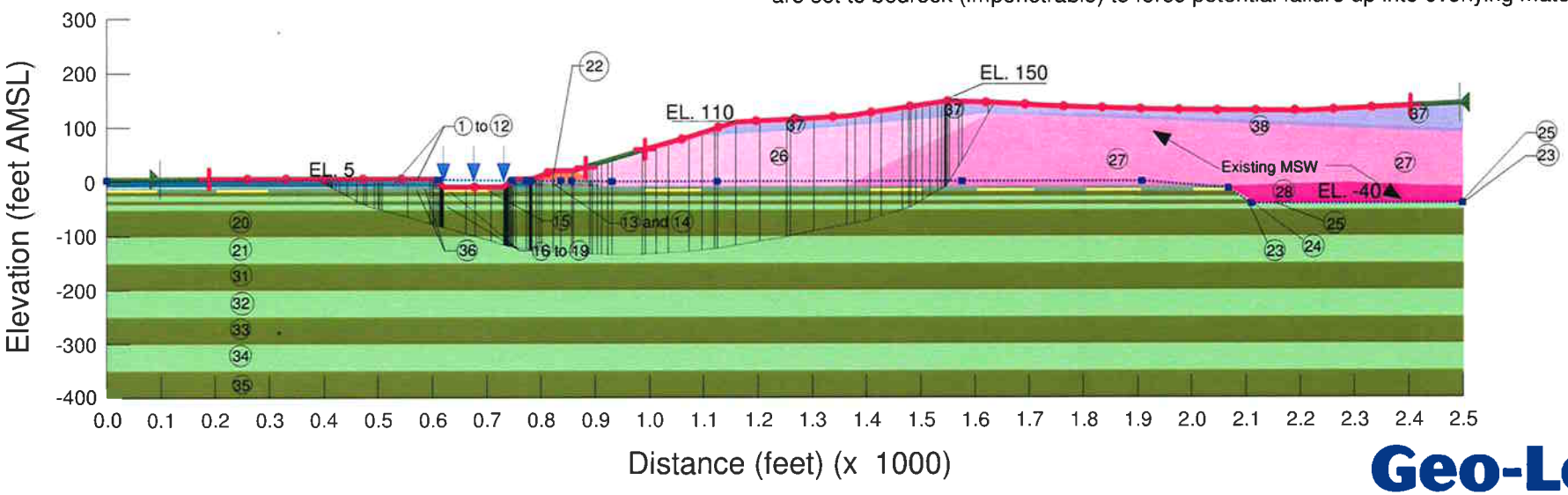
Material #: 36
Description: OBA (top El. -10 OCR=2)
Wt: 127
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 450

Material #: 37 and 38
Municipal Solid Waste-Dynamic (5)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 39
Bedrock (Impenetrable)

1.005

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Through MSW & OBA
Sta. 120+00 2004-0049 Static Analysis
Sta.120+00 MSW & OBA.gsz
Date: 6/2/2008
Time: 3:46:28 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 660

Material #: 15
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 750 to 9950

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste-Static (2)
Wt: 80 to 105
Phi: Strength Fn: 1
C: Strength Fn: 1

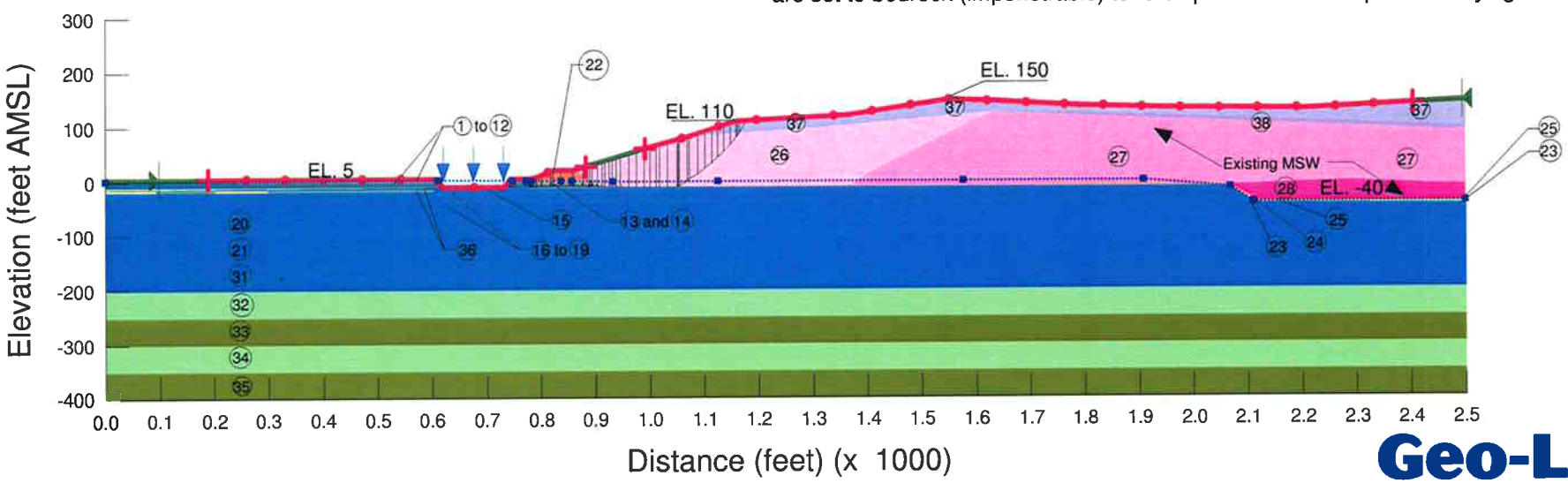
Material #: 36
Description: OBA (top El. -10 OCR=2)
Wt: 127
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 450

Material #: 37 and 38
Municipal Solid Waste-Static (5)
Wt: 80 to 90
Phi: Strength Fn: 1
C: Strength Fn: 1

Material #: 39
Bedrock (Impenetrable)

2.275

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Through MSW & OBA
Sta. 120+00 2004-0049 Pseudo-Static Analysis
Sta.120+00 MSW & OBA_eq.gsz
Date: 6/2/2008
Time: 3:54:08 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0.26

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 660

Material #: 15
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 750 to 9950

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste-Dynamic (2)
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

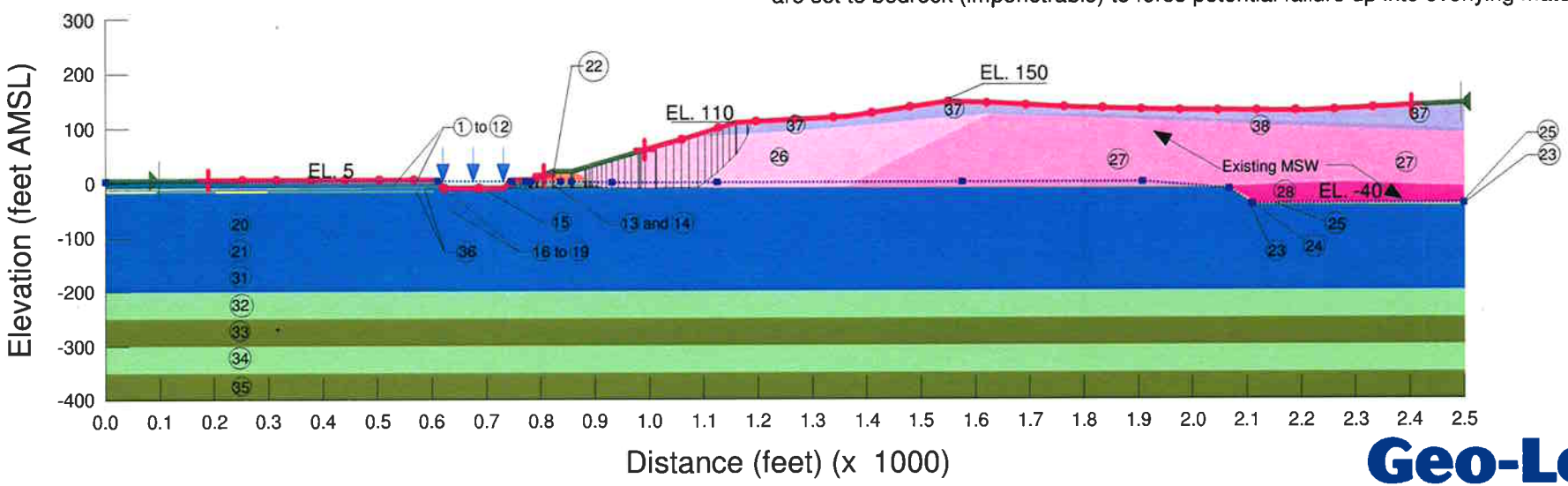
Material #: 36
Description: OBA (top El. -10 OCR=2)
Wt: 127
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 450

Material #: 37 and 38
Municipal Solid Waste-Dynamic(5)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 39
Bedrock (Impenetrable)

1.005

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Through MSW & YBM
Sta. 120+00 2004-0049 Pseudo-Static Analysis
Sta.120+00 MSW & YBM.gsz
Date: 6/8/2008
Time: 3:19:14 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 660

Material #: 15
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 750 to 9950

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste-Static (2)
Wt: 80 to 105
Phi: Strength Fn: 1
C: Strength Fn: 1

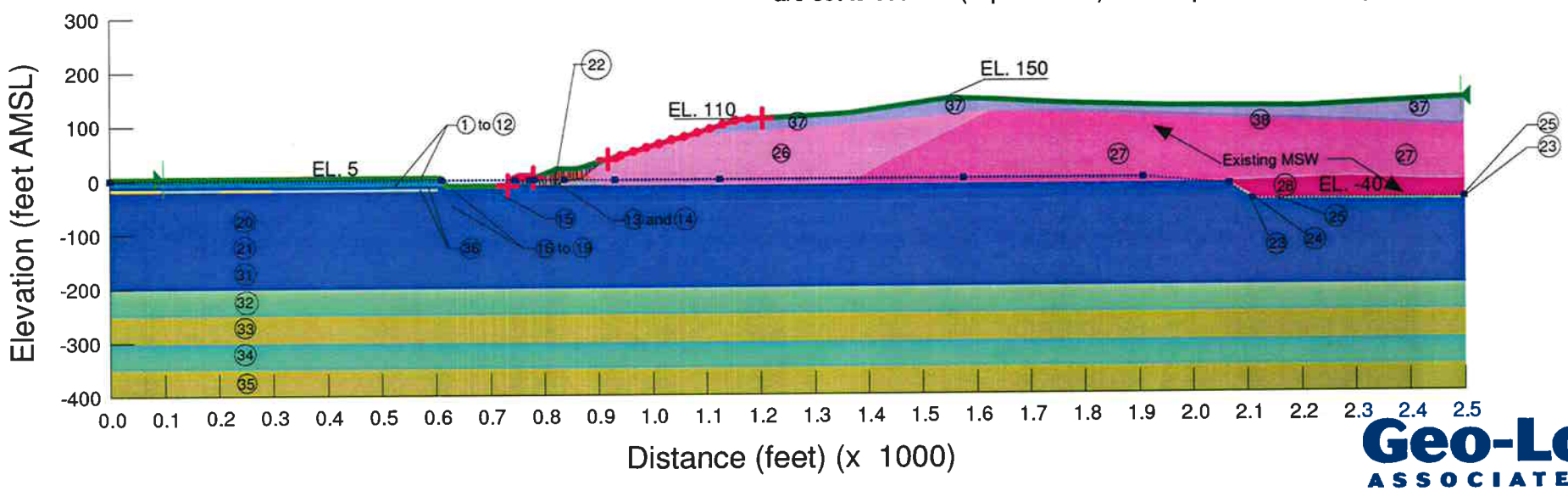
Material #: 36
Description: OBA (top El. -10 OCR=2)
Wt: 127
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 450

Material #: 37 and 38
Municipal Solid Waste-Static (5)
Wt: 80 to 90
Phi: Strength Fn: 1
C: Strength Fn: 1

Material #: 39
Bedrock (Impenetrable)

2.060

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Through MSW & YBM
Sta. 120+00 2004-0049 Pseudo-Static Analysis
Sta.120+00 MSW & YBM_eq.gsz
Date: 6/8/2008
Time: 3:13:06 PM
Method: Morgenstern-Price
Slip Surface Option: Fully-Specified
Optimization: Yes
Horz Seismic Load: 0.19

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 660

Material #: 15
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 750 to 9950

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste-Dynamic (2)
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

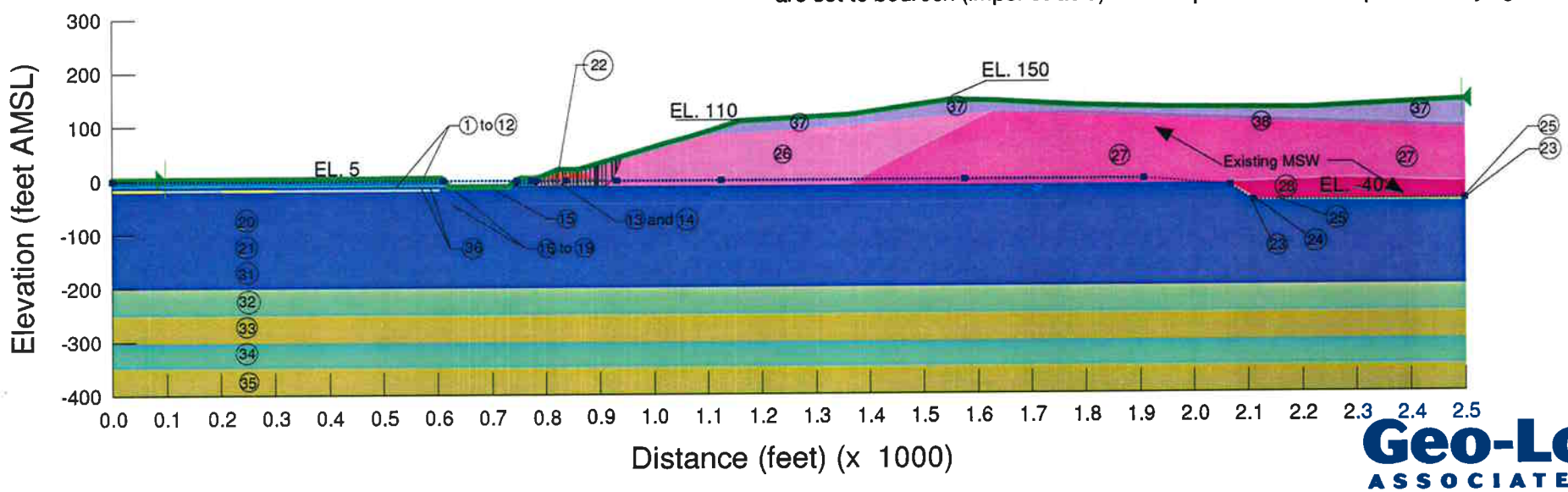
Material #: 36
Description: OBA (top El. -10 OCR=2)
Wt: 127
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 450

Material #: 37 and 38
Municipal Solid Waste-Dynamic (5)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 39
Bedrock (Impenetrable)

1.002

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Deep Foundation Failure Through Older Bay Alluvium
Sta. 132+56 2004-0049 Static Analysis
Sta.132+56 OBA.gsz
Date: 6/3/2008
Time: 6:48:42 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 620

Material #: 15
Sand (non-liquefied) (2)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 750 to 9950

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste-Static (2)
Wt: 80 to 105
Phi: Strength Fn: 1
C: Strength Fn: 1

Material #: 29
Sand (non-liquefied)
Wt: 125
Phi: 28
C: 200

Material #: 30
Organic Layer beneath Dike
Wt: 100
Phi: 20
C: 100

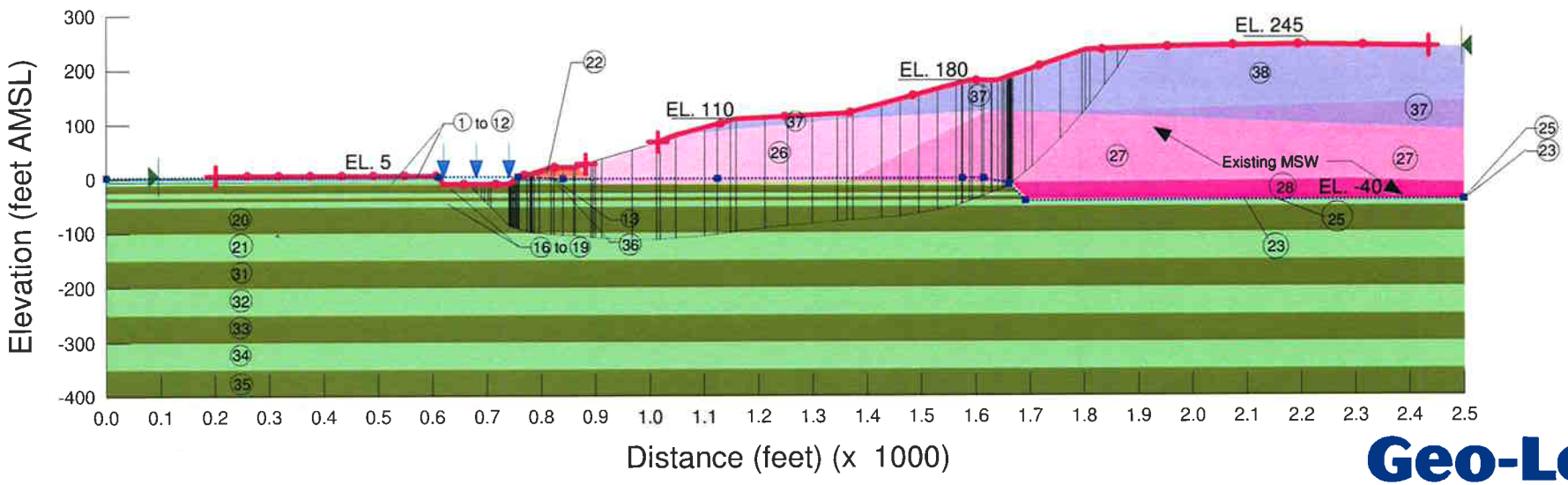
Material #: 36
Description: OBA (top El. -5 OCR=2)
Wt: 127
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 450

Material #: 37 and 38
Municipal Solid Waste-Static (5)
Wt: 80 to 90
Phi: Strength Fn: 1
C: Strength Fn: 1

Material #: 39
Bedrock (Impenetrable)

1.869

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials [redacted] are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Deep Foundation Failure Through Older Bay Alluvium
Sta. 132+56 2004-0049 Pseudo-Static Analysis

Sta.132+56 OBA_eq.gsz
Date: 6/3/2008
Time: 7:39:04 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0.1394

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 620

Material #: 15
Sand (non-liquefied) (2)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 750 to 9950

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste-Dynamic (2)
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 29
Sand (non-liquefied)
Wt: 125
Phi: 28
C: 200

Material #: 30
Organic Layer beneath Dike
Wt: 100
Phi: 20
C: 100

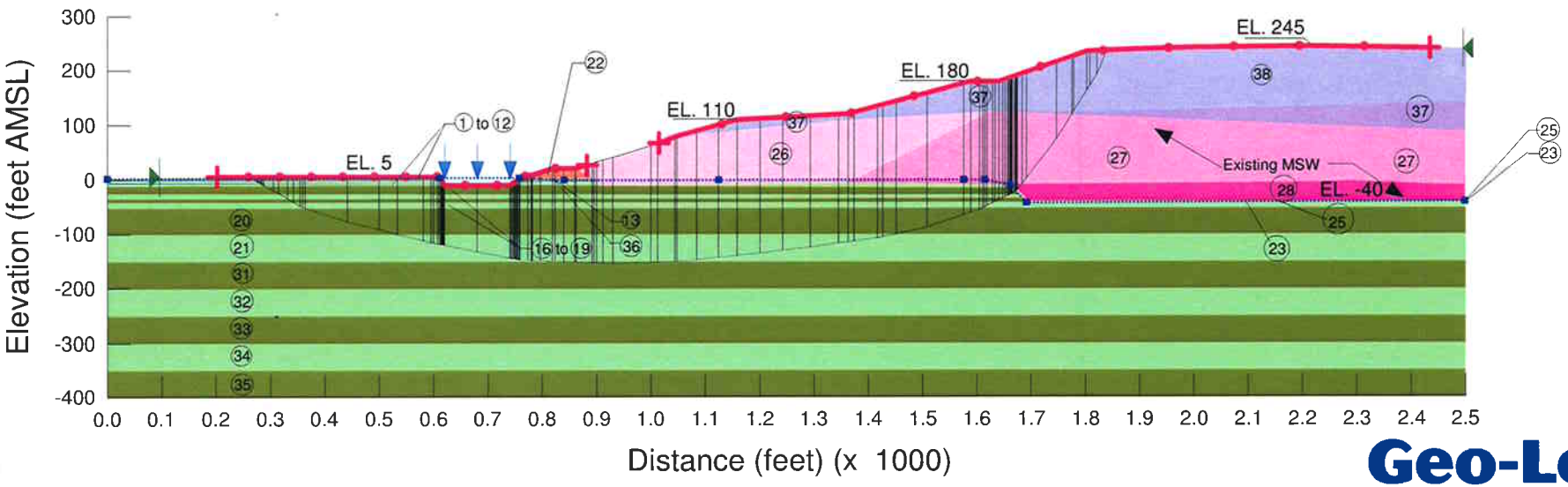
Material #: 36
Description: OBA (top El. -5 OCR=2)
Wt: 127
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 450

Material #: 37 and 38
Municipal Solid Waste-Dynamic (5)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 39
Bedrock (Impenetrable)

1.000

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Through MSW & OBA
Sta. 132+56 2004-0049 Static Analysis
Sta.132+56 MSW & OBA.gsz
Date: 6/3/2008
Time: 9:45:12 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 620

Material #: 15
Sand (non-liquefied) (2)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 750 to 9950

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste-Static (2)
Wt: 80 to 105
Phi: Strength Fn: 1
C: Strength Fn: 1

Material #: 29
Sand (non-liquefied)
Wt: 125
Phi: 28
C: 200

Material #: 30
Organic Layer beneath Dike
Wt: 100
Phi: 20
C: 100

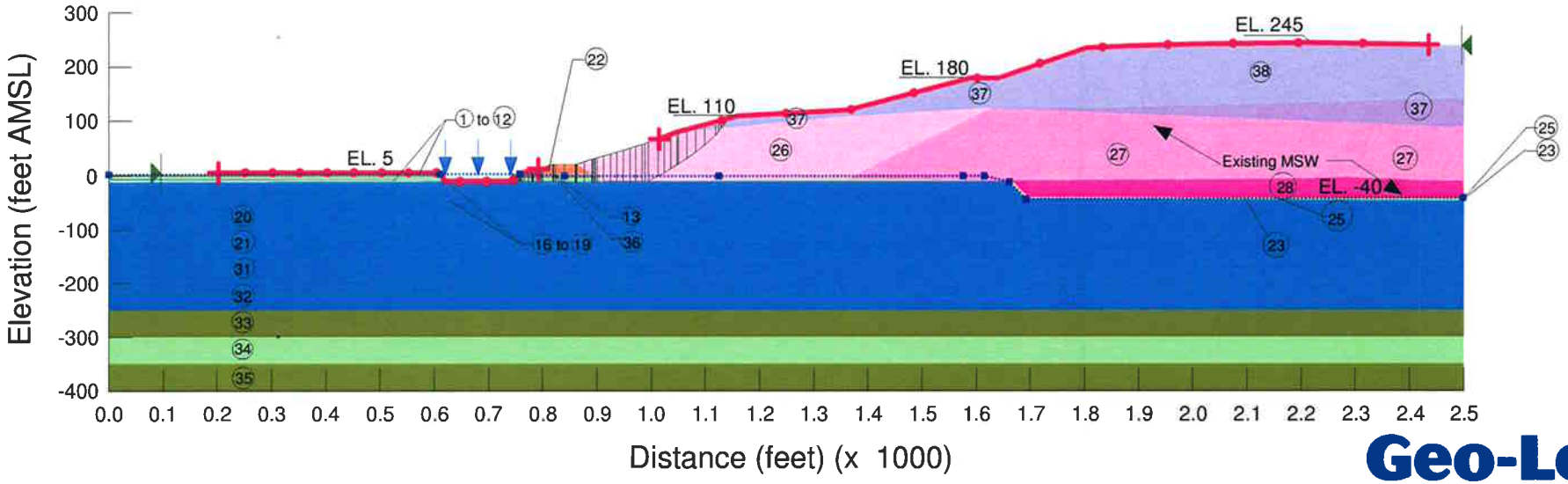
Material #: 36
Description: OBA (top El. -5 OCR=2)
Wt: 127
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 450

Material #: 37 and 38
Municipal Solid Waste-Static (5)
Wt: 80 to 90
Phi: Strength Fn: 1
C: Strength Fn: 1

Material #: 39
Bedrock (Impenetrable)

2.779

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Through MSW & OBA
Sta. 132+56 2004-0049 Pseudo-Static Analysis
Sta.132+56 MSW & OBA_eq.gsz
Date: 6/3/2008
Time: 9:56:46 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0.325

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 620

Material #: 15
Sand (non-liquefied) (2)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 750 to 9950

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste-Dynamic (2)
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 29
Sand (non-liquefied)
Wt: 125
Phi: 28
C: 200

Material #: 30
Organic Layer beneath Dike
Wt: 100
Phi: 20
C: 100

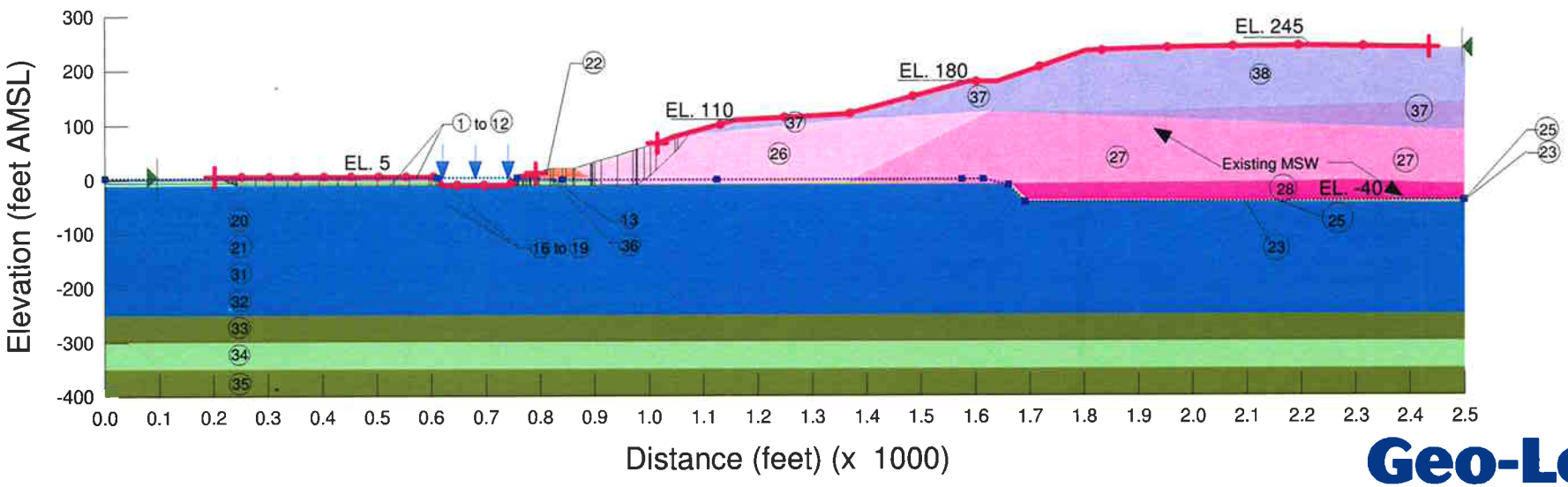
Material #: 36
Description: OBA (top El. -5 OCR=2)
Wt: 127
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 450

Material #: 37 and 38
Municipal Solid Waste-Dynamic (5)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 39
Bedrock (Impenetrable)

1.002

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials
are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Through MSW & YBM
Sta. 132+56 2004-0049 Pseudo-Static Analysis
Sta.132+56 MSW & YBM.gsz
Date: 6/8/2008
Time: 2:05:18 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 620

Material #: 15
Sand (non-liquefied) (2)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 750 to 9950

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste-Dynamic (2)
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 29
Sand (non-liquefied)
Wt: 125
Phi: 28
C: 200

Material #: 30
Organic Layer beneath Dike
Wt: 100
Phi: 20
C: 100

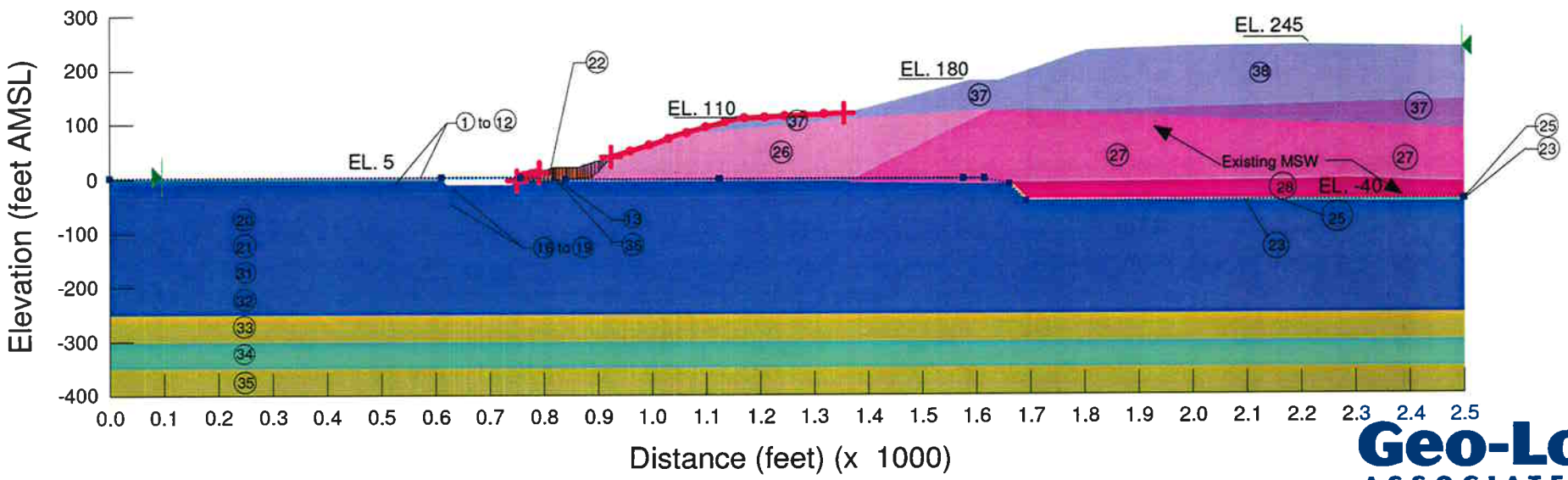
Material #: 36
Description: OBA (top El. -5 OCR=2)
Wt: 127
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 450

Material #: 37 and 38
Municipal Solid Waste-Dynamic (5)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 39
Bedrock (Impenetrable)

2.943

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Through MSW & YBM
Sta. 132+56 2004-0049 Pseudo-Static Analysis
Sta.132+56 MSW & YBM_eq.gsz
Date: 6/8/2008
Time: 1:59:44 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0.233

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 620

Material #: 15
Sand (non-liquefied) (2)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 750 to 9950

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste-Dynamic (2)
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 29
Sand (non-liquefied)
Wt: 125
Phi: 28
C: 200

Material #: 30
Organic Layer beneath Dike
Wt: 100
Phi: 20
C: 100

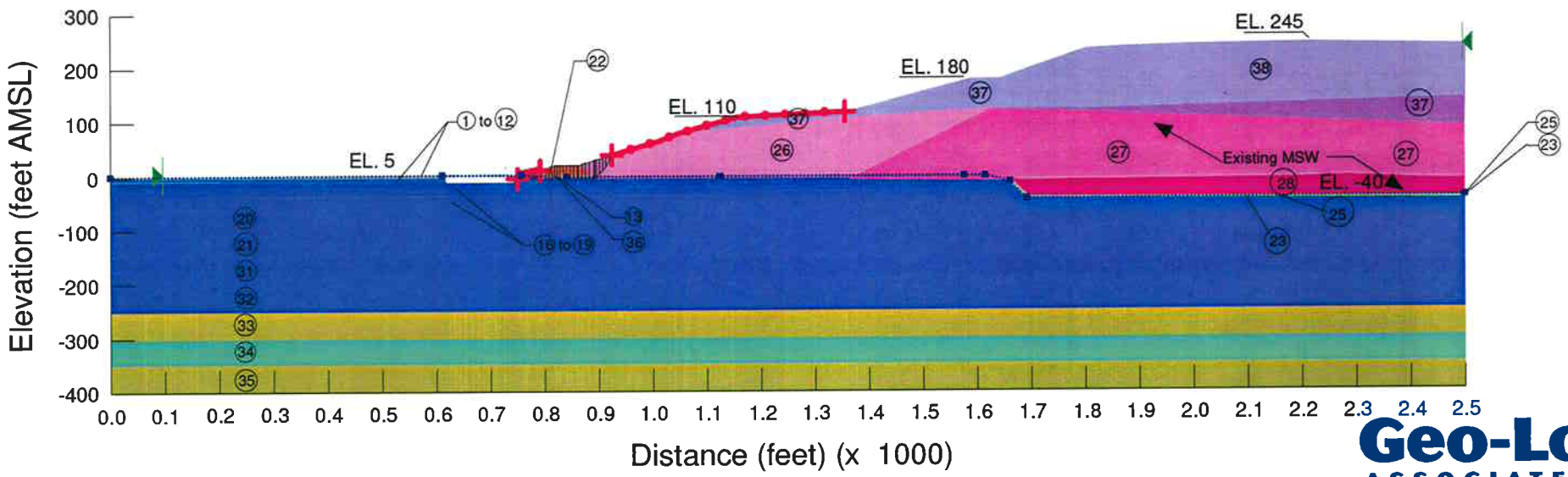
Material #: 36
Description: OBA (top El. -5 OCR=2)
Wt: 127
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 450

Material #: 37 and 38
Municipal Solid Waste-Dynamic (5)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 39
Bedrock (Impenetrable)

1.000

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials [redacted] are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Deep Foundation Failure Through Older Bay Alluvium
Sta. 140+00 2004-0049 Static Analysis
Sta.140+00 OBA.gsz
Date: 6/2/2008
Time: 8:36:50 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 450

Name: Material #14: Young Bay Mud
Model: S=f(overburden)
Unit Weight: 113 pcf
Tau/Sigma Ratio: 0.3
Minimum Strength: 620

Material #: 15
Sand (non-liquefied) (2)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 780 to 9960

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste-Static (2)
Wt: 80 to 105
Phi: Strength Fn: 1
C: Strength Fn: 1

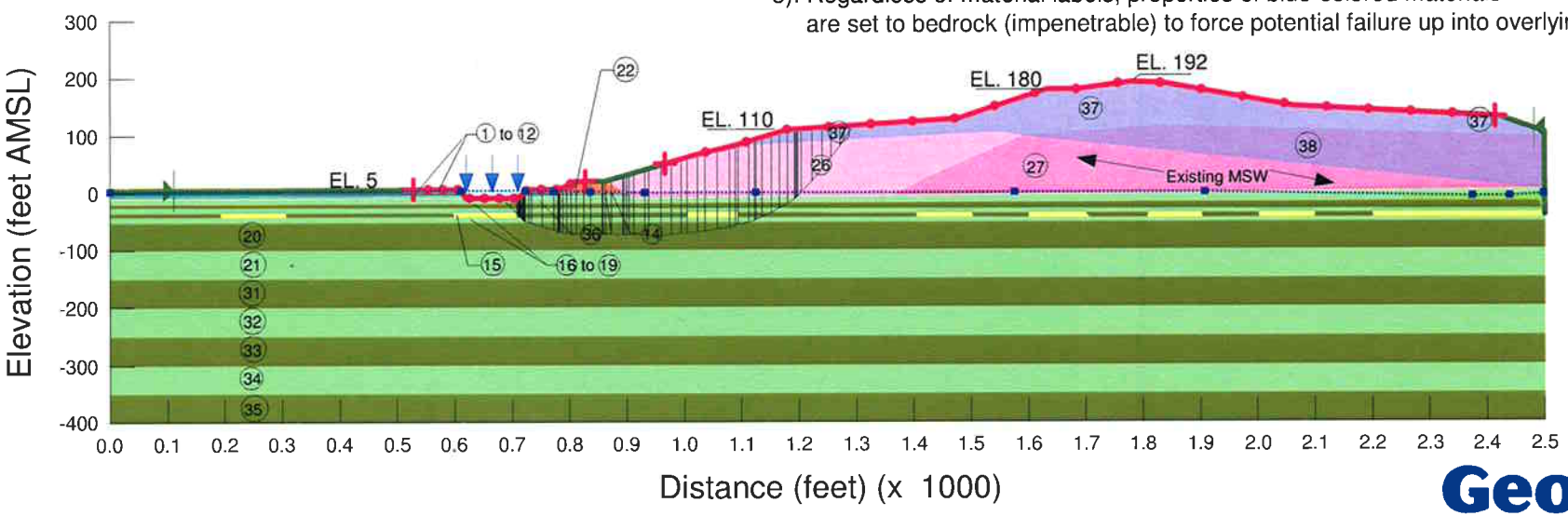
Material #: 36
Description: OBA (top El. -10 OCR=2)
Wt: 127
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 540

Material #: 37 and 38
Municipal Solid Waste-Static (5)
Wt: 80 to 90
Phi: Strength Fn: 1
C: Strength Fn: 1

Material #: 39
Bedrock (Impenetrable)

2.078

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Deep Foundation Failure Through Older Bay Alluvium
Sta. 140+00 2004-0049 Pseudo-Static Analysis
Sta.140+00 OBA_eq.gsz
Date: 6/2/2008
Time: 8:48:38 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0.1478

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 450

Name: Material #14: Young Bay Mud
Model: S=f(overburden)
Unit Weight: 113 pcf
Tau/Sigma Ratio: 0.3
Minimum Strength: 620

Material #: 15
Sand (non-liquefied) (2)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 780 to 9960

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste-Dynamic (2)
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

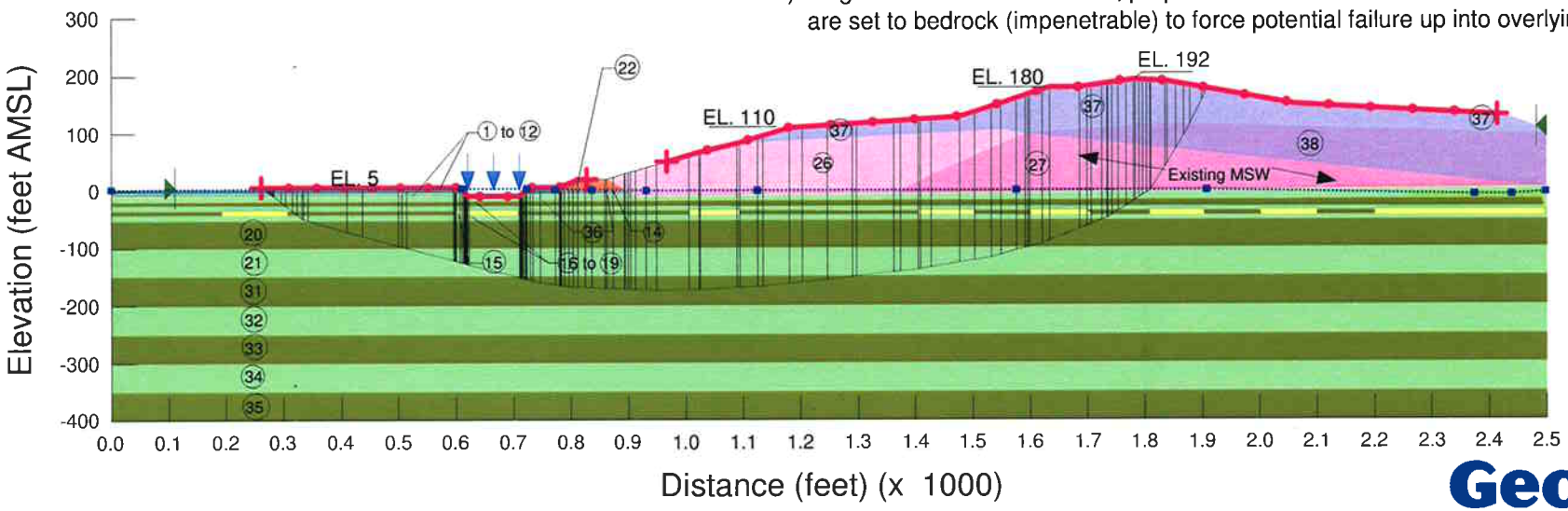
Material #: 36
Description: OBA (top El. -10 OCR=2)
Wt: 127
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 540

Material #: 37 and 38
Municipal Solid Waste-Dynamic (5)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 39
Bedrock (Impenetrable)

1.005

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Through MSW & OBA
Sta. 140+00 2004-0049 Static Analysis
Sta.140+00 MSW & OBA.gsz
Date: 6/2/2008
Time: 8:52:28 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 450

Name: Material #14: Young Bay Mud
Model: S=f(overburden)
Unit Weight: 113 pcf
Tau/Sigma Ratio: 0.3
Minimum Strength: 620

Material #: 15
Sand (non-liquefied) (2)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 780 to 9960

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste-Static (2)
Wt: 80 to 105
Phi: Strength Fn: 1
C: Strength Fn: 1

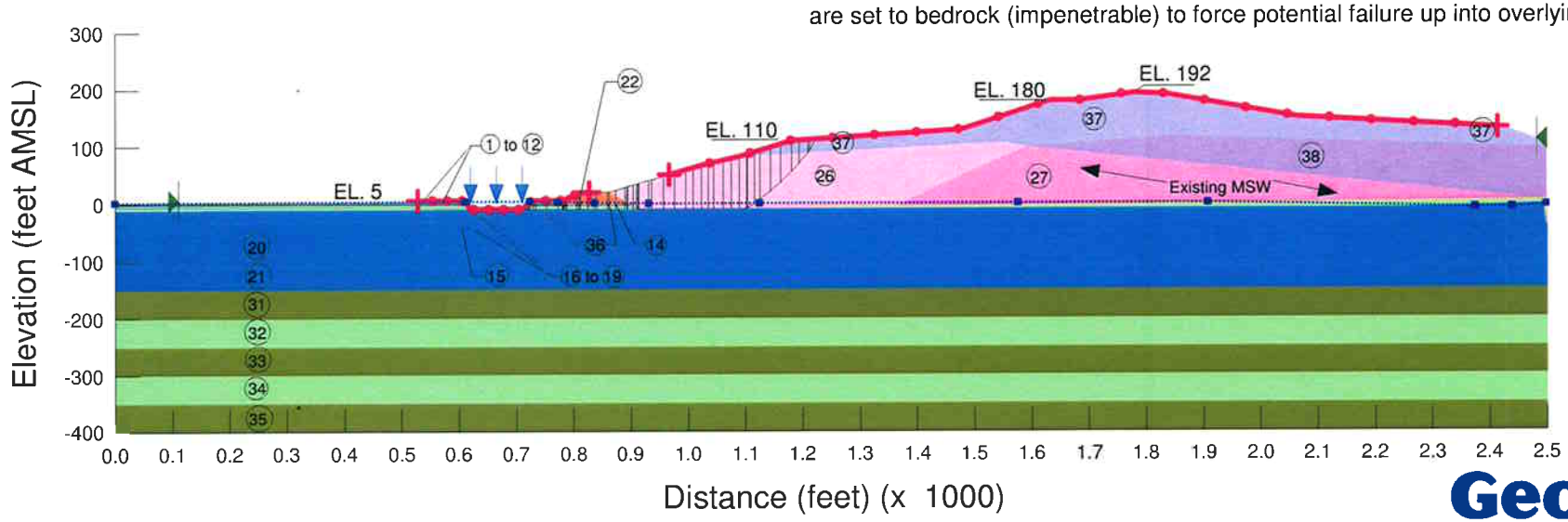
Material #: 36
Description: OBA (top El. -10 OCR=2)
Wt: 127
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 540

Material #: 37 and 38
Municipal Solid Waste-Static (5)
Wt: 80 to 90
Phi: Strength Fn: 1
C: Strength Fn: 1

Material #: 39
Bedrock (Impenetrable)

2.560

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Through MSW & OBA
Sta. 140+00 2004-0049 Pseudo-Static Analysis
Sta.140+00 MSW & OBA_eq.gsz
Date: 6/2/2008
Time: 8:55:48 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0.2957

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 450

Name: Material #14: Young Bay Mud
Model: S=f(overburden)
Unit Weight: 113 pcf
Tau/Sigma Ratio: 0.3
Minimum Strength: 620

Material #: 15
Sand (non-liquefied) (2)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 780 to 9960

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste-Dynamic (2)
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

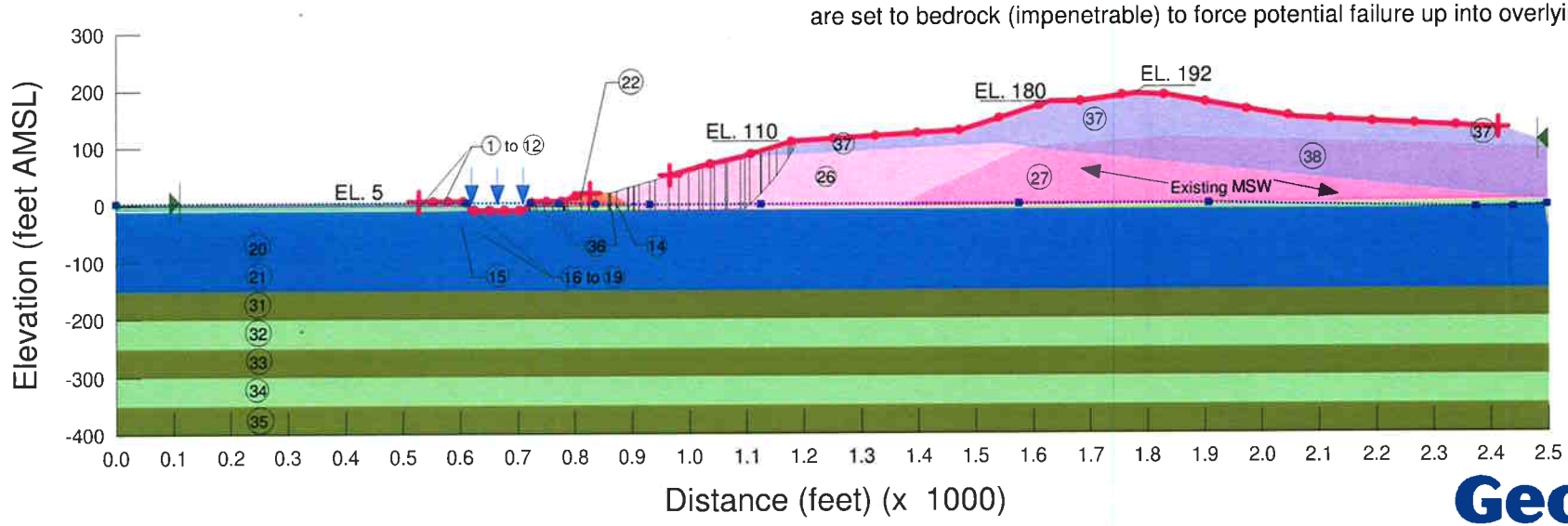
Material #: 36
Description: OBA (top El. -10 OCR=2)
Wt: 127
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 540

Material #: 37 and 38
Municipal Solid Waste-Dynamic (5)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 39
Bedrock (Impenetrable)

1.004

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Through MSW & YBM
Sta. 140+00 2004-0049 Pseudo-Static Analysis
Sta.140+00 MSW & YBM_eq.gsz
Date: 6/2/2008
Time: 9:32:17 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0.289

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 450

Name: Material #14: Young Bay Mud
Model: S=f(overburden)
Unit Weight: 113 pcf
Tau/Sigma Ratio: 0.3
Minimum Strength: 620

Material #: 15
Sand (non-liquefied) (2)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 780 to 9960

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

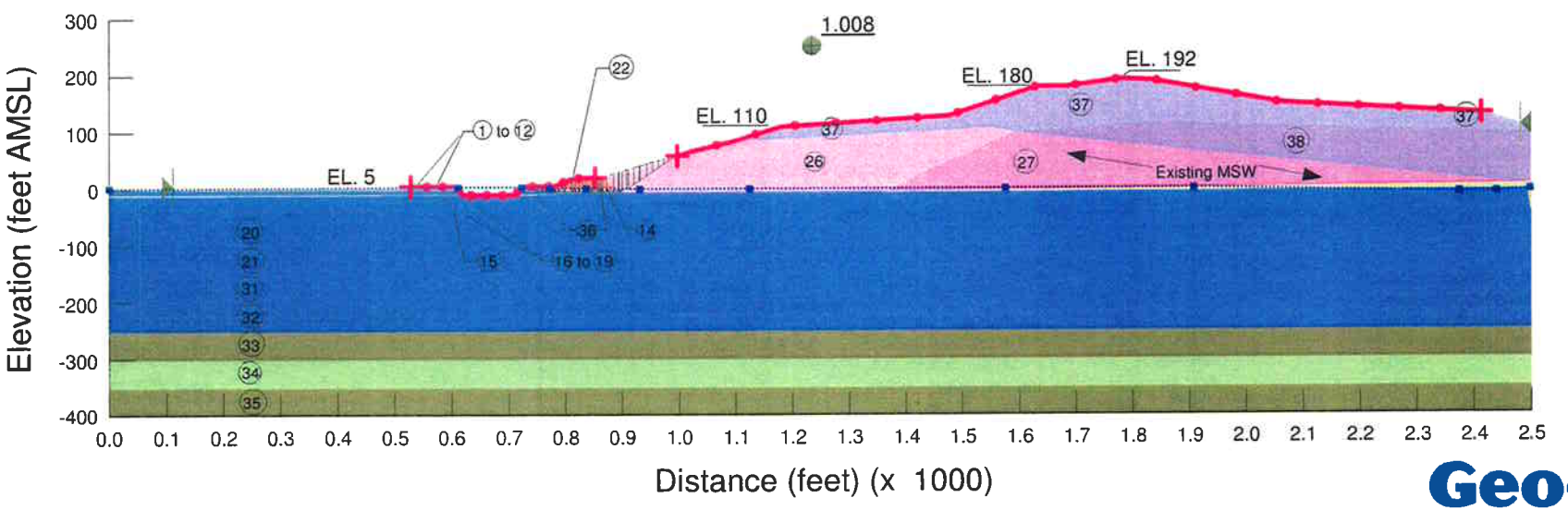
Material #: 26 to 28
Municipal Solid Waste-Dynamic (2)
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 36
Description: OBA (top El. -10 OCR=2)
Wt: 127
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 540

Material #: 37 and 38
Municipal Solid Waste-Dynamic (5)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 39
Bedrock (Impenetrable)

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Through MSW & YBM
Sta. 140+00 2004-0049 Static Analysis
Sta.140+00 MSW & YBM.gsz
Date: 6/2/2008
Time: 9:02:35 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 450

Name: Material #14: Young Bay Mud
Model: S=f(overburden)
Unit Weight: 113 pcf
Tau/Sigma Ratio: 0.3
Minimum Strength: 620

Material #: 15
Sand (non-liquefied) (2)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 780 to 9960

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste-Static (2)
Wt: 80 to 105
Phi: Strength Fn: 1
C: Strength Fn: 1

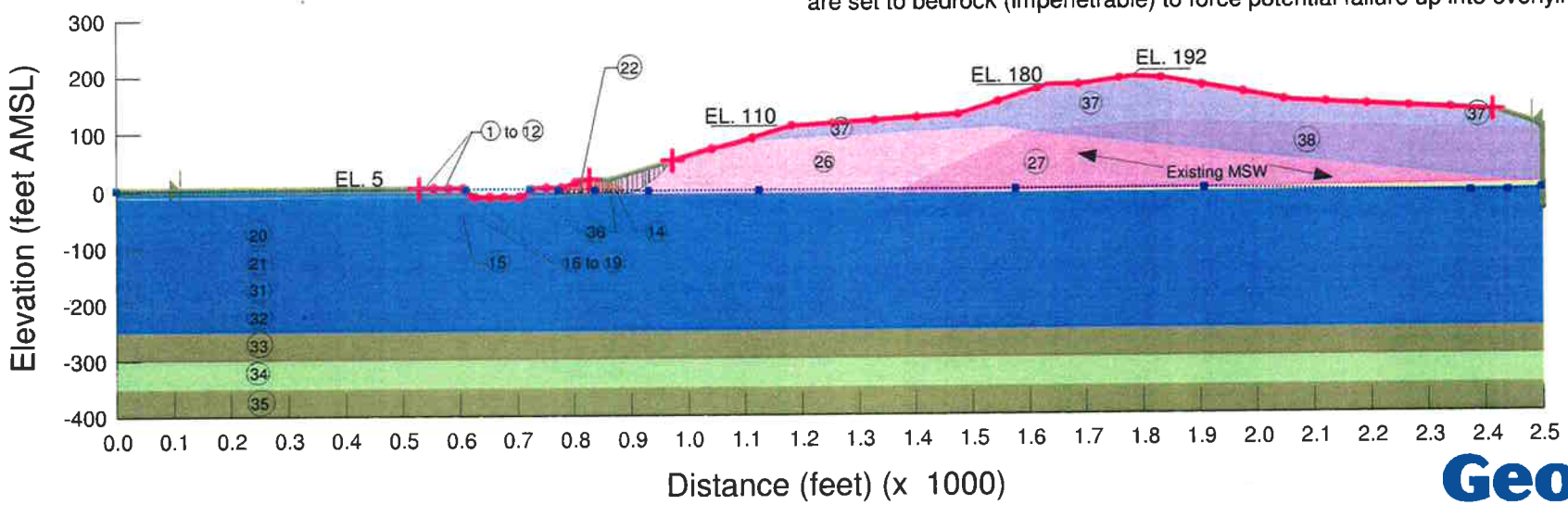
Material #: 36
Description: OBA (top El. -10 OCR=2)
Wt: 127
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 540

Material #: 37 and 38
Municipal Solid Waste-Static (5)
Wt: 80 to 90
Phi: Strength Fn: 1
C: Strength Fn: 1

Material #: 39
Bedrock (Impenetrable)

2.971

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Deep Foundation Failure Through Older Bay Alluvium
Sta. 150+00 2004-0049 Static Analysis
Sta.150+00 OBA.gsz
Date: 6/3/2008
Time: 10:05:57 AM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 450

Material #: 15
Sand (Non-Liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 780 to 9960

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste-Static (2)
Wt: 80 to 105
Phi: Strength Fn: 1
C: Strength Fn: 1

Material # 13 & 14
Name: Young Bay Mud
Model: S=f(overburden)
Unit Weight: 113 pcf
Tau/Sigma Ratio: 0.3
Anisotropic Strength Fn: Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 620

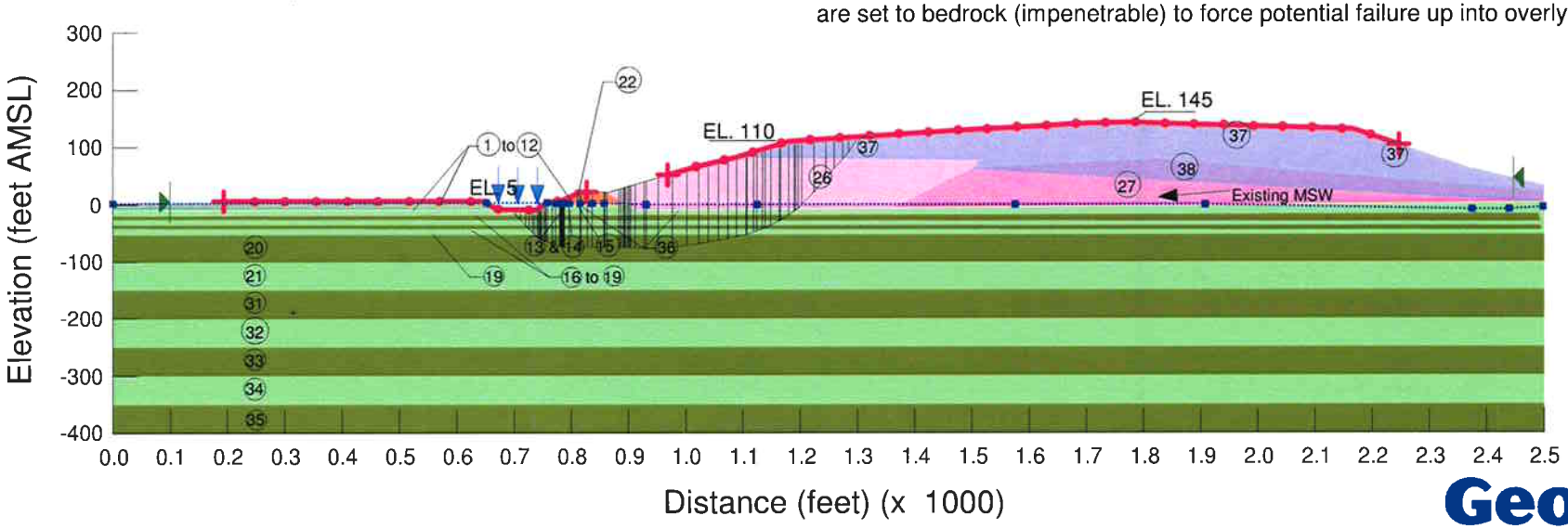
Material #: 36
Description: OBA (top El. -10 OCR=2)
Wt: 127
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 4700

Material #: 37 and 38
Municipal Solid Waste-Static (5)
Wt: 80 to 90
Phi: Strength Fn: 1
C: Strength Fn: 1

Material #: 39
Bedrock (Impenetrable)

2.099

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Deep Foundation Failure Through Older Bay Alluvium
Sta. 150+00 2004-0049 Pseudo-Static Analysis
Sta.150+00 OBA_eq.gsz
Date: 6/3/2008
Time: 10:28:38 AM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0.162

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 450

Material #: 15
Sand (Non-Liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 780 to 9960

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste-Dynamic (2)
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

Material # 13 & 14
Name: Young Bay Mud
Model: S=f(overburden)
Unit Weight: 113 pcf
Tau/Sigma Ratio: 0.3
Anisotropic Strength Fn: Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 620

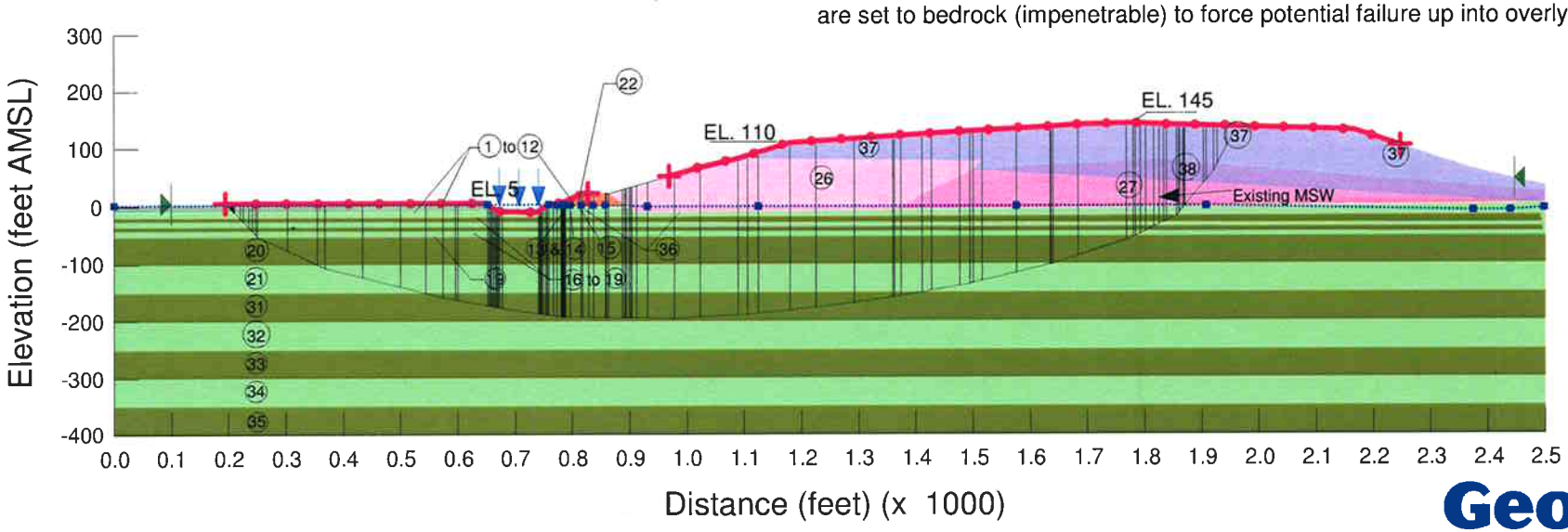
Material #: 36
Description: OBA (top El. -10 OCR=2)
Wt: 127
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 4700

Material #: 37 and 38
Municipal Solid Waste-Dynamic (5)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 39
Bedrock (Impenetrable)

1.005

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Through MSW & OBA
Sta. 150+00 2004-0049 Static Analysis
Sta.150+00 MSW & OBA.gsz
Date: 6/3/2008
Time: 10:40:59 AM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 450

Material #: 15
Sand (Non-Liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 780 to 9960

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste-Static (2)
Wt: 80 to 105
Phi: Strength Fn: 1
C: Strength Fn: 1

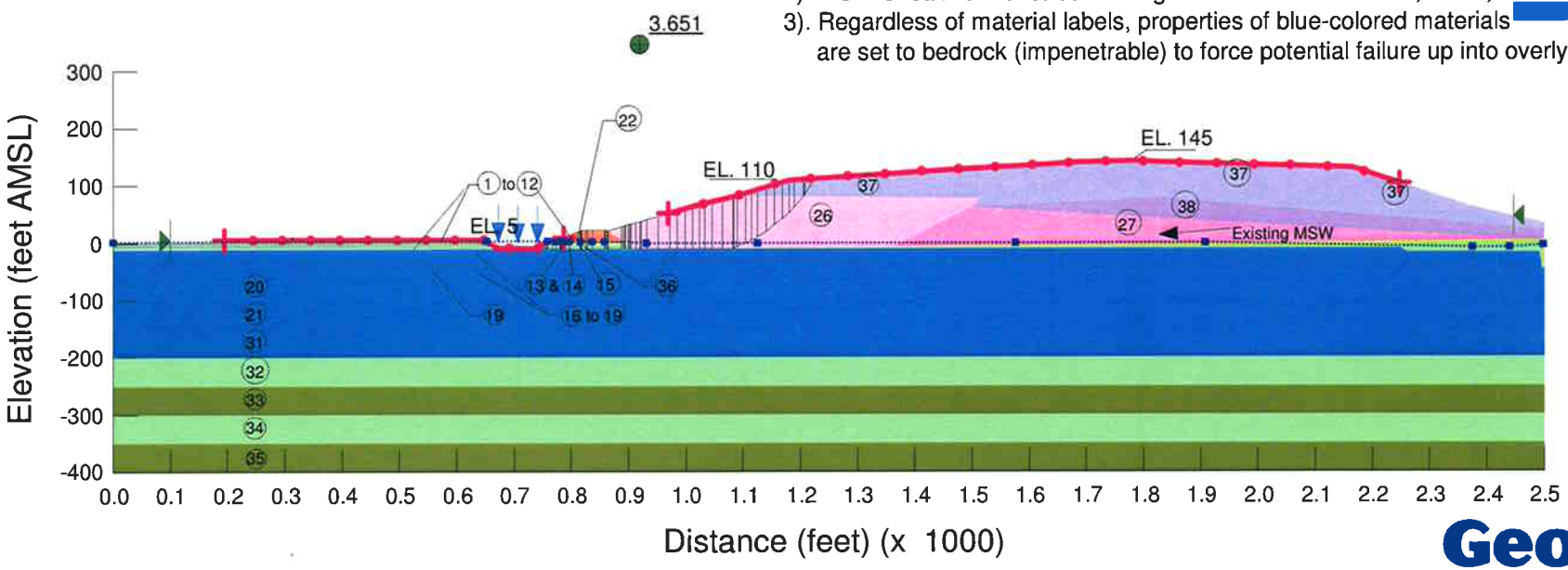
Material # 13 & 14
Name: Young Bay Mud
Model: S=f(overburden)
Unit Weight: 113 pcf
Tau/Sigma Ratio: 0.3
Anisotropic Strength Fn: Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 620

Material #: 36
Description: OBA (top El. -10 OCR=2)
Wt: 127
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 4700

Material #: 37 and 38
Municipal Solid Waste-Static (5)
Wt: 80 to 90
Phi: Strength Fn: 1
C: Strength Fn: 1

Material #: 39
Bedrock (Impenetrable)

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Through MSW & OBA
Sta. 150+00 2004-0049 Pseudo-Static Analysis
Sta.150+00 MSW & OBA_eq.gsz
Date: 6/3/2008
Time: 11:16:43 AM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0.48

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 450

Material #: 15
Sand (Non-Liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 780 to 9960

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste-Dynamic (2)
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

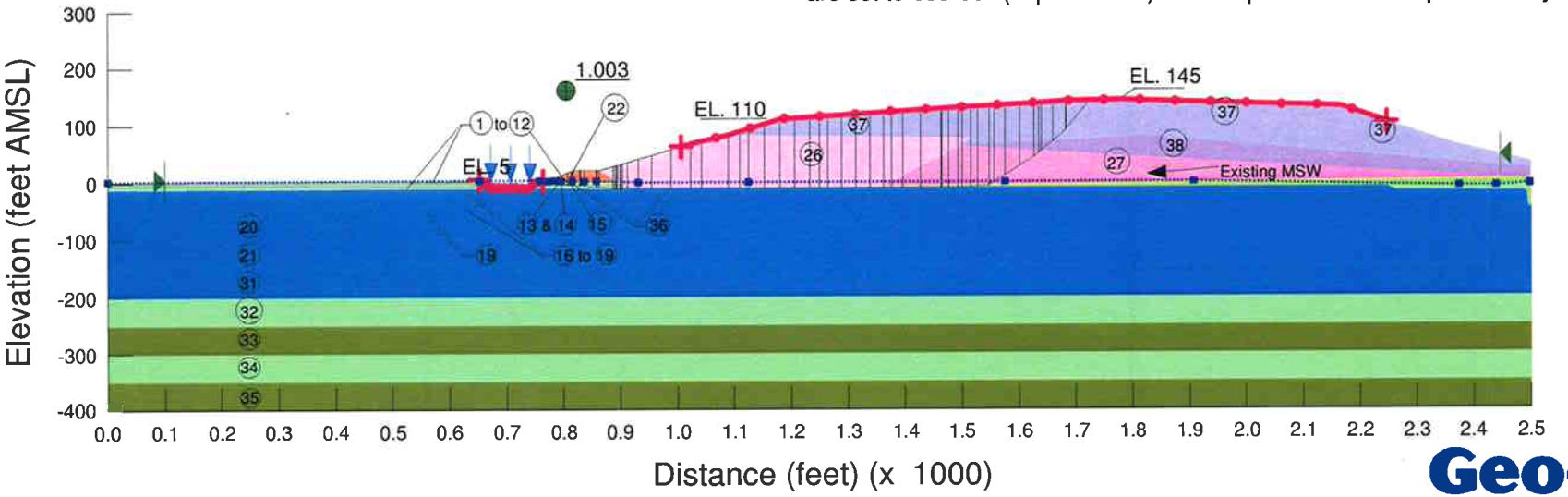
Material # 13 & 14
Name: Young Bay Mud
Model: S=f(overburden)
Unit Weight: 113 pcf
Tau/Sigma Ratio: 0.3
Anisotropic Strength Fn: Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 620

Material #: 36
Description: OBA (top El. -10 OCR=2)
Wt: 127
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 4700

Material #: 37 and 38
Municipal Solid Waste-Dynamic (5)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 39
Bedrock (Impenetrable)

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Through MSW & YBM
Sta. 150+00 2004-0049 Pseudo-Static Analysis
Sta.150+00 MSW & YBM.gsz
Date: 6/8/2008
Time: 3:46:50 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 450

Material #: 15
Sand (Non-Liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 780 to 9960

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste-Static (2)
Wt: 80 to 105
Phi: Strength Fn: 1
C: Strength Fn: 1

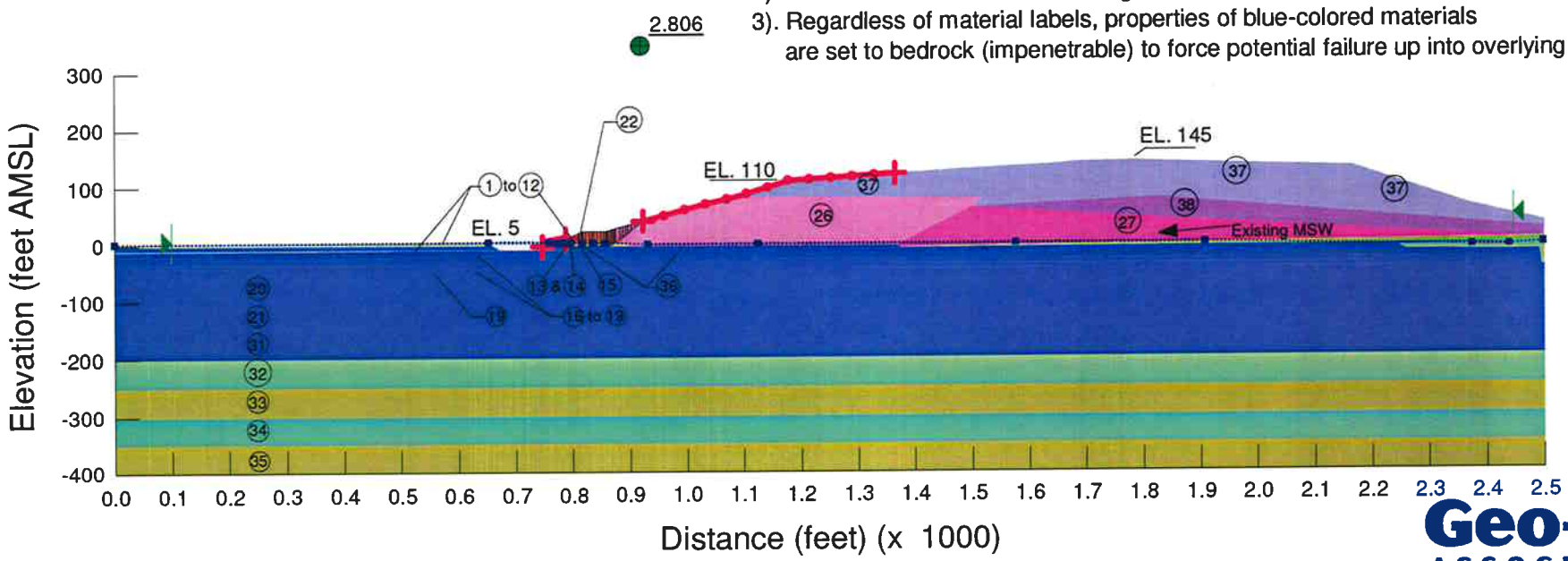
Material # 13 & 14
Name: Young Bay Mud
Model: S=f(overburden)
Unit Weight: 113 pcf
Tau/Sigma Ratio: 0.3
Anisotropic Strength Fn: Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 620

Material #: 36
Description: OBA (top El. -10 OCR=2)
Wt: 127
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 4700

Material #: 37 and 38
Municipal Solid Waste-Static (5)
Wt: 80 to 90
Phi: Strength Fn: 1
C: Strength Fn: 1

Material #: 39
Bedrock (Impenetrable)

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Through MSW & YBM
Sta. 150+00 2004-0049 Pseudo-Static Analysis
Sta.150+00 MSW & YBM_eq.gsz
Date: 6/8/2008
Time: 1:33:23 PM
Method: Morgenstern-Price
Slip Surface Option: Fully-Specified
Optimization: Yes
Horz Seismic Load: 0.259

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 450

Material #: 15
Sand (Non-Liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 780 to 9960

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste-Dynamic (2)
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

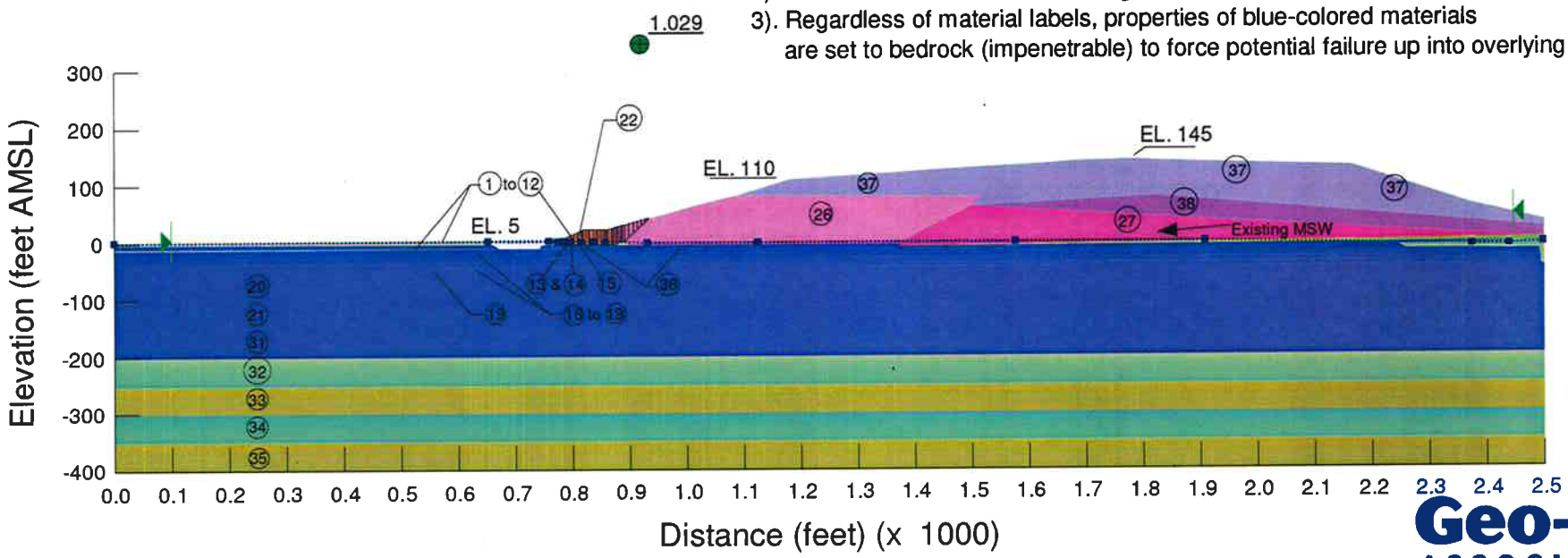
Material # 13 & 14
Name: Young Bay Mud
Model: S=f(overburden)
Unit Weight: 113 pcf
Tau/Sigma Ratio: 0.3
Anisotropic Strength Fn: Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 620

Material #: 36
Description: OBA (top El. -10 OCR=2)
Wt: 127
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 4700

Material #: 37 and 38
Municipal Solid Waste-Dynamic (5)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 39
Bedrock (Impenetrable)

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Deep Foundation Failure Through Older Bay Alluvium
Sta. 163+13 2004-0049 Static Analysis
Sta.163+13 OBA.gsz
Date: 6/2/2008
Time: 9:43:04 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 450

Name: Material #: 14 Young Bay Mud
Model: S=f(overburden)
Unit Weight: 113 pcf
Tau/Sigma Ratio: 0.3
Minimum Strength: 620

Material #: 15
Sand (Non-Liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 780 to 9960

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste-Static (2)
Wt: 80 to 105
Phi: Strength Fn: 1
C: Strength Fn: 1

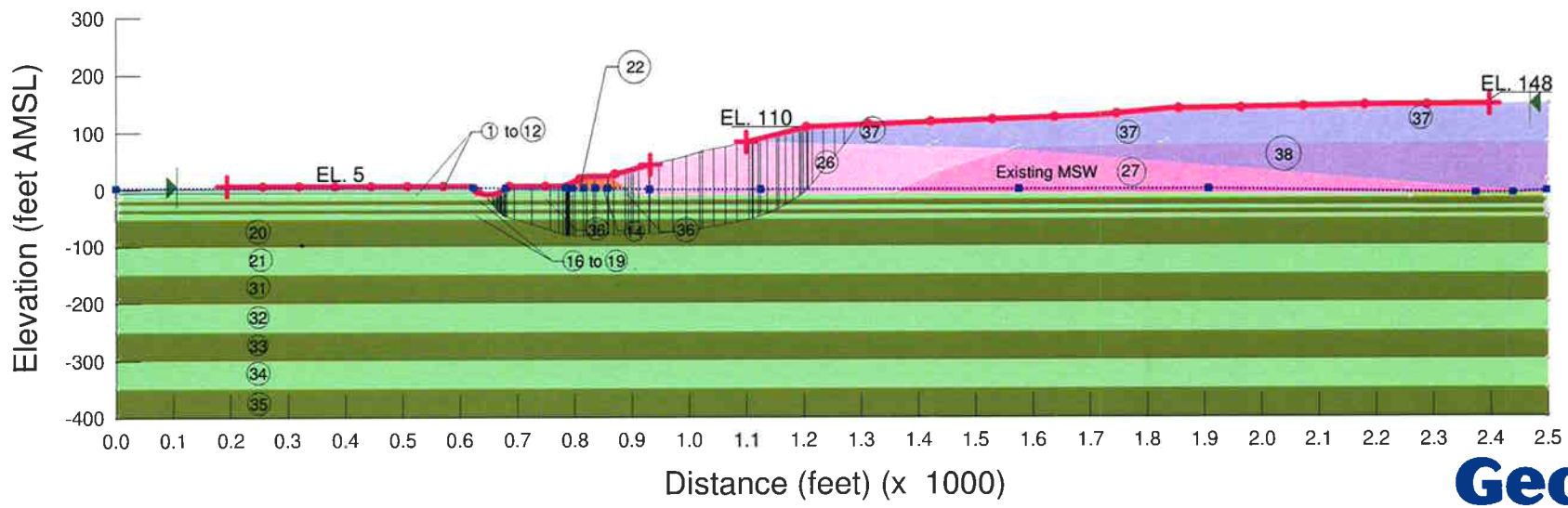
Material #: 36
Description: OBA (top El. -2 OCR=2)
Wt: 127
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 470

Material #: 37 and 38
Municipal Solid Waste-Static (5)
Wt: 80 to 90
Phi: Strength Fn: 1
C: Strength Fn: 1

Material #: 39
Bedrock (Impenetrable)

2.201

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Deep Foundation Failure Through Older Bay Alluvium
Sta. 163+13 2004-0049 Pseudo-Static Analysis
Sta.163+13 OBA_eq.gsz
Date: 6/2/2008
Time: 9:48:57 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0.16

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 450

Name: Material #: 14 Young Bay Mud
Model: S=f(overburden)
Unit Weight: 113 pcf
Tau/Sigma Ratio: 0.3
Minimum Strength: 620

Material #: 15
Sand (Non-Liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 780 to 9960

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste-Dynamic
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

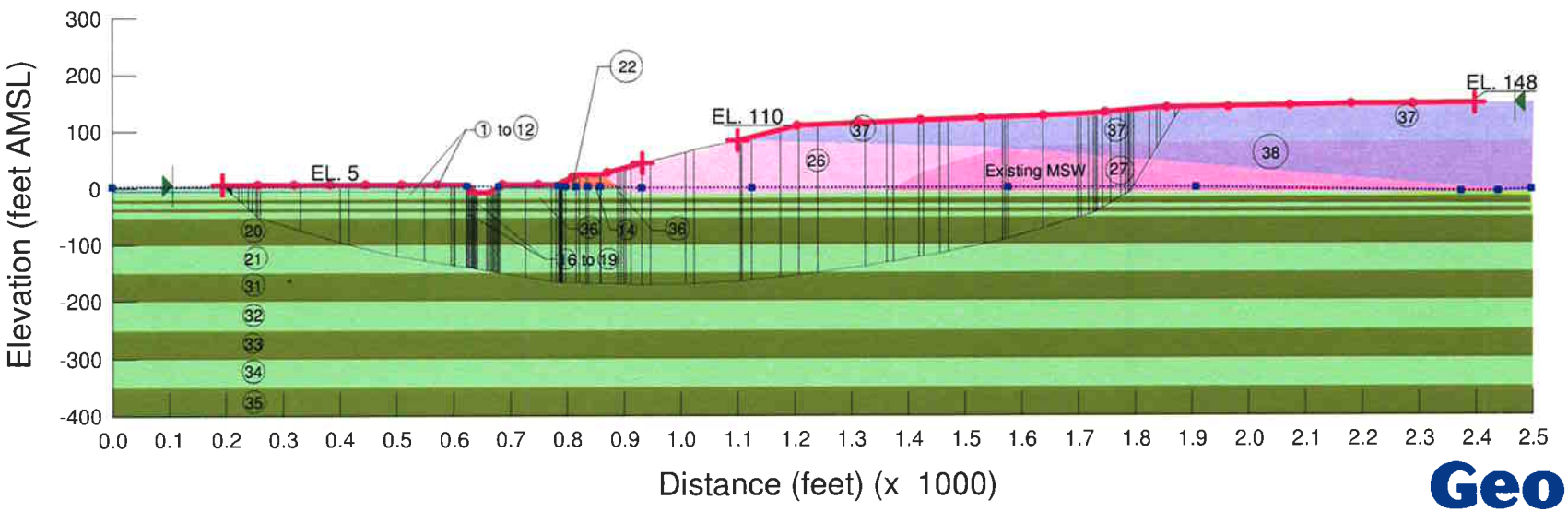
Material #: 36
Description: OBA (top El. -2 OCR=2)
Wt: 127
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 470

Material #: 37 and 38
Municipal Solid Waste-Dynamic (4)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 39
Bedrock (Impenetrable)

1.002

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Through MSW & OBA
Sta. 163+13 2004-0049 Static Analysis
Sta.163+13 MSW & OBA.gsz
Date: 6/2/2008
Time: 9:59:15 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 450

Name: Material #: 14 Young Bay Mud
Model: S=f(overburden)
Unit Weight: 113 pcf
Tau/Sigma Ratio: 0.3
Minimum Strength: 620

Material #: 15
Sand (Non-Liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 780 to 9960

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste-Static (2)
Wt: 80 to 105
Phi: Strength Fn: 1
C: Strength Fn: 1

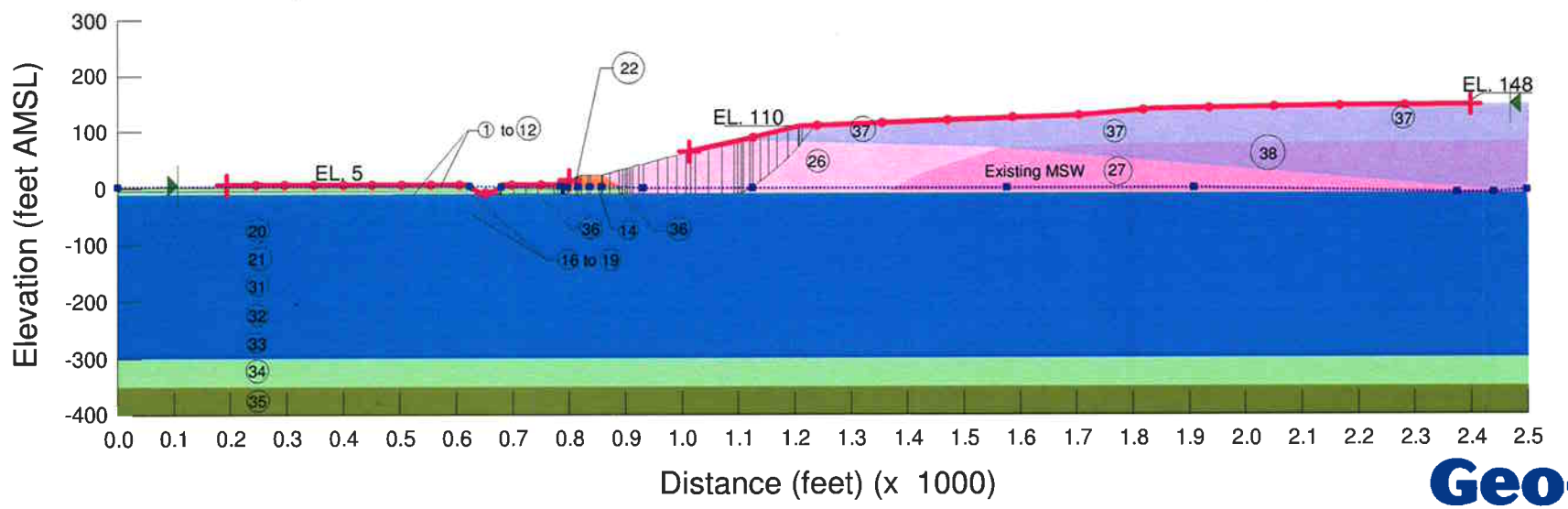
Material #: 36
Description: OBA (top El. -2 OCR=2)
Wt: 127
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 470

Material #: 37 and 38
Municipal Solid Waste-Static (5)
Wt: 80 to 90
Phi: Strength Fn: 1
C: Strength Fn: 1

Material #: 39
Bedrock (Impenetrable)

3.153

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Through MSW & OBA
Sta. 163+13 2004-0049 Pseudo-Static Analysis
Sta.163+13 MSW & OBA_eq.gsz
Date: 6/8/2008
Time: 12:57:51 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0.359

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 450

Name: Material #: 14 Young Bay Mud
Model: S=f(overburden)
Unit Weight: 113 pcf
Tau/Sigma Ratio: 0.3
Minimum Strength: 620

Material #: 15
Sand (Non-Liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 780 to 9960

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste-Dynamic (2)
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

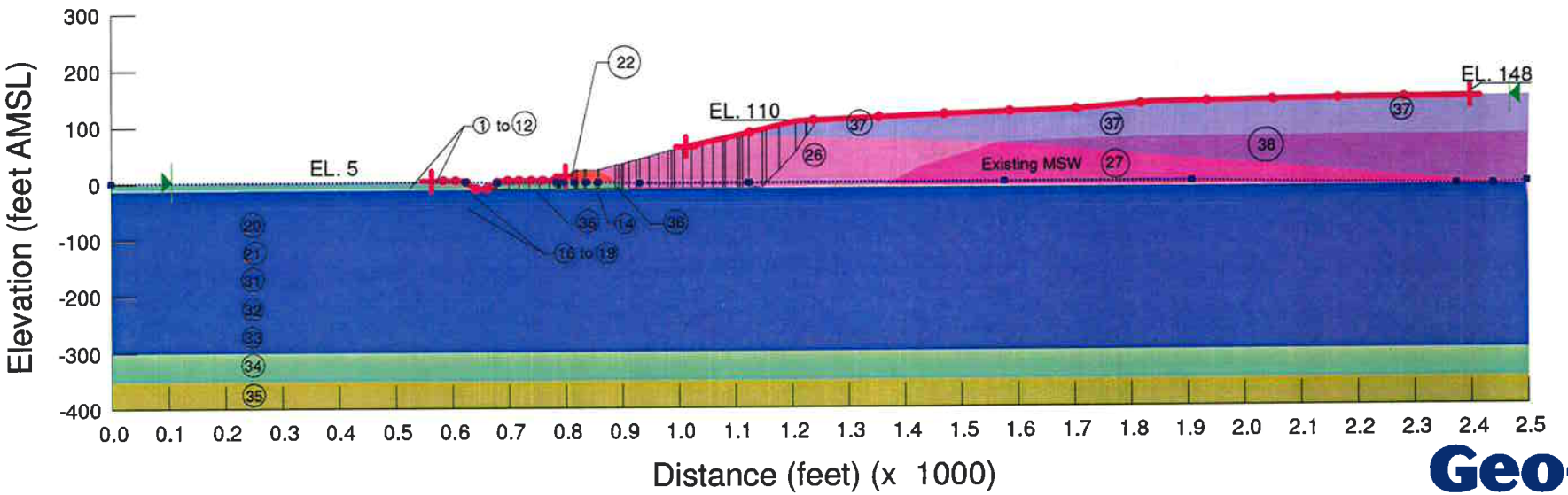
Material #: 36
Description: OBA (top El. -2 OCR=2)
Wt: 127
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 470

Material #: 37 and 38
Municipal Solid Waste-Dynamic (5)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 39
Bedrock (Impenetrable)

1.001

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Through MSW & YBM
Sta. 163+13 2004-0049 Pseudo-Static Analysis
Sta.163+13 MSW & YBM.gsz
Date: 6/8/2008
Time: 3:49:37 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 450

Name: Material #: 14 Young Bay Mud
Model: S=f(overburden)
Unit Weight: 113 pcf
Tau/Sigma Ratio: 0.3
Minimum Strength: 620

Material #: 15
Sand (Non-Liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 780 to 9960

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste-Static (2)
Wt: 80 to 105
Phi: Strength Fn: 1
C: Strength Fn: 1

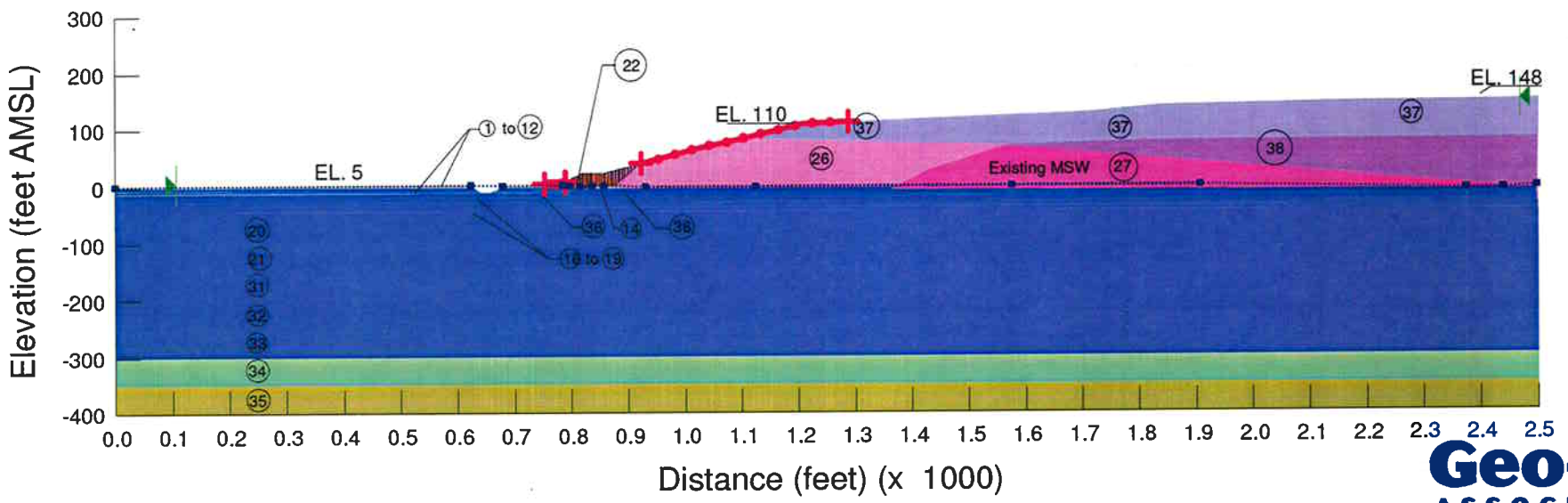
Material #: 36
Description: OBA (top El. -2 OCR=2)
Wt: 127
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 470

Material #: 37 and 38
Municipal Solid Waste-Static
Wt: 80 to 90
Phi: Strength Fn: 1
C: Strength Fn: 1

Material #: 39
Bedrock (Impenetrable)

2.655

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials [redacted] are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES

Newby Island Landfill Failure Through MSW & YBM
Sta. 163+13 2004-0049 Pseudo-Static Analysis
Sta.163+13 MSW & YBM_eq.gsz
Date: 6/8/2008
Time: 2:33:25 PM
Method: Morgenstern-Price
Slip Surface Option: Fully-Specified
Optimization: Yes
Horz Seismic Load: 0.22

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 450

Name: Material #: 14 Young Bay Mud
Model: S=f(overburden)
Unit Weight: 113 pcf
Tau/Sigma Ratio: 0.3
Minimum Strength: 620

Material #: 15
Sand (Non-Liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 780 to 9960

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
Municipal Solid Waste-Dynamic (2)
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

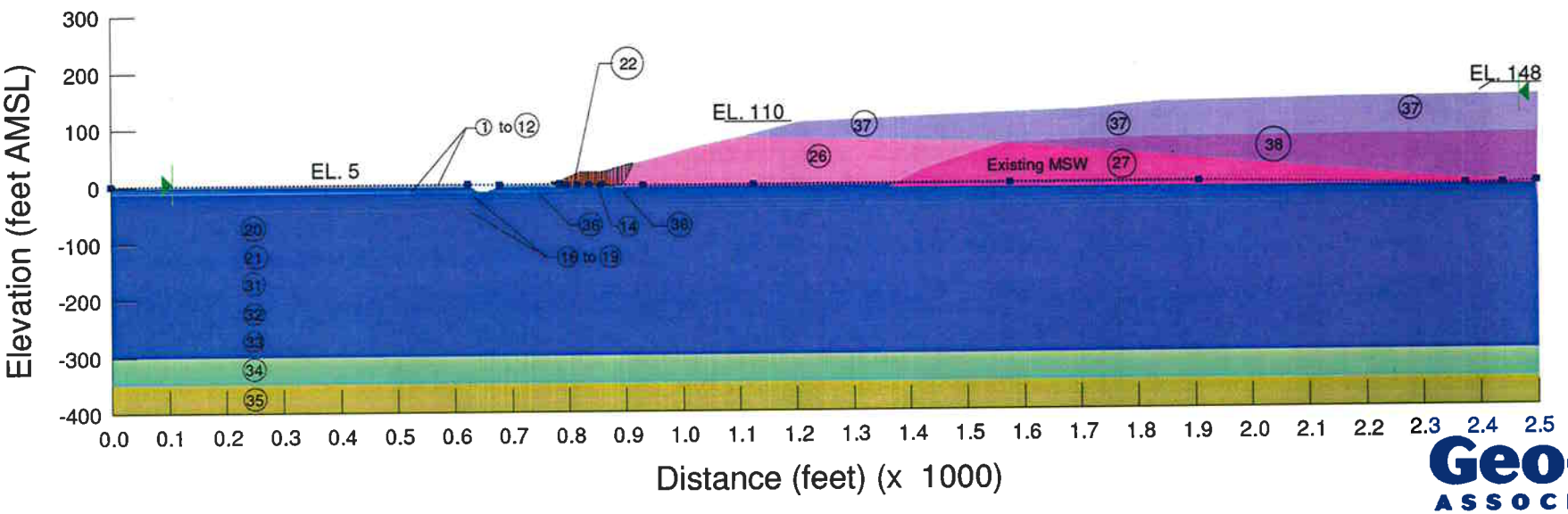
Material #: 36
Description: OBA (top El. -2 OCR=2)
Wt: 127
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 470

Material #: 37 and 38
Municipal Solid Waste-Dynamic
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 39
Bedrock (Impenetrable)

1.005

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.
3). Regardless of material labels, properties of blue-colored materials [redacted]
are set to bedrock (impenetrable) to force potential failure up into overlying materials



Geo-Logic ASSOCIATES