



P.M.I.S. No. 5-000231

October 4, 1993

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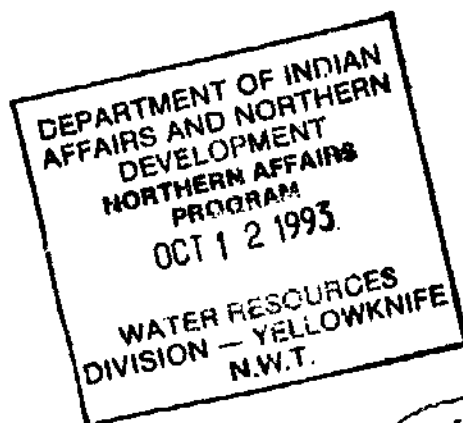
Mr. Dave Nickerson
Chairman
NWT Water Board
P.O. Box 1500
Yellowknife, Northwest Territories
XIA 2R3

Sewage Lagoon Expansion - Design and Operations Concept Reports (Draft)
Grise Fiord, Northwest Territories

I enclose for your review and comments one (1) copy of the referenced draft Design and Operations Concept Report prepared by U.M.A. Engineering Limited (Consultant) of Yellowknife. The report reviews and analyzes the available alternatives for the improvements of the sewage lagoon and honeybag disposal systems in the community of Grise Fiord.

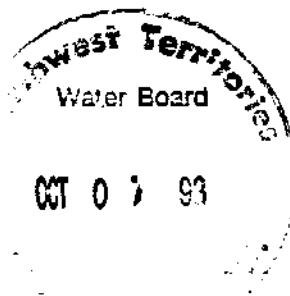
Please arrange to have your comments forwarded to me at the 4th Floor YK Centre, P. O. Box No.1320, Technical Services Division, Department of Public Works and Services, Yellowknife, N.T. XIA 2L9. Time is of the essence because design must be completed in the current fiscal year and construction is scheduled to commence in fiscal year 1994/95. Finalizing this report will allow sufficient time for the design consultant to be engaged by the Department of Public Works and Services. Your assistance to help us meet this schedule will be much appreciated.

Thanks.



Attachment

Eddie Gordillo
Eddie Gordillo, P. Eng.,
Facility Planner
Technical Services Division
Public Works and Services



Buy North

WASHED SIEVE WORKSHEET

PROJECT: 1-22 193 Gris Field Lagoon

TEST DESCRIPTION: TPI

SAMPLE DESCRIPTION: Sandy material with a slight amount of gravel

A) Mass before washing: 870.9 grams N. Bucyk

B) Mass after washing: 854.7 grams July 12/94

C) Mass passing No. 200: 16.2 grams

SIEVE SIZES	MASS RETAINED	MULTIPLY BY FACTOR	MASS RETAINED	PERCENT RETAINED	PERCENT PASSING	FACTOR
U.S.	Metric					
3	75					◇
2 1/2	67					
2	50					X
1 1/2	37.5		0	0	100	
1	25		129.9	14.9	85.1	PAN X
3/4	19	◇	50.7	5.8	79.3	AMOUNT for Y
5/8	16	◇	32.3	3.7	75.6	
1/2	12.5	◇	59.4	6.8	68.8	Y
3/8	9.5	◇	44.2	5.1	63.7	
4	4.75	◇	84.2	9.7	54.0	◇
No. 3	2.36	◆	53.9	6.2	47.8	
No. 10	2	◆	15.0	1.7	46.1	
No. 16	1.18	◆	39.9	4.6	41.5	PAN Y x ◇
No. 30	0.600	◆	58.7	6.7	34.8	AMOUNT for Z
No. 40	0.425	◆	57.2	6.6	28.2	Z
No. 60	0.250	◆	79.3	9.1	19.1	
No. 100	0.150	◆	103.6	11.9	7.2	
No. 200	0.075	◆	40.3	4.6	2.6	
PAN		◆	3.5			
MATERIAL WASHED PASSING No. 200			C	16.2	AASHTO T-11 and 27	
TOTAL RETAINED			D	868.3		

$$OR = \frac{A \ 270.9 - D \ 868.3}{A \ 870.9} \times 100 = 0.30 \%$$



WASHED SIEVE WORKSHEET

PROJECT		15 22 193 Grize Ford Lagoon	
SAMPLE IDENTIFICATION		TP 2 2' (0.61m) - depth	
SAMPLE DESCRIPTION			
A) Mass before washing:	260.49	grams	TESTED BY N. Buyle
B) Mass after washing:	141.93	grams	
C) Mass passing No. 200:	126.56	grams	DATE July 12/94

SIEVE SIZES		MASS RETAINED	MULTIPLY BY FACTOR	MASS RETAINED	PERCENT RETAINED	PERCENT PASSING	FACTOR	
U.S.	Metric							
3	75						X	◇
2 1/2	63							
2	50							
1 1/2	37.5							
1	25							
3/4	19		◇				Y	◇
5/8	16		◇					
1/2	12.5		◇					
3/8	9.5		◇					
No. 4	4.75		◇					
No. 8	2.36		◆				Z	◆
No. 10	2		◆					
No. 16	1.18		◆					
No. 30	0.600		◆					
No. 40	0.425		◆					
No. 50	0.300		◆					
No. 100	0.150		◆					
No. 200	0.075		◆					
PAN			◆				AASHTO T-11 and 27	
MATERIAL WASHED PASSING No. 200			C					
TOTAL RETAINED			D					

COMMENTS

47.1% passing No. 200 sieve

$$\text{ERROR} = \frac{A}{A} - D \times 100 = \%$$

COMPLETED BY

DATE

REVIEWED BY

DATE

WASHED SIEVE WORKSHEET

PROJECT: 15 2 193 Grisfiord Lagoon

TEST LOCATION: 7P3 1' (0.30 m) - depth

SAMPLE DESCRIPTION: silty material containing gravel

A) Mass before washing: 920.6 grams TESTED BY: Ne. Bueytk

B) Mass after washing: 849.1 grams DATE: July 12/94

C) Mass passing No. 200: 71.5 grams

SIEVE SIZES		MASS RETAINED	MULTIPLY BY FACTOR	MASS RETAINED	PERCENT RETAINED	PERCENT PASSING	FACTOR
U.S.	Metric						
3	75						X
2 1/2	67						
2	50			0	0	100	
1 1/2	37.5			49.5	5.4	94.6	
1	25			0	0	94.6	
3/4	19	◇		36.5	4.0	90.6	Y
5/8	16	◇		42.3	4.6	86.0	
1/2	12.5	◇		69.6	7.6	78.4	
3/8	9.5	◇		63.5	6.9	71.5	
4	4.75	◇		116.1	12.6	58.9	
No. 8	2.36	◆		94.3	10.2	48.7	Z
No. 10	2	◆		28.3	3.1	45.6	
No. 16	1.18	◆		69.2	7.5	38.1	
No. 30	0.600	◆		69.9	7.6	30.5	
No. 40	0.425	◆		35.1	3.8	26.7	
No. 60	0.300	◆		36.8	4.0	22.7	
No. 100	0.150	◆		83.4	9.1	13.6	
No. 200	0.075	◆		46.8	5.1	8.5	
PAN		◆		6.0			
MATERIAL WASHED PASSING No. 200				C	71.5	AASHTO T-11 and 27	
TOTAL RETAINED				D	918.8		

PAN X
= AMOUNT for Y

PAN Y x ◇
= AMOUNT for Z

OR = $\frac{A \ 920.6 - D \ 849.1}{A \ 920.6} \times 100 = 0.20 \%$

REVIEWED BY: _____

TESTED BY: _____

WASHED SIEVE WORKSHEET

PROJECT: 15-22 193 Gristford Lagoon

SAMPLE DESCRIPTION: TP3 2' (0.61 m) - depth

Silty material containing large aggregate.

A) Mass before washing: 971.3 grams

B) Mass after washing: 880.4 grams

C) Mass passing No. 200: 90.9 grams

TESTED BY: N. Brayk

DATE: July 12/94

SIEVE SIZES	MASS	MULTIPLY BY	MASS	PERCENT	PERCENT	FACTOR
U.S.	Metric	FACTOR	RETAINED	RETAINED	PASSING	
3	75					◇
2 1/2	67					
2	50					X
1 1/2	37.5		0	0	100	
1	25		129.8	13.4	86.6	PAN X
3/4	19	◇	48.8	5.0	81.6	AMOUNT for Y =
5/8	16	◇	119.5	12.3	69.3	
1/2	12.5	◇	52.1	5.4	63.9	Y
3/8	9.5	◇	46.3	4.8	59.1	
4	4.75	◇	115.8	11.9	47.2	◇
No. 8	2.36	◇	102.0	10.5	36.7	
No. 10	2	◇	25.0	2.6	34.1	
No. 16	1.18	◇	58.3	6.0	28.1	
No. 30	0.600	◇	50.3	5.2	22.9	PAN Y x ◇ =
No. 40	0.425	◇	24.2	2.5	20.4	Z AMOUNT for Z =
No. 60	0.300	◇	24.5	2.5	17.9	
No. 100	0.150	◇	45.5	4.7	13.2	
No. 200	0.075	◇	33.1	3.4	9.8	
PAN		◇	5.1			

MATERIAL WASHED PASSING No. 200 C 90.9

TOTAL RETAINED 0 971.2

COMMENTS:

AASHTO T-11 and 27

OR = $\frac{A - C}{A} \times 100 = \frac{971.3 - 90.9}{971.3} \times 100 = 90.6\%$

APPROVED BY: _____

TESTED BY: _____

WASHED SIEVE WORKSHEET

PROJECT: 15 22 193 Grisford Lagoon

SAMPLE DESCRIPTION: Secondary Cell

SAMPLE DESCRIPTION: Gravel mixture with little fines

A) Mass before washing: 1305.2 grams

B) Mass after washing: 1285.0 grams

C) Mass passing No. 200: 20.2 grams

TESTED BY: N. Bucyk

DATE: July 12/94

SIEVE SIZES		MASS RETAINED	MULTIPLY BY FACTOR	MASS RETAINED	PERCENT RETAINED	PERCENT PASSING	FACTOR
U.S.	Metric						
3	75						X
2 1/2	67			0	0	100	
2	50			391.7	30.0	70.0	
1 1/2	37.5			0	0	70.0	
1	25			95.2	7.3	62.7	PAN X
3/4	19	◇		117.6	9.0	53.7	AMOUNT for Y
5/8	16	◇		161.5	12.4	41.3	Y
1/2	12.5	◇		157.2	12.0	29.3	
3/8	9.5	◇		73.6	5.6	23.7	
4	4.75	◇		210.1	16.1	7.6	◆
No. 8	2.36	◆		45.0	3.4	4.2	Z
No. 10	2	◆		3.2	0.2	4.0	
No. 16	1.18	◆		6.0	0.5	3.5	
No. 30	0.600	◆		7.4	0.6	2.9	
No. 40	0.425	◆		4.0	0.3	2.6	
No. 60	0.300	◆		2.4	0.2	2.4	
No. 100	0.150	◆		3.6	0.3	2.1	
No. 200	0.075	◆		3.8	0.3	1.8	
PAN		◆		1.5			
MATERIAL WASHED PASSING No. 200				C	20.2	AASHTO T-11 and 27	
TOTAL RETAINED				D1304.0			

$$DR = \frac{A 1305.2 - D 1304}{A 1305.2} \times 100 = 0.09 \%$$

COMPILED BY

RECEIVED BY