



Public Works  
Canada

Travaux publics  
Canada

G9 - 01 - 096

GEOTECHNICAL INVESTIGATION

SHAKWAK RELOCATION PROJECT  
ALASKA HWY km 1634.5-1664.5 (SEG.8)

CENTERLINE DRILLING  
VOLUME I OF III

GEOTECHNICAL & MATERIAL SERVICES  
WHITEHORSE, YUKON



VOLUME I

CONTENTS

FEB. - MAR. 1978 CENTERLINE INVESTIGATION

HOLES 78-8-T1 to

78-8-T138

Drill log summaries only





Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

HOLE LOCATION:

DATE DRILLED: 28-2-78

DRILL TECHNICIAN:

H.R.

PLOTTED BY:

R.S.

HOLE ELEVATION:

HOLE NO.: T-1

HOLE DEPTH 1.65  
TYPE OF DRILL B40-6" AUGERS  
WATER LEVEL  
SOIL DESCRIPTION

SOIL DESCRIPTION

SANDY GRAVEL

END HOLE @ 1.65

N.R.C.  
PERMAFROST  
CLASSIFICATION

LABORATORY  
NUMBER  
SAMPLE  
TYPE  
SAMPLE  
NUMBER  
(FIELD)  
SAMPLE  
DEPTH  
(FT.)

CONSISTENCY LIMITS  
LIQUID  
LIMIT  
PLASTIC  
LIMIT  
PLASTICITY  
INDEX

MECHANICAL ANALYSIS  
GRAVEL  
SAND  
<.074 mm  
>.005 mm  
<.005 mm

DRY  
DENSITY  
STANDARD  
PENETRATION  
RESISTANCE  
UNIFIED  
CLASSIFICATION

0 1 2 3 4 5



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

HOLE LOCATION:

DATE DRILLED: 28-2-78

DRILL TECHNICIAN:

H.R.

PLOTTED BY:

R.S.

HOLE ELEVATION:

HOLE NO.: T-2

HOLE DEPTH 1.65  
TYPE OF DRILL B40-6" AUGERS  
WATER LEVEL  
DEPTH (M)  
SOIL DESCRIPTION

N.R.C.  
PERMAFROST  
CLASSIFICATION

SAMPLE IDENTIFICATION DATA  
SAMPLE DEPTH (FT.)  
SAMPLE NUMBER (FIELD)  
SAMPLE TYPE  
LABORATORY NUMBER

CONSISTENCY LIMITS  
LIQUID LIMIT  
PLASTIC LIMIT  
PLASTICITY INDEX

MECHANICAL ANALYSIS  
GRAVEL  
SAND  
>.005 mm  
<.074 mm  
<.005 mm

DRY DENSITY  
LB/CU.FT.  
STANDARD PENETRATION RESISTANCE  
BLOWS/FT.

UNIFIED CLASSIFICATION

0

1

2

3

4

5

SANDY GRAVEL

END HOLE @ 1.65

.3

1.1

SM

31.5

42.6

25.9

3-2

14.8

10.0

5.8

551

AUGER

T2





MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

# SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

**HOLE LOCATION:**

DATE DRILLED: 1-3-78

**DRILL TECHNICIAN :**

H. R.

**PLOTTED BY :**

R.S.

**HOLE ELEVATION:**

**HOLE NO.: T-4**

|               |                  |
|---------------|------------------|
| HOLE DEPTH    | 1.50             |
| TYPE OF DRILL | B40-6" AUGERS    |
| WATER LEVEL   |                  |
| DEPTH (M)     | SOIL DESCRIPTION |

Silt Till

END HOLE @ 1.50

|                 |                  |
|-----------------|------------------|
| HOLE DEPTH      | 1.50             |
| TYPE OF DRILL   | B40-6" AUGERS    |
| WATER LEVEL     |                  |
| DEPTH (M)       | SOIL DESCRIPTION |
| 0               | SILT TILL        |
| 1               |                  |
| 2               |                  |
| 3               |                  |
| 4               |                  |
| 5               |                  |
| END HOLE @ 1.50 |                  |



# SUBSURFACE TESTING REPORT

**HOLE LOCATION :**

**DRILL TECHNICIAN :** H. R.

**PLOTTED BY :**

R.S.

HOLE ELEVATION:

HOLE NO.: T-5

SOIL DESCRIPTION

SILTY SAND TILL

END HOLE @ 1.50

3.

٢١

41

**AUGER 5575**

| MECHANICAL ANALYSIS |   | CONSISTENCY LIMITS |   |
|---------------------|---|--------------------|---|
| <.005 mm            | % | PLASTICITY INDEX   | % |
| <.074 mm            | % |                    |   |
| >.005 mm            | % |                    |   |
| SAND                | % | PLASTIC LIMIT      | % |
| GRAVEL              | % |                    |   |
|                     |   |                    |   |
|                     |   | LIQUID LIMIT       | % |
|                     |   |                    |   |
|                     |   |                    |   |

| NATURAL<br>MOISTURE<br>CONTENT | % |
|--------------------------------|---|
|--------------------------------|---|

| SAMPLE IDENTIFICATION DATA | NUMBER                   |
|----------------------------|--------------------------|
|                            | SAMPLE TYPE              |
|                            | SAMPLE NUMBER<br>(FIELD) |
|                            | SAMPLE DEPTH<br>(FT.)    |

|                                       |                 |
|---------------------------------------|-----------------|
| STANDARD<br>PENETRATION<br>RESISTANCE | BLOWS<br>FT.    |
| DRY<br>DENSITY                        | LBS.<br>CU. FT. |

**UNIFIED  
CLASSIFICATION**

DRWG NO 60-194



MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

# SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

**HOLE LOCATION:**

DATE DRILLED: 1-3-78

DRILL TECHNICIAN : H. R.

**PLOTTED BY :**

**R.S.**

**HOLE ELEVATION:**

HOLE NO.: T-6

|               |                  |
|---------------|------------------|
| HOLE DEPTH    | 1.50             |
| TYPE OF DRILL | B40-6" AUGERS    |
| WATER LEVEL   |                  |
| DEPTH (M)     | SOIL DESCRIPTION |

SILTY SAND TILL

END HOLE @ 1.50

**N.R.C.  
PERMAFROST  
CLASSIFICATION**

# STANDARD PENETRATION RESISTANCE

**DRY  
DENSITY**

**<.005 mm**

BYT **<.074mm**

**A** | **>.005 mm**

**SAND**

**GRAVEL**

## PLASTICITY

|      |   |
|------|---|
| 1961 | 1 |
|------|---|

| PLASTIC LIMIT | PLASTIC LIMIT |
|---------------|---------------|
|---------------|---------------|

LIQUID  
LIMIT

### NATURAL MOISTURE CONTENT

|    |                      |
|----|----------------------|
| TA | LABORATORY<br>NUMBER |
|----|----------------------|

| LOCATION | SAMPLE TYPE |
|----------|-------------|
|----------|-------------|

| E IDENT | SAMPLE<br>NUMBER<br>(FIELD) |
|---------|-----------------------------|
|         |                             |
|         |                             |
|         |                             |
|         |                             |
|         |                             |
|         |                             |
|         |                             |
|         |                             |
|         |                             |
|         |                             |
|         |                             |
|         |                             |
|         |                             |
|         |                             |
|         |                             |
|         |                             |
|         |                             |
|         |                             |
|         |                             |
|         |                             |
|         |                             |

| SAMPLE | SAMPLE<br>DEPTH<br>(FT.) |
|--------|--------------------------|
|--------|--------------------------|

DRWG. NO. 60-194



| Public Works<br>Canada      |                | MATERIALS QUALITY CONTROL LABORATORY<br>WHITEHORSE, Y.T. |  | SUBSURFACE TESTING REPORT       |  |    |
|-----------------------------|----------------|----------------------------------------------------------|--|---------------------------------|--|----|
| PROJECT: SHAKWAK SEGMENT 8  |                | HOLE LOCATION:                                           |  | HOLE NO.: T-8                   |  |    |
| DATE DRILLED: 1-3-78        |                | DRILL TECHNICIAN: H.R.                                   |  | PLOTTED BY: R.S.                |  |    |
| HOLE DEPTH 1.50             |                | HOLE ELEVATION:                                          |  | HOLE NO.: T-8                   |  |    |
| TYPE OF DRILL B40-6" AUGERS |                | CONSISTENCY LIMITS                                       |  | MECHANICAL ANALYSIS             |  |    |
| WATER LEVEL                 |                | PLASTIC LIMIT                                            |  | SAND                            |  |    |
| DEPTH (M)                   |                | LIQUID LIMIT                                             |  | GRAVEL                          |  |    |
| SOIL DESCRIPTION            |                | PLASTICITY INDEX                                         |  | CLAY < .005 mm                  |  |    |
|                             |                | NATURAL MOISTURE CONTENT                                 |  | CLAY < .075 mm                  |  |    |
|                             |                | LABORATORY NUMBER                                        |  | CLAY > .005 mm                  |  |    |
|                             |                | SAMPLE TYPE                                              |  | DRY DENSITY                     |  |    |
|                             |                | SAMPLE NUMBER (FIELD)                                    |  | STANDARD PENETRATION RESISTANCE |  |    |
|                             |                | SAMPLE DEPTH (FT.)                                       |  | BLOWS / FT.                     |  |    |
|                             |                | N.R.C. PERMAFROST CLASSIFICATION                         |  | UNIFIED CLASSIFICATION          |  |    |
| 0                           | SAND TILL      | .3                                                       |  |                                 |  |    |
| 1                           | SILT SAND TILL | .9                                                       |  |                                 |  | CL |
| 2                           |                |                                                          |  |                                 |  |    |
| 3                           |                |                                                          |  |                                 |  |    |
| 4                           |                |                                                          |  |                                 |  |    |
| 5                           |                |                                                          |  |                                 |  |    |



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

HOLE LOCATION:

DATE DRILLED: 1-3-78

DRILL TECHNICIAN:

H.R.

PLOTTED BY:

R.S.

HOLE ELEVATION:

HOLE NO.: T-9

HOLE DEPTH 1.50  
TYPE OF DRILL B40-6" AUGERS  
WATER LEVEL  
DEPTH (M)  
SOIL DESCRIPTION

SAND TILL  
0 .30

SILT TILL

END HOLE @ 1.50

N.R.C.  
PERMAFROST  
CLASSIFICATION

SAMPLE IDENTIFICATION DATA

SAMPLE  
DEPTH  
(FT.)

SAMPLE  
NUMBER  
(FIELD)

SAMPLE  
TYPE

LABORATORY  
NUMBER

NATURAL  
MOISTURE  
CONTENT

LIQUID  
LIMIT

PLASTIC  
LIMIT

PLASTICITY  
INDEX

GRAVEL

SAND

MECHANICAL ANALYSIS  
0.075 mm  
0.005 mm

0.005 mm

DRY  
DENSITY

STANDARD  
PENETRATION  
RESISTANCE

UNIFIED  
CLASSIFICATION

BLOWS  
/ FT.

LB/FT.  
CU. FT.

.3

1.2

35.1

1.4

4.9

15.7

20.6

11.6

5576

AUGER

T6

CL-MU



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

HOLE LOCATION:

DATE DRILLED: 1-3-78

DRILL TECHNICIAN: 8

H.R.

PLOTTED BY:

R.S.

HOLE ELEVATION:

HOLE NO.: T-10

HOLE DEPTH 1.50  
TYPE OF DRILL B40-6" AUGERS  
WATER LEVEL  
DEPTH (M)  
SOIL DESCRIPTION

SILTY SAND TILL .30

SILT

END HOLE @ 1.50

N.R.C.  
PERMAFROST  
CLASSIFICATION

SAMPLE IDENTIFICATION DATA

LABORATORY  
NUMBER  
SAMPLE  
TYPE  
SAMPLE  
NUMBER  
(FIELD)  
SAMPLE  
DEPTH  
(FT.)

NATURAL  
MOISTURE  
CONTENT

LIQUID  
LIMIT

PLASTIC  
LIMIT

PLASTICITY  
INDEX

GRAVEL

SAND

MECHANICAL ANALYSIS  
<.074 mm  
>.005 mm  
<.005 mm

DRY  
DENSITY

STANDARD  
PENETRATION  
RESISTANCE

UNIFIED  
CLASSIFICATION



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

HOLE LOCATION:

DATE DRILLED: 1-3-78

DRILL TECHNICIAN: H.R.

PLOTTED BY: R.S.

HOLE ELEVATION:

HOLE NO.: T-11

HOLE DEPTH 1.50  
TYPE OF DRILL B40-6" AUGERS  
WATER LEVEL  
DEPTH (M)  
SOIL DESCRIPTION

0 SAND 1.15

SILT SAND TILL

END HOLE @ 1.50

N.R.C.  
PERMAFROST  
CLASSIFICATION

SAMPLE IDENTIFICATION DATA  
SAMPLE DEPTH (FT.)  
SAMPLE NUMBER (FIELD)  
SAMPLE TYPE  
LABORATORY NUMBER

CONSISTENCY LIMITS  
LIQUID LIMIT  
PLASTIC LIMIT  
PLASTICITY INDEX

MECHANICAL ANALYSIS  
GRAVEL  
SAND  
<.075 mm  
>.005 mm  
<.005 mm

DRY DENSITY  
LB/CU.FT.  
STANDARD PENETRATION RESISTANCE  
BLOWS/FT.

UNIFIED CLASSIFICATION

.6

1.2

CL



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

HOLE LOCATION:

DATE DRILLED: 1-3-78

DRILL TECHNICIAN: H.R.

PLOTTED BY: R.S.

HOLE ELEVATION:

HOLE NO.: T-12

HOLE DEPTH 1.50  
TYPE OF DRILL B40-6" AUGERS  
WATER LEVEL  
DEPTH (M.)  
SOIL DESCRIPTION

SANDY TILL

SILT

END HOLE @ 1.50

.45

N.R.C.  
PERMAFROST  
CLASSIFICATION

SAMPLE IDENTIFICATION DATA

LABORATORY  
NUMBER  
SAMPLE  
TYPE  
SAMPLE  
NUMBER  
(FIELD)  
SAMPLE  
DEPTH  
(FT.)

NATURAL  
MOISTURE  
CONTENT

LIQUID  
LIMIT  
PLASTIC  
LIMIT  
PLASTICITY  
INDEX

GRAVEL  
SAND  
>.005 mm  
<.074 mm  
<.005 mm

MECHANICAL ANALYSIS

DRY  
DENSITY  
STANDARD  
PENETRATION  
RESISTANCE

UNIFIED  
CLASSIFICATION





# SUBSURFACE TESTING REPORT

**HOLE LOCATION:**

**DRILL TECHNICIAN :**

**PLOTTED BY :**

R.S.

HOLE ELEVATION:

HOLE NO.: T-14

SOIL DESCRIPTION

5117

END HOLE @ 1.50

**UNIFIED  
CLASSIFICATION**

**STANDARD  
PENETRATION  
RESISTANCE**

**DRY  
DENSITY**

|          |          |
|----------|----------|
| ANALYSIS | <.074 mm |
|          | >.005 mm |

**SAND**

## GRAVEL

## PLASTICITY INDEX

**PLASTIC  
LIMIT**

LIQUID  
LIMIT

## NATURAL MOISTURE CONTENT

| TA | LABORATORY<br>NUMBER |
|----|----------------------|
|----|----------------------|

**SAMPLE  
TYPE**

**SAMPLE  
NUMBER  
(FIELD)**

**SAMPLE  
DEPTH  
(FT.)**

**N.R.C.  
PERMAFROST  
CLASSIFICATION**

DRWG. NO. 60-194



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

HOLE LOCATION:

DATE DRILLED: 1-3-78

DRILL TECHNICIAN:

H.R.

PLOTTED BY:

R.S.

HOLE ELEVATION:

HOLE NO.: T-15

HOLE DEPTH 1.50  
TYPE OF DRILL B40-6" AUGERS  
WATER LEVEL  
DEPTH (M)

SOIL DESCRIPTION

SILT SAND TILL .30

SILT TILL

END HOLE @ 1.50

N.R.C.  
PERMAFROST  
CLASSIFICATION

SAMPLE IDENTIFICATION DATA

SAMPLE  
DEPTH  
(FT.)

SAMPLE  
NUMBER  
(FIELD)

SAMPLE  
TYPE

LABORATORY  
NUMBER

NATURAL  
MOISTURE  
CONTENT

LIQUID  
LIMIT

PLASTIC  
LIMIT

PLASTICITY  
INDEX

GRAVEL

SAND

>.075 mm  
>.005 mm

MECHANICAL ANALYSIS

DRY  
DENSITY

STANDARD  
PENETRATION  
RESISTANCE

UNIFIED  
CLASSIFICATION

LB  
CU. FT.

BLOWS  
FT.

.3

1.1

14.4

78.5

7.1

13.8

18.4

32.2

19.9

5578

T 9

AUGER

GL



# SUBSURFACE TESTING REPORT

**HOLE LOCATION:**

DRILL TECHNICIAN: H. R.

|       |              |
|-------|--------------|
| H. R. | PLOTTED BY : |
|-------|--------------|

**HOLE ELEVATION:**

HOLE NO.: T-16

SOIL DESCRIPTION

SANDY SILT TILL

Silt Till

END HOLE @ 1.50

**N.R.C.  
PERMAFROST  
CLASSIFICATION**

| NUMBER | SAMPLE TYPE | SAMPLE NUMBER (FIELD) | SAMPLE DEPTH (FT.) |
|--------|-------------|-----------------------|--------------------|
|--------|-------------|-----------------------|--------------------|

|                  |
|------------------|
| PLASTICITY INDEX |
| PLASTIC LIMIT    |
| LIQUID LIMIT     |

|                     |          |
|---------------------|----------|
| MECHANICAL ANALYSIS | >.005 mm |
|                     | SAND     |
|                     | GRAVEL   |

### STANDARD PENETRATION RESISTANCE

DRY DENSITY

**UNIFIED  
CLASSIFICATION**

**DRWG NO 60-194**





# SUBSURFACE TESTING REPORT

**HOLE LOCATION:**

R.  
S.

HOLE NO.: T-18

UNIFIED  
CLASSIFICATION

END HOLE @ 1.50

72



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

HOLE LOCATION:

DATE DRILLED: 1-3-78

DRILL TECHNICIAN: H.R.

PLOTTED BY: R.S.

HOLE ELEVATION:

HOLE NO.: T-19

HOLE DEPTH 1.50  
TYPE OF DRILL B40-6" AUGERS  
WATER LEVEL  
DEPTH (M.)  
SOIL DESCRIPTION

GRAVELLY SILT

END HOLE @ 1.50

N.R.C.  
PERMAFROST  
CLASSIFICATION

SAMPLE IDENTIFICATION DATA

LABORATORY  
NUMBER  
SAMPLE  
TYPE  
SAMPLE  
NUMBER  
(FIELD)  
SAMPLE  
DEPTH  
(FT.)

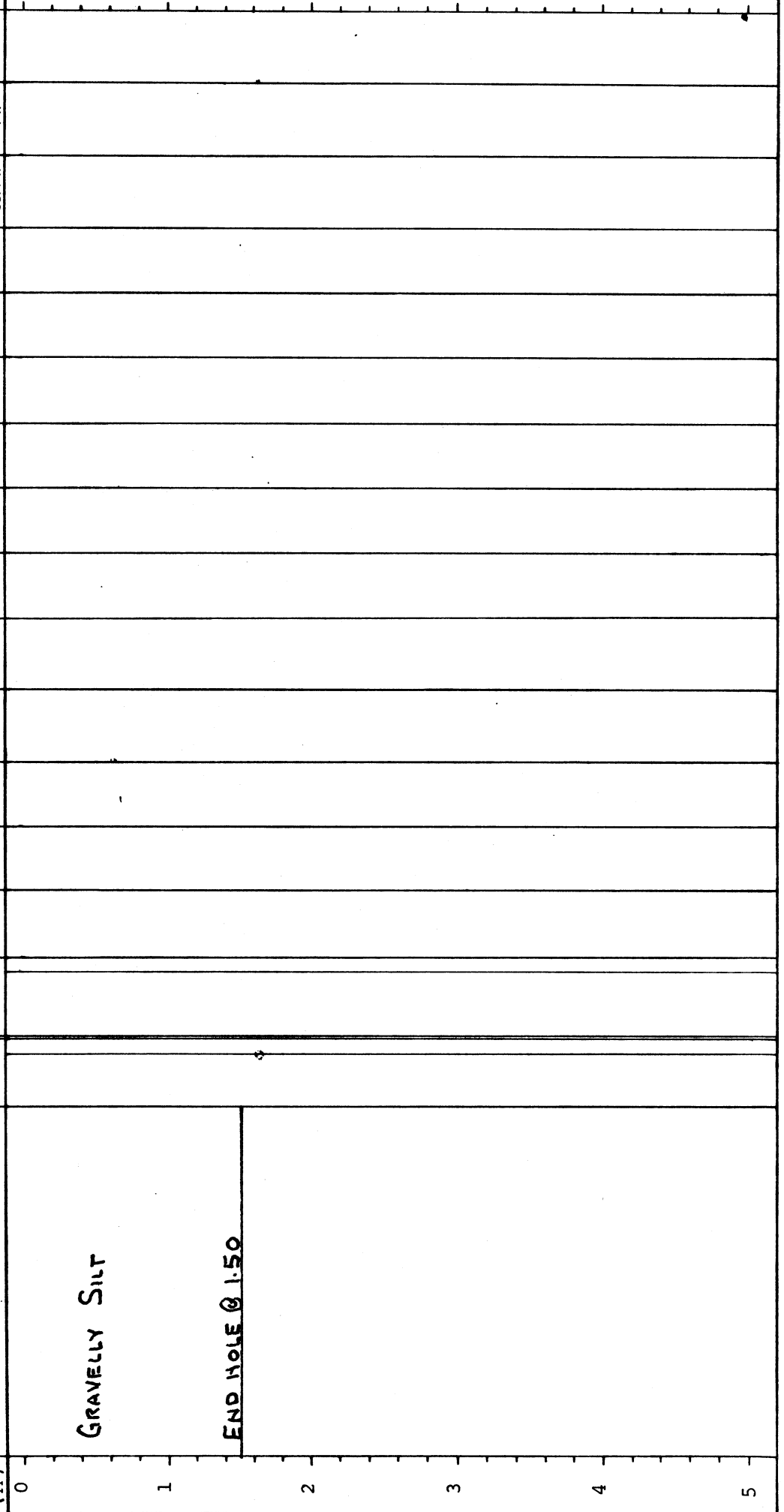
NATURAL  
MOISTURE  
CONTENT

LIQUID  
LIMIT  
PLASTIC  
LIMIT  
PLASTICITY  
INDEX

GRAVEL  
SAND  
>.005 mm  
<.075 mm  
<.005 mm

MECHANICAL ANALYSIS

DRY  
DENSITY  
STANDARD  
PENETRATION  
RESISTANCE  
UNIFIED  
CLASSIFICATION





Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

HOLE LOCATION:

DATE DRILLED: 1-3-78

DRILL TECHNICIAN: 8

H.R.

PLOTTED BY:

R.S.

HOLE ELEVATION:

HOLE NO.: T.20

HOLE DEPTH 4.30  
TYPE OF DRILL B40-6" AUGERS  
WATER LEVEL  
SOIL DESCRIPTION

DEPTH (M)

GRAVEL

30

GRAVELLY SILT

2.7

3.3

END HOLE @ 4.30

N.R.C.  
PERMAFROST  
CLASSIFICATION

SAMPLE IDENTIFICATION DATA  
SAMPLE DEPTH (FT.)  
SAMPLE NUMBER (FIELD)  
SAMPLE TYPE  
LABORATORY NUMBER

NATURAL  
MOISTURE  
CONTENT

CONSISTENCY LIMITS  
LIQUID LIMIT  
PLASTIC LIMIT  
PLASTICITY INDEX

MECHANICAL ANALYSIS  
GRAVEL  
SAND  
AND  
AND  
AND

DRY DENSITY  
STANDARD PENETRATION RESISTANCE  
UNIFIED CLASSIFICATION



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

|                                  |  |                        |  |                    |  |                          |  |
|----------------------------------|--|------------------------|--|--------------------|--|--------------------------|--|
| PROJECT: SHAKWAK SEGMENT 8       |  | HOLE LOCATION:         |  | HOLE ELEVATION:    |  | HOLE NO.: T-21           |  |
| DATE DRILLED: 1-3-78             |  | DRILL TECHNICIAN: H.R. |  | PLOTTED BY: R.S.   |  |                          |  |
| HOLE DEPTH 4.35                  |  | MECHANICAL ANALYSIS    |  | CONSISTENCY LIMITS |  | NATURAL MOISTURE CONTENT |  |
| TYPE OF DRILL B40-6" AUGERS      |  | <.005 mm               |  | PLASTICITY INDEX   |  | %                        |  |
| WATER LEVEL                      |  | <.074 mm               |  | PLASTIC LIMIT      |  | %                        |  |
| DEPTH (M.)                       |  | >.005 mm               |  | LIQUID LIMIT       |  | %                        |  |
| SOIL DESCRIPTION                 |  | SAND                   |  | GRAVEL             |  | %                        |  |
| GRAVEL                           |  | %                      |  | %                  |  | %                        |  |
| SILTY GRAVEL                     |  | %                      |  | %                  |  | %                        |  |
| GRAVELLY SILT                    |  | %                      |  | %                  |  | %                        |  |
| SAND                             |  | %                      |  | %                  |  | %                        |  |
| END HOLE @ 4.35                  |  | %                      |  | %                  |  | %                        |  |
| N.R.C. PERMAFROST CLASSIFICATION |  | LABORATORY NUMBER      |  | SAMPLE TYPE        |  | SAMPLE NUMBER (FIELD)    |  |
|                                  |  | SAMPLE DEPTH (FT.)     |  | 2.7                |  | 3.3                      |  |
|                                  |  |                        |  | T15 AUGER S558     |  | 16.5                     |  |
|                                  |  |                        |  | N.P.               |  | 13.5                     |  |
|                                  |  |                        |  | 1-2                |  | Ø5.3                     |  |
|                                  |  |                        |  | ML                 |  |                          |  |



# SUBSURFACE TESTING REPORT

**HOLE LOCATION:**

HOLE NO.: T-22

SOIL DESCRIPTION

**END HOLE @ 435**

**N.R.C.  
PERMAFROST  
CLASSIFICATION**

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

47

### PLASTICITY

**<.005 m**

**STANDARD  
PENETRATION  
RESISTANCE**

**DRY  
DENSITY**

**UNIFIED  
CLASSIFICATION**

CL-ML



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

|                            |  |                                  |  |                            |  |                                 |  |
|----------------------------|--|----------------------------------|--|----------------------------|--|---------------------------------|--|
| PROJECT: SHAKWAK SEGMENT 8 |  | HOLE LOCATION:                   |  | HOLE ELEVATION:            |  | HOLE NO.: T-23                  |  |
| DATE DRILLED: 1-3-78       |  | DRILL TECHNICIAN: H.R.           |  | PLOTTED BY: R.S.           |  |                                 |  |
| HOLE DEPTH 4.35            |  | TYPE OF DRILL B40-6" AUGERS      |  | WATER LEVEL                |  | SOIL DESCRIPTION                |  |
| DEPTH (M)                  |  | N.R.C. PERMAFROST CLASSIFICATION |  | SAMPLE IDENTIFICATION DATA |  | NATURAL MOISTURE CONTENT        |  |
|                            |  |                                  |  | SAMPLE DEPTH (FT.)         |  | %                               |  |
|                            |  |                                  |  | SAMPLE NUMBER (FIELD)      |  | LIQUID LIMIT                    |  |
|                            |  |                                  |  | SAMPLE TYPE                |  | PLASTIC LIMIT                   |  |
|                            |  |                                  |  | LABORATORY NUMBER          |  | PLASTICITY INDEX                |  |
|                            |  |                                  |  |                            |  | GRAVEL                          |  |
|                            |  |                                  |  |                            |  | SAND                            |  |
|                            |  |                                  |  |                            |  | >.005 mm                        |  |
|                            |  |                                  |  |                            |  | <.074 mm                        |  |
|                            |  |                                  |  |                            |  | <.005 mm                        |  |
|                            |  |                                  |  |                            |  | DRY DENSITY                     |  |
|                            |  |                                  |  |                            |  | LIBS. CU FT.                    |  |
|                            |  |                                  |  |                            |  | STANDARD PENETRATION RESISTANCE |  |
|                            |  |                                  |  |                            |  | UNIFIED CLASSIFICATION          |  |

|   |                 |      |
|---|-----------------|------|
| 0 | GRAVEL          | .15  |
| 1 | SILTY GRAVEL    |      |
| 2 | SAND            | 2.25 |
| 3 |                 |      |
| 4 | END HOLE @ 4.35 |      |
| 5 |                 |      |



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

HOLE LOCATION:

DATE DRILLED: 1-3-78

DRILL TECHNICIAN: 8

H.R.

PLOTTED BY: R.S.

HOLE ELEVATION:

HOLE NO.: T-24

HOLE DEPTH 4.35  
TYPE OF DRILL B40-6" AUGERS  
WATER LEVEL  
DEPTH (M.)  
SOIL DESCRIPTION

SILTY GRAVEL .30

SILT TILL

SAND 4.20

END HOLE @ 4.35

N.R.C.  
PERMAFROST  
CLASSIFICATION

LABORATORY  
NUMBER  
SAMPLE  
TYPE  
SAMPLE  
NUMBER  
(FIELD)  
SAMPLE  
DEPTH  
(FT.)

NATURAL  
MOISTURE  
CONTENT  
%

CONSISTENCY LIMITS  
LIQUID  
LIMIT  
PLASTIC  
LIMIT  
PLASTICITY  
INDEX

MECHANICAL ANALYSIS  
GRAVEL  
SAND  
>.005 mm  
<.075 mm  
<.005 mm

DRY  
DENSITY  
LB./  
CU. FT.  
STANDARD  
PENETRATION  
RESISTANCE  
BLOWS  
/ FT.  
UNIFIED  
CLASSIFICATION

2.4

2.9

T18 AUGER S581 23.7 36.5 21.9 14.6 3.8 20.3 75.9

CL



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

HOLE LOCATION:

DATE DRILLED: 1-3-78

DRILL TECHNICIAN:

H.R.

PLOTTED BY:

R.S.

HOLE ELEVATION:

HOLE NO.: T-25

HOLE DEPTH 4.35  
TYPE OF DRILL B40-6" AUGERS  
WATER LEVEL  
DEPTH (M)  
SOIL DESCRIPTION

GRAVEL .30

SILT TILL

2.10

GRAVELLY SILTY SAND 2.55

SILT

END HOLE @ 4.35

N.R.C.  
PERMAFROST  
CLASSIFICATION

LABORATORY  
NUMBER  
SAMPLE  
TYPE  
SAMPLE  
NUMBER  
(FIELD)  
SAMPLE  
DEPTH  
(FT.)

NATURAL  
MOISTURE  
CONTENT  
%

LIQUID  
LIMIT  
%  
PLASTIC  
LIMIT  
%  
PLASTICITY  
INDEX  
%

GRAVEL  
%  
SAND  
%

<.075 mm  
%  
<.005 mm  
%  
>.005 mm  
%

DRY  
DENSITY  
LBS.  
CU. FT.

STANDARD  
PENETRATION  
RESISTANCE  
BLOWS  
FT.

UNIFIED  
CLASSIFICATION

CL-MU



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

HOLE LOCATION:

DATE DRILLED: 1-3-78

DRILL TECHNICIAN:

H. R.

PLOTTED BY:

R. S.

HOLE ELEVATION:

HOLE NO.: T-26

HOLE DEPTH 7.60  
TYPE OF DRILL B40-6" AUGERS  
WATER LEVEL  
SOIL DESCRIPTION

DEPTH (M)

GRAVEL .15

SILTY GRAVEL

1.65

SILT TILL

4.75

SILTY GRAVEL

N.R.C.  
PERMAFROST  
CLASSIFICATION

SAMPLE IDENTIFICATION DATA  
SAMPLE DEPTH (FT.)  
SAMPLE NUMBER (FIELD)  
SAMPLE TYPE  
LABORATORY NUMBER

CONSISTENCY LIMITS  
LIQUID LIMIT  
PLASTIC LIMIT  
PLASTICITY INDEX

MECHANICAL ANALYSIS  
GRAVEL  
SAND  
<.074 mm  
>.005 mm  
<.005 mm

DRY DENSITY  
LIBS.  
CU. FT.  
STANDARD PENETRATION RESISTANCE  
BLOWS  
FT.  
UNIFIED CLASSIFICATION

.3

.9

T20 AUGER S583

11.6 31.8 56.6

8.3

15.7

24.0

11.4

11.4

11.4

11.4

11.4

11.4

11.4

11.4

11.4

11.4

11.4

11.4

|                                                                                     |  |                                                          |  |                           |  |                                 |  |             |  |                     |  |                    |  |                          |  |                            |  |                        |  |                      |  |                            |  |
|-------------------------------------------------------------------------------------|--|----------------------------------------------------------|--|---------------------------|--|---------------------------------|--|-------------|--|---------------------|--|--------------------|--|--------------------------|--|----------------------------|--|------------------------|--|----------------------|--|----------------------------|--|
|  |  | MATERIALS QUALITY CONTROL LABORATORY<br>WHITEHORSE, Y.T. |  | SUBSURFACE TESTING REPORT |  |                                 |  |             |  |                     |  |                    |  |                          |  |                            |  |                        |  |                      |  |                            |  |
| PROJECT: SHAKWAK SEGMENT 8                                                          |  | HOLE LOCATION:                                           |  | HOLE NO.: T-26            |  |                                 |  |             |  |                     |  |                    |  |                          |  |                            |  |                        |  |                      |  |                            |  |
| DATE DRILLED: 1-3-78                                                                |  | DRILL TECHNICIAN: H.R.                                   |  | HOLE ELEVATION:           |  |                                 |  |             |  |                     |  |                    |  |                          |  |                            |  |                        |  |                      |  |                            |  |
| HOLE DEPTH 7.60                                                                     |  | SAMPLE IDENTIFICATION DATA                               |  | CONSISTENCY LIMITS        |  |                                 |  |             |  |                     |  |                    |  |                          |  |                            |  |                        |  |                      |  |                            |  |
| TYPE OF DRILL 40-6" AUGERS                                                          |  | LABORATORY NUMBER                                        |  | PLASTIC LIMIT             |  |                                 |  |             |  |                     |  |                    |  |                          |  |                            |  |                        |  |                      |  |                            |  |
| WATER LEVEL                                                                         |  | SAMPLE TYPE                                              |  | LIQUID LIMIT              |  |                                 |  |             |  |                     |  |                    |  |                          |  |                            |  |                        |  |                      |  |                            |  |
| DEPTH (M)                                                                           |  | SAMPLE NUMBER (FIELD)                                    |  | NATURAL MOISTURE CONTENT  |  |                                 |  |             |  |                     |  |                    |  |                          |  |                            |  |                        |  |                      |  |                            |  |
| SOIL DESCRIPTION                                                                    |  | SAMPLE DEPTH (FT.)                                       |  | MECHANICAL ANALYSIS       |  |                                 |  |             |  |                     |  |                    |  |                          |  |                            |  |                        |  |                      |  |                            |  |
| SILTY GRAVEL                                                                        |  | END HOLE 7.60                                            |  | UNIFIED CLASSIFICATION    |  | STANDARD PENETRATION RESISTANCE |  | DRY DENSITY |  | MECHANICAL ANALYSIS |  | CONSISTENCY LIMITS |  | NATURAL MOISTURE CONTENT |  | SAMPLE IDENTIFICATION DATA |  | DRILL TECHNICIAN: H.R. |  | DATE DRILLED: 1-3-78 |  | PROJECT: SHAKWAK SEGMENT 8 |  |
|                                                                                     |  |                                                          |  | UNIFIED CLASSIFICATION    |  | STANDARD PENETRATION RESISTANCE |  | DRY DENSITY |  | MECHANICAL ANALYSIS |  | CONSISTENCY LIMITS |  | NATURAL MOISTURE CONTENT |  | SAMPLE IDENTIFICATION DATA |  | DRILL TECHNICIAN: H.R. |  | DATE DRILLED: 1-3-78 |  | PROJECT: SHAKWAK SEGMENT 8 |  |
|                                                                                     |  |                                                          |  | UNIFIED CLASSIFICATION    |  | STANDARD PENETRATION RESISTANCE |  | DRY DENSITY |  | MECHANICAL ANALYSIS |  | CONSISTENCY LIMITS |  | NATURAL MOISTURE CONTENT |  | SAMPLE IDENTIFICATION DATA |  | DRILL TECHNICIAN: H.R. |  | DATE DRILLED: 1-3-78 |  | PROJECT: SHAKWAK SEGMENT 8 |  |
|                                                                                     |  |                                                          |  | UNIFIED CLASSIFICATION    |  | STANDARD PENETRATION RESISTANCE |  | DRY DENSITY |  | MECHANICAL ANALYSIS |  | CONSISTENCY LIMITS |  | NATURAL MOISTURE CONTENT |  | SAMPLE IDENTIFICATION DATA |  | DRILL TECHNICIAN: H.R. |  | DATE DRILLED: 1-3-78 |  | PROJECT: SHAKWAK SEGMENT 8 |  |
|                                                                                     |  |                                                          |  | UNIFIED CLASSIFICATION    |  | STANDARD PENETRATION RESISTANCE |  | DRY DENSITY |  | MECHANICAL ANALYSIS |  | CONSISTENCY LIMITS |  | NATURAL MOISTURE CONTENT |  | SAMPLE IDENTIFICATION DATA |  | DRILL TECHNICIAN: H.R. |  | DATE DRILLED: 1-3-78 |  | PROJECT: SHAKWAK SEGMENT 8 |  |



**MATERIALS QUALITY CONTROL LABORATORY**  
**WHITEHORSE, Y.T.**

# SUBSURFACE TESTING REPORT

**PROJECT: SHAKWAK SEGMENT 8**

PROJECT: SHAKWAK SE  
DATE DRILLED: 1-3-78

|                      |       |
|----------------------|-------|
| DATE DRILLED: 1-3-78 | DRILL |
|----------------------|-------|

|                      |                   |
|----------------------|-------------------|
| DATE DRILLED: 1-3-78 | DRILL TECHNICIAN: |
|----------------------|-------------------|

|                      |                         |
|----------------------|-------------------------|
| DATE DRILLED: 1-3-78 | DRILL TECHNICIAN: H. R. |
|----------------------|-------------------------|

|                      |                         |
|----------------------|-------------------------|
| DATE DRILLED: 1-3-78 | DRILL TECHNICIAN: H. R. |
|----------------------|-------------------------|

|                      |                         |             |
|----------------------|-------------------------|-------------|
| DATE DRILLED: 1-3-78 | DRILL TECHNICIAN: H. R. | PLOTTED BY: |
|----------------------|-------------------------|-------------|

|                      |                         |                   |
|----------------------|-------------------------|-------------------|
| DATE DRILLED: 1-3-78 | DRILL TECHNICIAN: H. R. | PLOTTED BY: R. S. |
|----------------------|-------------------------|-------------------|

|                      |                         |                   |
|----------------------|-------------------------|-------------------|
| DATE DRILLED: 1-3-78 | DRILL TECHNICIAN: H. R. | PLOTTED BY: R. S. |
|----------------------|-------------------------|-------------------|

|                      |                         |                   |                 |
|----------------------|-------------------------|-------------------|-----------------|
| DATE DRILLED: 1-3-78 | DRILL TECHNICIAN: H. R. | PLOTTED BY: R. S. | HOLE ELEVATION: |
|----------------------|-------------------------|-------------------|-----------------|

|                      |                         |                   |                 |
|----------------------|-------------------------|-------------------|-----------------|
| DATE DRILLED: 1-3-78 | DRILL TECHNICIAN: H. R. | PLOTTED BY: R. S. | HOLE ELEVATION: |
|----------------------|-------------------------|-------------------|-----------------|

|                      |                         |                   |                 |                |
|----------------------|-------------------------|-------------------|-----------------|----------------|
| DATE DRILLED: 1-3-78 | DRILL TECHNICIAN: H. R. | PLOTTED BY: R. S. | HOLE ELEVATION: | HOLE NO.: T-27 |
|----------------------|-------------------------|-------------------|-----------------|----------------|

|               |                  |
|---------------|------------------|
| HOLE DEPTH    | 4.35             |
| TYPE OF DRILL | B40-6" AUGERS    |
| WATER LEVEL   |                  |
| DEPTH<br>(M)  | SOIL DESCRIPTION |

| DEPTH<br>(M) | SOIL DESCRIPTION |
|--------------|------------------|
|--------------|------------------|

SANDY SILT .15

Silt Till

END HOLE @ 4.35

5



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

HOLE LOCATION:

DATE DRILLED: 1-3-78

DRILL TECHNICIAN: H.R.

PLOTTED BY: R.S.

HOLE ELEVATION:

HOLE NO.: T-28

HOLE DEPTH 4.35  
TYPE OF DRILL B40-6" AUGERS  
WATER LEVEL  
DEPTH (M.)

SOIL DESCRIPTION

SANDY TILL .30

SILT

1.50

SILT TILL

3.45

SANDY TILL

END HOLE @ 4.35

N.R.C.  
PERMAFROST  
CLASSIFICATION

SAMPLE IDENTIFICATION DATA

SAMPLE DEPTH (FT.)  
SAMPLE NUMBER (FIELD)  
SAMPLE TYPE  
LABORATORY NUMBER

NATURAL  
MOISTURE  
CONTENT

LIQUID  
LIMIT  
PLASTIC  
LIMIT  
PLASTICITY  
INDEX

GRAVEL  
SAND  
MECHANICAL ANALYSIS  
AND 0.075 mm  
AND 0.005 mm

DRY  
DENSITY  
LBS.  
CU. FT.

STANDARD  
PENETRATION  
RESISTANCE  
BLOWS  
FT.

UNIFIED  
CLASSIFICATION

0

1

2

3

4

5

Public Works Canada

SHAKWAK SEGMENT 8

MATERIALS QUALITY CONTROL LABORATORY

WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

DATE DRILLED: 1-3-78

HOLE DEPTH 4.35

TYPE OF DRILL B40-6" AUGERS

WATER LEVEL

SOIL DESCRIPTION

DRILL TECHNICIAN: H.R.

PLOTTED BY: R.S.

HOLE ELEVATION:

HOLE NO.: T-29

HOLE LOCATION:

DEPTH (M)

0

1

2

3

4

5

SANDY TILL

SILT

END HOLE @ 4.35

| SAMPLE IDENTIFICATION DATA |                       | CONSISTENCY LIMITS |                   | MECHANICAL ANALYSIS |               |                  | DRY DENSITY | STANDARD PENETRATION RESISTANCE | UNIFIED CLASSIFICATION |        |      |          |          |
|----------------------------|-----------------------|--------------------|-------------------|---------------------|---------------|------------------|-------------|---------------------------------|------------------------|--------|------|----------|----------|
| SAMPLE DEPTH (FT.)         | SAMPLE NUMBER (FIELD) | SAMPLE TYPE        | LABORATORY NUMBER | LIQUID LIMIT        | PLASTIC LIMIT | PLASTICITY INDEX |             |                                 |                        | GRAVEL | SAND | <.075 mm | <.005 mm |
| 0.3                        | T23                   | AUGER              | S564              | 20.4                | 18.0          | 2.4              | 1.1         | 31.6                            | 67.3                   |        |      |          | ML       |
| 0.9                        |                       |                    |                   |                     |               |                  |             |                                 |                        |        |      |          |          |
| 2.4                        | T24                   | AUGER              | S565              | 32.2                | 22.0          | 10.2             |             |                                 | +95%                   |        |      |          | CL       |
| 3.0                        |                       |                    |                   |                     |               |                  |             |                                 |                        |        |      |          |          |

DRWG NO 60-194



**MATERIALS QUALITY CONTROL LABORATORY**  
**WHITEHORSE, Y.T.**

# SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

**HOLE LOCATION:**

DATE DRILLED: 2-3-78

**DRILL TECHNICIAN :**

H. R.

**PLOTTED BY :**

R.S.

**HOLE ELEVATION:**

HOLE NO.: T-30

|               |                  |
|---------------|------------------|
| HOLE DEPTH    | 4.35             |
| TYPE OF DRILL | B40-6" AUGERS    |
| WATER LEVEL   |                  |
| DEPTH<br>(M)  | SOIL DESCRIPTION |

SOIL DESCRIPTION

GRAVEL

3

SILTY GRAVEL

1.65

GRAVELLY SILT

END HOLE @ 4.35

| SAMPLE IDENTIFICATION DATA | LABORATORY NUMBER     |
|----------------------------|-----------------------|
|                            | SAMPLE TYPE           |
|                            | SAMPLE NUMBER (FIELD) |
|                            | SAMPLE DEPTH (FT.)    |

**N.R.C.  
PERMAFROST  
CLASSIFICATION**

**NATURAL  
MOISTURE  
CONTENT**

|                  |
|------------------|
| PLASTICITY INDEX |
| PLASTIC LIMIT    |
| LIQUID LIMIT     |

|       |
|-------|
| SAND  |
| GRAVE |

|          |
|----------|
| <.005 mm |
| <.074 mm |
| >.005 mm |

**STANDARD  
PENETRATION  
RESISTANCE**

| CU. FT. | BLOWS<br>FT. |
|---------|--------------|
| 1.00    | 1.00         |
| 2.00    | 2.00         |
| 3.00    | 3.00         |
| 4.00    | 4.00         |
| 5.00    | 5.00         |
| 6.00    | 6.00         |
| 7.00    | 7.00         |
| 8.00    | 8.00         |
| 9.00    | 9.00         |
| 10.00   | 10.00        |
| 11.00   | 11.00        |
| 12.00   | 12.00        |
| 13.00   | 13.00        |
| 14.00   | 14.00        |
| 15.00   | 15.00        |
| 16.00   | 16.00        |
| 17.00   | 17.00        |
| 18.00   | 18.00        |
| 19.00   | 19.00        |
| 20.00   | 20.00        |
| 21.00   | 21.00        |
| 22.00   | 22.00        |
| 23.00   | 23.00        |
| 24.00   | 24.00        |
| 25.00   | 25.00        |
| 26.00   | 26.00        |
| 27.00   | 27.00        |
| 28.00   | 28.00        |
| 29.00   | 29.00        |
| 30.00   | 30.00        |
| 31.00   | 31.00        |
| 32.00   | 32.00        |
| 33.00   | 33.00        |
| 34.00   | 34.00        |
| 35.00   | 35.00        |
| 36.00   | 36.00        |
| 37.00   | 37.00        |
| 38.00   | 38.00        |
| 39.00   | 39.00        |
| 40.00   | 40.00        |
| 41.00   | 41.00        |
| 42.00   | 42.00        |
| 43.00   | 43.00        |
| 44.00   | 44.00        |
| 45.00   | 45.00        |
| 46.00   | 46.00        |
| 47.00   | 47.00        |
| 48.00   | 48.00        |
| 49.00   | 49.00        |
| 50.00   | 50.00        |
| 51.00   | 51.00        |
| 52.00   | 52.00        |
| 53.00   | 53.00        |
| 54.00   | 54.00        |
| 55.00   | 55.00        |
| 56.00   | 56.00        |
| 57.00   | 57.00        |
| 58.00   | 58.00        |
| 59.00   | 59.00        |
| 60.00   | 60.00        |
| 61.00   | 61.00        |
| 62.00   | 62.00        |
| 63.00   | 63.00        |
| 64.00   | 64.00        |
| 65.00   | 65.00        |
| 66.00   | 66.00        |
| 67.00   | 67.00        |
| 68.00   | 68.00        |
| 69.00   | 69.00        |
| 70.00   | 70.00        |
| 71.00   | 71.00        |
| 72.00   | 72.00        |
| 73.00   | 73.00        |
| 74.00   | 74.00        |
| 75.00   | 75.00        |
| 76.00   | 76.00        |
| 77.00   | 77.00        |
| 78.00   | 78.00        |
| 79.00   | 79.00        |
| 80.00   | 80.00        |
| 81.00   | 81.00        |
| 82.00   | 82.00        |
| 83.00   | 83.00        |
| 84.00   | 84.00        |
| 85.00   | 85.00        |
| 86.00   | 86.00        |
| 87.00   | 87.00        |
| 88.00   | 88.00        |
| 89.00   | 89.00        |
| 90.00   | 90.00        |
| 91.00   | 91.00        |
| 92.00   | 92.00        |
| 93.00   | 93.00        |
| 94.00   | 94.00        |
| 95.00   | 95.00        |
| 96.00   | 96.00        |
| 97.00   | 97.00        |
| 98.00   | 98.00        |
| 99.00   | 99.00        |
| 100.00  | 100.00       |

UNIFIED  
CLASSIFICATION

76103 UN 60-194



# SUBSURFACE TESTING REPORT

WHITEHORSE, Y.T.

DATE DRILLED: 2-3-78

**DRILL TECHNICIAN :**

**PLOTTED BY :**

HOLE ELEVATION:

HOLE NO.: T-31

|               |                  |
|---------------|------------------|
| HOLE DEPTH    | 4.35             |
| TYPE OF DRILL | B40-6" AUGERS    |
| WATER LEVEL   |                  |
| DEPTH<br>C.M. | SOIL DESCRIPTION |

HOLE DEPTH 4.35

TYPE OF DRILL B40-6" AUGERS

**WATER LEVEL** \_\_\_\_\_

| DEPTH<br>(M) | SOIL DESCRIPTION |
|--------------|------------------|
|--------------|------------------|

A vertical scale for gravel content, ranging from 0 to 30 percent. The word "GRAVEL" is written vertically along the scale.

SILT

|     |            |
|-----|------------|
| T27 | AUGER S567 |
|-----|------------|

1.

|      |      |      |     |
|------|------|------|-----|
| 22.6 | 24.5 | 19.9 | 4.6 |
|------|------|------|-----|

16.2 83.3

CL-ML

END HOLE @ 4.35



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

HOLE LOCATION:

DATE DRILLED: 2-3-78

DRILL TECHNICIAN: 8

H.R.

PLOTTED BY: R.S.

HOLE ELEVATION:

HOLE NO.: T-32

HOLE DEPTH 4.35  
TYPE OF DRILL B40-6" AUGERS  
WATER LEVEL  
DEPTH (M)  
SOIL DESCRIPTION

GRAVEL  
Silt Till

END HOLE @ 4.35

N.R.C.  
PERMAFROST  
CLASSIFICATION

SAMPLE IDENTIFICATION DATA  
SAMPLE DEPTH (FT.)  
SAMPLE NUMBER (FIELD)  
SAMPLE TYPE  
LABORATORY NUMBER

NATURAL  
MOISTURE  
CONTENT

CONSISTENCY LIMITS  
LIQUID LIMIT  
PLASTIC LIMIT  
PLASTICITY INDEX

MECHANICAL ANALYSIS  
GRAVEL  
SAND  
AND  
AND  
AND

DRY DENSITY  
STANDARD PENETRATION RESISTANCE  
UNIFIED CLASSIFICATION



# SUBSURFACE TESTING REPORT

**HOLE LOCATION:**

HOLE NO.: T-33

SOIL DESCRIPTION

0

SANDY GRAVEL

1

1.80

52

01.2

Silt

END HOLE @ 4.35

5



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

|                             |  |                                  |  |                  |  |                                 |  |
|-----------------------------|--|----------------------------------|--|------------------|--|---------------------------------|--|
| PROJECT: SHAKWAK SEGMENT 8  |  | HOLE LOCATION:                   |  | HOLE ELEVATION:  |  | HOLE NO.: T-34                  |  |
| DATE DRILLED: 2-3-78        |  | DRILL TECHNICIAN: H.R.           |  | PLOTTED BY: R.S. |  |                                 |  |
| HOLE DEPTH 4.35             |  | MECHANICAL ANALYSIS              |  | DRY DENSITY      |  | STANDARD PENETRATION RESISTANCE |  |
| TYPE OF DRILL B40-6" AUGERS |  | GRAVEL                           |  | LIB. CU.FT.      |  | BLOWS FT.                       |  |
| WATER LEVEL                 |  | SAND                             |  |                  |  |                                 |  |
| DEPTH (M.)                  |  | PLASTICITY INDEX                 |  |                  |  |                                 |  |
| SOIL DESCRIPTION            |  | PLASTIC LIMIT                    |  |                  |  |                                 |  |
| 0                           |  | LIQUID LIMIT                     |  |                  |  |                                 |  |
| 1                           |  | NATURAL MOISTURE CONTENT         |  |                  |  |                                 |  |
| 2                           |  | CONSISTENCY LIMITS               |  |                  |  |                                 |  |
| 3                           |  | LABORATORY NUMBER                |  |                  |  |                                 |  |
| 4                           |  | SAMPLE TYPE                      |  |                  |  |                                 |  |
| 5                           |  | SAMPLE NUMBER (FIELD)            |  |                  |  |                                 |  |
|                             |  | SAMPLE DEPTH (FT.)               |  |                  |  |                                 |  |
|                             |  | N.R.C. PERMAFROST CLASSIFICATION |  |                  |  |                                 |  |
| GRAVEL .30                  |  |                                  |  |                  |  |                                 |  |
| SANDY GRAVEL                |  |                                  |  |                  |  |                                 |  |
| 1.50                        |  |                                  |  |                  |  |                                 |  |
| SILTY SAND 1.95             |  |                                  |  |                  |  |                                 |  |
| SILT                        |  |                                  |  |                  |  |                                 |  |
| 3.0                         |  |                                  |  |                  |  |                                 |  |
| 3.7                         |  |                                  |  |                  |  |                                 |  |
| T31 AUGER S662              |  |                                  |  |                  |  |                                 |  |
| 27.6                        |  |                                  |  |                  |  |                                 |  |
| 31.3                        |  |                                  |  |                  |  |                                 |  |
| 21.1                        |  |                                  |  |                  |  |                                 |  |
| 10.2                        |  |                                  |  |                  |  |                                 |  |
| END HOLE @ 4.35             |  |                                  |  |                  |  |                                 |  |



MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

# SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

PROJECT: SHAKWAK SEE  
DATE DRILLED: 2-3-78

DATE DRILLED: 2-3-78

**DRILL TECHNICIAN :** H. R.

H. R.

**PLOTTED BY :**

R.S.

HOLE ELEVATION:

**HOLE NO.: T-35**

HOLE DEPTH 4.35

4.35

TYPE OF DRILL B40-6" AUGERS

TYPE OF DRILL B40-6" AUGERS

**WATER LEVEL**

WATER LEVEL \_\_\_\_\_

| DEPTH<br>(M) | SOIL DESCRIPTION |
|--------------|------------------|
|--------------|------------------|

| DEPTH<br>(M) | SOIL DESCRIPTION |
|--------------|------------------|
|--------------|------------------|

0

**GRAVEL**

GRAVEL \_\_\_\_\_ 15

SILT SAND TILL

1

02.1

# SILT TILL

2

3

4

END HOLE @ 4.35

10

במסגרת תוכנית



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY

WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

HOLE LOCATION:

DATE DRILLED: 2-3-78

DRILL TECHNICIAN:

H.R.

PLOTTED BY:

R.S.

HOLE ELEVATION:

HOLE NO.: T-36

HOLE DEPTH 4.35  
TYPE OF DRILL B40-6" AUGERS  
WATER LEVEL  
DEPTH (M)  
SOIL DESCRIPTION

GRAVEL .15

SILTY SAND TILL

2.10

GRAVELLY SILT

END HOLE @ 4.35

N.R.C.  
PERMAFROST  
CLASSIFICATION

LABORATORY  
NUMBER  
SAMPLE  
TYPE  
SAMPLE  
NUMBER  
(FIELD)  
SAMPLE  
DEPTH  
(FT.)

LIQUID  
LIMIT  
PLASTIC  
LIMIT  
PLASTICITY  
INDEX

GRAVEL  
SAND  
<.075 mm  
<.005 mm

DRY  
DENSITY  
LIBB.  
CU.FT.

STANDARD  
PENETRATION  
RESISTANCE  
BLOWS  
FT.

UNIFIED  
CLASSIFICATION

SM

47.1

47.0

5.9

NP

10.6

5735

AUGER

T32

.3

.9



# SUBSURFACE TESTING REPORT

**HOLE LOCATION:**

HOLE NO.: T-37

SOIL DESCRIPTION

## GRAVELLY SAND

1.80

SILT SAND TILL

2.70

~~END HOLE @ 4.35~~

|               |                  |
|---------------|------------------|
| HOLE DEPTH    | 4.35             |
| TYPE OF DRILL | B40-6" AUGERS    |
| WATER LEVEL   |                  |
| DEPTH (M.)    | SOIL DESCRIPTION |

SOIL DESCRIPTION

## GRAVELLY SAND

1.80

SILT SAND TILL

2.70

END HOLE @ 4.35

NRWG NO 60-194



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

HOLE LOCATION:

DATE DRILLED: 2-3-78

DRILL TECHNICIAN:

H.R.

PLOTTED BY:

R.S.

HOLE ELEVATION:

HOLE NO.: T-38

HOLE DEPTH 4.35  
TYPE OF DRILL B40-6" AUGERS  
WATER LEVEL  
DEPTH (M)

SOIL DESCRIPTION

GRAVEL .15

SAND TILL

1.05

SANDY SILT

END HOLE @ 4.35

N.R.C.  
PERMAFROST  
CLASSIFICATION

SAMPLE IDENTIFICATION DATA

SAMPLE  
DEPTH  
(FT.)

SAMPLE  
NUMBER  
(FIELD)

SAMPLE  
TYPE

LABORATORY  
NUMBER

NATURAL  
MOISTURE  
CONTENT

LIQUID  
LIMIT

PLASTIC  
LIMIT

PLASTICITY  
INDEX

GRAVEL

SAND

>.005 mm  
<.075 mm  
<.005 mm

MECHANICAL ANALYSIS

<.005 mm

DRY  
DENSITY

STANDARD  
PENETRATION  
RESISTANCE

UNIFIED  
CLASSIFICATION

LB.  
CU. FT.

BLOWS  
FT.

.3

.9

T34 AUGER S664 5.0

NP



**MATERIALS QUALITY CONTROL LABORATORY**  
**WHITEHORSE, Y.T.**

# SUBSURFACE TESTING REPORT

**PROJECT: SHAKWAK SEGMENT 8**

**HOLE LOCATION:**

DATE DRILLED: 2-3-78

**DRILL TECHNICIAN :**

H. R.

**PLOTTED BY :**

R.S.

**HOLE ELEVATION:**

HOLE NO.: T-39

|               |                  |
|---------------|------------------|
| HOLE DEPTH    | 4.35             |
| TYPE OF DRILL | B40-6" AUGERS    |
| WATER LEVEL   |                  |
| DEPTH (M)     | SOIL DESCRIPTION |

| DEPTH<br>(M) | SOIL DESCRIPTION |
|--------------|------------------|
|--------------|------------------|

|            |     |
|------------|-----|
| GRAVEL     | .30 |
| SILTY SAND | .60 |

517

1.2  
9.

**T35**

## Index

590

## 22.4

27.9

16.1

80

---

---

---

1

END HOLE @ 4.35



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

HOLE LOCATION:

DATE DRILLED: 2-3-78

DRILL TECHNICIAN:

H.R.

PLOTTED BY:

R.S.

HOLE ELEVATION:

HOLE NO.: T-40

HOLE DEPTH 4.35  
TYPE OF DRILL B40-6" AUGERS  
WATER LEVEL  
DEPTH (M)  
SOIL DESCRIPTION

GRAVEL .15

SILT SAND TILL

END HOLE @ 4.35

N.R.C.  
PERMAFROST  
CLASSIFICATION

LABORATORY  
NUMBER  
SAMPLE  
TYPE  
SAMPLE  
NUMBER  
(FIELD)  
SAMPLE  
DEPTH  
(FT.)

NATURAL  
MOISTURE  
CONTENT  
%

CONSISTENCY LIMITS  
LIQUID  
LIMIT  
PLASTIC  
LIMIT  
PLASTICITY  
INDEX

MECHANICAL ANALYSIS  
GRAVEL  
SAND  
%.074 mm  
%.005 mm  
%.005 mm

DRY  
DENSITY  
LB/CU. FT.  
STANDARD  
PENETRATION  
RESISTANCE  
BLOWS  
/FT.  
UNIFIED  
CLASSIFICATION

.3

.9

T36 AUGER S666 9.7

TRACE



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

HOLE LOCATION:

DATE DRILLED: 2-3-78

DRILL TECHNICIAN:

H.R.

PLOTTED BY:

R.S.

HOLE ELEVATION:

HOLE NO.: T-41

HOLE DEPTH 4.35  
TYPE OF DRILL 840-6" AUGERS  
WATER LEVEL  
DEPTH (M)  
SOIL DESCRIPTION

SILT SAND TILL .30

SAND TILL

1.35

SANDY SILT

END HOLE @ 4.35

N.R.C.  
PERMAFROST  
CLASSIFICATION

SAMPLE IDENTIFICATION DATA  
SAMPLE DEPTH (FT.)  
SAMPLE NUMBER (FIELD)  
SAMPLE TYPE  
LABORATORY NUMBER

NATURAL  
MOISTURE  
CONTENT

CONSISTENCY LIMITS  
LIQUID LIMIT  
PLASTIC LIMIT  
PLASTICITY INDEX

MECHANICAL ANALYSIS  
GRAVEL  
SAND  
<.075 mm  
<.005 mm

DRY DENSITY  
STANDARD PENETRATION RESISTANCE  
UNIFIED CLASSIFICATION



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

|                             |  |                                  |  |                            |  |                          |  |                     |  |             |  |                                 |  |                        |  |          |  |
|-----------------------------|--|----------------------------------|--|----------------------------|--|--------------------------|--|---------------------|--|-------------|--|---------------------------------|--|------------------------|--|----------|--|
| PROJECT: SHAKWAK SEGMENT 8  |  | HOLE LOCATION: R. S.             |  | HOLE ELEVATION:            |  | HOLE NO.: T-42           |  |                     |  |             |  |                                 |  |                        |  |          |  |
| DATE DRILLED: 2-3-78        |  | DRILL TECHNICIAN: H. R.          |  | PLOTTED BY:                |  |                          |  |                     |  |             |  |                                 |  |                        |  |          |  |
| HOLE DEPTH 4.35             |  | N.R.C. PERMAFROST CLASSIFICATION |  | SAMPLE IDENTIFICATION DATA |  | NATURAL MOISTURE CONTENT |  |                     |  |             |  |                                 |  |                        |  |          |  |
| TYPE OF DRILL B40-6" AUGERS |  |                                  |  | LABORATORY NUMBER          |  | PLASTICITY INDEX         |  | MECHANICAL ANALYSIS |  | DRY DENSITY |  | STANDARD PENETRATION RESISTANCE |  | UNIFIED CLASSIFICATION |  |          |  |
| WATER LEVEL                 |  |                                  |  |                            |  |                          |  |                     |  |             |  |                                 |  |                        |  |          |  |
| SOIL DESCRIPTION            |  | SAMPLE DEPTH (FT.)               |  | SAMPLE NUMBER (FIELD)      |  | SAMPLE TYPE              |  | LIQUID LIMIT        |  | GRAVEL      |  | SAND                            |  | <.075 mm               |  | <.005 mm |  |
| 0                           |  | .3                               |  | T38                        |  | AUGER                    |  | 5670                |  | 23.2        |  |                                 |  |                        |  |          |  |
| 1                           |  | .9                               |  |                            |  |                          |  |                     |  |             |  |                                 |  |                        |  |          |  |
| 2                           |  |                                  |  |                            |  |                          |  |                     |  |             |  |                                 |  |                        |  |          |  |
| 3                           |  | 2.4                              |  | T39                        |  | AUGER                    |  | 5668                |  | 16.9        |  | 30.7                            |  | 17.2                   |  | 13.5     |  |
| 4                           |  | 3.0                              |  |                            |  |                          |  |                     |  |             |  |                                 |  |                        |  |          |  |
| 5                           |  |                                  |  |                            |  |                          |  |                     |  |             |  |                                 |  |                        |  |          |  |

SILT SAND TILL

SILT

END HOLE @ 4.35



**MATERIALS QUALITY CONTROL LABORATORY**  
**WHITEHORSE, Y.T.**

# SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

**HOLE LOCATION:**

DATE DRILLED: 2-3-78

**DRILL TECHNICIAN :**

H. R.

**PLOTTED BY :**

R. S.

**HOLE ELEVATION:**

HOLE NO.: T-43

HOLE DEPTH 4.35

HOLE DEPTH 4.35

TYPE OF DRILL B40-6" AUGERS

**WATER LEVEL**

| DEPTH<br>(M) | SOIL DESCRIPTION |
|--------------|------------------|
|--------------|------------------|

SILT SAND TILL .30

512T

END HOLE @ 4.35

| UNIFIED CLASSIFICATION          |                  |               |
|---------------------------------|------------------|---------------|
| STANDARD PENETRATION RESISTANCE |                  | BLOWS<br>/ FT |
| DRY DENSITY                     |                  | LB./CU. FT.   |
| MECHANICAL ANALYSIS             | <.005 mm         | %             |
|                                 | <.074 mm         | %             |
|                                 | >.005 mm         | %             |
|                                 | SAND             | %             |
|                                 | GRAVEL           | %             |
| CONSISTENCY LIMITS              | PLASTICITY INDEX | %             |
|                                 | PLASTIC LIMIT    | %             |
|                                 | LIQUID LIMIT     | %             |
| NATURAL MOISTURE CONTENT        |                  | %             |

|                            |                       |
|----------------------------|-----------------------|
| SAMPLE IDENTIFICATION DATA | LABORATORY NUMBER     |
|                            | SAMPLE TYPE           |
|                            | SAMPLE NUMBER (FIELD) |
|                            | SAMPLE DEPTH (FT.)    |

**N.R.C.  
PERMAFROST  
CLASSIFICATION**

|               |                  |
|---------------|------------------|
| HOLE DEPTH    | 4.35             |
| TYPE OF DRILL | B40-6" AUGERS    |
| WATER LEVEL   |                  |
| DEPTH<br>F.M. | SOIL DESCRIPTION |

0

1

2

3

7

5



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

HOLE LOCATION:

DATE DRILLED: 6-3-78

DRILL TECHNICIAN:

H.R.

PLOTTED BY:

R.S.

HOLE ELEVATION:

HOLE NO.: T-44

HOLE DEPTH 4.35  
TYPE OF DRILL B40-6" AUGERS  
WATER LEVEL  
DEPTH (M)  
SOIL DESCRIPTION

SILT SAND TILL .30

SANDY SILT

END HOLE @ 4.35

N.R.C.  
PERMAFROST  
CLASSIFICATION

SAMPLE IDENTIFICATION DATA

SAMPLE  
DEPTH  
(FT.)

.3

.9

SAMPLE  
NUMBER  
(FIELD)

T41

SAMPLE  
TYPE

AUGER

LABORATORY  
NUMBER

5736

NATURAL  
MOISTURE  
CONTENT

%

20.5

LIQUID  
LIMIT

%

PLASTIC  
LIMIT

%

NP

PLASTICITY  
INDEX

%

GRAVEL

%

SAND

%

18.5

>.005 mm

%

81.5

<.075 mm

%

<.005 mm

%

DRY  
DENSITY

LB.  
CU. FT.

STANDARD  
PENETRATION  
RESISTANCE

BLOWS  
FT.

UNIFIED  
CLASSIFICATION

ML



**MATERIALS QUALITY CONTROL LABORATORY**  
**WHITEHORSE, Y.T.**

# SUBSURFACE TESTING REPORT

**PROJECT: SHAKWAK SEGMENT 8**

**HOLE LOCATION:**

DATE DRILLED: 6-3-78

DRILL TECHNICIAN: H D

**PLOTTED BY :**

u  
p

**HOLE ELEVATION:**

HOLE NO.: T-45

|               |                  |
|---------------|------------------|
| HOLE DEPTH    | 4.35             |
| TYPE OF DRILL | B40-6" AUGERS    |
| WATER LEVEL   |                  |
| DEPTH         | SOIL DESCRIPTION |

SILT SAND TILL

Silty Sand

**END HOLE @ 4.35**

|                            |                       |
|----------------------------|-----------------------|
| SAMPLE IDENTIFICATION DATA | LABORATORY NUMBER     |
|                            | SAMPLE TYPE           |
|                            | SAMPLE NUMBER (FIELD) |
|                            | SAMPLE DEPTH (FT.)    |

**NATURAL  
MOISTURE  
CONTENT**

|                    |                  |
|--------------------|------------------|
| CONSISTENCY LIMITS | PLASTICITY INDEX |
|                    | PLASTIC LIMIT    |
|                    | LIQUID LIMIT     |

|                     |          |
|---------------------|----------|
| MECHANICAL ANALYSIS | >.005 mm |
|                     | SAND     |
|                     | GRAVEL   |

|          |          |
|----------|----------|
| ANALYSIS | <.005 mm |
|          | <.074 mm |
|          | >.005 mm |

STANDARD  
PENETRATION  
RESISTANCE

---

DRY  
DENSITY

UNIFIED  
CLASSIFICATION

9.

2.

72

DRWG. NO. 60-194



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

HOLE LOCATION:

DATE DRILLED: 6-3-78

DRILL TECHNICIAN: 8

H.R.

PLOTTED BY:

R.S.

HOLE ELEVATION:

HOLE NO.: T-46

HOLE DEPTH 4.35  
TYPE OF DRILL B40-6" AUGERS  
WATER LEVEL  
DEPTH (M)  
SOIL DESCRIPTION

N.R.C.  
PERMAFROST  
CLASSIFICATION

SAMPLE IDENTIFICATION DATA  
LABORATORY NUMBER  
SAMPLE TYPE  
SAMPLE NUMBER (FIELD)  
SAMPLE DEPTH (FT.)

NATURAL  
MOISTURE  
CONTENT

LIQUID  
LIMIT

PLASTIC  
LIMIT

PLASTICITY  
INDEX

GRAVEL

SAND

MECHANICAL ANALYSIS  
<.075 mm  
<.075 mm  
>.005 mm

<.005 mm

DRY  
DENSITY

STANDARD  
PENETRATION  
RESISTANCE

UNIFIED  
CLASSIFICATION

0

1

2

3

4

5

SILT SAND TILL

.90

SILT

END HOLE @ 4.35



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

HOLE LOCATION:

DATE DRILLED: 6-3-78

DRILL TECHNICIAN: 8

H.R.

PLOTTED BY: R.S.

HOLE ELEVATION:

HOLE NO.: T-47

HOLE DEPTH 4.35  
TYPE OF DRILL B40-6" AUGERS  
WATER LEVEL  
DEPTH (M)  
SOIL DESCRIPTION

SAND SILT TILL

.75

SILT

END HOLE @ 4.35

| SAMPLE IDENTIFICATION DATA |                       |             |                   | CONSISTENCY LIMITS |               |                  | MECHANICAL ANALYSIS |      |           |           | DRY DENSITY | STANDARD PENETRATION RESISTANCE | UNIFIED CLASSIFICATION |
|----------------------------|-----------------------|-------------|-------------------|--------------------|---------------|------------------|---------------------|------|-----------|-----------|-------------|---------------------------------|------------------------|
| SAMPLE DEPTH (FT.)         | SAMPLE NUMBER (FIELD) | SAMPLE TYPE | LABORATORY NUMBER | LIQUID LIMIT       | PLASTIC LIMIT | PLASTICITY INDEX | GRAVEL              | SAND | < .075 mm | < .005 mm | LB/ CU.FT.  | BLOWS / FT.                     |                        |
| .8                         | T43                   | AUGER       | ST38              | 26.9               | 18.1          | 8.8              |                     | 17.0 | 83.0      |           |             |                                 | CL                     |
| 1.4                        |                       |             |                   |                    |               |                  |                     |      |           |           |             |                                 |                        |
| 3.3                        | T47                   | AUGER       | ST42              | 32.5               | 18.9          | 13.6             | 4.7                 | 8.0  | 87.3      |           |             |                                 | CL                     |
| 4.0                        |                       |             |                   |                    |               |                  |                     |      |           |           |             |                                 |                        |



**MATERIALS QUALITY CONTROL LABORATORY**  
**WHITEHORSE, Y.T.**

# SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

**HOLE LOCATION:**

DATE DRILLED: 6-3-78

DATE DRILLED: 6-3-78

**PLOTTED BY :**

U  
M

**HOLE ELEVATION:**

HOLE NO.: T-48

|                                    |                  |
|------------------------------------|------------------|
| HOLE DEPTH <u>4.35</u>             |                  |
| TYPE OF DRILL <u>B40-6" AUGERS</u> |                  |
| WATER LEVEL _____                  |                  |
| DEPTH<br>M                         | SOIL DESCRIPTION |

SOIL DESCRIPTION

SILT SAND TILL .45  
SILT TILL .75

517

END OF FILE 4.35

**N.R.C.  
PERMAFROST  
CLASSIFICATION**

|                            |                       |
|----------------------------|-----------------------|
| SAMPLE IDENTIFICATION DATA | LABORATORY NUMBER     |
|                            | SAMPLE TYPE           |
|                            | SAMPLE NUMBER (FIELD) |
|                            | SAMPLE DEPTH (FT.)    |

|                           |                         |   |
|---------------------------|-------------------------|---|
| <b>CONSISTENCY LIMITS</b> | <b>PLASTICITY INDEX</b> | % |
|                           | <b>PLASTIC LIMIT</b>    | % |
|                           | <b>LIQUID LIMIT</b>     | % |

|          |          |   |
|----------|----------|---|
| ANALYSIS | <.074 mm | % |
|          | >.005 mm |   |

| STANDARD<br>PENETRATION<br>RESISTANCE | BLOWS |
|---------------------------------------|-------|
|---------------------------------------|-------|

UNIFIED  
CLASSIFICATION

9.

١٠

95 +

|      |      |      |
|------|------|------|
| 35.8 | 23.2 | 12.7 |
|------|------|------|

205

AUGER 5739

五

1

5





Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

|                            |  |                                  |  |                            |  |                                 |  |
|----------------------------|--|----------------------------------|--|----------------------------|--|---------------------------------|--|
| PROJECT: SHAKWAK SEGMENT 8 |  | HOLE LOCATION:                   |  | HOLE ELEVATION:            |  | HOLE NO.: T-50                  |  |
| DATE DRILLED: 6-3-78       |  | DRILL TECHNICIAN: 8              |  | PLOTTED BY: R.S.           |  |                                 |  |
| HOLE DEPTH 4.35            |  | TYPE OF DRILL B40-6" AUGERS      |  | WATER LEVEL                |  | SOIL DESCRIPTION                |  |
| DEPTH (M.)                 |  | N.R.C. PERMAFROST CLASSIFICATION |  | SAMPLE IDENTIFICATION DATA |  | NATURAL MOISTURE CONTENT        |  |
|                            |  |                                  |  | SAMPLE DEPTH (FT.)         |  | %                               |  |
|                            |  |                                  |  | SAMPLE NUMBER (FIELD)      |  | LIQUID LIMIT                    |  |
|                            |  |                                  |  | SAMPLE TYPE                |  | PLASTIC LIMIT                   |  |
|                            |  |                                  |  | LABORATORY NUMBER          |  | PLASTICITY INDEX                |  |
|                            |  |                                  |  |                            |  | GRAVEL                          |  |
|                            |  |                                  |  |                            |  | SAND                            |  |
|                            |  |                                  |  |                            |  | >.005 mm                        |  |
|                            |  |                                  |  |                            |  | <.074 mm                        |  |
|                            |  |                                  |  |                            |  | <.005 mm                        |  |
|                            |  |                                  |  |                            |  | DRY DENSITY                     |  |
|                            |  |                                  |  |                            |  | LBS. CU. FT.                    |  |
|                            |  |                                  |  |                            |  | STANDARD PENETRATION RESISTANCE |  |
|                            |  |                                  |  |                            |  | BLOWS / FT.                     |  |
|                            |  |                                  |  |                            |  | UNIFIED CLASSIFICATION          |  |

|   |                 |      |
|---|-----------------|------|
| 0 | SILT SAND TILL  | .30  |
| 1 | SILT            |      |
| 2 |                 |      |
| 3 | SILT TILL       | 2.40 |
| 4 | END HOLE @ 4.35 |      |
| 5 |                 |      |



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

|                              |  |                        |  |                                 |  |                          |  |
|------------------------------|--|------------------------|--|---------------------------------|--|--------------------------|--|
| PROJECT: SHAKWAK SEGMENT 8   |  | HOLE LOCATION:         |  | HOLE ELEVATION:                 |  | HOLE NO.: T-51           |  |
| DATE DRILLED: 6-3-78         |  | DRILL TECHNICIAN: H.R. |  | PLOTTED BY: R.S.                |  |                          |  |
| HOLE DEPTH 3.00              |  | MECHANICAL ANALYSIS    |  | CONSISTENCY LIMITS              |  | NATURAL MOISTURE CONTENT |  |
| TYPE OF DRILL B40-6" AUGERS  |  | GRAVEL                 |  | LIQUID LIMIT                    |  | %                        |  |
| WATER LEVEL                  |  | SAND                   |  | PLASTIC LIMIT                   |  | %                        |  |
| DEPTH (M)                    |  | %                      |  | PLASTICITY INDEX                |  | %                        |  |
| SOIL DESCRIPTION             |  | %                      |  | PLASTICITY INDEX                |  | %                        |  |
| SANDY SILT TILL .30          |  | %                      |  | PLASTICITY INDEX                |  | %                        |  |
| SILTY SAND TILL ORGANIC 1.35 |  | %                      |  | PLASTICITY INDEX                |  | %                        |  |
| SILT TILL                    |  | %                      |  | PLASTICITY INDEX                |  | %                        |  |
| REFUSAL @ 3.00               |  | %                      |  | PLASTICITY INDEX                |  | %                        |  |
| UNIFIED CLASSIFICATION       |  | DRY DENSITY            |  | STANDARD PENETRATION RESISTANCE |  | BLOWS / FT.              |  |
| ML                           |  | LB / CU. FT.           |  | BLOWS / FT.                     |  | BLOWS / FT.              |  |





**MATERIALS QUALITY CONTROL LABORATORY**  
**WHITEHORSE, Y.T.**

# SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

**HOLE LOCATION :**

DATE DRILLED: 6-3-78

DRILL TECHNICIAN : H P

**PLOTTED BY :**

U  
P

**HOLE ELEVATION:**

HOLE NO.: T-53

|               |                  |
|---------------|------------------|
| HOLE DEPTH    | 3.00             |
| TYPE OF DRILL | B40-6" AUGERS    |
| WATER LEVEL   |                  |
| DEPTH<br>(M)  | SOIL DESCRIPTION |

SILTY SAND TILL

90.

SILT

5.5

GRAVELLY SAND

REVENUE \$3.00

|                     |               |
|---------------------|---------------|
| MECHANICAL ANALYSIS | <.005 mm      |
|                     | <.075 mm      |
|                     | >.005 mm      |
|                     | SAND          |
| CONSISTENCY LIMITS  | GRAVEL        |
|                     | PLASTIC INDEX |
|                     | PLASTIC LIMIT |
|                     | LIQUID LIMIT  |

**NATURAL  
MOISTURE  
CONTENT**

[illegible]

**STANDARD  
PENETRATION  
RESISTANCE**

---

**DRY  
DENSITY**

UNIFIED  
CLASSIFICATION

95+

|      |      |      |
|------|------|------|
| 48.7 | 27.3 | 21.4 |
|------|------|------|

27.4

AUGER S74b

151

9.

5.

72



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

|                            |  |                                  |  |                            |  |                                 |  |
|----------------------------|--|----------------------------------|--|----------------------------|--|---------------------------------|--|
| PROJECT: SHAKWAK SEGMENT 8 |  | HOLE LOCATION:                   |  | HOLE ELEVATION:            |  | HOLE NO.: T-54                  |  |
| DATE DRILLED: 7-3-78       |  | DRILL TECHNICIAN: 8              |  | PLOTTED BY: R.S.           |  |                                 |  |
| HOLE DEPTH 4.35            |  | TYPE OF DRILL B40-6" AUGERS      |  | WATER LEVEL                |  | SOIL DESCRIPTION                |  |
| DEPTH (M.)                 |  | N.R.C. PERMAFROST CLASSIFICATION |  | SAMPLE IDENTIFICATION DATA |  | NATURAL MOISTURE CONTENT        |  |
|                            |  |                                  |  | SAMPLE DEPTH (FT.)         |  | LIQUID LIMIT                    |  |
|                            |  |                                  |  | SAMPLE NUMBER (FIELD)      |  | PLASTIC LIMIT                   |  |
|                            |  |                                  |  | SAMPLE TYPE                |  | PLASTICITY INDEX                |  |
|                            |  |                                  |  | LABORATORY NUMBER          |  | GRAVEL                          |  |
|                            |  |                                  |  |                            |  | SAND                            |  |
|                            |  |                                  |  |                            |  | >.005 mm                        |  |
|                            |  |                                  |  |                            |  | <.075 mm                        |  |
|                            |  |                                  |  |                            |  | <.005 mm                        |  |
|                            |  |                                  |  |                            |  | DRY DENSITY                     |  |
|                            |  |                                  |  |                            |  | STANDARD PENETRATION RESISTANCE |  |
|                            |  |                                  |  |                            |  | UNIFIED CLASSIFICATION          |  |

|                     |   |   |   |   |   |
|---------------------|---|---|---|---|---|
| 0                   | 1 | 2 | 3 | 4 | 5 |
| SANDY SILT Till     |   |   |   |   |   |
| GRAVELLY SANDY SILT |   |   |   |   |   |
| END HOLE @ 4.35     |   |   |   |   |   |
| 2.10                |   |   |   |   |   |
| 1.2                 |   |   |   |   |   |
| 1.8                 |   |   |   |   |   |
| T52 AUGER 5747      |   |   |   |   |   |
| 10.8                |   |   |   |   |   |
| 37.1                |   |   |   |   |   |
| 19.6                |   |   |   |   |   |
| 17.5                |   |   |   |   |   |
| 8.3                 |   |   |   |   |   |
| 41.8                |   |   |   |   |   |
| 49.9                |   |   |   |   |   |
| SC                  |   |   |   |   |   |



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

HOLE LOCATION:

DATE DRILLED: 7-3-78

DRILL TECHNICIAN:

H.R.

PLOTTED BY:

R.S.

HOLE ELEVATION:

HOLE NO.: T-55

HOLE DEPTH 4.35  
TYPE OF DRILL B40-6" AUGERS  
WATER LEVEL  
DEPTH (M)  
SOIL DESCRIPTION

SILT SAND TILL

0.90

SILT

1.50

SANDY SILT

END HOLE @ 4.35

N.R.C.  
PERMAFROST  
CLASSIFICATION

SAMPLE IDENTIFICATION DATA

LABORATORY  
NUMBER  
SAMPLE  
TYPE  
SAMPLE  
NUMBER  
(FIELD)  
SAMPLE  
DEPTH  
(FT.)

NATURAL  
MOISTURE  
CONTENT

LIQUID  
LIMIT

PLASTIC  
LIMIT

PLASTICITY  
INDEX

SAND

GRAVEL

MECHANICAL ANALYSIS

<.005 mm  
<.075 mm  
>.005 mm

STANDARD  
PENETRATION  
RESISTANCE

DRY  
DENSITY

UNIFIED  
CLASSIFICATION





MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

# SUBSURFACE TESTING REPORT

| PROJECT: SHAKWAK SEGMENT 8  |                    | HOLE LOCATION:                   |  | HOLE ELEVATION:            |  | HOLE NO.: T-57           |  |
|-----------------------------|--------------------|----------------------------------|--|----------------------------|--|--------------------------|--|
| DATE DRILLED: 7-3-78        |                    | DRILL TECHNICIAN: H.R.           |  | PLOTTED BY: R.S.           |  |                          |  |
| HOLE DEPTH 1.80             |                    | N.R.C. PERMAFROST CLASSIFICATION |  | SAMPLE IDENTIFICATION DATA |  | NATURAL MOISTURE CONTENT |  |
| TYPE OF DRILL B40-6" AUGERS |                    |                                  |  | SAMPLE DEPTH (FT.)         |  | %                        |  |
| WATER LEVEL                 |                    |                                  |  | SAMPLE NUMBER (FIELD)      |  | %                        |  |
| DEPTH (M.)                  |                    |                                  |  | SAMPLE TYPE                |  | %                        |  |
| SOIL DESCRIPTION            |                    |                                  |  | LABORATORY NUMBER          |  | %                        |  |
| 0                           | SILTY SANDY GRAVEL |                                  |  |                            |  |                          |  |
| 1                           |                    |                                  |  |                            |  |                          |  |
| 2                           | END HOLE @ 1.80    |                                  |  |                            |  |                          |  |
| 3                           |                    |                                  |  |                            |  |                          |  |
| 4                           |                    |                                  |  |                            |  |                          |  |
| 5                           |                    |                                  |  |                            |  |                          |  |



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

|                             |  |                                  |  |                                 |  |
|-----------------------------|--|----------------------------------|--|---------------------------------|--|
| PROJECT: SHAKWAK SEGMENT 8  |  | HOLE LOCATION:                   |  | HOLE NO.: T-58                  |  |
| DATE DRILLED: 7.-3-78       |  | DRILL TECHNICIAN: H.R.           |  | PLOTTED BY: R.S.                |  |
| HOLE DEPTH 1.65             |  | MECHANICAL ANALYSIS              |  | STANDARD PENETRATION RESISTANCE |  |
| TYPE OF DRILL B40-6" AUGERS |  | GRAVEL                           |  | BLOWS / FT.                     |  |
| WATER LEVEL                 |  | SAND                             |  | LBS. / CU. FT.                  |  |
| DEPTH (M.)                  |  | PLASTIC LIMIT                    |  | DRY DENSITY                     |  |
| SOIL DESCRIPTION            |  | PLASTICITY INDEX                 |  | UNIFIED CLASSIFICATION          |  |
| 0                           |  | LIQUID LIMIT                     |  |                                 |  |
| 1                           |  | NATURAL MOISTURE CONTENT         |  |                                 |  |
| 2                           |  | CONSISTENCY LIMITS               |  |                                 |  |
| 3                           |  | SAMPLE IDENTIFICATION DATA       |  |                                 |  |
| 4                           |  | SAMPLE DEPTH (FT.)               |  |                                 |  |
| 5                           |  | SAMPLE NUMBER (FIELD)            |  |                                 |  |
|                             |  | SAMPLE TYPE                      |  |                                 |  |
|                             |  | LABORATORY NUMBER                |  |                                 |  |
|                             |  | N.R.C. PERMAFROST CLASSIFICATION |  |                                 |  |
|                             |  | T 57                             |  |                                 |  |
|                             |  | AUGER 5751                       |  |                                 |  |
|                             |  | NP                               |  |                                 |  |
|                             |  | 0.4                              |  |                                 |  |
|                             |  | 46.3                             |  |                                 |  |
|                             |  | 53.3                             |  |                                 |  |
|                             |  | ML                               |  |                                 |  |
|                             |  | 10.6                             |  |                                 |  |
|                             |  | .6                               |  |                                 |  |
|                             |  | 1.2                              |  |                                 |  |
|                             |  | REFUSAL @ 1.65                   |  |                                 |  |
|                             |  | SILT SAND TILL                   |  |                                 |  |



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

|                            |  |                             |  |                                  |  |                                 |  |
|----------------------------|--|-----------------------------|--|----------------------------------|--|---------------------------------|--|
| PROJECT: SHAKWAK SEGMENT 8 |  | HOLE LOCATION: R.S.         |  | HOLE ELEVATION:                  |  | HOLE NO.: T-59                  |  |
| DATE DRILLED: 7-3-78       |  | DRILL TECHNICIAN: H.R.      |  | PLOTTED BY:                      |  |                                 |  |
| HOLE DEPTH 4.35            |  | TYPE OF DRILL B40-6" AUGERS |  | WATER LEVEL                      |  |                                 |  |
| DEPTH (M.)                 |  | SOIL DESCRIPTION            |  | N.R.C. PERMAFROST CLASSIFICATION |  | SAMPLE IDENTIFICATION DATA      |  |
|                            |  |                             |  |                                  |  | SAMPLE DEPTH (FT.)              |  |
|                            |  |                             |  |                                  |  | SAMPLE NUMBER (FIELD)           |  |
|                            |  |                             |  |                                  |  | SAMPLE TYPE                     |  |
|                            |  |                             |  |                                  |  | LABORATORY NUMBER               |  |
|                            |  |                             |  |                                  |  | NATURAL MOISTURE CONTENT        |  |
|                            |  |                             |  |                                  |  | LIQUID LIMIT                    |  |
|                            |  |                             |  |                                  |  | PLASTIC LIMIT                   |  |
|                            |  |                             |  |                                  |  | PLASTICITY INDEX                |  |
|                            |  |                             |  |                                  |  | GRAVEL                          |  |
|                            |  |                             |  |                                  |  | SAND                            |  |
|                            |  |                             |  |                                  |  | >.005 mm                        |  |
|                            |  |                             |  |                                  |  | <.075 mm                        |  |
|                            |  |                             |  |                                  |  | <.005 mm                        |  |
|                            |  |                             |  |                                  |  | DRY DENSITY                     |  |
|                            |  |                             |  |                                  |  | STANDARD PENETRATION RESISTANCE |  |
|                            |  |                             |  |                                  |  | UNIFIED CLASSIFICATION          |  |

0 1 2 3 4 5

SILTY SANDY GRAVEL  
ORGANIC

END HOLE @ 4.35

T58 AUGER S752 8.0

NP 11.6 29.9 38.5

SM

3

9



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

HOLE LOCATION:

DATE DRILLED: 7-3-78

DRILL TECHNICIAN: H.R.

PLOTTED BY: R.S.

HOLE ELEVATION:

HOLE NO.: T-60

HOLE DEPTH 4.35  
TYPE OF DRILL B40-6" AUGERS  
WATER LEVEL

SOIL DESCRIPTION

DEPTH  
(M)

0

1

2

3

4

5

SANDY SILT

1.50

GRAVELLY SILTY SAND

END HOLE @ 4.35

N.R.C.  
PERMAFROST  
CLASSIFICATION

SAMPLE IDENTIFICATION DATA

SAMPLE  
DEPTH  
(FT.)

SAMPLE  
NUMBER  
(FIELD)

SAMPLE  
TYPE

LABORATORY  
NUMBER

NATURAL  
MOISTURE  
CONTENT

%

LIQUID  
LIMIT

%

PLASTIC  
LIMIT

%

PLASTICITY  
INDEX

%

GRAVEL

%

SAND

%

MECHANICAL ANALYSIS

>.005 mm

%

<.075 mm

%

<.005 mm

%

DRY  
DENSITY

LB.  
CU. FT.

STANDARD  
PENETRATION  
RESISTANCE

BLOWS  
FT.

UNIFIED  
CLASSIFICATION

ML









Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

HOLE LOCATION:

DATE DRILLED: 7-3-78

DRILL TECHNICIAN:

H.R.

PLOTTED BY:

R.S.

HOLE ELEVATION:

HOLE NO.: T-64

HOLE DEPTH 5.95  
TYPE OF DRILL B40-6" AUGERS  
WATER LEVEL  
DEPTH (M)  
SOIL DESCRIPTION

N.R.C.  
PERMAFROST  
CLASSIFICATION

SAMPLE IDENTIFICATION DATA  
SAMPLE DEPTH (FT.)  
SAMPLE NUMBER (FIELD)  
SAMPLE TYPE  
LABORATORY NUMBER

NATURAL  
MOISTURE  
CONTENT  
%

CONSISTENCY LIMITS  
LIQUID LIMIT  
PLASTIC LIMIT  
PLASTICITY INDEX

MECHANICAL ANALYSIS  
GRAVEL  
SAND  
%.074 mm  
%.005 mm  
%.005 mm

DRY DENSITY  
LB./CU. FT.  
STANDARD PENETRATION RESISTANCE  
BLOWS/FT.  
UNIFIED CLASSIFICATION

0  
1  
2  
3  
4  
5

.3

SANDY SILTY GRAVEL

T64 AUGER ST58

12.0

NP

5.9 33.7 60.4

ML



MATERIALS QUALITY CONTROL LABORATORY

# SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

**HOLE LOCATION:**

DATE DRILLED: 7-3-78

DRILL TECHNICIAN: H. R.

PLOTTED BY : R. S.

**HOLE ELEVATION:**

HOLE NO.: T-64

HOLE DEPTH

၆၈၆

TYPE OF DRILL B40-6" AUGERS

**WATER LEVEL**

SOIL DESCRIPTION

SANDY SILTY GRAVEL

56.5 @ 370H ON3

**UNIFIED  
CLASSIFICATION**

**STANDARD  
PENETRATION  
RESISTANCE**

**DRY  
DENSITY**

**<.005 mm**

LYS |  $<.074\text{ mm}$

ANAL. Calcd for  $C_{10}H_{10}O$ : C, 88.10%; H, 7.39%. Found: C, 88.1%; H, 7.4%.

**SAND**

**GRAVEL**

**PLASTICITY  
INDEX**

**PLASTIC  
LIMIT**

LIQUID  
LIMIT

### NATURAL MOISTURE CONTENT

|    |                      |
|----|----------------------|
| 7A | LABORATORY<br>NUMBER |
|----|----------------------|

**SAMPLE  
TYPE**

**SAMPLE  
NUMBER  
(FIELD)**

**SAMPLE  
DEPTH  
(FT.)**

**N.R.C.  
PERMAFROST  
CLASSIFICATION**

DRWG. NO. 60-194



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

|                             |                 |                            |                |                          |      |                     |      |
|-----------------------------|-----------------|----------------------------|----------------|--------------------------|------|---------------------|------|
| PROJECT: SHAKWAK SEGMENT 8  |                 | HOLE LOCATION:             |                | HOLE ELEVATION:          |      | HOLE NO.: T-65      |      |
| DATE DRILLED: 7-3-78        |                 | DRILL TECHNICIAN: H.R.     |                | PLOTTED BY: R.S.         |      |                     |      |
| HOLE DEPTH 4.35             |                 | SAMPLE IDENTIFICATION DATA |                | CONSISTENCY LIMITS       |      | MECHANICAL ANALYSIS |      |
| TYPE OF DRILL B40-6" AUGERS |                 | LABORATORY NUMBER          |                | PLASTIC LIMIT            |      | <.075 mm            |      |
| WATER LEVEL                 |                 | SAMPLE TYPE                |                | LIQUID LIMIT             |      | >.005 mm            |      |
| DEPTH (M)                   |                 | SAMPLE NUMBER (FIELD)      |                | NATURAL MOISTURE CONTENT |      | DRY DENSITY         |      |
| SOIL DESCRIPTION            |                 | SAMPLE DEPTH (FT.)         |                | %                        |      | BLOWS / FT.         |      |
| UNIFIED CLASSIFICATION      |                 |                            |                |                          |      |                     |      |
| 0                           | GRAVEL          | .6                         |                |                          |      |                     |      |
| 1                           | GRAVELLY SILT   | 1.2                        | T65 AUGER S759 | 15.9                     | 23.2 | 6.3                 | 28.4 |
| 2                           |                 |                            |                |                          |      |                     |      |
| 3                           | SILT TILL       |                            |                |                          |      |                     |      |
| 4                           |                 | 3.7                        | T66 AUGER S760 | 14.6                     | 28.3 | 11.4                | 18.8 |
| 5                           | END HOLE @ 4.35 | 4.3                        |                |                          |      |                     |      |



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

HOLE LOCATION:

DATE DRILLED: 7-3-78

DRILL TECHNICIAN:

H.R.

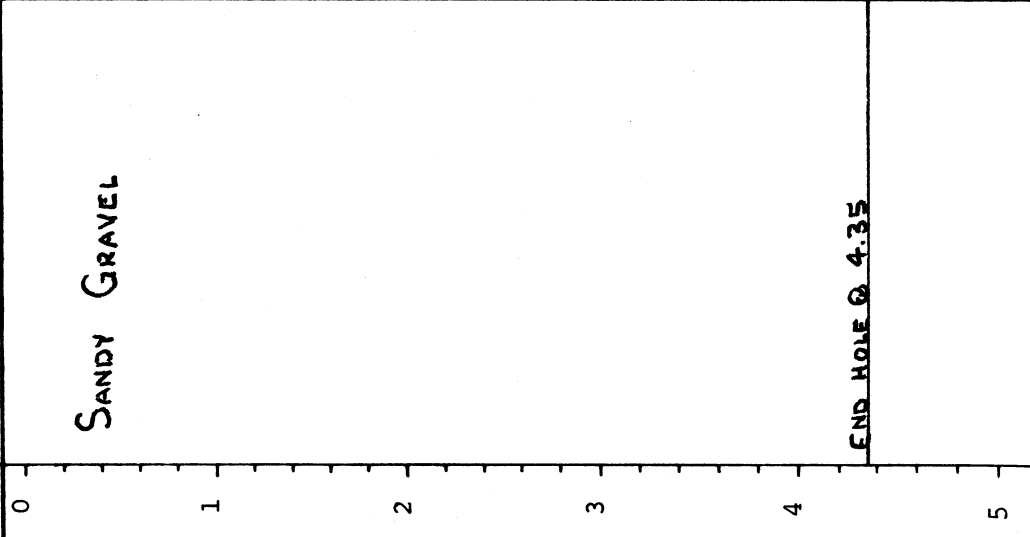
PLOTTED BY:

R.S.

HOLE ELEVATION:

HOLE NO.: T-66

HOLE DEPTH 4.35  
TYPE OF DRILL B40-6" AUGERS  
WATER LEVEL  
DEPTH (M.)  
SOIL DESCRIPTION



N.R.C.  
PERMAFROST  
CLASSIFICATION

SAMPLE IDENTIFICATION DATA  
SAMPLE DEPTH (FT.)  
SAMPLE NUMBER (FIELD)  
SAMPLE TYPE  
LABORATORY NUMBER

NATURAL  
MOISTURE  
CONTENT  
%

CONSISTENCY LIMITS  
LIQUID LIMIT  
PLASTIC LIMIT  
PLASTICITY INDEX

MECHANICAL ANALYSIS  
GRAVEL  
SAND  
< 0.075 mm  
< 0.005 mm

DRY DENSITY  
LB./CU. FT.  
STANDARD PENETRATION RESISTANCE  
BLOWS/FT.

UNIFIED CLASSIFICATION

0 1 2 3 4 5

6 1.2

T67 AUGER 5761

NP 46.9 37.7 15.4

GM

END HOLE @ 4.35



# SUBSURFACE TESTING REPORT

**HOLE LOCATION:**

DRILL TECHNICIAN : H. R.

**PLOTTED BY :**

R.S.

**HOLE ELEVATION:**

HOLE NO.: T-67

3.60

TYPE OF DRILL B40-6" AUGERS

**WATER LEVEL** \_\_\_\_\_

SOIL DESCRIPTION

DEPTH  
(M)

o

7

2

3.

4

5

SANDY GRAVEL

REFUSAL @ 3.60

—

۱۰

**N.R.C.  
PERMAFROST  
CLASSIFICATION**

|                            |                       |
|----------------------------|-----------------------|
| SAMPLE IDENTIFICATION DATA | LABORATORY NUMBER     |
|                            | SAMPLE TYPE           |
|                            | SAMPLE NUMBER (FIELD) |
|                            | SAMPLE DEPTH (FT.)    |

| NATURAL<br>MOISTURE<br>CONTENT | % |
|--------------------------------|---|
|--------------------------------|---|

|                    |                  |   |
|--------------------|------------------|---|
| CONSISTENCY LIMITS | PLASTICITY INDEX | % |
|                    | PLASTIC LIMIT    | % |
|                    | LIQUID LIMIT     | % |

|                     |          |   |
|---------------------|----------|---|
| MECHANICAL ANALYSIS | <.005 mm | % |
|                     | <.074 mm | % |
|                     | >.005 mm |   |
|                     | SAND     | % |
|                     | GRAVEL   | % |

| STANDARD<br>PENETRATION<br>RESISTANCE | BLOWS |
|---------------------------------------|-------|
| 10                                    | 10    |
| 20                                    | 20    |
| 30                                    | 30    |
| 40                                    | 40    |
| 50                                    | 50    |
| 60                                    | 60    |
| 70                                    | 70    |
| 80                                    | 80    |
| 90                                    | 90    |
| 100                                   | 100   |
| 110                                   | 110   |
| 120                                   | 120   |
| 130                                   | 130   |
| 140                                   | 140   |
| 150                                   | 150   |
| 160                                   | 160   |
| 170                                   | 170   |
| 180                                   | 180   |
| 190                                   | 190   |
| 200                                   | 200   |
| 210                                   | 210   |
| 220                                   | 220   |
| 230                                   | 230   |
| 240                                   | 240   |
| 250                                   | 250   |
| 260                                   | 260   |
| 270                                   | 270   |
| 280                                   | 280   |
| 290                                   | 290   |
| 300                                   | 300   |
| 310                                   | 310   |
| 320                                   | 320   |
| 330                                   | 330   |
| 340                                   | 340   |
| 350                                   | 350   |
| 360                                   | 360   |
| 370                                   | 370   |
| 380                                   | 380   |
| 390                                   | 390   |
| 400                                   | 400   |
| 410                                   | 410   |
| 420                                   | 420   |
| 430                                   | 430   |
| 440                                   | 440   |
| 450                                   | 450   |
| 460                                   | 460   |
| 470                                   | 470   |
| 480                                   | 480   |
| 490                                   | 490   |
| 500                                   | 500   |
| 510                                   | 510   |
| 520                                   | 520   |
| 530                                   | 530   |
| 540                                   | 540   |
| 550                                   | 550   |
| 560                                   | 560   |
| 570                                   | 570   |
| 580                                   | 580   |
| 590                                   | 590   |
| 600                                   | 600   |
| 610                                   | 610   |
| 620                                   | 620   |
| 630                                   | 630   |
| 640                                   | 640   |
| 650                                   | 650   |
| 660                                   | 660   |
| 670                                   | 670   |
| 680                                   | 680   |
| 690                                   | 690   |
| 700                                   | 700   |
| 710                                   | 710   |
| 720                                   | 720   |
| 730                                   | 730   |
| 740                                   | 740   |
| 750                                   | 750   |
| 760                                   | 760   |
| 770                                   | 770   |
| 780                                   | 780   |
| 790                                   | 790   |
| 800                                   | 800   |
| 810                                   | 810   |
| 820                                   | 820   |
| 830                                   | 830   |
| 840                                   | 840   |
| 850                                   | 850   |
| 860                                   | 860   |
| 870                                   | 870   |
| 880                                   | 880   |
| 890                                   | 890   |
| 900                                   | 900   |
| 910                                   | 910   |
| 920                                   | 920   |
| 930                                   | 930   |
| 940                                   | 940   |
| 950                                   | 950   |
| 960                                   | 960   |
| 970                                   | 970   |
| 980                                   | 980   |
| 990                                   | 990   |
| 1000                                  | 1000  |

UNIFIED  
CLASSIFICATION

26



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

HOLE LOCATION:

DATE DRILLED: 7-3-78

DRILL TECHNICIAN: 8

H.R.

PLOTTED BY:

R.S.

HOLE ELEVATION:

HOLE NO.: T-68

HOLE DEPTH 4.35  
TYPE OF DRILL B40-6" AUGERS  
WATER LEVEL  
DEPTH (M.)  
SOIL DESCRIPTION

| DEPTH (M.) | SOIL DESCRIPTION | N.R.C. PERMAFROST CLASSIFICATION | SAMPLE IDENTIFICATION DATA |                       |             |                   | CONSISTENCY LIMITS |               |                  | MECHANICAL ANALYSIS |      |          |          | DRY DENSITY<br>LB./CU. FT. | STANDARD PENETRATION RESISTANCE<br>BLOWS/FT. | UNIFIED CLASSIFICATION |
|------------|------------------|----------------------------------|----------------------------|-----------------------|-------------|-------------------|--------------------|---------------|------------------|---------------------|------|----------|----------|----------------------------|----------------------------------------------|------------------------|
|            |                  |                                  | SAMPLE DEPTH (FT.)         | SAMPLE NUMBER (FIELD) | SAMPLE TYPE | LABORATORY NUMBER | LIQUID LIMIT       | PLASTIC LIMIT | PLASTICITY INDEX | GRAVEL              | SAND | >.006 mm | <.074 mm | <.005 mm                   |                                              |                        |
| 0          |                  |                                  | .3                         |                       |             |                   |                    |               |                  |                     |      |          |          |                            |                                              |                        |
| 1          |                  |                                  | .9                         | T69                   | AUGER       | 5763              |                    |               | NP               | 33.4                | 28.4 | 38.2     |          |                            |                                              | GM                     |
| 2          |                  |                                  |                            |                       |             |                   |                    |               |                  |                     |      |          |          |                            |                                              |                        |
| 3          |                  |                                  |                            |                       |             |                   |                    |               |                  |                     |      |          |          |                            |                                              |                        |
| 4          |                  |                                  |                            |                       |             |                   |                    |               |                  |                     |      |          |          |                            |                                              |                        |
| 5          |                  |                                  |                            |                       |             |                   |                    |               |                  |                     |      |          |          |                            |                                              |                        |

SANDY GRAVEL  
ORGANIC

2.40

GRAVELLY SAND

END HOLE @ 4.35



# SUBSURFACE TESTING REPORT

**HOLE LOCATION:**

U  
M

**HOLE ELEVATION:**

HOLE NO.: T-69

|                          |                  |   |
|--------------------------|------------------|---|
| CONSISTENCY LIMITS       | PLASTICITY INDEX | % |
|                          | PLASTIC LIMIT    | % |
|                          | LIQUID LIMIT     | % |
| NATURAL MOISTURE CONTENT |                  | % |

|                     |          |
|---------------------|----------|
| MECHANICAL ANALYSIS | <.005 mm |
|                     | <.075 mm |
|                     | >.005 mm |
|                     | SAND     |
|                     | GRAVEL   |

STANDARD  
PENETRATION  
RESISTANCE

---

DRY  
DENSITY

UNIFIED  
CLASSIFICATION

3.

|     |       |      |
|-----|-------|------|
| T70 | AUGER | 5764 |
|-----|-------|------|

5,3

|  |    |
|--|----|
|  | NP |
|  |    |

6.69

6.9

18.5

---

1

15 JULY 2004

14

SANDY GRAVEL

T70 AUGER 5764

5,3

22

46.0

34.9

18.5

GM

3 3.00

Silty Sand

4.05

END HOLE @ 4.35





Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

HOLE LOCATION:

DATE DRILLED: 8-3-77

DRILL TECHNICIAN: H. R.

PLOTTED BY: R. S.

HOLE ELEVATION:

HOLE NO.: T-71

HOLE DEPTH 3.60  
TYPE OF DRILL B40-6" AUGERS  
WATER LEVEL \_\_\_\_\_  
DEPTH (M) \_\_\_\_\_  
SOIL DESCRIPTION \_\_\_\_\_

N.R.C.  
PERMAFROST  
CLASSIFICATION

SAMPLE IDENTIFICATION DATA  
SAMPLE DEPTH (FT.)  
SAMPLE NUMBER (FIELD)  
SAMPLE TYPE  
LABORATORY NUMBER

NATURAL  
MOISTURE  
CONTENT  
%

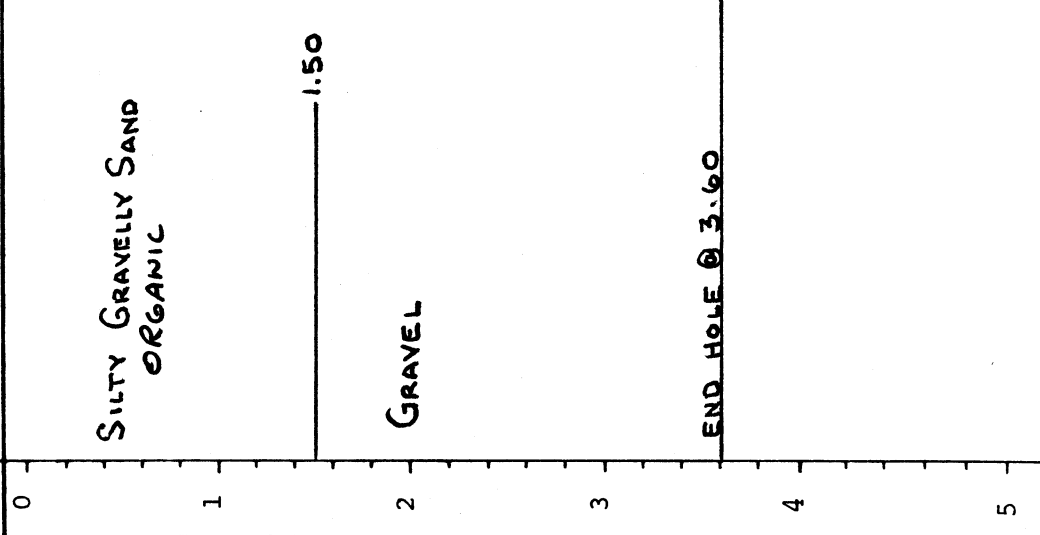
CONSISTENCY LIMITS  
LIQUID LIMIT  
PLASTIC LIMIT  
PLASTICITY INDEX

MECHANICAL ANALYSIS  
GRAVEL  
SAND  
>.005 mm  
<.075 mm  
<.005 mm

DRY DENSITY  
LB/CU. FT.

STANDARD  
PENETRATION  
RESISTANCE  
BLOWS  
/ FT.

UNIFIED  
CLASSIFICATION



.3  
T73 AUGER 5767  
.9

NP  
39.2 41.5 19.3

SM



**MATERIALS QUALITY CONTROL LABORATORY**  
**WHITEHORSE, Y.T.**

# SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

**HOLE LOCATION:**

DATE DRILLED: 8-3-78

DRILL TECHNICIAN: H. R.

**PLOTTED BY :**

R.S.

**HOLE ELEVATION:**

HOLE NO.: T-72

HOLE DEPTH 4.35

TYPE OF DRILL B40-6" AUGERS

## WATER LEVEL

| DEPTH<br>(M) | SOIL DESCRIPTION |
|--------------|------------------|
|              |                  |

0

SAND SILT TILL  
ORGANIC

1

10.

2

SILTY SANDY GRAVEL

3

4

**END HOLE @ 4.35**

10

DRWG NO 60-194



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

|                             |  |                            |  |                          |  |                     |  |
|-----------------------------|--|----------------------------|--|--------------------------|--|---------------------|--|
| PROJECT: SHAKWAK SEGMENT 8  |  | HOLE LOCATION:             |  | HOLE ELEVATION:          |  | HOLE NO.: T-73      |  |
| DATE DRILLED: 8-3-78        |  | DRILL TECHNICIAN: H.R.     |  | PLOTTED BY: R.S.         |  |                     |  |
| HOLE DEPTH 3.45             |  | SAMPLE IDENTIFICATION DATA |  | CONSISTENCY LIMITS       |  | MECHANICAL ANALYSIS |  |
| TYPE OF DRILL B40-6" AUGERS |  | LABORATORY NUMBER          |  | PLASTIC LIMIT            |  | <.005 mm            |  |
| WATER LEVEL                 |  | SAMPLE TYPE                |  | LIQUID LIMIT             |  | <.074 mm            |  |
| SOIL DESCRIPTION            |  | SAMPLE NUMBER (FIELD)      |  | NATURAL MOISTURE CONTENT |  | >.005 mm            |  |
| DEPTH (M)                   |  | SAMPLE DEPTH (FT.)         |  |                          |  | SAND                |  |
| 0                           |  | .8                         |  |                          |  | GRAVEL              |  |
| 1                           |  | 1.4                        |  | 3.0                      |  | NP                  |  |
| 2                           |  |                            |  |                          |  | 72.9                |  |
| 3                           |  |                            |  |                          |  | 19.8                |  |
| 4                           |  |                            |  |                          |  | 7.3                 |  |
| 5                           |  |                            |  |                          |  | GP-GM               |  |
| SANDY SILT                  |  |                            |  |                          |  |                     |  |
| SILTY SANDY GRAVEL          |  |                            |  |                          |  |                     |  |
| GRAVELLY SILTY SAND         |  |                            |  |                          |  |                     |  |
| END HOLE @ 3.45             |  |                            |  |                          |  |                     |  |



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

HOLE LOCATION:

DATE DRILLED: 8-3-78

DRILL TECHNICIAN: H.R.

PLOTTED BY: R.S.

HOLE ELEVATION:

HOLE NO.: T-74

HOLE DEPTH 4.35  
TYPE OF DRILL B40-6" AUGERS  
WATER LEVEL  
DEPTH (M.)  
SOIL DESCRIPTION

| DEPTH (M.) | SOIL DESCRIPTION   | N.R.C. PERMAFROST CLASSIFICATION | SAMPLE IDENTIFICATION DATA |                       |             |                   | CONSISTENCY LIMITS         |                |                 | MECHANICAL ANALYSIS |          |        |            | DRY DENSITY<br>LB./CU. FT. | STANDARD PENETRATION RESISTANCE<br>BLOWS/FT. | UNIFIED CLASSIFICATION |
|------------|--------------------|----------------------------------|----------------------------|-----------------------|-------------|-------------------|----------------------------|----------------|-----------------|---------------------|----------|--------|------------|----------------------------|----------------------------------------------|------------------------|
|            |                    |                                  | SAMPLE DEPTH (FT.)         | SAMPLE NUMBER (FIELD) | SAMPLE TYPE | LABORATORY NUMBER | NATURAL MOISTURE CONTENT % | LIQUID LIMIT % | PLASTIC LIMIT % | PLASTICITY INDEX %  | GRAVEL % | SAND % | >.005 mm % | <.075 mm %                 | <.005 mm %                                   |                        |
| 0          |                    |                                  |                            |                       |             |                   |                            |                |                 |                     |          |        |            |                            |                                              |                        |
| 1          | SANDY SILT         |                                  |                            |                       |             |                   |                            |                |                 |                     |          |        |            |                            |                                              |                        |
| 2          | SANDY SILTY GRAVEL |                                  |                            |                       |             |                   |                            |                |                 |                     |          |        |            |                            |                                              |                        |
| 3          | SILTY SAND         |                                  | 1.8                        | T77                   | AUGER       | S787              | 22.2                       |                |                 | NP                  | 5.9      | 40.7   |            | 53.4                       |                                              | OL                     |
| 4          | SANDY GRAVEL       |                                  | 2.4                        |                       |             |                   |                            |                |                 |                     |          |        |            |                            |                                              |                        |
| 5          | END HOLE @ 4.35    |                                  |                            |                       |             |                   |                            |                |                 |                     |          |        |            |                            |                                              |                        |



MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

# SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

**HOLE LOCATION:**

DATE DRILLED: 8-3-78

**DRILL TECHNICIAN :**

H. R.

**PLOTTED BY :**

R.S.

**HOLE ELEVATION:**

HOLE NO.: T-75

**HOLE DEPTH** 4.35

TYPE OF DRILL B40-6" AUGERS

**WATER LEVEL** —

SOIL DESCRIPTION

O

SILT SAND TILL

1.35

SILTY SANDY GRAVEL

END HOLE @ 4.35

**N.R.C.  
PERMAFROST  
CLASSIFICATION**

## SAMPLE IDENTIFICATION DATA

**SAM**  
**TY**

---

**SAM**  
**NUM**  
**(FI**

**SAN  
NUM  
(FI**

BORN  
NUM

---

SAN  
TY

**THE  
M  
C**

LI  
LI

PL  
L

**PLAY**  
11

G

9

7.0

2.0

PE  
R

•

DRAWING NO. 60-194



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

|                             |  |                                  |  |                            |  |                          |  |                     |  |               |  |                                 |  |                        |  |          |  |          |  |             |  |
|-----------------------------|--|----------------------------------|--|----------------------------|--|--------------------------|--|---------------------|--|---------------|--|---------------------------------|--|------------------------|--|----------|--|----------|--|-------------|--|
| PROJECT: SHAKWAK SEGMENT 8  |  | HOLE LOCATION:                   |  | HOLE ELEVATION:            |  | HOLE NO.: T-76           |  |                     |  |               |  |                                 |  |                        |  |          |  |          |  |             |  |
| DATE DRILLED: 8-3-78        |  | DRILL TECHNICIAN: H.R.           |  | PLOTTED BY: R.S.           |  |                          |  |                     |  |               |  |                                 |  |                        |  |          |  |          |  |             |  |
| HOLE DEPTH 4.35             |  | N.R.C. PERMAFROST CLASSIFICATION |  | SAMPLE IDENTIFICATION DATA |  | NATURAL MOISTURE CONTENT |  |                     |  |               |  |                                 |  |                        |  |          |  |          |  |             |  |
| TYPE OF DRILL B40-6" AUGERS |  |                                  |  | LABORATORY NUMBER          |  | PLASTICITY INDEX         |  | MECHANICAL ANALYSIS |  | DRY DENSITY   |  | STANDARD PENETRATION RESISTANCE |  | UNIFIED CLASSIFICATION |  |          |  |          |  |             |  |
| WATER LEVEL                 |  |                                  |  |                            |  |                          |  |                     |  |               |  |                                 |  |                        |  |          |  |          |  |             |  |
| DEPTH (M)                   |  | SAMPLE DEPTH (FT.)               |  | SAMPLE NUMBER (FIELD)      |  | SAMPLE TYPE              |  | LIQUID LIMIT        |  | PLASTIC LIMIT |  | GRAVEL                          |  | SAND                   |  | <.075 mm |  | <.005 mm |  | BLOWS / FT. |  |
| 0                           |  | .3                               |  | T80                        |  | AUGER ST90               |  | 3.0                 |  | NP            |  | 10.4                            |  | 60.2                   |  | 17.0     |  | 12.4     |  | SM          |  |
| 1                           |  | .9                               |  |                            |  |                          |  |                     |  |               |  |                                 |  |                        |  |          |  |          |  |             |  |
| 2                           |  | 2.4                              |  | T81                        |  | AUGER ST91               |  | 5.9                 |  | NP            |  | 60.0                            |  | 23.0                   |  | 17.0     |  |          |  | GM          |  |
| 3                           |  | 3.0                              |  |                            |  |                          |  |                     |  |               |  |                                 |  |                        |  |          |  |          |  |             |  |
| 4                           |  |                                  |  |                            |  |                          |  |                     |  |               |  |                                 |  |                        |  |          |  |          |  |             |  |
| 5                           |  |                                  |  |                            |  |                          |  |                     |  |               |  |                                 |  |                        |  |          |  |          |  |             |  |

SILTY SANDY TILL

1.35

SILTY SANDY GRAVEL

END HOLE @ 4.35



# SUBSURFACE TESTING REPORT

**HOLE LOCATION:**

HOLE NO.: T-77

SOIL DESCRIPTION

END HOLE @ 3.00

**N.R.C.  
PERMAFROST  
CLASSIFICATION**

**<.005 mm**

---

**<.074 mm**

**>.005 mm**

**STANDARD  
PENETRATION  
RESISTANCE**

---

**DRY  
DENSITY**

UNIFIED  
CLASSIFICATION



# SUBSURFACE TESTING REPORT

HOLE NO.: T-78

SOIL DESCRIPTION

51.

SILTY SANDY GRAVEL

1.50

SILT SAND TILL

END HOLE @ 3.15

**UNIFIED  
CLASSIFICATION**

8.

1.4

T83

**WGET**

261

2.2

NP

6.6

9.1

1

GP.GM



**MATERIALS QUALITY CONTROL LABORATORY**  
**WHITEHORSE, Y.T.**

# SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

**HOLE LOCATION:**

DATE DRILLED: 8-3-78

DRILL TECHNICIAN : H. B.

**PLOTTED BY :**

5  
6

**HOLE ELEVATION:**

HOLE NO.: T-79

HOLE DEPTH 1.80  
TYPE OF DRILL B40-6" AUGERS  
WATER LEVEL                     

[illegible]

SILTY SAND

1.20

SILTY SANDY GRAVEL

REFUSAL \$1.00

3

७.

| NUMBER | SAMPLE TYPE | SAMPLE NUMBER (FIELD) | SAMPLE DEPTH (FT.) |
|--------|-------------|-----------------------|--------------------|
|--------|-------------|-----------------------|--------------------|

**NATURAL  
MOISTURE  
CONTENT**

|                  |
|------------------|
| PLASTICITY INDEX |
| PLASTIC LIMIT    |
| LIQUID LIMIT     |

|        |
|--------|
| SAND   |
| GRAVEL |

|          |
|----------|
| <.005 mm |
| <.074 mm |
| >.005 mm |

**STANDARD  
PENETRATION  
RESISTANCE**

**UNIFIED  
CLASSIFICATION**

22.3

2

$$\begin{array}{r} 34.6 \\ \hline 65.4 \end{array}$$

70

תשס"ח-תשס"ט



# SUBSURFACE TESTING REPORT

**HOLE LOCATION:**

R.S.

**HOLE ELEVATION:**

**HOLE NO.: T-80**

SOIL DESCRIPTION

SILTY SAND SAND

06.

SILTY SANDY GRAVEL

REFUSAL @ 1.50

**N.R.C.  
PERMAFROST  
CLASSIFICATION**

|                            |                       |
|----------------------------|-----------------------|
| SAMPLE IDENTIFICATION DATA | LABORATORY NUMBER     |
|                            | SAMPLE TYPE           |
|                            | SAMPLE NUMBER (FIELD) |
|                            | SAMPLE DEPTH (FT.)    |

### NATURAL MOISTURE CONTENT

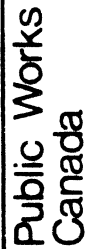
|                           |                         |
|---------------------------|-------------------------|
| <b>CONSISTENCY LIMITS</b> | <b>PLASTICITY INDEX</b> |
|                           | <b>PLASTIC LIMIT</b>    |
|                           | <b>LIQUID LIMIT</b>     |

|                            |          |
|----------------------------|----------|
| <b>MECHANICAL ANALYSIS</b> | <.005 mm |
|                            | <.074 mm |
|                            | >.005 mm |
|                            | SAND     |

### STANDARD PENETRATION RESISTANCE

**UNIFIED  
CLASSIFICATION**

FORM NO. 50-104



**MATERIALS QUALITY CONTROL LABORATORY**  
**WHITEHORSE, Y.T.**

# SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

**HOLE LOCATION:**

DATE DRILLED: 8-3-78

DRILL TECHNICIAN : H. R.

**PLOTTED BY :**

R.S.

**HOLE ELEVATION:**

HOLE NO.: T-81

HOLE DEPTH 1.50

TYPE OF DRILL B40-6" AUGERS

**WATER LEVEL**

| DEPTH<br>(M) | SOIL DESCRIPTION |
|--------------|------------------|
|--------------|------------------|

SILTY SAND .15

SILT SAND TILL

SILTY SANDY GRAVEL

REFUSAL @ 1.50

UNIFIED  
CLASSIFICATION

**STANDARD  
PENETRATION  
RESISTANCE**

**DRY  
DENSITY**

|          |          |
|----------|----------|
| ANALYSIS | <.074 mm |
|          | >.005 mm |

SA

**GRAVEL**

## PLASTICITY

**PLASTIC  
LIMIT**

LIQUID  
LIMIT

### NATURAL MOISTURE CONTENT

|    |                      |
|----|----------------------|
| TA | LABORATORY<br>NUMBER |
|----|----------------------|

**SAMPLE  
TYPE**

**SAMPLE  
NUMBER  
(FIELD)**

**SAMPLE  
DEPTH  
(FT.)**

**N.R.C.  
PERMAFROST  
CLASSIFICATION**

DRAWING NO 60-194



# SUBSURFACE TESTING REPORT

HOLE NO.: T-82

| DEPTH<br>M | SOIL DESCRIPTION |
|------------|------------------|
|------------|------------------|

○

REFUSAL @ 1.50

|                           |  |
|---------------------------|--|
| UNIFIED<br>CLASSIFICATION |  |
|                           |  |

| DEPTH (ft) | TEST    | STANDARD PENETRATION TEST (SPT) (blows/ft) | UNSATURATED WATERS (u) | WATER CONTENT (%) | LIQUID LIMIT (%) | PLASTIC LIMIT (%) | PLASTICITY INDEX (%) | GROUP SYMBOL |
|------------|---------|--------------------------------------------|------------------------|-------------------|------------------|-------------------|----------------------|--------------|
| 0.8        | T85     | 51.9                                       | 31.7                   | 16.4              |                  |                   |                      | GM           |
| 1.4        | AUGER   | 1.9                                        |                        |                   |                  |                   |                      |              |
| 1.50       | REFUSAL |                                            |                        |                   |                  |                   |                      |              |



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

|                             |  |                                  |  |                            |  |                          |  |                     |  |                                 |  |                        |  |
|-----------------------------|--|----------------------------------|--|----------------------------|--|--------------------------|--|---------------------|--|---------------------------------|--|------------------------|--|
| PROJECT: SHAKWAK SEGMENT 8  |  | HOLE LOCATION:                   |  | HOLE ELEVATION:            |  | HOLE NO.: T-83           |  |                     |  |                                 |  |                        |  |
| DATE DRILLED: 8-3-78        |  | DRILL TECHNICIAN: H. R.          |  | PLOTTED BY: R. S.          |  |                          |  |                     |  |                                 |  |                        |  |
| HOLE DEPTH 4.35             |  | N.R.C. PERMAFROST CLASSIFICATION |  | SAMPLE IDENTIFICATION DATA |  | NATURAL MOISTURE CONTENT |  |                     |  |                                 |  |                        |  |
| TYPE OF DRILL B40-6" AUGERS |  |                                  |  | LABORATORY NUMBER          |  | PLASTICITY INDEX         |  | MECHANICAL ANALYSIS |  | STANDARD PENETRATION RESISTANCE |  | UNIFIED CLASSIFICATION |  |
| WATER LEVEL                 |  |                                  |  |                            |  |                          |  |                     |  |                                 |  |                        |  |
| SOIL DESCRIPTION            |  | SAMPLE DEPTH (FT.)               |  | SAMPLE NUMBER (FIELD)      |  | PLASTIC LIMIT            |  | GRAVEL              |  | DRY DENSITY                     |  | BLOWS / FT.            |  |
|                             |  |                                  |  |                            |  | LIQUID LIMIT             |  | SAND                |  | LBS. / CU. FT.                  |  |                        |  |
|                             |  |                                  |  |                            |  |                          |  |                     |  |                                 |  |                        |  |
| 0 SILTY SANDY GRAVEL .15    |  | .3                               |  | T86 AUGER ST95             |  | NP                       |  | 70.4 24.4 5.2       |  |                                 |  | GP-GM                  |  |
| 1 SANDY GRAVEL              |  | .9                               |  |                            |  |                          |  |                     |  |                                 |  |                        |  |
| 2 SANDY SILT 1.95           |  |                                  |  |                            |  |                          |  |                     |  |                                 |  |                        |  |
| SANDY SILTY GRAVEL 2.25     |  | 2.7                              |  | T87 AUGER ST96             |  | TRACE                    |  | 25.7 35.5 38.8      |  |                                 |  | SM                     |  |
| 3                           |  | 3.3                              |  |                            |  |                          |  |                     |  |                                 |  |                        |  |
| 4                           |  |                                  |  |                            |  |                          |  |                     |  |                                 |  |                        |  |
| 5                           |  |                                  |  |                            |  |                          |  |                     |  |                                 |  |                        |  |
| END HOLE @ 4.35             |  |                                  |  |                            |  |                          |  |                     |  |                                 |  |                        |  |



# SUBSURFACE TESTING REPORT

HOLE NO.: T-84

SOIL DESCRIPTION

END HOLE @ 4.35

**UNIFIED  
CLASSIFICATION**

2.

30.5

T89

5798

6.6

14.8 84.8

GM

CL-MC



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

|                             |  |                            |  |                                           |  |
|-----------------------------|--|----------------------------|--|-------------------------------------------|--|
| PROJECT: SHAKWAK SEGMENT 8  |  | HOLE LOCATION:             |  | HOLE NO.: T-85                            |  |
| DATE DRILLED: 9-3-78        |  | DRILL TECHNICIAN: H.R.     |  | HOLE ELEVATION:                           |  |
| HOLE DEPTH 4.35             |  | PLOTTED BY: R.S.           |  | MECHANICAL ANALYSIS                       |  |
| TYPE OF DRILL B40-6" AUGERS |  | SAMPLE IDENTIFICATION DATA |  | GRAVEL %                                  |  |
| WATER LEVEL                 |  | LABORATORY NUMBER          |  | SAND %                                    |  |
| DEPTH (M.)                  |  | SAMPLE TYPE                |  | PLASTICITY INDEX %                        |  |
| SOIL DESCRIPTION            |  | SAMPLE NUMBER (FIELD)      |  | PLASTIC LIMIT %                           |  |
|                             |  | SAMPLE DEPTH (FT.)         |  | LIQUID LIMIT %                            |  |
|                             |  |                            |  | NATURAL MOISTURE CONTENT %                |  |
|                             |  |                            |  | UNIFIED CLASSIFICATION                    |  |
|                             |  |                            |  | STANDARD PENETRATION RESISTANCE BLOWS/FT. |  |
|                             |  |                            |  | DRY DENSITY LBS./CU. FT.                  |  |
|                             |  |                            |  | UNIFIED CLASSIFICATION                    |  |

0 1 2 3 4 5

SILT SAND TILL .30

SANDY GRAVEL

2.25

SILTY SAND TILL

END HOLE @ 4.35



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

|                             |  |                                  |  |                                 |  |
|-----------------------------|--|----------------------------------|--|---------------------------------|--|
| PROJECT: SHAKWAK SEGMENT 8  |  | HOLE LOCATION:                   |  | HOLE NO.: T-86                  |  |
| DATE DRILLED: 9-3-78        |  | DRILL TECHNICIAN: H.R.           |  | PLOTTED BY: R.S.                |  |
| HOLE DEPTH 3.45             |  | MECHANICAL ANALYSIS              |  | STANDARD PENETRATION RESISTANCE |  |
| TYPE OF DRILL B40-6" AUGERS |  | GRAVEL                           |  | BLOWS                           |  |
| WATER LEVEL                 |  | SAND                             |  | CU. FT.                         |  |
| DEPTH (M)                   |  | PLASTIC LIMIT                    |  | LIB.                            |  |
|                             |  | LIQUID LIMIT                     |  | CU. FT.                         |  |
|                             |  | PLASTICITY INDEX                 |  | DRY DENSITY                     |  |
|                             |  | NATURAL MOISTURE CONTENT         |  | UNIFIED CLASSIFICATION          |  |
|                             |  | LABORATORY NUMBER                |  |                                 |  |
|                             |  | SAMPLE TYPE                      |  |                                 |  |
|                             |  | SAMPLE NUMBER (FIELD)            |  |                                 |  |
|                             |  | SAMPLE DEPTH (FT.)               |  |                                 |  |
|                             |  | N.R.C. PERMAFROST CLASSIFICATION |  |                                 |  |
| SILT SAND TILL              |  | .9                               |  | T91                             |  |
| SANDY SILT                  |  | 1.5                              |  | AUGER 5799                      |  |
| SANDY SILTY GRAVEL          |  |                                  |  | 18.8                            |  |
| SILT SAND TILL              |  |                                  |  | TRACE                           |  |
| END HOLE @ 3.45             |  |                                  |  | 1.4                             |  |
|                             |  |                                  |  | 34.7                            |  |
|                             |  |                                  |  | 63.9                            |  |
|                             |  |                                  |  | ML                              |  |



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

HOLE LOCATION:

DATE DRILLED: 9-3-78

DRILL TECHNICIAN: 8

H.R.

PLOTTED BY:

R.S.

HOLE ELEVATION:

HOLE NO.: T-87

HOLE DEPTH 4.35  
TYPE OF DRILL B40-6" AUGERS  
WATER LEVEL  
DEPTH (M)  
SOIL DESCRIPTION

N.R.C.  
PERMAFROST  
CLASSIFICATION

SAMPLE IDENTIFICATION DATA  
SAMPLE DEPTH (FT.)  
SAMPLE NUMBER (FIELD)  
SAMPLE TYPE  
LABORATORY NUMBER

NATURAL  
MOISTURE  
CONTENT

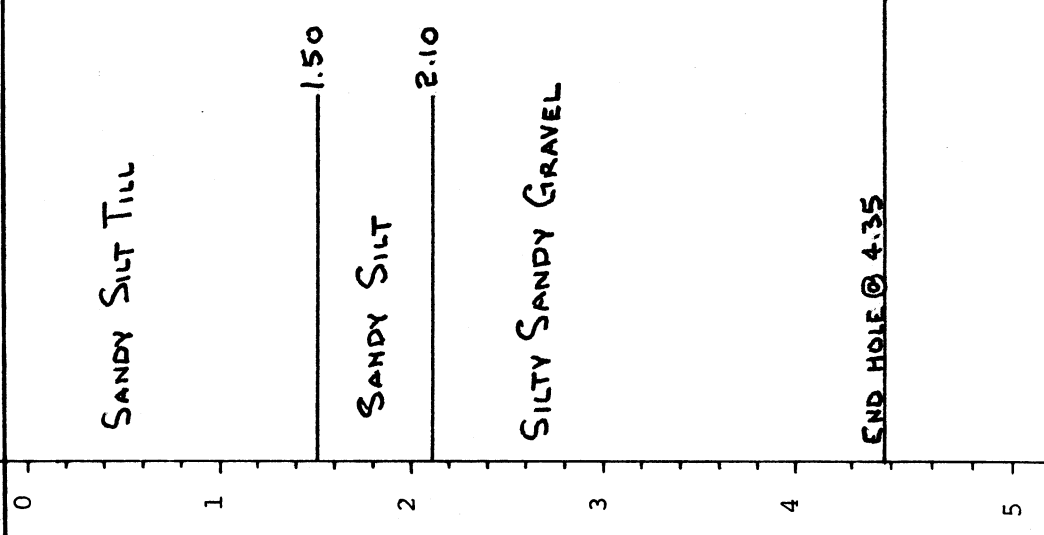
CONSISTENCY LIMITS  
LIQUID LIMIT  
PLASTIC LIMIT  
PLASTICITY INDEX

MECHANICAL ANALYSIS  
GRAVEL  
SAND  
7.074 mm  
7.005 mm  
7.005 mm

DRY DENSITY  
LBS.  
CU. FT.

STANDARD  
PENETRATION  
RESISTANCE

UNIFIED  
CLASSIFICATION



.3  
.9

16.0  
40.5  
36.8  
6.7

NP

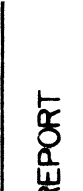
14.8

T92 AUGER S800







|                                                                                  |  |                                                          |  |                                 |  |
|----------------------------------------------------------------------------------|--|----------------------------------------------------------|--|---------------------------------|--|
|  |  | MATERIALS QUALITY CONTROL LABORATORY<br>WHITEHORSE, Y.T. |  | SUBSURFACE TESTING REPORT       |  |
| PROJECT: SHAKWAK SEGMENT 8                                                       |  |                                                          |  | HOLE LOCATION:                  |  |
| DATE DRILLED: 9-3-78                                                             |  | DRILL TECHNICIAN: H.R.                                   |  | PLOTTED BY: R.S.                |  |
| HOLE DEPTH: 3.00                                                                 |  | HOLE ELEVATION:                                          |  | HOLE NO.: T-91                  |  |
| TYPE OF DRILL: B40-6" AUGERS                                                     |  | CONSISTENCY LIMITS                                       |  | MECHANICAL ANALYSIS             |  |
| WATER LEVEL:                                                                     |  | PLASTIC LIMIT                                            |  | SAND                            |  |
| SOIL DESCRIPTION                                                                 |  | LIQUID LIMIT                                             |  | GRAVEL                          |  |
| DEPTH (M)                                                                        |  | NATURAL MOISTURE CONTENT                                 |  | PLASTICITY INDEX                |  |
| 0                                                                                |  | %                                                        |  | %                               |  |
| 1                                                                                |  | %                                                        |  | %                               |  |
| 2                                                                                |  | %                                                        |  | %                               |  |
| 3                                                                                |  | %                                                        |  | %                               |  |
| 4                                                                                |  | %                                                        |  | %                               |  |
| 5                                                                                |  | %                                                        |  | %                               |  |
| SILTY SANDY GRAVEL<br>ORGANIC                                                    |  | LABORATORY NUMBER                                        |  | UNIFIED CLASSIFICATION          |  |
| REFUSAL @ 3.00                                                                   |  | SAMPLE TYPE                                              |  | STANDARD PENETRATION RESISTANCE |  |
|                                                                                  |  | SAMPLE NUMBER (FIELD)                                    |  | BLOWS / FT.                     |  |
|                                                                                  |  | SAMPLE DEPTH (FT.)                                       |  | LIB. CU. FT.                    |  |
|                                                                                  |  | N.R.C. PERMAFROST CLASSIFICATION                         |  |                                 |  |
|                                                                                  |  | T97                                                      |  | 47.6                            |  |
|                                                                                  |  | .6                                                       |  | 21.7                            |  |
|                                                                                  |  | 1.2                                                      |  | 30.7                            |  |
|                                                                                  |  |                                                          |  | NP                              |  |
|                                                                                  |  |                                                          |  | 7.8                             |  |
|                                                                                  |  |                                                          |  | SM                              |  |



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

HOLE LOCATION:

DATE DRILLED: 10-3-78

DRILL TECHNICIAN: H.R.

PLOTTED BY: R.S.

HOLE ELEVATION:

HOLE NO.: T-92

HOLE DEPTH 4.35  
TYPE OF DRILL B40-6" AUGERS  
WATER LEVEL  
SOIL DESCRIPTION

| DEPTH<br>(M) | N.R.C.<br>PERMAFROST<br>CLASSIFICATION | SAMPLE IDENTIFICATION DATA |                             |                |                      | CONSISTENCY LIMITS   |                       |                          | MECHANICAL ANALYSIS |           |               |               | DRY<br>DENSITY<br>LB/CU. FT. | STANDARD<br>PENETRATION<br>RESISTANCE<br>BLOWS<br>/FT. | UNIFIED<br>CLASSIFICATION |
|--------------|----------------------------------------|----------------------------|-----------------------------|----------------|----------------------|----------------------|-----------------------|--------------------------|---------------------|-----------|---------------|---------------|------------------------------|--------------------------------------------------------|---------------------------|
|              |                                        | SAMPLE<br>DEPTH<br>(FT.)   | SAMPLE<br>NUMBER<br>(FIELD) | SAMPLE<br>TYPE | LABORATORY<br>NUMBER | LIQUID<br>LIMIT<br>% | PLASTIC<br>LIMIT<br>% | PLASTICITY<br>INDEX<br>% | GRAVEL<br>%         | SAND<br>% | >.005 mm<br>% | <.075 mm<br>% | <.005 mm<br>%                |                                                        |                           |
| 0            |                                        | .3                         | T98                         | AUGER          | 5806                 |                      |                       |                          |                     |           |               |               |                              |                                                        |                           |
| 1            |                                        | .9                         |                             |                |                      |                      |                       |                          | 1.8                 | 38.0      | 60.2          |               |                              |                                                        | ML                        |
| 2            |                                        |                            |                             |                |                      |                      |                       |                          |                     |           |               |               |                              |                                                        |                           |
| 3            |                                        |                            |                             |                |                      |                      |                       |                          |                     |           |               |               |                              |                                                        |                           |
| 4            |                                        |                            |                             |                |                      |                      |                       |                          |                     |           |               |               |                              |                                                        |                           |
| 5            |                                        |                            |                             |                |                      |                      |                       |                          |                     |           |               |               |                              |                                                        |                           |

SILTY SAND

1.35

SILTY SANDY GRAVEL

END HOLE @ 4.35



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

|                             |  |                                  |  |                            |  |                          |  |
|-----------------------------|--|----------------------------------|--|----------------------------|--|--------------------------|--|
| PROJECT: SHAKWAK SEGMENT 8  |  | HOLE LOCATION:                   |  | HOLE ELEVATION:            |  | HOLE NO.: T-93           |  |
| DATE DRILLED: 10-3-78       |  | DRILL TECHNICIAN: H.R.           |  | PLOTTED BY: R.S.           |  |                          |  |
| HOLE DEPTH 3.00             |  | N.R.C. PERMAFROST CLASSIFICATION |  | SAMPLE IDENTIFICATION DATA |  | NATURAL MOISTURE CONTENT |  |
| TYPE OF DRILL B40-6" AUGERS |  |                                  |  | LABORATORY NUMBER          |  | PLASTIC LIMIT            |  |
| WATER LEVEL                 |  |                                  |  | SAMPLE TYPE                |  | PLASTICITY INDEX         |  |
| SOIL DESCRIPTION            |  |                                  |  | SAMPLE NUMBER (FIELD)      |  | GRAVEL                   |  |
| DEPTH (M)                   |  |                                  |  | SAMPLE DEPTH (FT.)         |  | SAND                     |  |
|                             |  |                                  |  |                            |  | MECHANICAL ANALYSIS      |  |
|                             |  |                                  |  |                            |  | <.005 mm                 |  |
|                             |  |                                  |  |                            |  | .075 mm                  |  |
|                             |  |                                  |  |                            |  | >.005 mm                 |  |
|                             |  |                                  |  |                            |  | LIQUID LIMIT             |  |
|                             |  |                                  |  |                            |  | PLASTICITY INDEX         |  |
|                             |  |                                  |  |                            |  | GRAVEL                   |  |
|                             |  |                                  |  |                            |  | SAND                     |  |
|                             |  |                                  |  |                            |  | MECHANICAL ANALYSIS      |  |
|                             |  |                                  |  |                            |  | <.005 mm                 |  |
|                             |  |                                  |  |                            |  | .075 mm                  |  |
|                             |  |                                  |  |                            |  | >.005 mm                 |  |
|                             |  |                                  |  |                            |  | LIQUID LIMIT             |  |
|                             |  |                                  |  |                            |  | PLASTICITY INDEX         |  |
|                             |  |                                  |  |                            |  | GRAVEL                   |  |
|                             |  |                                  |  |                            |  | SAND                     |  |
|                             |  |                                  |  |                            |  | MECHANICAL ANALYSIS      |  |
|                             |  |                                  |  |                            |  | <.005 mm                 |  |
|                             |  |                                  |  |                            |  | .075 mm                  |  |
|                             |  |                                  |  |                            |  | >.005 mm                 |  |
|                             |  |                                  |  |                            |  | LIQUID LIMIT             |  |
|                             |  |                                  |  |                            |  | PLASTICITY INDEX         |  |
|                             |  |                                  |  |                            |  | GRAVEL                   |  |
|                             |  |                                  |  |                            |  | SAND                     |  |
|                             |  |                                  |  |                            |  | MECHANICAL ANALYSIS      |  |
|                             |  |                                  |  |                            |  | <.005 mm                 |  |
|                             |  |                                  |  |                            |  | .075 mm                  |  |
|                             |  |                                  |  |                            |  | >.005 mm                 |  |
|                             |  |                                  |  |                            |  | LIQUID LIMIT             |  |
|                             |  |                                  |  |                            |  | PLASTICITY INDEX         |  |
|                             |  |                                  |  |                            |  | GRAVEL                   |  |
|                             |  |                                  |  |                            |  | SAND                     |  |
|                             |  |                                  |  |                            |  | MECHANICAL ANALYSIS      |  |
|                             |  |                                  |  |                            |  | <.005 mm                 |  |
|                             |  |                                  |  |                            |  | .075 mm                  |  |
|                             |  |                                  |  |                            |  | >.005 mm                 |  |
|                             |  |                                  |  |                            |  | LIQUID LIMIT             |  |
|                             |  |                                  |  |                            |  | PLASTICITY INDEX         |  |
|                             |  |                                  |  |                            |  | GRAVEL                   |  |
|                             |  |                                  |  |                            |  | SAND                     |  |
|                             |  |                                  |  |                            |  | MECHANICAL ANALYSIS      |  |
|                             |  |                                  |  |                            |  | <.005 mm                 |  |
|                             |  |                                  |  |                            |  | .075 mm                  |  |
|                             |  |                                  |  |                            |  | >.005 mm                 |  |
|                             |  |                                  |  |                            |  | LIQUID LIMIT             |  |
|                             |  |                                  |  |                            |  | PLASTICITY INDEX         |  |
|                             |  |                                  |  |                            |  | GRAVEL                   |  |
|                             |  |                                  |  |                            |  | SAND                     |  |
|                             |  |                                  |  |                            |  | MECHANICAL ANALYSIS      |  |
|                             |  |                                  |  |                            |  | <.005 mm                 |  |
|                             |  |                                  |  |                            |  | .075 mm                  |  |
|                             |  |                                  |  |                            |  | >.005 mm                 |  |
|                             |  |                                  |  |                            |  | LIQUID LIMIT             |  |
|                             |  |                                  |  |                            |  | PLASTICITY INDEX         |  |
|                             |  |                                  |  |                            |  | GRAVEL                   |  |
|                             |  |                                  |  |                            |  | SAND                     |  |
|                             |  |                                  |  |                            |  | MECHANICAL ANALYSIS      |  |
|                             |  |                                  |  |                            |  | <.005 mm                 |  |
|                             |  |                                  |  |                            |  | .075 mm                  |  |
|                             |  |                                  |  |                            |  | >.005 mm                 |  |
|                             |  |                                  |  |                            |  | LIQUID LIMIT             |  |
|                             |  |                                  |  |                            |  | PLASTICITY INDEX         |  |
|                             |  |                                  |  |                            |  | GRAVEL                   |  |
|                             |  |                                  |  |                            |  | SAND                     |  |
|                             |  |                                  |  |                            |  | MECHANICAL ANALYSIS      |  |
|                             |  |                                  |  |                            |  | <.005 mm                 |  |
|                             |  |                                  |  |                            |  | .075 mm                  |  |
|                             |  |                                  |  |                            |  | >.005 mm                 |  |
|                             |  |                                  |  |                            |  | LIQUID LIMIT             |  |
|                             |  |                                  |  |                            |  | PLASTICITY INDEX         |  |
|                             |  |                                  |  |                            |  | GRAVEL                   |  |
|                             |  |                                  |  |                            |  | SAND                     |  |
|                             |  |                                  |  |                            |  | MECHANICAL ANALYSIS      |  |
|                             |  |                                  |  |                            |  | <.005 mm                 |  |
|                             |  |                                  |  |                            |  | .075 mm                  |  |
|                             |  |                                  |  |                            |  | >.005 mm                 |  |
|                             |  |                                  |  |                            |  | LIQUID LIMIT             |  |
|                             |  |                                  |  |                            |  | PLASTICITY INDEX         |  |
|                             |  |                                  |  |                            |  | GRAVEL                   |  |
|                             |  |                                  |  |                            |  | SAND                     |  |
|                             |  |                                  |  |                            |  | MECHANICAL ANALYSIS      |  |
|                             |  |                                  |  |                            |  | <.005 mm                 |  |
|                             |  |                                  |  |                            |  | .075 mm                  |  |
|                             |  |                                  |  |                            |  | >.005 mm                 |  |
|                             |  |                                  |  |                            |  | LIQUID LIMIT             |  |
|                             |  |                                  |  |                            |  | PLASTICITY INDEX         |  |
|                             |  |                                  |  |                            |  | GRAVEL                   |  |
|                             |  |                                  |  |                            |  | SAND                     |  |
|                             |  |                                  |  |                            |  | MECHANICAL ANALYSIS      |  |
|                             |  |                                  |  |                            |  | <.005 mm                 |  |
|                             |  |                                  |  |                            |  | .075 mm                  |  |
|                             |  |                                  |  |                            |  | >.005 mm                 |  |
|                             |  |                                  |  |                            |  | LIQUID LIMIT             |  |
|                             |  |                                  |  |                            |  | PLASTICITY INDEX         |  |
|                             |  |                                  |  |                            |  | GRAVEL                   |  |
|                             |  |                                  |  |                            |  | SAND                     |  |
|                             |  |                                  |  |                            |  | MECHANICAL ANALYSIS      |  |
|                             |  |                                  |  |                            |  | <.005 mm                 |  |
|                             |  |                                  |  |                            |  | .075 mm                  |  |
|                             |  |                                  |  |                            |  | >.005 mm                 |  |
|                             |  |                                  |  |                            |  | LIQUID LIMIT             |  |
|                             |  |                                  |  |                            |  | PLASTICITY INDEX         |  |
|                             |  |                                  |  |                            |  | GRAVEL                   |  |
|                             |  |                                  |  |                            |  | SAND                     |  |
|                             |  |                                  |  |                            |  | MECHANICAL ANALYSIS      |  |
|                             |  |                                  |  |                            |  | <.005 mm                 |  |
|                             |  |                                  |  |                            |  | .075 mm                  |  |
|                             |  |                                  |  |                            |  | >.005 mm                 |  |
|                             |  |                                  |  |                            |  | LIQUID LIMIT             |  |
|                             |  |                                  |  |                            |  | PLASTICITY INDEX         |  |
|                             |  |                                  |  |                            |  | GRAVEL                   |  |
|                             |  |                                  |  |                            |  | SAND                     |  |
|                             |  |                                  |  |                            |  | MECHANICAL ANALYSIS      |  |
|                             |  |                                  |  |                            |  | <.005 mm                 |  |
|                             |  |                                  |  |                            |  | .075 mm                  |  |
|                             |  |                                  |  |                            |  | >.005 mm                 |  |
|                             |  |                                  |  |                            |  | LIQUID LIMIT             |  |
|                             |  |                                  |  |                            |  | PLASTICITY INDEX         |  |
|                             |  |                                  |  |                            |  | GRAVEL                   |  |
|                             |  |                                  |  |                            |  | SAND                     |  |
|                             |  |                                  |  |                            |  | MECHANICAL ANALYSIS      |  |
|                             |  |                                  |  |                            |  | <.005 mm                 |  |
|                             |  |                                  |  |                            |  | .075 mm                  |  |
|                             |  |                                  |  |                            |  | >.005 mm                 |  |
|                             |  |                                  |  |                            |  | LIQUID LIMIT             |  |
|                             |  |                                  |  |                            |  | PLASTICITY INDEX         |  |
|                             |  |                                  |  |                            |  | GRAVEL                   |  |
|                             |  |                                  |  |                            |  | SAND                     |  |
|                             |  |                                  |  |                            |  | MECHANICAL ANALYSIS      |  |
|                             |  |                                  |  |                            |  | <.005 mm                 |  |
|                             |  |                                  |  |                            |  | .075 mm                  |  |
|                             |  |                                  |  |                            |  | >.005 mm                 |  |
|                             |  |                                  |  |                            |  | LIQUID LIMIT             |  |
|                             |  |                                  |  |                            |  | PLASTICITY INDEX         |  |
|                             |  |                                  |  |                            |  | GRAVEL                   |  |
|                             |  |                                  |  |                            |  | SAND                     |  |
|                             |  |                                  |  |                            |  | MECHANICAL ANALYSIS      |  |
|                             |  |                                  |  |                            |  | <.005 mm                 |  |
|                             |  |                                  |  |                            |  | .075 mm                  |  |
|                             |  |                                  |  |                            |  | >.005 mm                 |  |
|                             |  |                                  |  |                            |  | LIQUID LIMIT             |  |
|                             |  |                                  |  |                            |  | PLASTICITY INDEX         |  |
|                             |  |                                  |  |                            |  | GRAVEL                   |  |
|                             |  |                                  |  |                            |  | SAND                     |  |
|                             |  |                                  |  |                            |  | MECHANICAL ANALYSIS      |  |
|                             |  |                                  |  |                            |  | <.005 mm                 |  |
|                             |  |                                  |  |                            |  | .075 mm                  |  |
|                             |  |                                  |  |                            |  | >.005 mm                 |  |
|                             |  |                                  |  |                            |  | LIQUID LIMIT             |  |
|                             |  |                                  |  |                            |  | PLASTICITY INDEX         |  |
|                             |  |                                  |  |                            |  | GRAVEL                   |  |
|                             |  |                                  |  |                            |  | SAND                     |  |
|                             |  |                                  |  |                            |  | MECHANICAL ANALYSIS      |  |
|                             |  |                                  |  |                            |  | <.005 mm                 |  |
|                             |  |                                  |  |                            |  | .075 mm                  |  |
|                             |  |                                  |  |                            |  | >.005 mm                 |  |
|                             |  |                                  |  |                            |  | LIQUID LIMIT             |  |
|                             |  |                                  |  |                            |  | PLASTICITY INDEX         |  |
|                             |  |                                  |  |                            |  | GRAVEL                   |  |
|                             |  |                                  |  |                            |  | SAND                     |  |
|                             |  |                                  |  |                            |  | MECHANICAL ANALYSIS      |  |
|                             |  |                                  |  |                            |  | <.005 mm                 |  |
|                             |  |                                  |  |                            |  | .075 mm                  |  |
|                             |  |                                  |  |                            |  | >.005 mm                 |  |
|                             |  |                                  |  |                            |  | LIQUID LIMIT             |  |
|                             |  |                                  |  |                            |  | PLASTICITY INDEX         |  |
|                             |  |                                  |  |                            |  | GRAVEL                   |  |
|                             |  |                                  |  |                            |  | SAND                     |  |
|                             |  |                                  |  |                            |  | MECHANICAL ANALYSIS      |  |
|                             |  |                                  |  |                            |  | <.005 mm                 |  |
|                             |  |                                  |  |                            |  | .075 mm                  |  |
|                             |  |                                  |  |                            |  | >.005 mm                 |  |
|                             |  |                                  |  |                            |  | LIQUID LIMIT             |  |
|                             |  |                                  |  |                            |  | PLASTICITY INDEX         |  |
|                             |  |                                  |  |                            |  | GRAVEL                   |  |
|                             |  |                                  |  |                            |  | SAND                     |  |
|                             |  |                                  |  |                            |  | MECHANICAL ANALYSIS      |  |
|                             |  |                                  |  |                            |  | <.005 mm                 |  |
|                             |  |                                  |  |                            |  | .075 mm                  |  |
|                             |  |                                  |  |                            |  | >.005 mm                 |  |
|                             |  |                                  |  |                            |  | LIQUID LIMIT             |  |
|                             |  |                                  |  |                            |  | PLASTICITY INDEX         |  |
|                             |  |                                  |  |                            |  | GRAVEL                   |  |
|                             |  |                                  |  |                            |  | SAND                     |  |
|                             |  |                                  |  |                            |  | MECHANICAL ANALYSIS      |  |
|                             |  |                                  |  |                            |  | <.005 mm                 |  |
|                             |  |                                  |  |                            |  | .075 mm                  |  |
|                             |  |                                  |  |                            |  | >.005 mm                 |  |
|                             |  |                                  |  |                            |  | LIQUID LIMIT             |  |
|                             |  |                                  |  |                            |  | PLASTICITY INDEX         |  |
|                             |  |                                  |  |                            |  | GRAVEL                   |  |
|                             |  |                                  |  |                            |  | SAND                     |  |
|                             |  |                                  |  |                            |  | MECHANICAL ANALYSIS      |  |
|                             |  |                                  |  |                            |  | <.005 mm                 |  |
|                             |  |                                  |  |                            |  | .075 mm                  |  |
|                             |  |                                  |  |                            |  | >.005 mm                 |  |
|                             |  |                                  |  |                            |  | LIQUID LIMIT             |  |
|                             |  |                                  |  |                            |  | PLASTICITY INDEX         |  |
|                             |  |                                  |  |                            |  | GRAVEL                   |  |
|                             |  |                                  |  |                            |  | SAND                     |  |
|                             |  |                                  |  |                            |  | MECHANICAL ANALYSIS      |  |
|                             |  |                                  |  |                            |  | <.005 mm                 |  |
|                             |  |                                  |  |                            |  | .075 mm                  |  |
|                             |  |                                  |  |                            |  | >.005 mm                 |  |
|                             |  |                                  |  |                            |  | LIQUID LIMIT             |  |
|                             |  |                                  |  |                            |  | PLASTICITY INDEX         |  |
|                             |  |                                  |  |                            |  | GRAVEL                   |  |
|                             |  |                                  |  |                            |  | SAND                     |  |
|                             |  |                                  |  |                            |  | MECHANICAL ANALYSIS      |  |
|                             |  |                                  |  |                            |  | <.005 mm                 |  |
|                             |  |                                  |  |                            |  | .075 mm                  |  |
|                             |  |                                  |  |                            |  | >.005 mm                 |  |
|                             |  |                                  |  |                            |  | LIQUID LIMIT             |  |
|                             |  |                                  |  |                            |  | PLASTICITY INDEX         |  |
|                             |  |                                  |  |                            |  | GRAVEL                   |  |
|                             |  |                                  |  |                            |  | SAND                     |  |
|                             |  |                                  |  |                            |  | MECHANICAL ANALYSIS      |  |
|                             |  |                                  |  |                            |  | <.005 mm                 |  |
|                             |  |                                  |  |                            |  | .075 mm                  |  |
|                             |  |                                  |  |                            |  | >.005 mm                 |  |
|                             |  |                                  |  |                            |  | LIQUID LIMIT             |  |
|                             |  |                                  |  |                            |  | PLASTICITY INDEX         |  |
|                             |  |                                  |  |                            |  | GRAVEL                   |  |
|                             |  |                                  |  |                            |  | SAND                     |  |
|                             |  |                                  |  |                            |  | MECHANICAL ANALYSIS      |  |
|                             |  |                                  |  |                            |  | <.005 mm                 |  |
|                             |  |                                  |  |                            |  | .075 mm                  |  |
|                             |  |                                  |  |                            |  | >.005 mm                 |  |
|                             |  |                                  |  |                            |  | LIQUID LIMIT             |  |
|                             |  |                                  |  |                            |  | PLASTICITY INDEX         |  |
|                             |  |                                  |  |                            |  | GRAVEL                   |  |
|                             |  |                                  |  |                            |  | SAND                     |  |
|                             |  |                                  |  |                            |  | MECHANICAL ANALYSIS      |  |
|                             |  |                                  |  |                            |  | <.005 mm                 |  |
|                             |  |                                  |  |                            |  | .075 mm                  |  |
|                             |  |                                  |  |                            |  | >.005 mm                 |  |
|                             |  |                                  |  |                            |  | LIQUID LIMIT             |  |
|                             |  |                                  |  |                            |  | PLASTICITY INDEX         |  |
|                             |  |                                  |  |                            |  | GRAVEL                   |  |
|                             |  |                                  |  |                            |  | SAND                     |  |
|                             |  |                                  |  |                            |  | MECHANICAL ANALYSIS      |  |
|                             |  |                                  |  |                            |  | <.005 mm                 |  |
|                             |  |                                  |  |                            |  | .075 mm                  |  |
|                             |  |                                  |  |                            |  | >.005 mm                 |  |
|                             |  |                                  |  |                            |  | LIQUID LIMIT             |  |
|                             |  |                                  |  |                            |  | PLASTICITY INDEX         |  |
|                             |  |                                  |  |                            |  | GRAVEL                   |  |
|                             |  |                                  |  |                            |  | SAND                     |  |
|                             |  |                                  |  |                            |  | MECHANICAL ANALYSIS      |  |
|                             |  |                                  |  |                            |  | <.005 mm                 |  |
|                             |  |                                  |  |                            |  | .075 mm                  |  |
|                             |  |                                  |  |                            |  | >.005 mm                 |  |
|                             |  |                                  |  |                            |  | LIQUID LIMIT             |  |
|                             |  |                                  |  |                            |  | PLASTICITY INDEX         |  |
|                             |  |                                  |  |                            |  | GRAVEL                   |  |
|                             |  |                                  |  |                            |  | SAND                     |  |
|                             |  |                                  |  |                            |  | MECHANICAL ANALYSIS      |  |
|                             |  |                                  |  |                            |  | <.005 mm                 |  |
|                             |  |                                  |  |                            |  | .075 mm                  |  |
|                             |  |                                  |  |                            |  | >.005 mm                 |  |
|                             |  |                                  |  |                            |  | LIQUID LIMIT             |  |
|                             |  |                                  |  |                            |  | PLASTICITY INDEX         |  |
|                             |  |                                  |  |                            |  | GRAVEL                   |  |
|                             |  |                                  |  |                            |  | SAND                     |  |
|                             |  |                                  |  |                            |  | MECHANICAL ANALYSIS      |  |
|                             |  |                                  |  |                            |  | <.005 mm                 |  |
|                             |  |                                  |  |                            |  | .075 mm                  |  |
|                             |  |                                  |  |                            |  | >.005 mm                 |  |
|                             |  |                                  |  |                            |  | LIQUID LIMIT             |  |
|                             |  |                                  |  |                            |  | PLASTICITY INDEX         |  |
|                             |  |                                  |  |                            |  | GRAVEL                   |  |
|                             |  |                                  |  |                            |  | SAND                     |  |
|                             |  |                                  |  |                            |  | MECHANICAL ANALYSIS      |  |
|                             |  |                                  |  |                            |  | <.005 mm                 |  |
|                             |  |                                  |  |                            |  | .075 mm                  |  |
|                             |  |                                  |  |                            |  | >.005 mm                 |  |
|                             |  |                                  |  |                            |  | LIQUID LIMIT             |  |
|                             |  |                                  |  |                            |  | PLASTICITY INDEX         |  |
|                             |  |                                  |  |                            |  | GRAVEL                   |  |
|                             |  |                                  |  |                            |  | SAND                     |  |
|                             |  |                                  |  |                            |  | MECHANICAL ANALYSIS      |  |
|                             |  |                                  |  |                            |  | <.005 mm                 |  |
|                             |  |                                  |  |                            |  | .075 mm                  |  |
|                             |  |                                  |  |                            |  | >.005 mm                 |  |
|                             |  |                                  |  |                            |  | LIQUID LIMIT             |  |
|                             |  |                                  |  |                            |  | PLASTICITY INDEX         |  |
|                             |  |                                  |  |                            |  | GRAVEL                   |  |
|                             |  |                                  |  |                            |  | SAND                     |  |
|                             |  |                                  |  |                            |  | MECHANICAL ANALYSIS      |  |
|                             |  |                                  |  |                            |  | <.005 mm                 |  |
|                             |  |                                  |  |                            |  | .075 mm                  |  |
|                             |  |                                  |  |                            |  | >.005 mm                 |  |
|                             |  |                                  |  |                            |  | LIQUID LIMIT             |  |
|                             |  |                                  |  |                            |  | PLASTICITY INDEX         |  |
|                             |  |                                  |  |                            |  | GRAVEL                   |  |
|                             |  |                                  |  |                            |  | SAND                     |  |
|                             |  |                                  |  |                            |  | MECHANICAL ANALYSIS      |  |
|                             |  |                                  |  |                            |  | <.005 mm                 |  |
|                             |  |                                  |  |                            |  | .075 mm                  |  |
|                             |  |                                  |  |                            |  | >.005 mm                 |  |
|                             |  |                                  |  |                            |  | LIQUID LIMIT             |  |
|                             |  |                                  |  |                            |  | PLASTICITY INDEX         |  |
|                             |  |                                  |  |                            |  | GRAVEL                   |  |
|                             |  |                                  |  |                            |  | SAND                     |  |
|                             |  |                                  |  |                            |  | MECHANICAL ANALYSIS      |  |
|                             |  |                                  |  |                            |  | <.005 mm                 |  |
|                             |  |                                  |  |                            |  | .075 mm                  |  |
|                             |  |                                  |  |                            |  | >.005 mm                 |  |
|                             |  |                                  |  |                            |  | LIQUID LIMIT             |  |
|                             |  |                                  |  |                            |  | PLASTICITY INDEX         |  |
|                             |  |                                  |  |                            |  | GRAVEL                   |  |
|                             |  |                                  |  |                            |  | SAND                     |  |
|                             |  |                                  |  |                            |  | MECHANICAL ANALYSIS      |  |
|                             |  |                                  |  |                            |  | <.005 mm                 |  |
|                             |  |                                  |  |                            |  | .075 mm                  |  |
|                             |  |                                  |  |                            |  | >.005 mm                 |  |



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

HOLE LOCATION:

DATE DRILLED: 10-3-78

DRILL TECHNICIAN: 8

H.R.R.

PLOTTED BY:

R.S.

HOLE ELEVATION:

HOLE NO.: T-94

HOLE DEPTH 4.35  
TYPE OF DRILL B40-6" AUGERS  
WATER LEVEL  
DEPTH (M.)

SOIL DESCRIPTION

0

1

2

3

4

5

SILT SAND TILL

1.50

SILTY SANDY GRAVEL

END HOLE @ 4.35

N.R.C.  
PERMAFROST  
CLASSIFICATION

SAMPLE IDENTIFICATION DATA  
SAMPLE DEPTH (FT.)  
SAMPLE NUMBER (FIELD)  
SAMPLE TYPE  
LABORATORY NUMBER

NATURAL  
MOISTURE  
CONTENT  
%

CONSISTENCY LIMITS  
LIQUID LIMIT  
PLASTIC LIMIT  
PLASTICITY INDEX  
%

MECHANICAL ANALYSIS  
GRAVEL  
SAND  
%

<.074 mm  
>.005 mm  
%

DRY DENSITY  
LB./CU. FT.

STANDARD  
PENETRATION  
RESISTANCE  
BLOWS  
/FT.

UNIFIED  
CLASSIFICATION

SM

13.4

45.8

40.8

NP

6.8

T100 AUGER S808

.6

1.2



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

HOLE LOCATION:

DATE DRILLED: 10-3-78

DRILL TECHNICIAN: 8

H.R.

PLOTTED BY:

R.S.

HOLE ELEVATION:

HOLE NO.: T-95

HOLE DEPTH 1.50  
TYPE OF DRILL B40-6" AUGERS  
WATER LEVEL  
DEPTH (M.)  
SOIL DESCRIPTION

SILT SAND TILL

END HOLE @ 1.50

N.R.C.  
PERMAFROST  
CLASSIFICATION

SAMPLE IDENTIFICATION DATA  
SAMPLE DEPTH (FT.)  
SAMPLE NUMBER (FIELD)  
SAMPLE TYPE  
LABORATORY NUMBER

NATURAL  
MOISTURE  
CONTENT  
%

CONSISTENCY LIMITS  
LIQUID LIMIT  
PLASTIC LIMIT  
PLASTICITY INDEX  
%

MECHANICAL ANALYSIS  
GRAVEL  
SAND  
%  
0.075 mm  
0.075 mm  
0.075 mm  
%

DRY DENSITY  
LB/ CU. FT.  
STANDARD PENETRATION RESISTANCE  
BLOWS / FT.  
UNIFIED CLASSIFICATION

0 1 2 3 4 5

.3 .9

6.4

4.6

54.2

41.2

SM



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

|                            |      |                                  |  |                  |  |                |  |
|----------------------------|------|----------------------------------|--|------------------|--|----------------|--|
| PROJECT: SHAKWAK SEGMENT 8 |      | HOLE LOCATION:                   |  | HOLE ELEVATION:  |  | HOLE NO.: T-96 |  |
| DATE DRILLED: 10-3-78      |      | DRILL TECHNICIAN: H.R.           |  | PLOTTED BY: R.S. |  |                |  |
| HOLE DEPTH 3.30            |      | TYPE OF DRILL B40-6" AUGERS      |  | WATER LEVEL      |  |                |  |
| DEPTH (M)                  |      | SOIL DESCRIPTION                 |  |                  |  |                |  |
| 0                          |      | Silty SAND                       |  |                  |  |                |  |
| 1                          | 1.05 | SANDY GRAVEL                     |  |                  |  |                |  |
| 2                          |      |                                  |  |                  |  |                |  |
| 3                          |      | REFUSAL @ 3.30                   |  |                  |  |                |  |
| 4                          |      |                                  |  |                  |  |                |  |
| 5                          |      |                                  |  |                  |  |                |  |
|                            |      | N.R.C. PERMAFROST CLASSIFICATION |  |                  |  |                |  |
|                            |      | SAMPLE IDENTIFICATION DATA       |  |                  |  |                |  |
|                            |      | SAMPLE DEPTH (FT.)               |  |                  |  |                |  |
|                            |      | SAMPLE NUMBER (FIELD)            |  |                  |  |                |  |
|                            |      | SAMPLE TYPE                      |  |                  |  |                |  |
|                            |      | LABORATORY NUMBER                |  |                  |  |                |  |
|                            |      | NATURAL MOISTURE CONTENT         |  |                  |  |                |  |
|                            |      | LIQUID LIMIT                     |  |                  |  |                |  |
|                            |      | PLASTIC LIMIT                    |  |                  |  |                |  |
|                            |      | PLASTICITY INDEX                 |  |                  |  |                |  |
|                            |      | GRAVEL                           |  |                  |  |                |  |
|                            |      | SAND                             |  |                  |  |                |  |
|                            |      | >.005 mm                         |  |                  |  |                |  |
|                            |      | <.075 mm                         |  |                  |  |                |  |
|                            |      | <.005 mm                         |  |                  |  |                |  |
|                            |      | DRY DENSITY                      |  |                  |  |                |  |
|                            |      | STANDARD PENETRATION RESISTANCE  |  |                  |  |                |  |
|                            |      | UNIFIED CLASSIFICATION           |  |                  |  |                |  |



**MATERIALS QUALITY CONTROL LABORATORY**  
**WHITEHORSE, Y.T.**

# SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

**HOLE LOCATION:**

DATE DRILLED: 10-3-78

DRILL TECHNICIAN : H. R.

**PLOTTED BY :**

R.S.

**HOLE ELEVATION:**

HOLE NO.: T-97

|               |                  |
|---------------|------------------|
| HOLE DEPTH    | 1.50             |
| TYPE OF DRILL | B40-6" AUGERS    |
| WATER LEVEL   |                  |
| DEPTH (M)     | SOIL DESCRIPTION |

**N.R.C.  
PERMAFROST  
CLASSIFICATION**

|                            |                       |
|----------------------------|-----------------------|
| SAMPLE IDENTIFICATION DATA | LABORATORY NUMBER     |
|                            | SAMPLE TYPE           |
|                            | SAMPLE NUMBER (FIELD) |
|                            | SAMPLE DEPTH (FT.)    |

|                    |                  |   |
|--------------------|------------------|---|
| CONSISTENCY LIMITS | PLASTICITY INDEX | % |
|                    | PLASTIC LIMIT    | % |
|                    | LIQUID LIMIT     | % |

| MECHANICAL ANALYSIS | No. 10 |   | No. 20 |   | No. 40 |   | No. 60 |   | No. 100 |   |
|---------------------|--------|---|--------|---|--------|---|--------|---|---------|---|
|                     | mm     | % | mm     | % | mm     | % | mm     | % | mm      | % |
| <.005 mm            |        | % |        | % |        | % |        | % |         | % |
| <.074 mm            |        | % |        | % |        | % |        | % |         | % |
| >.005 mm            |        | % |        | % |        | % |        | % |         | % |
| SAND                |        | % |        | % |        | % |        | % |         | % |
| GRAVEL              |        | % |        | % |        | % |        | % |         | % |

|                                       |                 |
|---------------------------------------|-----------------|
| STANDARD<br>PENETRATION<br>RESISTANCE | BLOWS<br>/ft    |
| DRY<br>DENSITY                        | LB.<br>/cu. ft. |

UNIFIED  
CLASSIFICATION

Silt Sand Till

REFUSAL @ 1.50

و

2.

72

NRWC 67-194



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

HOLE LOCATION:

DATE DRILLED: 13-3-78

DRILL TECHNICIAN:

H. R.

PLOTTED BY:

R. S.

HOLE ELEVATION:

HOLE NO.: T-98

HOLE DEPTH 1.20  
TYPE OF DRILL B40-6" AUGERS  
WATER LEVEL  
DEPTH (M)  
SOIL DESCRIPTION

SILT SAND TILL  
SILTY SANDY GRAVEL  
REFUSAL @ 1.20

N.R.C.  
PERMAFROST  
CLASSIFICATION

SAMPLE IDENTIFICATION DATA

LABORATORY  
NUMBER  
SAMPLE  
TYPE  
SAMPLE  
NUMBER  
(FIELD)  
SAMPLE  
DEPTH  
(FT.)

CONSISTENCY LIMITS

LIQUID  
LIMIT  
PLASTIC  
LIMIT  
PLASTICITY  
INDEX

MECHANICAL ANALYSIS

GRAVEL  
SAND  
>.005 mm  
<.075 mm  
<.005 mm

DRY  
DENSITY  
STANDARD  
PENETRATION  
RESISTANCE

UNIFIED  
CLASSIFICATION

LB  
CU. FT.

BLOWS  
FT.

0

1

2

3

4

5



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

HOLE LOCATION:

DATE DRILLED: 13-3-78

DRILL TECHNICIAN: H.R.

PLOTTED BY: R.S.

HOLE ELEVATION:

HOLE NO.: T-99

HOLE DEPTH 4.35  
TYPE OF DRILL B40-6" AUGERS  
WATER LEVEL  
DEPTH (M)  
SOIL DESCRIPTION

SANDY GRAVEL .15  
SILT SAND TILL .60

SILTY SANDY GRAVEL

2.55

SANDY SILT

END HOLE @ 4.35

N.R.C.  
PERMAFROST  
CLASSIFICATION

LABORATORY  
NUMBER  
SAMPLE  
TYPE  
SAMPLE  
NUMBER  
(FIELD)  
SAMPLE  
DEPTH  
(FT.)

NATURAL  
MOISTURE  
CONTENT  
%

LIQUID  
LIMIT  
%  
PLASTIC  
LIMIT  
%  
PLASTICITY  
INDEX  
%

GRAVEL  
%  
SAND  
%

<.075 mm  
<.005 mm  
>.005 mm  
%

DRY  
DENSITY  
LB./  
CU. FT.

STANDARD  
PENETRATION  
RESISTANCE  
BLOWS  
/ FT.

UNIFIED  
CLASSIFICATION

1.8

2.4

3.3

4.0

SM

ML



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

|                             |  |                            |  |                                 |  |
|-----------------------------|--|----------------------------|--|---------------------------------|--|
| PROJECT: SHAKWAK SEGMENT 8  |  | HOLE LOCATION:             |  | HOLE NO: T-100                  |  |
| DATE DRILLED: 13-3-78       |  | DRILL TECHNICIAN: H.R.     |  | HOLE ELEVATION: R.S.            |  |
| HOLE DEPTH 2.25             |  | SAMPLE IDENTIFICATION DATA |  | MECHANICAL ANALYSIS             |  |
| TYPE OF DRILL B40-6" AUGERS |  | LABORATORY NUMBER          |  | AND. 0.075 mm                   |  |
| WATER LEVEL                 |  | SAMPLE TYPE                |  | AND. 0.075 mm                   |  |
| SOIL DESCRIPTION            |  | SAMPLE NUMBER (FIELD)      |  | AND. 0.075 mm                   |  |
| DEPTH (M)                   |  | SAMPLE DEPTH (FT.)         |  | SAND                            |  |
| 0                           |  |                            |  | GRAVEL                          |  |
| 1                           |  |                            |  | PLASTICITY INDEX                |  |
| 2                           |  |                            |  | PLASTIC LIMIT                   |  |
| 3                           |  |                            |  | LIQUID LIMIT                    |  |
| 4                           |  |                            |  | NATURAL MOISTURE CONTENT        |  |
| 5                           |  |                            |  | UNIFIED CLASSIFICATION          |  |
| REFUSAL @ 2.25              |  |                            |  | STANDARD PENETRATION RESISTANCE |  |
|                             |  |                            |  | BLOWS / FT.                     |  |

[illegible]



# SUBSURFACE TESTING REPORT

**HOLE LOCATION:**

DRILL TECHNICIAN : H. R.

5

**HOLE ELEVATION:**

HOLE NO.: T-102

|  | SOIL DESCRIPTION |
|--|------------------|
|--|------------------|

SILT SAND TILL

90.

SILTY SANDY GRAVEL

REFUSAL @ 1.65

6

٧٠

|      |            |
|------|------------|
| T107 | AUGER S844 |
|------|------------|

|                            |                       |
|----------------------------|-----------------------|
| SAMPLE IDENTIFICATION DATA | LABORATORY NUMBER     |
|                            | SAMPLE TYPE           |
|                            | SAMPLE NUMBER (FIELD) |
|                            | SAMPLE DEPTH (FT.)    |

**N.R.C.  
PERMAFROST  
CLASSIFICATION**

|                  |
|------------------|
| PLASTICITY INDEX |
| PLASTIC LIMIT    |
| LIQUID LIMIT     |

|                 |                    |
|-----------------|--------------------|
| <b>ANALYSIS</b> | <b>&lt;.074 mm</b> |
|                 | <b>&gt;.005 mm</b> |

**STANDARD  
PENETRATION  
RESISTANCE**

UNIFIED  
CLASSIFICATION

GP-GM



# SUBSURFACE TESTING REPORT

**HOLE LOCATION:**

HOLE NO.: T-103

SOIL DESCRIPTION

END HOLE @ 1.65

UNIFIED  
CLASSIFICATION

5



**MATERIALS QUALITY CONTROL LABORATORY**  
**WHITEHORSE, Y.T.**

# SUBSURFACE TESTING REPORT

| PROJECT: SHAKWAK SEGMENT 8 |  |                             | HOLE LOCATION: |                   | HOLE ELEVATION: |                  | HOLE NO.: T-104 |  |
|----------------------------|--|-----------------------------|----------------|-------------------|-----------------|------------------|-----------------|--|
| DATE DRILLED: 13-3-78      |  | DRILL TECHNICIAN: H. R.     |                | PLOTTED BY: R. S. |                 |                  |                 |  |
| HOLE DEPTH 1.65            |  | TYPE OF DRILL B40-6" AUGERS |                | WATER LEVEL       |                 | SOIL DESCRIPTION |                 |  |
| DEPTH (M)                  |  |                             |                |                   |                 |                  |                 |  |
| 0                          |  | SANDY GRAVEL                |                | .75               |                 |                  |                 |  |
| 1                          |  | SILTY SAND                  |                |                   |                 |                  |                 |  |
| 2                          |  | REFUSAL @ 1.65              |                |                   |                 |                  |                 |  |
| 3                          |  |                             |                |                   |                 |                  |                 |  |
| 4                          |  |                             |                |                   |                 |                  |                 |  |
| 5                          |  |                             |                |                   |                 |                  |                 |  |





MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

# SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

PROJECT: SHAKWAK SEC  
DATE DRILLED: 13-3-78

|                       |       |
|-----------------------|-------|
| DATE DRILLED: 13-3-78 | DRILL |
|-----------------------|-------|

|                       |                         |
|-----------------------|-------------------------|
| DATE DRILLED: 13-3-78 | DRILL TECHNICIAN: H. R. |
|-----------------------|-------------------------|

|                       |                         |             |
|-----------------------|-------------------------|-------------|
| DATE DRILLED: 13-3-78 | DRILL TECHNICIAN: H. R. | PLOTTED BY: |
|-----------------------|-------------------------|-------------|

|                       |                         |                   |
|-----------------------|-------------------------|-------------------|
| DATE DRILLED: 13-3-78 | DRILL TECHNICIAN: H. R. | PLOTTED BY: R. S. |
|-----------------------|-------------------------|-------------------|

|                       |                         |                   |
|-----------------------|-------------------------|-------------------|
| DATE DRILLED: 13-3-78 | DRILL TECHNICIAN: H. R. | PLOTTED BY: R. S. |
|-----------------------|-------------------------|-------------------|

|                       |                         |                   |                 |
|-----------------------|-------------------------|-------------------|-----------------|
| DATE DRILLED: 13-3-78 | DRILL TECHNICIAN: H. R. | PLOTTED BY: R. S. | HOLE ELEVATION: |
|-----------------------|-------------------------|-------------------|-----------------|

|                       |                         |                   |                 |                 |
|-----------------------|-------------------------|-------------------|-----------------|-----------------|
| DATE DRILLED: 13-3-78 | DRILL TECHNICIAN: H. R. | PLOTTED BY: R. S. | HOLE ELEVATION: | HOLE NO.: T-106 |
|-----------------------|-------------------------|-------------------|-----------------|-----------------|

**HOLE LOCATION:**

|                       |                         |                   |                 |                 |
|-----------------------|-------------------------|-------------------|-----------------|-----------------|
| DATE DRILLED: 13-3-78 | DRILL TECHNICIAN: H. R. | PLOTTED BY: R. S. | HOLE ELEVATION: | HOLE NO.: T-106 |
|-----------------------|-------------------------|-------------------|-----------------|-----------------|

HOLE DEPTH 2.70

TYPE OF DRILL B40-6" AUGERS

**WATER LEVEL** \_\_\_\_\_

[illegible]

0

0

SILT SAND TILL

5.9.5

SILTY SANDY GRAVEL

REFUSAL @ 2.70

9.

٢١

三

AUGER 5848

00  
h

22

2

20.7

三

**DRWG. NO. 60-194**



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

HOLE LOCATION:

DATE DRILLED: 14-3-78

DRILL TECHNICIAN: H.R.

PLOTTED BY: R.S.

HOLE ELEVATION:

HOLE NO.: T-107

HOLE DEPTH 4.35  
TYPE OF DRILL B40-6" AUGERS  
WATER LEVEL  
DEPTH (M)  
SOIL DESCRIPTION

| DEPTH (M) | N.R.C. PERMAFROST CLASSIFICATION | SAMPLE IDENTIFICATION DATA |                       |             |                   | CONSISTENCY LIMITS         |                |                 | MECHANICAL ANALYSIS |          |        |            | DRY DENSITY<br>LB/ CU. FT. | STANDARD PENETRATION RESISTANCE<br>BLOWS / FT. | UNIFIED CLASSIFICATION |
|-----------|----------------------------------|----------------------------|-----------------------|-------------|-------------------|----------------------------|----------------|-----------------|---------------------|----------|--------|------------|----------------------------|------------------------------------------------|------------------------|
|           |                                  | SAMPLE DEPTH (FT.)         | SAMPLE NUMBER (FIELD) | SAMPLE TYPE | LABORATORY NUMBER | NATURAL MOISTURE CONTENT % | LIQUID LIMIT % | PLASTIC LIMIT % | PLASTICITY INDEX %  | GRAVEL % | SAND % | <.075 mm % | <.005 mm %                 |                                                |                        |
| 0         |                                  | .6                         |                       |             |                   |                            |                |                 |                     |          |        |            |                            |                                                |                        |
| 1         |                                  | 1.2                        | T112                  | AUGER       | S049              | 11.3                       |                |                 | WP                  | 2.5      | 50.4   | 47.1       |                            |                                                | SM                     |
| 2         |                                  |                            |                       |             |                   |                            |                |                 |                     |          |        |            |                            |                                                |                        |
| 3         |                                  |                            |                       |             |                   |                            |                |                 |                     |          |        |            |                            |                                                |                        |
| 4         |                                  |                            |                       |             |                   |                            |                |                 |                     |          |        |            |                            |                                                |                        |
| 5         |                                  |                            |                       |             |                   |                            |                |                 |                     |          |        |            |                            |                                                |                        |

SILT SAND TILL

1.35

SANDY SILT TILL

2.90

SILTY SANDY GRAVEL

END HOLE @ 4.35



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

|                             |  |                          |  |                                 |  |
|-----------------------------|--|--------------------------|--|---------------------------------|--|
| PROJECT: SHAKWAK SEGMENT 8  |  | HOLE LOCATION:           |  | HOLE NO.: T-108                 |  |
| DATE DRILLED: 14-3-78       |  | HOLE ELEVATION:          |  | HOLE NO.: T-108                 |  |
| DRILL TECHNICIAN: H.R.      |  | PLOTTED BY: R.S.         |  | HOLE NO.: T-108                 |  |
| HOLE DEPTH 1.80             |  | MECHANICAL ANALYSIS      |  | UNIFIED CLASSIFICATION          |  |
| TYPE OF DRILL B40-6" AUGERS |  | GRAVEL                   |  | STANDARD PENETRATION RESISTANCE |  |
| WATER LEVEL                 |  | SAND                     |  | DRY DENSITY                     |  |
| DEPTH (M.)                  |  | PLASTICITY INDEX         |  | BLOWS/FT.                       |  |
| SOIL DESCRIPTION            |  | PLASTIC LIMIT            |  | LBS./CU. FT.                    |  |
| 0                           |  | LIQUID LIMIT             |  | CU. FT.                         |  |
| 1                           |  | NATURAL MOISTURE CONTENT |  | CU. FT.                         |  |
| 2                           |  | CONSISTENCY LIMITS       |  | CU. FT.                         |  |
| 3                           |  | PLASTIC LIMIT            |  | CU. FT.                         |  |
| 4                           |  | PLASTICITY INDEX         |  | CU. FT.                         |  |
| 5                           |  | GRAVEL                   |  | CU. FT.                         |  |
| SILT SAND TILL              |  | SAND                     |  | CU. FT.                         |  |
| REFUSAL @ 1.80              |  | SAND                     |  | CU. FT.                         |  |





Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

|                             |  |                            |  |                          |  |                                 |  |
|-----------------------------|--|----------------------------|--|--------------------------|--|---------------------------------|--|
| PROJECT: SHAKWAK SEGMENT 8  |  | HOLE LOCATION:             |  | HOLE ELEVATION:          |  | HOLE NO.: T-110                 |  |
| DATE DRILLED: 14-3-78       |  | DRILL TECHNICIAN: H.R.     |  | PLOTTED BY: R.S.         |  |                                 |  |
| HOLE DEPTH 2.70             |  | SAMPLE IDENTIFICATION DATA |  | CONSISTENCY LIMITS       |  | MECHANICAL ANALYSIS             |  |
| TYPE OF DRILL B40-6" AUGERS |  | LABORATORY NUMBER          |  | PLASTIC LIMIT            |  | < .075 mm                       |  |
| WATER LEVEL                 |  | SAMPLE TYPE                |  | LIQUID LIMIT             |  | > .005 mm                       |  |
| DEPTH (M)                   |  | SAMPLE NUMBER (FIELD)      |  | NATURAL MOISTURE CONTENT |  | DRY DENSITY                     |  |
| SOIL DESCRIPTION            |  | SAMPLE DEPTH (FT.)         |  | %                        |  | LB/ CU. FT.                     |  |
|                             |  |                            |  |                          |  | STANDARD PENETRATION RESISTANCE |  |
|                             |  |                            |  |                          |  | BLOWS / FT.                     |  |
|                             |  |                            |  |                          |  | UNIFIED CLASSIFICATION          |  |
| 0                           |  | 1.8                        |  | 5.2                      |  |                                 |  |
| 1                           |  | 2.4                        |  | NP                       |  |                                 |  |
| 2                           |  |                            |  |                          |  | GM                              |  |
| 3                           |  |                            |  |                          |  |                                 |  |
| 4                           |  |                            |  |                          |  |                                 |  |
| 5                           |  |                            |  |                          |  |                                 |  |

SILT SAND TILL

1.35

SILTY SANDY GRAVEL

END HOLE @ 2.70

| PROJECT: SHAKWAK SEGMENT 8 |  |                             |  |             |                        |           |  |                  |  | HOLE LOCATION:                   |  |                            |  |                    |                 |                     |  |              |  |                                 |  |                        |  |  |
|----------------------------|--|-----------------------------|--|-------------|------------------------|-----------|--|------------------|--|----------------------------------|--|----------------------------|--|--------------------|-----------------|---------------------|--|--------------|--|---------------------------------|--|------------------------|--|--|
| DATE DRILLED: 14-3-78      |  |                             |  |             | DRILL TECHNICIAN: H.R. |           |  |                  |  | PLOTTED BY: R.S.                 |  |                            |  |                    | HOLE ELEVATION: |                     |  |              |  | HOLE NO: T-111                  |  |                        |  |  |
| HOLE DEPTH 1.95            |  | TYPE OF DRILL 840-6" AUGERS |  | WATER LEVEL |                        | DEPTH (M) |  | SOIL DESCRIPTION |  | N.R.C. PERMAFROST CLASSIFICATION |  | SAMPLE IDENTIFICATION DATA |  | CONSISTENCY LIMITS |                 | MECHANICAL ANALYSIS |  | DRY DENSITY  |  | STANDARD PENETRATION RESISTANCE |  | UNIFIED CLASSIFICATION |  |  |
|                            |  |                             |  |             |                        |           |  |                  |  |                                  |  | LABORATORY NUMBER          |  | PLASTICITY INDEX   |                 | GRAVEL              |  | LBS. CU. FT. |  | BLOWS FT.                       |  |                        |  |  |
|                            |  |                             |  |             |                        |           |  |                  |  |                                  |  | SAMPLE TYPE                |  | PLASTIC LIMIT      |                 | SAND                |  |              |  |                                 |  |                        |  |  |
|                            |  |                             |  |             |                        |           |  |                  |  |                                  |  | SAMPLE NUMBER (FIELD)      |  | LIQUID LIMIT       |                 |                     |  |              |  |                                 |  |                        |  |  |
|                            |  |                             |  |             |                        |           |  |                  |  |                                  |  | SAMPLE DEPTH (FT.)         |  |                    |                 |                     |  |              |  |                                 |  |                        |  |  |
|                            |  |                             |  |             |                        |           |  |                  |  |                                  |  | .9                         |  |                    |                 |                     |  |              |  |                                 |  |                        |  |  |
|                            |  |                             |  |             |                        |           |  |                  |  |                                  |  | 1.5                        |  |                    |                 |                     |  |              |  |                                 |  |                        |  |  |
|                            |  |                             |  |             |                        |           |  |                  |  |                                  |  |                            |  |                    |                 |                     |  |              |  |                                 |  |                        |  |  |
|                            |  |                             |  |             |                        |           |  |                  |  |                                  |  |                            |  |                    |                 |                     |  |              |  |                                 |  |                        |  |  |
|                            |  |                             |  |             |                        |           |  |                  |  |                                  |  |                            |  |                    |                 |                     |  |              |  |                                 |  |                        |  |  |
|                            |  |                             |  |             |                        |           |  |                  |  |                                  |  |                            |  |                    |                 |                     |  |              |  |                                 |  |                        |  |  |
|                            |  |                             |  |             |                        |           |  |                  |  |                                  |  |                            |  |                    |                 |                     |  |              |  |                                 |  |                        |  |  |
|                            |  |                             |  |             |                        |           |  |                  |  |                                  |  |                            |  |                    |                 |                     |  |              |  |                                 |  |                        |  |  |
|                            |  |                             |  |             |                        |           |  |                  |  |                                  |  |                            |  |                    |                 |                     |  |              |  |                                 |  |                        |  |  |
|                            |  |                             |  |             |                        |           |  |                  |  |                                  |  |                            |  |                    |                 |                     |  |              |  |                                 |  |                        |  |  |
|                            |  |                             |  |             |                        |           |  |                  |  |                                  |  |                            |  |                    |                 |                     |  |              |  |                                 |  |                        |  |  |
|                            |  |                             |  |             |                        |           |  |                  |  |                                  |  |                            |  |                    |                 |                     |  |              |  |                                 |  |                        |  |  |
|                            |  |                             |  |             |                        |           |  |                  |  |                                  |  |                            |  |                    |                 |                     |  |              |  |                                 |  |                        |  |  |
|                            |  |                             |  |             |                        |           |  |                  |  |                                  |  |                            |  |                    |                 |                     |  |              |  |                                 |  |                        |  |  |
|                            |  |                             |  |             |                        |           |  |                  |  |                                  |  |                            |  |                    |                 |                     |  |              |  |                                 |  |                        |  |  |
|                            |  |                             |  |             |                        |           |  |                  |  |                                  |  |                            |  |                    |                 |                     |  |              |  |                                 |  |                        |  |  |
|                            |  |                             |  |             |                        |           |  |                  |  |                                  |  |                            |  |                    |                 |                     |  |              |  |                                 |  |                        |  |  |
|                            |  |                             |  |             |                        |           |  |                  |  |                                  |  |                            |  |                    |                 |                     |  |              |  |                                 |  |                        |  |  |
|                            |  |                             |  |             |                        |           |  |                  |  |                                  |  |                            |  |                    |                 |                     |  |              |  |                                 |  |                        |  |  |
|                            |  |                             |  |             |                        |           |  |                  |  |                                  |  |                            |  |                    |                 |                     |  |              |  |                                 |  |                        |  |  |
|                            |  |                             |  |             |                        |           |  |                  |  |                                  |  |                            |  |                    |                 |                     |  |              |  |                                 |  |                        |  |  |
|                            |  |                             |  |             |                        |           |  |                  |  |                                  |  |                            |  |                    |                 |                     |  |              |  |                                 |  |                        |  |  |
|                            |  |                             |  |             |                        |           |  |                  |  |                                  |  |                            |  |                    |                 |                     |  |              |  |                                 |  |                        |  |  |
|                            |  |                             |  |             |                        |           |  |                  |  |                                  |  |                            |  |                    |                 |                     |  |              |  |                                 |  |                        |  |  |
|                            |  |                             |  |             |                        |           |  |                  |  |                                  |  |                            |  |                    |                 |                     |  |              |  |                                 |  |                        |  |  |
|                            |  |                             |  |             |                        |           |  |                  |  |                                  |  |                            |  |                    |                 |                     |  |              |  |                                 |  |                        |  |  |
|                            |  |                             |  |             |                        |           |  |                  |  |                                  |  |                            |  |                    |                 |                     |  |              |  |                                 |  |                        |  |  |
|                            |  |                             |  |             |                        |           |  |                  |  |                                  |  |                            |  |                    |                 |                     |  |              |  |                                 |  |                        |  |  |
|                            |  |                             |  |             |                        |           |  |                  |  |                                  |  |                            |  |                    |                 |                     |  |              |  |                                 |  |                        |  |  |
|                            |  |                             |  |             |                        |           |  |                  |  |                                  |  |                            |  |                    |                 |                     |  |              |  |                                 |  |                        |  |  |
|                            |  |                             |  |             |                        |           |  |                  |  |                                  |  |                            |  |                    |                 |                     |  |              |  |                                 |  |                        |  |  |
|                            |  |                             |  |             |                        |           |  |                  |  |                                  |  |                            |  |                    |                 |                     |  |              |  |                                 |  |                        |  |  |
|                            |  |                             |  |             |                        |           |  |                  |  |                                  |  |                            |  |                    |                 |                     |  |              |  |                                 |  |                        |  |  |
|                            |  |                             |  |             |                        |           |  |                  |  |                                  |  |                            |  |                    |                 |                     |  |              |  |                                 |  |                        |  |  |
|                            |  |                             |  |             |                        |           |  |                  |  |                                  |  |                            |  |                    |                 |                     |  |              |  |                                 |  |                        |  |  |
|                            |  |                             |  |             |                        |           |  |                  |  |                                  |  |                            |  |                    |                 |                     |  |              |  |                                 |  |                        |  |  |
|                            |  |                             |  |             |                        |           |  |                  |  |                                  |  |                            |  |                    |                 |                     |  |              |  |                                 |  |                        |  |  |
|                            |  |                             |  |             |                        |           |  |                  |  |                                  |  |                            |  |                    |                 |                     |  |              |  |                                 |  |                        |  |  |
|                            |  |                             |  |             |                        |           |  | </               |  |                                  |  |                            |  |                    |                 |                     |  |              |  |                                 |  |                        |  |  |



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

HOLE LOCATION:

DATE DRILLED: 14-3-78

DRILL TECHNICIAN:

H.R.

PLOTTED BY:

R.S.

HOLE ELEVATION:

HOLE NO.: T-112

HOLE DEPTH 4.35  
TYPE OF DRILL B40-6" AUGERS  
WATER LEVEL  
DEPTH (M.)  
SOIL DESCRIPTION

0  
1  
2  
3  
4  
5  
SILT SAND TILL  
1.20  
SAND SILT TILL  
END HOLE @ 4.35

N.R.C.  
PERMAFROST  
CLASSIFICATION

SAMPLE IDENTIFICATION DATA  
SAMPLE DEPTH (FT.)  
SAMPLE NUMBER (FIELD)  
SAMPLE TYPE  
LABORATORY NUMBER

NATURAL  
MOISTURE  
CONTENT  
%

CONSISTENCY LIMITS  
LIQUID LIMIT  
PLASTIC LIMIT  
PLASTICITY INDEX  
%

GRAVEL  
SAND  
%

MECHANICAL ANALYSIS  
AND 0.075 mm  
AND 0.005 mm  
%

DRY  
DENSITY  
LB/ CU. FT.

STANDARD  
PENETRATION  
RESISTANCE  
BLOWS  
/ FT.

UNIFIED  
CLASSIFICATION

SM

31.6  
38.1  
30.3

TRACE

7.2

2.1

2.7



**MATERIALS QUALITY CONTROL LABORATORY**  
**WHITEHORSE, Y.T.**

# SUBSURFACE TESTING REPORT

**PROJECT:** SHAKWAK SEGMENT 8

**HOLE LOCATION:**

DATE DRILLED: 14-3-78

**DRILL TECHNICIAN :**

H. R.

**PLOTTED BY :**

•  
•

**HOLE ELEVATION:**

HOLE NO.: T-113

|               |                  |
|---------------|------------------|
| HOLE DEPTH    | 2.25             |
| TYPE OF DRILL | B40-6" AUGERS    |
| WATER LEVEL   |                  |
| DEPTH<br>M    | SOIL DESCRIPTION |

SILT SAND TILL

REFUSAL @ 2.25

|                            |                       |
|----------------------------|-----------------------|
| SAMPLE IDENTIFICATION DATA | LABORATORY NUMBER     |
|                            | SAMPLE TYPE           |
|                            | SAMPLE NUMBER (FIELD) |
|                            | SAMPLE DEPTH (FT.)    |

**N.R.C.  
PERMAFROST  
CLASSIFICATION**

|                    |                  |
|--------------------|------------------|
| CONSISTENCY LIMITS | PLASTICITY INDEX |
|                    | PLASTIC LIMIT    |
|                    | LIQUID LIMIT     |

|                     |          |
|---------------------|----------|
| MECHANICAL ANALYSIS | <.075 mm |
|                     | >.005 mm |
|                     | SAND     |

**<.005 mm**

**DRY  
DENSITY**

### STANDARD PENETRATION RESISTANCE

**UNIFIED  
CLASSIFICATION**

1

2

3

4

10

[illegible]



MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

# SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

**HOLE LOCATION:**

DATE DRILLED: 14-3-78

**DRILL TECHNICIAN :**

H. R.

1

**PLOTTED BY :**

R.S.

**HOLE ELEVATION:**

HOLE NO.: T-114

HOLE DEPTH 2.25  
TYPE OF DRILL B40-6" AUGERS  
WATER LEVEL                     

| DEPTH<br>(M) | SOIL DESCRIPTION |
|--------------|------------------|
|--------------|------------------|

# Sand Till

Refusal 03.25

**N.R.C.  
PERMAFROST  
CLASSIFICATION**

|                            |                       |
|----------------------------|-----------------------|
| SAMPLE IDENTIFICATION DATA | LABORATORY NUMBER     |
|                            | SAMPLE TYPE           |
|                            | SAMPLE NUMBER (FIELD) |
|                            | SAMPLE DEPTH (FT.)    |

### NATURAL MOISTURE CONTENT

|                           |                         |
|---------------------------|-------------------------|
| <b>CONSISTENCY LIMITS</b> | <b>PLASTICITY INDEX</b> |
|                           | <b>PLASTIC LIMIT</b>    |
|                           | <b>LIQUID LIMIT</b>     |

|          |         |
|----------|---------|
| ANALYSIS | <.074mm |
|          | >.005mm |

**STANDARD  
PENETRATION  
RESISTANCE**

UNIFIED  
CLASSIFICATION

10

1

2

3

4

10

3.

9.

6111

**AUGER S856**

200

22

8.

$$\begin{array}{r} 48.8 \\ 45.4 \\ \hline \end{array}$$
$$\Sigma$$

DRWG. NO. 60-194



**MATERIALS QUALITY CONTROL LABORATORY**  
**WHITEHORSE, Y.T.**

# SUBSURFACE TESTING REPORT

**PROJECT: SHAKWAK SEGMENT 8**

**HOLE LOCATION:**

DATE DRILLED: 14-3-78

DRILL TECHNICIAN: H. R.

PLOTTED BY :

R.S.

**HOLE ELEVATION:**

HOLE NO.: T-115

HOLE DEPTH 3.60  
TYPE OF DRILL B40-6" AUGERS  
WATER LEVEL \_\_\_\_\_

| DEPTH<br>(M) | SOIL DESCRIPTION |
|--------------|------------------|
|--------------|------------------|

SILTY SANDY GRAVEL  
\_\_\_\_\_ .60

SILT SAND TILL

END HOLE @ 3.60

|                            |                       |
|----------------------------|-----------------------|
| SAMPLE IDENTIFICATION DATA | LABORATORY NUMBER     |
|                            | SAMPLE TYPE           |
|                            | SAMPLE NUMBER (FIELD) |
|                            | SAMPLE DEPTH (FT.)    |

|                    |                  |   |
|--------------------|------------------|---|
| CONSISTENCY LIMITS | PLASTICITY INDEX | % |
|                    | PLASTIC LIMIT    | % |
|                    | LIQUID LIMIT     | % |

|                     |          |   |
|---------------------|----------|---|
| MECHANICAL ANALYSIS | <.005 mm | % |
|                     | <.074 mm | % |
|                     | >.005 mm | % |
|                     | SAND     | % |

|                                       |                 |
|---------------------------------------|-----------------|
| STANDARD<br>PENETRATION<br>RESISTANCE | BLOWS<br>/ FT.  |
| DRY<br>DENSITY                        | LB./<br>CU. FT. |

UNIFIED  
CLASSIFICATION

10

T

2

3

4

5



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

|                             |  |                                  |  |                            |  |                          |  |                     |  |             |  |                                 |  |                        |  |      |  |    |  |
|-----------------------------|--|----------------------------------|--|----------------------------|--|--------------------------|--|---------------------|--|-------------|--|---------------------------------|--|------------------------|--|------|--|----|--|
| PROJECT: SHAKWAK SEGMENT 8  |  | HOLE LOCATION:                   |  | HOLE ELEVATION:            |  | HOLE NO: T-116           |  |                     |  |             |  |                                 |  |                        |  |      |  |    |  |
| DATE DRILLED: 14-3-78       |  | DRILL TECHNICIAN: H.R.           |  | PLOTTED BY: R.S.           |  |                          |  |                     |  |             |  |                                 |  |                        |  |      |  |    |  |
| HOLE DEPTH 3.00             |  | N.R.C. PERMAFROST CLASSIFICATION |  | SAMPLE IDENTIFICATION DATA |  | NATURAL MOISTURE CONTENT |  |                     |  |             |  |                                 |  |                        |  |      |  |    |  |
| TYPE OF DRILL B40-6" AUGERS |  |                                  |  | LABORATORY NUMBER          |  | PLASTICITY INDEX         |  | MECHANICAL ANALYSIS |  | DRY DENSITY |  | STANDARD PENETRATION RESISTANCE |  | UNIFIED CLASSIFICATION |  |      |  |    |  |
| WATER LEVEL                 |  |                                  |  |                            |  |                          |  |                     |  |             |  |                                 |  |                        |  |      |  |    |  |
| DEPTH (M)                   |  | SAMPLE DEPTH (FT.)               |  | SAMPLE NUMBER (FIELD)      |  | SAMPLE TYPE              |  | LIQUID LIMIT        |  | GRAVEL      |  | SAND                            |  | BLOWS / FT.            |  |      |  |    |  |
| SOIL DESCRIPTION            |  |                                  |  |                            |  |                          |  |                     |  |             |  |                                 |  |                        |  |      |  |    |  |
| 0                           |  | .6                               |  | T122                       |  | AUGER SB59               |  | 5.3                 |  | NP          |  | 16.9                            |  | 49.5                   |  | 33.6 |  | SM |  |
| 1                           |  | 1.2                              |  |                            |  |                          |  |                     |  |             |  |                                 |  |                        |  |      |  |    |  |
| 2                           |  |                                  |  |                            |  |                          |  |                     |  |             |  |                                 |  |                        |  |      |  |    |  |
| 3                           |  |                                  |  |                            |  |                          |  |                     |  |             |  |                                 |  |                        |  |      |  |    |  |
| 4                           |  |                                  |  |                            |  |                          |  |                     |  |             |  |                                 |  |                        |  |      |  |    |  |
| 5                           |  |                                  |  |                            |  |                          |  |                     |  |             |  |                                 |  |                        |  |      |  |    |  |

SAND TILL

END HOLE @ 3.00



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

HOLE LOCATION:

DATE DRILLED: 14-3-78

DRILL TECHNICIAN: H.R.

PLOTTED BY: R.S.

HOLE ELEVATION:

HOLE NO.: T-117

HOLE DEPTH 2.40  
TYPE OF DRILL B40-6" AUGERS  
WATER LEVEL  
DEPTH (M)  
SOIL DESCRIPTION

SILTY SAND TILL

END HOLE @ 2.40

N.R.C.  
PERMAFROST  
CLASSIFICATION

SAMPLE IDENTIFICATION DATA  
SAMPLE DEPTH (FT.)  
SAMPLE NUMBER (FIELD)  
SAMPLE TYPE  
LABORATORY NUMBER

CONSISTENCY LIMITS  
LIQUID LIMIT  
PLASTIC LIMIT  
PLASTICITY INDEX

MECHANICAL ANALYSIS  
GRAVEL  
SAND  
<.075 mm  
>.005 mm  
<.005 mm

DRY DENSITY  
LBS./CU. FT.  
STANDARD PENETRATION RESISTANCE  
BLOWS/FT.  
UNIFIED CLASSIFICATION

0

1

2

3

4

5

.6

1.2

12.7

4.6

41.8

37.4

16.2

OL

**PROJECT: SHAKWAK SEGMENT 8**

**HOLE LOCATION :**

DATE DRILLED: 15-3-78

DRILL TECHNICIAN : H. R.

PLOTTED BY : R. S.

**HOLE ELEVATION:**

HOLE NO.: T-118

HOLE DEPTH 2.55

TYPE OF DRILL B40-6" AUGERS

WATER LEVEL \_\_\_\_\_

| DEPTH<br>(M) | SOIL DESCRIPTION |
|--------------|------------------|
|--------------|------------------|

0

SILT SAND TILL

1.35

SILTY SANDY GRAVEL

REFUSAL @ 2.55

0.4

12

**N.R.C.  
PERMAFROST  
CLASSIFICATION**

## SAMPLE IDENTIFICATION DATA

|                             |
|-----------------------------|
| LABORATORY<br>NUMBER        |
| SAMPLE<br>TYPE              |
| SAMPLE<br>NUMBER<br>(FIELD) |
| SAMPLE<br>DEPTH<br>(FT.)    |

**NATURAL  
MOISTURE  
CONTENT**

|                           |                         |
|---------------------------|-------------------------|
| <b>CONSISTENCY LIMITS</b> | <b>PLASTICITY INDEX</b> |
|                           | <b>PLASTIC LIMIT</b>    |
|                           | <b>LIQUID LIMIT</b>     |

|                     |          |
|---------------------|----------|
| MECHANICAL ANALYSIS | <.075 mm |
|                     | >.005 mm |
|                     | SAND     |
|                     | GRAVEL   |

### STANDARD PENETRATION RESISTANCE

**DRY  
DENSITY**

**UNIFIED  
CLASSIFICATION**

22







Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

|                            |  |                                  |  |                            |  |                                 |  |
|----------------------------|--|----------------------------------|--|----------------------------|--|---------------------------------|--|
| PROJECT: SHAKWAK SEGMENT 8 |  | HOLE LOCATION:                   |  | HOLE ELEVATION:            |  | HOLE NO: T-121                  |  |
| DATE DRILLED: 15-3-78      |  | DRILL TECHNICIAN: H.R.           |  | PLOTTED BY: R.S.           |  |                                 |  |
| HOLE DEPTH 2.25            |  | TYPE OF DRILL B40-6" AUGERS      |  | WATER LEVEL                |  | SOIL DESCRIPTION                |  |
| DEPTH (M)                  |  | N.R.C. PERMAFROST CLASSIFICATION |  | SAMPLE IDENTIFICATION DATA |  | NATURAL MOISTURE CONTENT        |  |
|                            |  |                                  |  | SAMPLE DEPTH (FT.)         |  | %                               |  |
|                            |  |                                  |  | SAMPLE NUMBER (FIELD)      |  | LIQUID LIMIT                    |  |
|                            |  |                                  |  | SAMPLE TYPE                |  | PLASTIC LIMIT                   |  |
|                            |  |                                  |  | LABORATORY NUMBER          |  | PLASTICITY INDEX                |  |
|                            |  |                                  |  |                            |  | GRAVEL                          |  |
|                            |  |                                  |  |                            |  | SAND                            |  |
|                            |  |                                  |  |                            |  | >.005 mm                        |  |
|                            |  |                                  |  |                            |  | <.075 mm                        |  |
|                            |  |                                  |  |                            |  | <.005 mm                        |  |
|                            |  |                                  |  |                            |  | DRY DENSITY                     |  |
|                            |  |                                  |  |                            |  | LB./CU.FT.                      |  |
|                            |  |                                  |  |                            |  | STANDARD PENETRATION RESISTANCE |  |
|                            |  |                                  |  |                            |  | BLOWS/FT.                       |  |
|                            |  |                                  |  |                            |  | UNIFIED CLASSIFICATION          |  |

0 1 2 3 4 5

SANDY SILT TILL

END HOLE @ 2.25

0.6

1.2

T-127 AUGER 5-919

12.3 17.5 14.5 3.0 2.8 43.4 53.8

ML

[illegible]



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

HOLE LOCATION:

DATE DRILLED: 15-3-78

DRILL TECHNICIAN:

H.R.

PLOTTED BY:

R.S.

HOLE ELEVATION:

HOLE NO.: T-123

HOLE DEPTH 2.55  
TYPE OF DRILL B40-6" AUGERS  
WATER LEVEL

DEPTH (M)  
SOIL DESCRIPTION

0 SANDY GRAVEL .15

SILT SAND TILL

REUSAL @ 2.55

MECHANICAL ANALYSIS

<.005 mm  
<.075 mm  
>.005 mm

SAND

GRAVEL

PLASTICITY INDEX

PLASTIC LIMIT

LIQUID LIMIT

NATURAL MOISTURE CONTENT

SAMPLE IDENTIFICATION DATA

LABORATORY NUMBER

SAMPLE TYPE

SAMPLE NUMBER (FIELD)

SAMPLE DEPTH (FT.)

N.R.C. PERMAFROST CLASSIFICATION

STANDARD PENETRATION RESISTANCE

BLOWS / FT.

DRY DENSITY

LB. / CU. FT.

UNIFIED CLASSIFICATION



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

|                             |  |                            |  |                                  |  |
|-----------------------------|--|----------------------------|--|----------------------------------|--|
| PROJECT: SHAKWAK SEGMENT 8  |  | HOLE LOCATION:             |  | HOLE NO.: T-124                  |  |
| DATE DRILLED: 15-3-78       |  | DRILL TECHNICIAN: 8        |  | HOLE ELEVATION:                  |  |
| HOLE DEPTH 3.45             |  | PLOTTED BY: R.S.           |  |                                  |  |
| TYPE OF DRILL B40-6" AUGERS |  | SAMPLE IDENTIFICATION DATA |  | MECHANICAL ANALYSIS              |  |
| WATER LEVEL                 |  | LABORATORY NUMBER          |  | GRAVEL %                         |  |
| DEPTH (M)                   |  | SAMPLE TYPE                |  | SAND %                           |  |
| SOIL DESCRIPTION            |  | SAMPLE NUMBER (FIELD)      |  | PLASTICITY INDEX %               |  |
|                             |  | SAMPLE DEPTH (FT.)         |  | PLASTIC LIMIT %                  |  |
|                             |  |                            |  | LIQUID LIMIT %                   |  |
|                             |  |                            |  | NATURAL MOISTURE CONTENT %       |  |
|                             |  |                            |  | N.R.C. PERMAFROST CLASSIFICATION |  |
|                             |  |                            |  | UNIFIED CLASSIFICATION           |  |
|                             |  |                            |  | STANDARD PENETRATION RESISTANCE  |  |
|                             |  |                            |  | BLOWS / FT.                      |  |
|                             |  |                            |  | DRY DENSITY                      |  |
|                             |  |                            |  | LB/ CU. FT.                      |  |
|                             |  |                            |  | <.005 mm %                       |  |
|                             |  |                            |  | <.075 mm %                       |  |
|                             |  |                            |  | >.005 mm %                       |  |

0 1 2 3 4 5

SAND SILT TILL

ORGANIC SILT 2.10 2.30

SILT TILL ORGANIC

SAT.

END HOLE @ 3.45

2.4

3.0

T-129 AUGER 5-920 43.6

NP

13.6 58.2 22.2 6.0

SM





MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

# SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

**HOLE LOCATION:**

DATE DRILLED: 15-3-78

DRILL TECHNICIAN: H. R.

|       |              |
|-------|--------------|
| H. R. | PLOTTED BY : |
|-------|--------------|

R.S.

**HOLE ELEVATION:**

**HOLE NO.: T-126**

HOLE DEPTH 2.40

HOLE DEPTH 2.40  
TYPE OF DRILL B40-6" AUGERS

**WATER LEVEL**

 DEPTH (M) | SOIL DESCRIPTION |

SILT SAND TILL

REFUSAL @ 3.40

**N.R.C.  
PERMAFROST  
CLASSIFICATION**

### SAMPLE IDENTIFICATION DATA

| LABORATORY<br>NUMBER | SAMPLE<br>TYPE | SAMPLE<br>NUMBER<br>(FIELD) | SAMPLE<br>DEPTH<br>(FT.) |
|----------------------|----------------|-----------------------------|--------------------------|
|----------------------|----------------|-----------------------------|--------------------------|

|                    |                  |
|--------------------|------------------|
| CONSISTENCY LIMITS | PLASTICITY INDEX |
|                    | PLASTIC LIMIT    |
|                    | LIQUID LIMIT     |

## MECHANICAL ANALYSIS

**<.005 mm**

---

**<.074 mm**

**>.005 mm**

**STANDARD  
PENETRATION  
RESISTANCE**

CU. FT.  
LBS.

**BLOWS**  
**Ft.**

UNIFIED  
CLASSIFICATION



MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

# SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

**HOLE LOCATION:**

DATE DRILLED: 15-3-78

DRILL TECHNICIAN: H. R.

**PLOTTED BY :**

R.S.

**HOLE ELEVATION:**

HOLE NO.: T-137

HOLE DEPTH 1.35

1.35

TYPE OF DRILL B40-6" AUGERS

## WATER LEVEL

SOIL DESCRIPTION

SILT SAND TILL

REFUSAL @ 1.35

**N.R.C.  
PERMAFROST  
CLASSIFICATION**

## SAMPLE IDENTIFICATION DATA

| LABORATORY<br>NUMBER        |
|-----------------------------|
| SAMPLE<br>TYPE              |
| SAMPLE<br>NUMBER<br>(FIELD) |
| SAMPLE<br>DEPTH<br>(FT.)    |

|                           |                         |
|---------------------------|-------------------------|
| <b>CONSISTENCY LIMITS</b> | <b>PLASTICITY INDEX</b> |
|                           | <b>PLASTIC LIMIT</b>    |
|                           | <b>LIQUID LIMIT</b>     |

|                     |          |
|---------------------|----------|
| MECHANICAL ANALYSIS | <.075 mm |
|                     | >.005 mm |
|                     | SAND     |
|                     | GRAVEL   |

## STANDARD PENETRATION RESISTANCE

**DRY  
DENSITY**

UNIFIED  
CLASSIFICATION

DRWG. NO. 60-194



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

HOLE LOCATION:

DATE DRILLED: 15-3-78

DRILL TECHNICIAN: 8

H. R.

PLOTTED BY:

R. S.

HOLE ELEVATION:

HOLE NO.: T-128

HOLE DEPTH 2.10  
TYPE OF DRILL B40-6" AUGERS  
WATER LEVEL  
DEPTH (M)  
SOIL DESCRIPTION

SILT SAND TILL

REFUSAL @ 2.10

N.R.C.  
PERMAFROST  
CLASSIFICATION

SAMPLE IDENTIFICATION DATA

LABORATORY  
NUMBER  
SAMPLE  
TYPE  
SAMPLE  
NUMBER  
(FIELD)  
SAMPLE  
DEPTH  
(FT.)

NATURAL  
MOISTURE  
CONTENT

CONSISTENCY LIMITS  
PLASTICITY  
INDEX  
PLASTIC  
LIMIT  
LIQUID  
LIMIT

MECHANICAL ANALYSIS

<.005 mm  
<.075 mm  
>.005 mm

SAND

GRAVEL

STANDARD  
PENETRATION  
RESISTANCE

DRY  
DENSITY

UNIFIED  
CLASSIFICATION



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

|                            |  |                             |  |                            |  |                                 |  |
|----------------------------|--|-----------------------------|--|----------------------------|--|---------------------------------|--|
| PROJECT: SHAKWAK SEGMENT 8 |  | HOLE LOCATION:              |  | HOLE ELEVATION:            |  | HOLE NO: T-129                  |  |
| DATE DRILLED: 15-3-78      |  | DRILL TECHNICIAN: H.R.      |  | PLOTTED BY: R.S.           |  |                                 |  |
| HOLE DEPTH 2.10            |  | TYPE OF DRILL B40-6" AUGERS |  | WATER LEVEL                |  |                                 |  |
| DEPTH (M)                  |  | SOIL DESCRIPTION            |  |                            |  |                                 |  |
| 0                          |  | SILT SAND TILL              |  |                            |  |                                 |  |
| 1                          |  |                             |  |                            |  |                                 |  |
| 2                          |  | REFUSAL @ 2.10              |  |                            |  |                                 |  |
| 3                          |  |                             |  |                            |  |                                 |  |
| 4                          |  |                             |  |                            |  |                                 |  |
| 5                          |  |                             |  |                            |  |                                 |  |
|                            |  | SAMPLE DEPTH (FT.)          |  | SAMPLE IDENTIFICATION DATA |  | NATURAL MOISTURE CONTENT        |  |
|                            |  | 0.6                         |  | SAMPLE NUMBER (FIELD)      |  | %                               |  |
|                            |  | 1.2                         |  | SAMPLE TYPE                |  | LIQUID LIMIT                    |  |
|                            |  | 1.8                         |  | LABORATORY NUMBER          |  | PLASTIC LIMIT                   |  |
|                            |  |                             |  |                            |  | PLASTICITY INDEX                |  |
|                            |  |                             |  |                            |  | GRAVEL                          |  |
|                            |  |                             |  |                            |  | SAND                            |  |
|                            |  |                             |  |                            |  | > .005 mm                       |  |
|                            |  |                             |  |                            |  | < .074 mm                       |  |
|                            |  |                             |  |                            |  | < .005 mm                       |  |
|                            |  |                             |  |                            |  | DRY DENSITY                     |  |
|                            |  |                             |  |                            |  | LB./CU. FT.                     |  |
|                            |  |                             |  |                            |  | STANDARD PENETRATION RESISTANCE |  |
|                            |  |                             |  |                            |  | BLOWS/FT.                       |  |
|                            |  |                             |  |                            |  | UNIFIED CLASSIFICATION          |  |
|                            |  |                             |  |                            |  | ML                              |  |
|                            |  |                             |  |                            |  | SM                              |  |



**MATERIALS QUALITY CONTROL LABORATORY**  
**WHITEHORSE, Y.T.**

# SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

**HOLE LOCATION:**

DATE DRILLED: 15-3-78

**DRILL TECHNICIAN :**

H. R.

**PLOTTED BY :**

R.S.

**HOLE ELEVATION:**

HOLE NO.: T-130

|               |                  |               |
|---------------|------------------|---------------|
| HOLE DEPTH    |                  | 3.00          |
| TYPE OF DRILL |                  | B40-6" AUGERS |
| WATER LEVEL   |                  |               |
| DEPTH<br>(M)  | SOIL DESCRIPTION |               |

HOLE DEPTH 3.00

TYPE OF DRILL B40-6" AUGERS

**WATER LEVEL** \_\_\_\_\_

| DEPTH<br>(M) | SOIL DESCRIPTION |
|--------------|------------------|
|--------------|------------------|

|   |  |
|---|--|
| 0 |  |
|---|--|

SILT SAND TILL

५४

SAND SILT TILL

1.830

**SILT**

**END HOLE @ 3.00**

2.1

27

T-133 AUG 65 5-924

५५

VP

24.5

74.1

70

DRWG NO 60-194



MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

# SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

**HOLE LOCATION :**

DATE DRILLED: 16-3-78

DRILL TECHNICIAN: H. R.

**PLOTTED BY :**

R.S.

HOLE ELEVATION:

HOLE NO.: T-131

|               |                  |
|---------------|------------------|
| HOLE DEPTH    | 3.00             |
| TYPE OF DRILL | B40-6" AUGERS    |
| WATER LEVEL   |                  |
| DEPTH<br>(M)  | SOIL DESCRIPTION |

SILT SAND TILL

|   |      |
|---|------|
| 1 | 1.05 |
|---|------|

SAND SILT TILL 1.35

SILT SAND TILL

REFUSAL @ 3.00

5.1

2.1

Auger 5-925 5.7

T-134 ANGER

T-134



TRACE

## 11.2

54.7

34.1

45

DRWG NO 20-194

| Public Works<br>Canada      |  | MATERIALS QUALITY CONTROL LABORATORY<br>WHITEHORSE, Y.T. |  | SUBSURFACE TESTING REPORT        |  |
|-----------------------------|--|----------------------------------------------------------|--|----------------------------------|--|
| PROJECT: SHAKWAK SEGMENT 8  |  | HOLE LOCATION:                                           |  | HOLE NO.: T-132                  |  |
| DATE DRILLED: 16-3-78       |  | DRILL TECHNICIAN: H. R.                                  |  | HOLE ELEVATION: R. S.            |  |
| HOLE DEPTH 1.65             |  | SAMPLE IDENTIFICATION DATA                               |  | MECHANICAL ANALYSIS              |  |
| TYPE OF DRILL B40-6" AUGERS |  | LABORATORY NUMBER                                        |  | GRAVEL                           |  |
| WATER LEVEL                 |  | SAMPLE TYPE                                              |  | SAND                             |  |
| DEPTH (M)                   |  | SAMPLE NUMBER (FIELD)                                    |  | PLASTICITY INDEX                 |  |
| SOIL DESCRIPTION            |  | SAMPLE DEPTH (FT.)                                       |  | PLASTIC LIMIT                    |  |
| SILT SAND TILL              |  | 0.6                                                      |  | LIQUID LIMIT                     |  |
| SILTY SANDY GRAVEL          |  | 1.2                                                      |  | NATURAL MOISTURE CONTENT         |  |
| REFUSAL @ 1.65              |  |                                                          |  | N.R.C. PERMAFROST CLASSIFICATION |  |
|                             |  |                                                          |  | CONSISTENCY LIMITS               |  |
|                             |  |                                                          |  | PLASTIC LIMIT                    |  |
|                             |  |                                                          |  | PLASTICITY INDEX                 |  |
|                             |  |                                                          |  | GRAVEL                           |  |
|                             |  |                                                          |  | SAND                             |  |
|                             |  |                                                          |  | < .005 mm                        |  |
|                             |  |                                                          |  | < .075 mm                        |  |
|                             |  |                                                          |  | > .005 mm                        |  |
|                             |  |                                                          |  | DRY DENSITY                      |  |
|                             |  |                                                          |  | STANDARD PENETRATION RESISTANCE  |  |
|                             |  |                                                          |  | UNIFIED CLASSIFICATION           |  |
|                             |  |                                                          |  | SM                               |  |





Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

|                            |  |                             |  |                                  |  |                                 |  |
|----------------------------|--|-----------------------------|--|----------------------------------|--|---------------------------------|--|
| PROJECT: SHAKWAK SEGMENT 8 |  | HOLE LOCATION:              |  | HOLE ELEVATION:                  |  | HOLE NO.: T-134                 |  |
| DATE DRILLED: 16-3-78      |  | DRILL TECHNICIAN: H.R.      |  | PLOTTED BY: R.S.                 |  |                                 |  |
| HOLE DEPTH 2.10            |  | TYPE OF DRILL B40-6" AUGERS |  | WATER LEVEL                      |  |                                 |  |
| DEPTH (M)                  |  | SOIL DESCRIPTION            |  | N.R.C. PERMAFROST CLASSIFICATION |  |                                 |  |
| 0                          |  | SILT SAND TILL .45          |  |                                  |  |                                 |  |
| 1                          |  | SAND SILT TILL              |  |                                  |  |                                 |  |
| 2                          |  | REFUSAL @ 2.10              |  |                                  |  |                                 |  |
| 3                          |  |                             |  |                                  |  |                                 |  |
| 4                          |  |                             |  |                                  |  |                                 |  |
| 5                          |  |                             |  |                                  |  |                                 |  |
|                            |  |                             |  | SAMPLE IDENTIFICATION DATA       |  | NATURAL MOISTURE CONTENT        |  |
|                            |  | SAMPLE DEPTH (FT.)          |  | SAMPLE NUMBER (FIELD)            |  | SAMPLE TYPE                     |  |
|                            |  | 0.6                         |  | T. 137                           |  | AUGER                           |  |
|                            |  | 1.2                         |  | 5-928                            |  |                                 |  |
|                            |  |                             |  | LABORATORY NUMBER                |  |                                 |  |
|                            |  |                             |  | LIQUID LIMIT                     |  | PLASTIC LIMIT                   |  |
|                            |  |                             |  | PLASTICITY INDEX                 |  |                                 |  |
|                            |  |                             |  | GRAVEL                           |  | SAND                            |  |
|                            |  |                             |  | <.075 mm                         |  | <.005 mm                        |  |
|                            |  |                             |  | %                                |  | %                               |  |
|                            |  |                             |  | DRY DENSITY                      |  | STANDARD PENETRATION RESISTANCE |  |
|                            |  |                             |  | LB./CU. FT.                      |  | BLOWS/FT.                       |  |
|                            |  |                             |  | UNIFIED CLASSIFICATION           |  |                                 |  |
|                            |  |                             |  | CL-ML                            |  |                                 |  |



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

HOLE LOCATION:

DATE DRILLED: 16-3-78

DRILL TECHNICIAN: H.R.

PLOTTED BY: R.S.

HOLE ELEVATION:

HOLE NO.: T-135

HOLE DEPTH .90  
TYPE OF DRILL B40-6" AUGERS  
WATER LEVEL

DEPTH (M) SOIL DESCRIPTION

0 SILT SAND TILL

1 REFUSAL @ .90

2

3

4

5

N.R.C.  
PERMAFROST  
CLASSIFICATION

SAMPLE IDENTIFICATION DATA

LABORATORY  
NUMBER  
SAMPLE  
TYPE  
SAMPLE  
NUMBER  
(FIELD)  
SAMPLE  
DEPTH  
(FT.)

NATURAL  
MOISTURE  
CONTENT

LIQUID  
LIMIT  
PLASTIC  
LIMIT  
PLASTICITY  
INDEX

MECHANICAL ANALYSIS

GRAVEL  
SAND  
<.075 mm  
<.005 mm

DRY  
DENSITY  
STANDARD  
PENETRATION  
RESISTANCE

UNIFIED  
CLASSIFICATION



MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

# SUBSURFACE TESTING REPORT

PROJECT: SHAKWAK SEGMENT 8

**HOLE LOCATION:**

DATE DRILLED: 16-3-75

**DRILL TECHNICIAN :**

H. R.

**PLOTTED BY :**

R.S.

HOLE ELEVATION:

HOLE NO.: T-136

|                                    |                  |
|------------------------------------|------------------|
| HOLE DEPTH <u>.75</u>              |                  |
| TYPE OF DRILL <u>B40-6" AUGERS</u> |                  |
| WATER LEVEL <u></u>                |                  |
| DEPTH<br>(M)                       | SOIL DESCRIPTION |

SOIL DESCRIPTION

SILT SAND TILL

REFUSAL @ .75

**N.R.C.  
PERMAFROST  
CLASSIFICATION**

## SAMPLE IDENTIFICATION DATA

[illegible]

|                    |                  |   |
|--------------------|------------------|---|
| CONSISTENCY LIMITS | PLASTICITY INDEX | % |
|                    | PLASTIC LIMIT    | % |
|                    | LIQUID LIMIT     | % |

## MECHANICAL ANALYSIS

**<.005 mm**

---

**<.074 mm**

**>.005 mm**

### STANDARD PENETRATION RESISTANCE

4315

BLUETS

**UNIFIED  
CLASSIFICATION**

DRWG. NO. 60-194



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

|                            |  |                             |  |                                  |  |                    |  |
|----------------------------|--|-----------------------------|--|----------------------------------|--|--------------------|--|
| PROJECT: SHAKWAK SEGMENT 8 |  | HOLE LOCATION:              |  | HOLE ELEVATION:                  |  | HOLE NO.: T-137    |  |
| DATE DRILLED: 16-3-78      |  | DRILL TECHNICIAN: H.R.      |  | PLOTTED BY: R.S.                 |  |                    |  |
| HOLE DEPTH 3.60            |  | TYPE OF DRILL B40-6" AUGERS |  | WATER LEVEL                      |  |                    |  |
| DEPTH (M)                  |  | SOIL DESCRIPTION            |  | N.R.C. PERMAFROST CLASSIFICATION |  |                    |  |
| 0                          |  | SILT SAND TILL              |  |                                  |  |                    |  |
| 1                          |  | SILTY GRAVELLY SAND         |  |                                  |  |                    |  |
| 2                          |  | SILT TILL<br>SOME GRAVEL    |  |                                  |  |                    |  |
| 3                          |  | REFUSAL @ 3.60              |  |                                  |  |                    |  |
| 4                          |  |                             |  |                                  |  |                    |  |
| 5                          |  |                             |  |                                  |  |                    |  |
|                            |  |                             |  | NATURAL MOISTURE CONTENT         |  | CONSISTENCY LIMITS |  |
|                            |  |                             |  | %                                |  | LIQUID LIMIT       |  |
|                            |  |                             |  | %                                |  | PLASTIC LIMIT      |  |
|                            |  |                             |  | %                                |  | PLASTICITY INDEX   |  |
|                            |  |                             |  | GRAVEL                           |  | SAND               |  |
|                            |  |                             |  | %                                |  | %                  |  |
|                            |  |                             |  | MECHANICAL ANALYSIS              |  | DRY DENSITY        |  |
|                            |  |                             |  | <.075 mm                         |  | %                  |  |
|                            |  |                             |  | >.005 mm                         |  | %                  |  |
|                            |  |                             |  | STANDARD PENETRATION RESISTANCE  |  | BLOWS / FT.        |  |
|                            |  |                             |  | UNIFIED CLASSIFICATION           |  |                    |  |



Public Works  
Canada

MATERIALS QUALITY CONTROL LABORATORY  
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

| PROJECT: SHAKWAK SEGMENT 8 |               | HOLE LOCATION:         |            | HOLE ELEVATION:    |                                  | HOLE NO.: T-138 |                            |                    |                          |             |                    |   |                     |   |               |                                 |                        |   |        |   |      |   |            |   |            |   |              |             |    |
|----------------------------|---------------|------------------------|------------|--------------------|----------------------------------|-----------------|----------------------------|--------------------|--------------------------|-------------|--------------------|---|---------------------|---|---------------|---------------------------------|------------------------|---|--------|---|------|---|------------|---|------------|---|--------------|-------------|----|
| DATE DRILLED: 16-3-78      |               | DRILL TECHNICIAN: H.R. |            | PLOTTED BY: R.S.   |                                  |                 |                            |                    |                          |             |                    |   |                     |   |               |                                 |                        |   |        |   |      |   |            |   |            |   |              |             |    |
| HOLE DEPTH                 | TYPE OF DRILL | WATER LEVEL            | DEPTH (M.) | SOIL DESCRIPTION   | N.R.C. PERMAFROST CLASSIFICATION |                 | SAMPLE IDENTIFICATION DATA |                    | NATURAL MOISTURE CONTENT |             | CONSISTENCY LIMITS |   | MECHANICAL ANALYSIS |   | DRY DENSITY   | STANDARD PENETRATION RESISTANCE | UNIFIED CLASSIFICATION |   |        |   |      |   |            |   |            |   |              |             |    |
|                            |               |                        |            |                    |                                  |                 |                            | SAMPLE DEPTH (FT.) | SAMPLE NUMBER (FIELD)    | SAMPLE TYPE | LABORATORY NUMBER  | % | LIQUID LIMIT        | % | PLASTIC LIMIT | %                               | PLASTICITY INDEX       | % | GRAVEL | % | SAND | % | < 0.075 mm | % | < 0.005 mm | % | LIB. CU. FT. | BLOWS / FT. |    |
| 0                          |               |                        |            | SILT SAND TILL     |                                  |                 |                            | 0.6                |                          |             |                    |   |                     |   |               |                                 |                        |   |        |   |      |   |            |   |            |   |              |             |    |
| 1                          |               |                        |            | SILTY SANDY GRAVEL |                                  |                 |                            | 1.2                | T-139 AUGER 5-930        |             |                    |   |                     |   |               |                                 | TRACE                  |   | 28.9   |   | 43.3 |   |            |   |            |   |              |             | SM |
| 2                          |               |                        |            | REFUSAL @ 1.50     |                                  |                 |                            |                    |                          |             |                    |   |                     |   |               |                                 |                        |   |        |   |      |   |            |   |            |   |              |             |    |
| 3                          |               |                        |            |                    |                                  |                 |                            |                    |                          |             |                    |   |                     |   |               |                                 |                        |   |        |   |      |   |            |   |            |   |              |             |    |
| 4                          |               |                        |            |                    |                                  |                 |                            |                    |                          |             |                    |   |                     |   |               |                                 |                        |   |        |   |      |   |            |   |            |   |              |             |    |
| 5                          |               |                        |            |                    |                                  |                 |                            |                    |                          |             |                    |   |                     |   |               |                                 |                        |   |        |   |      |   |            |   |            |   |              |             |    |

