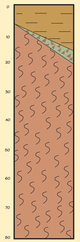
Soils of the Fairbanks Area

GILMORE

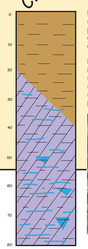
GILMORE SILT LOAM
Gilmore soils are dry soils on hills. A layer of silt loam 1 to 2 feet thick overlies weathered bedrock.
FROST HEAVE can damage foundations and roads. Ensure adequate drainage to minimize frost heave.
BEDROCK is usually soft enough to be excavated, though onsite inspection to confirm this is advised. Soft weathered bedrock is generally suitable for septic systems, but where FRACTURED HARD BEDROCK is present, septic systems will require special design to function properly.
SLOPE may complicate design of roads and structures.
SOIL EROSION BY WATER is likely where the vegetation and ground surface are disturbed. To prevent erosion, minimize disturbance and use erosion-control measures.



Road cut showing shallow soil over bedrock.

CHATANIKA

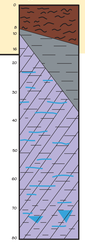
CHATANIKA SILT LOAM
Chatanika soils are wet soils with permafrost. A moss/organic mat overlies silty soil many feet thick.
WETNESS, PERMAFROST, and PONDING make these soils poorly suited for building sites. Wetness problems are likely to persist after clearing of the vegetation and removal of the moss/organic layer.
THAW SUBSIDENCE and PITTING due to thaw of buried ice masses are likely to occur if the surface is disturbed. If roads or structures must be placed on these soils, take steps to ensure that the permafrost will be preserved.



Above ground foundations help to protect the permafrost.

GOLDSTREAM

GOLDSTREAM PEAT
Goldstream soils are wet soils with permafrost. A thick moss/organic mat overlies silty soil many feet thick.
WETNESS, PERMAFROST, and PONDING make these soils poorly suited for building sites. Wetness problems are likely to persist after clearing of the vegetation and removal of the moss/organic layer.
THAW SUBSIDENCE AND PITTING due to thaw of buried ice masses are likely to occur if the surface is disturbed. If roads or structures must be placed on these soils, take steps to ensure that the permafrost will be preserved.

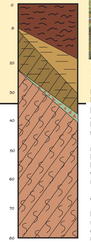


Stunted black spruce forest with moss and tussock ground cover.

ESTER

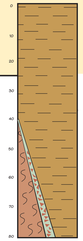
Steep north facing slopes with sparse, stunted black spruce forest.

ESTER PEAT
Ester soils are wet soils with permafrost on north facing slopes. A thick moss/organic mat over a thin layer of frozen silt loam over weathered bedrock.
WETNESS and PERMAFROST make these soils poorly suited for building sites. Wetness problems are likely to persist after clearing of the vegetation and removal of the moss/organic layer.
STEEP SLOPES complicate design of roads and structures.
SOIL EROSION BY WATER is likely where the vegetation and ground surface are disturbed. To prevent erosion, minimize disturbance and use erosion-control measures.



FAIRBANKS

FAIRBANKS SILT LOAM
Fairbanks soils are dry soils on hills. A layer of silt loam greater than 3 feet overlies weathered bedrock.
FROST HEAVE can damage foundations and roads. Ensure adequate drainage to minimize frost heave.
SLOW PERCOLATION of septic system effluent is likely. Leachfields should be constructed to compensate for slow percolation.
SLOPE may complicate design of roads and structures.
SOIL EROSION BY WATER is likely where the vegetation and ground surface are disturbed. To prevent erosion, minimize disturbance and use erosion-control measures.

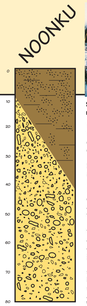


Road cut showing very deep silty soil.

NOONKU

Seasonally ponded soils and flooding as a result of clogged surface drains.

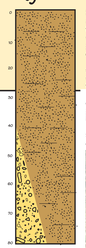
NOONKU VERY FINE SANDY LOAM
Noonku soils are wet soils consisting of 2 to 3 feet of silt and fine sand over sand and gravel.
FLOODING is a hazard for homesites, although this hazard is reduced in many areas by the Chena Lakes flood control system. Elsewhere structures should be built on a gravel pad or otherwise placed above the reach of potential floodwaters.
PONDING of melt water over frozen soil in spring occurs in low areas. Be sure the ground slopes away from foundations to prevent problems.
POOR FILTRATION of septic system effluent is likely if the leachfields are placed in gravelly subsoil. Be sure leachfields provide adequate filtration.
WETNESS makes these soils poorly suited for building sites.



SALCHAKET

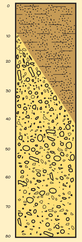
SALCHAKET VERY FINE SANDY LOAM
Salchaket soils consists of greater than 3 feet of silt and fine sand over sand and gravel.
FLOODING is a hazard for homesites, although this hazard is reduced in many areas by the Chena Lakes flood control system. Elsewhere structures should be built on a gravel pad or otherwise placed above the reach of potential floodwaters.
PONDING of melt water over frozen soil in spring occurs in low areas. Be sure the ground slopes away from foundations to prevent problems.
POOR FILTRATION of septic system effluent is likely if the leachfields are placed in gravelly subsoil. Be sure leachfields provide adequate filtration.

Soil profile showing stratification of organic matter.



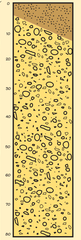
JARVIS

JARVIS
Jarvis soils consist of 1.5 to 3 feet of silt and fine sand over sand and gravel.
FLOODING is a hazard for homesites, although this hazard is reduced in many areas by the Chena Lakes flood control system. Elsewhere structures should be built on a gravel pad or otherwise placed above the reach of potential floodwaters.
PONDING of melt water over frozen soil in spring occurs in low areas. Be sure the ground slopes away from foundations to prevent problems.
POOR FILTRATION of septic system effluent is likely if the leachfields are placed in gravelly subsoil. Be sure leachfields provides adequate filtration.

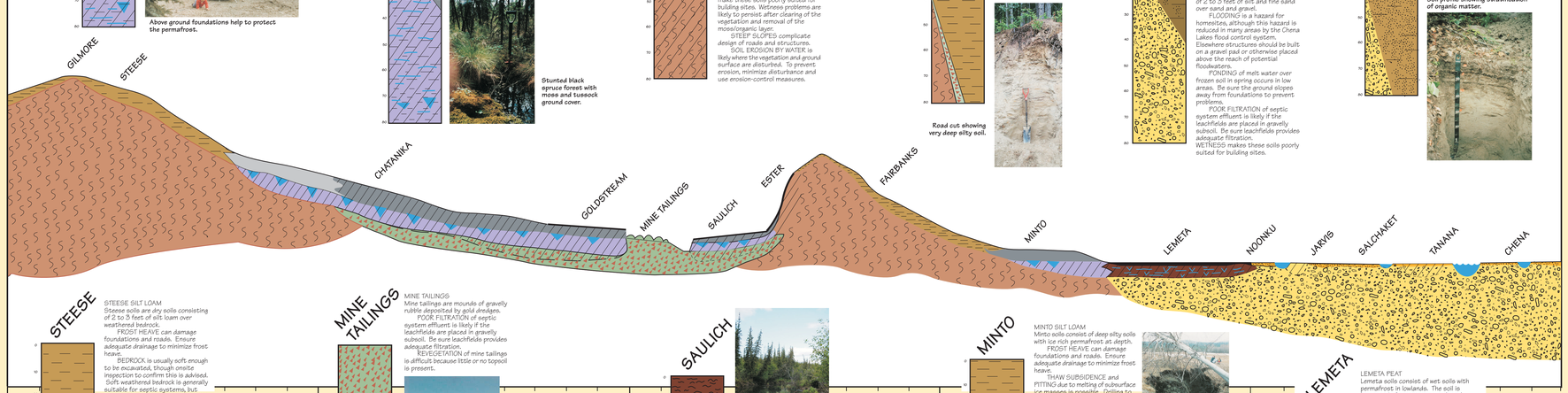


1967 flood in Fairbanks.

CHENA



CHENA VERY FINE SANDY LOAM
Chena soils are dry soils on stream terraces and floodplains. A thin layer of loamy material overlies sand and gravel.
FLOODING is a hazard for homesites, although this hazard is reduced in many areas by the Chena Lakes flood control system. Elsewhere structures should be built on a gravel pad or otherwise placed above the reach of potential floodwaters.
PONDING of melt water over frozen soil in spring occurs in low areas. Be sure the ground slopes away from foundations to prevent problems.
POOR FILTRATION of septic system effluent is likely if the leach fields are placed in gravelly subsoil. Be sure leachfields provide adequate filtration.

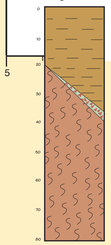


LEGEND

- Alluvial sand & gravel
- Metamorphic bedrock
- Wet colluvial silt
- Colluvial silt
- Permafrost with ice wedges
- Permafrost
- Wind-blown silt & loamy alluvium
- Placer deposits & mine tailings
- Thick organic matter
- Water
- Peat

STEESE

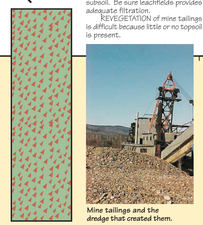
STEESE SILT LOAM
Steese soils are dry soils consisting of 2 to 3 feet of silt loam over weathered bedrock.
FROST HEAVE can damage foundations and roads. Ensure adequate drainage to minimize frost heave.
BEDROCK is usually soft enough to be excavated, though onsite inspection to confirm this is advised. Soft weathered bedrock is generally suitable for septic systems, but where FRACTURED HARD BEDROCK is present, septic systems will require especial design to function properly.
SLOPE may complicate design of roads and structures.
SOIL EROSION BY WATER is likely where the vegetation and ground surface are disturbed. To prevent erosion, minimize disturbance and use erosion-control measures.



Road cut showing moderately deep soil over bedrock.

MINE TAILINGS

MINE TAILINGS
Mine tailings are mounds of gravelly rubble deposited by gold dredges.
POOR FILTRATION of septic system effluent is likely if the leachfields are placed in gravelly subsoil. Be sure leachfields provides adequate filtration.
REVEGETATION of mine tailings is difficult because little or no topsoil is present.

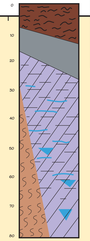


Mine tailings and the dredge that created them.

SAULICH

Thermokarst pond with trees tipping in.

SAULICH PEAT
Saulich soils are wet soils with permafrost. A thick moss/organic mat over lies frozen silty soil many feet thick.
WETNESS and PERMAFROST make these soils poorly suited for building sites. Wetness problems are likely to persist after clearing of the vegetation and removal of the moss/organic layer.
THAW SUBSIDENCE and PITTING due to melting of subsurface ice masses is possible. Drilling to determine if ice is present is recommended before construction. If ice is present, structures should be designed to minimize thaw and allow leveling if necessary.
SOIL EROSION BY WATER is likely where the vegetation and ground surface are disturbed. To prevent erosion, minimize disturbance and use erosion-control measures.

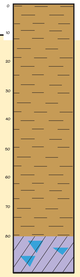


MINTO

MINTO SILT LOAM
Minto soils consist of deep silty soils with ice rich permafrost at depth.
FROST HEAVE can damage foundations and roads. Ensure adequate drainage to minimize frost heave.
THAW SUBSIDENCE and PITTING due to melting of subsurface ice masses is possible. Drilling to determine if ice is present is recommended before construction. If ice is present, structures should be designed to minimize thaw and allow leveling if necessary.
SOIL EROSION BY WATER is likely where the vegetation and ground surface are disturbed. To prevent erosion, minimize disturbance and use erosion-control measures.

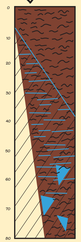
Thermokarst pit in farm field near Fairbanks.

House damaged by melting ice rich permafrost.



LEMETA

LEMETA PEAT
Lemeta soils consist of wet soils with permafrost in lowlands. The soil is composed of organic matter (peat).
WETNESS, PERMAFROST and PONDING makes these soils poorly suited for building sites.
THAW SUBSIDENCE AND PITTING due to thaw of buried ice masses are likely to occur if the surface is disturbed. If roads or structures must be placed on these soils, take steps to ensure that the permafrost will be preserved.



Peat bog with ice wedge polygons.

TANANA

TANANA SILT LOAM
Tanana soils are wet soils with permafrost. More than three feet of silt and fine sand overly sand and gravel.
WETNESS and PERMAFROST make these soils poorly suited for building sites. Wetness problems are likely to persist after clearing of the vegetation and removal of the moss/organic layer.
FLOODING is a hazard for homesites, although this hazard is reduced in many areas by the Chena Lakes flood control system. Elsewhere structures should be built on a gravel pad or otherwise placed above the reach of potential floodwaters.
PONDING of melt water over frozen soil in spring occurs in low areas. Be sure the ground slopes away from foundations to prevent problems.

Stunted black spruce forest on alluvial terrace.

United States Department of Agriculture
NRCS Natural Resources Conservation Service