

ERDMAN & ASSOCIATES
Consulting Engineers / Water Testing Laboratory

5200 Dunbar Drive
Wasilla, AK 99654

Phone 907-376-6989
Fax 907-373-2157

October 15, 2004

Western Spruce, LLC
c/o John Shadrach, RLS
PO Box 1497
Wasilla, AK 99687

Re: TP B22, Sec 20, T18N, R1E, S.M.; Proposed Hart Lake Subdivision; Soils Report

Mr. Shadrach,

As you requested, we inspected the excavation of six test pits on the referenced property in June 2004, and 19 additional test pits in August 2004. A test hole location map and copies of our test hole logs are attached, and our findings are summarized below:

Subsurface soils were found to be primarily clean sand and gravel, beneath a surface layer of silt and organics 1 to 3 feet thick. Groundwater was encountered in the test holes #1, #2, #24 & #25 near Hart Lake. Neither groundwater nor impermeable soil were encountered in the other holes.

Our findings are based upon the soil and groundwater conditions observed in the test pits. Conditions appear to be representative of the property. However, differing conditions may be encountered, and groundwater levels can change. Conditions on the majority of the property appear to meet the definition of "Usable Area" for subdivision under Mat-Su Borough requirements, and for installation of conventional onsite septic systems. The northeast corner of the property, near Hart Lake, appears to have groundwater at a depth less than 8 feet, and would thus not meet the definition of usable area.

Based upon our investigation, the proposed lots shown on the preliminary plat contain a minimum of 20,000 square feet of usable area as defined by MSB Title 16, with the exception of Lots 1-4 and 7-9, Block 1. These lots will require a variance to usable area requirements, or connection to a public sewer system, unless additional soils investigation can prove that they contain sufficient usable area to meet MSB requirements.

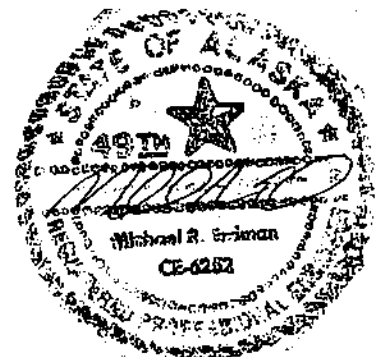
Please call if you have any questions or need additional information.

Sincerely,



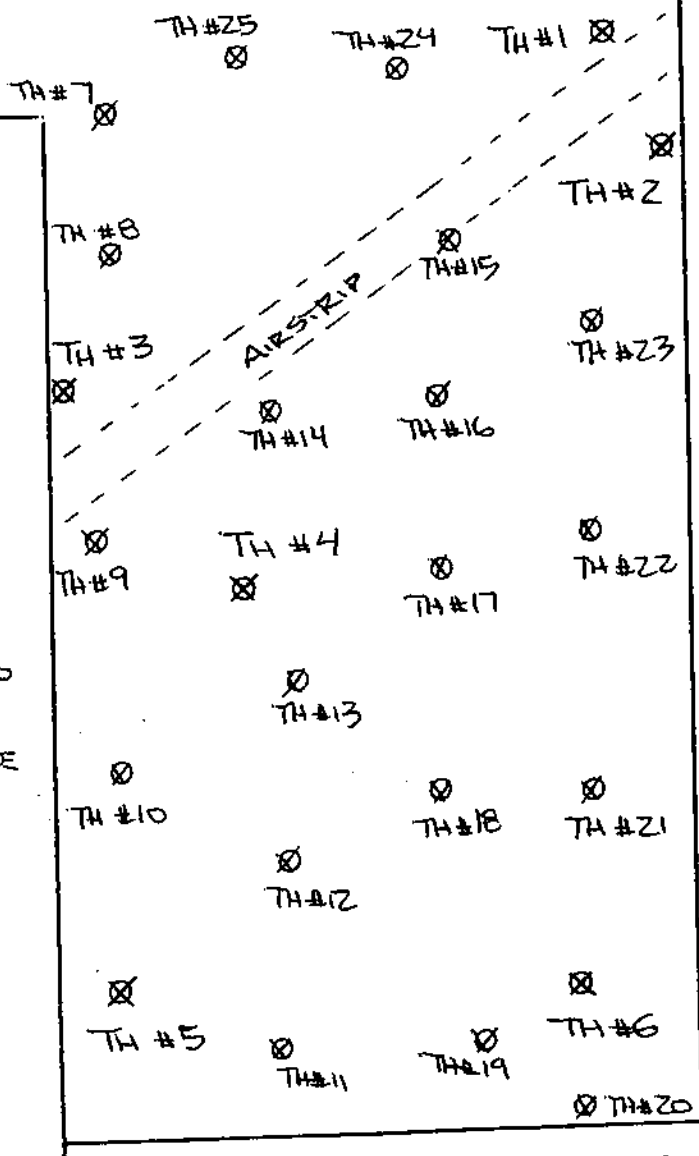
Michael R. Erdman, P.E.

cc: Scott Walther



E. PAMELA DR.

HART
LAKE



NOTE:

THIS MAP IS NOT TO
SCALE, AND TEST
HOLE LOCATIONS ARE
APPROXIMATE.

PROPOSED HART LAKE SUBDIVISION
T.P. B22, SEC 20, T18N, R1E, S1M, ALASKA

ERDMAN & ASSOCIATES
ENGINEERING/WATER TESTING
5200 DUNBAR DRIVE
WASILLA, AK 99654

~~REPORT~~ SOILS REPORT - T.H. LOCATIONS

ERDMAN & ASSOCIATES

Engineering/Water Testing

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TEST HOLE # 1

SOILS LOG

PERFORMED FOR: Western Spruce LLC

LEGAL DESCRIPTION: TP B22, Sec 20, T18N, R1E, S.M., Alaska
(Proposed Hart Lake Subdivision)

SITE PLAN

SEE ATTACHED TEST HOLE LOCATION
MAP.

| Depth (Feet) | |
|-----------------|--|
| 1- | ORGANICS/SILT |
| 2- | |
| 3- | |
| 4- | SAND & GRAVEL (SP/GP) w/ Cobbles. Brown. |
| 5- | |
| 6- | |
| 7- | |
| 8- | SAND & GRAVEL (SP/GP) w/ Cobbles. & some Silt. Gray. Ground water flows freely at 7'. |
| 9- | Bottom of Hole 9 Feet. |
| 10- | |
| 11- | |
| 12- | |
| 13- | |
| 14- | |
| 15- | |
| 16- | |

WAS GROUND WATER
ENCOUNTERED?

YES

IF YES, AT WHAT
DEPTH?

7 Feet

DEPTH TO WATER
AFTER MONITORING?

N/A

COMMENTS:

LOGGED BY: MICHAEL R. ERDMAN, P.E.

DATE: 16 JUNE 2004

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TEST HOLE # 2

SOILS LOG

PERFORMED FOR: Western Spruce LLC

LEGAL DESCRIPTION: TP B22, Sec 20, T18N, R1E, S.M., Alaska
(Proposed Hart Lake Subdivision)

SITE PLAN

SEE ATTACHED TEST HOLE LOCATION
MAP.

| Depth (Feet) | |
|-----------------|---|
| 1- | ORGANICS/SILT |
| 2- | |
| 3- | SAND (SP/SW) |
| 4- | |
| 5- | Sandy GRAVEL (GP) w/ Cobbles Reddish-Brown with some Mottling |
| 6- | |
| 7- | SAND & GRAVEL (SP/GP) w/ Cobbles Brown. |
| 8- | |
| 9- | SAND & GRAVEL (SP/GP) w/ Cobbles, & some Silt. Gray. Ground water flows freely at 8' |
| 10- | Bottom of Hole 9.5 Feet. |
| 11- | |
| 12- | |
| 13- | |
| 14- | |
| 15- | |
| 16- | |

WAS GROUND WATER
ENCOUNTERED?

YES

IF YES, AT WHAT
DEPTH?

8 Feet

DEPTH TO WATER
AFTER MONITORING?

N/A

COMMENTS:

LOGGED BY: MICHAEL R. ERDMAN, P.E.

DATE: 16 JUNE 2004

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TEST HOLE # 3

SOILS LOG

PERFORMED FOR: Western Spruce LLC

LEGAL DESCRIPTION: TP B22, Sec 20, T18N, R1E, S.M., Alaska
(Proposed Hart Lake Subdivision)

SITE PLAN

SEE ATTACHED TEST HOLE
LOCATION MAP.

| Depth (Feet) | |
|-----------------|---|
| 1- | ORGANICS/SILT |
| 2- | |
| 3- | SAND (SP/SW) |
| 4- | |
| 5- | SAND & GRAVEL (SP/GP) w/ Cobbles. & Boulders to 24". |
| 6- | |
| 7- | |
| 8- | |
| 9- | |
| 10- | |
| 11- | |
| 12- | |
| 13- | Bottom of Hole 12.5 Feet. |
| 14- | |
| 15- | |
| 16- | |

WAS GROUND WATER ENCOUNTERED? NO

IF YES, AT WHAT DEPTH? N/A

DEPTH TO WATER AFTER MONITORING? N/A

COMMENTS:

LOGGED BY MICHAEL R. ERDMAN, P.E.

DATE 16 JUNE 2004

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TEST HOLE # 4

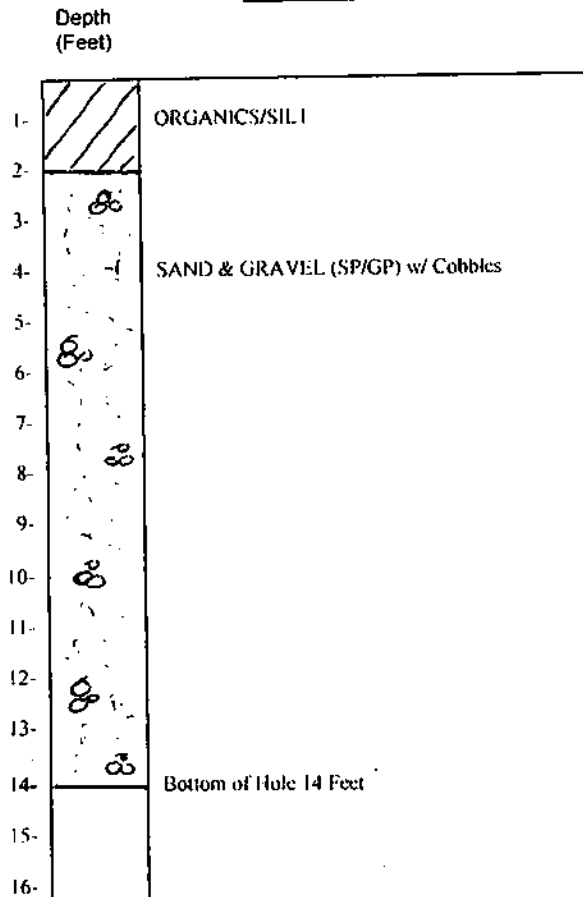
SOILS LOG

PERFORMED FOR: Western Spruce LLC

LEGAL DESCRIPTION: TP B22, Sec 20, T18N, R1E, S.M., Alaska
(Proposed Hart Lake Subdivision)

SITE PLAN

SEE ATTACHED TEST HOLE LOCATION
MAP.



WAS GROUND WATER
ENCOUNTERED? NO

IF YES, AT WHAT
DEPTH? N/A

DEPTH TO WATER
AFTER MONITORING? N/A

COMMENTS

LOGGED BY: MICHAEL R. ERDMAN, P.E. DATE: 16 JUNE 2004

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TEST HOLE # 5

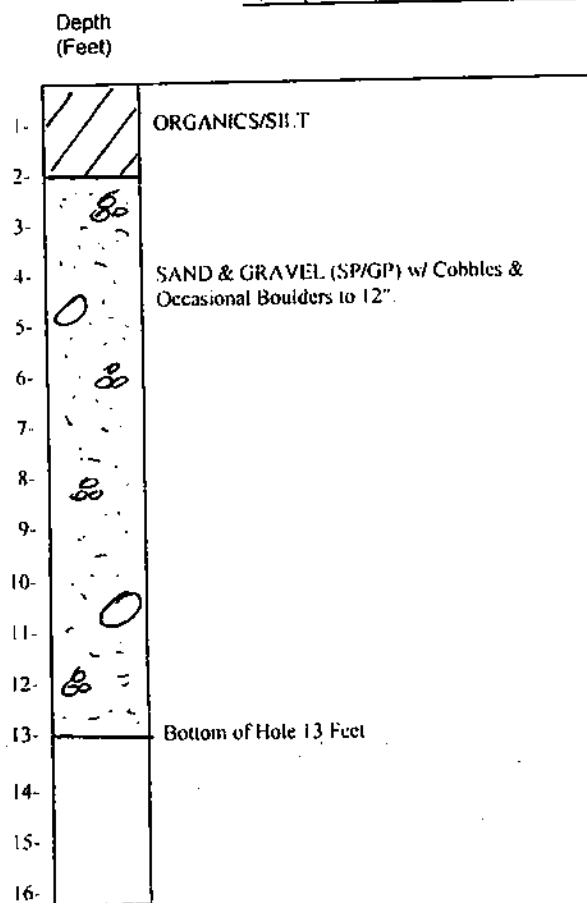
SOILS LOG

PERFORMED FOR: Western Spruce LLC

LEGAL DESCRIPTION: TP B22, Sec 20, T18N, R1E, S.M., Alaska
(Proposed Hart Lake Subdivision)

SITE PLAN

SEE ATTACHED TEST HOLE LOCATION
MAP.



WAS GROUND WATER
ENCOUNTERED?

NO

IF YES, AT WHAT
DEPTH?

N/A

DEPTH TO WATER
AFTER MONITORING?

N/A

COMMENTS:

LOGGED BY: MICHAEL R. ERDMAN, P.E.

DATE: 16 JUNE 2004

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TEST HOLE # 6

SOILS LOG

SITE PLAN

SEE ATTACHED TEST HOLE LOCATION
MAP.

PERFORMED FOR: Western Spruce LLC

LEGAL DESCRIPTION: TP B22, Sec 20, T18N, R1E, S.M., Alaska
(Proposed Hart Lake Subdivision)

| Depth (Feet) | |
|-----------------|---|
| 1- | ORGANICS/SILT |
| 2- | |
| 3- | |
| 4- | SAND & GRAVEL (SP/GP) w/ Cobbles & Occasional Boulders to 12". |
| 5- | |
| 6- | |
| 7- | |
| 8- | |
| 9- | |
| 10- | |
| 11- | |
| 12- | Bottom of Hole 12.5 Feet |
| 13- | |
| 14- | |
| 15- | |
| 16- | |

WAS GROUND WATER
ENCOUNTERED?

No

IF YES, AT WHAT
DEPTH?

N/A

DEPTH TO WATER
AFTER MONITORING?

N/A

COMMENTS:

LOGGED BY: MICHAEL R. ERDMAN, P.E.

DATE: 16 JUNE 2004

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TEST HOLE # 8

SOILS LOG

PERFORMED FOR: Western Spruce LLC

LEGAL DESCRIPTION: TP B22, Sec 20, T18N, R1E, S.M., Alaska
(Proposed Hart Lake Subdivision)

SITE PLAN

SEE ATTACHED TEST HOLE LOCATION
MAP.

| Depth (Feet) | |
|-----------------|---|
| 1- | ORGANICS/SILT |
| 2- | |
| 3- | |
| 4- | SAND & GRAVEL (SP/GP) w/ Cobbles & Occasional Boulders to 12". |
| 5- | |
| 6- | |
| 7- | |
| 8- | |
| 9- | |
| 10- | |
| 11- | |
| 12- | Silty GRAVEL (GM) |
| 13- | |
| 14- | Bottom of Hole 13.0 Feet |
| 15- | |
| 16- | |

WAS GROUND WATER
ENCOUNTERED? No

IF YES, AT WHAT
DEPTH? N/A

DEPTH TO WATER
AFTER MONITORING? N/A

COMMENTS:

LOGGED BY: MICHAEL R. ERDMAN, P.E.

DATE: 11 AUG 2004

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TEST HOLE # 9

SOILS LOG

PERFORMED FOR: Western Spruce LLC

LEGAL DESCRIPTION: TP B22, Sec 20, T18N, R1E, S.M., Alaska
(Proposed Hart Lake Subdivision)

SITE PLAN

SEE ATTACHED TEST HOLE LOCATION
MAP.

| Depth (Feet) | |
|-----------------|---|
| 1- | ORGANICS/SILT |
| 2- | |
| 3- | |
| 4- | SAND & GRAVEL (SP/GP) w/ Cobbles & Occasional Boulders to 12". |
| 5- | |
| 6- | |
| 7- | |
| 8- | |
| 9- | |
| 10- | |
| 11- | |
| 12- | Bottom of Hole 12.0 Feet |
| 13- | |
| 14- | |
| 15- | |
| 16- | |

WAS GROUND WATER
ENCOUNTERED? No

IF YES, AT WHAT
DEPTH? N/A

DEPTH TO WATER
AFTER MONITORING? N/A

COMMENTS:

LOGGED BY: MICHAEL R. ERDMAN, P.E.

DATE: 11 AUG 2004

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TEST HOLE # 10

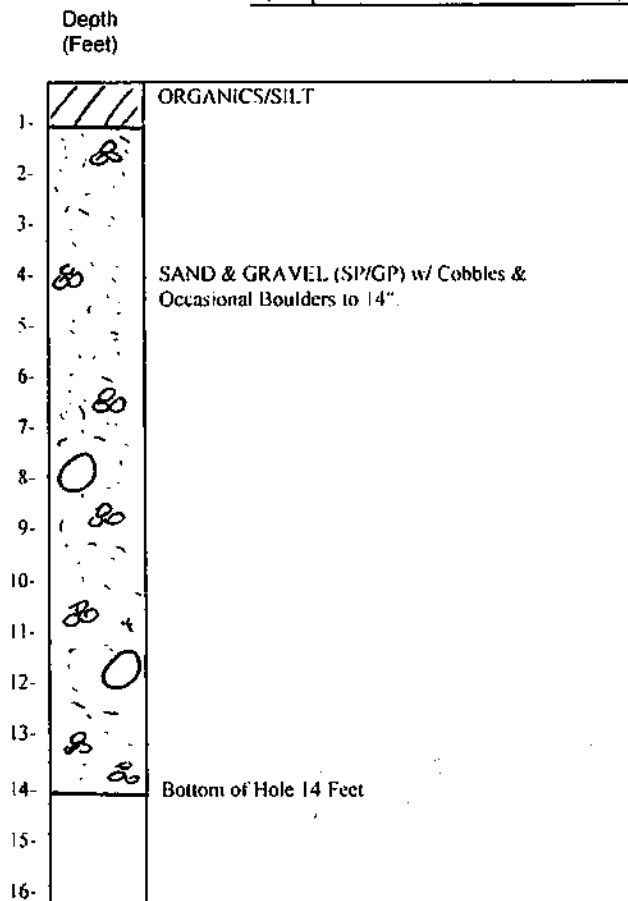
SOILS LOG

PERFORMED FOR: Western Spruce LLC

LEGAL DESCRIPTION: TP B22, Sec 20, T18N, R1E, S.M., Alaska
(Proposed Hart Lake Subdivision)

SITE PLAN

SEE ATTACHED TEST HOLE LOCATION
MAP.



WAS GROUND WATER
ENCOUNTERED? No

IF YES, AT WHAT
DEPTH? N/A

DEPTH TO WATER
AFTER MONITORING? N/A

COMMENTS:

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DATE: 11 AUG 2004

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TEST HOLE # 11

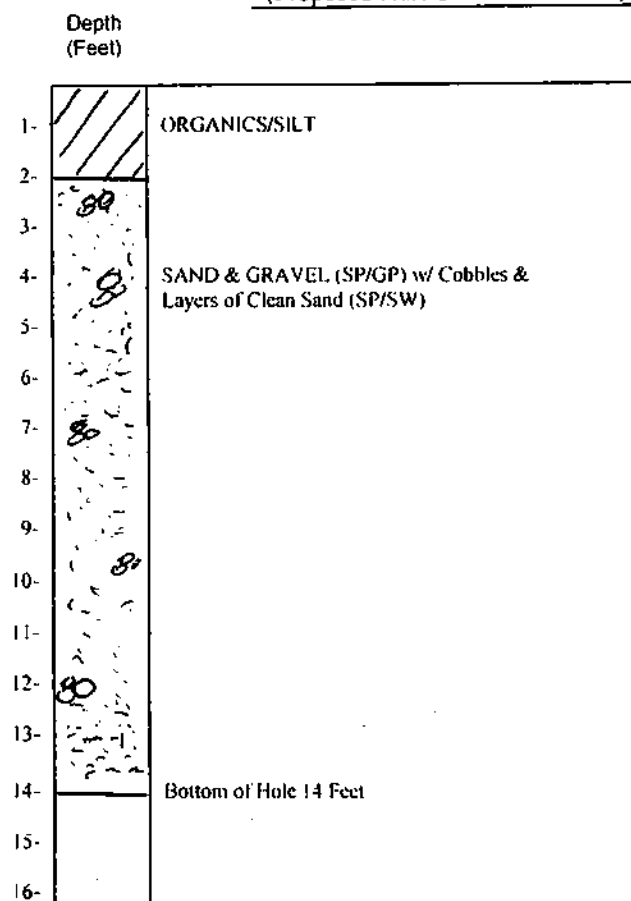
SOILS LOG

PERFORMED FOR: Western Spruce LLC

LEGAL DESCRIPTION: TP B22, Sec 20, T18N, R1E, S.M., Alaska
(Proposed Hart Lake Subdivision)

SITE PLAN

SEE ATTACHED TEST HOLE LOCATION
MAP.



WAS GROUND WATER
ENCOUNTERED?

No

IF YES, AT WHAT
DEPTH?

N/A

DEPTH TO WATER
AFTER MONITORING?

N/A

COMMENTS:

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DATE: 11 AUG 2004

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TEST HOLE # 12

SOILS LOG

PERFORMED FOR: Western Spruce LLC

LEGAL DESCRIPTION: TP B22, Sec 20, T18N, R1E, S.M., Alaska
(Proposed Hart Lake Subdivision)

SITE PLAN

SEE ATTACHED TEST HOLE LOCATION
MAP.

| Depth (Feet) | |
|-----------------|----------------------------------|
| 1- | ORGANICS/SILT |
| 2- | Sandy GRAVEL (GP) |
| 3- | SAND (SW) |
| 4- | |
| 5- | |
| 6- | SAND & GRAVEL (SP/GP) w/ Cobbles |
| 7- | |
| 8- | |
| 9- | |
| 10- | |
| 11- | |
| 12- | |
| 13- | Bottom of Hole 13 Feet |
| 14- | |
| 15- | |
| 16- | |

WAS GROUND WATER
ENCOUNTERED?

No

IF YES, AT WHAT
DEPTH?

N/A

DEPTH TO WATER
AFTER MONITORING?

N/A

COMMENTS:

LOGGED BY: MICHAEL R. ERDMAN, P.E.

DATE: 11 AUG 2004

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TEST HOLE # 13

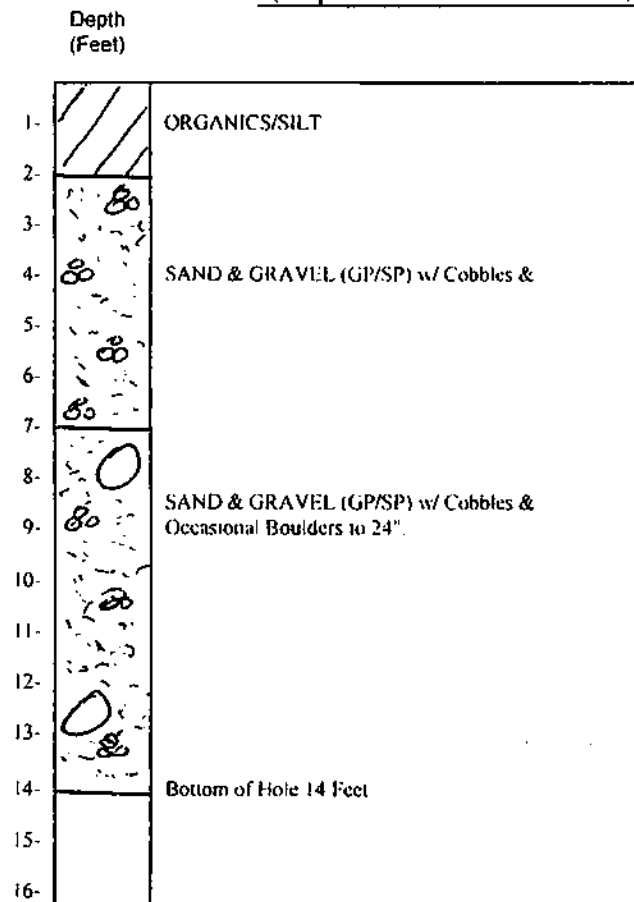
SOILS LOG

PERFORMED FOR: Western Spruce LLC

LEGAL DESCRIPTION: TP B22, Sec 20, T18N, R1E, S.M., Alaska
(Proposed Hart Lake Subdivision)

SITE PLAN

SEE ATTACHED TEST HOLE LOCATION
MAP.



WAS GROUND WATER
ENCOUNTERED? No

IF YES, AT WHAT
DEPTH? N/A

DEPTH TO WATER
AFTER MONITORING? N/A

COMMENTS

LOGGED BY: MICHAEL R. ERDMAN, P.E.

DATE: 11 AUG 2004

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TEST HOLE # 14


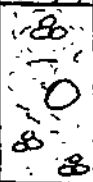

SOILS LOG

PERFORMED FOR: Western Spruce LLC

LEGAL DESCRIPTION: TP B22, Sec 20, T18N, R1E, S.M., Alaska
(Proposed Hart Lake Subdivision)

SITE PLAN

SEE ATTACHED TEST HOLE LOCATION
MAP.

| Depth (Feet) | |
|-----------------|---|
| 1- |  |
| 2- | |
| 3- |  |
| 4- | |
| 5- | |
| 6- |  |
| 7- | |
| 8- | |
| 9- | |
| 10- | |
| 11- | |
| 12- | |
| 13- | |
| 14- | Bottom of Hole 14 Feet |
| 15- | |
| 16- | |

WAS GROUND WATER
ENCOUNTERED? No

IF YES, AT WHAT
DEPTH? N/A

DEPTH TO WATER
AFTER MONITORING? N/A

COMMENTS:

LOGGED BY: MICHAEL R. ERDMAN, P.E.

DATE: 11 AUG 2004

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TEST HOLE # 15

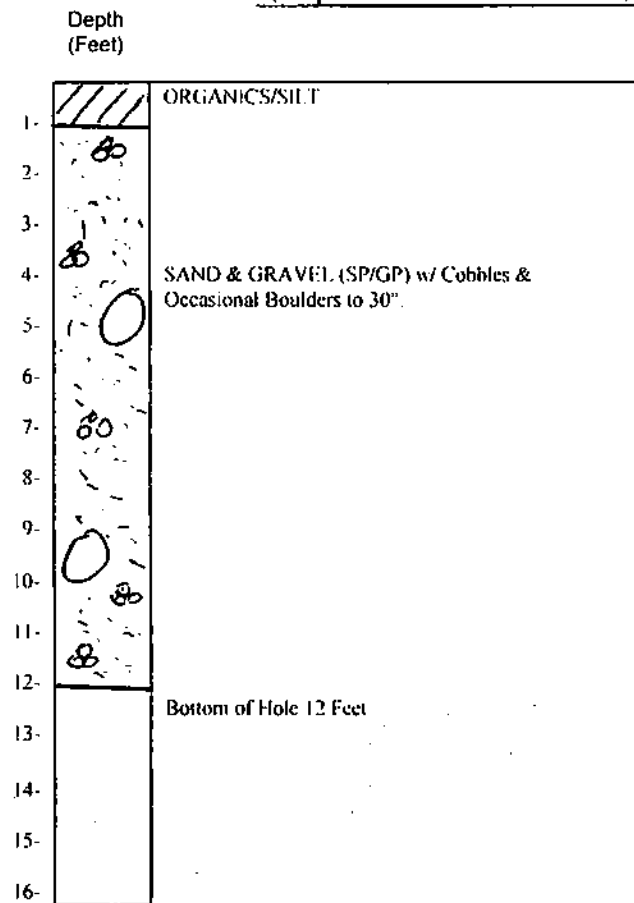
SOILS LOG

PERFORMED FOR: Western Spruce LLC

LEGAL DESCRIPTION: TP B22, Sec 20, T18N, R1E, S.M., Alaska
(Proposed Hart Lake Subdivision)

SITE PLAN

SEE ATTACHED TEST HOLE LOCATION
MAP.



WAS GROUND WATER
ENCOUNTERED?

No

IF YES, AT WHAT
DEPTH?

N/A

DEPTH TO WATER
AFTER MONITORING?

N/A

COMMENTS

LOGGED BY: MICHAEL R. ERDMAN, P.E.

DATE: 11 AUG 2004

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TEST HOLE # 16

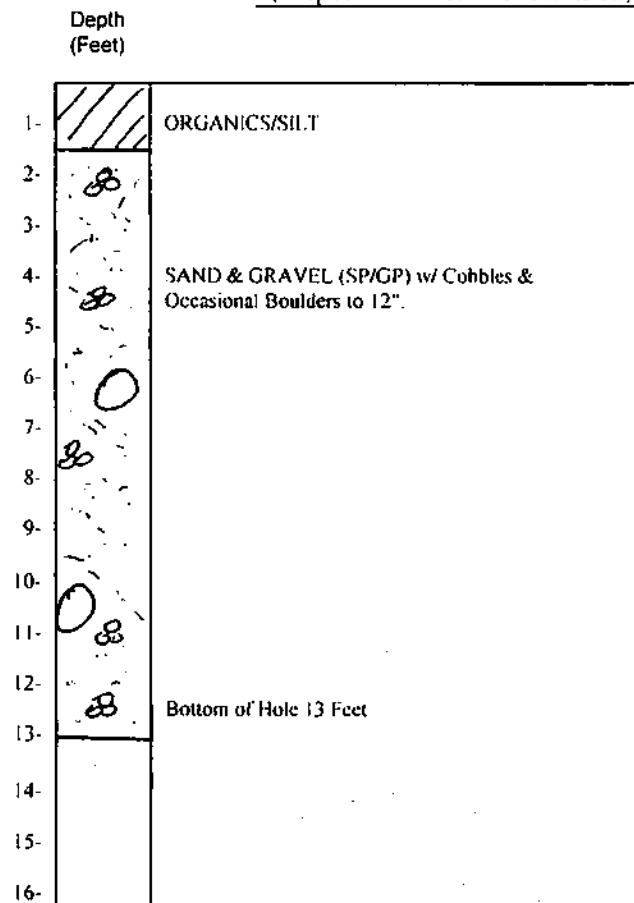
SOILS LOG

PERFORMED FOR: Western Spruce LLC

LEGAL DESCRIPTION: TP B22, Sec 20, T18N, R1E, S.M., Alaska
(Proposed Hart Lake Subdivision)

SITE PLAN

SEE ATTACHED TEST HOLE LOCATION
MAP



WAS GROUND WATER
ENCOUNTERED?

No

IF YES, AT WHAT
DEPTH?

N/A

DEPTH TO WATER
AFTER MONITORING?

N/A

COMMENTS:

LOGGED BY: MICHAEL R. ERDMAN, P.E.

DATE: 11 AUG 2004

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TEST HOLE # 17

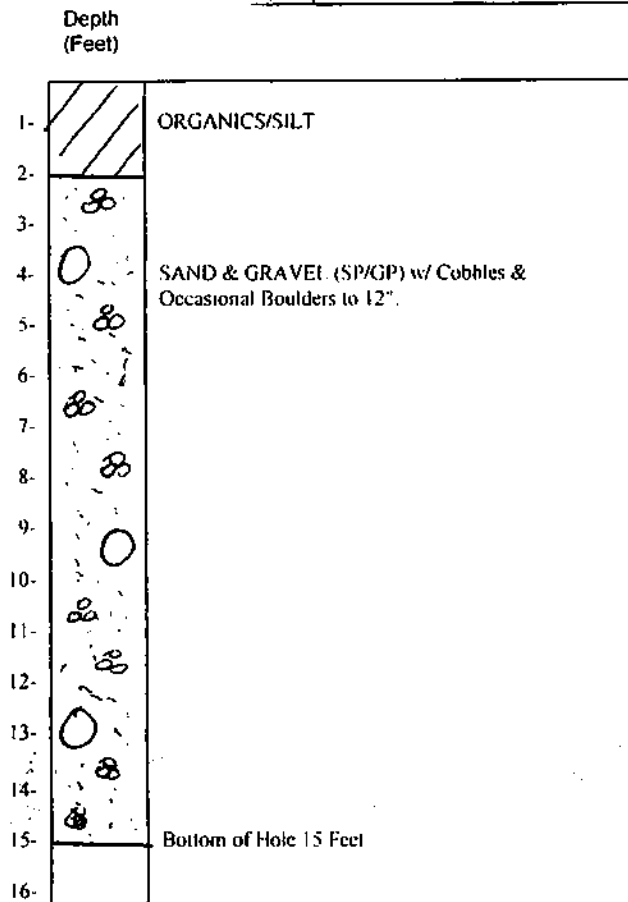
SOILS LOG

PERFORMED FOR: Western Spruce LLC

LEGAL DESCRIPTION: TP B22, Sec 20, T18N, R1E, S.M., Alaska
(Proposed Hart Lake Subdivision)

SITE PLAN

SEE ATTACHED TEST HOLE LOCATION
MAP.



WAS GROUND WATER
ENCOUNTERED?

No

IF YES, AT WHAT
DEPTH?

N/A

DEPTH TO WATER
AFTER MONITORING?

N/A

COMMENTS:

LOGGED BY: MICHAEL R. ERDMAN, P.E.

DATE: 11 AUG 2004

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TEST HOLE # 18

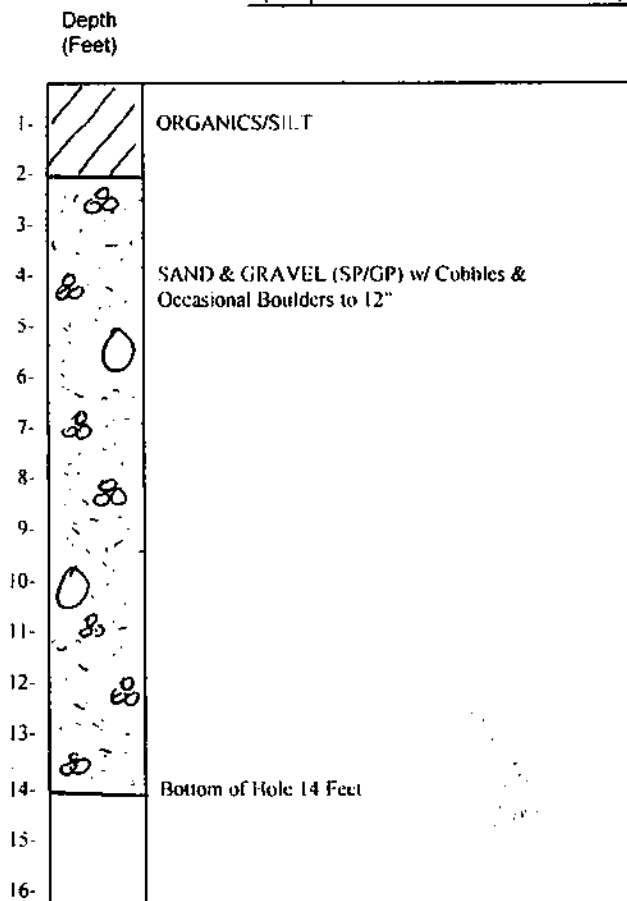
SOILS LOG

PERFORMED FOR: Western Spruce LLC

LEGAL DESCRIPTION: TP B22, Sec 20, T18N, R1E, S.M., Alaska
(Proposed Hart Lake Subdivision)

SITE PLAN

SEE ATTACHED TEST HOLE LOCATION
MAP.



WAS GROUND WATER
ENCOUNTERED? No

IF YES, AT WHAT
DEPTH? N/A

DEPTH TO WATER
AFTER MONITORING? N/A

COMMENTS:

LOGGED BY: MICHAEL R. ERDMAN, P.E.

DATE: 13 AUG 2004

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TEST HOLE # 19

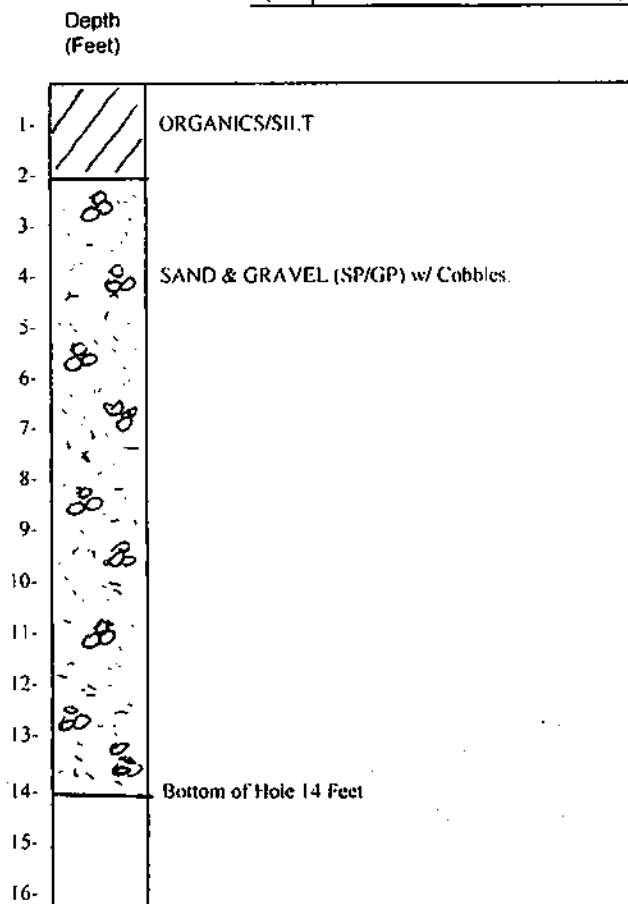
SOILS LOG

PERFORMED FOR: Western Spruce LLC

LEGAL DESCRIPTION: TP B22, Sec 20, T18N, R1E, S.M., Alaska
(Proposed Hart Lake Subdivision)

SITE PLAN

SEE ATTACHED TEST HOLE LOCATION
MAP.



WAS GROUND WATER
ENCOUNTERED? No

IF YES, AT WHAT
DEPTH? N/A

DEPTH TO WATER
AFTER MONITORING? N/A

COMMENTS

LOGGED BY: MICHAEL R. ERDMAN, P.E.

DATE: 13 AUG 2004

ERDMAN & ASSOCIATES

Engineering/Water Testing

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Wasilla, AK 99654

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TEST HOLE # 20

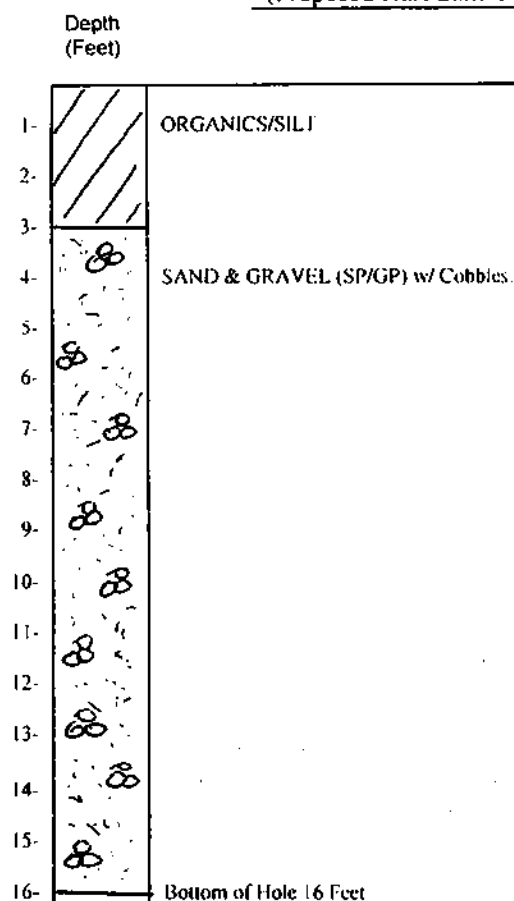
SOILS LOG

PERFORMED FOR Western Spruce LLC

LEGAL DESCRIPTION: TP B22, Sec 20, T18N, R1E, S.M., Alaska
(Proposed Hart Lake Subdivision)

SITE PLAN

SEE ATTACHED TEST HOLE LOCATION
MAP



WAS GROUND WATER
ENCOUNTERED?

No

IF YES, AT WHAT
DEPTH?

N/A

DEPTH TO WATER
AFTER MONITORING?

N/A

COMMENTS:

LOGGED BY: MICHAEL R. ERDMAN, P.E.

DATE: 13 AUG 2004

ERDMAN & ASSOCIATES

Engineering/Water Testing

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Wasilla, AK 99654

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TEST HOLE # 21

SOILS LOG

PERFORMED FOR: Western Spruce LLC

LEGAL DESCRIPTION: TP B22, Sec 20, T18N, R1E, S.M., Alaska
(Proposed Hart Lake Subdivision)

SITE PLAN

SEE ATTACHED TEST HOLE LOCATION
MAP

| Depth (Feet) | |
|-----------------|----------------------------------|
| 1- | ORGANICS/SILT |
| 2- | |
| 3- | |
| 4- | SAND & GRAVEL (SP/GP) w/ Cobbles |
| 5- | |
| 6- | |
| 7- | |
| 8- | |
| 9- | |
| 10- | |
| 11- | SAND (SP/GW) |
| 12- | |
| 13- | |
| 14- | Bottom of Hole 14 Feet |
| 15- | |
| 16- | |

WAS GROUND WATER
ENCOUNTERED?

No

IF YES, AT WHAT
DEPTH?

N/A

DEPTH TO WATER
AFTER MONITORING?

N/A

COMMENTS:

LOGGED BY: MICHAEL R. ERDMAN, P.E.

DATE: 13 AUG 2004

ERDMAN & ASSOCIATES

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TEST HOLE # ~~23~~ 22
M22

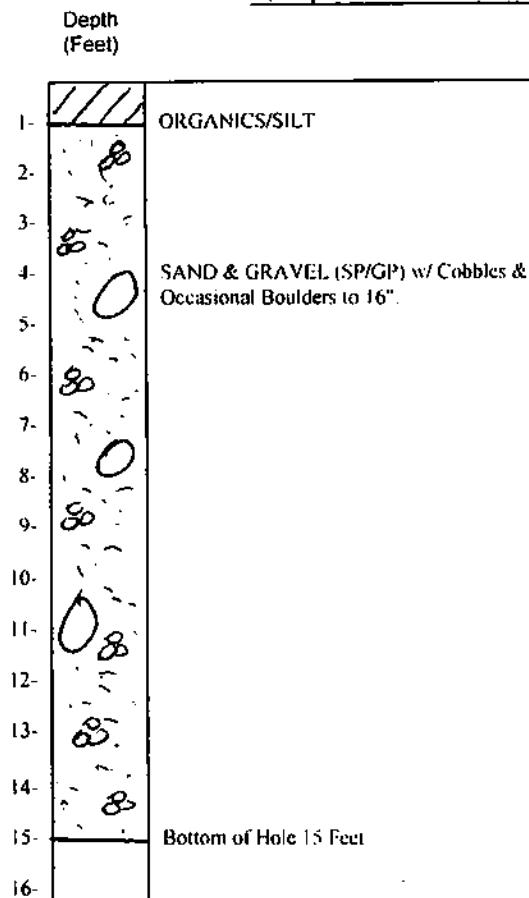
SOILS LOG

PERFORMED FOR: Western Spruce LLC

LEGAL DESCRIPTION: TP B22, Sec 20, T18N, R1E, S.M., Alaska
(Proposed Hart Lake Subdivision)

SITE PLAN

SEE ATTACHED TEST HOLE LOCATION
MAP.



WAS GROUND WATER
ENCOUNTERED?

No

IF YES, AT WHAT
DEPTH?

N/A

DEPTH TO WATER
AFTER MONITORING?

N/A

COMMENTS:

LOGGED BY: MICHAEL R. ERDMAN, P.E.

DATE: 13 AUG 2004

ERDMAN & ASSOCIATES

Engineering/Water Testing

5200 Dunbar Drive

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907-376-6989 Fax 907-373-2157

TEST HOLE # ~~22~~ **Z3**

net

SOILS LOG

PERFORMED FOR:

Western Spruce LLC

LEGAL DESCRIPTION:

TP B22, Sec 20, T18N, R1E, S.M., Alaska
(Proposed Hart Lake Subdivision)

SITE PLAN

SEE ATTACHED TEST HOLE LOCATION
MAP.

| Depth (Feet) | |
|-----------------|--|
| 1- | ORGANICS/SILT |
| 2- | |
| 3- | |
| 4- | SAND & GRAVEL (SP/GP) w/ Cobbles & Occasional Boulders to 12" |
| 5- | |
| 6- | |
| 7- | |
| 8- | |
| 9- | |
| 10- | |
| 11- | SAND & GRAVEL w/ some Silt (GP-GM) |
| 12- | |
| 13- | |
| 14- | Bottom of Hole 14 Feet |
| 15- | |
| 16- | |

WAS GROUND WATER
ENCOUNTERED?

No

IF YES, AT WHAT
DEPTH?

N/A

DEPTH TO WATER
AFTER MONITORING?

N/A

COMMENTS:

LOGGED BY

MICHAEL R. ERDMAN, P.E.

DATE:

13 AUG 2004

ERDMAN & ASSOCIATES

Engineering/Water Testing

5200 Dunbar Drive

Wasilla, AK 99654

907-376-6989 Fax 907-373-2157

TEST HOLE # 24

SOILS LOG

PERFORMED FOR: Western Spruce LLC

LEGAL DESCRIPTION: TP B22, Sec 20, T18N, R1E, S.M., Alaska
(Proposed Hart Lake Subdivision)

SITE PLAN

SEE ATTACHED TEST HOLE LOCATION
MAP.

| Depth (Feet) | |
|-----------------|--|
| 1- | ORGANICS/SILT |
| 2- | |
| 3- | |
| 4- | SAND & GRAVEL (SP/GP) w/ Cobbles & Occasional Boulders to 16" |
| 5- | |
| 6- | |
| 7- | |
| 8- | |
| 9- | |
| 10- | |
| 11- | |
| 12- | |
| 13- | Bottom of Hole 12 Feet |
| 14- | |
| 15- | |
| 16- | |

WAS GROUND WATER
ENCOUNTERED?

Yes

IF YES, AT WHAT
DEPTH?

11 Feet

DEPTH TO WATER
AFTER MONITORING?

N/A

COMMENTS:

LOGGED BY: MICHAEL R. ERDMAN, P.E.

DATE: 13 AUG 2004

ERDMAN & ASSOCIATES

Engineering/Water Testing

5200 Dunbar Drive

Wasilla, AK 99654

907-376-6989 Fax 907-373-2157

TEST HOLE # 25

SOILS LOG

PERFORMED FOR: Western Spruce LLC

LEGAL DESCRIPTION: TP B22, Sec 20, T18N, R1E, S.M., Alaska
(Proposed Hart Lake Subdivision)

SITE PLAN

SEE ATTACHED TEST HOLE LOCATION
MAP

| Depth (Feet) | |
|-----------------|---|
| 1- | ORGANICS/SILT |
| 2- | |
| 3- | |
| 4- | SAND & GRAVEL (SP/GP) w/ Cobbles & Occasional Boulders to 10". |
| 5- | NOTE: Soil staining at approx. 5 feet. |
| 6- | |
| 7- | |
| 8- | Silty GRAVEL (GM) |
| 9- | |
| 10- | Bottom of Hole 10 Feet |
| 11- | |
| 12- | |
| 13- | |
| 14- | |
| 15- | |
| 16- | |

WAS GROUND WATER
ENCOUNTERED? Yes

IF YES, AT WHAT
DEPTH? 8.5 Feet

DEPTH TO WATER
AFTER MONITORING? N/A

COMMENTS:

LOGGED BY: MICHAEL R. ERDMAN, P.E.

DATE: 13 AUG 2004