APPENDIX C

QC and QA Construction Approval Forms and Site Correspondence

C1: Foundation Approval Forms

C2: Golder Site Memoranda

C3: Weekly Reports

C1 – Foundation Approval Forms

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 30+000 Offset N/A	SHIFT: NIGHT :☐ DAY :☒	DATE : August 13, 2009	SHEET 1 OF 1
To Sta. 30+050 Offset N/A.	LOCATION: : Bay-Goose Dike		
EQUIPMENT: N/A			

DESCRIPTION BEDROCK SURFACE PREPARATION FOR CORE BACKFILL, STA. 30+000 to STA. 30+050

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings		PM3. FGL VERBALLY CONFIRMED SURVEY PICKUP.
2.	Storage areas planned for disposal of removed materials		PM3
3.	Occurrence of snow and ice removal method in place		N/A
4.	Occurrence of boulders and removal method in place		N/A.
5.	Occurrence of hummocks and scalping method in place		N/A
6.	Occurrence of surface and ground water and its impact mitigation in place		N/A
7.	Presence of other unsuitable materials and removal method in place		N/A
8.	Soil frozen or thawed and measures taken		N/A.
9.	Blasting requirement to remove unsuitable material and safety measure checked		N/A
10.	Adjustment made to suit design in field		PM3.
11.	Final walkover inspection before re-sloping or fill placement		PM3.
12.	"As-excavated" survey conducted		PM3 FGL TO PROVIDE COPY
13.	Final sounding conducted of lake bottom surface		N/A.

REMARKS : Foundation preparation approved for the section 30+000 to 30+050. Surveying approved based on visual observation.
Surface approved for fill placement - Toe core adjustment detail discussed and agreed upon with FGL, AGM + GAL → GAL to provide X-sec and profile of the core detail.

DEVIATIONS : (Attach list if necessary)

N/A

DATE OF RECTIFICATION : N/A

SURVEY VERIFICATION	ACCEPTED BY QA Manager :	ACCEPTED BY OWNER :
NAME: _____	NAME: Paul Bedell	NAME: _____
SIGNATURE : _____	SIGNATURE : _____	SIGNATURE : _____
DATE _____	DATE 13/08/2009	DATE _____

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 30+050 Offset -3.0 m to 4.8 m	SHIFT: NIGHT :☐ DAY :☒	DATE : 15 AUG 2009	SHEET 1 OF 1
To Sta. 30+120 Offset -3.0 m to 4.8 m	LOCATION: : TRENCH EXCAVATION		
EQUIPMENT: 385 + 345 EXCAVATORS			

DESCRIPTION

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings		
2.	Storage areas planned for disposal of removed materials		N/A
3.	Occurrence of snow and ice removal method in place		N/A
4.	Occurrence of boulders and removal method in place		
5.	Occurrence of hummocks and scaling method in place		
6.	Occurrence of surface and ground water and its impact mitigation in place		N/A
7.	Presence of other unsuitable materials and removal method in place		
8.	Soil frozen or thawed and measures taken		N/A
9.	Blasting requirement to remove unsuitable material and safety measure checked		N/A.
10.	Adjustment made to suit design in field		N/A
11.	Final walkover inspection before re-sloping or fill placement		
12.	"As-excavated" survey conducted		
13.	Final sounding conducted of lake bottom surface		

REMARKS : SURVEY TO BE PREPARED TO SHOW D/S LIMIT OF INITIAL CORE PLANS. BACKFILL AGAINST IN SITU SOILS.

DEVIATIONS : (Attach list if necessary)

N/A

DATE OF RECTIFICATION :

SURVEY VERIFICATION	ACCEPTED BY QA Manager :	ACCEPTED BY OWNER :
NAME: GUY MORISSETTE	NAME: PAUL TSEDEE	NAME: G. BLANCHETTE
SIGNATURE :	SIGNATURE :	SIGNATURE :
DATE 15 Aout 09	DATE 15 AUG 2009	DATE AUGUST 15th, 2009

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 30+000 Offset N/A	SHIFT: NIGHT: ☐ DAY: ☒	DATE: August 13, 2009	SHEET 1 OF 1
To Sta. 30+050 Offset N/A.	LOCATION: Bay-Goose Dike		
EQUIPMENT: N/A			

DESCRIPTION BEDROCK SURFACE PREPARATION FOR CORE BACKFILL, STA. 30+000 to STA. 30+050.

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings		RGL VERBALLY CONFIRMED SURVEY DRAWG.
2.	Storage areas planned for disposal of removed materials		
3.	Occurrence of snow and ice removal method in place		N/A
4.	Occurrence of boulders and removal method in place		N/A.
5.	Occurrence of hummocks and scalping method in place		N/A
6.	Occurrence of surface and ground water and its impact mitigation in place		N/A
7.	Presence of other unsuitable materials and removal method in place		N/A
8.	Soil frozen or thawed and measures taken		N/A.
9.	Blasting requirement to remove unsuitable material and safety measure checked		N/A
10.	Adjustment made to suit design in field		
11.	Final walkover inspection before re-sloping or fill placement		
12.	"As-excavated" survey conducted		RGL TO PROVIDE COPY
13.	Final sounding conducted of lake bottom surface		N/A.

REMARKS: Foundation preparation approved for the section 30+000 to 30+050. Surveying approved based on visual observation, Surface approved for fill placement - Tie in adjustment detail discussed and agreed upon with FGL, AGM + GAL → GAL to provide X-sand drawing of the coredetail.

DEVIATIONS: (Attach list if necessary)

N/A

DATE OF RECTIFICATION: N/A

SURVEY VERIFICATION	ACCEPTED BY QA Manager:	ACCEPTED BY OWNER:
NAME: _____	NAME: Paul Bedell	NAME: _____
SIGNATURE: _____	SIGNATURE: _____	SIGNATURE: _____
DATE _____	DATE 13/08/2009	DATE _____

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 30+050 Offset -3.8m to 4.8m	SHIFT: NIGHT :☐ DAY :☒	DATE : 15 AUG 2009	SHEET 1 OF 1
To Sta. 30+120 Offset -3.0m to 4.8m	LOCATION: : TRENCH EXCAVATION		
EQUIPMENT: 385 + 345 EXCAVATORS			

DESCRIPTION

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	GM	FM
2.	Storage areas planned for disposal of removed materials		N/A
3.	Occurrence of snow and ice removal method in place		N/A
4.	Occurrence of boulders and removal method in place	GM	FM
5.	Occurrence of hummocks and scaling method in place	GM	FM
6.	Occurrence of surface and ground water and its impact mitigation in place		N/A
7.	Presence of other unsuitable materials and removal method in place	GM	FM
8.	Soil frozen or thawed and measures taken		N/A
9.	Blasting requirement to remove unsuitable material and safety measure checked		N/A
10.	Adjustment made to suit design in field		N/A
11.	Final walkover inspection before re-sloping or fill placement	GM	FM
12.	"As-excavated" survey conducted	GM	FM
13.	Final sounding conducted of lake bottom surface	GM	FM

REMARKS : SURVEY TO BE PREPARED TO SHOW D/S LIMIT OF INITIAL CORE PLANS. BACKFILL AGAINST IN SITU SOILS.

DEVIATIONS : (Attach list if necessary)

N/A

DATE OF RECTIFICATION :

SURVEY VERIFICATION	ACCEPTED BY QA Manager :	ACCEPTED BY OWNER :
NAME: GUY MORISSETTE	NAME: PAUL TESSIER	NAME: G. BLANCHETTE
SIGNATURE :	SIGNATURE :	SIGNATURE :
DATE 15 Août 09	DATE 15 AUG 2009	DATE AUGUST 15th, 2009

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 30+120 Offset -3.6 m to +6.8 m	SHIFT: NIGHT: ☐ DAY: ☒	DATE: 18 JUN 2009	SHEET 1 OF 1
To Sta. 30+220 Offset -3.6 m L +6.8 m	LOCATION.:		
EQUIPMENT: 345 & 345 EXCAVATOR	TRENCH EXCAVATION		

DESCRIPTION

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings		
2.	Storage areas planned for disposal of removed materials		N/A
3.	Occurrence of snow and ice removal method in place		N/A
4.	Occurrence of boulders and removal method in place		
5.	Occurrence of hummocks and scalping method in place		
6.	Occurrence of surface and ground water and its impact mitigation in place		N/A
7.	Presence of other unsuitable materials and removal method in place		
8.	Soil frozen or thawed and measures taken		N/A
9.	Blasting requirement to remove unsuitable material and safety measure checked		N/A
10.	Adjustment made to suit design in field		
11.	Final walkover inspection before re-sloping or fill placement		
12.	"As-excavated" survey conducted		
13.	Final sounding conducted of lake bottom surface		

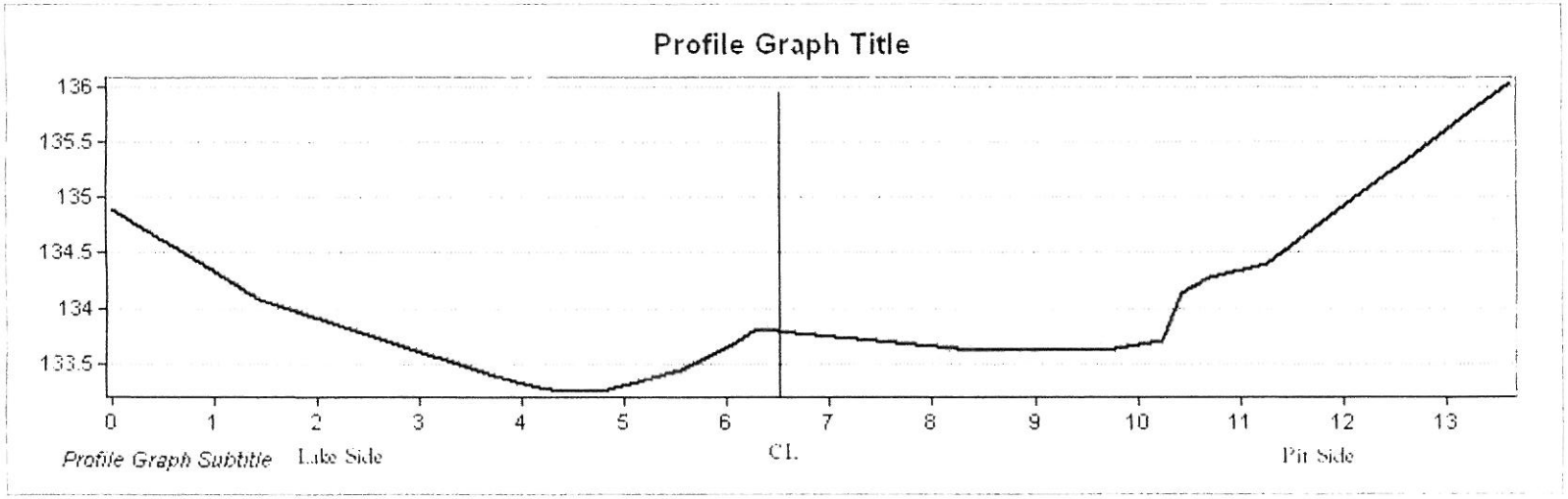
REMARKS: CONSTRUCTION X-S'S REVIEWED. REVISIONS STAKED, NECESSARY FOR - STA 30+155, 30+170, 30+175, 30+180, 30+185, 30+195 AND 30+215

DEVIATIONS: (Attach list if necessary)

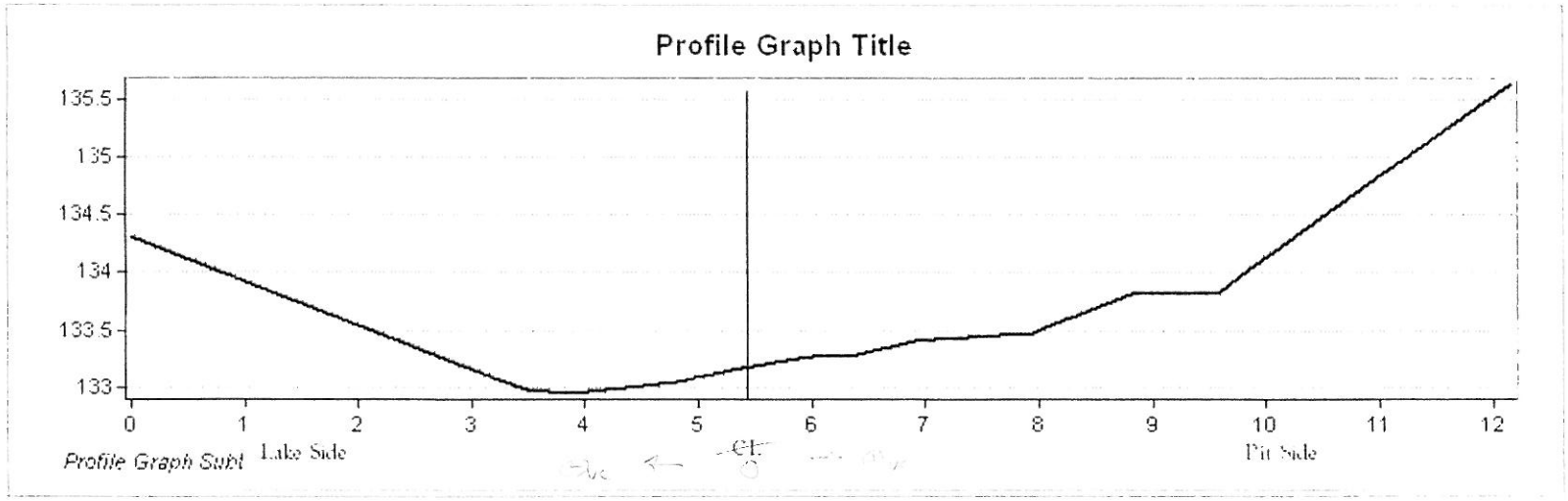
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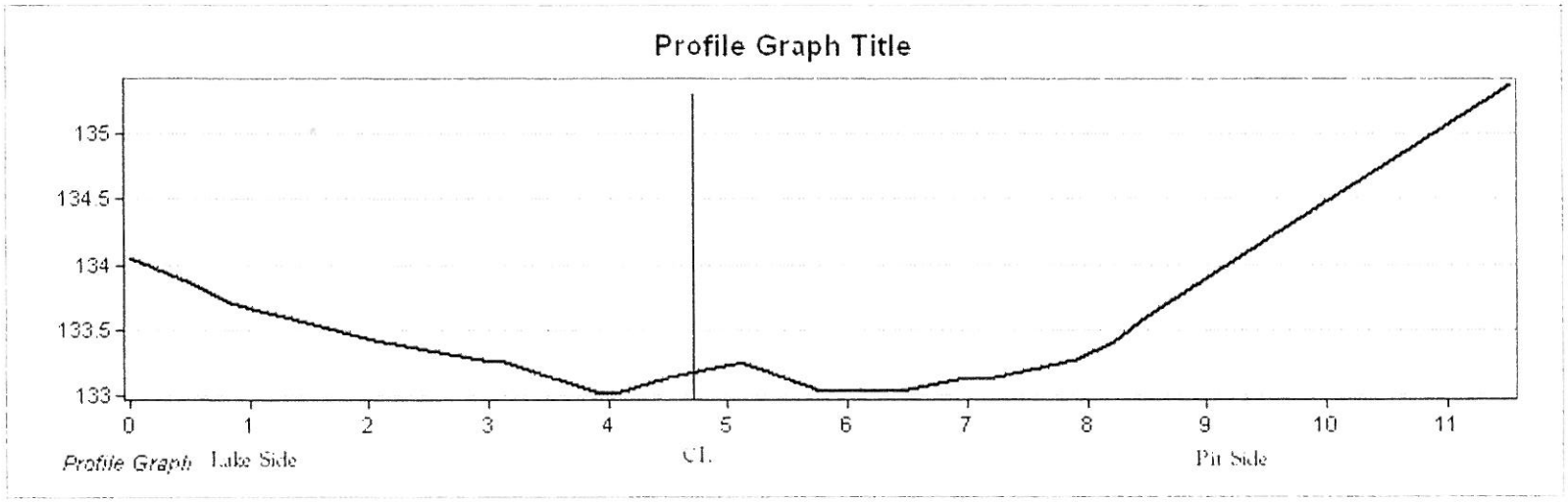
SURVEY VERIFICATION	ACCEPTED BY QA Manager:	ACCEPTED BY OWNER:
NAME: GUY MASSETTE	NAME: PAUL BADER	NAME:
SIGNATURE:	SIGNATURE:	SIGNATURE:
DATE 18 AUG. 2009	DATE 18 JUN 2009	DATE


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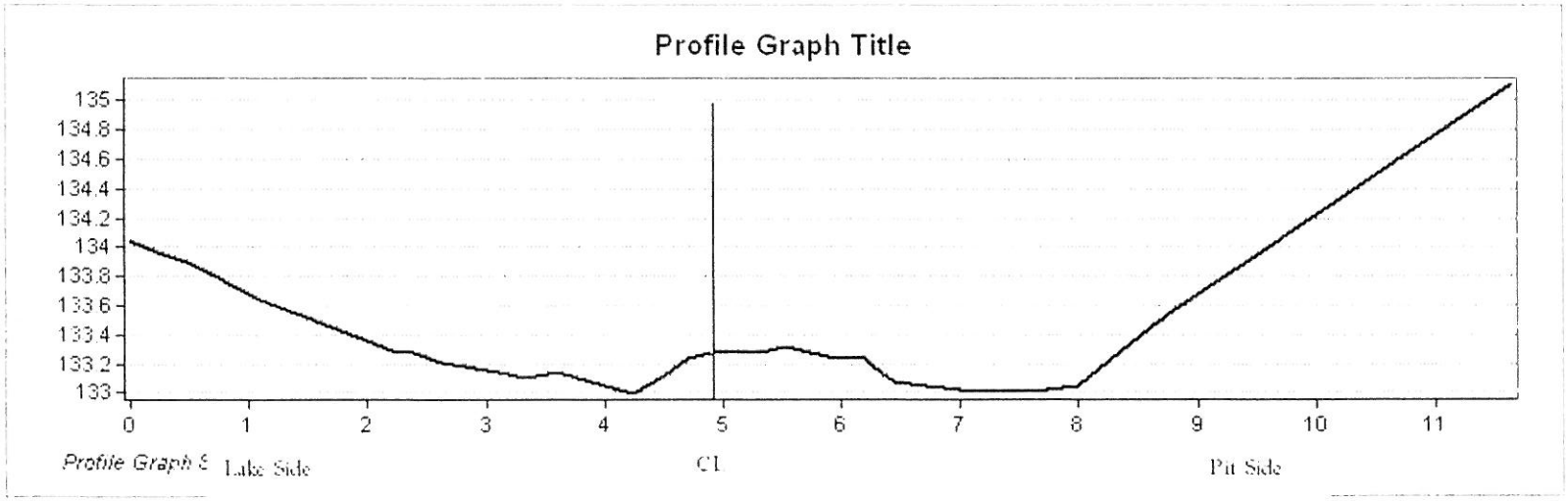
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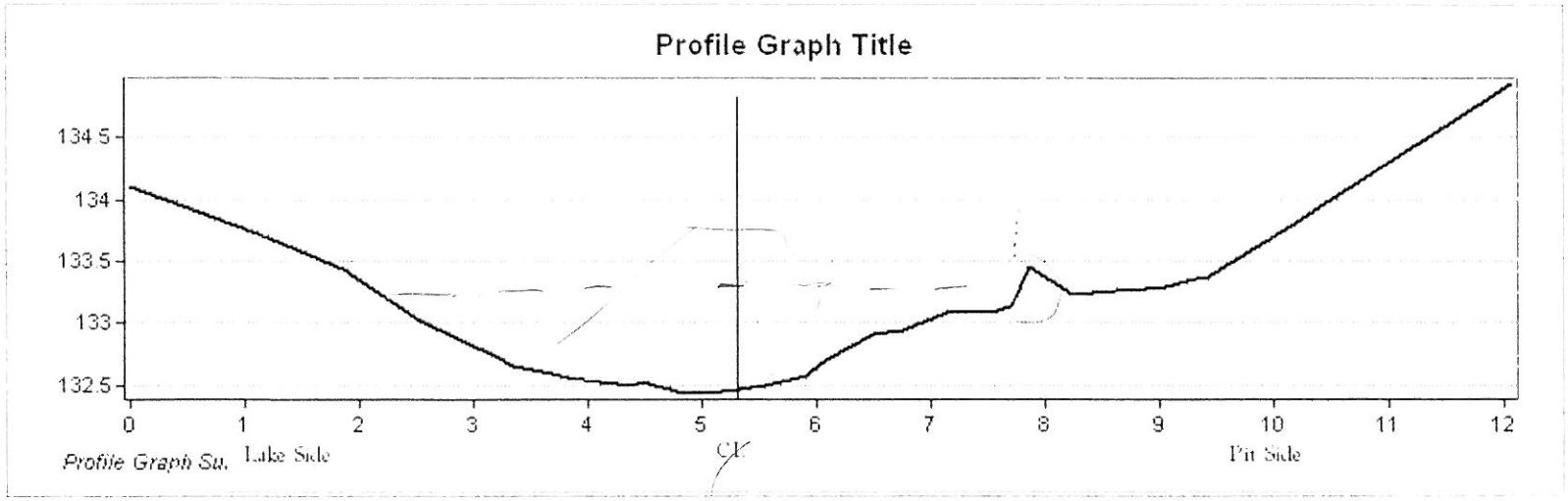
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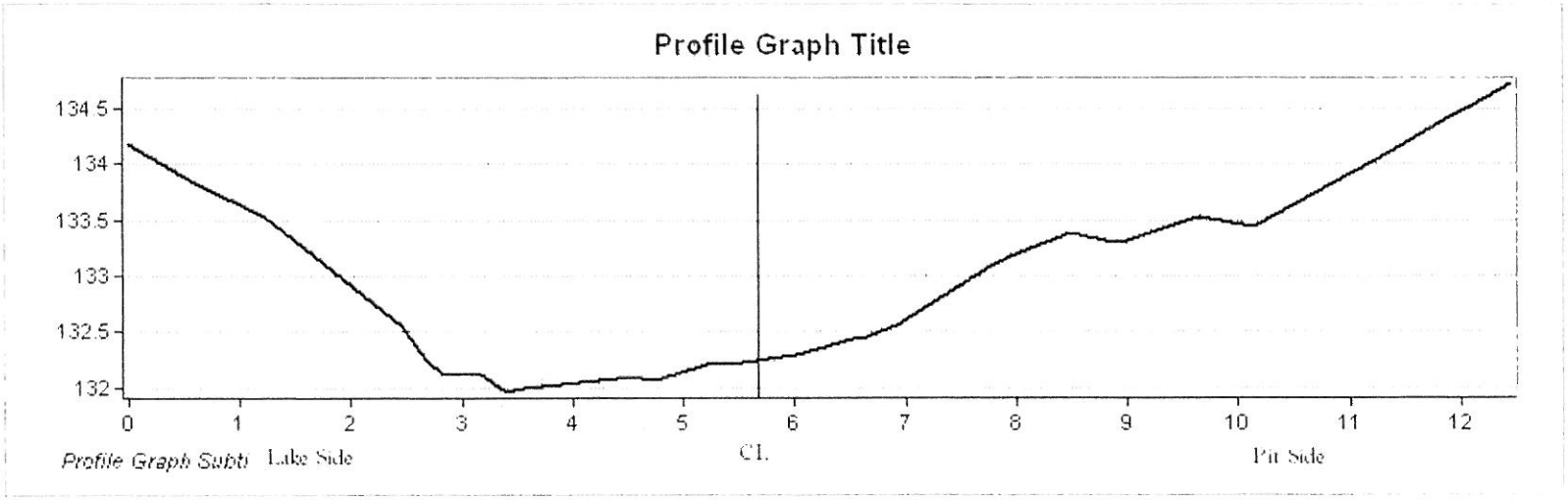
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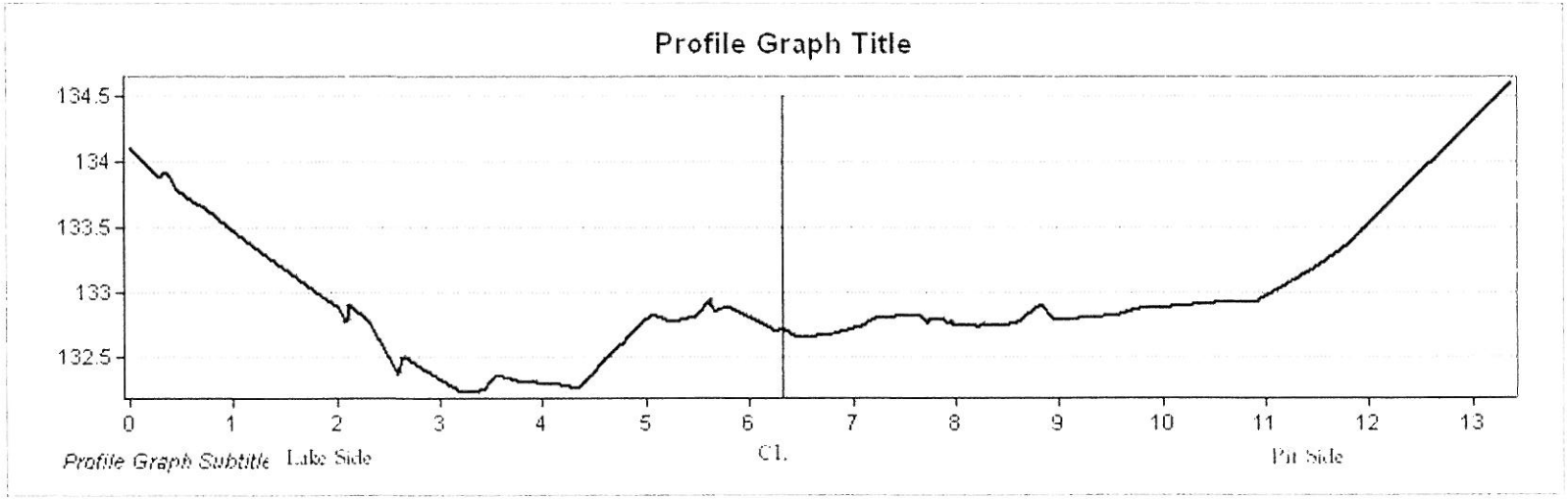
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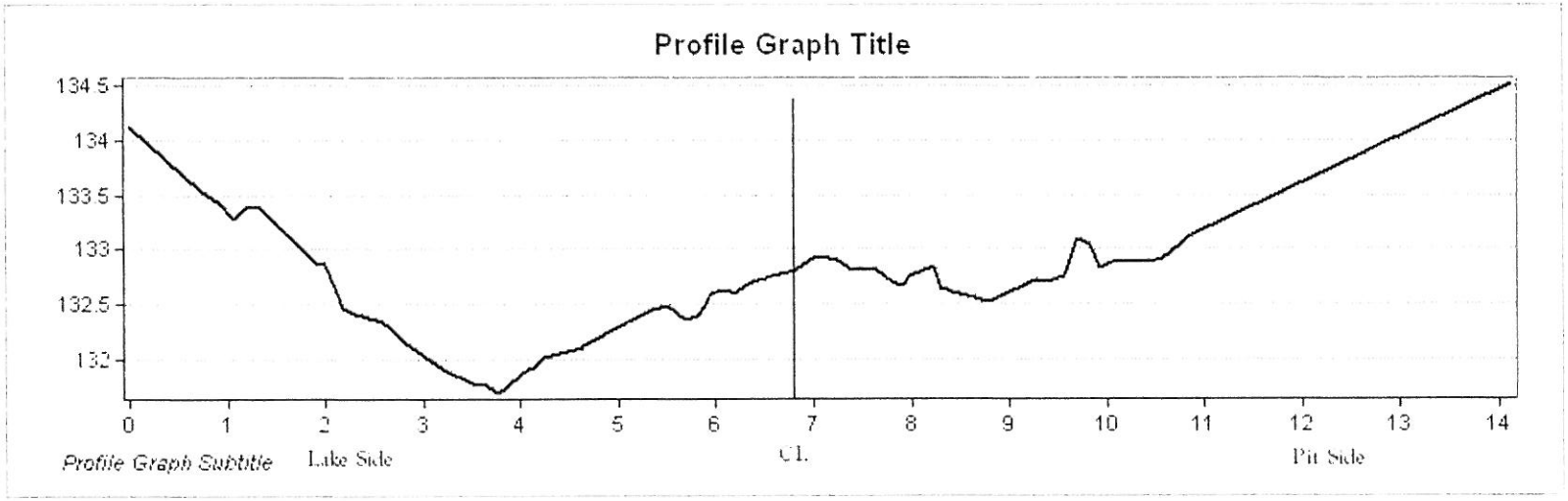

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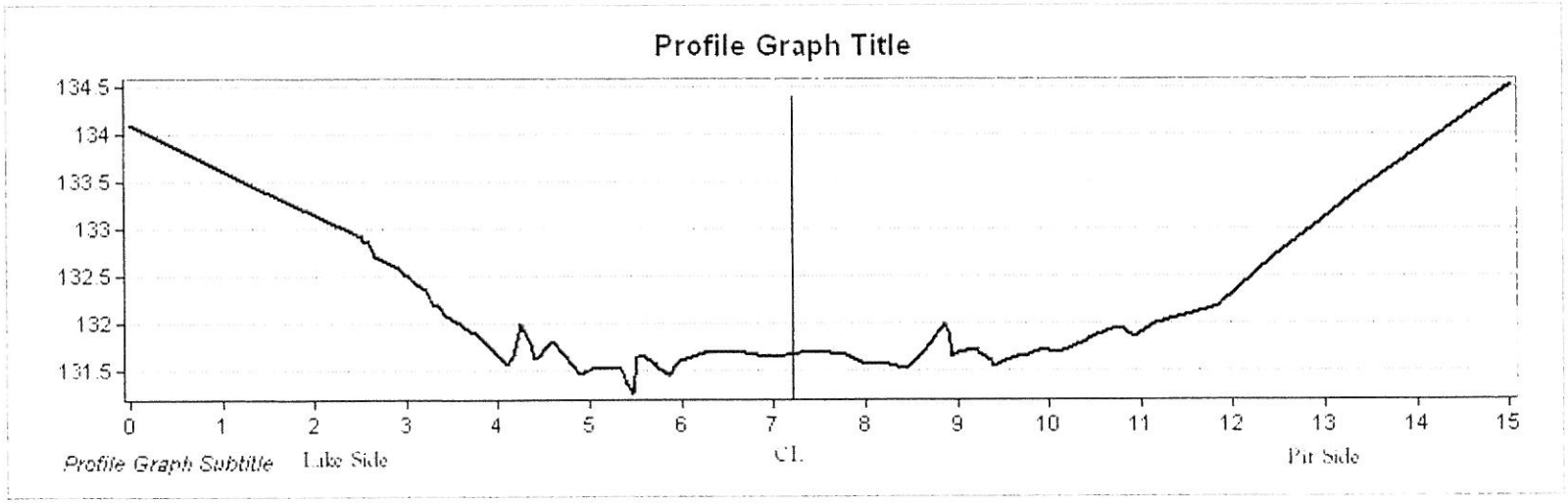

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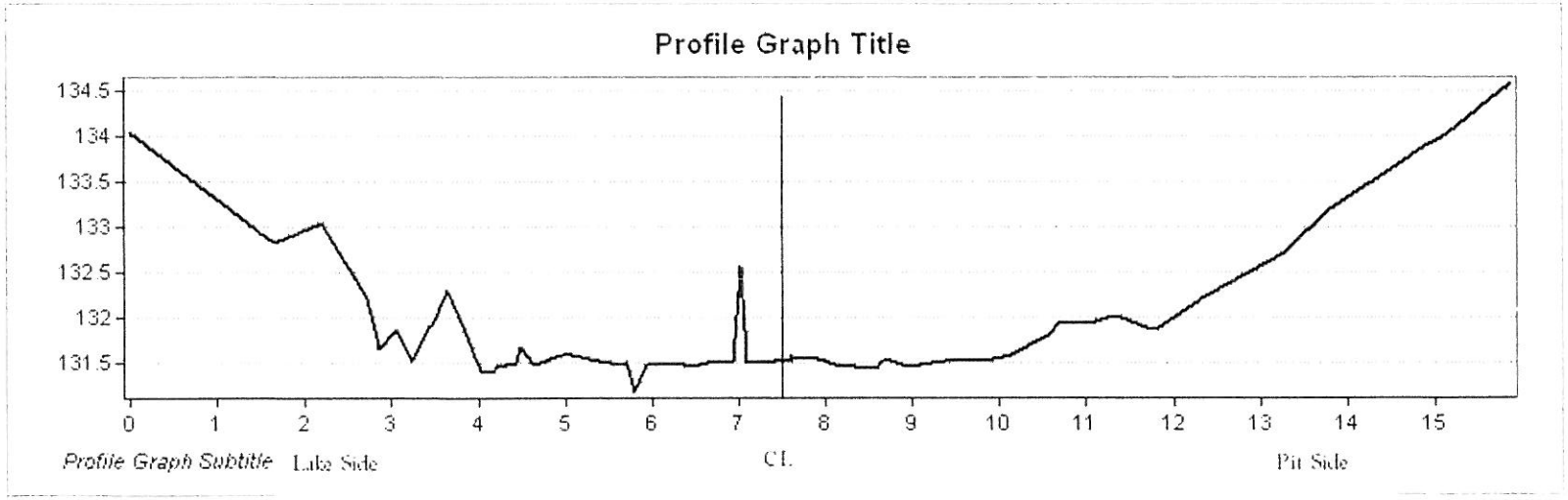

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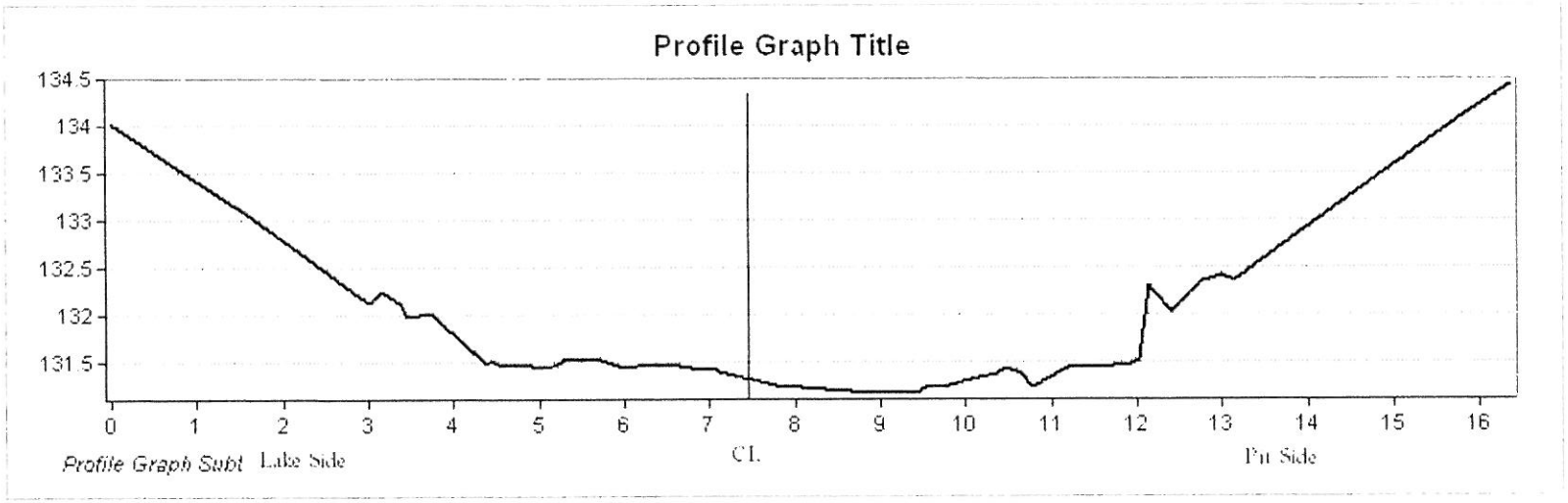
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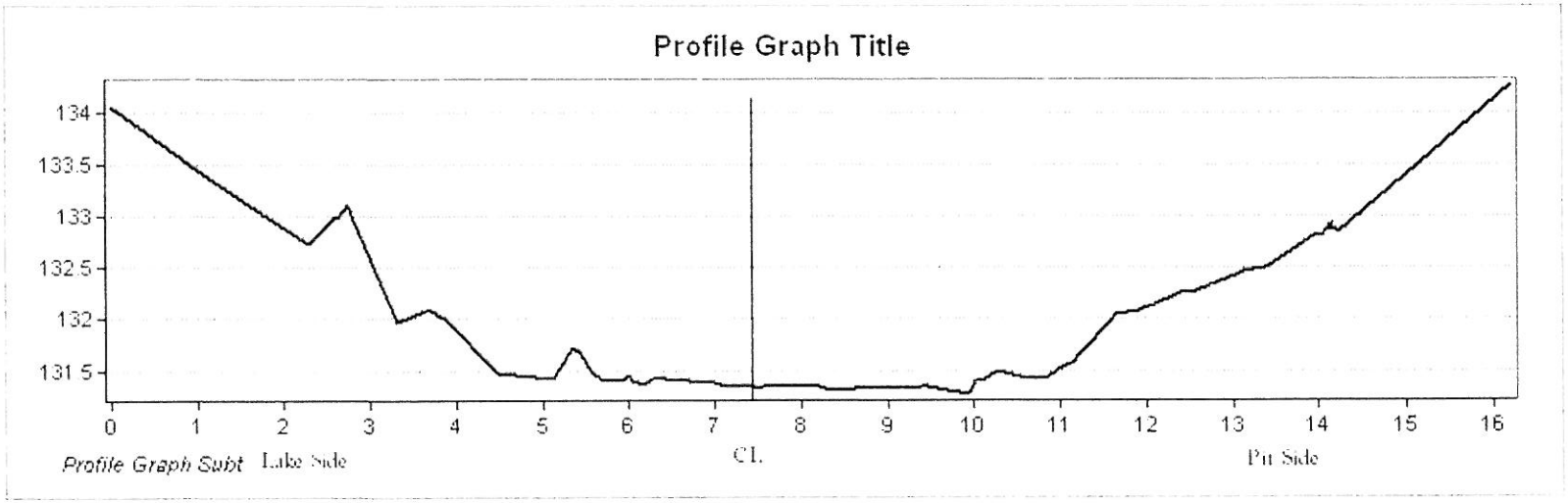
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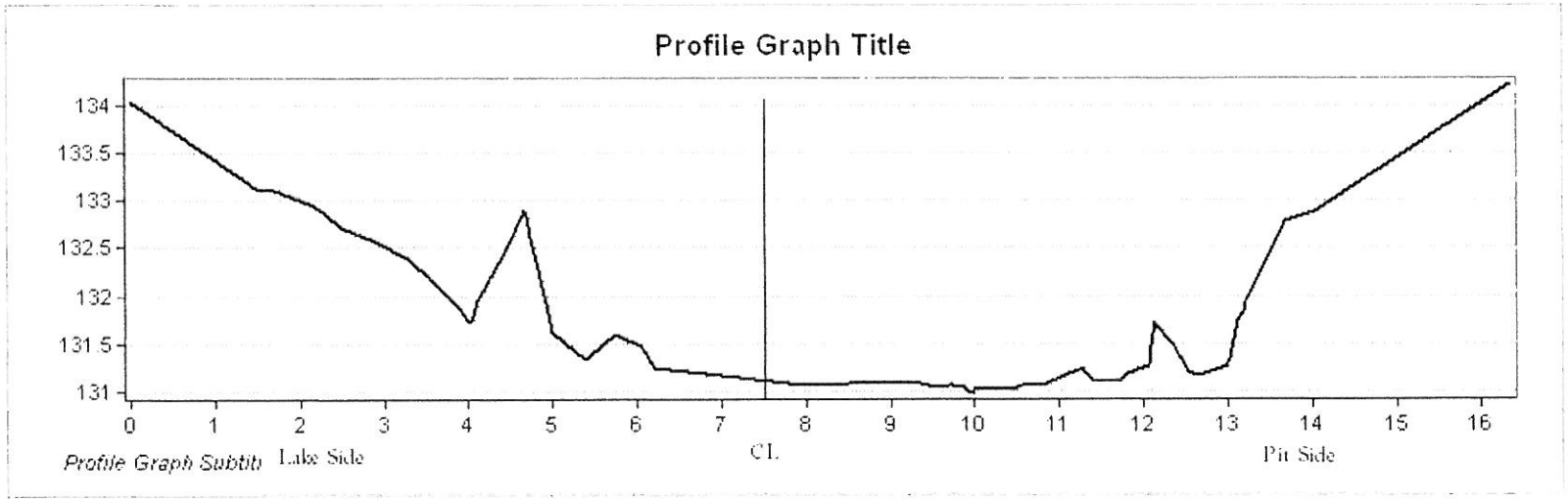

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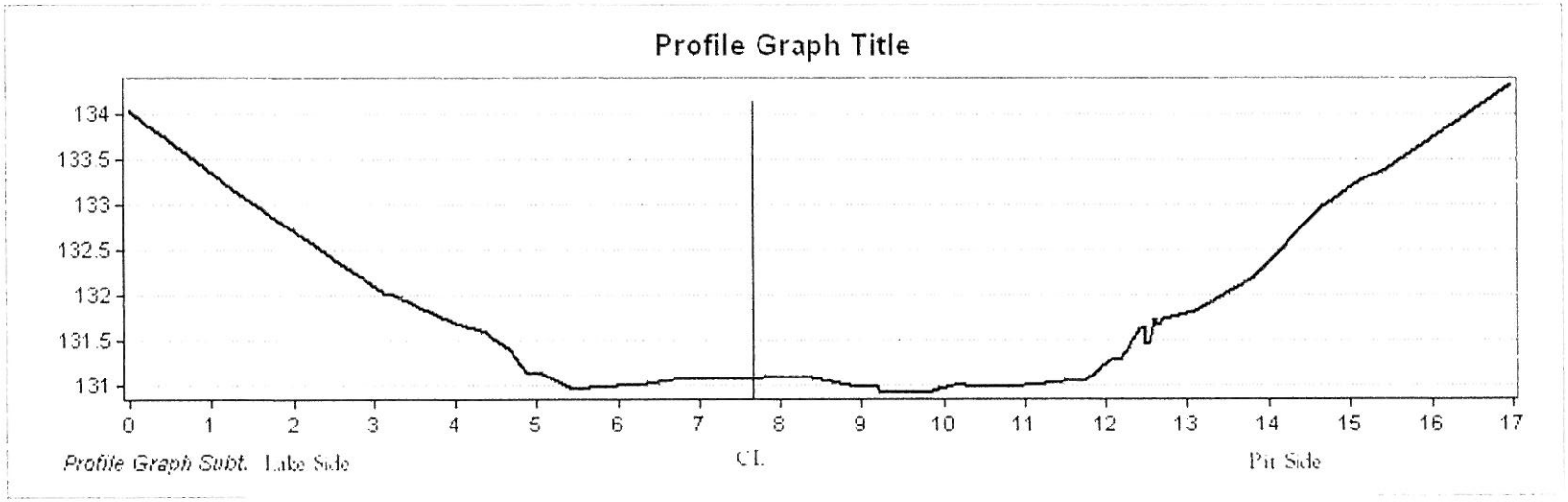
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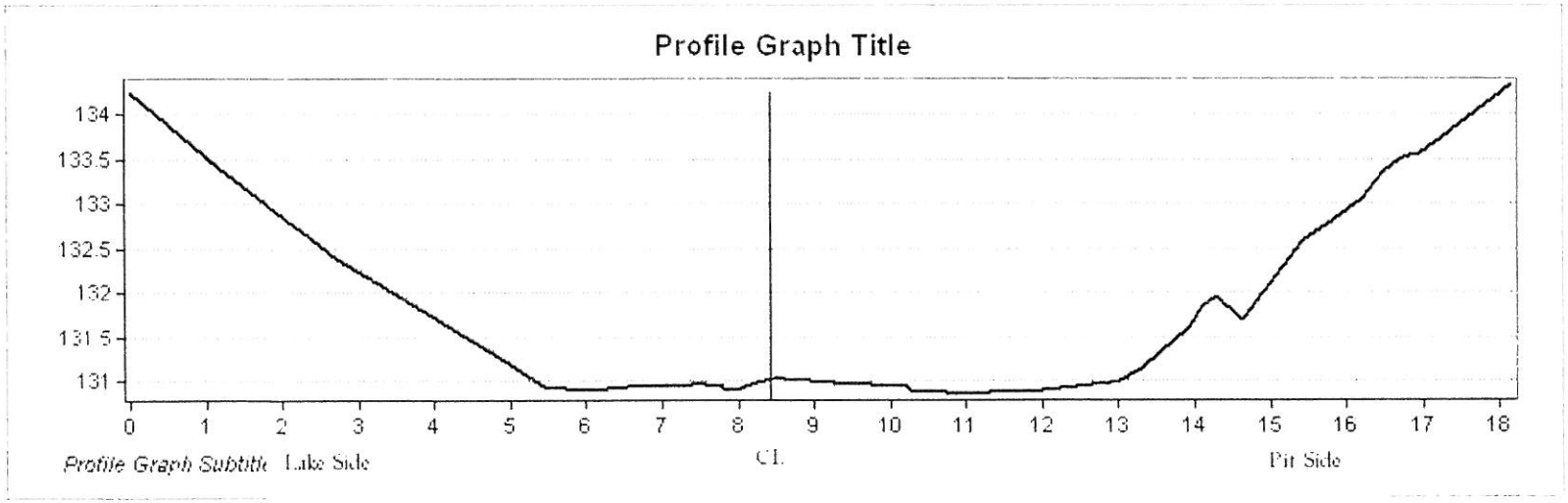
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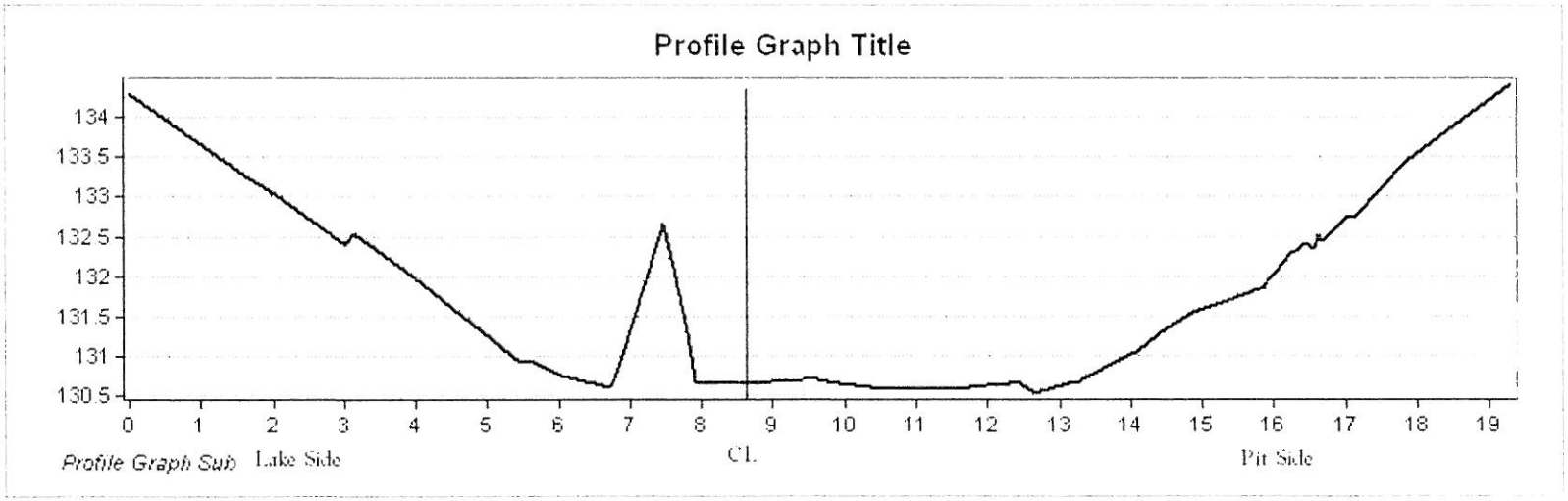

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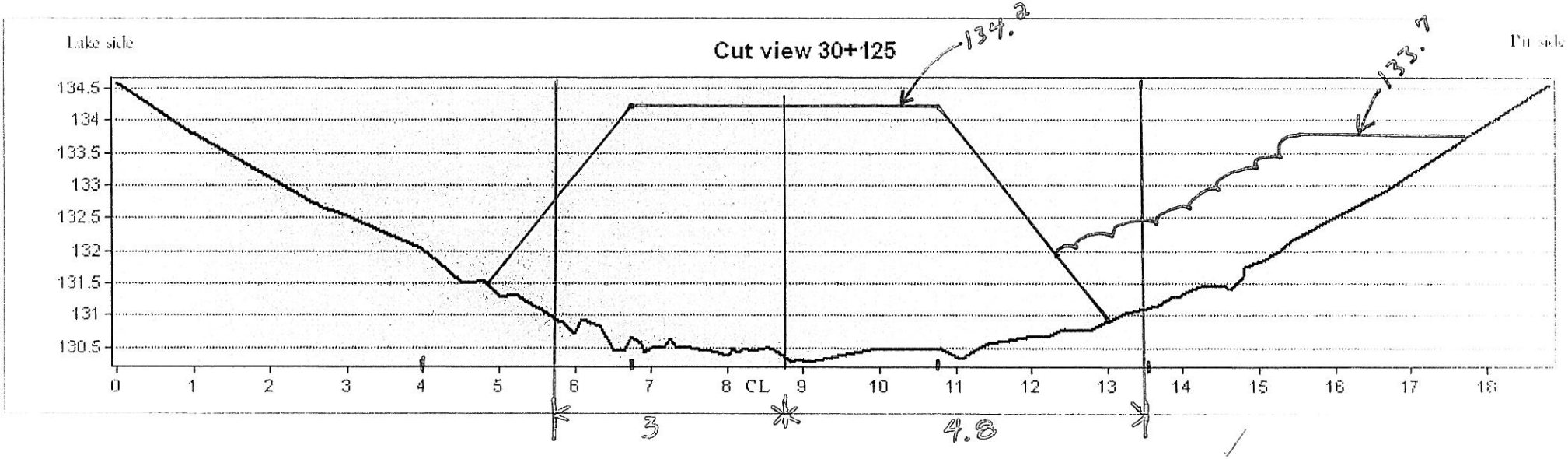
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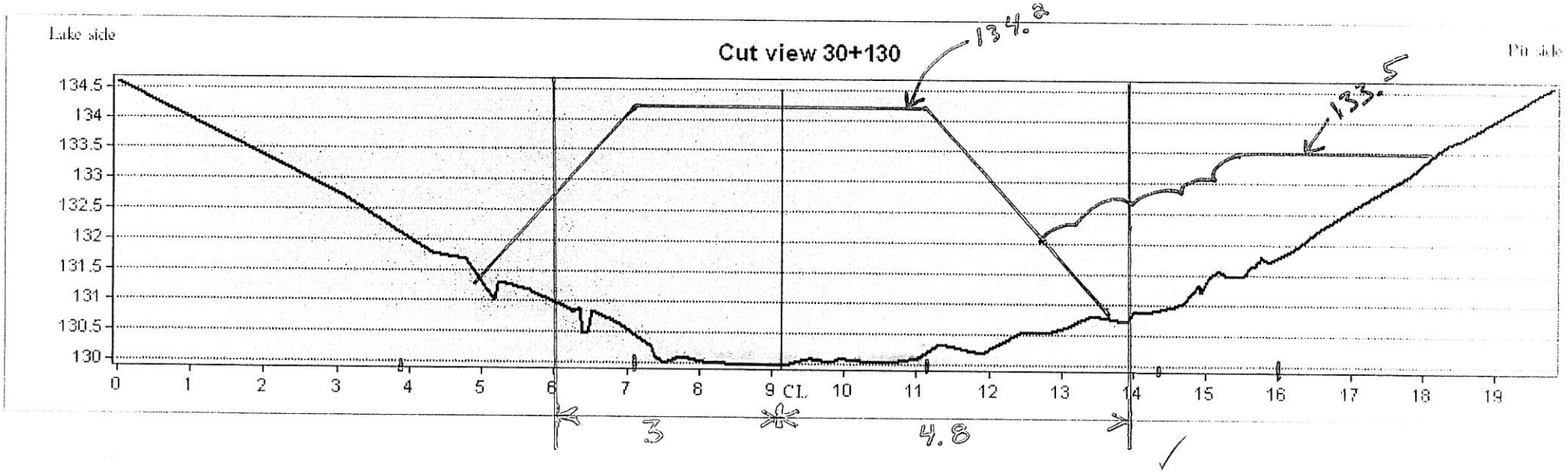

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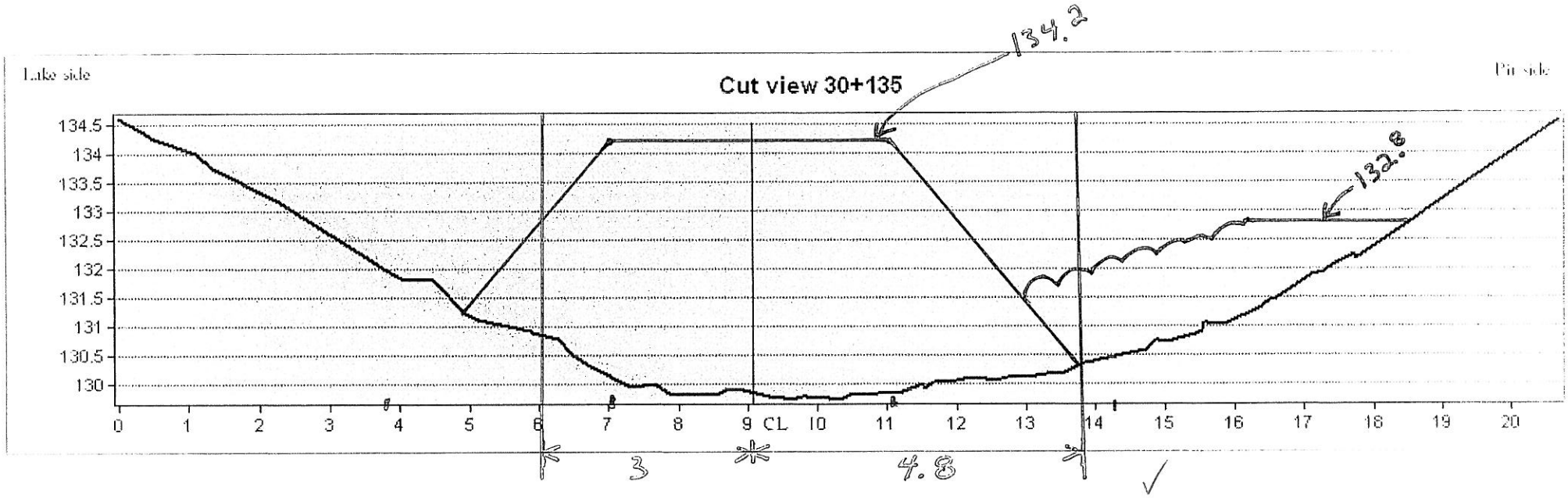

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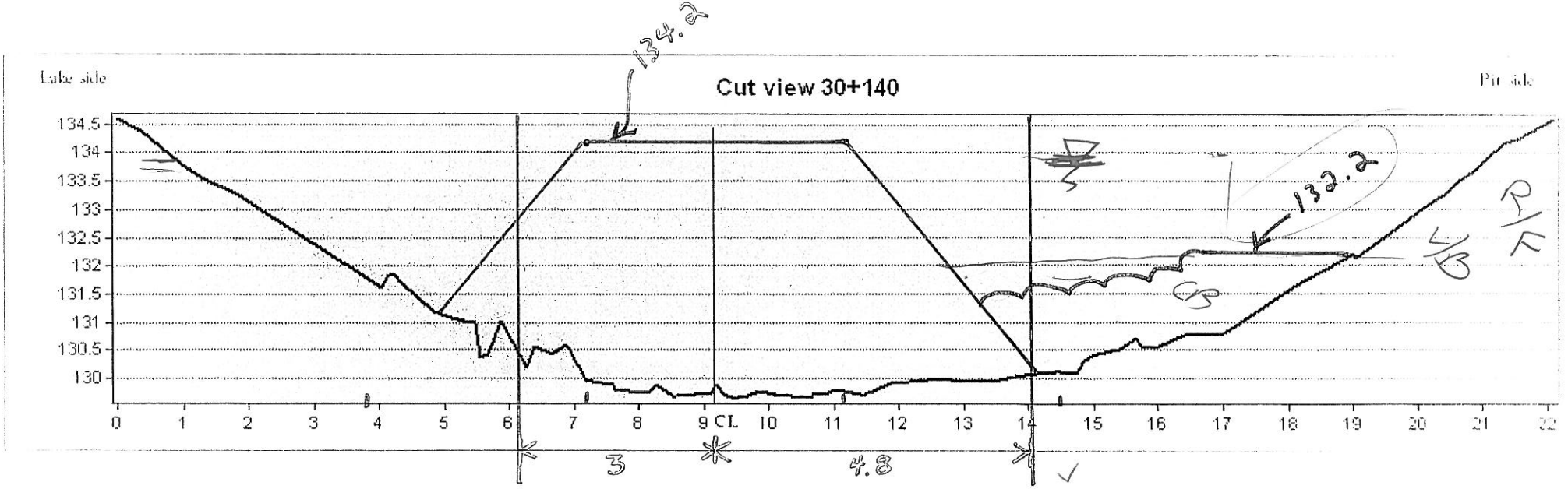
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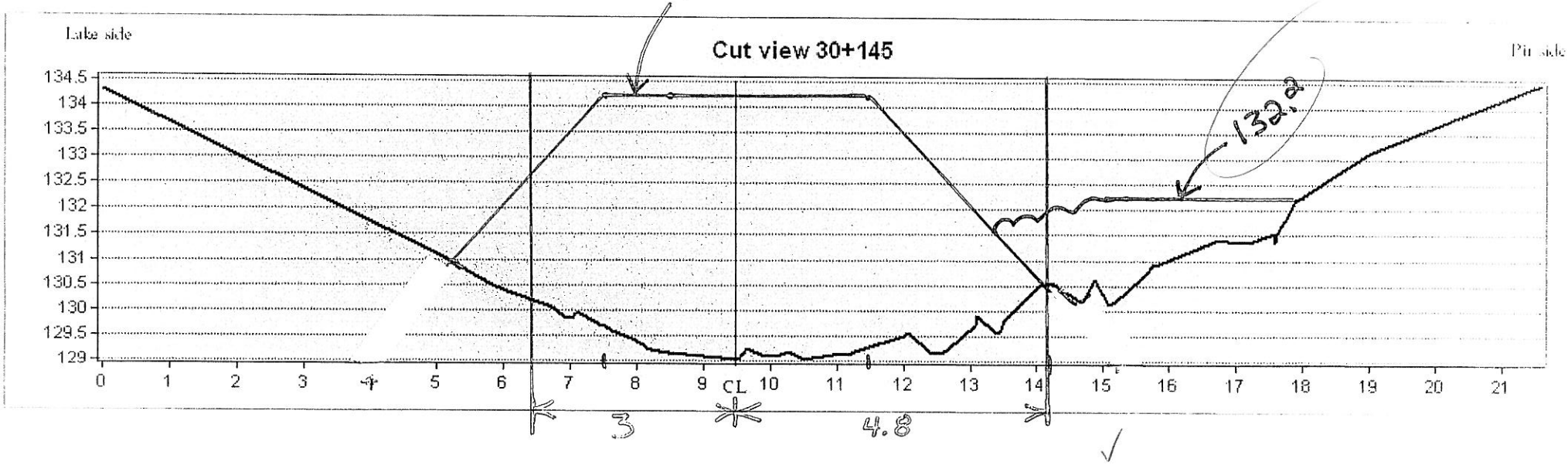

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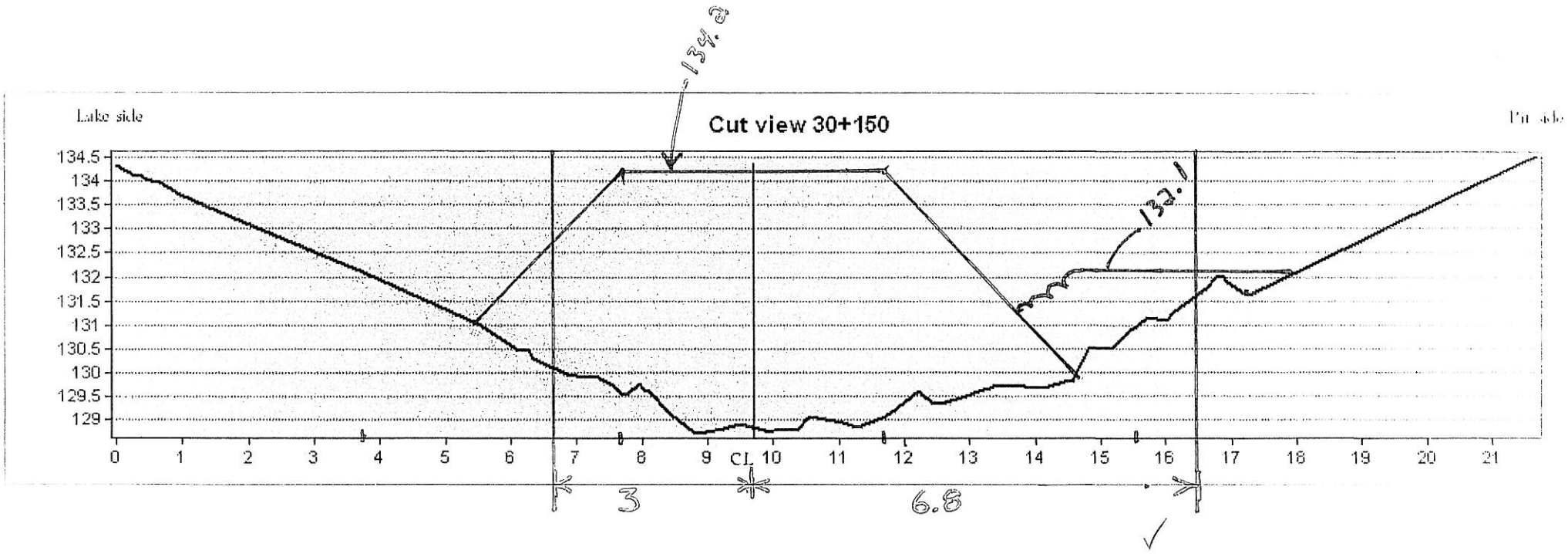

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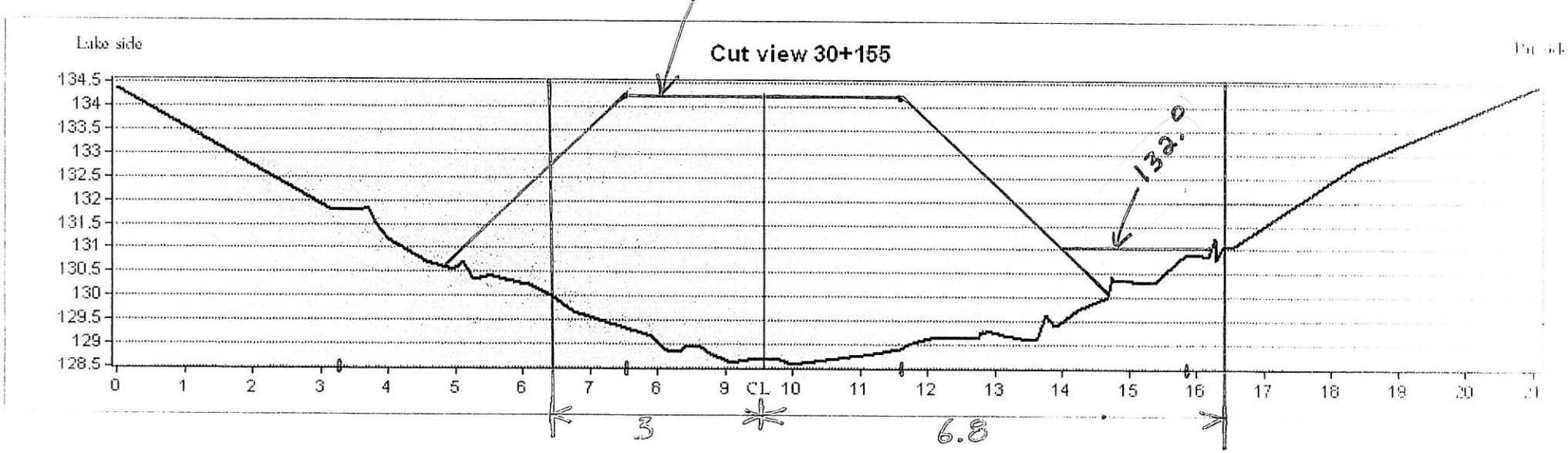

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133.5
133
132.5
132
131.5
131
130.5
130
0 1 2 3 4 5 6 7 8 9 CL 10 11 12 13 14 15 16 17 18 19 20
3
4.8

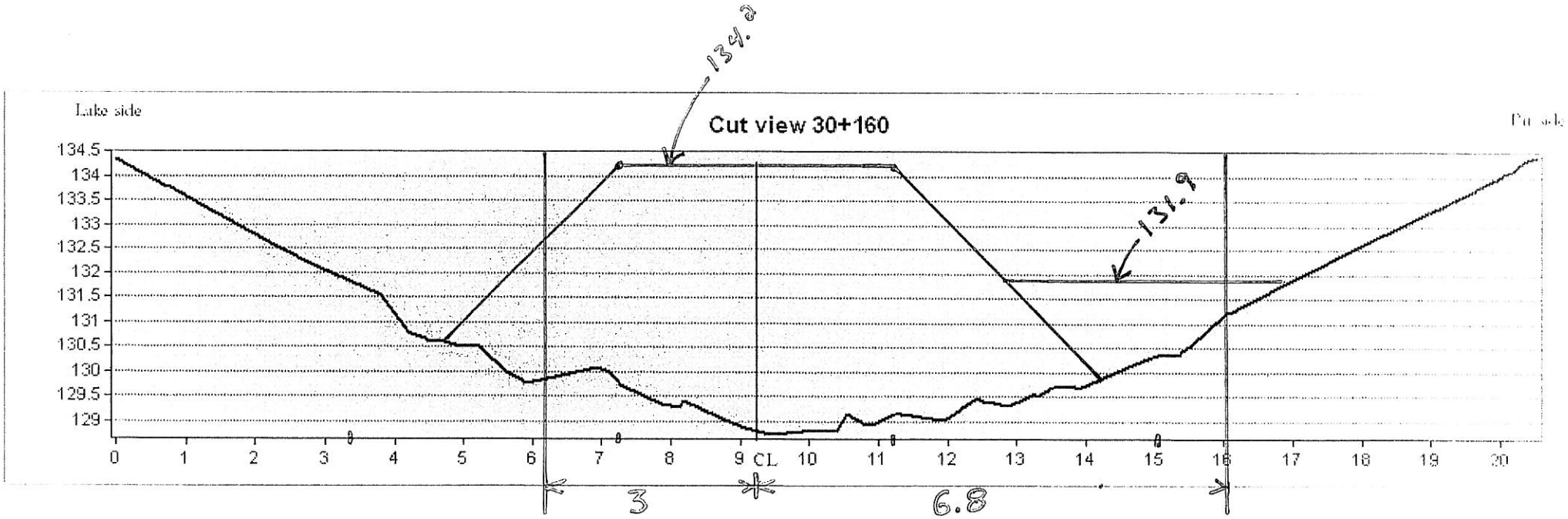
WL 1341
Existing 1337
1322
1.5

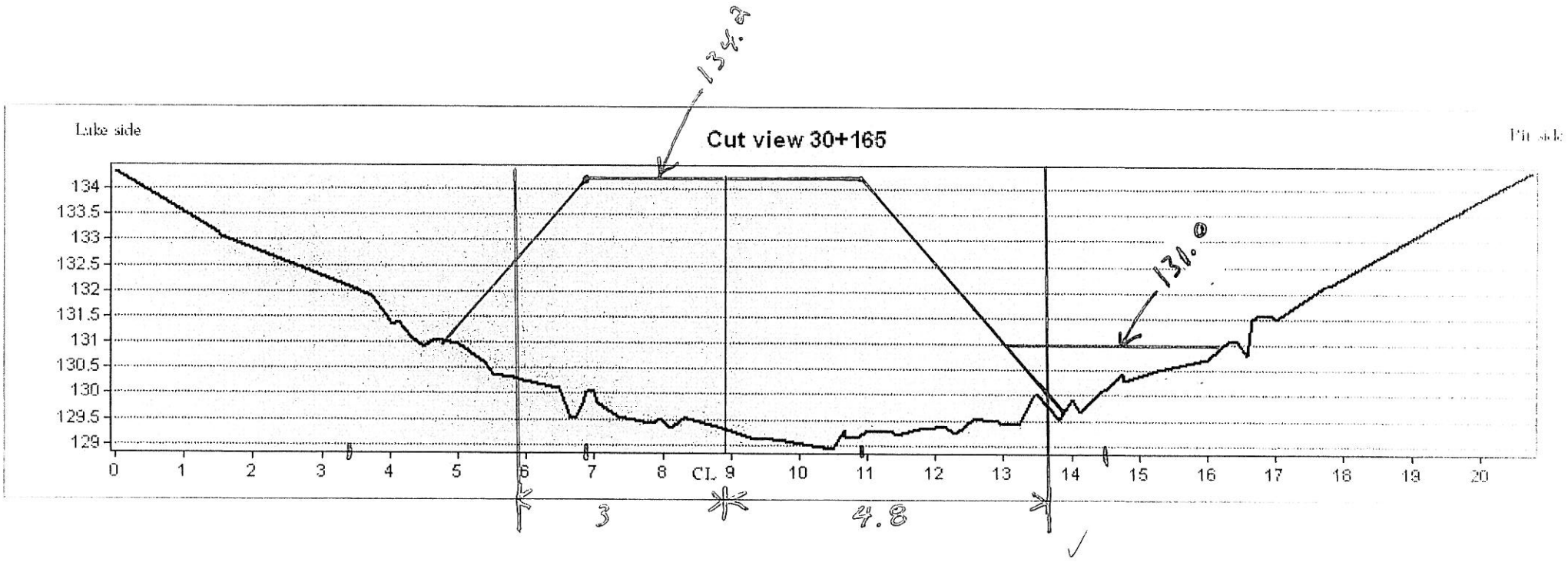


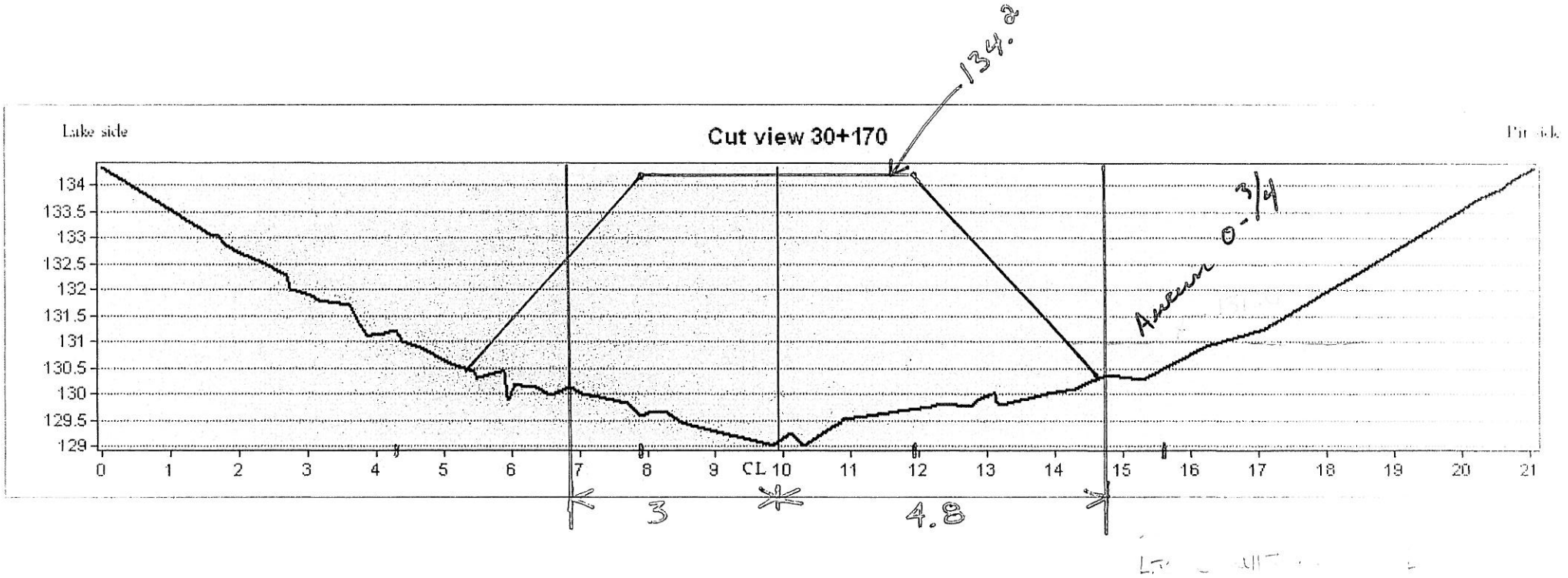

Lake side
Cut view 30+145
Pit side
134.5
134
133.5
133
132.5
132
131.5
131
130.5
130
129.5
129
0 1 2 3 4 5 6 7 8 9 CL 10 11 12 13 14 15 16 17 18 19 20 21
134.2
132.2
3
4.8

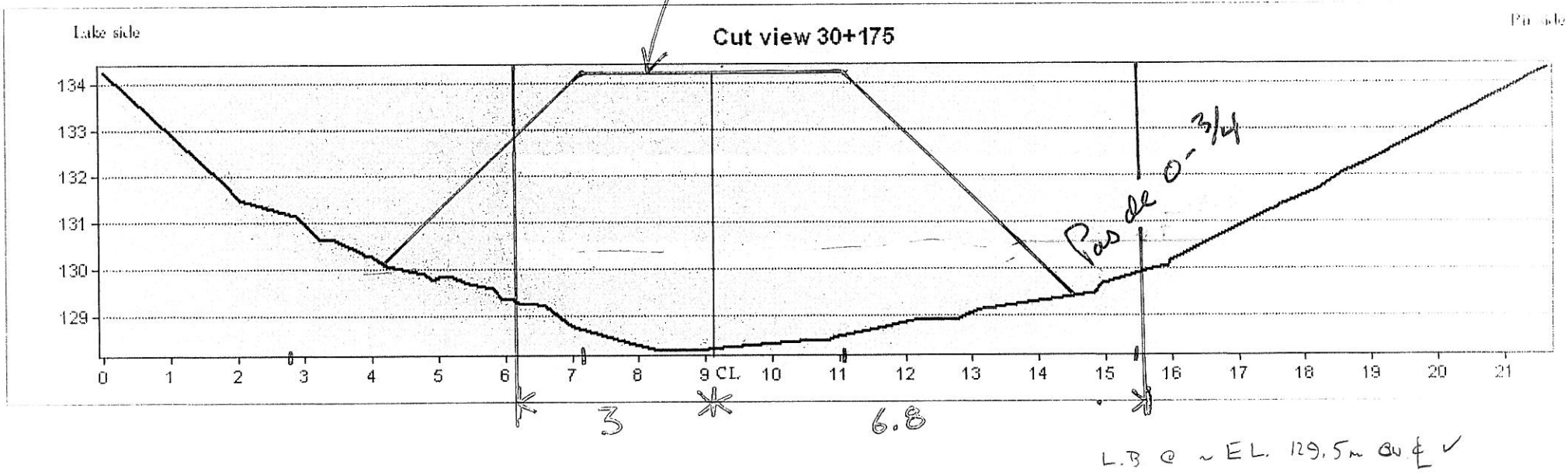

Lake side
Cut view 30+150
134.5
134
133.5
133
132.5
132
131.5
131
130.5
130
129.5
129
0 1 2 3 4 5 6 7 8 9 CL 10 11 12 13 14 15 16 17 18 19 20 21
3
6.8


Lake side
Cut view 30+155
134.5
134
133.5
133
132.5
132
131.5
131
130.5
130
129.5
129
128.5
0 1 2 3 4 5 6 7 8 9 CL 10 11 12 13 14 15 16 17 18 19 20
3
6.8

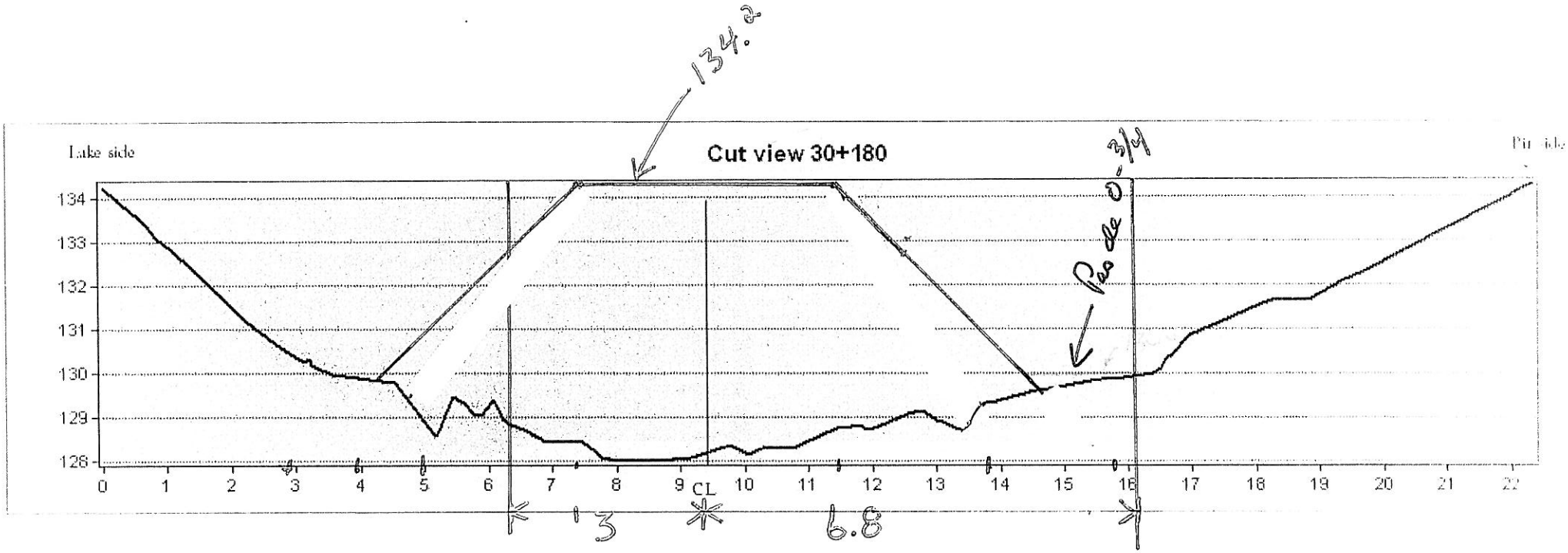

Lake side
Cut view 30+160
134.5
134
133.5
133
132.5
132
131.5
131
130.5
130
129.5
129
0 1 2 3 4 5 6 7 8 9 CL 10 11 12 13 14 15 16 17 18 19 20
134.3
131.9
3
6.8

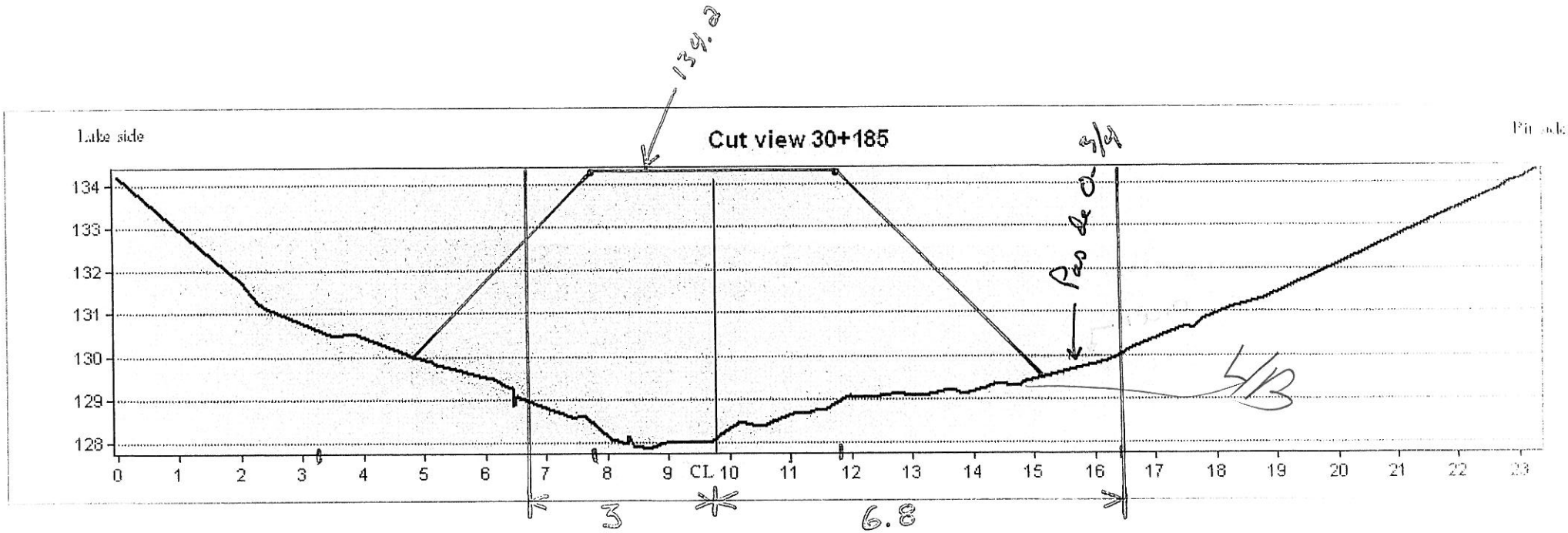

Lake side
Cut view 30+165
Pit side
134.8
130.0
134
133.5
133
132.5
132
131.5
131
130.5
130
129.5
129
0 1 2 3 4 5 6 7 8 CL 9 10 11 12 13 14 15 16 17 18 19 20
3
4.8

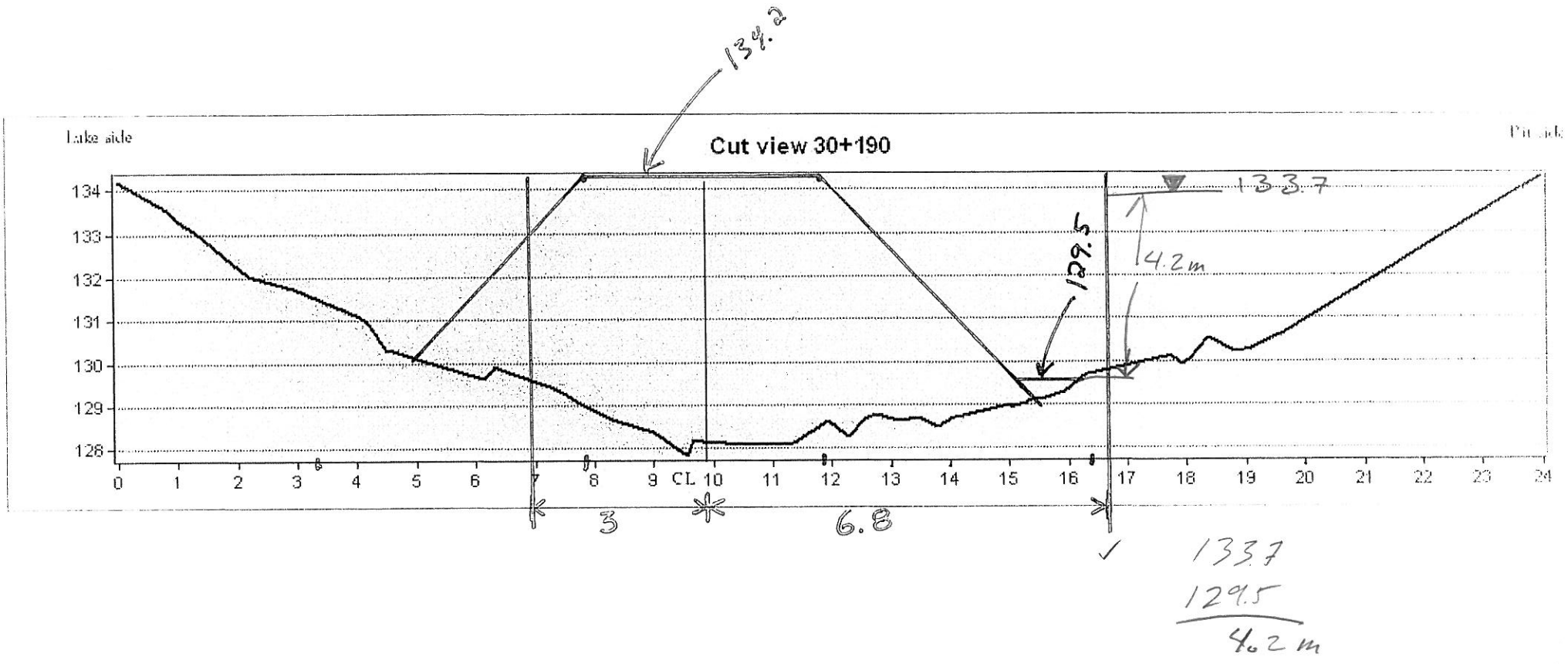

Lake side
Cut view 30+170
134.2
134
133.5
133
132.5
132
131.5
131
130.5
130
129.5
129
0 1 2 3 4 5 6 7 8 9 CL 10 11 12 13 14 15 16 17 18 19 20 21
3
4.8
Asem 0-3/4


Lake side
Cut view 30+175
134.2
134
133
132
131
130
129
0
1
2
3
4
5
6
7
8
9 CL.
10
11
12
13
14
15
16
17
18
19
20
21
3
6.8
Pas de 0-3/4

L.B @ ~ EL. 129.5m @ ℄ ✓

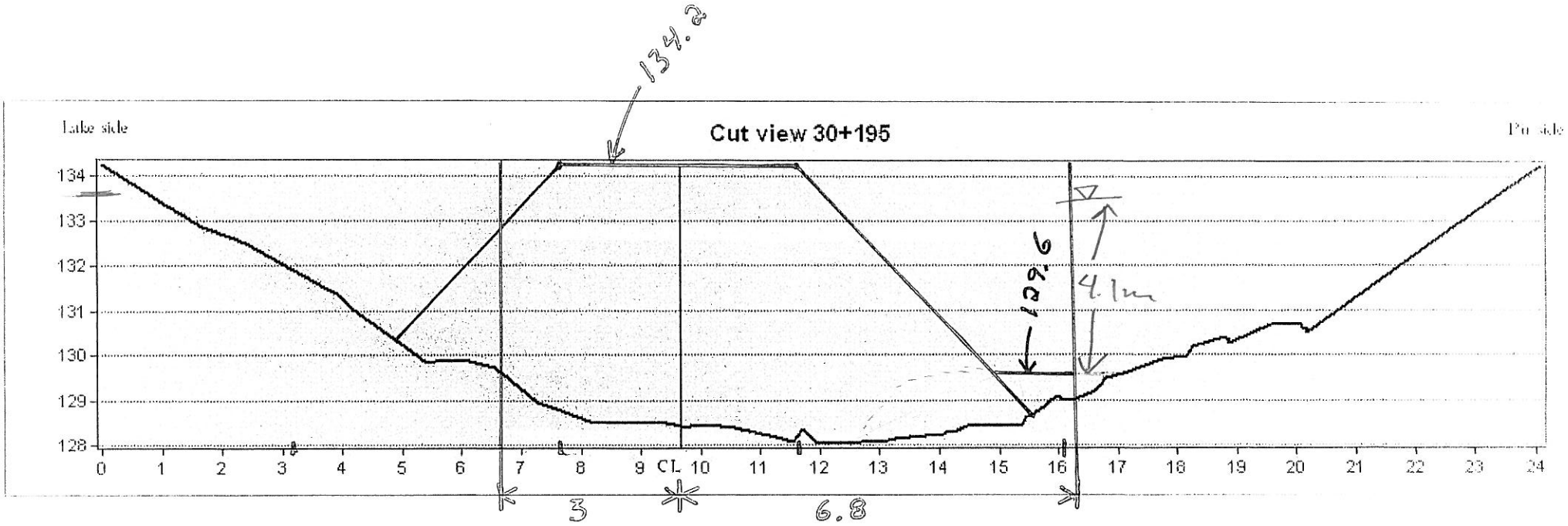

Lake side
Cut view 30+180
134.2
3/4
0
Pas de
134
133
132
131
130
129
128
0 1 2 3 4 5 6 7 8 9 CL 10 11 12 13 14 15 16 17 18 19 20 21 22
13
6.8

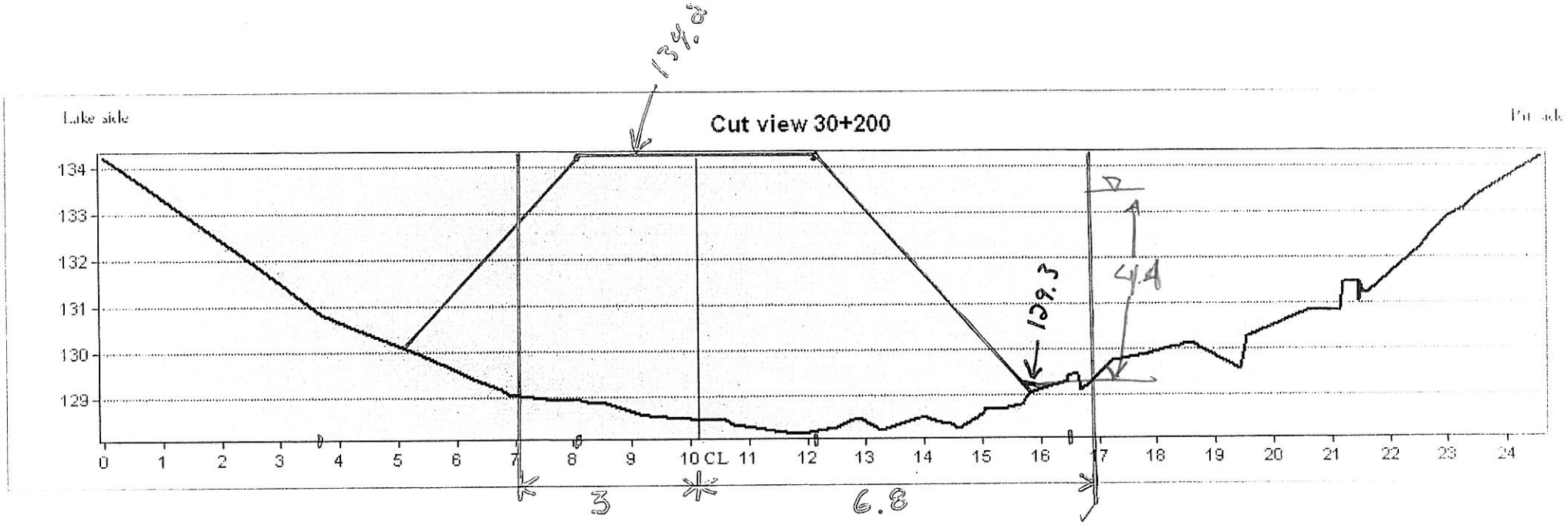

Lube side
Cut view 30+185
134.8
3/4
Pas de Ø
134
133
132
131
130
129
128
0 1 2 3 4 5 6 7 8 9 CL 10 11 12 13 14 15 16 17 18 19 20 21 22 23
3
6.8



✓ 133.7
129.5
4.2 m

133.7
- 129.6
4.1

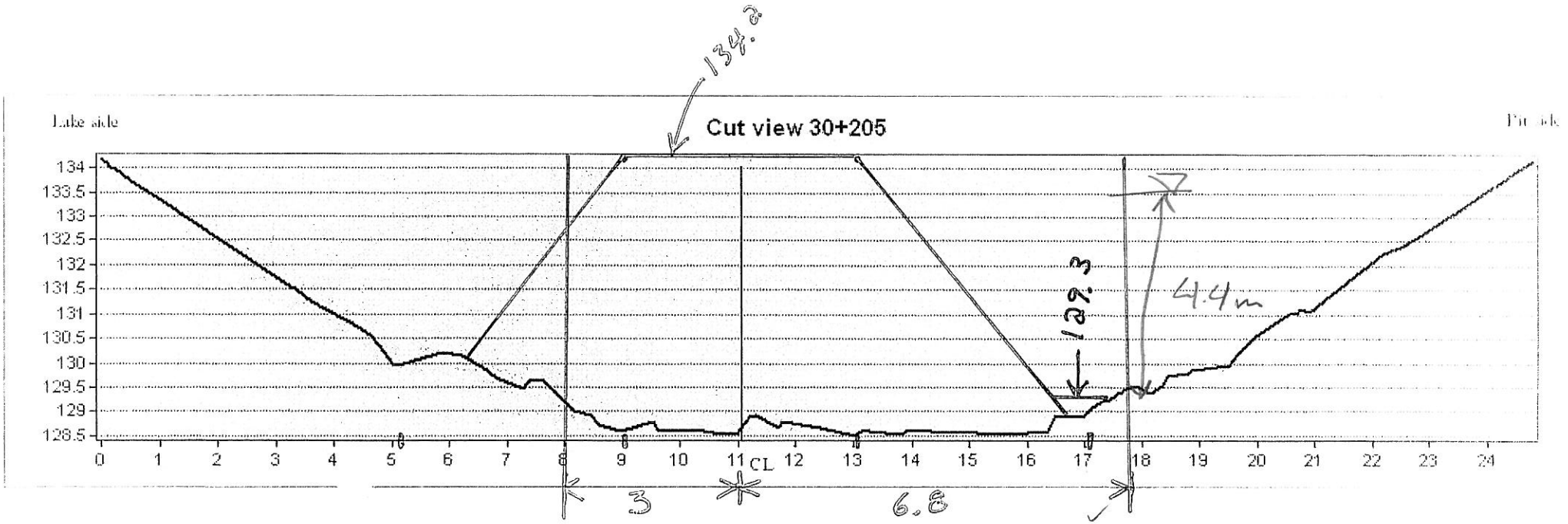

134.2
Lake side
Cut view 30+195
Pro side
134
133
132
131
130
129
128
129.6
4.1m
0 1 2 3 4 5 6 7 8 9 CL 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
3
6.8

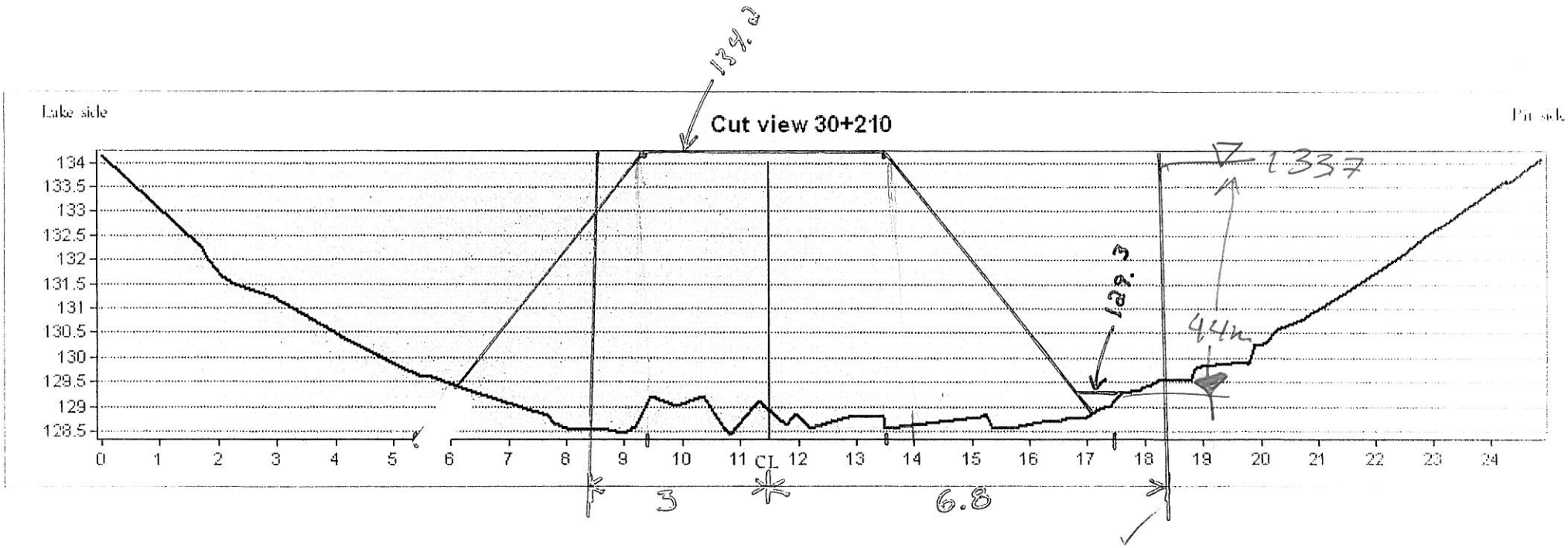

Lake side
Cut view 30+200
134
133
132
131
130
129
0 1 2 3 4 5 6 7 8 9 10 CL 11 12 13 14 15 16 17 18 19 20 21 22 23 24
134.8
129.3
4.4
3
6.8

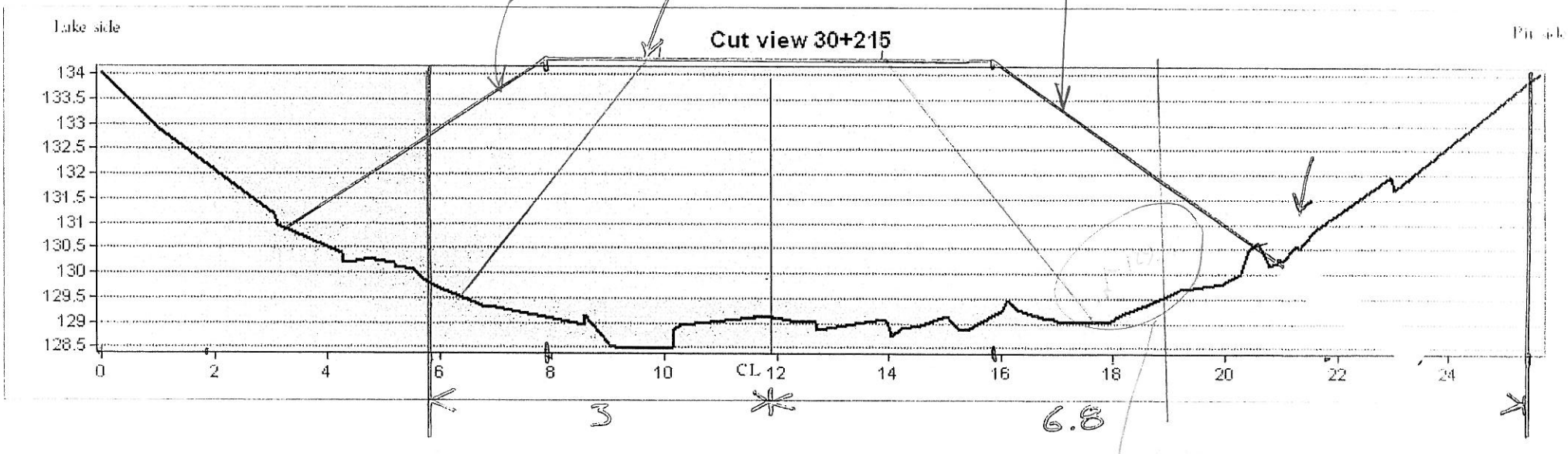
134.8

129.3

4.4


Lake side
Cut view 30+205
134.8
129.3
4.4m
134
133.5
133
132.5
132
131.5
131
130.5
130
129.5
129
128.5
0 1 2 3 4 5 6 7 8 9 10 11 CL 12 13 14 15 16 17 18 19 20 21 22 23 24
3
6.8


Lake side
Cut view 30+210
134.2
1337
1328.2
44m
134
133.5
133
132.5
132
131.5
131
130.5
130
129.5
129
128.5
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
CL
3
6.8

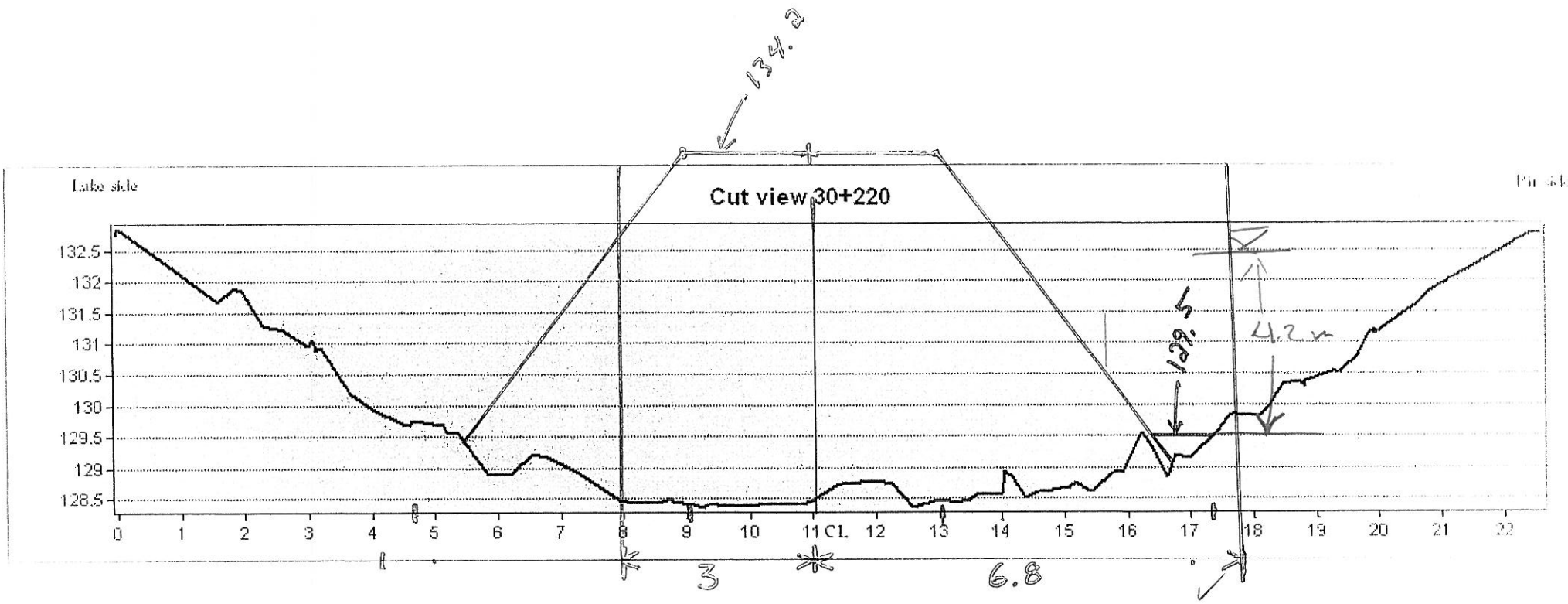


? M.G.

133.7

- 129.5

4.2m



1337

129.5

4.2 m

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 30+220 Offset - 3.0 m to +6.8 m	SHIFT: NIGHT: ☐ DAY: ☒	DATE: 20/AUG/2009	SHEET 1 OF 1
To Sta. 30+320 Offset - 3.0 m to +6.8 m	LOCATION: :		
EQUIPMENT: 385 + 345 EXCAVATOR.	TRENCH EXCAVATION		
DESCRIPTION			

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	MH	
2.	Storage areas planned for disposal of removed materials	N/A	N/A
3.	Occurrence of snow and ice removal method in place	N/A	N/A
4.	Occurrence of boulders and removal method in place	MH	
5.	Occurrence of hummocks and scalping method in place	MH	
6.	Occurrence of surface and ground water and its impact mitigation in place	N/A	N/A
7.	Presence of other unsuitable materials and removal method in place	MH	
8.	Soil frozen or thawed and measures taken	N/A	N/A
9.	Blasting requirement to remove unsuitable material and safety measure checked	N/A	N/A
10.	Adjustment made to suit design in field	MH	
11.	Final walkover inspection before re-sloping or fill placement	MH	
12.	"As-excavated" survey conducted	MH	
13.	Final sounding conducted of lake bottom surface	MH	

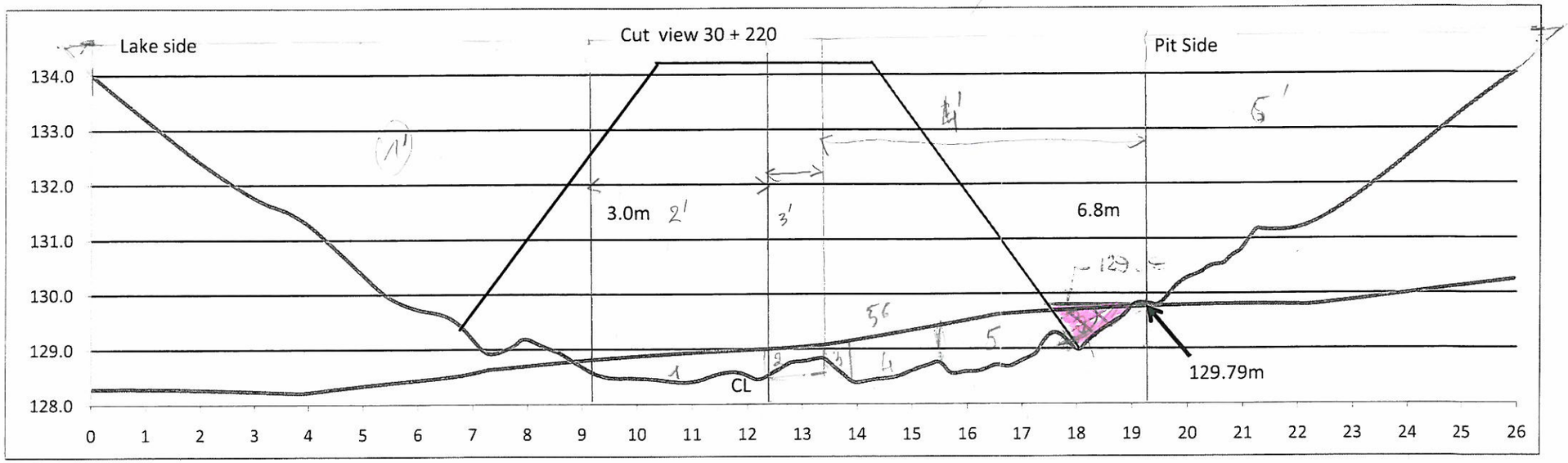
REMARKS: CONTOUR PLAN (INCL. MODEL), COVERAGE PLAN, X-S'S AND PROFILES REVIEWED. CONFIRMATION TESTING WITH EXCAVATOR PERFORMED : STA. 30+230 to 233 (FULL WIDTH), STA. 30+245 to 250 (FULL WIDTH), STA. 30+235 to 240 (U/S), STA. 30+252 to 256 (U/S), STA 30+285 to 305 (FULL WIDTH - ALL TESTING REVEALED SHEETUP TO EXCOUNTER BEDROCK SURFACE. D/S CORE BACKFILL LIMITS SHOWN IN MARKUP

DEVIATIONS : (Attach list if necessary)

PROFILES TO BE UPDATED BETWEEN STA. 30+230 to 260 TO PRESENT CORRECT INFERRED BEDROCK SURFACE.

DATE OF RECTIFICATION :

SURVEY VERIFICATION	ACCEPTED BY QA Manager :	ACCEPTED BY OWNER :
NAME: MAXIME GILBERT	NAME: PAUL BODELL	NAME: Johan Labuschagne
SIGNATURE :	SIGNATURE :	SIGNATURE :
DATE 21-AUG 2009	DATE 20 AUG 2009.	DATE 21-AUG-2009



Lake bed soil

Dike

Date 2009-08-20

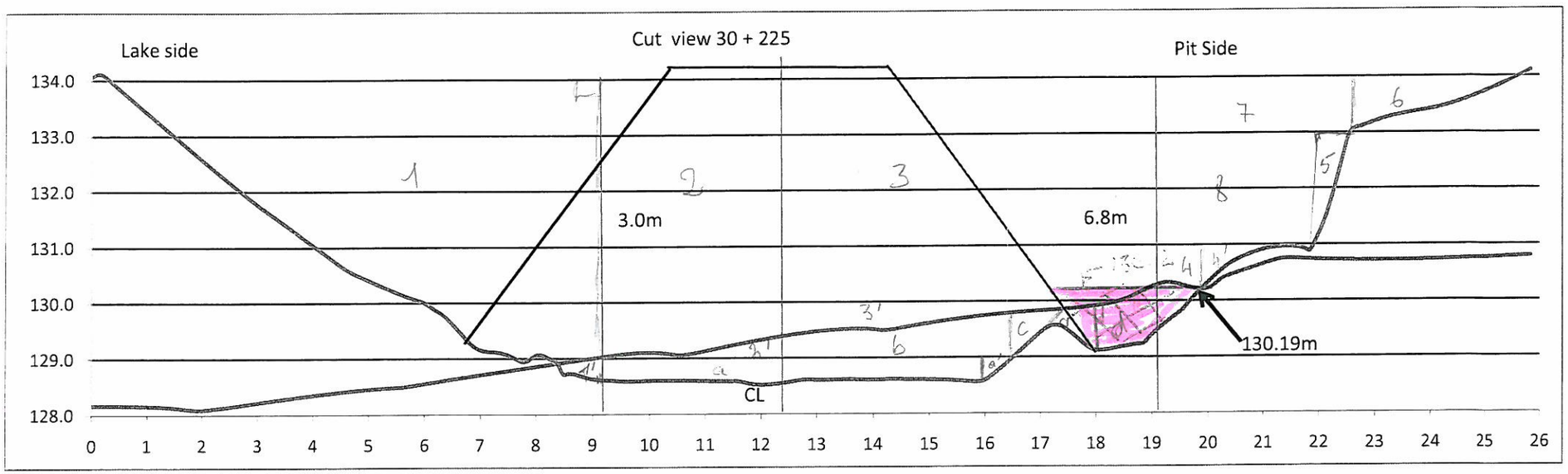
By: HG

nippour

ROCKFILL AREA = $1' + 2' + 3' + 4' + 5' + 6' = \frac{9,3 \times 6}{2} + (5,5 \times 3,2) + (1 \times 5,6) + (5,7 \times 4,5) + \frac{1 \times 5,7}{2} + \frac{6,5 + 4,7}{2} = 27,9 + 17,6 + 5,6 + 25,65 + 2,85 + 15,28 : 94,88\ m^2$

LAKE BED AREA = $6,5\ m^2 = ① + ② + ③ + ④ + ⑤ = \frac{1 \times 3,1}{2} + \frac{0,5 \times 1}{2} + \frac{0,7 \times 0,5}{2} + (1,7 \times 0,8) + (0,9 \times 2,5) + \frac{1,3 \times 0,8}{2} = 6,11\ m^2$

$= 1,55 + 0,25 + 0,175 + 1,36 + 2,25 + 0,52$



Lake bed soil

Dike

Date 2009-08-20

By: HG

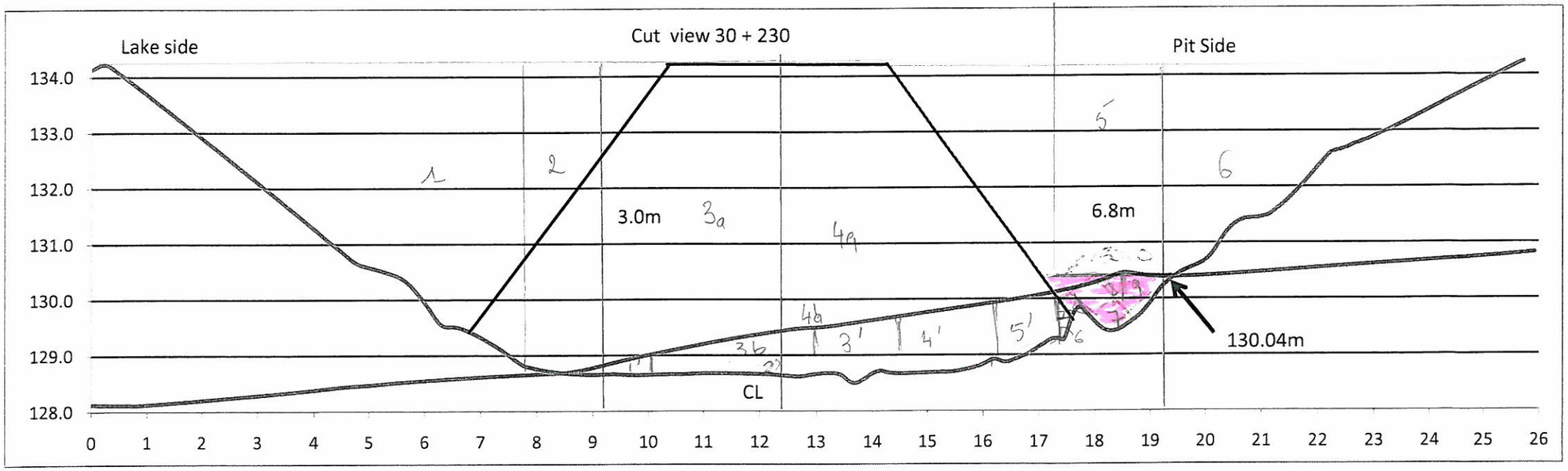
nippour

- Excavated Refill: $\frac{8,5 \times 5,3}{2} - \frac{0,4 \times 0,7}{2} + \left[(4,8 \times 3,2) - \frac{0,4 \times 1,8}{2}\right] + (6,5 \times 3,9) - \frac{(0,6 \times 5,8)}{2} + (0,7 \times 0,8) + \frac{(0,7 \times 1,2)}{2} + \frac{(2 \times 0,5)}{2} + \frac{(3 \times 1)}{2} + (3,4 \times 1) + (3,4 \times 2)$

$22,53 - 0,14 + 15,36 - 0,36 + 25,35 + 3,48 + 0,56 + 0,42 + 0,5 + 1,5 + 3,4 + 6,8 = 79,4\ m^2$

- Excavated lake bed: $\frac{0,4 \times 0,7}{2} + \frac{(0,4 \times 1,8)}{2} + (6,6 \times 0,5) + \frac{0,4 \times 0,3}{2} + \frac{(4 \times 0,8)}{2} + \frac{(0,8 \times 1)}{2} + \frac{(0,3 \times 0,9)}{2} + \frac{(1 + 2,3) \times 0,8}{2}$

$0,14 + 0,36 + 3,3 + 0,06 + 1,6 + 0,4 + 0,135 + 1,32 = 7,32\ m^2$



Lake bed soil

Dike

Date 2009-08-20

By: HG

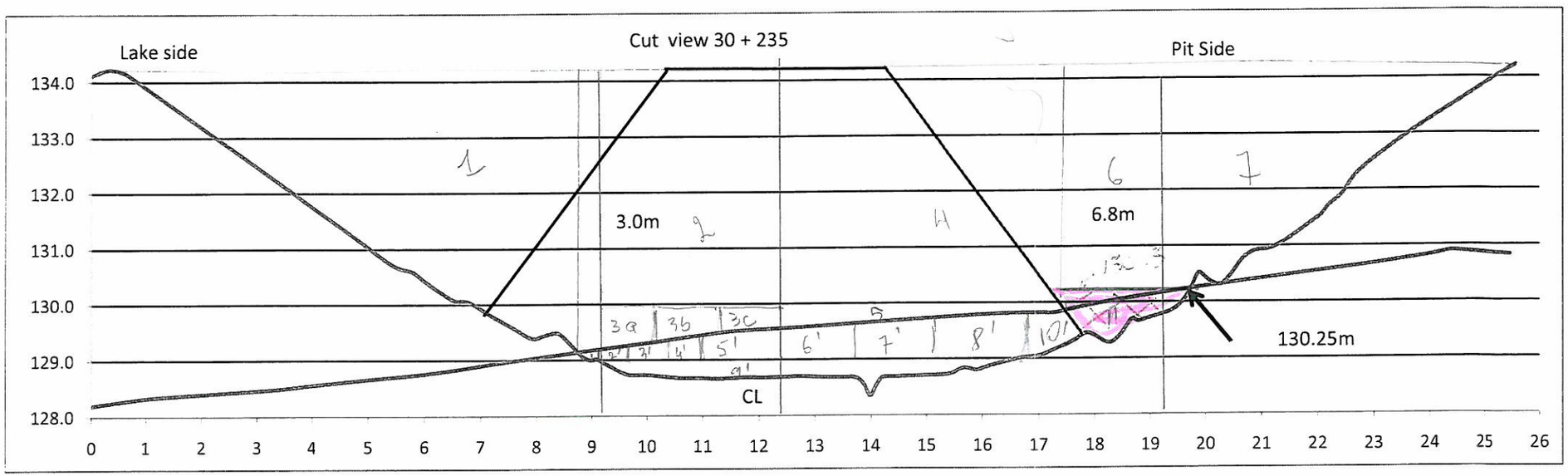
nippour

Ex. Rockfill = $\frac{(5,7\times7,2)}{2}$ + $(1,4\times5,9)$ + $(5,3\times3,3)$ + $(5\times4,2)$ + $\frac{(0,6\times4,3)}{2}$ + $(2\times3,8)$ + $\frac{(3,8\times6,5)}{2}$ =

$20,52 + 8,26 + 17,49 + 21 + 1,29 + 7,6 + 12,35 = 88,71 - \frac{(0,5\times2,5)}{2} = 88,09\ m^2$

Ex. Lake bed = $\frac{(0,3\times1,5)}{2}$ + $(6,8\times0,3)$ + $\frac{(0,5\times2,5)}{2}$ + $(1,6\times0,8)$ + $(0,8\times0,9)$ + $(1,2\times1)$ + $\frac{(0,3\times0,7)}{2}$ + $\frac{\pi\times0,4^2}{2}$ + $\frac{(0,2\times0,4)}{2}$ + $(0,7\times0,5)$ =

$0,23 + 2,04 + 0,63 + 1,28 + 0,72 + 1,2 + 0,11 + 0,25 + 0,24 + 0,35 = 7,05$



Lake bed soil

Dike

Date 2009-08-20

By: HG

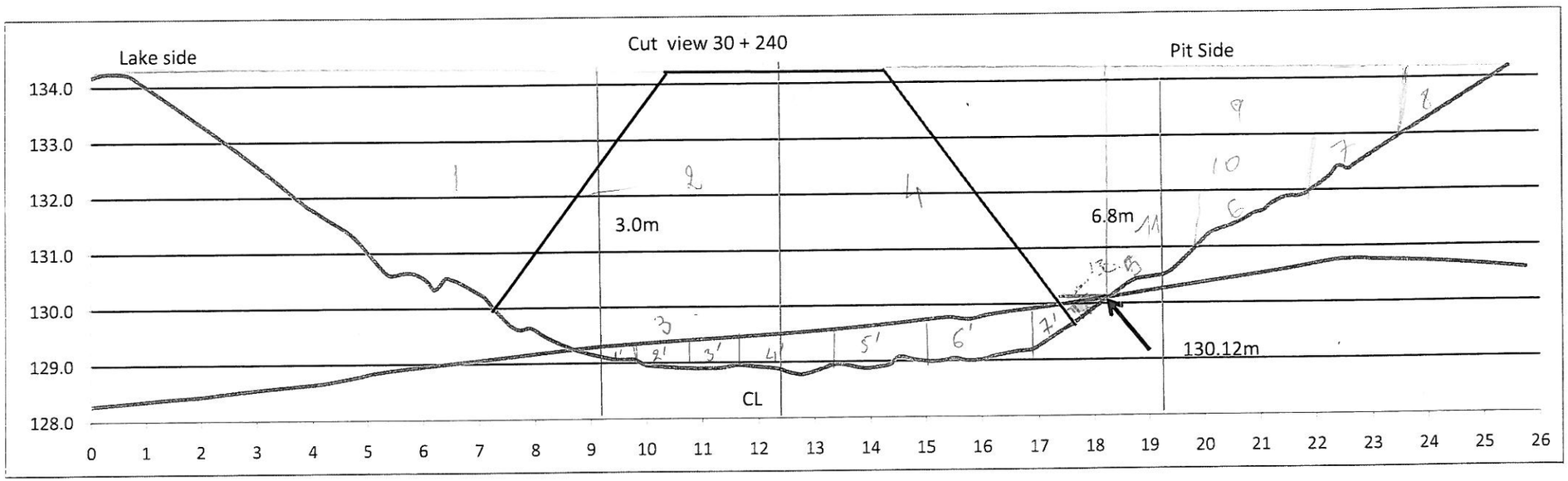
nippour

Excaved rockfill: $\frac{(7,9\times8,5)}{2} + (4,2\times3,2) + (1\times0,8) + \frac{(0,7\times1,2)}{2} + (1\times0,5) + (4,9\times4) + (4,9\times0,5) + (1,7\times3,7) + (4\times6,3)$

$= 20,83 + 13,44 + 0,8 + 0,84 + 0,5 + 19,6 + 2,45 + 6,29 + 12,6 = \underline{77,35}$

Excavated backfill $= (0,2\times0,2) + (0,3\times0,2) + (0,4\times0,3) + \frac{(0,4\times0,3)}{2} + (0,5\times1,5) + (0,6\times1,3) + (0,7\times1,5) + (1,6\times0,7) + (7,2\times0,2) + (0,8\times1,2) + \frac{(\pi\times1^2)}{2} = \underline{7,89\ m^2}$

$0,04 + 0,06 + 0,12 + 0,12 + 0,75 + 0,78 + 1,05 + 1,12 + 1,44 + 0,96 + 1,57 =$



Lake bed soil

Dike

Date 2009-08-20

By: HG

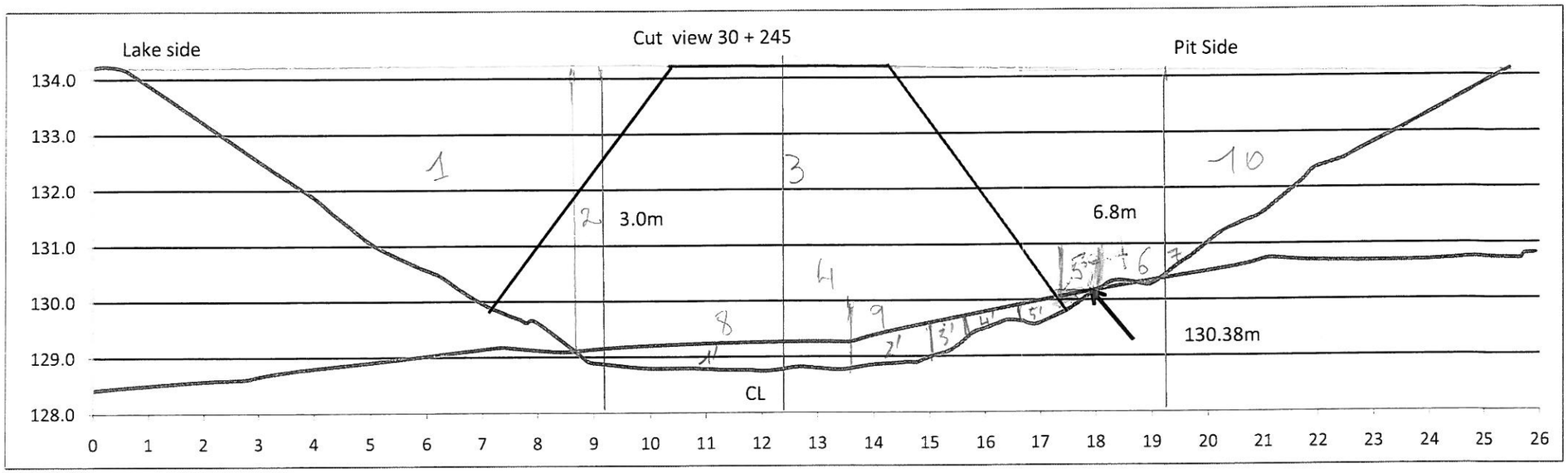
nippour

Extrapolated rockfill: $\frac{(5,1 \times 8,9)}{2} + (4 \times 3,2) + \frac{(8 \times 0,7)}{2} + (4 \times 6,7) + (1,5 \times 0,9) + (1,9 \times 0,9) + (1,5 \times 1) + (0,9 \times 1,7) + (5,3 \times 1) + (3,6 \times 1) + (1,6 \times 1) =$

$22,7 + 12,8 + 2,8 + 26,8 + 0,68 + 1,71 + 1,5 + 1,53 + 5,3 + 3,6 + 1,6 = 81,02\ m^2$

Excavated lakefill: $\frac{(0,3 \times 0,9)}{2} + (0,5 \times 1) + (0,8 \times 0,5) + (0,8 \times 0,6) + (0,8 \times 1,5) + (1,8 \times 2) + \frac{(1,6 \times 0,7)}{2}$

$= 0,14 + 0,5 + 0,4 + 0,48 + 1,2 + 3,6 + 0,56 = 6,88$



Lake bed soil
Dike

Date 2009-08-20
By: HG

nippour

Excavated rockfill: (1) + (2) + 3 + 4 + 5 + 6 + 7 + 8 + 9 + 10

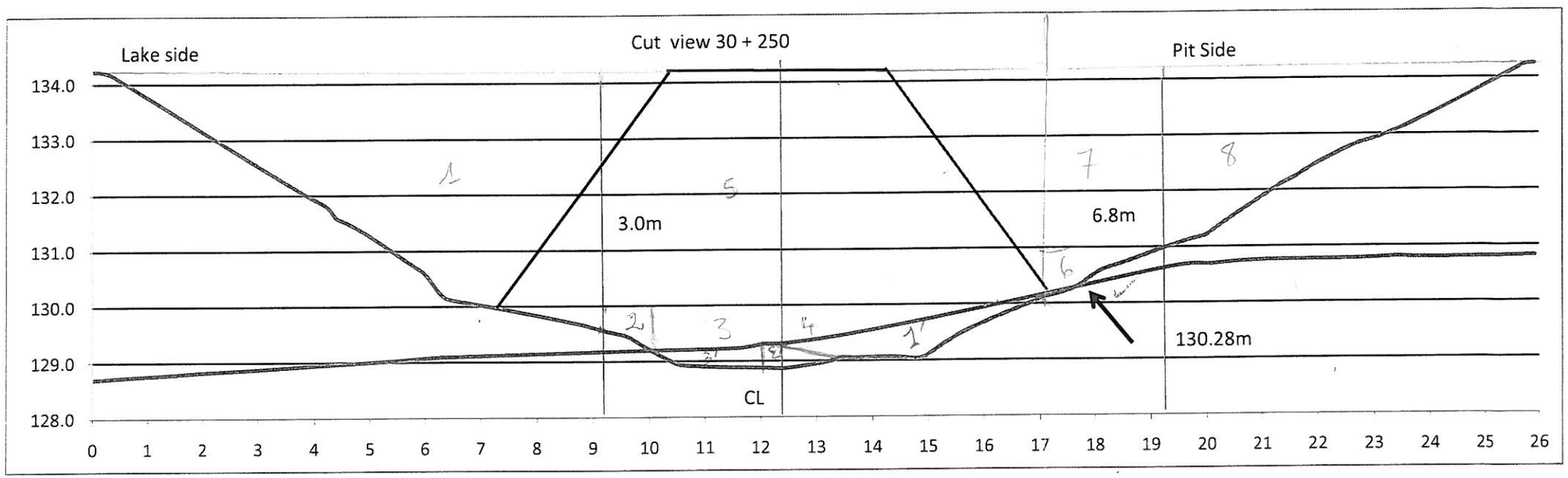
$(5\times8.2)+(0.5\times4.7)+(3.1\times9.8)+(4\times1)+(0.7\times1)+(1.2\times0.6)-\frac{(0.7\times0.5)}{2}+(4.4\times0.7)+(0.7\times3.6)+\frac{(3.7\times6)}{2}$

$20.5 + 2.35 + 30.38 + 4 + 0.7 + 0.72 + 0.18 + 3.08 + 2.52 + 1.102 = 75.51\ m^2$

Excavated lakefill: 1' + 2' + 3' + 4' + 5'

$(4.8\times0.5)+\frac{(1.5\times0.5)}{2}+(0.6\times0.4)+(1\times0.2)+\frac{(1.4\times0.2)}{2}$

$2.4 + 0.75 + 0.24 + 0.2 + 0.14 = 3.73\ m^2$



Lake bed soil

Dike

Date 2009-08-20

By: HG

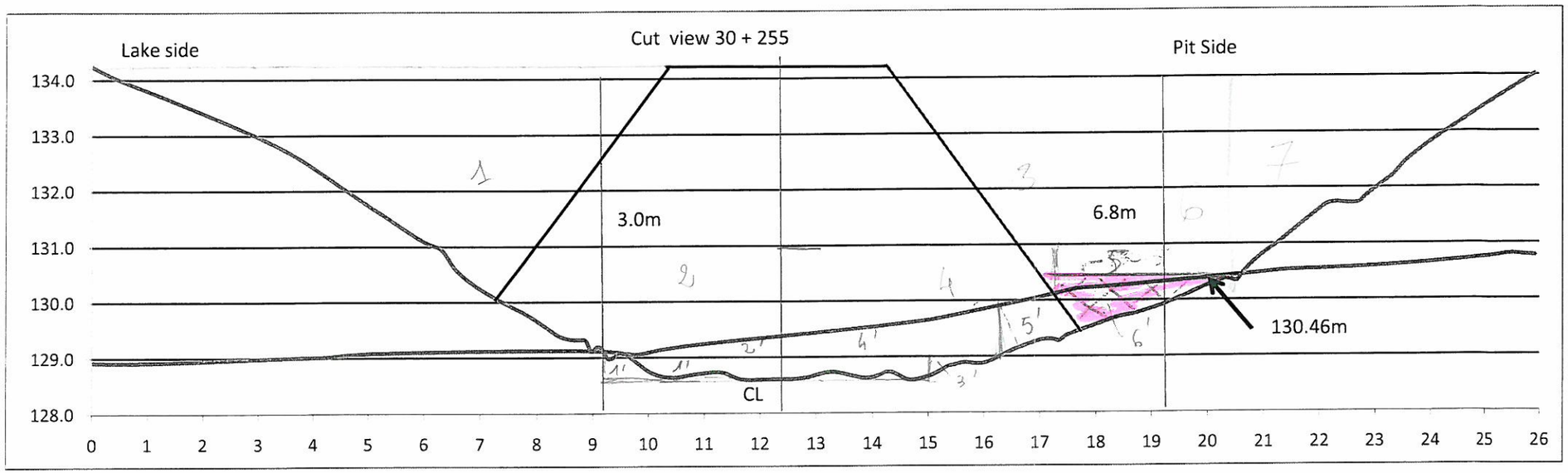
nippour

Excavated rockfill: $\frac{(1,5\times 9)}{2} + \frac{(0,8+0,4)\times 0,9}{2} + (0,8\times 2,3) + \frac{(3,8\times 0,6)}{2} + (7,7\times 4,2) + \frac{(0,8\times 2,1)}{2} + (4,1\times 2) + (6,5\times 3,2)$

$= 2,25 + 0,54 + 1,84 + 1,14 + 32,34 + 0,84 + 8,2 + 10,4 = 75,55\ m^2$

Excavated laborfill: $\frac{(1,2\times 4,8)}{2} + \frac{(1,2\times 0,5)}{2} + (1,8\times 0,4) =$

$= 2,88 + 0,3 + 0,72 = 3,9\ m^2$



Lake bed soil

Dike

Date 2009-08-20

By: HG

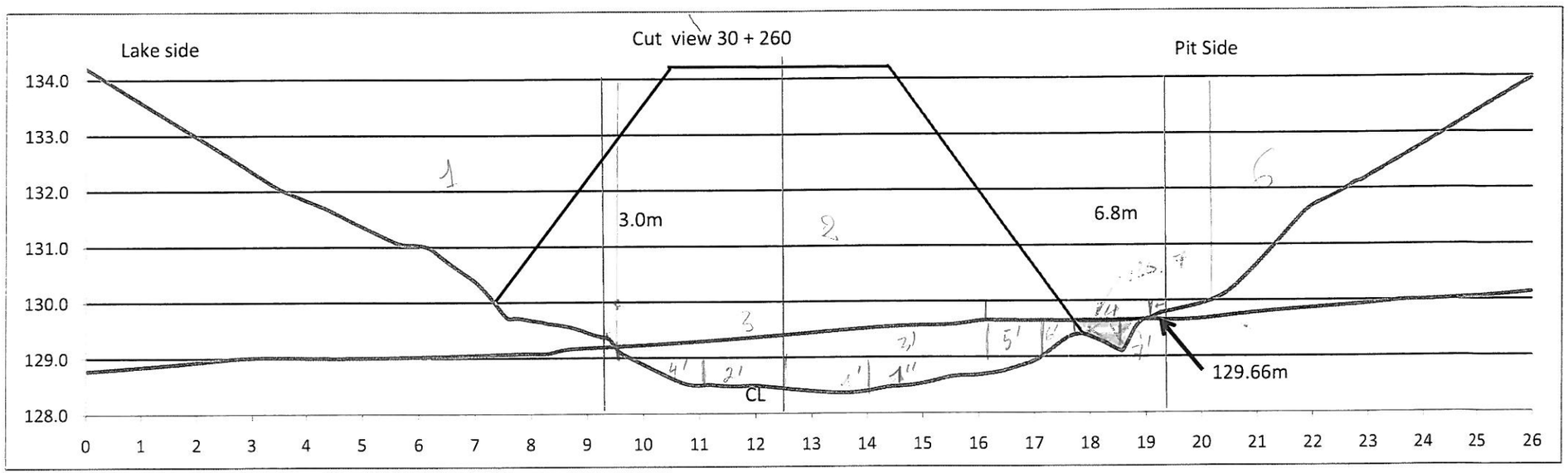
nippour

Excavated rockfill : $\frac{(10\times5)}{2} + (4.8\times3.2) - (0.4\times2.6) + (6.7\times3.2) + (6.8\times1) + (1.9\times0.8) + (1.2\times3.7) - (3.2\times5.3)$

$25 + 15.36 - 0.52 + 21.44 + 4.8 + 1.52 + 4.44 + 9.81 = 81.85\ m^2$

Excavated laterite : $(5.7\times0.5) - (1\times0.5) + (0.4\times1.2) + \frac{(0.4+0.9)\times3.8}{2} + \left(0.8\times\frac{(1+1.5)}{2}\right) + \frac{(3\times0.8)}{2}$

$2.85 - 0.5 + 0.48 + 2.47 + 1 + 1.2 = 7.5\ m^2$



Lake bed soil

Dike

Date 2009-08-20

By: HG

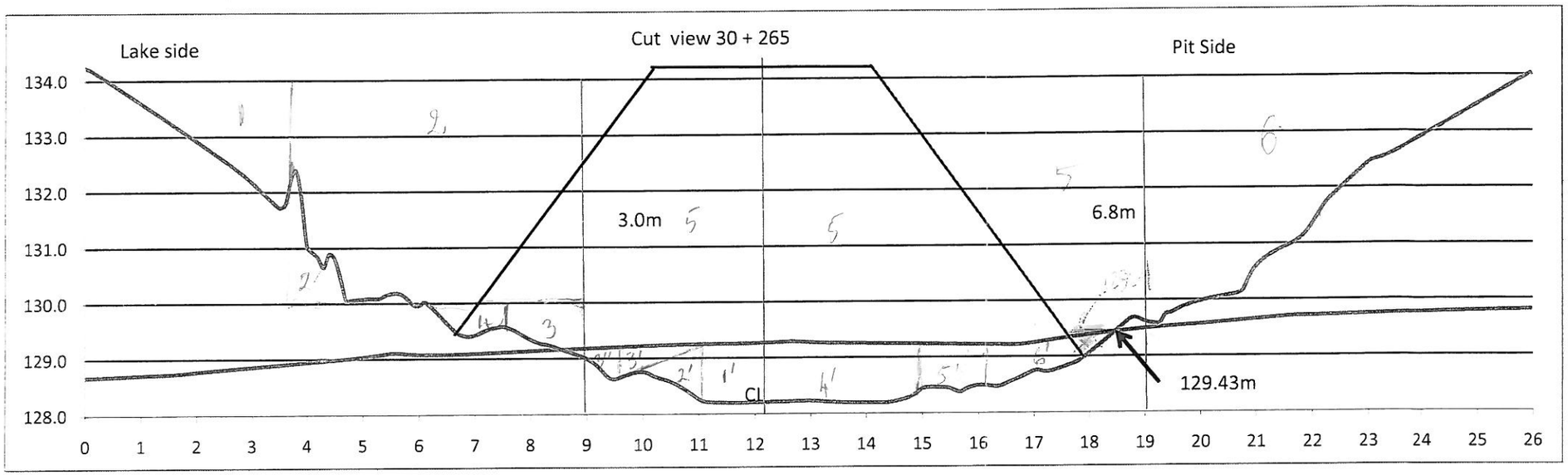
nippour

Excavated backfill: $\frac{(9,3 \times 4,7)}{2} + (4,9 \times 10,4) + \left(\frac{0,4 + 0,8}{2} \times 6,4\right) + (0,3 \times 2,9) + \frac{(0,3 \times 1)}{2} + \frac{(5,7 \times 4)}{2} = 89,07\ m^2$

$21,85 + 50,96 + 3,84 + 0,87 + 0,15 + 11,4 =$

Excavated backfill: $\frac{(3,0 \times 0,5)}{2} + (0,5 \times 1,4) + \frac{(6,5 \times 0,7)}{2} + (1,3 \times 0,5) + (0,6 \times 1) + \frac{(0,6 + 0,3) \times 0,6}{2} + \frac{(0,6 \times 1,2)}{2} + (1,5 \times 0,6)$

$0,9 + 0,7 + 2,28 + 0,33 + 0,6 + 0,27 + 0,36 + 0,9 = 6,34\ m^2$



Lake bed soil

Dike

Date 2009-08-20

By: HG

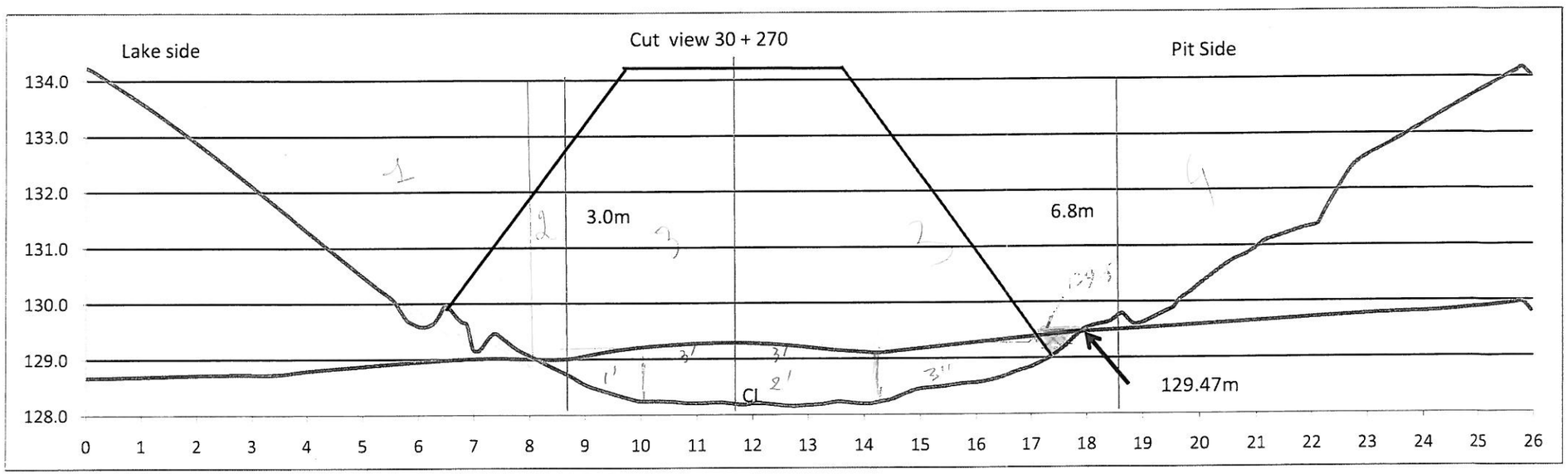
nippour

Excavated rockfill = $\frac{(3.2 \times 2.2)}{2} + (3.8 \times 5.2) - \frac{(2.4 \times 1.1)}{2} + \frac{(1 + 0.4) \times 1.4}{2} + \frac{(1.5 \times 0.4)}{2} + (4.8 \times 9.8) + \frac{(4.3 \times 6.8)}{2}$

$3.52 + 19.76 - 1.32 + 0.98 + 0.3 + 47.04 + 14.62 = 84.9\ m^2$

Excavated backfill: $(1 \times 1.1) + \frac{(0.9 \times 1)}{2} + \frac{(1.5 \times 0.5)}{2} + \frac{(0.9 \times 0.5)}{2} + (1 \times 2.9) + (0.9 \times 1.2) + \frac{(0.9 \times 2.2)}{2} = 7.13\ m^2$

$1.1 + 0.45 + 0.38 + 0.23 + 2.9 + 1.08 + 0.99$



Lake bed soil

Dike

Date 2009-08-20

By: HG

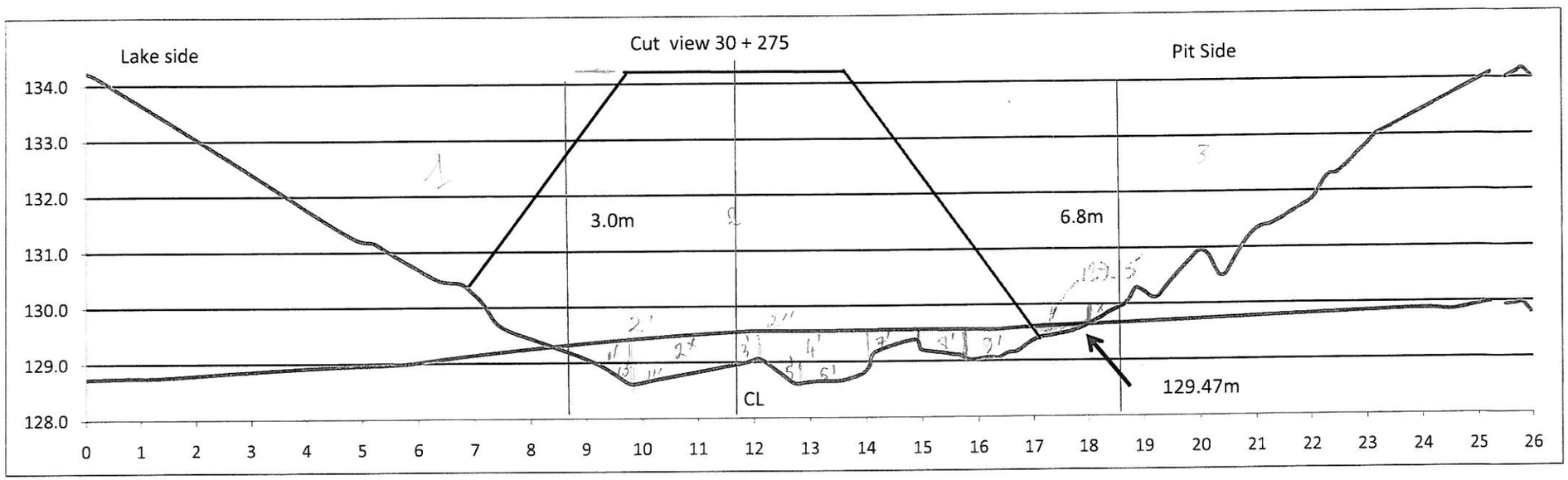
nippour

Excavated rock fill : $\frac{(1.8 \times 7.6)}{2} + (0.7 \times 4.8) + (9.7 \times 4.8) + (0.2 \times 8.3) + \frac{(4.2 \times 7.2)}{2}$

$18.24 + 3.36 + 46.56 - 1.66 + 15.12 = 81.52\ m^2$

Excavated lake fill : $\frac{(2 \times 0.7)}{2} + (0.8 \times 4.1) + 1.66 + \frac{(3.6 \times 0.8)}{2}$

$0.7 + 3.28 + 1.66 + 1.44 = 7.08\ m^2$



Lake bed soil

Dike

Date 2009-08-20

By: HG

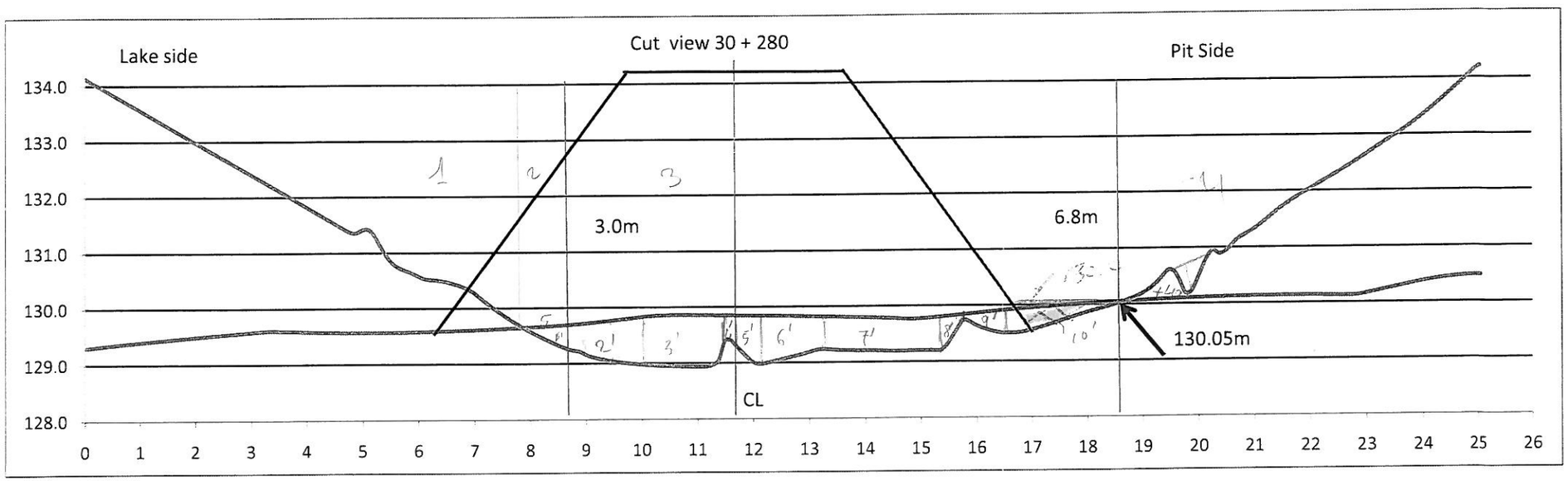
nippour

Excavated rockfill: $\frac{(8.3\times4.5)}{2} + (4.2\times9.6) + \frac{(0.6+0.7)}{2}\times3 + (6.1\times0.6) + \frac{(0.6\times0.4)}{2} + \frac{(6.5\times3.9)}{2}$

$18.68 + 40.32 + 1.95 + 3.66 + 0.12 + 12.68 = \underline{77.41\ m^2}$

Excavated lakefill: $\frac{(1.3\times0.8)}{2} + \frac{(0.4+0.8)\times3.3}{2} + (0.14\times0.5) + (0.5\times1.9) + \frac{(0.7\times0.4)}{2} + (0.4\times1.2) + \frac{(0.5+0.2)\times0.9}{2} + (1.5\times0.8) + \frac{(0.5\times2.3)}{2} + \frac{(0.7\times0.4)}{2} + \frac{2\times0.4}{2}$

$0.52 + 1.98 + 0.2 + 0.95 + 0.14 + 0.48 + 0.32 + 0.4 + 0.58 + 0.46 + 0.14 = \underline{6.11\ m^2}$



Lake bed soil

Dike

Date 2009-08-20

By: HG

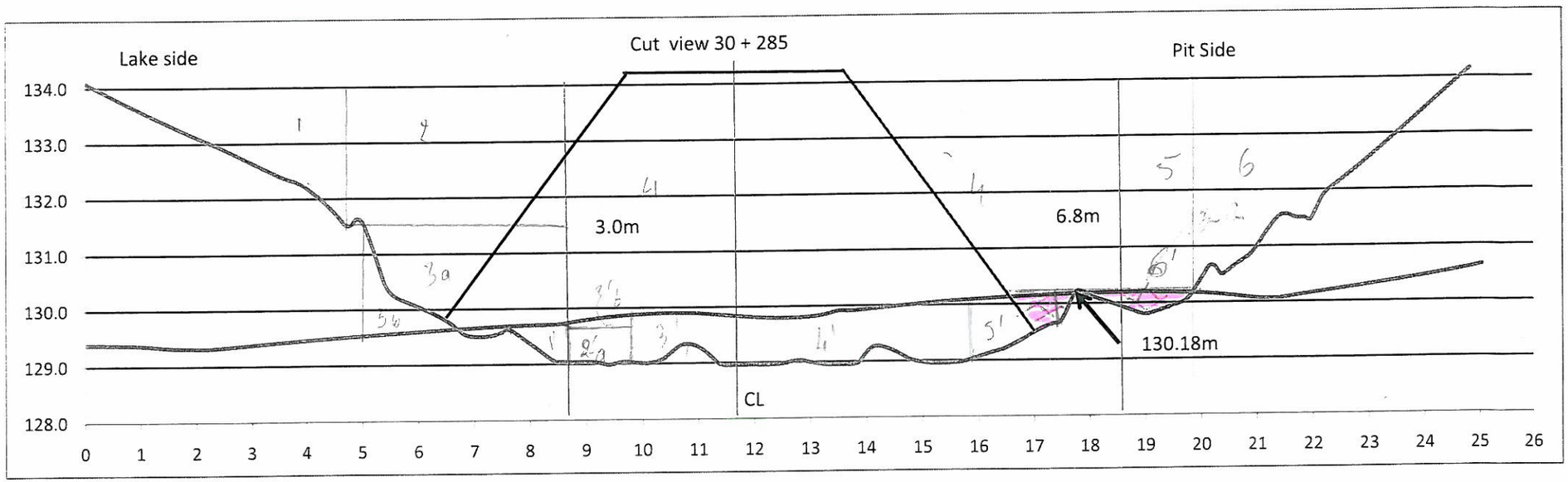
nippour

Excavated rock fill : $\frac{(7.6\times4.1)}{2} + (0.8\times4.1) + (4.1\times9.6) + \frac{(3.8\times6.)}{2} + \frac{(0.7\times0.5)}{2} = 70,85\ m^2$

$15,58 + 3,28 + 39,36 + 11,4 + 0,88 =$

Excavated lake fill : $\frac{(0.7\times0.5)}{2} + \frac{(0.4+0.8)\times1.3}{2} + (0.8\times1.5) + (0.2\times0.4) + \frac{(0.4+0.8)\times0.7}{2} + \frac{(0.8+0.6)\times1.1}{2} + (2\times0.6) + \frac{(0.6\times0.5)}{2} + \frac{(1\times0.4)}{2} + \frac{(0.4\times2.1)}{2} = 5,40\ m^2$

$0,18 + 0,90 + 1,2 + 0.08 + 0.42 + 0,77 + 1,2 + 0,15 + 0.2 + 0,41$



Lake bed soil

Dike

Date 2009-08-20

By: HG

nippour

Excavated rockfill = 1 + 2 + 3a + 3b + 4 + 5 + 6 + 7

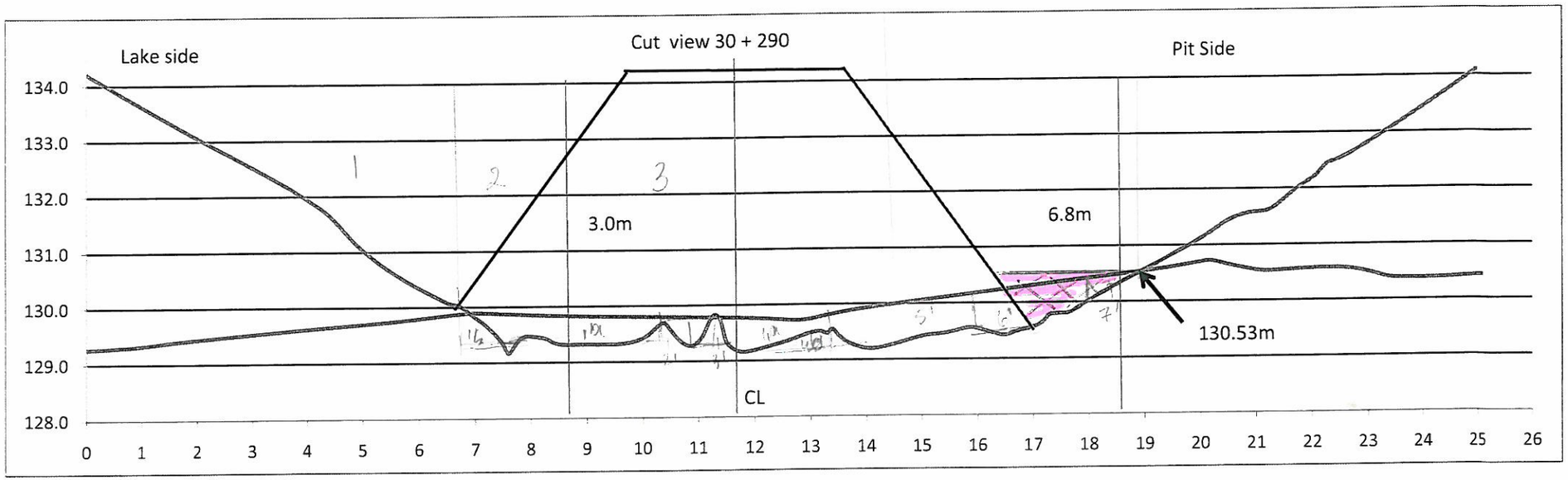
$\frac{(4.6 \times 2.4)}{2} + (2.4 \times 3.9) + (3.6 \times 2) - \frac{(2 \times 1.9)}{2} + (9.6 \times 3.9) + (3.7 \times 1.3) + \frac{(4.8 \times 3.7)}{2} + (6.5 \times 0.2)$

$5.52 + 9.36 + 7.2 - 1.8 + 37.44 + 4.81 + 8.88 + 1.3 = 72.71\ m^2$

Excavated lakefill = 1' + 2'a + 2'b + 3' + 4' + 5'

$\frac{(0.3+1) \times 0.7}{2} + (1 \times 0.7) + \frac{(1.1 \times 0.2)}{2} + (1.9 \times 0.9) + (0.8 \times 4) + \frac{(2+0.5) \times 2}{2} + \frac{(0.5 \times 0.3)}{2} + \frac{(0.4 \times 1.9)}{2} - 0.3 = 7.84$

$0.46 + 0.77 + 0.06 + 1.71 + 3.2 + 1.5 + 0.08 + 0.36$



Lake bed soil

Dike

Date 2009-08-20

By: HG

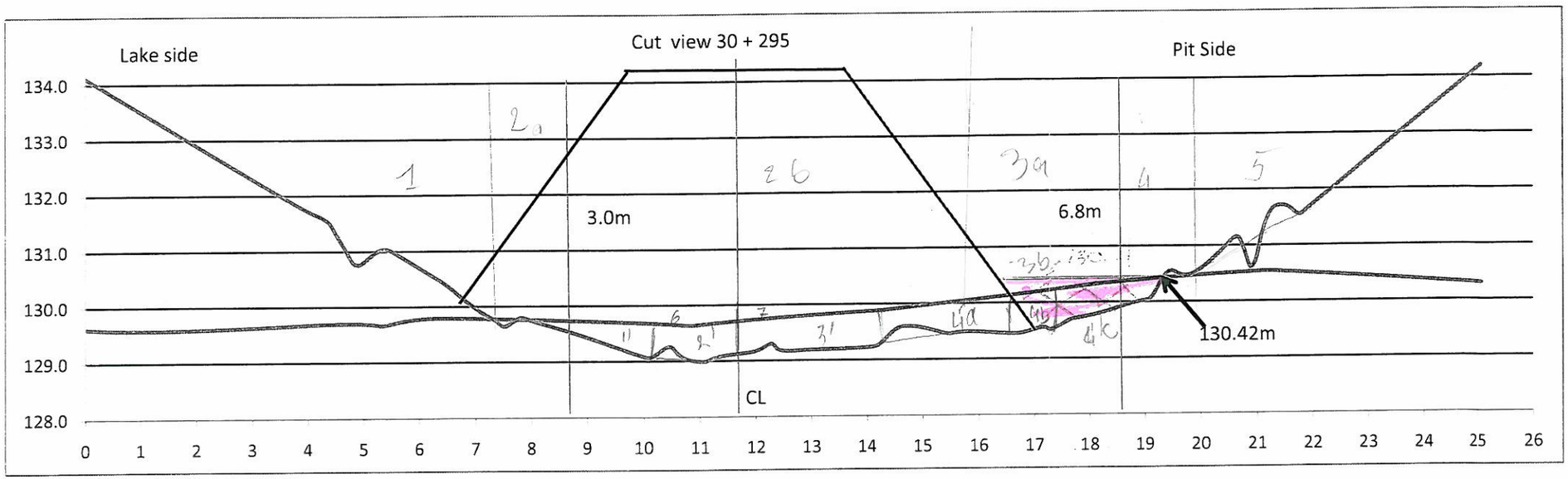
nippour

Excavated rock fill: $\frac{6.6\times4}{2} + \left(1.9\times\frac{1.2}{2}\right) + (5.7\times4.3) + (4.6\times4.1) - \frac{0.4\times3.3}{2} - \frac{1\times0.4}{2} + \frac{3.4\times5.9}{2}$

$12,8 + 8.17 + 24.51 + 18.06 - 0.66 - 0.2 + 10.03 = 72.69$

Excavated lake fill: $\frac{0.8\times3.5}{2} + \frac{0.8\times0.3}{2} + \frac{0.5\times0.6}{2} + \frac{0.6\times1.5}{2} - \frac{0.3\times1.3}{2} + \frac{2.5\times0.7}{2} + \frac{(1+0.9)\times0.9}{2} + \frac{2\times0.9}{2} - \frac{0.7\times0.9}{2} =$

$2.8 + 0,12 + 0,15 + 0.9 - 0,2 + 1,75 + 0,86 + 0,9 - 0,32 = 6,96\ m^2$



Date 2009-08-20
By: HG

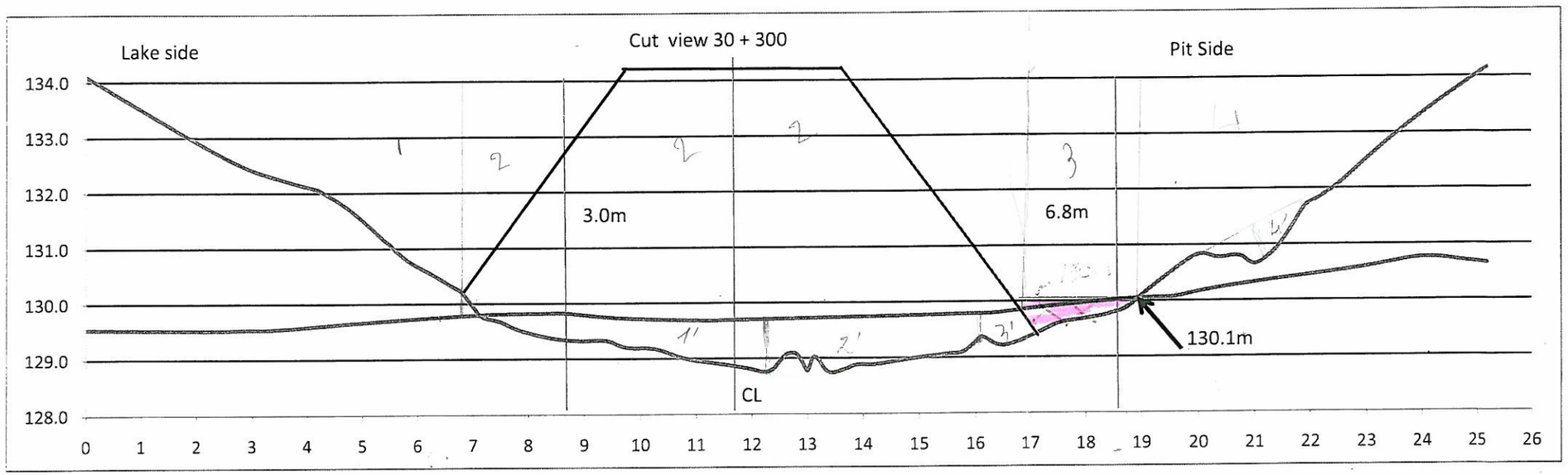
nippour

- Excavated rockfill: $\frac{(7\times1,1)}{2} + (1,3\times4) + (7\times4) + (2,7\times4) - \frac{(2,8\times0,4)}{2} + (1,4\times3,4) + \frac{(3,5\times4,8)}{2} + (4,2\times0,3) + \frac{(3\times0,3)}{2}$

$= 11,2 + 5,2 + 28 + 10,8 - 0,56 + 4,76 + 8,4 + 1,26 + 0,45 = 72,51$

Excavated lakefill: $\frac{(0,6\times2,2)}{2} + (0,5\times1,5) + (0,5\times2,5) + (2\times0,7) + (0,7\times0,8) + (2\times0,7) =$

$0,66 + 0,75 + 1,25 + 1,4 + 0,56 + 1,4 = 6,02$



Lake bed soil
Dike

Date 2009-08-20
By: HG

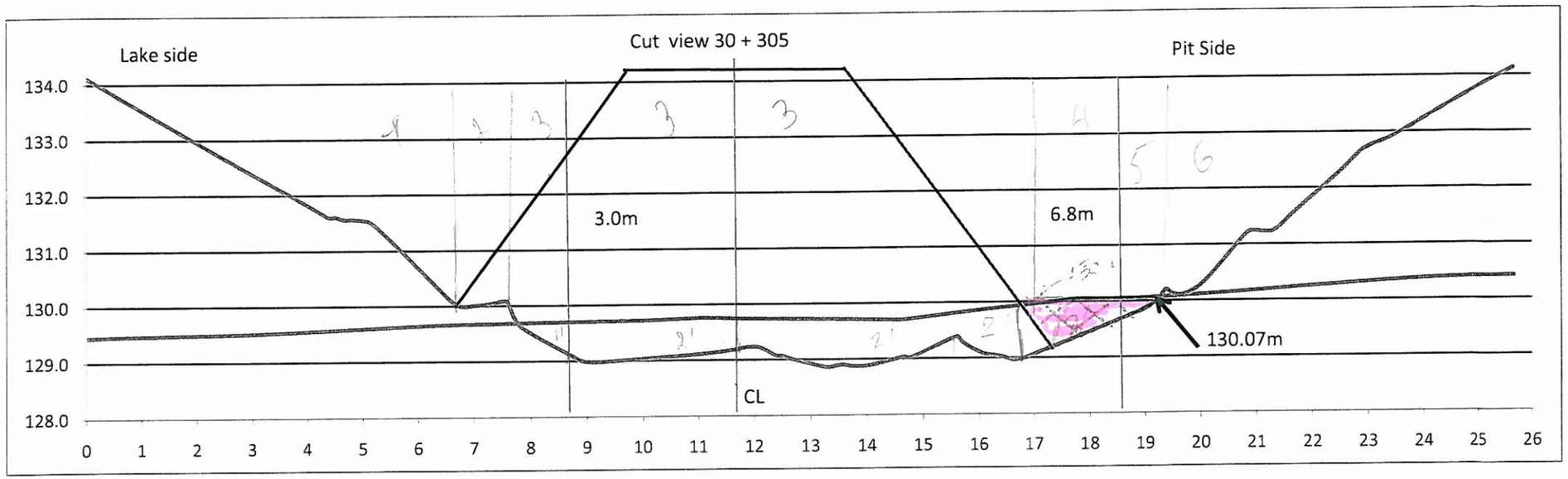
nippour

- Excavated rockfill: $\frac{(6,6+3.6)}{2}+1'(4.1\times9.7)+(2.0\times3.8)+\frac{(5.8\times3.8)}{2}+\frac{(2+0.7)}{2}=70,97\ m^2$

  $11,88 + 39.77 + 7.6 + 11.02^2 + 0,7$

- Excavated lake fill: $\frac{(5\times1)}{2}+\frac{(1+0.4)\times3.7}{2}+\frac{(2.8+0.4)}{2}=5,65\ m^2$

  $2.5 + 2.59 + 0.56^2$



Lake bed soil

Dike

Date 2009-08-20

By: HG

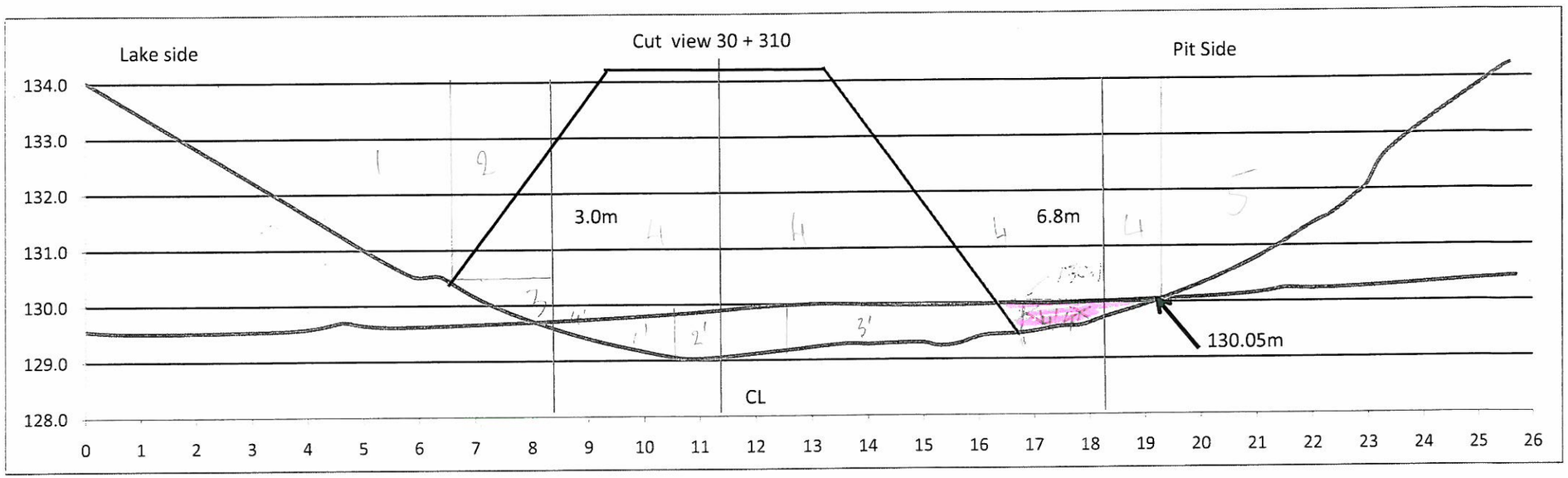
nippour

Excavated rockfill : $\underset{1}{(3.8\times6.3)} + \underset{2}{(1\times3.8)} + \underset{3}{(4.2\times6)} + \underset{4}{(1.5\times3.8)} + \underset{5}{(0.8\times3.8)} + \underset{6}{\frac{(6.3\times3.8)}{2}} = 61,68$

$11,97 + 3,8 + 25,2 + 5,7 + 3,04 + \frac{11,97}{2}$

Excavated lakefill : $\underset{1'}{\frac{(0.8\times0.6)}{2}} + \underset{2'}{(8\times0.8)} + \frac{(0.5\times1)}{2} + (0.6\times2.5) = 7,67\,m^2$

$0,27 + 6,4 + 0,25 + 0,75$



Lake bed soil

Dike

Date 2009-08-20

By: HG

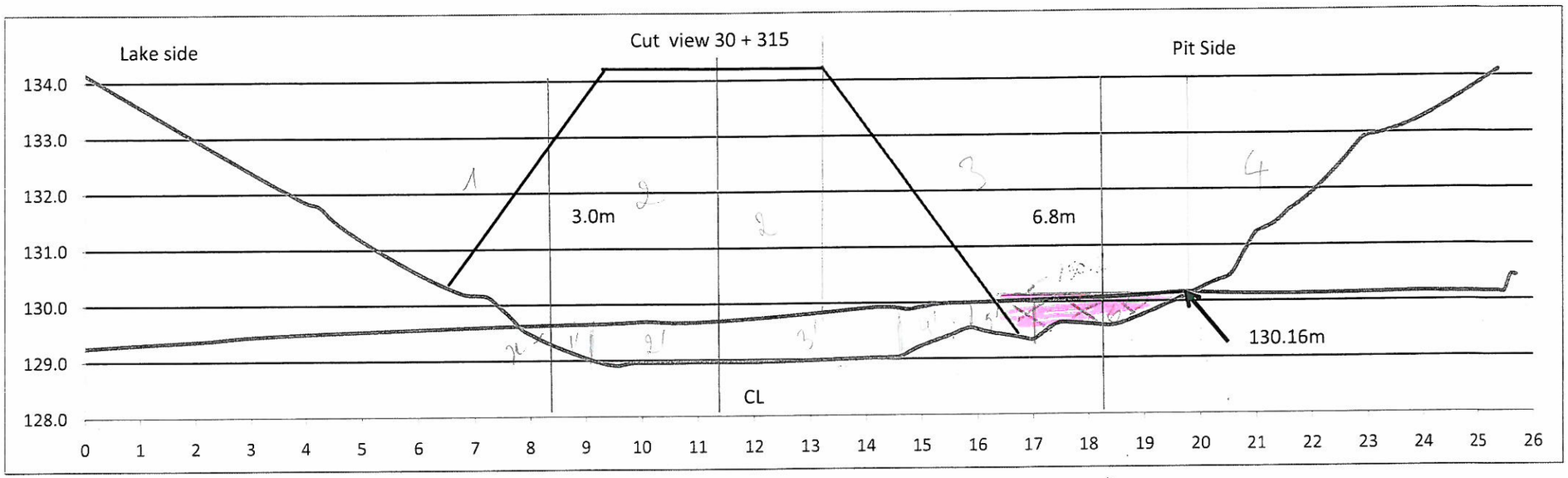
nippour

Excavated rockfill : $\frac{(3.4\times6.2)}{2} + (1.7\times3.5) + \frac{(1.8\times0.8)}{2} + (10.6\times3.8) + \frac{(0.3\times3.6)}{2} + \frac{(5.8\times3.8)}{2} = 69.05\ m^2$

$10.54 + 5.95 + 0.72 + 40.28 + 0.54 + 11.02$

- Excavated lake fill : $(2.4\times0.7) + (0.8\times1.9) + (4.1\times0.8) + (0.5\times2.7) = 6.91\ m^2$

$0.84 + 1.52 + 3.2 + 1.35$



Lake bed soil

Dike

Date 2009-08-20

By: HG

nippour

Excavated rockfill: $\frac{(6\times 4.3)}{2} - \frac{(0.6\times 0.3)}{2} + (4.7\times 6.2) + (6.3\times 3.9) + \frac{(5.5\times 3.9)}{2} = 67.85\ m^2$

$12.9 - 0.09 + 19.74 + 24.57 + 10.72$

Excavated lakefill: $\frac{(1.2\times 0.6)}{2} + (0.7\times 2.2) + (2.2\times 0.4) - \frac{(0.8+0.4)\times 1.2}{2} + \frac{(0.6+0.4)\times 1}{2} + \frac{(2.7\times 0.6)}{2} = 6.17$

$0.36 + 1.54 + 2.24 + 0.72 + 0.5^2 + 0.81$

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 30+320 Offset −3.0m to +6.0m	SHIFT: NIGHT :☒ DAY : ☐	DATE : 25/AUG/2009	SHEET 1 OF 1
To Sta. 30+380 Offset −3.0m to +6.0m	LOCATION: : TRENCH EXCAVATION		
EQUIPMENT: 385			

DESCRIPTION

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	MS	PMB
2.	Storage areas planned for disposal of removed materials	N/A	N/A
3.	Occurrence of snow and ice removal method in place	N/A	N/A
4.	Occurrence of boulders and removal method in place	MS	PMB
5.	Occurrence of hummocks and scalping method in place	MS	PMB
6.	Occurrence of surface and ground water and its impact mitigation in place	N/A	N/A
7.	Presence of other unsuitable materials and removal method in place	MS	PMB
8.	Soil frozen or thawed and measures taken	N/A	N/A
9.	Blasting requirement to remove unsuitable material and safety measure checked	N/A	N/A
10.	Adjustment made to suit design in field	MS	PMB
11.	Final walkover inspection before re-sloping or fill placement	MS	PMB
12.	"As-excavated" survey conducted	MS	PMB
13.	Final sounding conducted of lake bottom surface	MS	PMB

REMARKS : • COMPLETE SUBMISSION PACKAGE (REC'D AND REVIEWED (ATTACHED))
• CONFIRMATORY EXCAVATION DEMARCATED & RESURVEYED (SEE ATTACHED).
• D/S FILTER ELEV'NS PROVIDED TO FOL (SEE X-S'S ATTACHED)

DEVIATIONS : (Attach list if necessary)

N/A

DATE OF RECTIFICATION :

SURVEY VERIFICATION	ACCEPTED BY QA Manager :	ACCEPTED BY OWNER :
NAME: MAXIME GILBERT	NAME: PAUL BEDARD	NAME:
SIGNATURE :	SIGNATURE :	SIGNATURE :
DATE 25-08-09	DATE 25/AUG/2009	DATE

Golder Associates

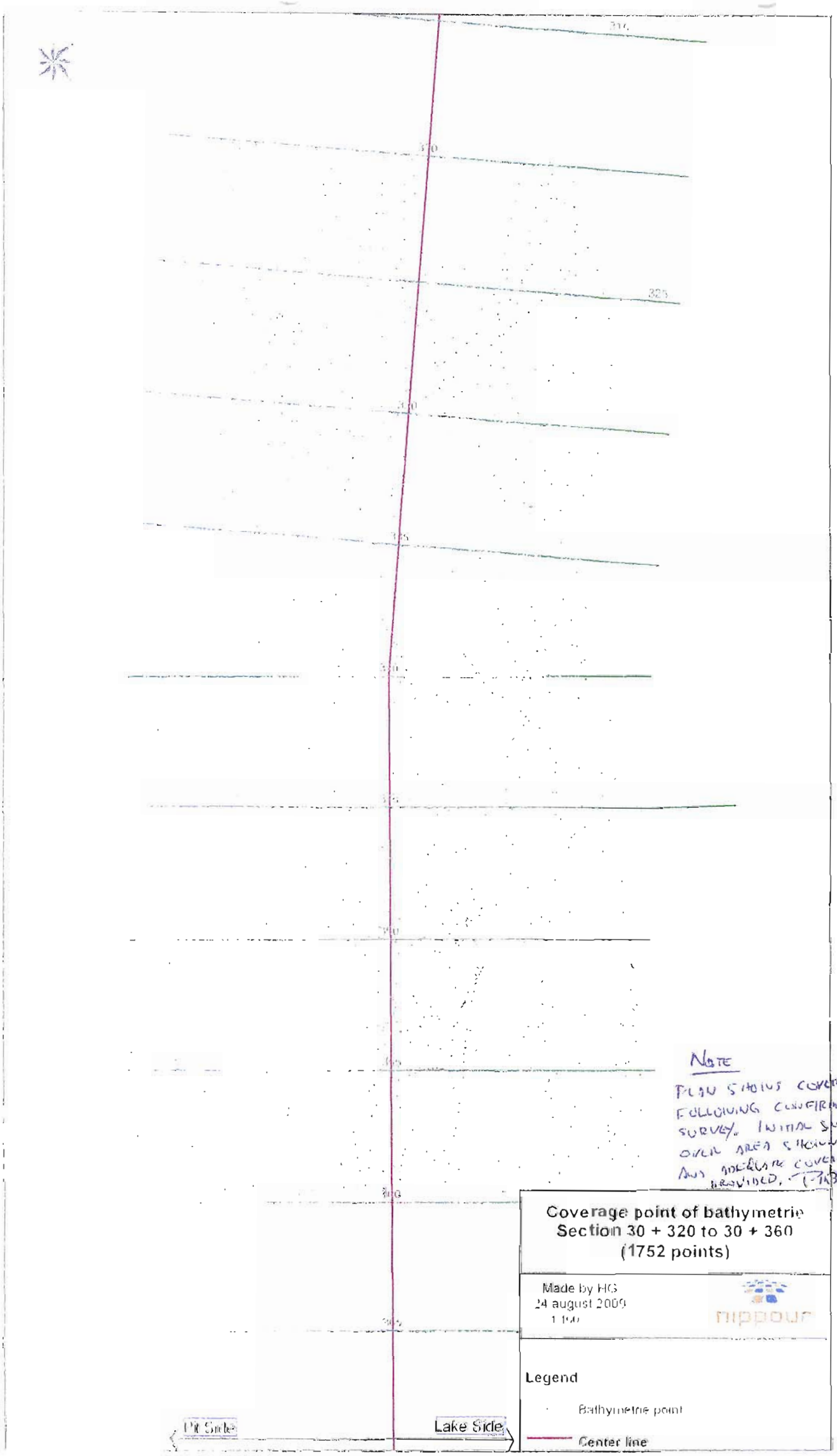
SUBJECT	Trench Excavation Survey Review: Sta 30+320 to 30+380, B-G.	
Job No. 08-1420-0029 5000	Made by [illegible] Reviewed	Date 24/06/2009 Sheet 1 of 1

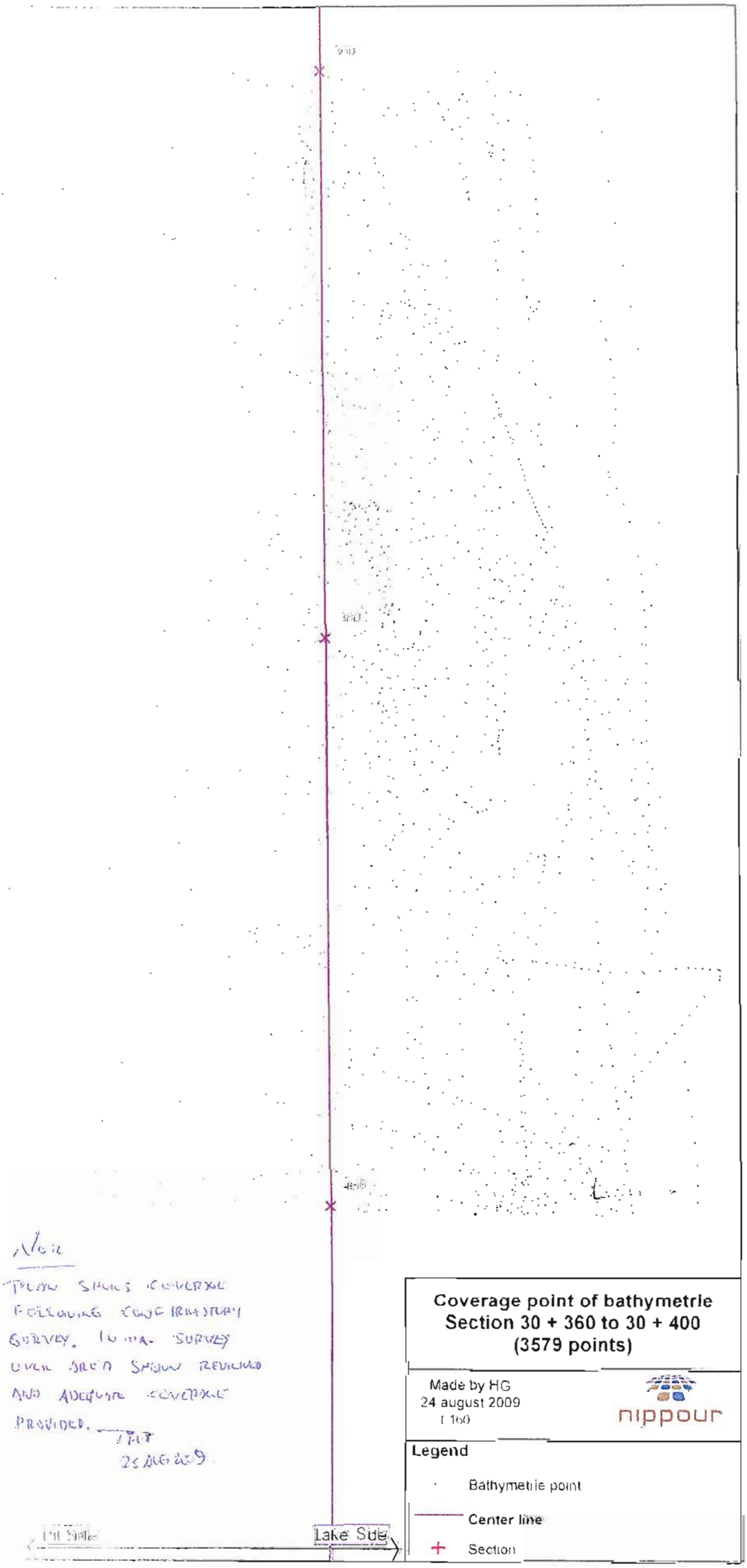
SUBMISSIONS FOR SIGN-OFF PACKAGE - STA 30+320 & STA 30+380

- SURVEY COVERAGE PLAN
  - NOT PROVIDED BETWEEN STA 30+320 & STA 30+360
  - REC'D STA 30+360 to STA 30+380 // REC'D 24 JUN 2009 TMB
- CONTOUR PLAN
  - RECEIVED STA 30+320 to STA 30+380
- CROSS-SECTIONS
  - STA 30+320
  - STA 30+325
  - STA 30+330
  - STA 30+335
  - STA 30+340
  - STA 30+345
  - STA 30+350
  - STA 30+355
  - STA 30+360

  LABELED "NOT FINAL" - FINAL VERSIONS TO BE PROVIDED // FINAL VERSIONS REC'D 24/06/2009 TMB

  - STA 30+365
  - STA 30+370
  - STA 30+375
  - STA 30+380 - NOT PROVIDED // PROVIDED 24 JUN 2009 TMB
  - ~~STA 30+385~~
  - ~~STA 30+390~~
  - ~~STA 30+395~~
  - ~~STA 30+400~~
- ℄ PROFILES
  - STA 30+320 to STA 30+340
  - STA 30+340 to STA 30+360
  - STA 30+360 to STA 30+380
  - ~~STA 30+380 to STA 30+400~~ ~~NOT PROVIDED~~


Coverage point of bathymetrie
Section 30 + 320 to 30 + 360
(1752 points)
Made by HG
24 august 2009
1:150
nippour
Legend
Bathymetrie point
Center line
Pit Side
Lake Side
NOTE
PLAN STATUS COVERAGE
FOLLOWING CONFIRMATORY
SURVEY. INITIAL SURVEY
OVER AREA SHOULD REVIEWED
AND ADEQUATE COVERAGE
PROVIDED.



Coverage point of bathymetrie
Section 30 + 360 to 30 + 400
(3579 points)

Made by HG
24 august 2009
[160)

nippour

Legend

Bathymetrie point

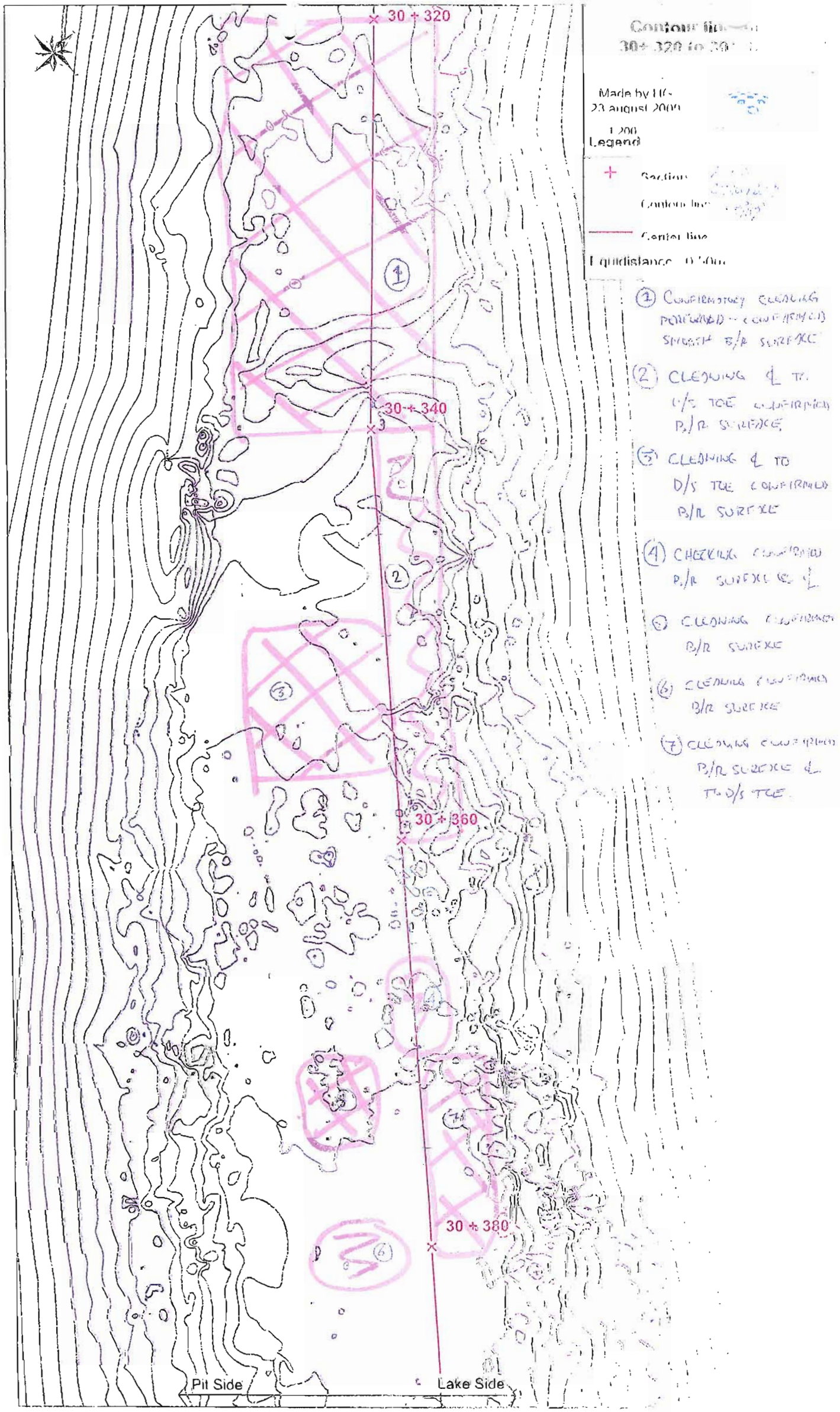
Center line

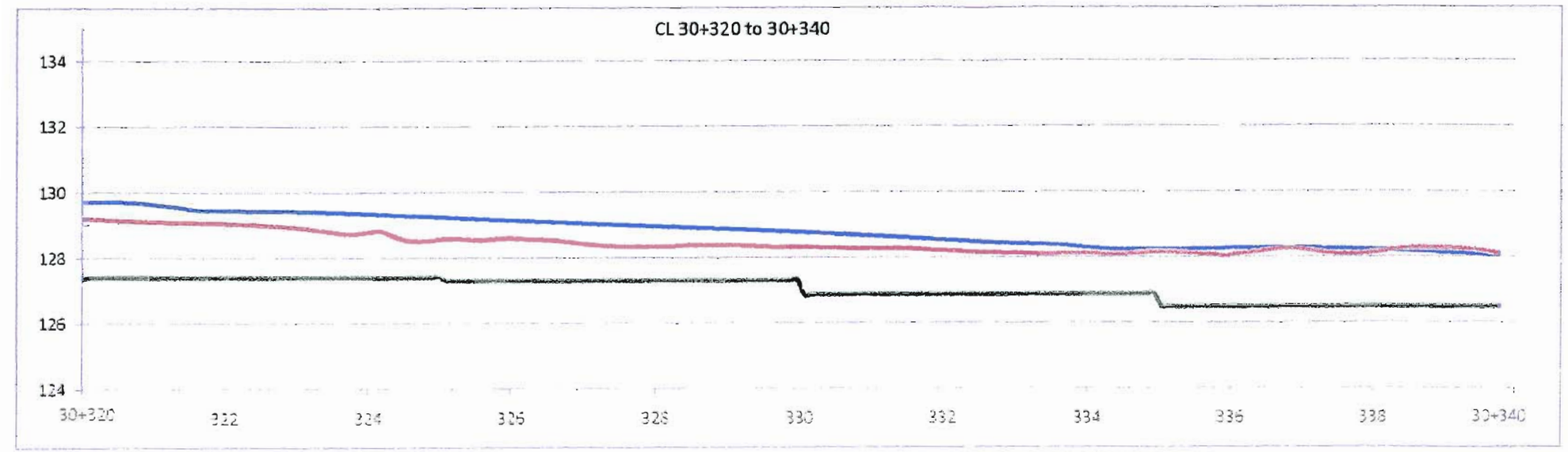
Section

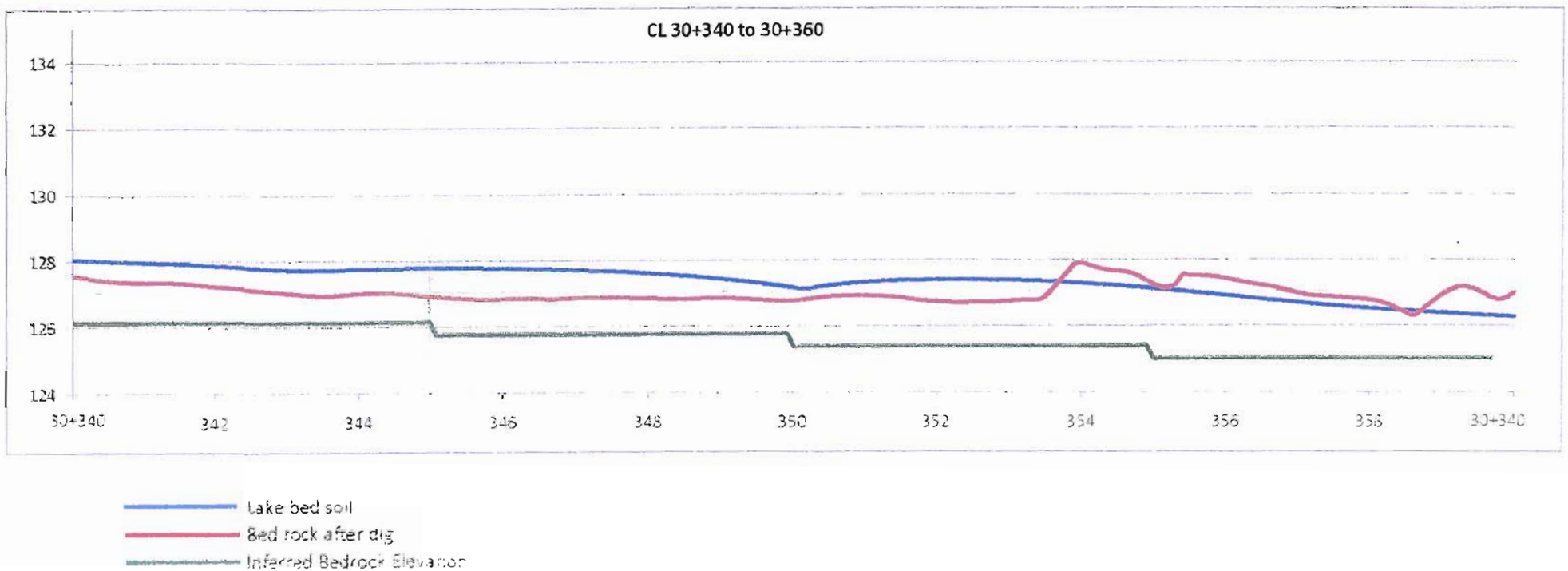
Voir

TRACK SHOWS COVERAGE FOLLOWING CONFIRMATORY SURVEY. INITIAL SURVEY OVER AREA SHOWN REVISED AND ADEQUATE COVERAGE PROVIDED.

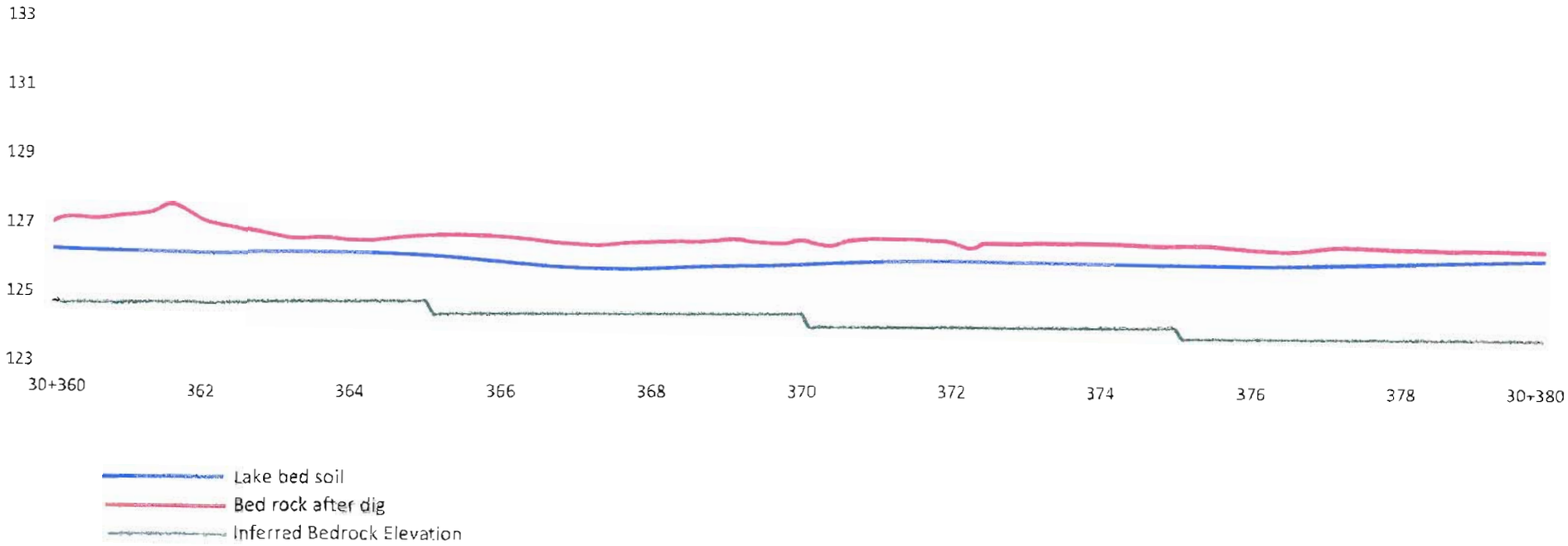
25 AUG 2009

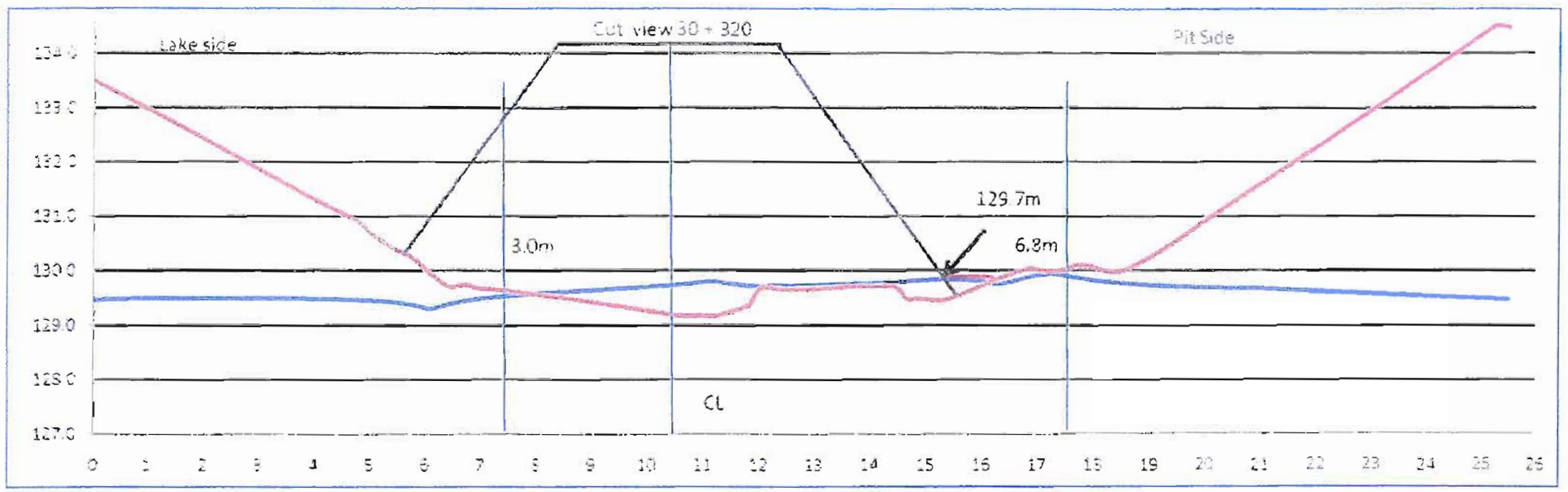

30 + 320
30 + 340
30 + 360
30 + 380
Pit Side
Lake Side
Contour line
30+ 320 to 30
Made by HS
23 august 2000
1:200
Legend
Section
Contour line
Center line
Equidistance 0.50m
1
2
3
4
5
6
7
(1) CONFIRMATORY CLEANING PERFORMED - CONFIRMED SMOOTH B/R SURFACE
(2) CLEANING ℄ TO U/S TOE CONFIRMED B/R SURFACE
(3) CLEANING ℄ TO D/S TOE CONFIRMED B/R SURFACE
(4) CHECKING CONFIRMED B/R SURFACE ℄
(5) CLEANING CONFIRMED B/R SURFACE
(6) CLEANING CONFIRMED B/R SURFACE
(7) CLEANING CONFIRMED B/R SURFACE ℄ TO D/S TOE.


CL 30+320 to 30+340
134
132
130
128
126
124
30+320
322
324
326
328
330
332
334
336
338
30+340
Lake bed soil
Bed rock after d:g
Inferred Bedrock Elevation


CL 30+340 to 30+360
134
132
130
128
126
124
30+340
342
344
346
348
350
352
354
356
358
30+340
Lake bed soil
Bed rock after dig
Inferred Bedrock Elevation

CL 30+360 to 30+380





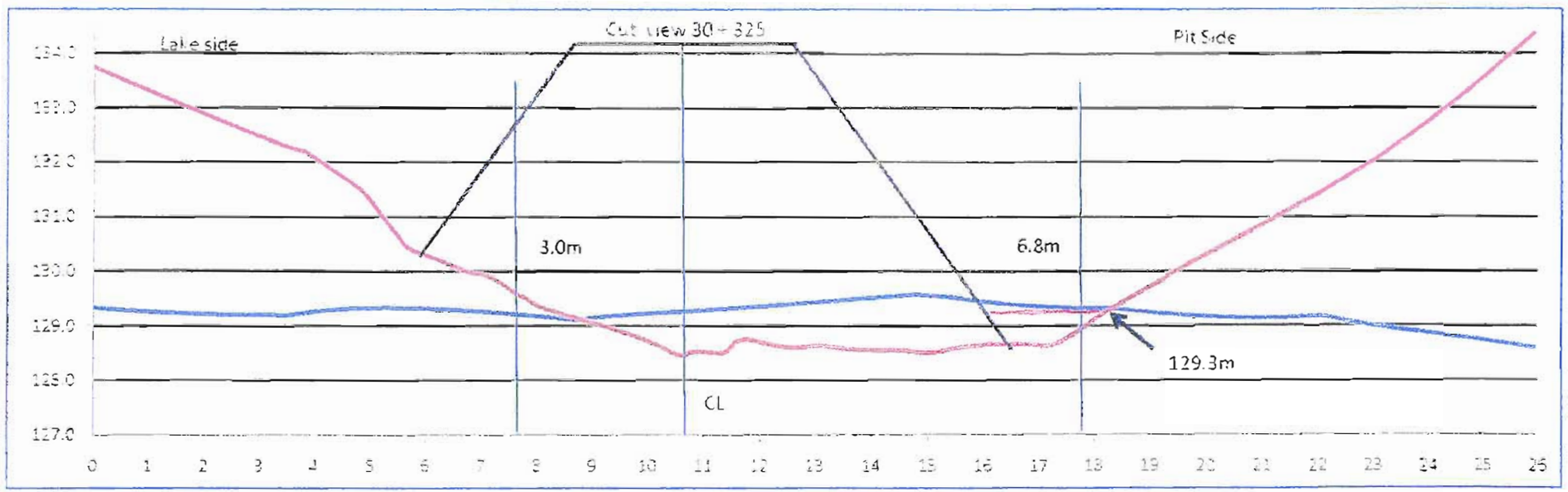
Lake bed soil

Dike

Date 2009-03-22

By: HG

nippour



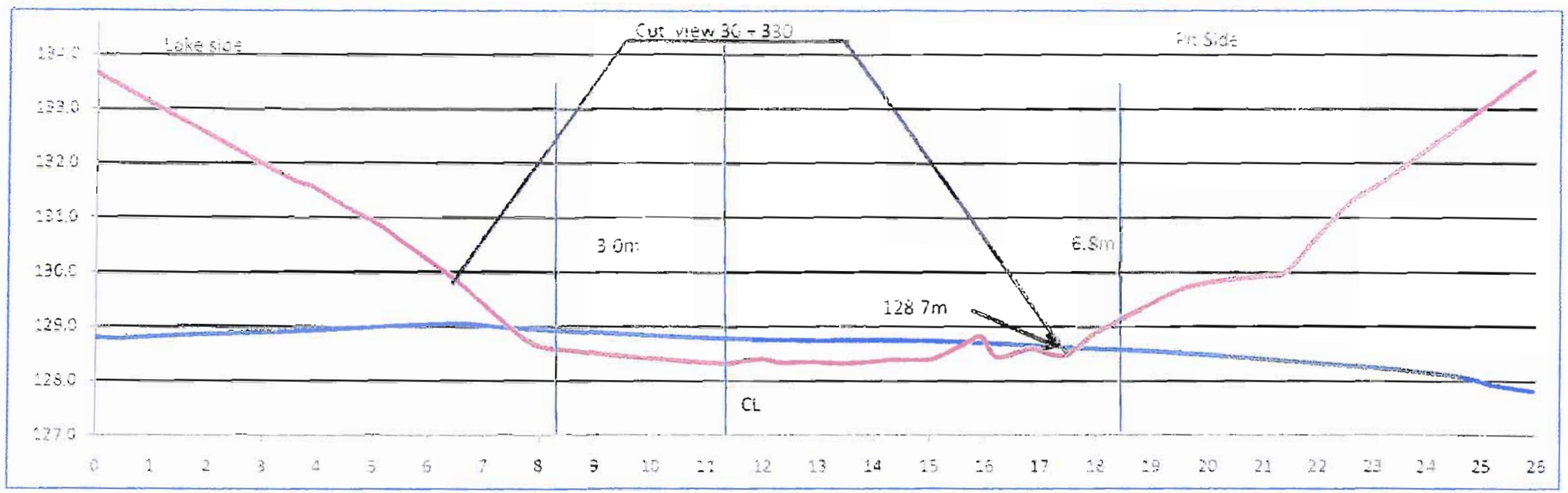
Lake bed soil

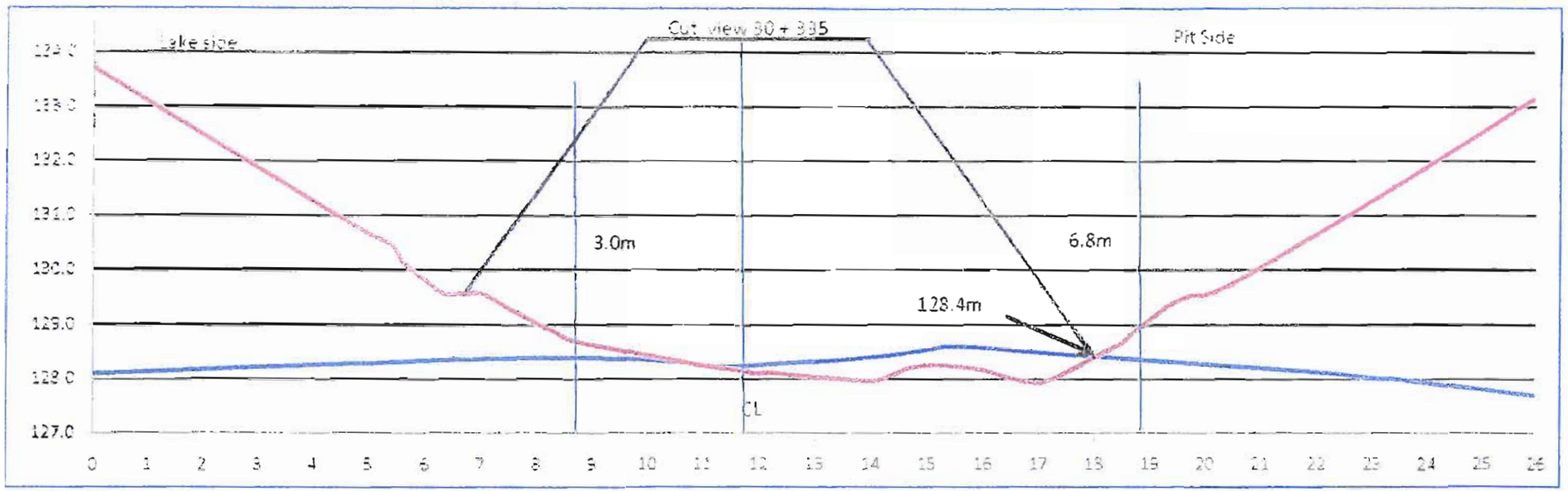
Dive

Date 2009-08-22

By: HG

nippon

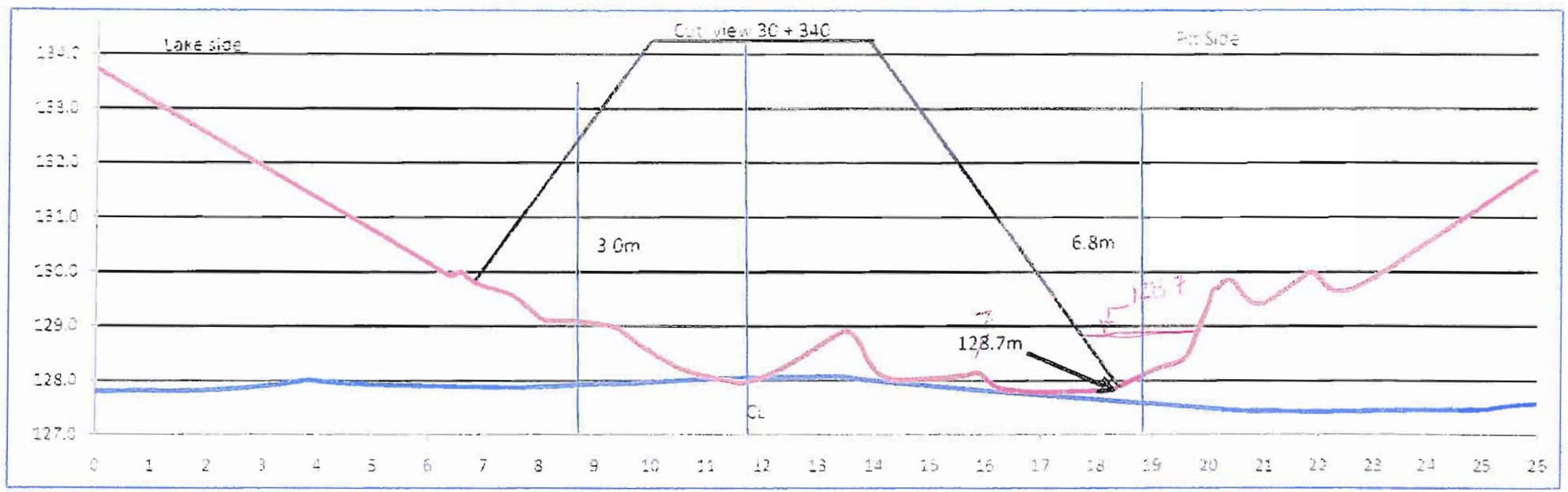

Cut view 30 - 330
Lake side
Fin Side
3.0m
6.8m
128.7m
CL
133.0
132.0
131.0
130.0
129.0
128.0
127.0
0
1
2
3
4
5
6
7
8
9
10
11
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16
17
18
19
20
21
22
23
24
25
26

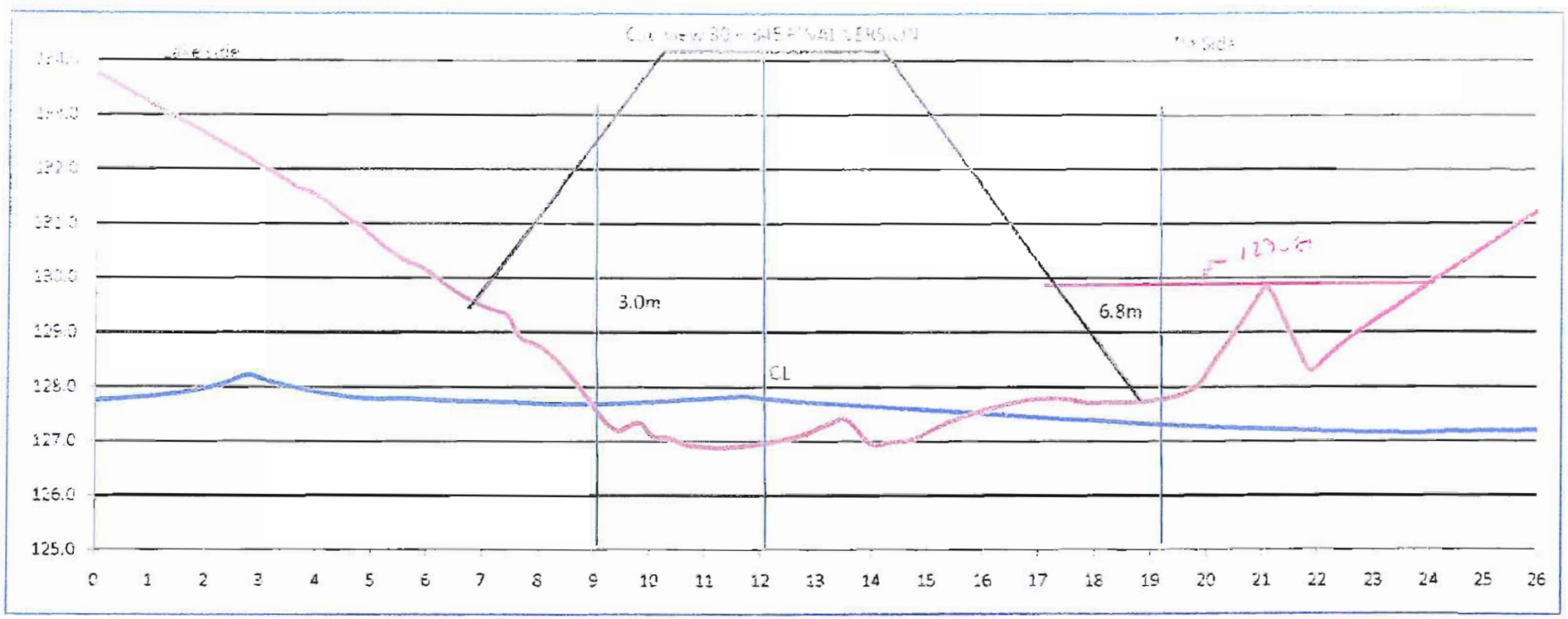


Lake bed soil
Dike

Date 2009-08-22
By HG

nippour


Lake side
Cut view 30 + 340
Pit Side
3.0m
6.8m
128.7m
CL
130.0
129.0
128.0
127.0
0
1
2
3
4
5
6
7
8
9
10
11
12
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26



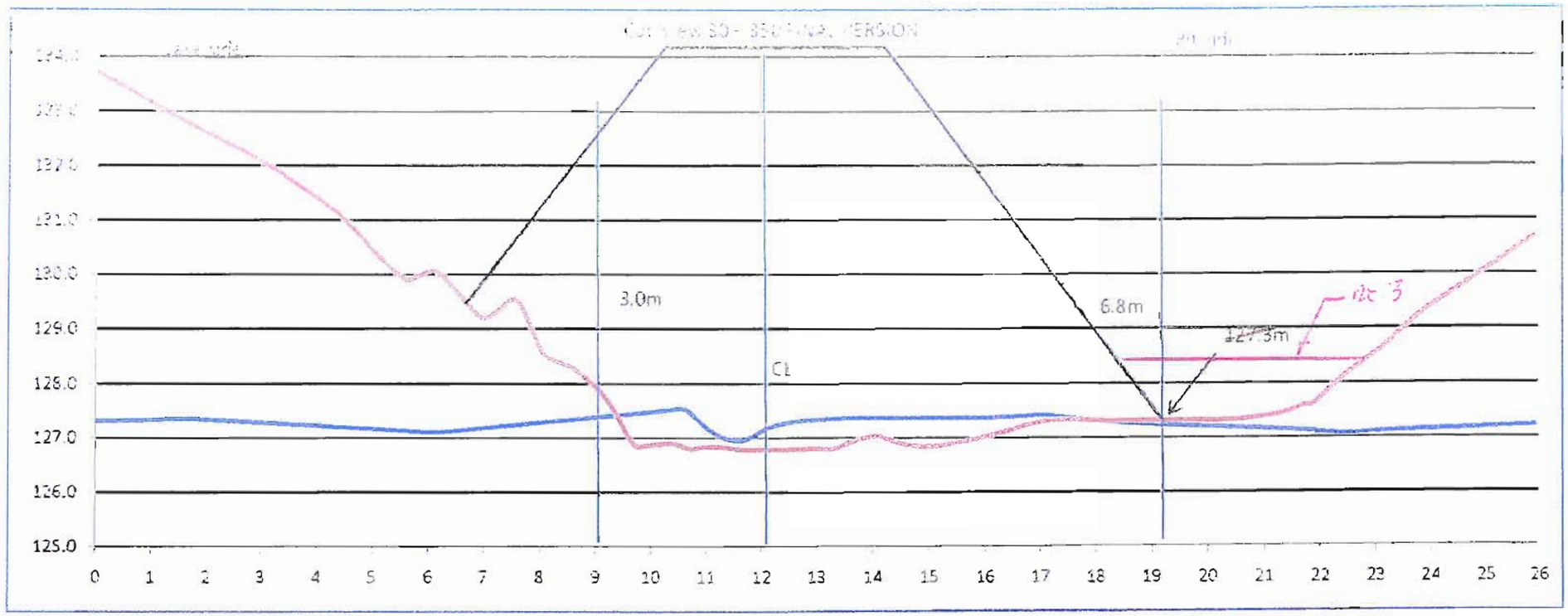
Lake bed soil

Dike

Date 2009-08-22

By: HG

nippour



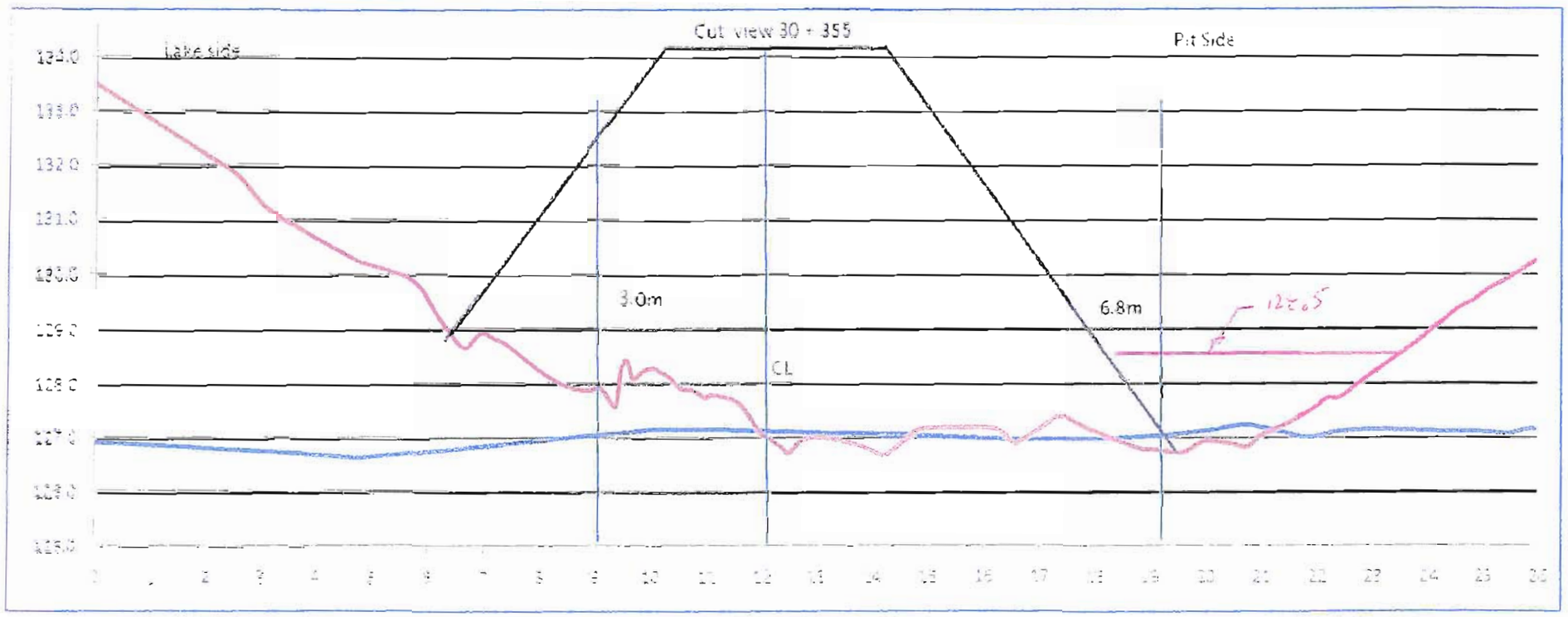
Lake bed soil

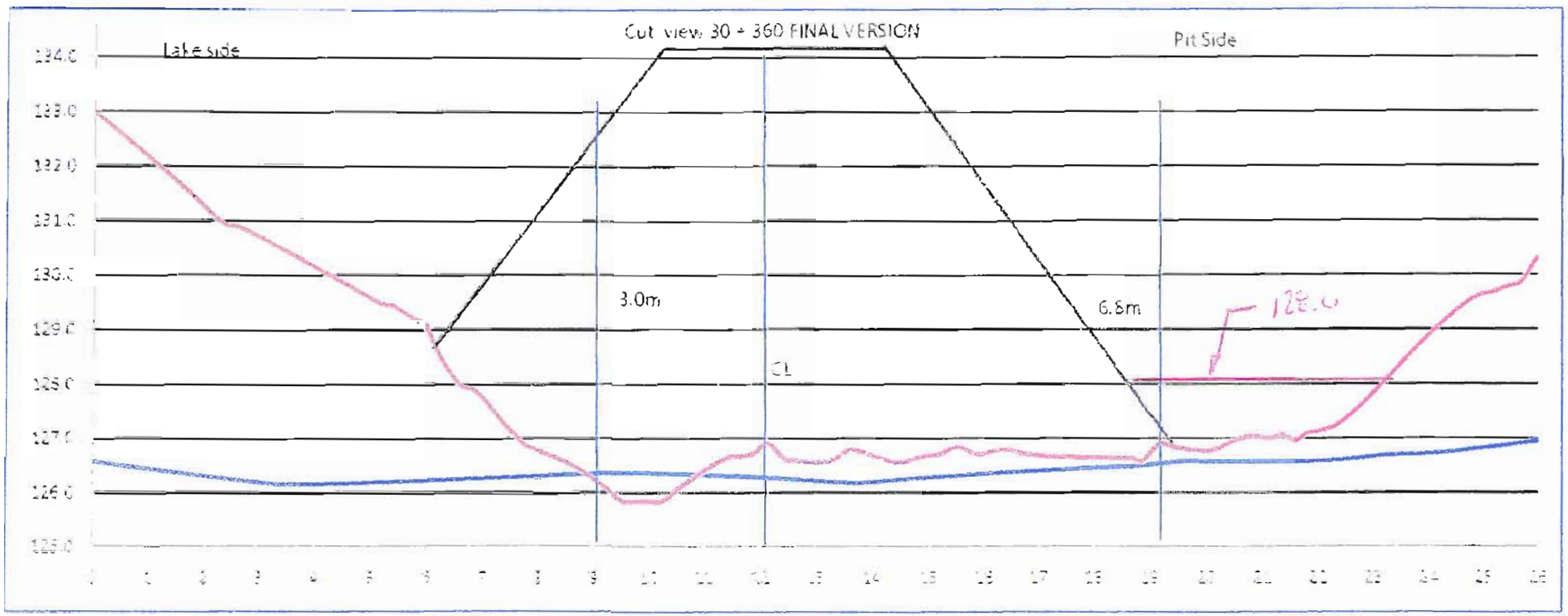
Dike

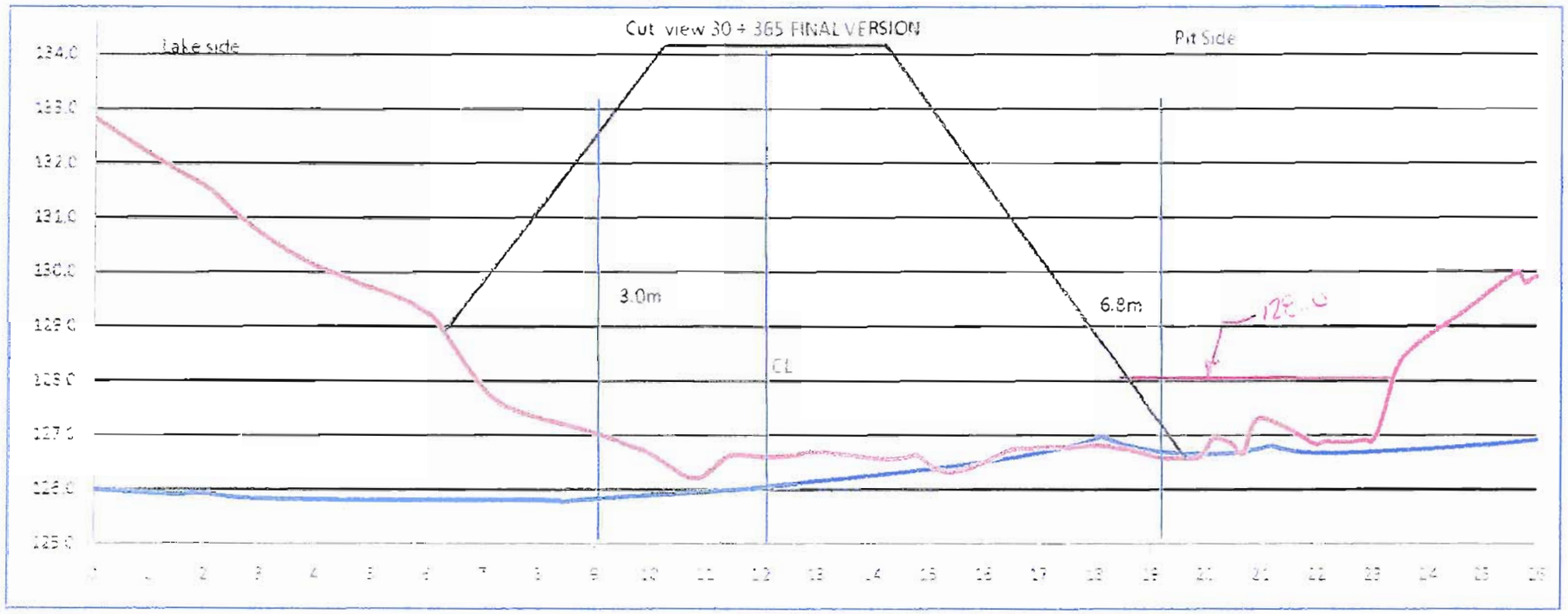
Date 2009-08-23

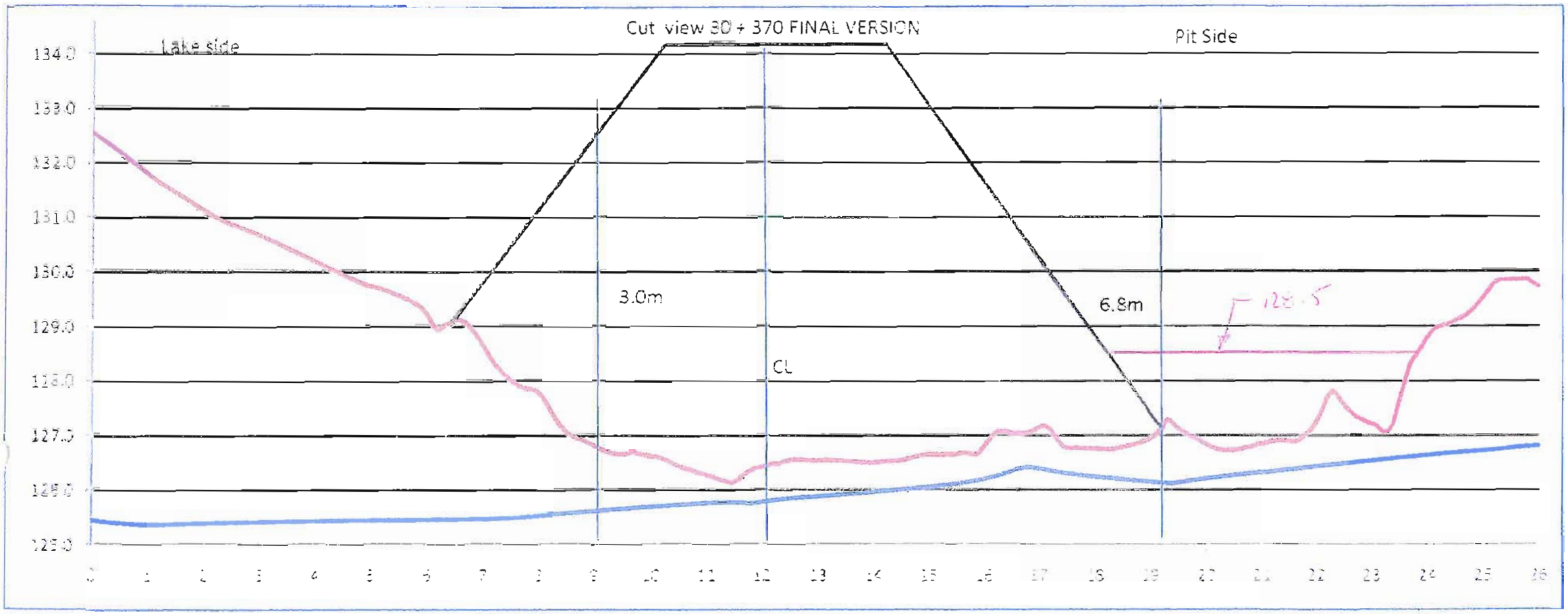
By: HG

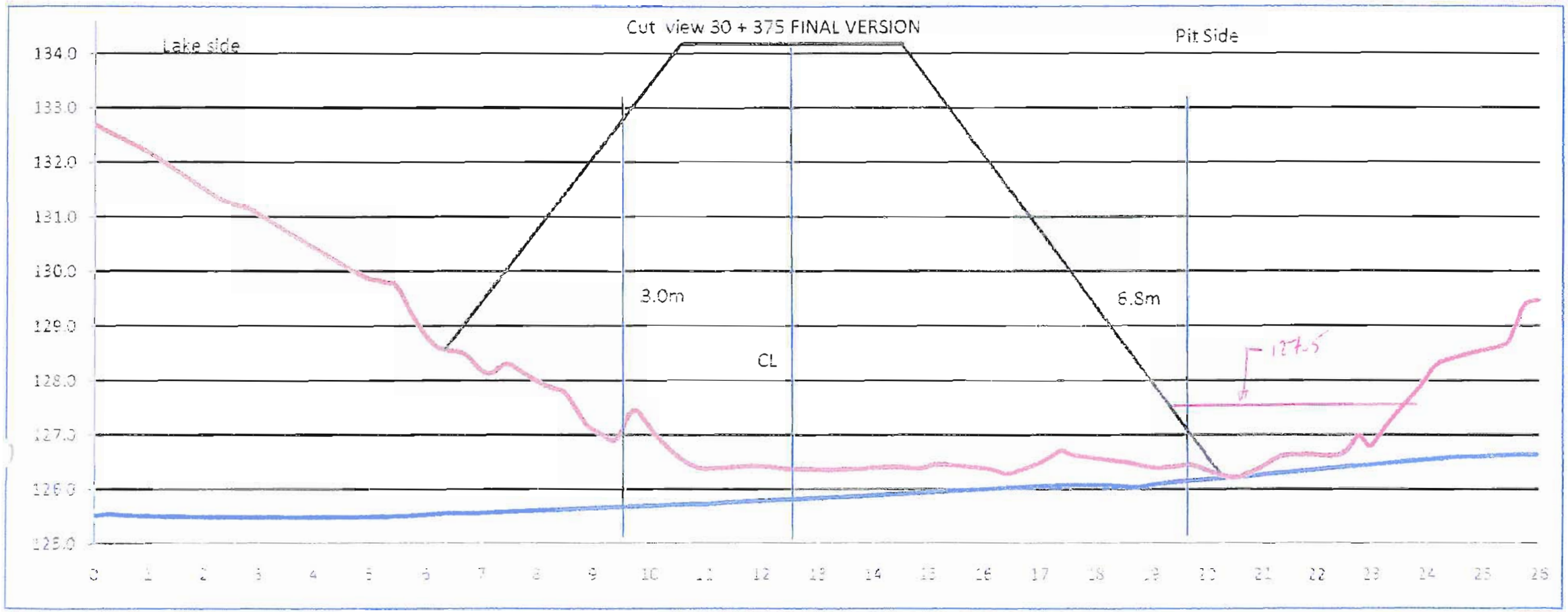
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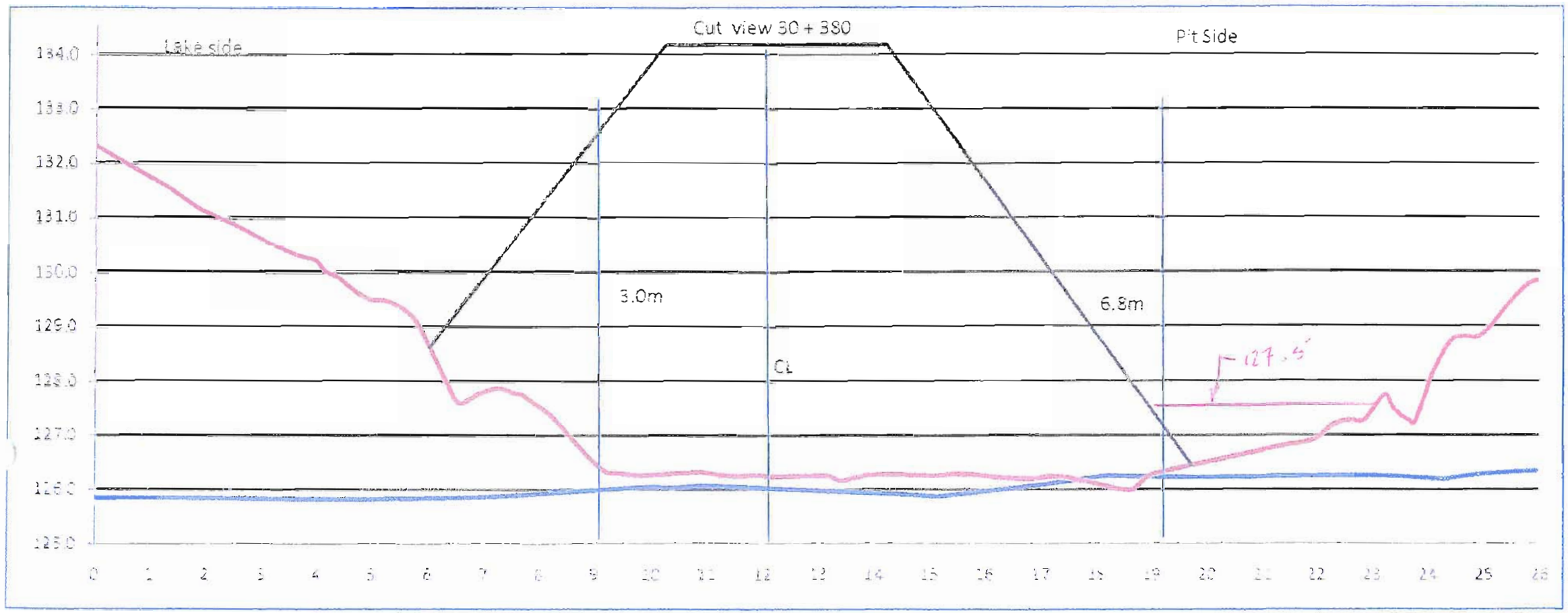

Cut view 30 + 355
Lake side
Pit Side
3.0m
6.8m
CL
12.05
Lake bed slope
Lake
Date
2009-08-22


Cut view 30 + 360 FINAL VERSION
Lake side
Pit Side
3.0m
6.8m
CL
128.0
134.0
133.0
132.0
131.0
130.0
129.0
128.0
127.0
126.0
125.0
Lake bed soil
Dike
Date
2009-08-22
HG


Cut view 30 + 365 FINAL VERSION
Lake side
Pit Side
3.0m
6.8m
CL
134.0
133.0
132.0
131.0
130.0
129.0
128.0
127.0
126.0
125.0
Lake bed so
Dike
Date
2009-08-22


Cut view 30 + 370 FINAL VERSION
Lake side
Pit Side
134.0
133.0
132.0
131.0
130.0
129.0
128.0
127.0
126.0
125.0
3.0m
6.8m
CL
128.5
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26


Cut view 30 + 375 FINAL VERSION
Lake side
Pit Side
134.0
133.0
132.0
131.0
130.0
129.0
128.0
127.0
126.0
125.0
3.0m
6.8m
CL
187.5
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26


Cut view 30 + 380
Lake side
Pit Side
134.0
133.0
132.0
131.0
130.0
129.0
128.0
127.0
126.0
125.0
3.0m
6.8m
CL
127.5
0
1
2
3
4
5
6
7
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9
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11
12
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26

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 30+380 Offset -30 to 68 | SHIFT. NIGHT: ☐ DAY: ☑ | DATE: Aug 26/09 | SHEET 1 OF 1

To Sta. 30+400 Offset -30 to 68 | LOCATION: Trench excavation

EQUIPMENT: 385

DESCRIPTION

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings		
2.	Storage areas planned for disposal of removed materials		N/A
3.	Occurrence of snow and ice removal method in place		N/A
4.	Occurrence of boulders and removal method in place		
5.	Occurrence of hummocks and scalping method in place		
6.	Occurrence of surface and ground water and its impact mitigation in place		N/A
7.	Presence of other unsuitable materials and removal method in place		
8.	Soil frozen or thawed and measures taken		N/A
9.	Blasting requirement to remove unsuitable material and safety measure checked		N/A
10.	Adjustment made to suit design in field		
11.	Final walkover inspection before re-sloping or fill placement		
12.	"As-excavated" survey conducted		
13	Final sounding conducted of lake bottom surface		

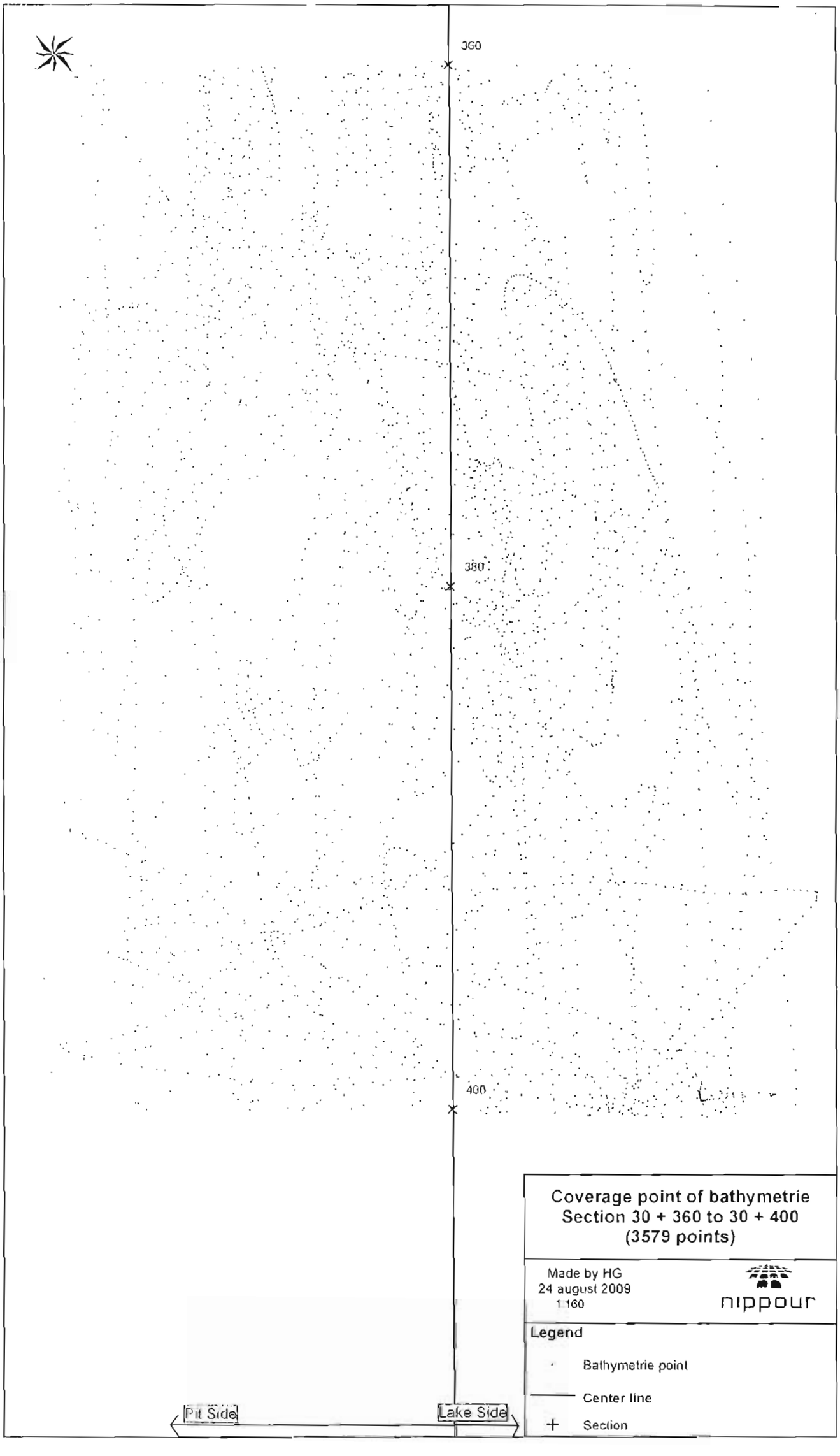
REMARKS: - Complete submission package recieved and reviewed (attached)
- additional foundation checking conducted (see attached)
- D/S Filter elevations provided to FGL (see attached sections)

DEVIATIONS: (Attach list if necessary)

N/A

DATE OF RECTIFICATION:

SURVEY VERIFICATION	ACCEPTED BY QA Manager:	ACCEPTED BY OWNER:
NAME: Guy Morissette	NAME: Glen Rutherford	NAME:
SIGNATURE:	SIGNATURE:	SIGNATURE:
DATE 26 Aug 09	DATE 26 Aug 09	DATE



Coverage point of bathymetrie
Section 30 + 360 to 30 + 400
(3579 points)

Made by HG
24 august 2009
1:160

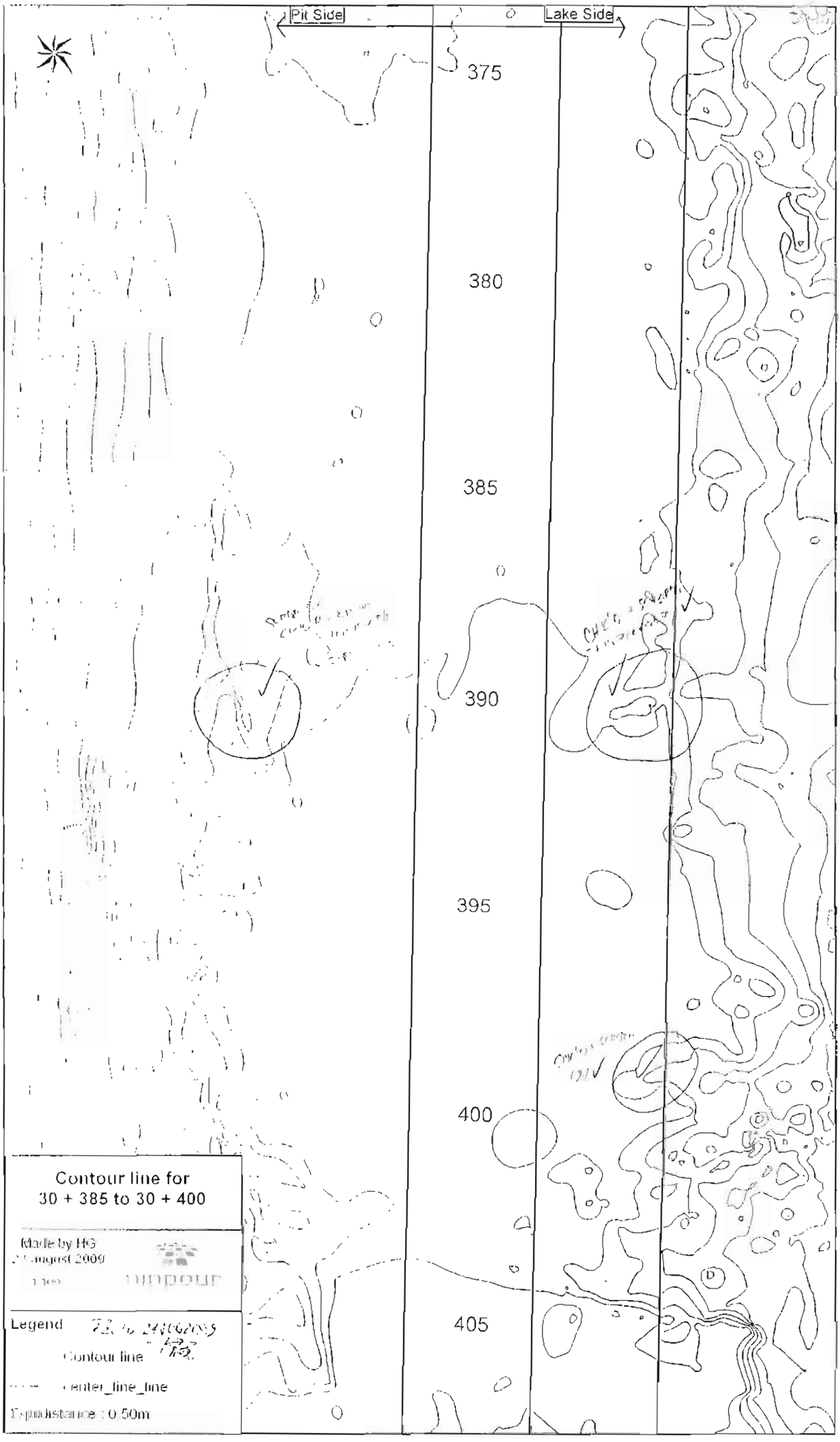
nippour

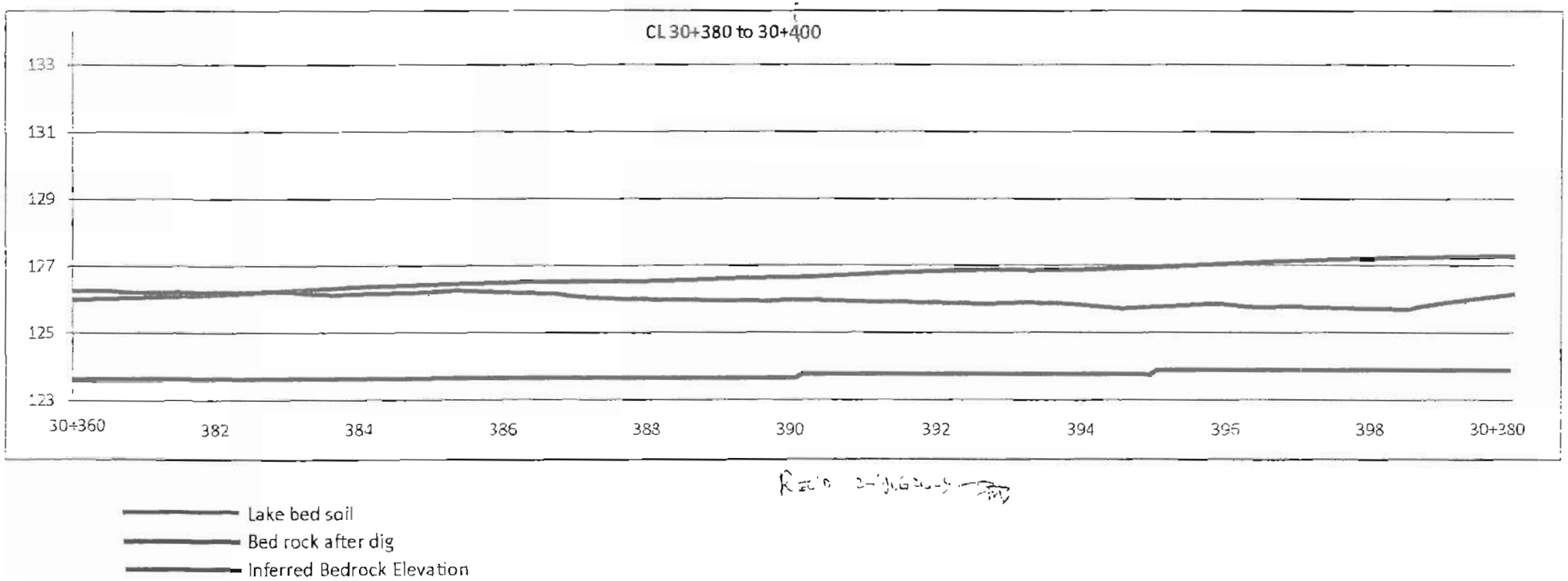
Legend

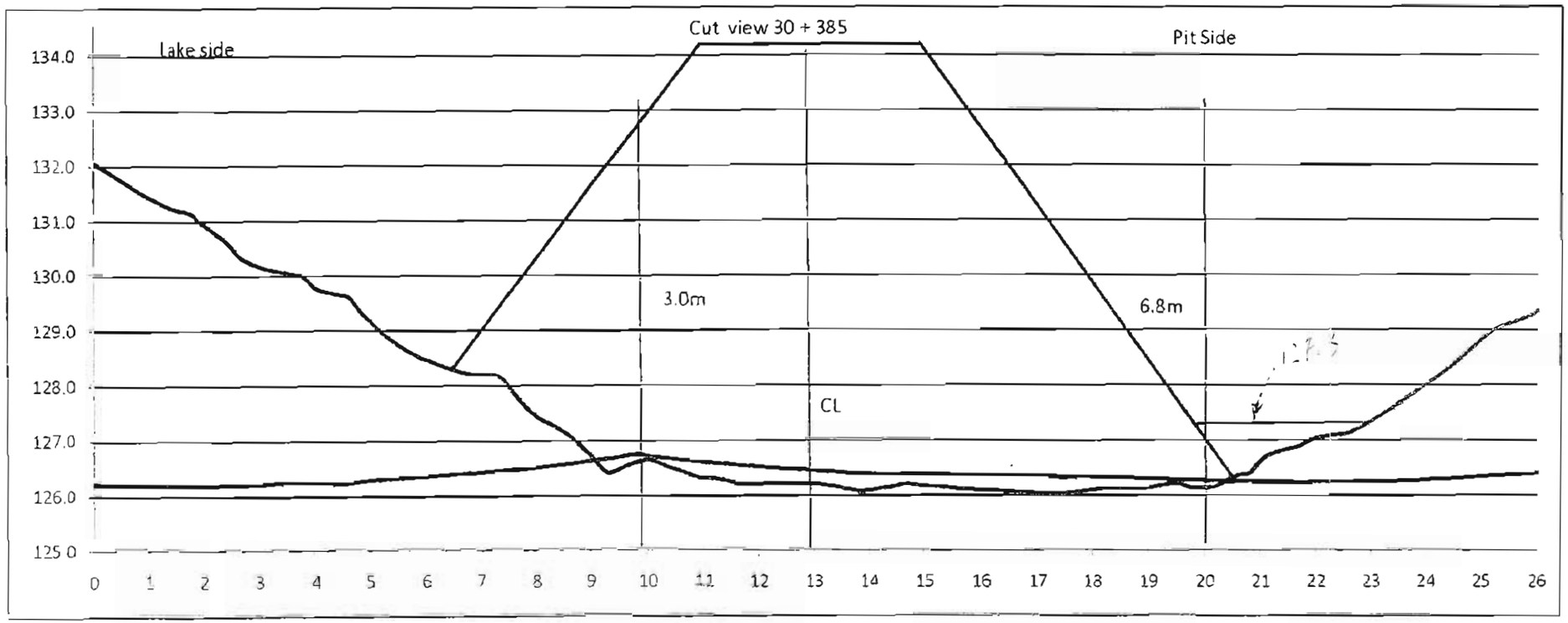
Bathymetrie point

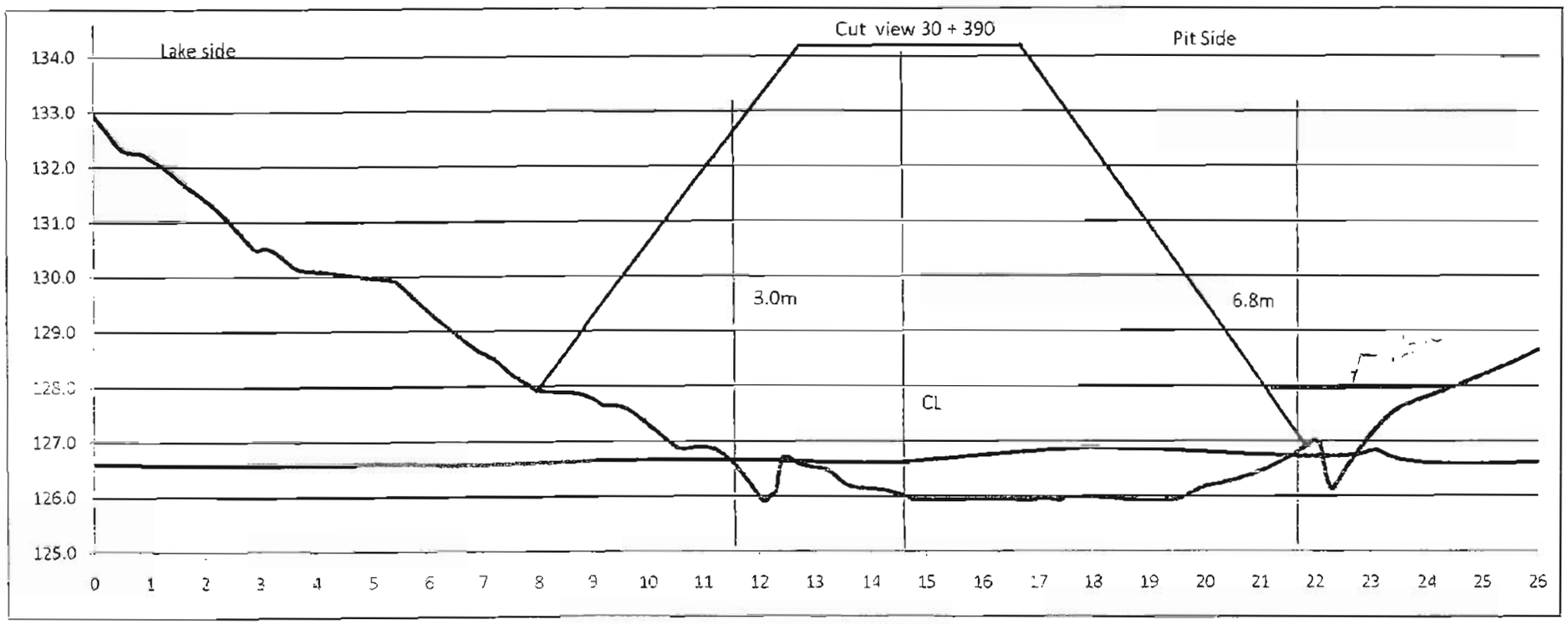
Center line

Section


Pit Side
Lake Side
375
380
385
390
395
400
405
Contour line for
30 + 385 to 30 + 400
Made by HG
August 2009
Legend
Contour line
Center_line_line
Equidistance : 0.50m


CL 30+380 to 30+400
133
131
129
127
125
123
30+360
382
384
386
388
390
392
394
396
398
30+380
Lake bed soil
Bed rock after dig
Inferred Bedrock Elevation


Cut view 30 + 385
Lake side
Pit Side
134.0
133.0
132.0
131.0
130.0
129.0
128.0
127.0
126.0
125.0
3.0m
6.8m
CL
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26
Lake bed soil
Dike
Date 2009-08-23
By: HG

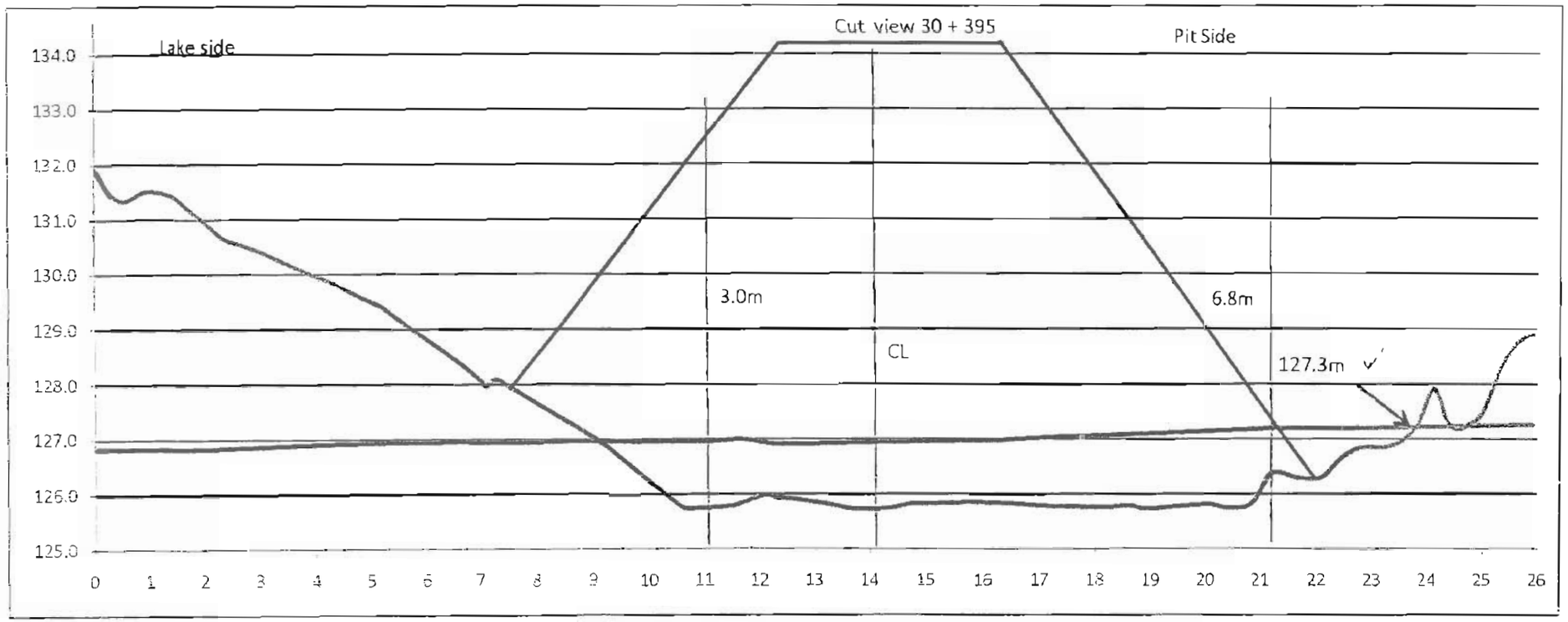


Lake bed soil

Dike

Date 2009-08-23

By: HG

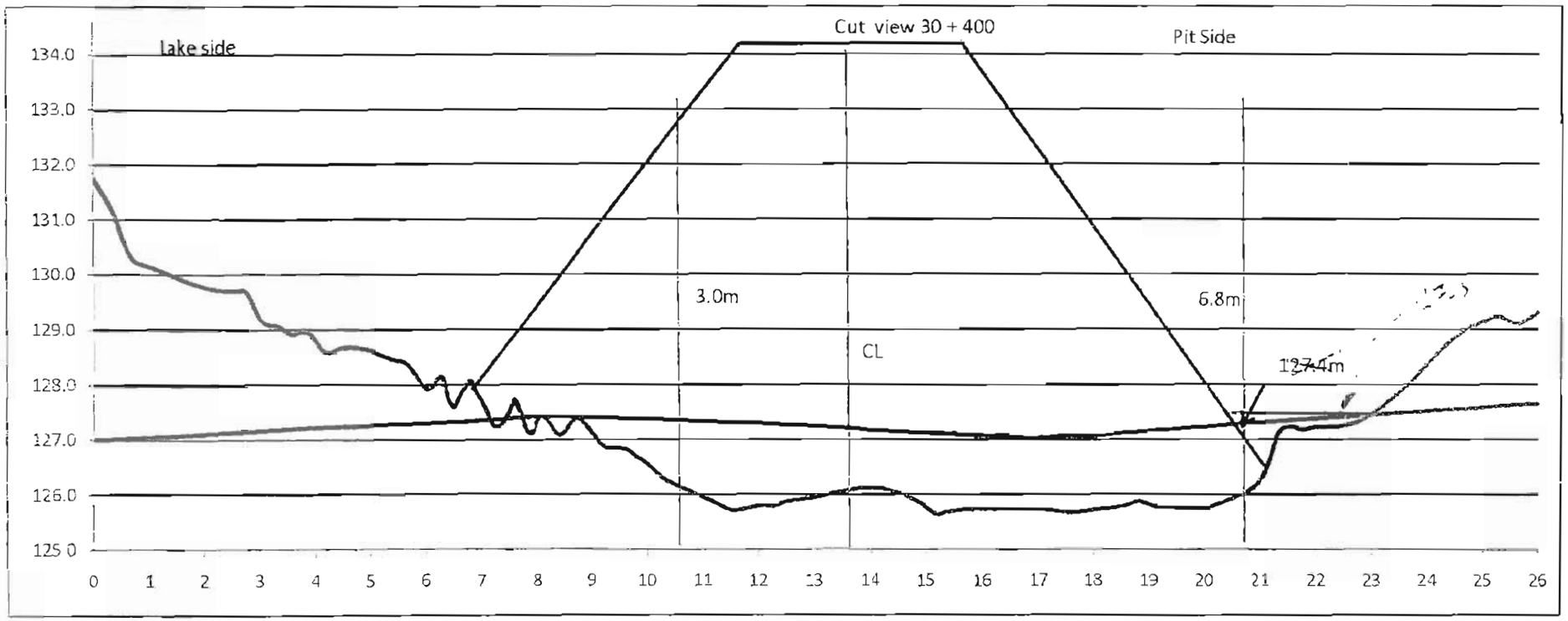


Lake bed soil

Dike

Date 2009-08-23

By: HG



Lake bed soil

Dike

Date 2009-08-23

By: HG

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 30+400 Offset	SHIFT: NIGHT: ☐ DAY: ☐	DATE: Aug 30/09	SHEET OF
To Sta. 30+435 Offset	LOCATION: Meadowbank – Bay Goose		
EQUIPMENT:	Rockfill Excavation		
DESCRIPTION			

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	GM	GR Deviation ①
2.	Storage areas planned for disposal of removed materials	—	N/A
3.	Occurrence of snow and ice removal method in place	—	N/A
4.	Occurrence of boulders and removal method in place	GM	GR
5.	Occurrence of hummocks and scalping method in place	GM	GR
6.	Occurrence of surface and ground water and its impact mitigation in place	—	N/A
7.	Presence of other unsuitable materials and removal method in place	GM	GR
8.	Soil frozen or thawed and measures taken	—	N/A
9.	Blasting requirement to remove unsuitable material and safety measure checked	—	N/A
10.	Adjustment made to suit design in field	GM	GR
11.	Final walkover inspection before re-sloping or fill placement	GM	GR
12.	"As-excavated" survey conducted	GM	GR
13.	Final sounding conducted of lake bottom surface	GM	GR

REMARKS: - Complete submission package recieved (attached)
- Additional foundation checking completed (attached)
- D/S Filter elevations provided to FGL (attached sections)

DEVIATIONS: (Attach list if necessary)
① – Based on the recent drilling Golder has concerns with regard to the accuracy of the bathymetry on the final excavated rock surface. While we feel that the excavation has been carried out as required, the line presented in the bathymetry does not seem to match the field observations.

DATE OF RECTIFICATION:

SURVEY VERIFICATION	ACCEPTED BY QA Manager:	ACCEPTED BY OWNER:
NAME: GUY MORISSETTE	NAME: Glen Rutherford	NAME:
SIGNATURE: Morissette	SIGNATURE:	SIGNATURE:
DATE 30 Aout 09	DATE 30 Aug 09	DATE

11:20 hrs.

Golder Associates

SUBJECT	Bay Goose		
Job No.		Made by GR	Date Aug 26/09
		Reviewed	Sheet of

Review of Bathymetry

30+400 to 30+420 cross sections
plan up to 30+440

- ~~check~~ OK up to 30+415

- AoC 30+420 to 30+423 – noted horizontal structure across base ⊥ to ℄. Bath redone and structure dissapeared. Reviewed coverage and there is an apparent bias (∩ the Bath 1st pass // to ℄ / 2nd pass ⊥ to ℄ Structure dissapears)

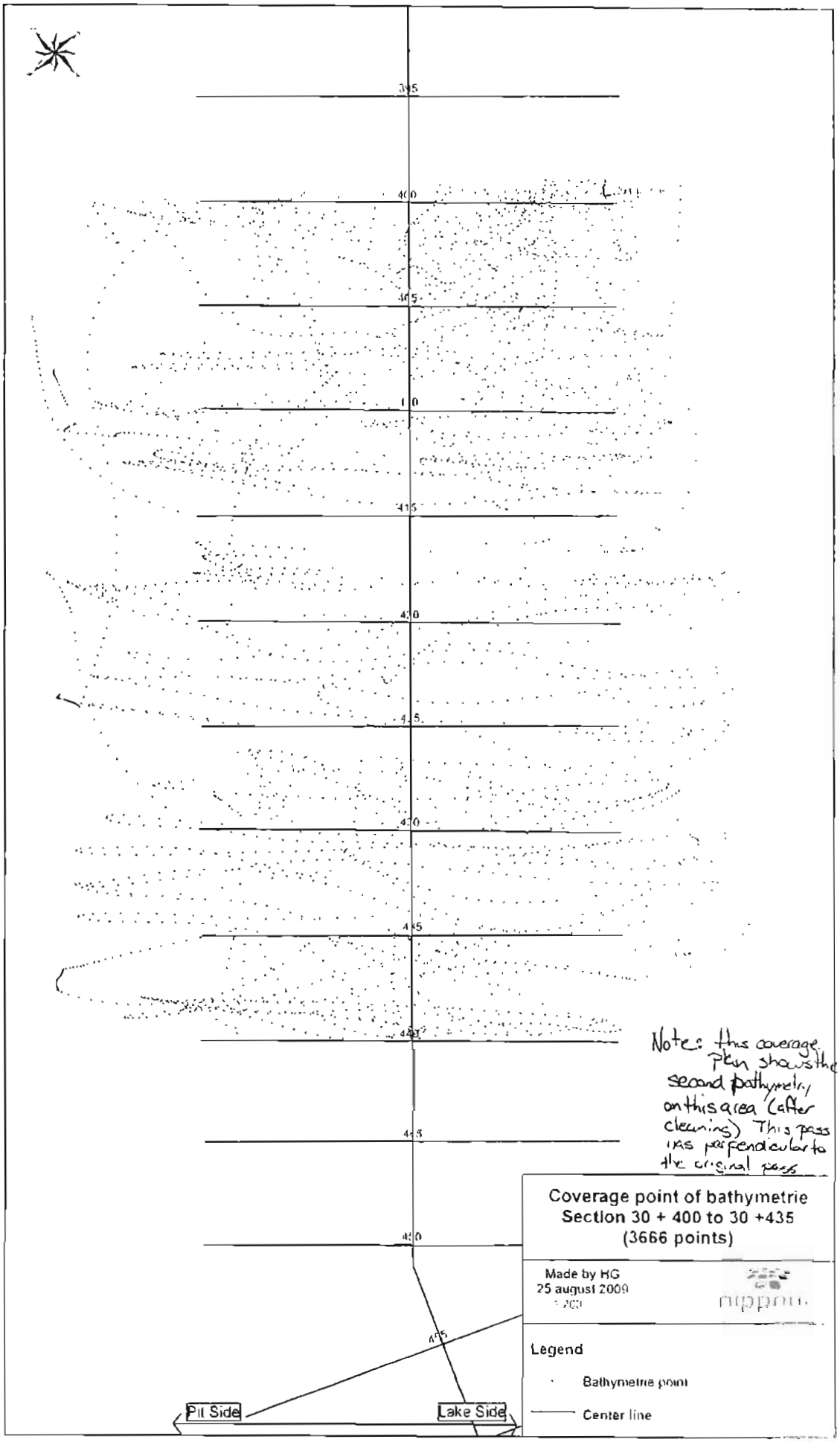
→ Golder requires ~~recommends~~ re-cleaning of 30+420 to 30+423

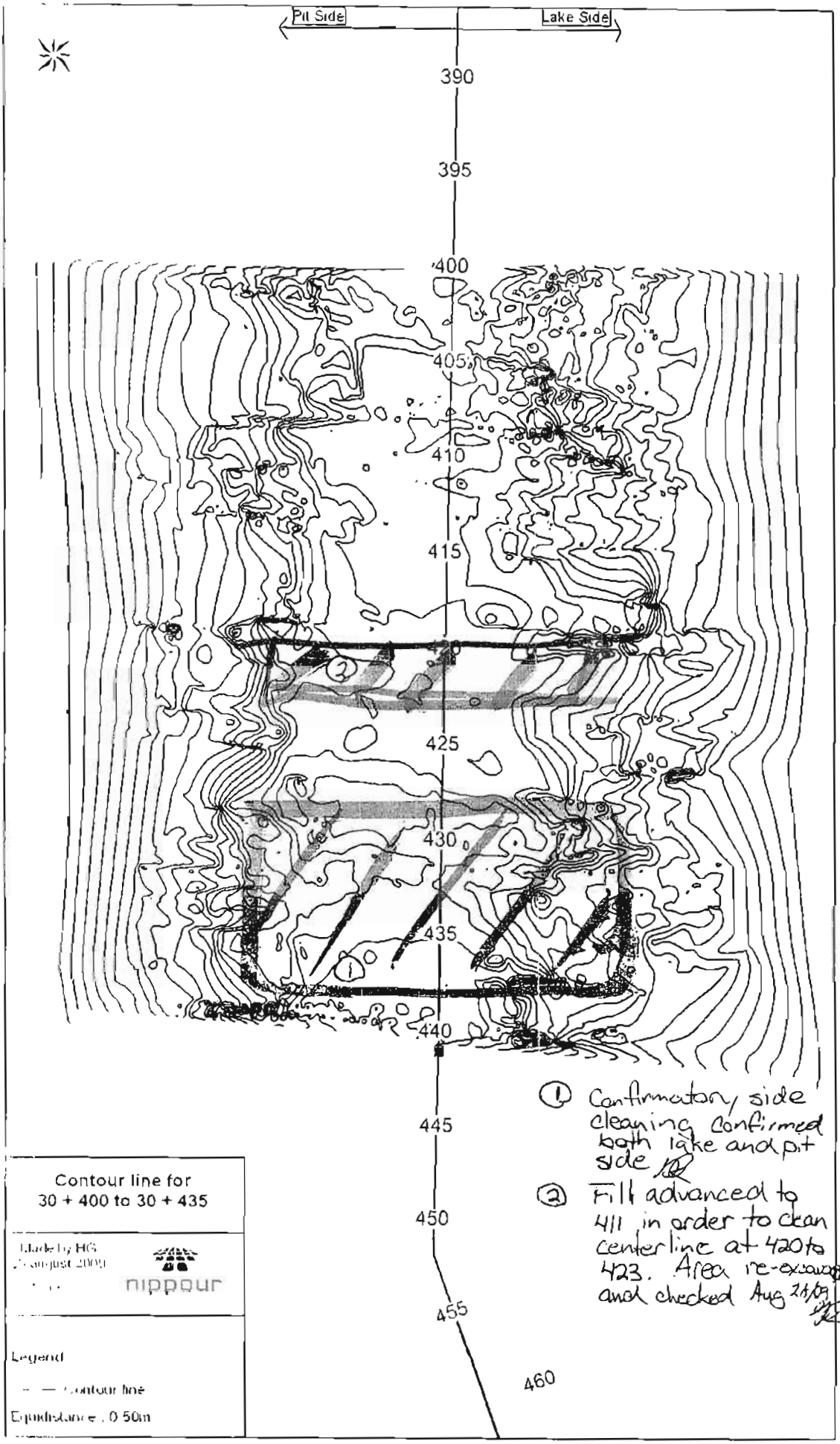
- AoC 30+428 to 30+435

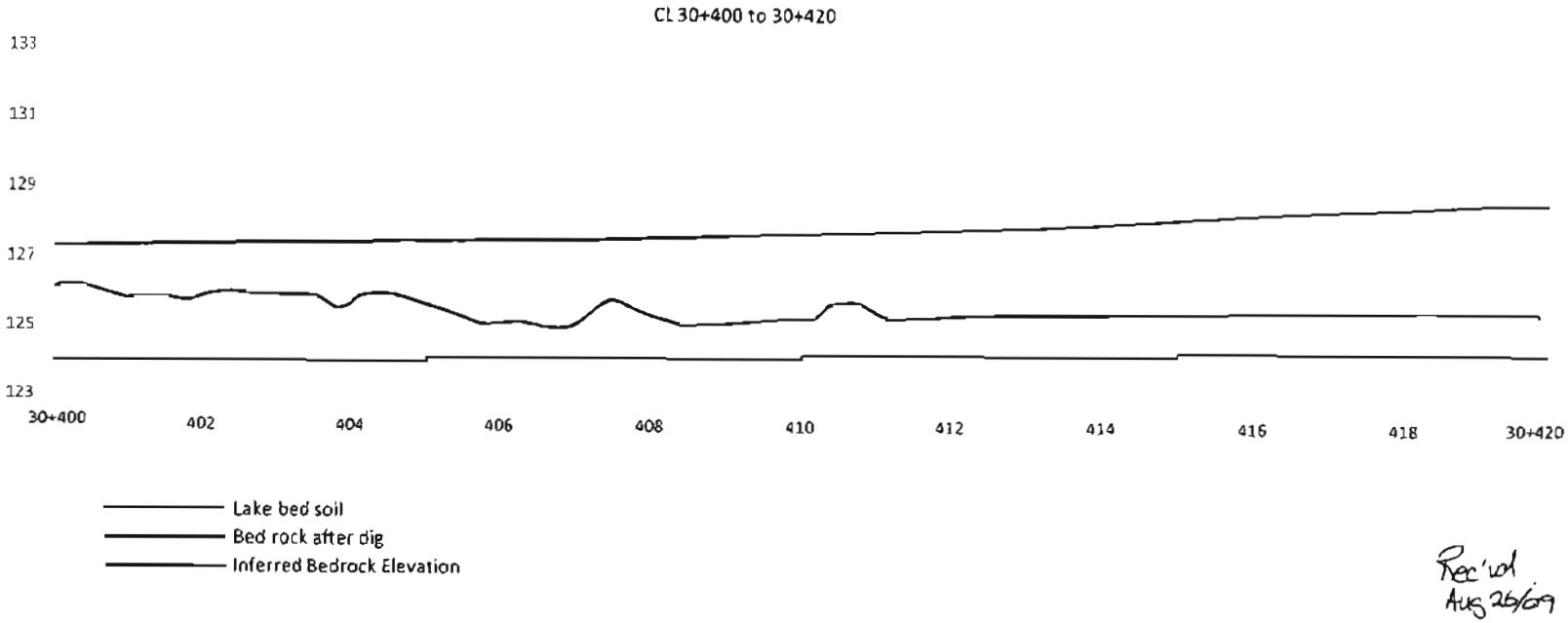
- Irregular surface ⊥ to ℄ across entire bottom – edges cleaned, ~~but~~ and rock found

→ Golder requires re cleaning of 30+425 to 30+435
- Cleaning occurred on each side
- Revised after speaking with JK and NSO we are confident that the surface consists of bedrock.

- Does not match inferred bedrock elevation but does match the previously reviewed sections and observations suggest that this is the same

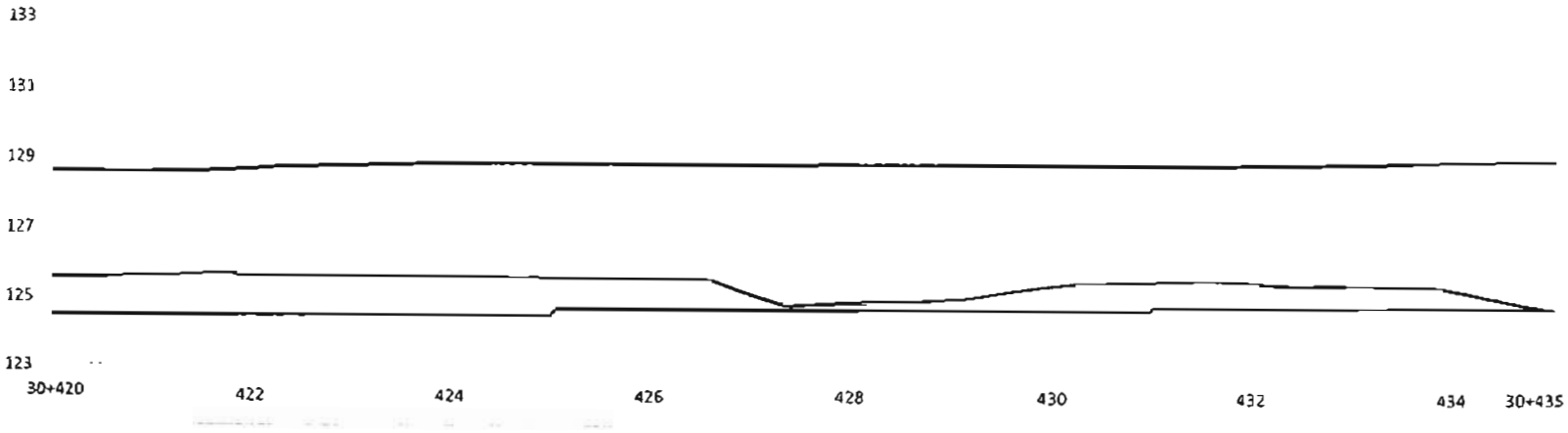

Note: this coverage plan shows the second bathymetry on this area (after cleaning) This pass was perpendicular to the original pass
Coverage point of bathymetrie
Section 30 + 400 to 30 +435
(3666 points)
Made by HG
25 august 2009
Legend
Bathymetrie point
Center line
Pit Side
Lake Side


Pit Side
Lake Side
390
395
400
405
410
415
425
430
435
440
445
450
455
460
Contour line for
30 + 400 to 30 + 435
Made by HG
August 2009
nippour
Legend
Contour line
Equidistance : 0.50m
① Confirmatory side cleaning confirmed both lake and pit side
② Fill advanced to 411 in order to clean centerline at 420 to 423. Area re-excavated and checked Aug 21/09

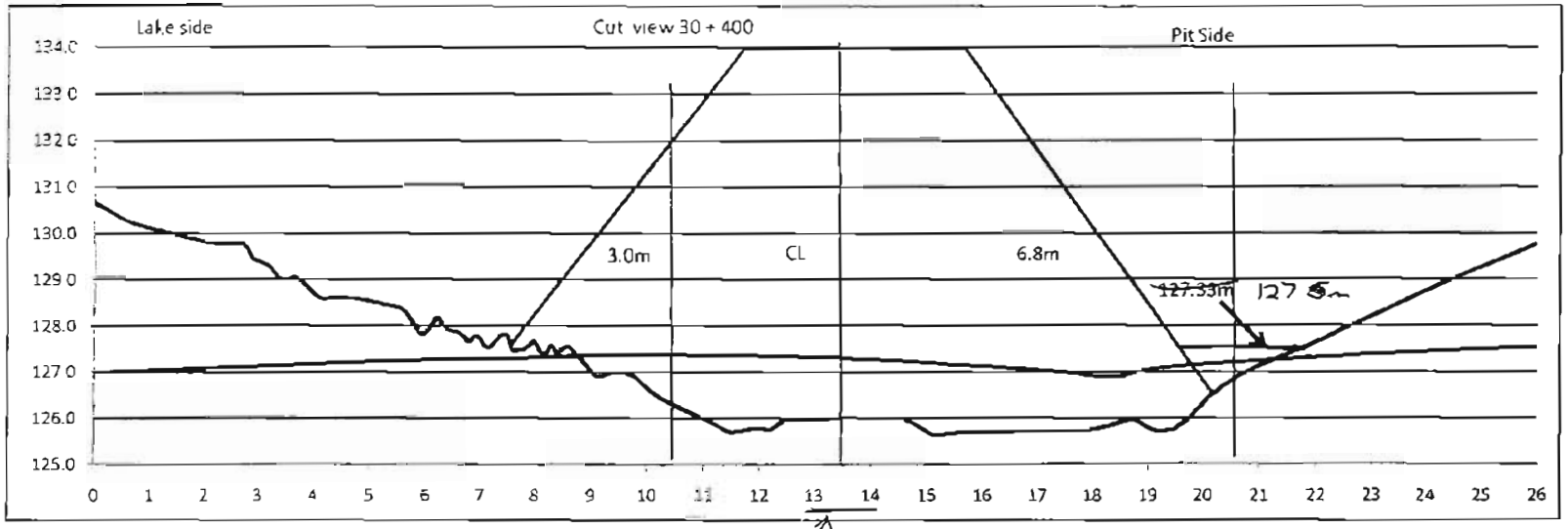


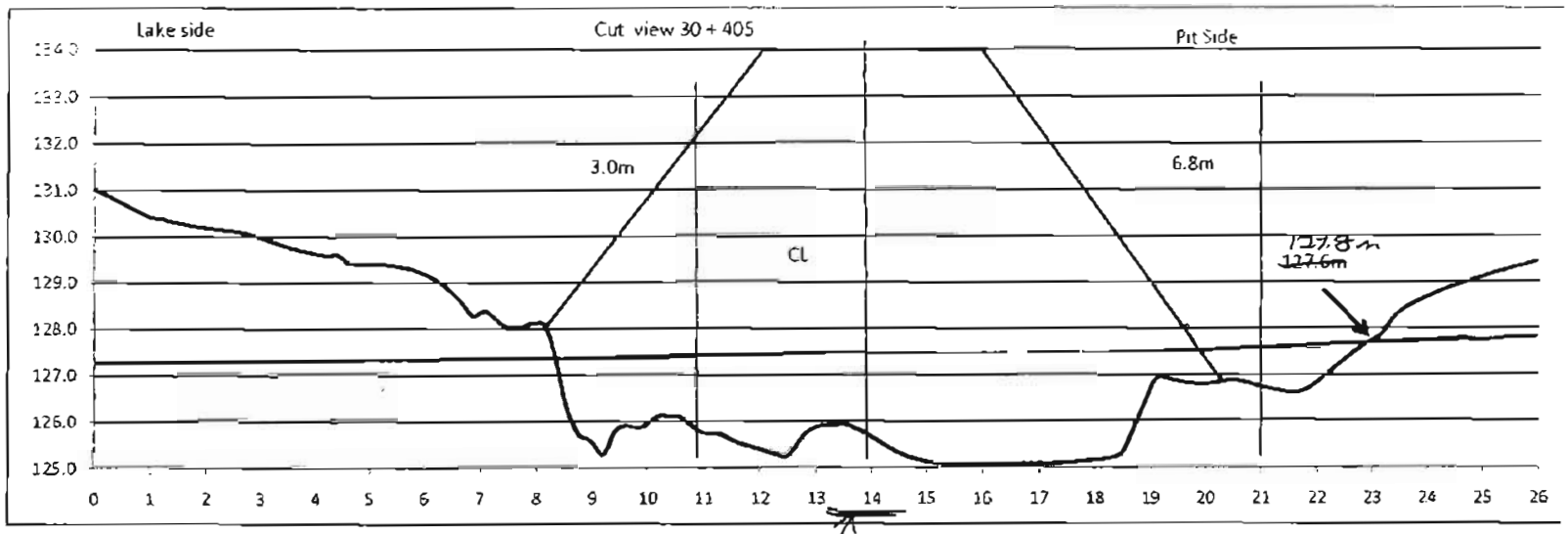
Rec'vd
Aug 26/09

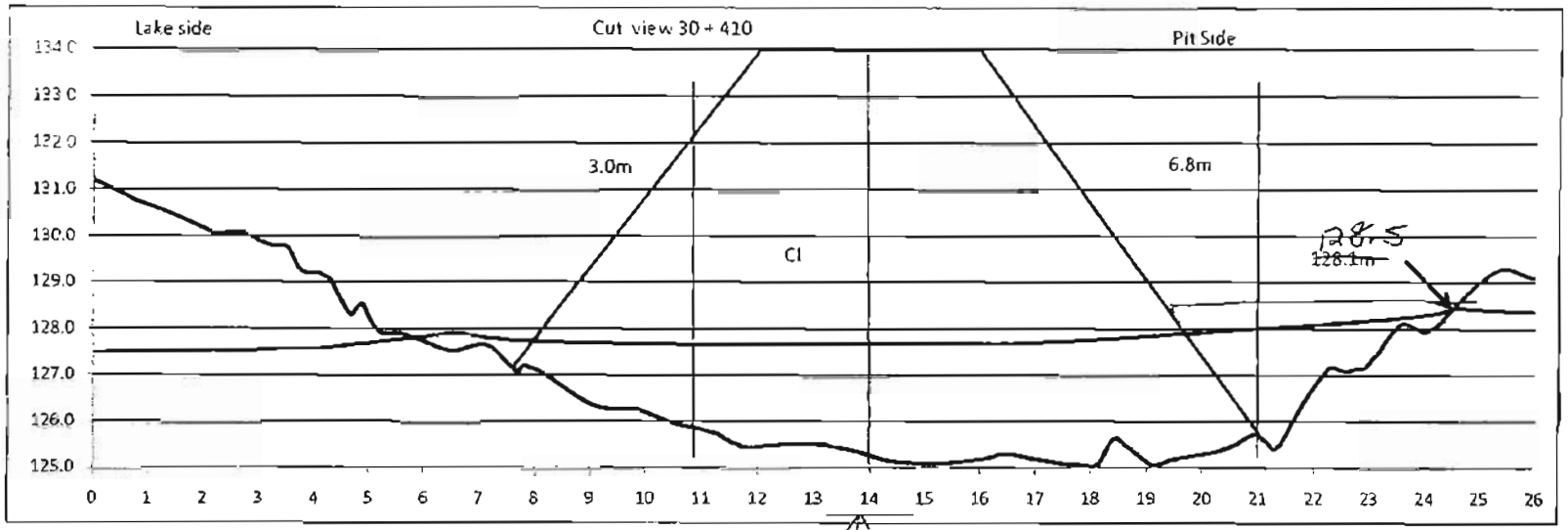
CL 30+420 to 30+435

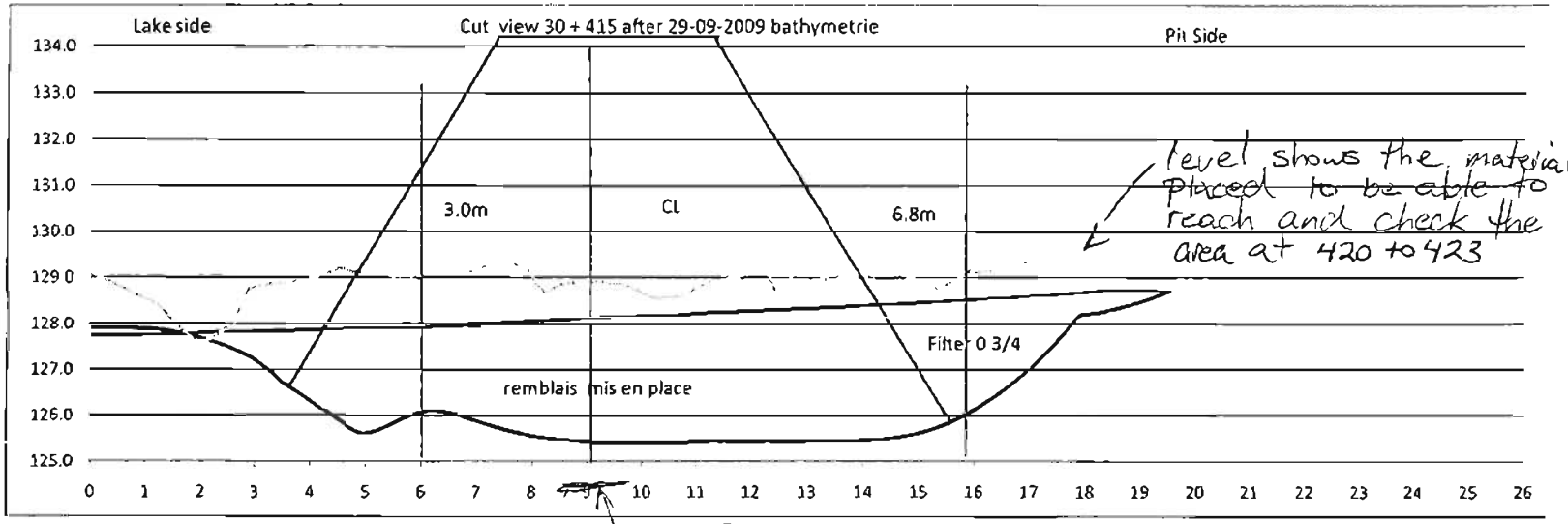


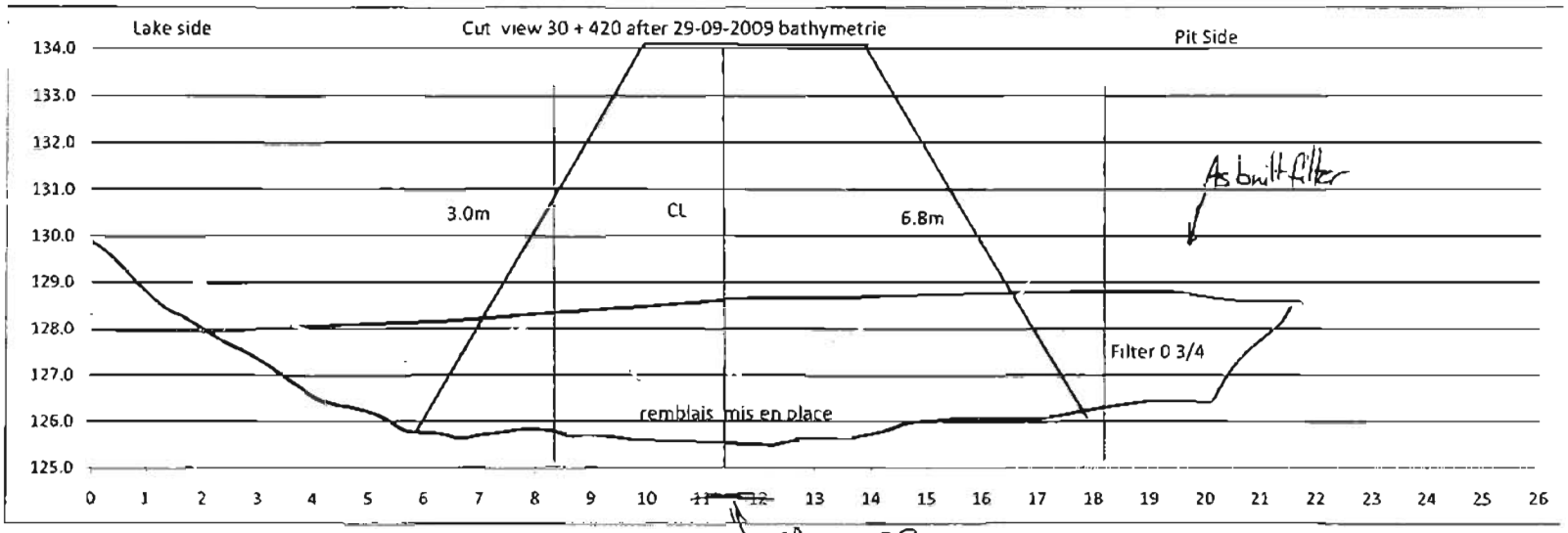
Rec'd
Aug 30/07

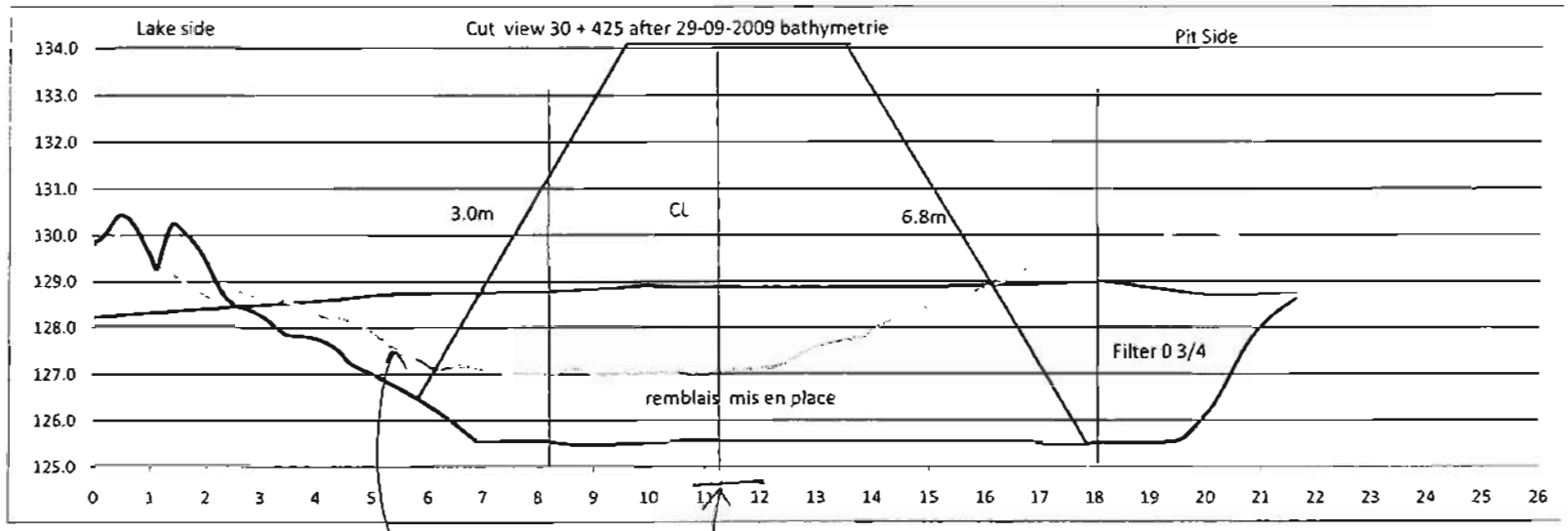

Lake side
Cut view 30 + 400
Pit Side
134.0
133.0
132.0
131.0
130.0
129.0
128.0
127.0
126.0
125.0
3.0m
CL
6.8m
127.33m
127.5m
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26
Lake bed soil
Dike
Inferred BR Surface
Date 2009-08-25
By: HG
nippour


Lake side
Cut view 30 + 405
Pit Side
3.0m
6.8m
CL
127.8m
127.6m
133.0
132.0
131.0
130.0
129.0
128.0
127.0
126.0
125.0
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26
Lake bed soil
Dike
Inferred BR Surface
Date 2009-08-25
By: HG
nippour

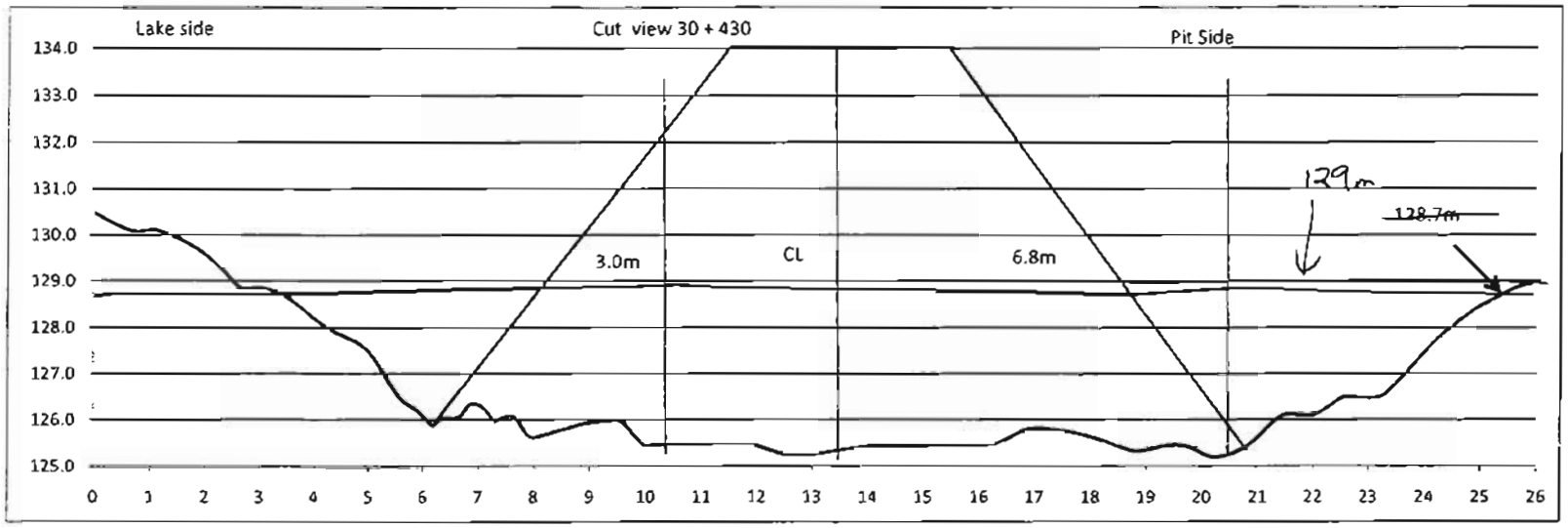

Lake side
Cut view 30 + 420
Pit Side
134.0
133.0
132.0
131.0
130.0
129.0
128.0
127.0
126.0
125.0
3.0m
6.8m
CI
128.5
128.1m
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26
Lake bed soil
Dike
Inferred BR Surface
Date 2009-08-25
By: HG
26 Meters
nippour


Lake side
Cut view 30 + 415 after 29-09-2009 bathymetrie
Pit Side
134.0
133.0
132.0
131.0
130.0
129.0
128.0
127.0
126.0
125.0
3.0m
CL
6.8m
Filter 0 3/4
remblais mis en place
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26
level shows the material placed to be able to reach and check the area at 420 to 423
Inferred BR surface
Lake bed soil
Dike 25-09-2009
Dike 29-09-2009
Date 2009-08-29
By: HG
nippour


Lake side
Cut view 30 + 420 after 29-09-2009 bathymetrie
Pit Side
134.0
133.0
132.0
131.0
130.0
129.0
128.0
127.0
126.0
125.0
3.0m
CL
6.8m
As built filter
Filter 0 3/4
remblais mis en place
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26
Interreg BR surface
Lake bed soil
Dike 25-09-2009
Dike 29-09-2009
Date 2009-08-29
By: HG
nippour



shows the material placed to bedde to rock



Lake bed soil

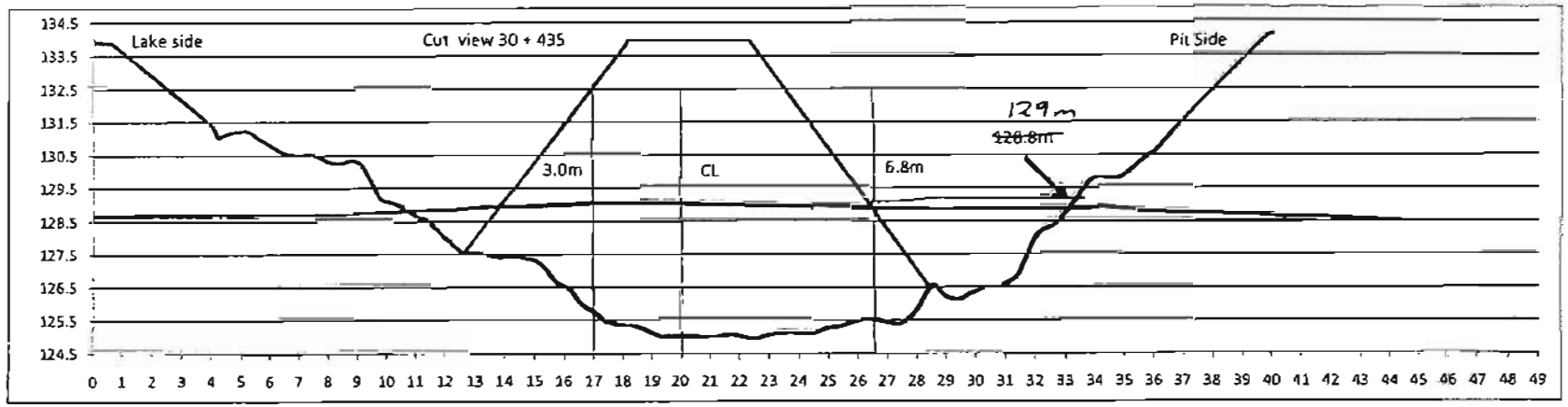
Dike

Date 2009-08-25

By: HG

nippour

Rec. ud
Aug 30/09 MR



Rec'd
Aug 30/09

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 30+435 Offset	SHIFT: NIGHT: ☐ DAY: ☒	DATE: AUG. 30/09	SHEET 1 OF 1
To Sta. 30+450 Offset	LOCATION: MEADOW BANK - BAY GOOSE ROCK FILL EXCAVATION		
EQUIPMENT:			

DESCRIPTION

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	✓	✓
2.	Storage areas planned for disposal of removed materials	—	—
3.	Occurrence of snow and ice removal method in place	—	—
4.	Occurrence of boulders and removal method in place	✓	✓
5.	Occurrence of hummocks and scalping method in place	✓	✓
6.	Occurrence of surface and ground water and its impact mitigation in place	—	—
7.	Presence of other unsuitable materials and removal method in place	✓	✓
8.	Soil frozen or thawed and measures taken	—	—
9.	Blasting requirement to remove unsuitable material and safety measure checked	—	—
10.	Adjustment made to suit design in field	✓	✓
11.	Final walkover inspection before re-sloping or fill placement	✓	✓
12.	"As-excavated" survey conducted	✓	✓
13.	Final sounding conducted of lake bottom surface	✓	✓

REMARKS: - Complete Submission package recieved Aug 31/09 (attached)
- Pitside filter elevations provided to FGL (attached section)

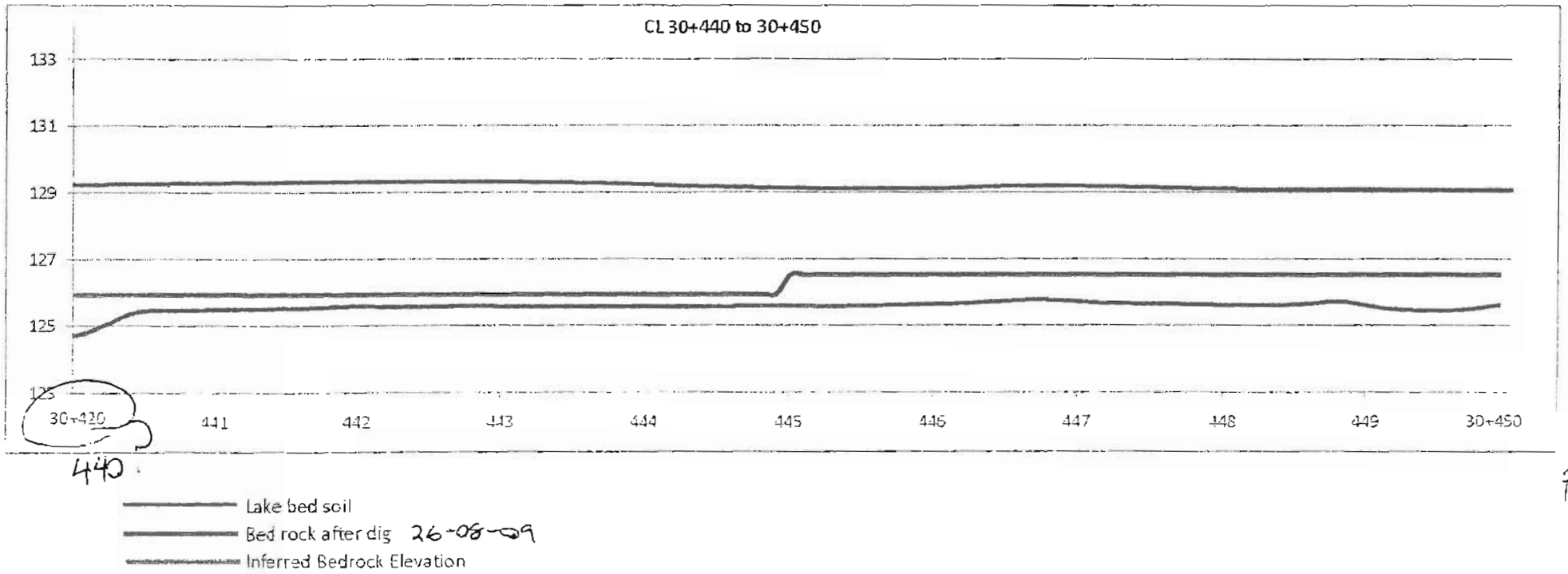
DEVIATIONS: (Attach list if necessary)

DATE OF RECTIFICATION:

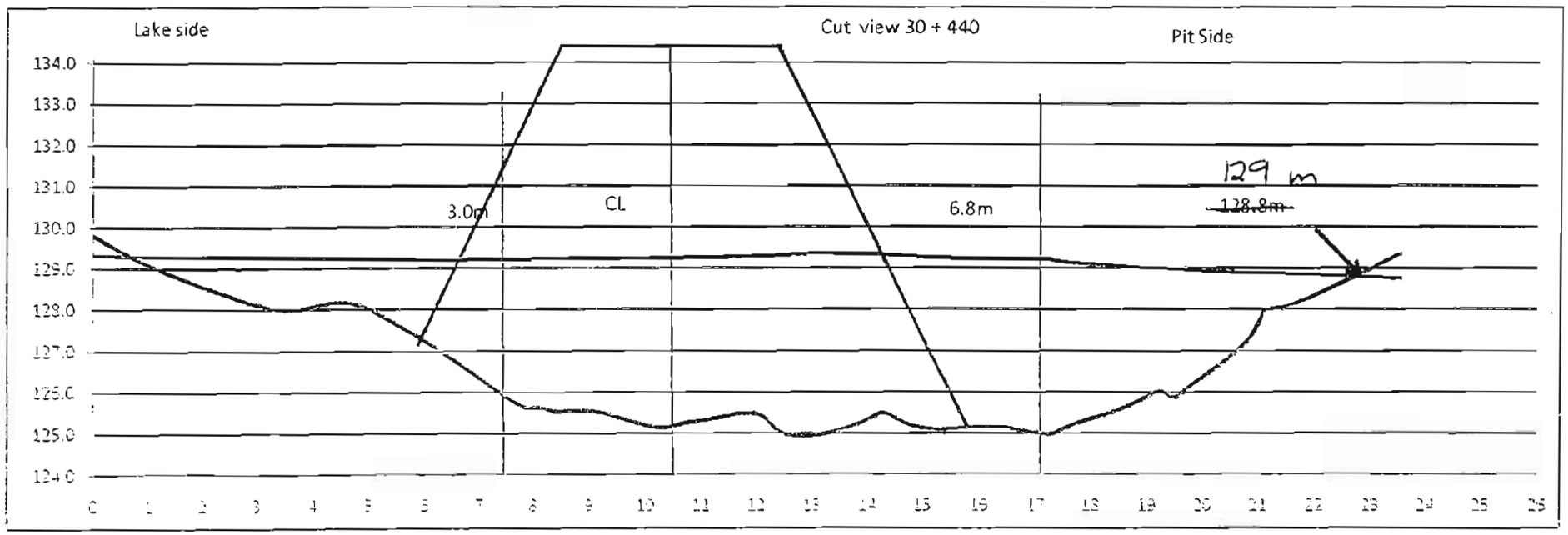
SURVEY VERIFICATION	ACCEPTED BY QA Manager:	ACCEPTED BY OWNER:
NAME: GUY MORISSETTE	NAME: Glen Rutherford	NAME:
SIGNATURE: Guy Morissette	SIGNATURE:	SIGNATURE:
DATE 30 AUG 09	DATE 31 Aug 09	DATE

REMIS A 'GLEN DE GOLDER
À THUNDER LE 31 AOUT 09

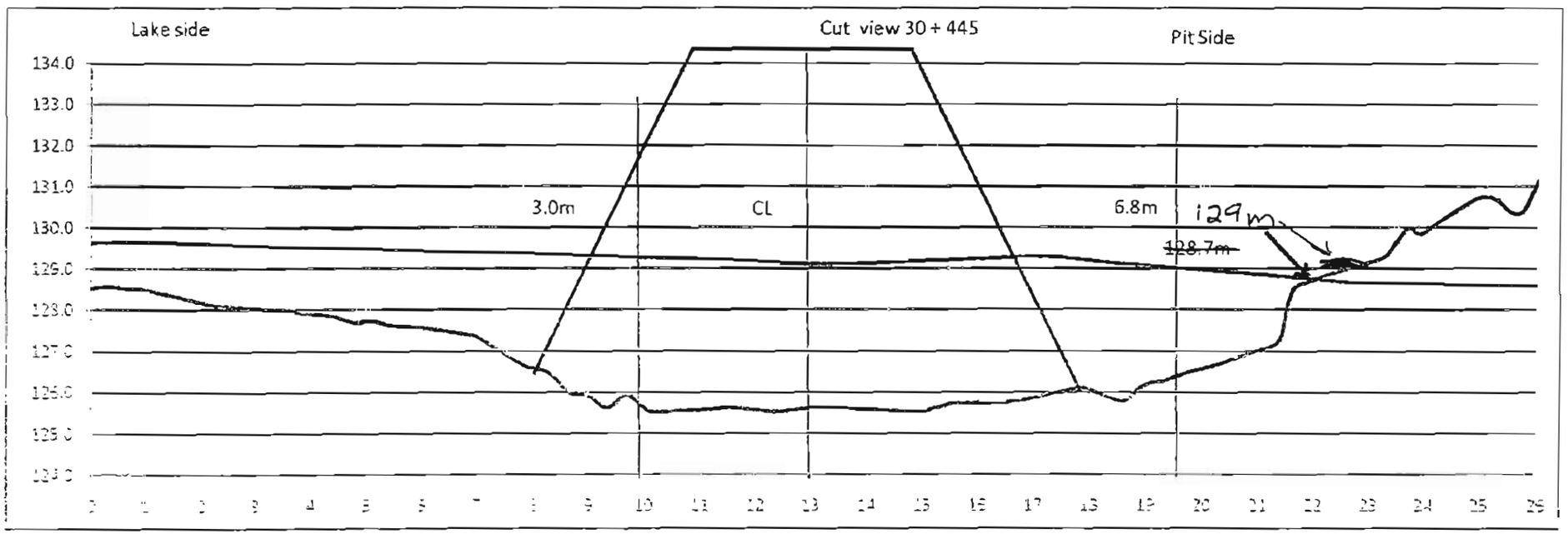

Pit Side
Lake Side
425
430
435
440
445
450
455
460
465
470
475
Limit of Approval
Rec'd Aug 31/09
Contour line and covergage point
30 + 440 30 + 450
Made by HG
25 august 2009
nippour
Legend
acot_pelle_260809
contour
center_line_line
Equidistance : 0.50m



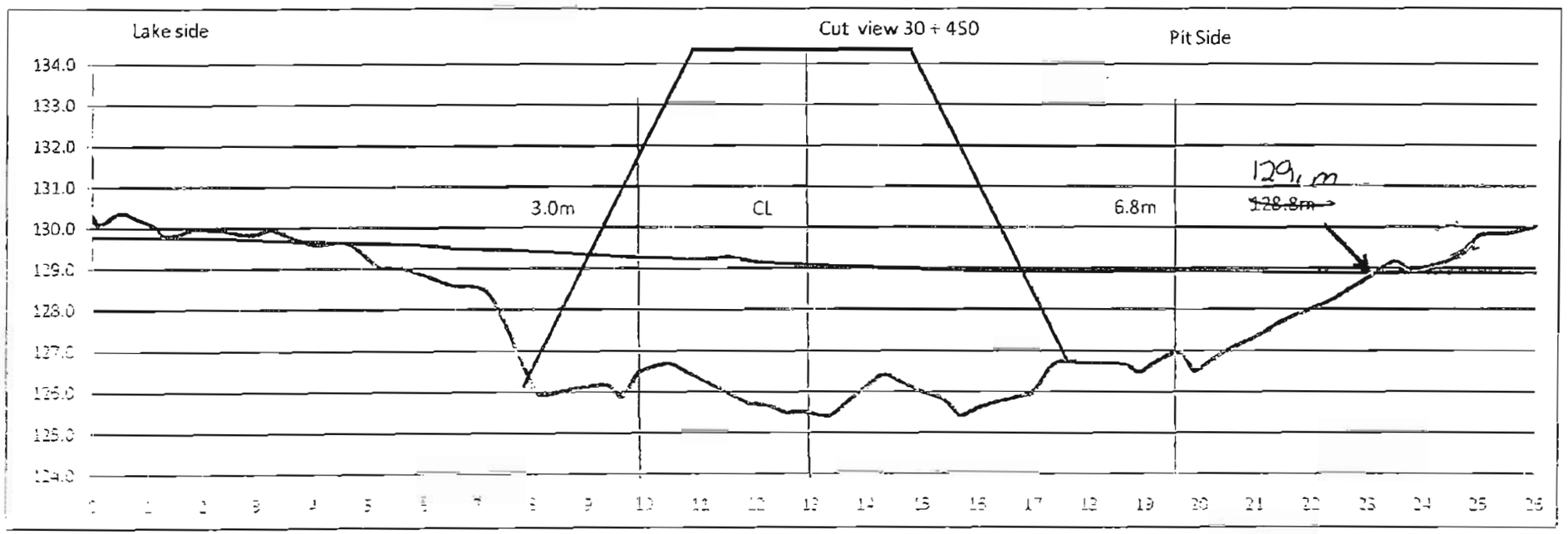
Recd
Aug 31/09



Rec'd
Aug 31, 09



Received
Aug 31/09



Lake bed soil

Dike 26-08-09

Date 2009-08-26

By HG

Rec'd
Aug 31/09

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 30+455 Offset 45D	SHIFT: NIGHT: ☐ DAY ☒ ☐	DATE: Sept. 03/09	SHEET 1 OF 1
To Sta. 30+470 Offset	LOCATION:: MEADOW BANK - BAY GOOSE ROCKFILL - EXCAVATION -		
EQUIPMENT:			
DESCRIPTION			

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	✓	✓
2.	Storage areas planned for disposal of removed materials	—	—
3.	Occurrence of snow and ice removal method in place	—	—
4.	Occurrence of boulders and removal method in place	✓	✓
5.	Occurrence of hummocks and scalping method in place	✓	✓
6.	Occurrence of surface and ground water and its impact mitigation in place	—	—
7.	Presence of other unsuitable materials and removal method in place	✓	✓
8.	Soil frozen or thawed and measures taken	—	—
9.	Blasting requirement to remove unsuitable material and safety measure checked	—	—
10.	Adjustment made to suit design in field	✓	✓
11.	Final walkover inspection before re-sloping or fill placement	✓	✓
12.	"As-excavated" survey conducted	✓	✓
13.	Final sounding conducted of lake bottom surface	✓	✓

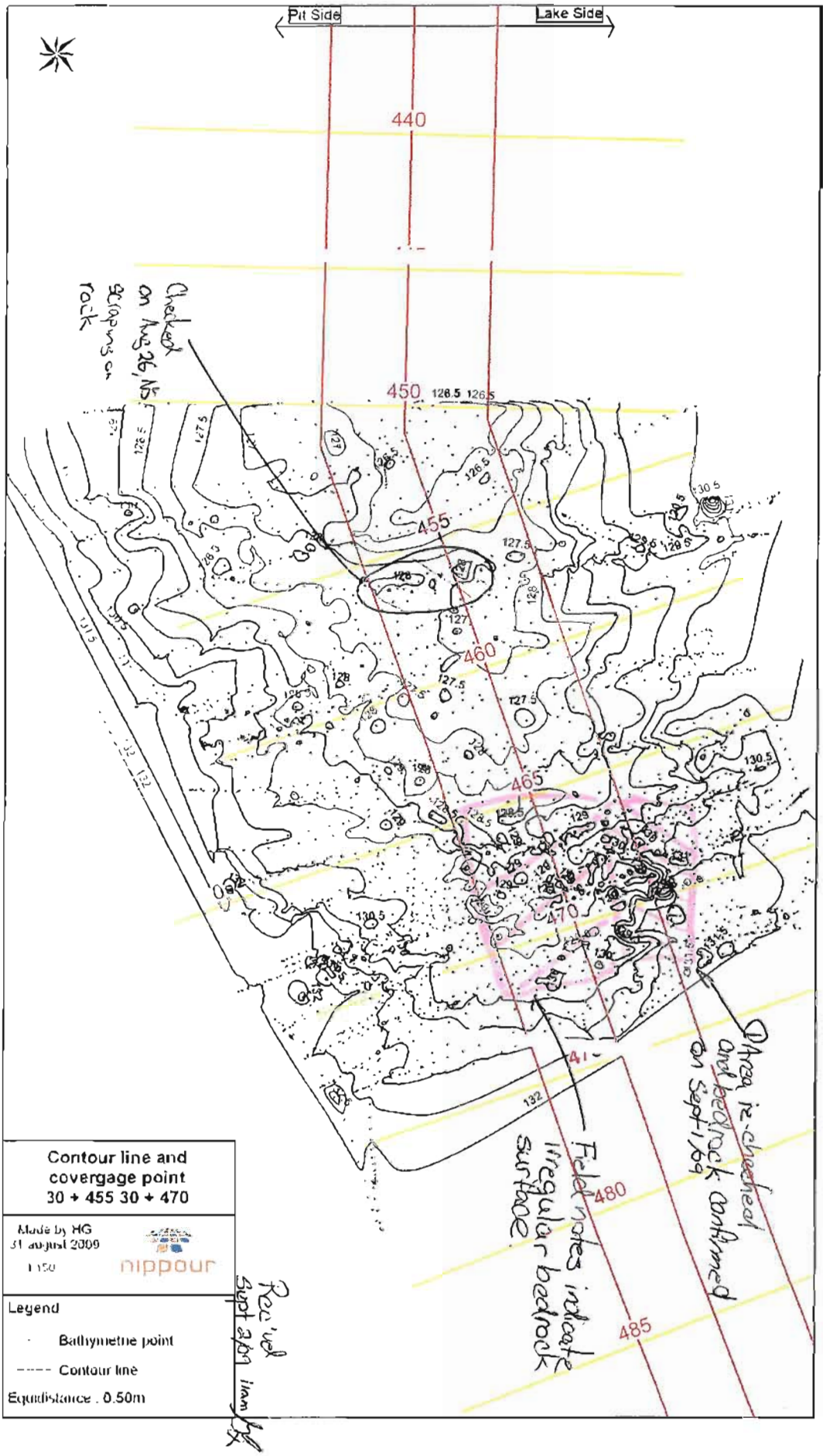
REMARKS: - Complete submission package received (attached) Sept 2/09
- Additional checking completed Sept 1/09
- Pitside filter elevations provided to FGh

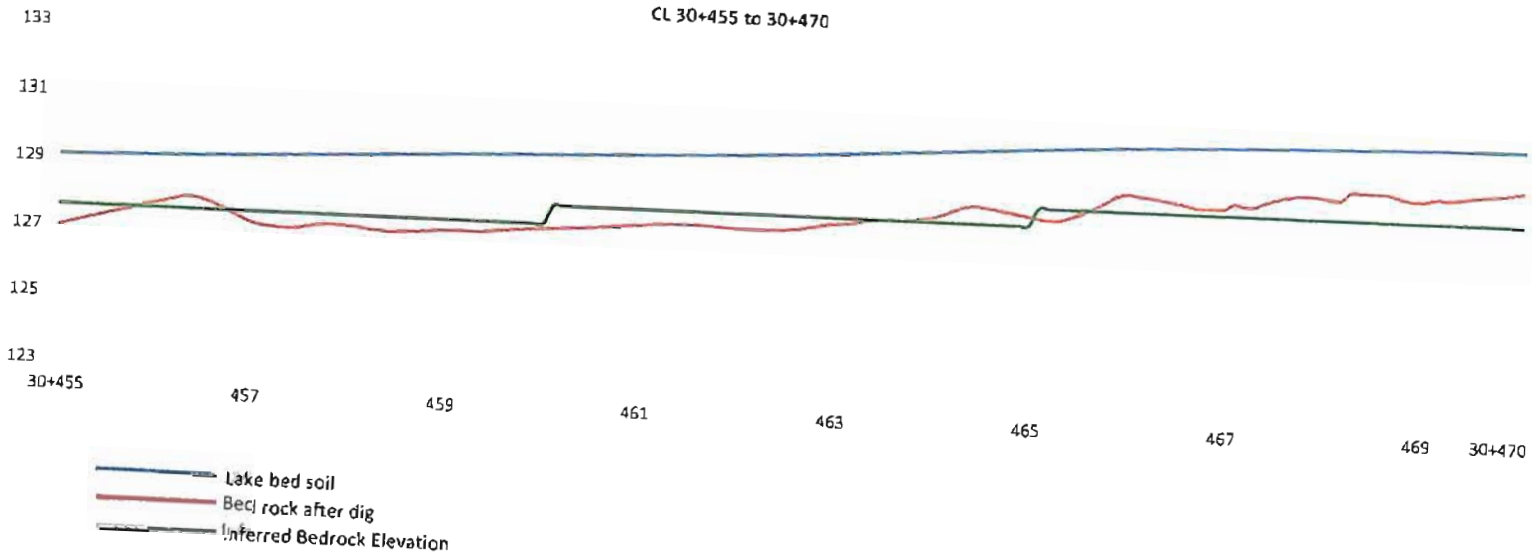
DEVIATIONS : (Attach list if necessary)

DATE OF RECTIFICATION :

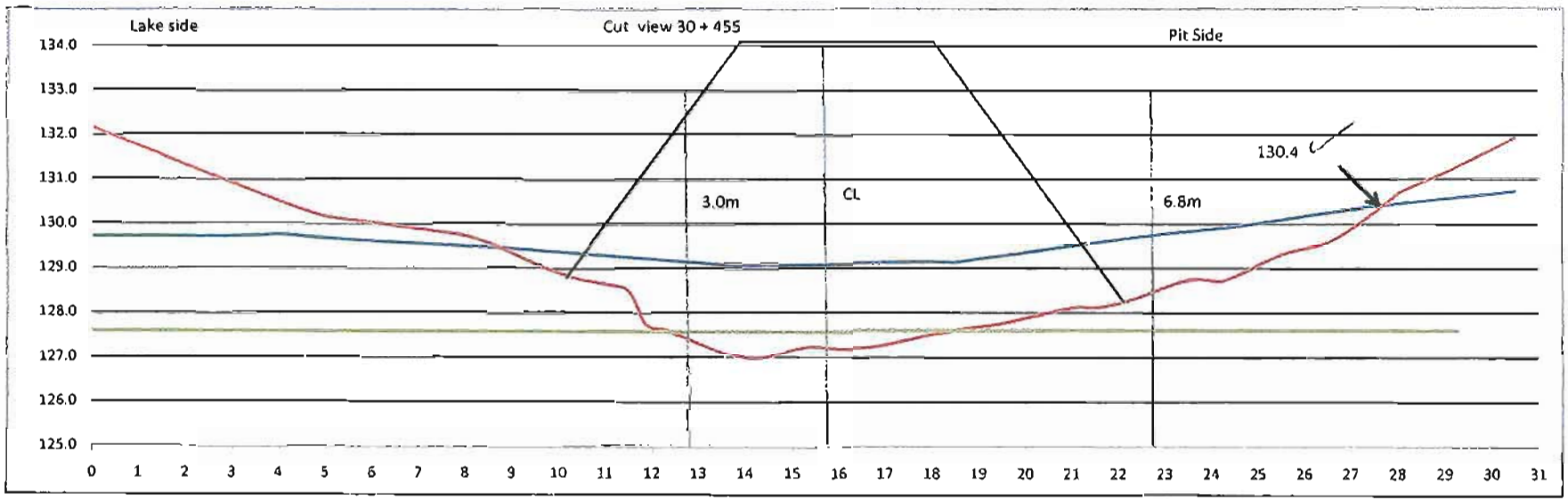
SURVEY VERIFICATION	ACCEPTED BY QA Manager :	ACCEPTED BY OWNER :
NAME: Guy Morissette	NAME: Glen Rutherford	NAME:
SIGNATURE :	SIGNATURE :	SIGNATURE :
DATE 2 sept. 09	DATE 2 Sept 09	DATE

Remis à Glen de Golder
à ± 11 hrs AM le 2 sept. 09


Pit Side
Lake Side
440
450
455
460
465
470
480
485
Checked on Aug 26, 05
Scrapings on rock
Area re-checked and bedrock confirmed on Sept 1/09
Field notes indicate irregular bedrock surface
Rec'vd Sept 2/09
Contour line and covergage point
30 + 455 30 + 470
Made by HG
31 august 2009
1:50
nippour
Legend
Bathymetrie point
Contour line
Equidistance : 0.50m



Rec'vd
Sept 2/09 11am

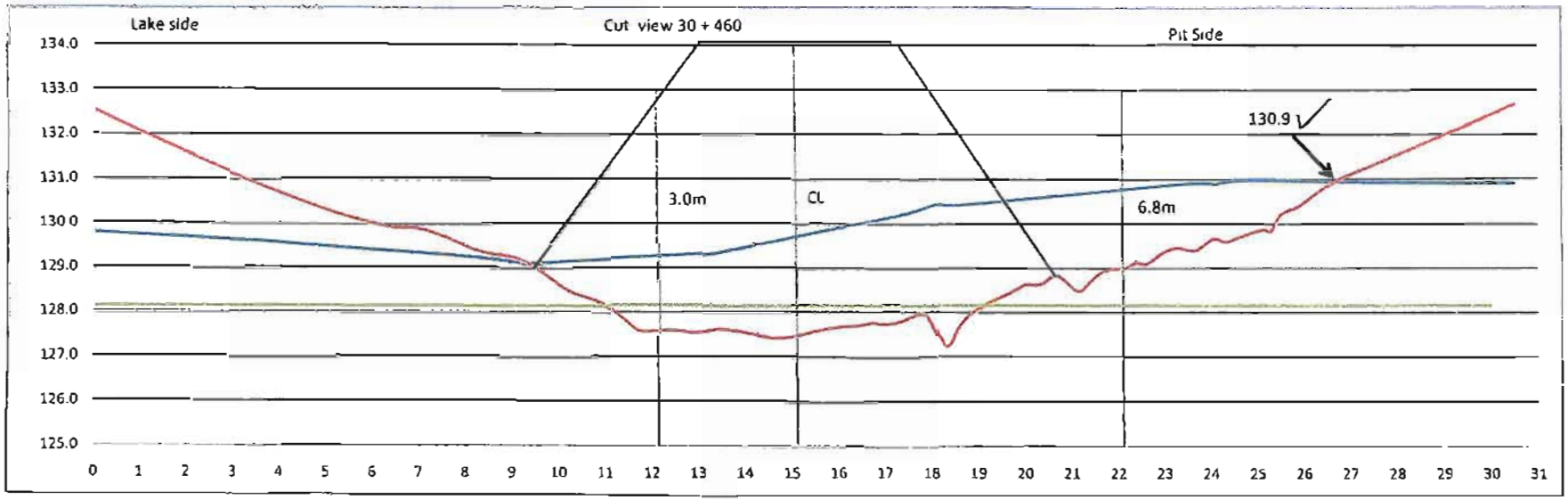


Lake bed soil
Dike
Infered bed rock

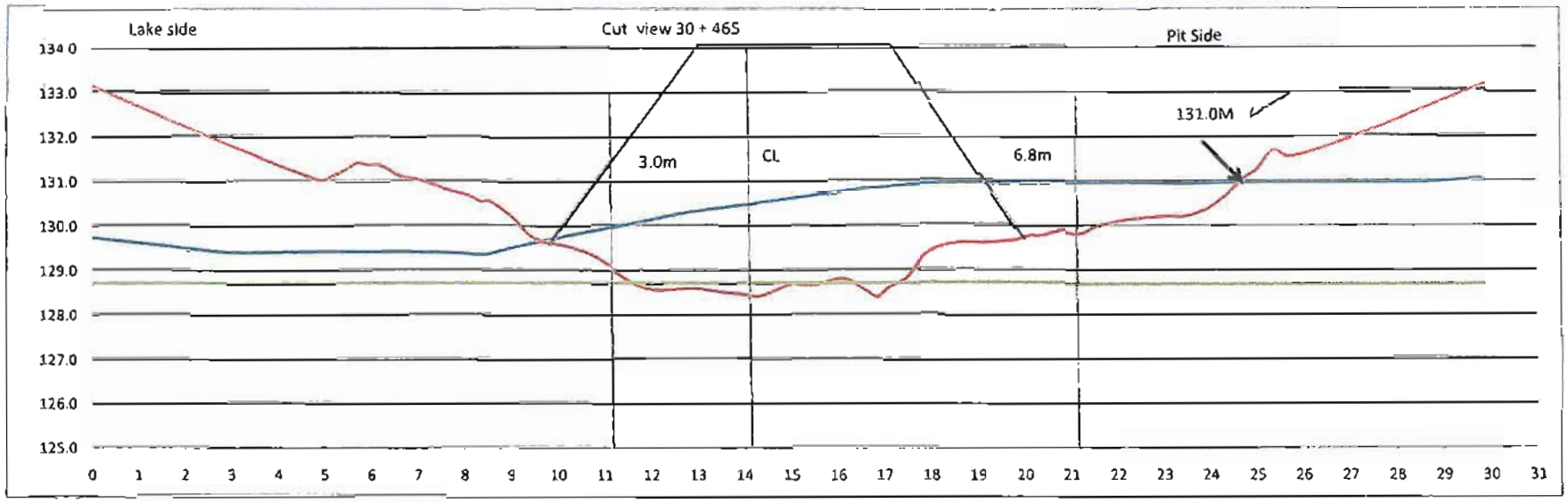
Date 2009-09-01
By: HG

nippour

Rec'vd
Sept 2/09 11am



Rec'vd
Sept 2/09 11am
MB

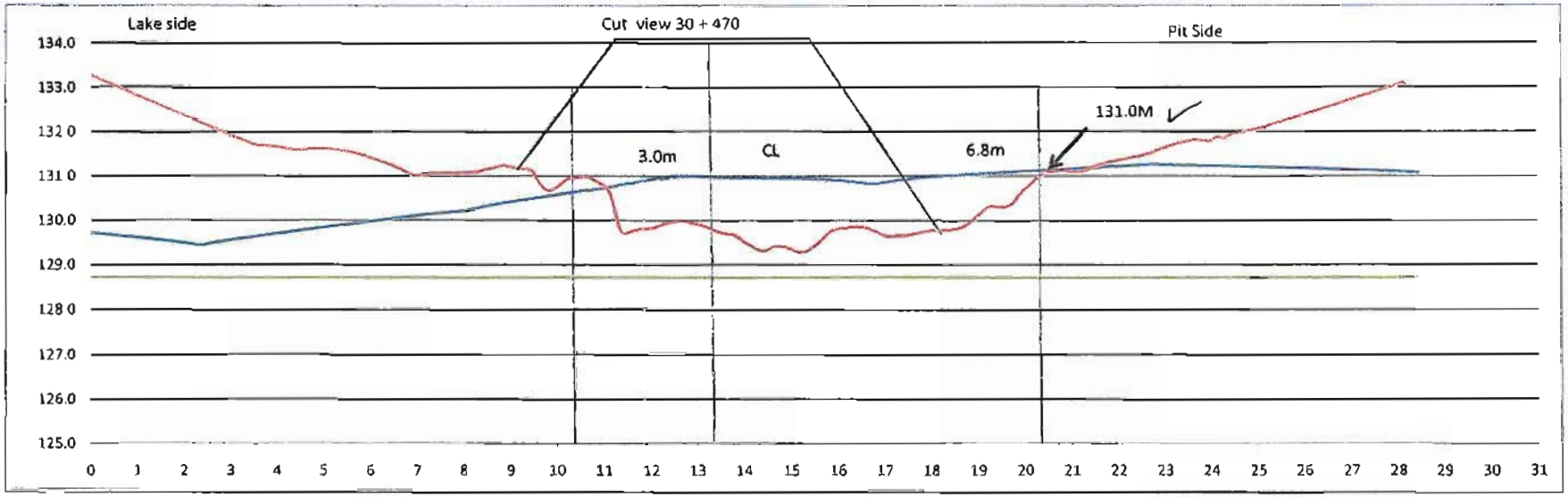


Lake bed soil
Dike
Infered bed rock

Date 2009-09-01
By: HG

nippour

Rec'd
Sept 2/09 11am
MG



Lake bed soil
Dike
Infered bed rock

Date 2009-09-01
By: HG

nippour

Rec'd
Sept 2/09 11am

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 30+470 Offset	SHIFT: NIGHT: ☐ DAY: X ☐	DATE: Sept. 03/09	SHEET 1 OF 1
To Sta. 30+540 Offset	LOCATION: MEADOW BANK - BAY GOOSE - ROCKFILL - EXCAVATION -		
EQUIPMENT:			

DESCRIPTION

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	GM	GR
2.	Storage areas planned for disposal of removed materials	—	—
3.	Occurrence of snow and ice removal method in place	—	—
4.	Occurrence of boulders and removal method in place	GM	GR
5.	Occurrence of hummocks and scalping method in place	GM	GR
6.	Occurrence of surface and ground water and its impact mitigation in place	—	—
7.	Presence of other unsuitable materials and removal method in place	GM	GR
8.	Soil frozen or thawed and measures taken	—	—
9.	Blasting requirement to remove unsuitable material and safety measure checked	—	—
10.	Adjustment made to suit design in field	GM	GR
11.	Final walkover inspection before re-sloping or fill placement	GM	GR
12.	"As-excavated" survey conducted	GM	GR
13.	Final sounding conducted of lake bottom surface	GM	GR

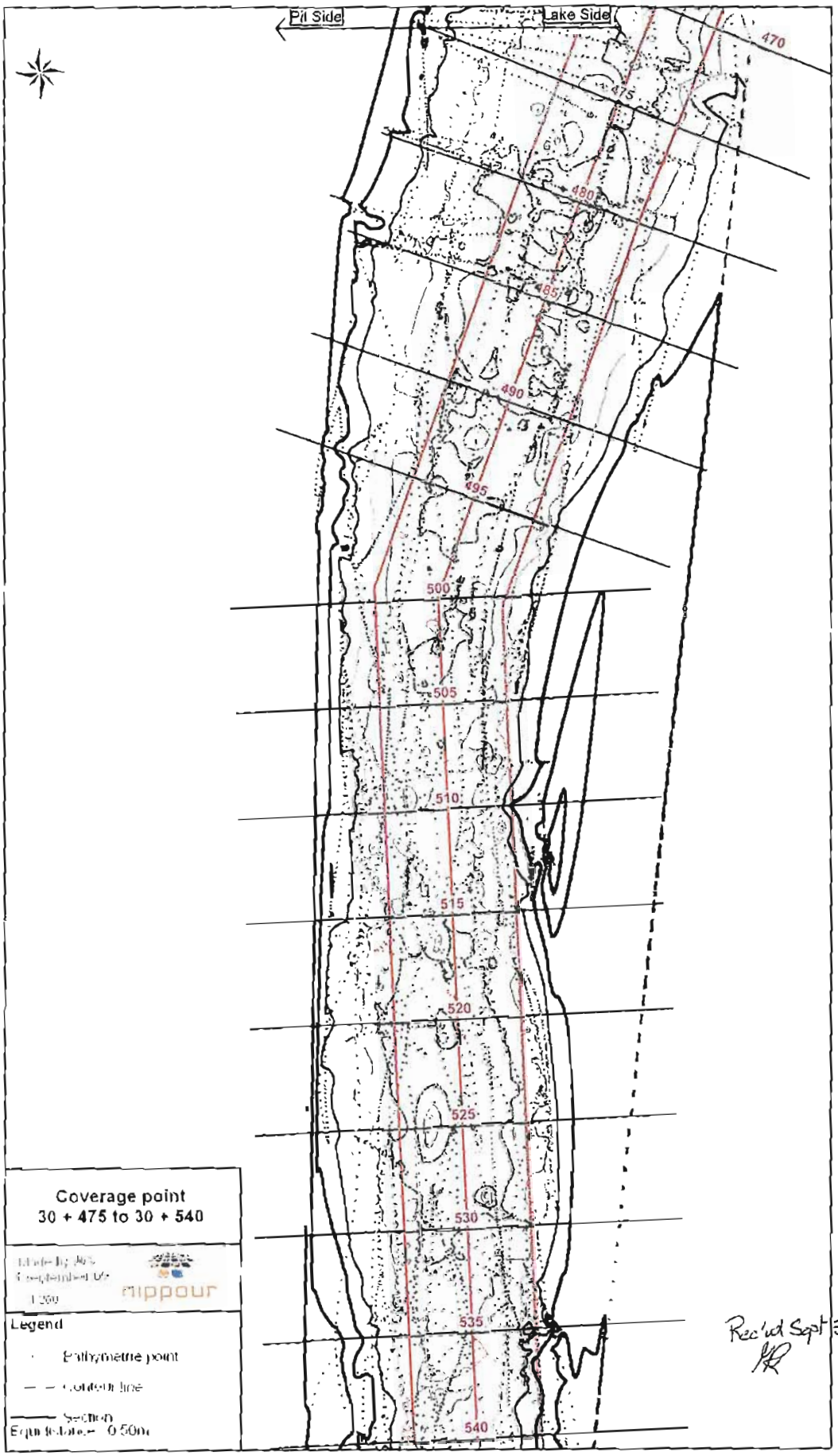
REMARKS: - Complete submission package received (attached) Sept 8/09
- Additional checking completed (Sept 5/09)
- Pitside filter elevations provided to FGI

DEVIATIONS: (Attach list if necessary)
- Required to continuously clean sediment in front of advancing CB face

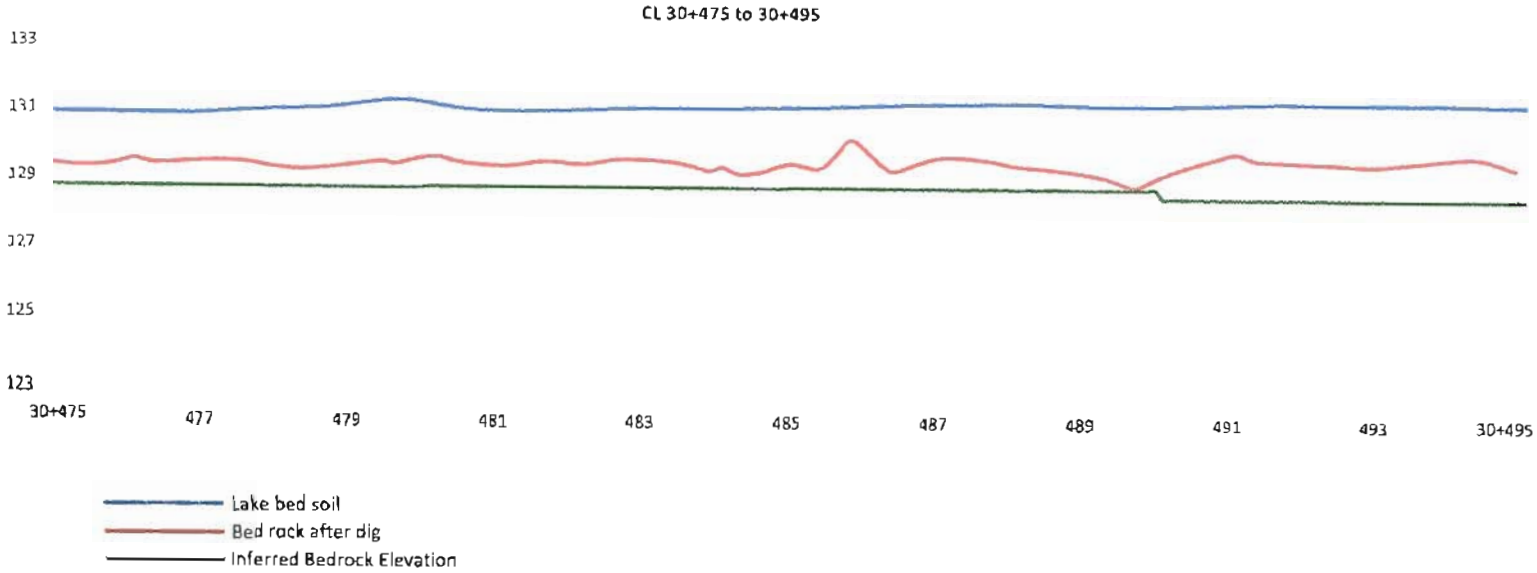
DATE OF RECTIFICATION:

SURVEY VERIFICATION	ACCEPTED BY QA Manager:	ACCEPTED BY OWNER:
NAME: Guy Morissette	NAME: Glen Rutherford	NAME:
SIGNATURE: Guy Morissette	SIGNATURE: GR	SIGNATURE:
DATE 3 sept. 09	DATE 5 Sept 09	DATE

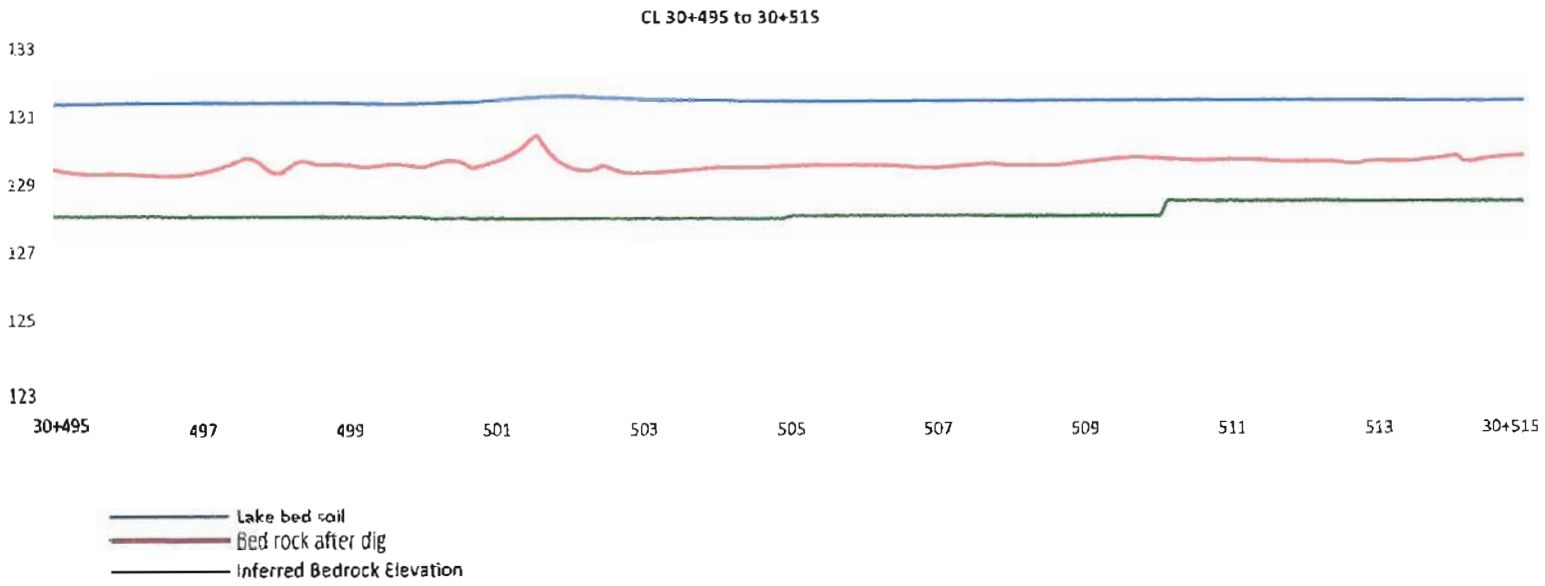
Remis à 'Glen' de Golder
A ± 14 hrs 30 le 3 sept. 09.


Pit Side
Lake Side
470
475
480
485
490
495
500
505
510
515
520
525
530
535
540
Coverage point
30 + 475 to 30 + 540
Legend
Bathymetric point
Contour line
Section
Equidistance = 0.50m
Rec'd Sept 3/69

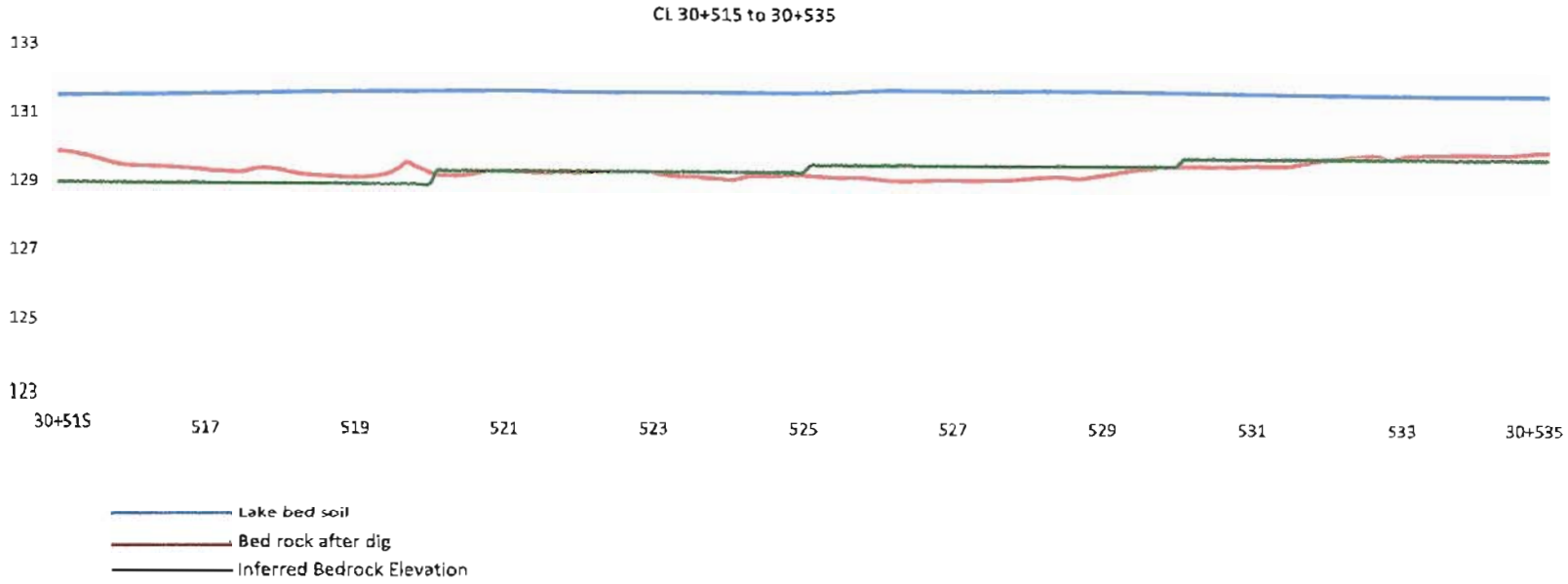

Pit Side
Lake Side
470
475
480
485
490
495
500
505
510
515
520
525
530
535
540
Chipped to create transitional slope
Checked No hill found
Checked No hills found
Contour line
30 + 475 to 30 + 540
nippour
Legend
Rec'd Sept 3/09



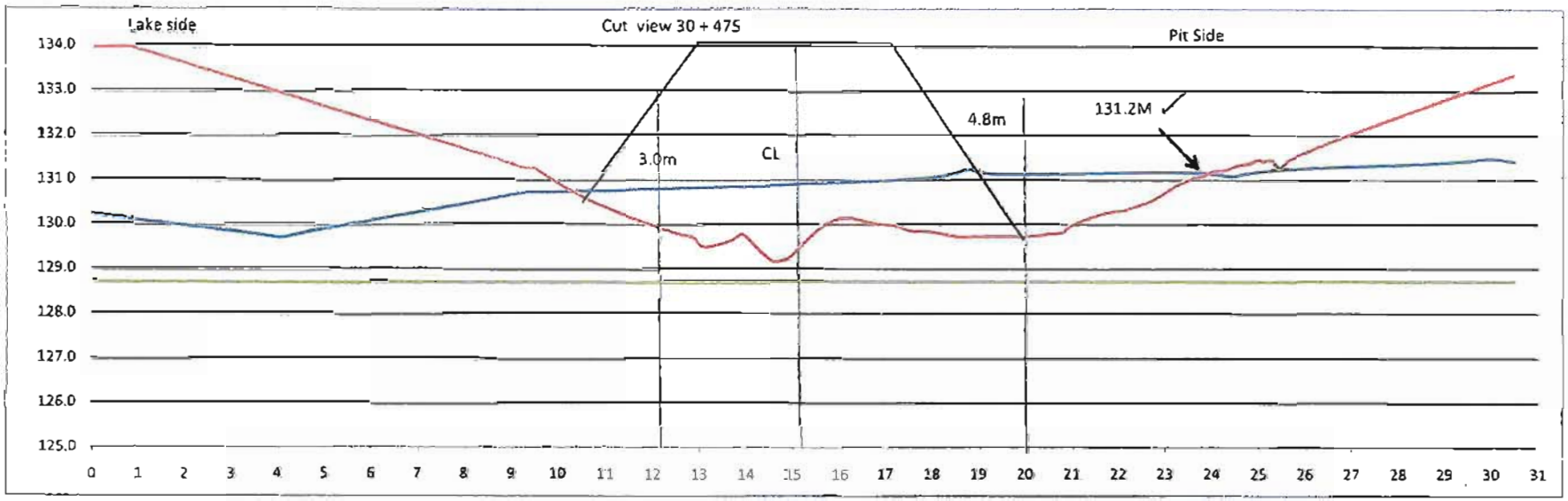
Rec'd Sept 3/09



Rec'd Sept 8/09

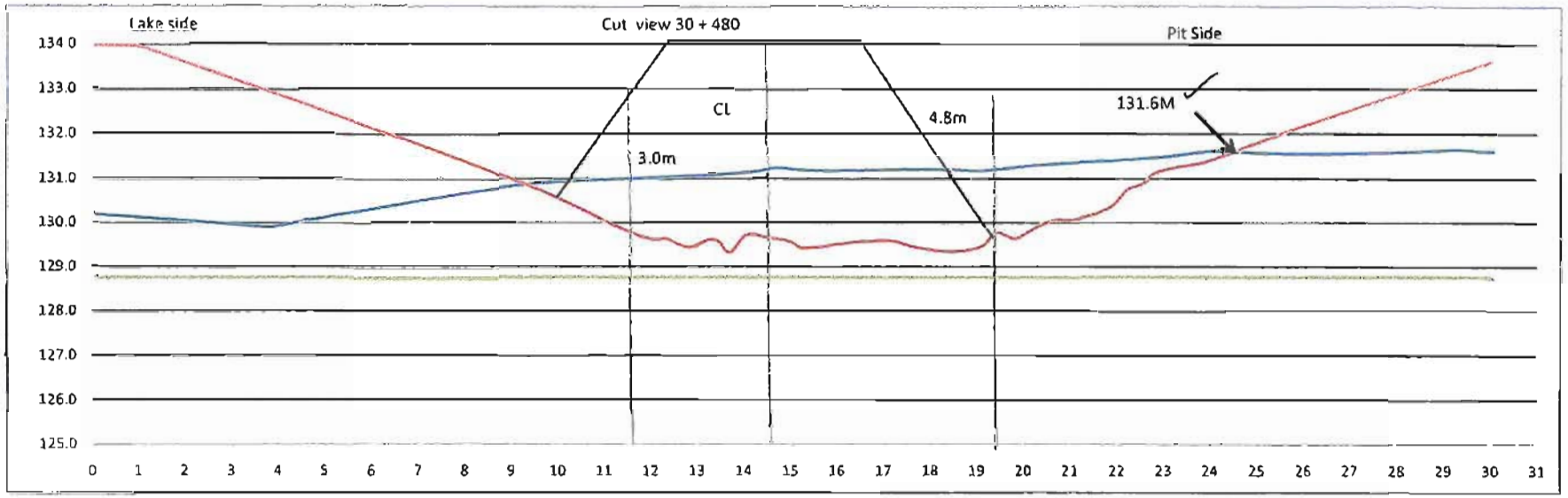


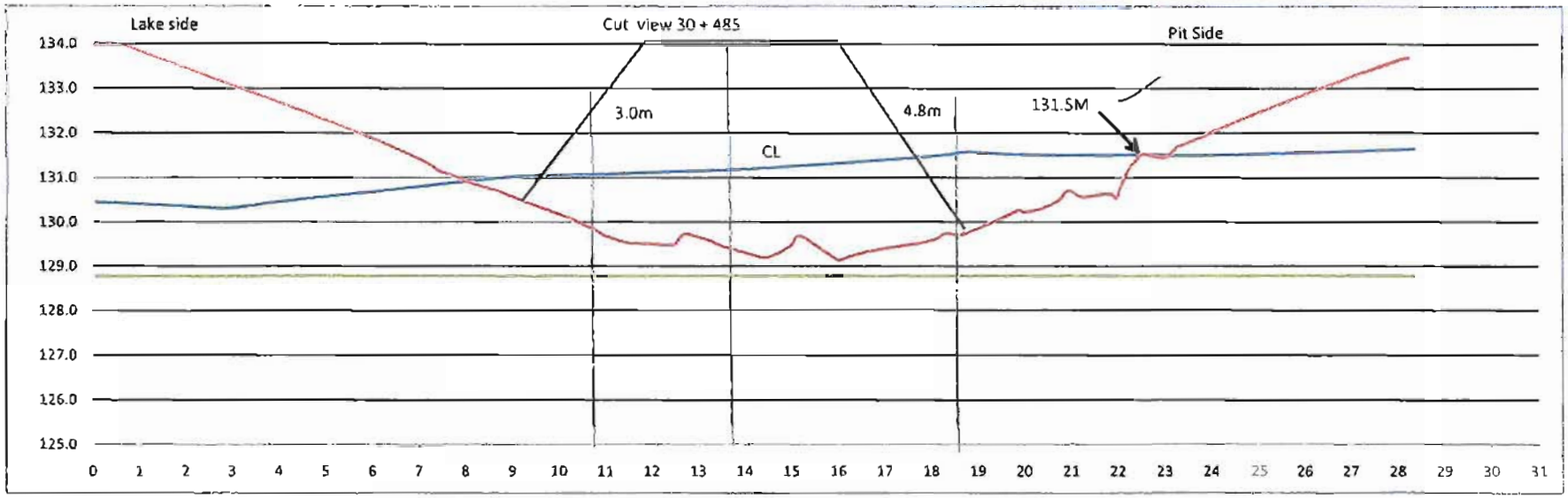
Rec'd Sept 3/04



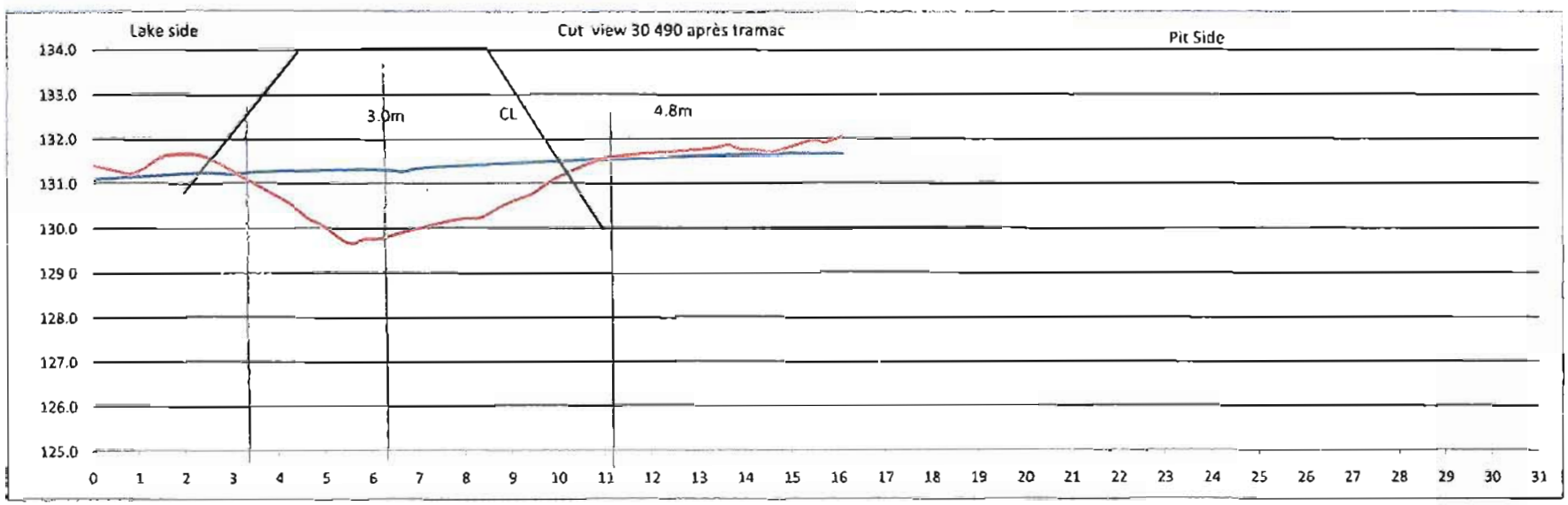
Rec'd
Sept 3/09

Rec'd 03 Sept 2009



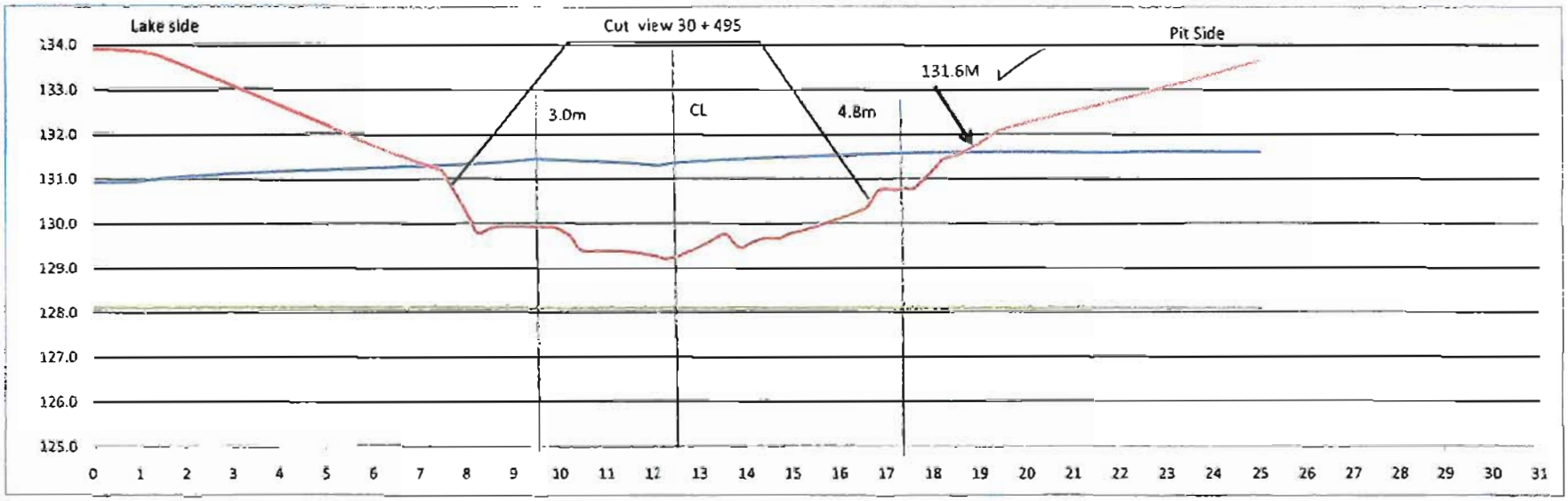


Rec'd Sept 4/09

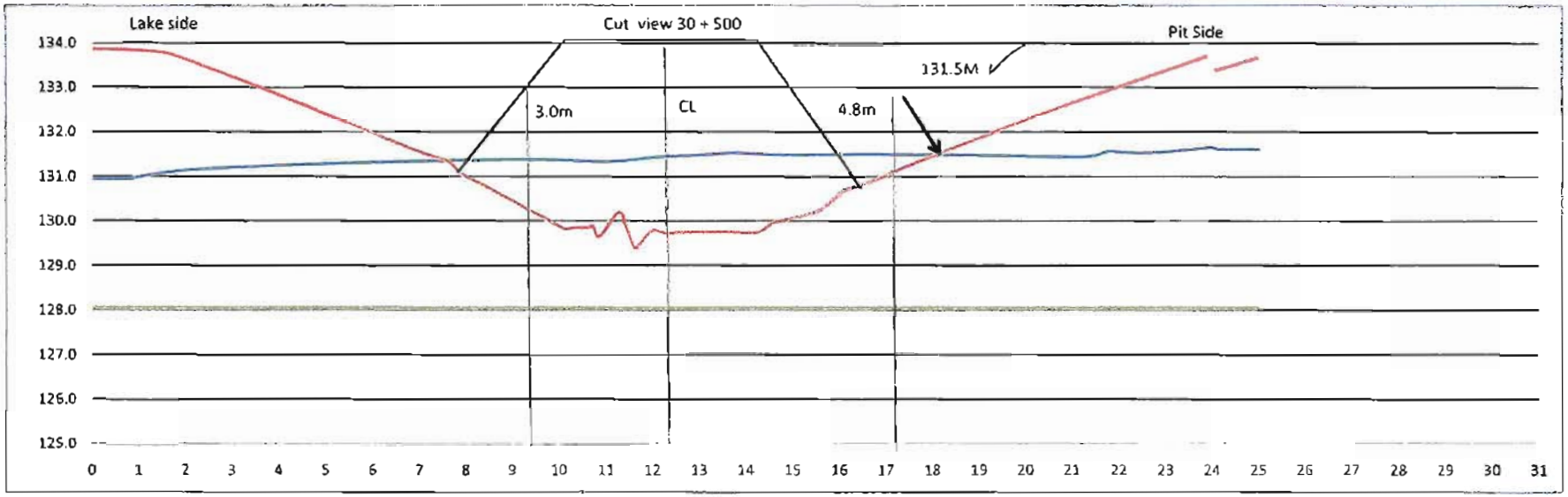


GR observations est 5m after clearing @490m
est 3.5m depth @ 492m. After filter placement (infilling of sounded hole)
comes up in ~~0.2~~ to 0.4m stepped.

Rec'd Sept 5 12pm

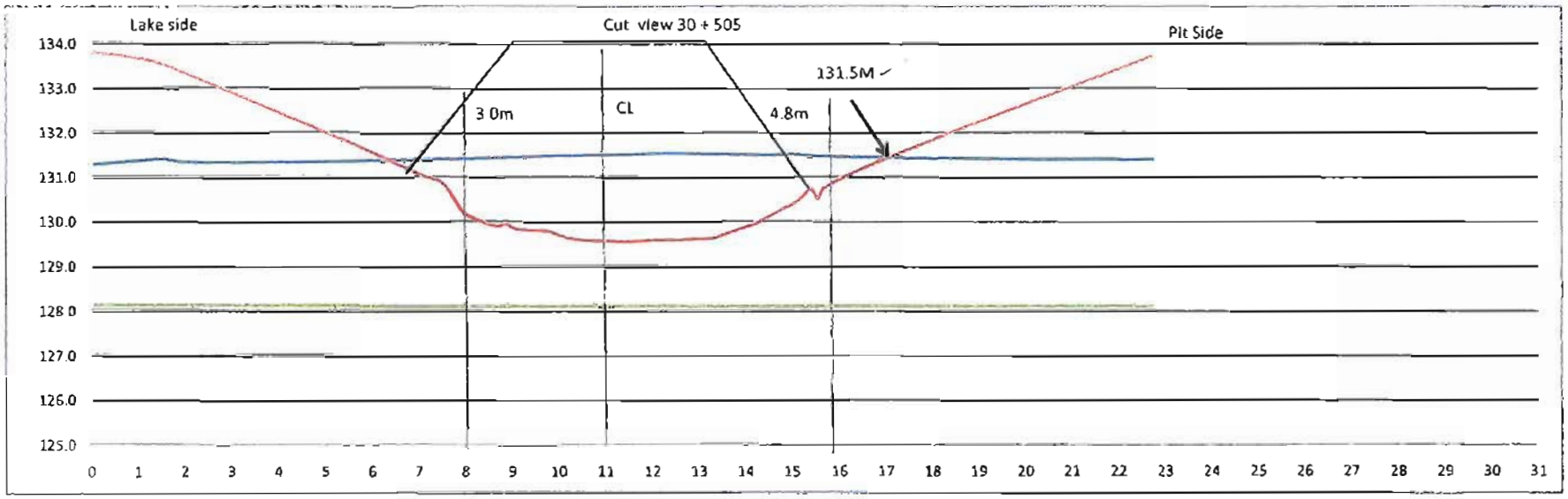


Rec'd Sept 3/09

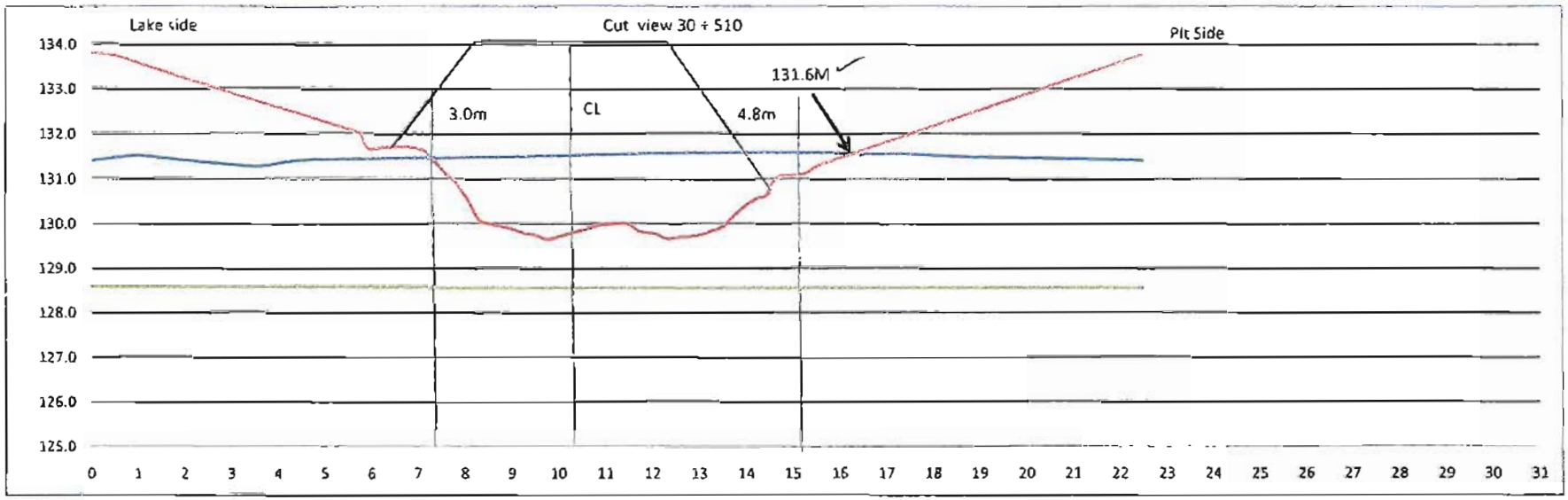


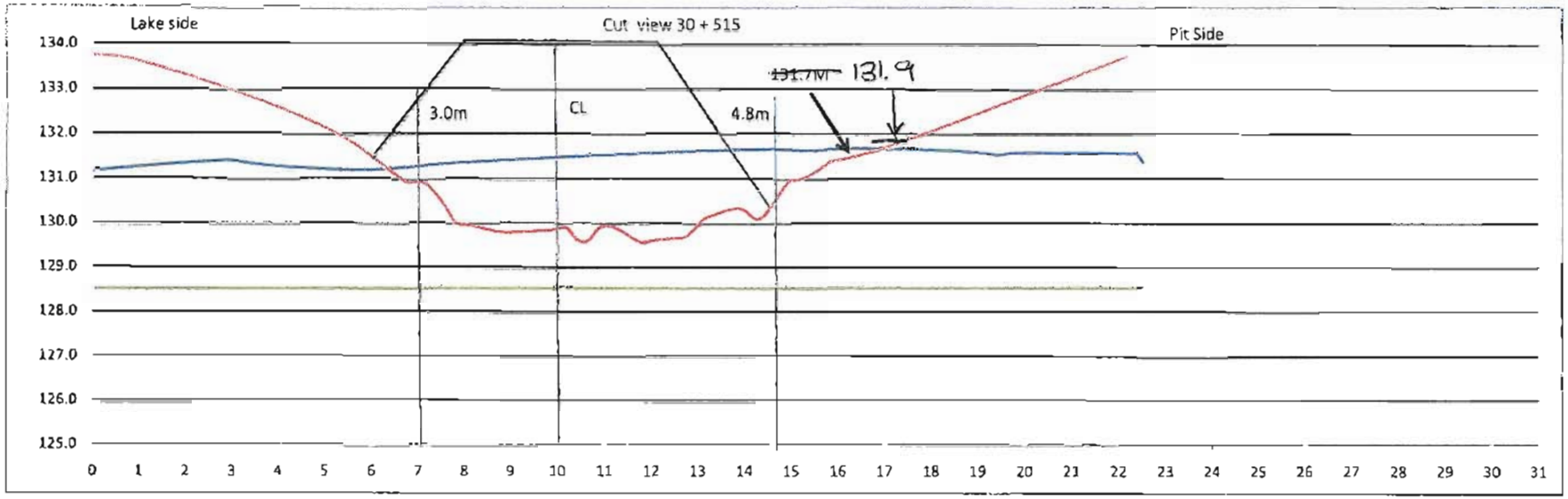
Rec'd Sept 14/09

Rec'd Sept 3/09



Rec'd Sept 3/09

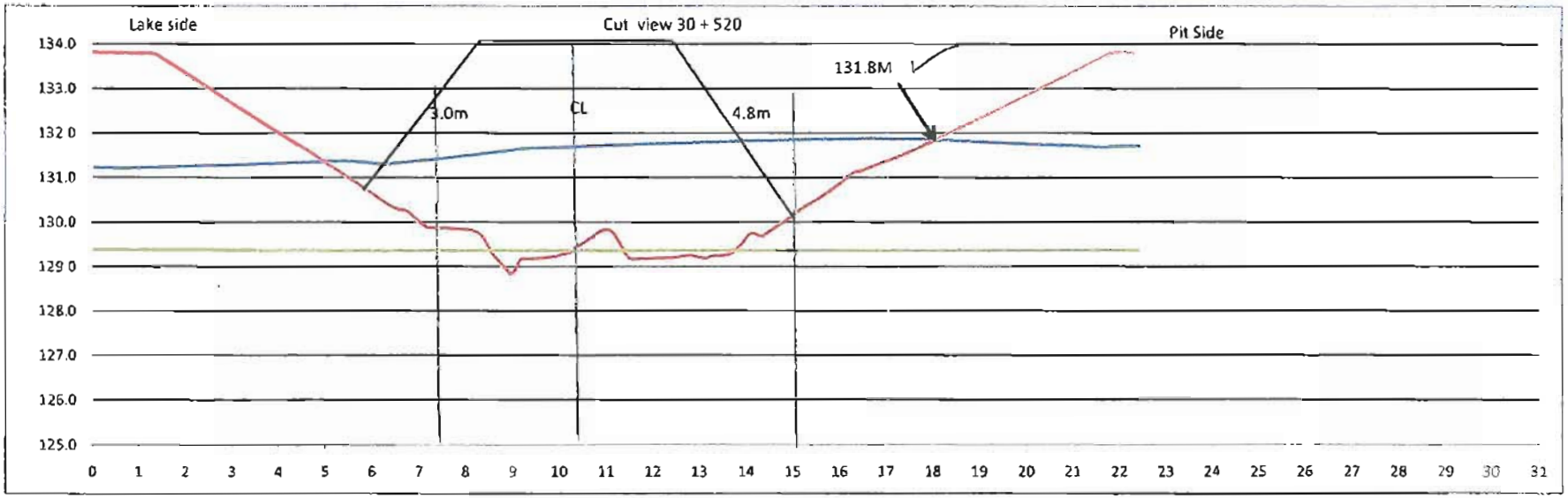




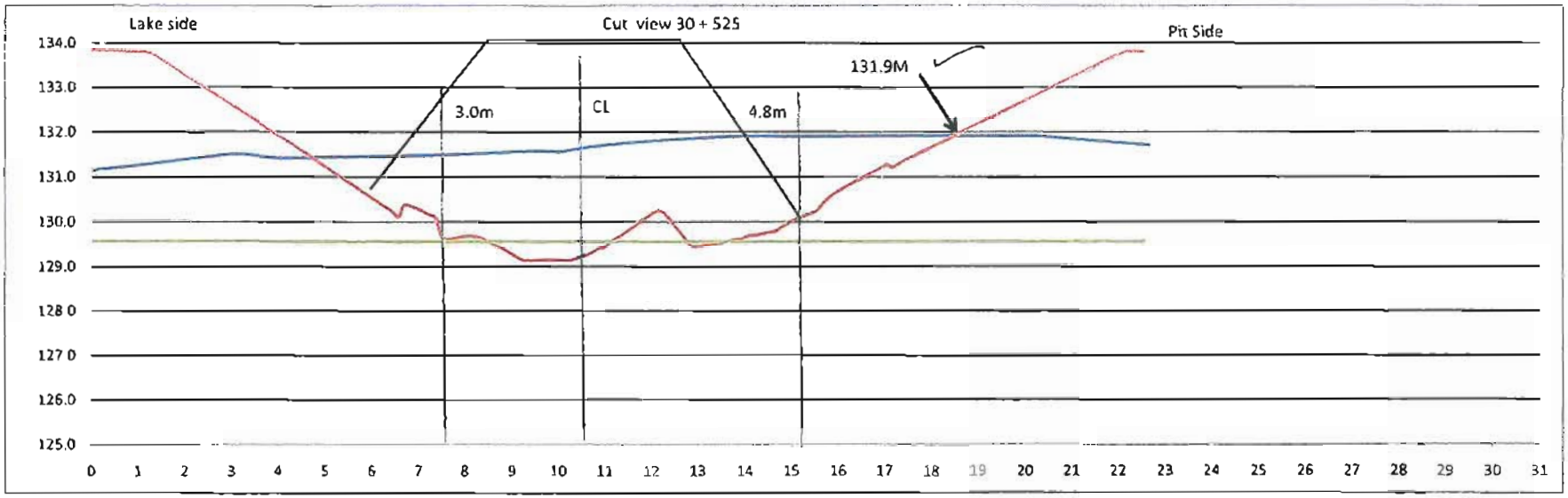
Date 2009-09-03
By: HG

nippour

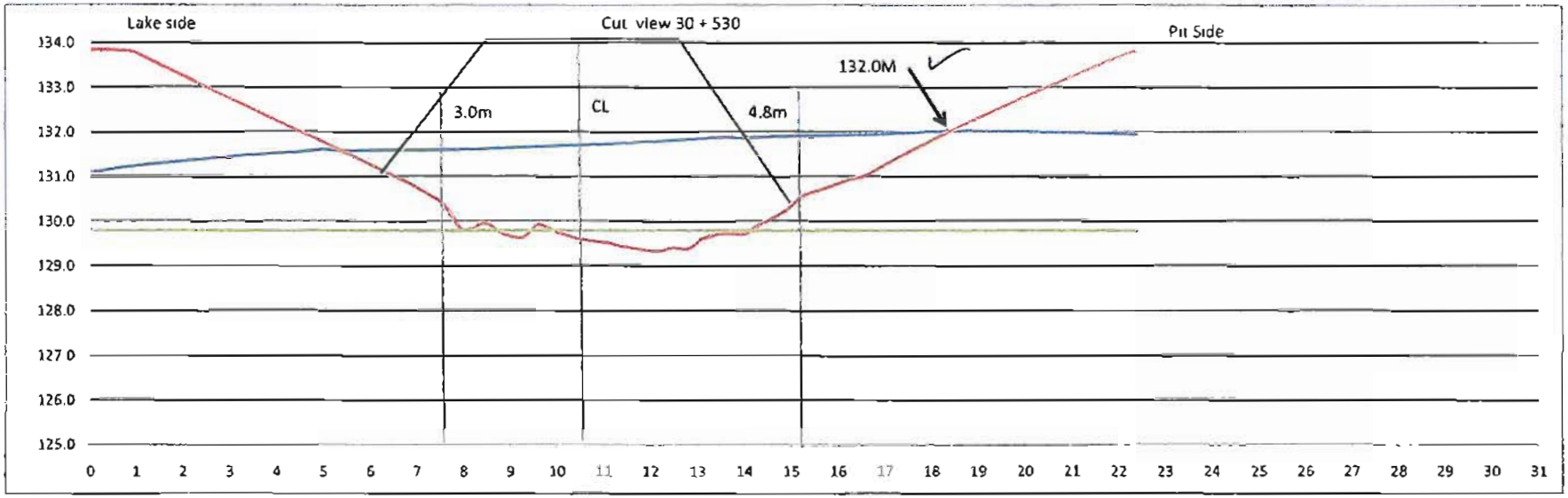
Received Sept 3/09



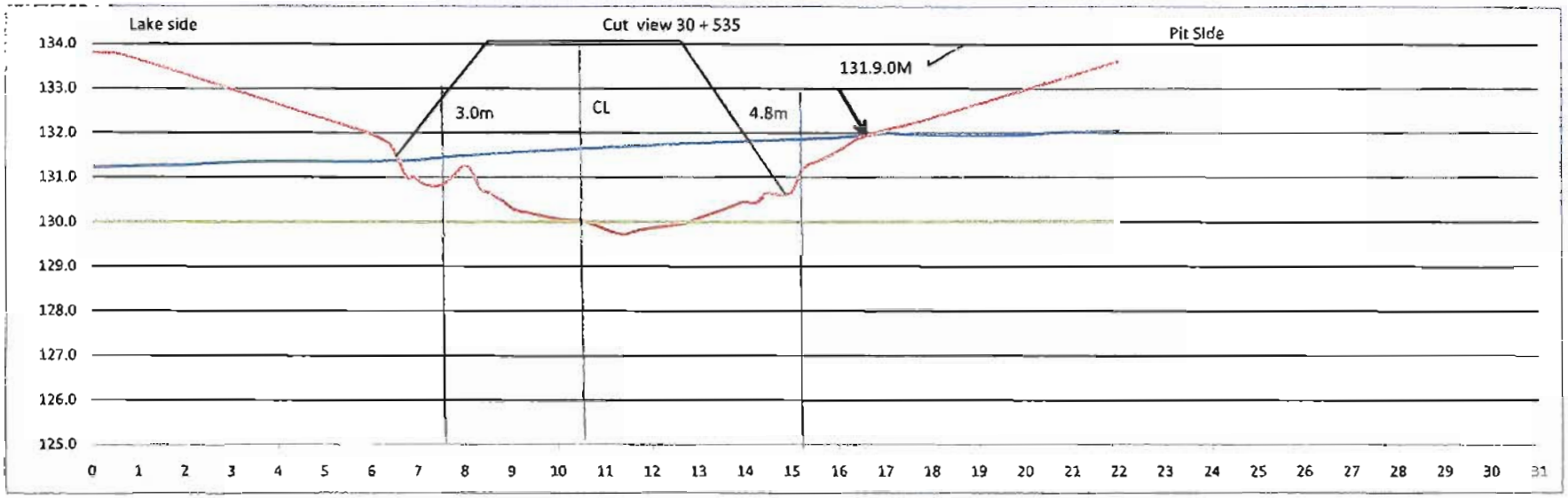
Rec'd Sept 4/09
HG



Rec'd Sept 3/09



Rec'd Sept 3/09



Rec'd Sept 3/09

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 30+540 Offset	SHIFT: NIGHT ☐ DAY ☐	DATE: Sept. 05/09	SHEET 1 OF 1
To Sta. 30+620 Offset	LOCATION:: MEADOW BANK - BAY GOOSE - ROCKFILL - EXCAVATION -		
EQUIPMENT:			

DESCRIPTION

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings		
2.	Storage areas planned for disposal of removed materials	—	—
3.	Occurrence of snow and ice removal method in place	—	—
4.	Occurrence of boulders and removal method in place		
5.	Occurrence of hummocks and scalping method in place		
6.	Occurrence of surface and ground water and its impact mitigation in place	—	—
7.	Presence of other unsuitable materials and removal method in place		
8.	Soil frozen or thawed and measures taken	—	
9.	Blasting requirement to remove unsuitable material and safety measure checked	—	—
10.	Adjustment made to suit design in field		
11.	Final walkover inspection before re-sloping or fill placement		
12.	"As-excavated" survey conducted		
13.	Final sounding conducted of lake bottom surface		

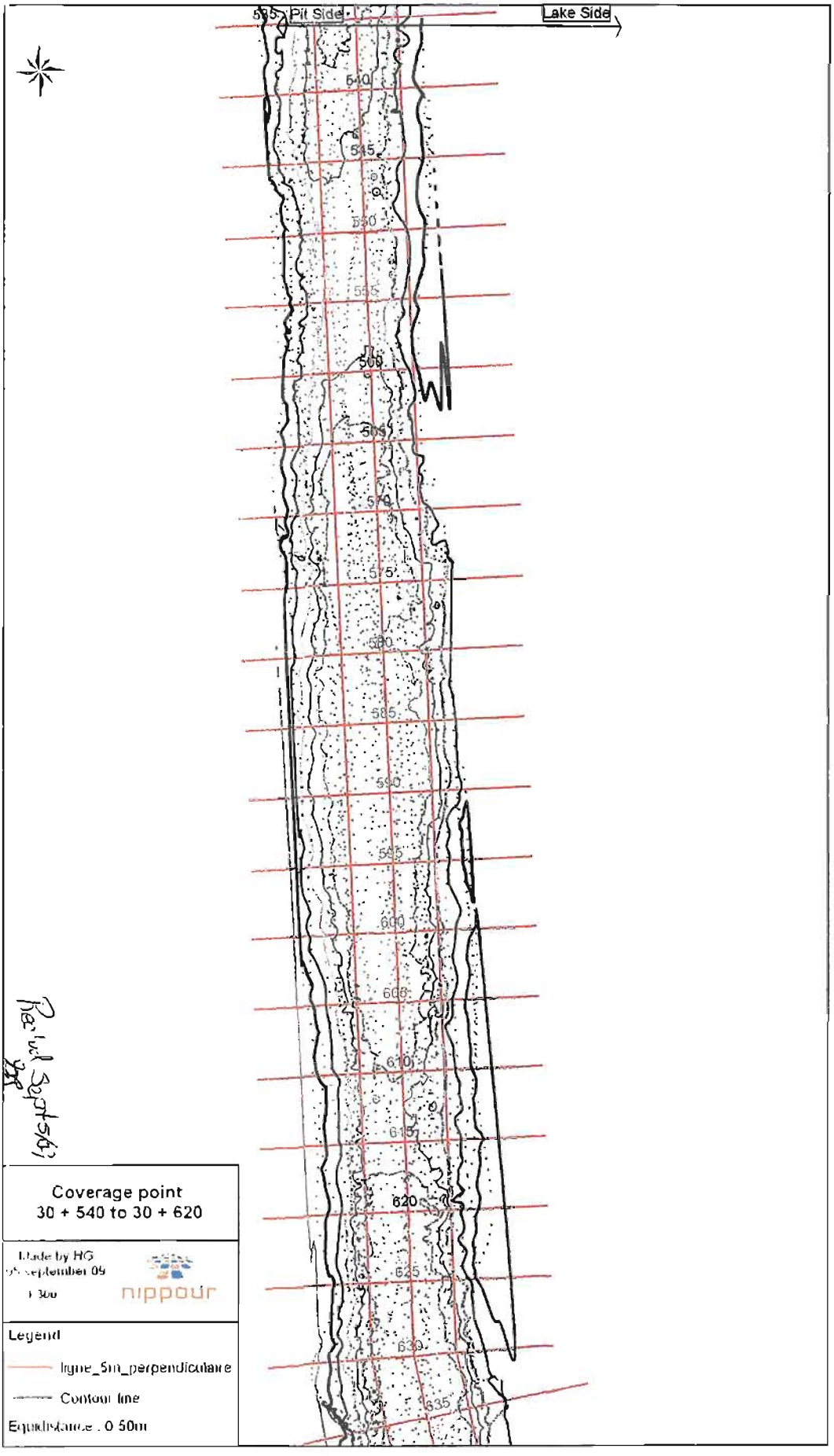
REMARKS : - Complete submission package received (attached) Sept 6/09
- Additional checking and chipping completed (Sept 6/09)
- Pitside filter elevations provided to FGL

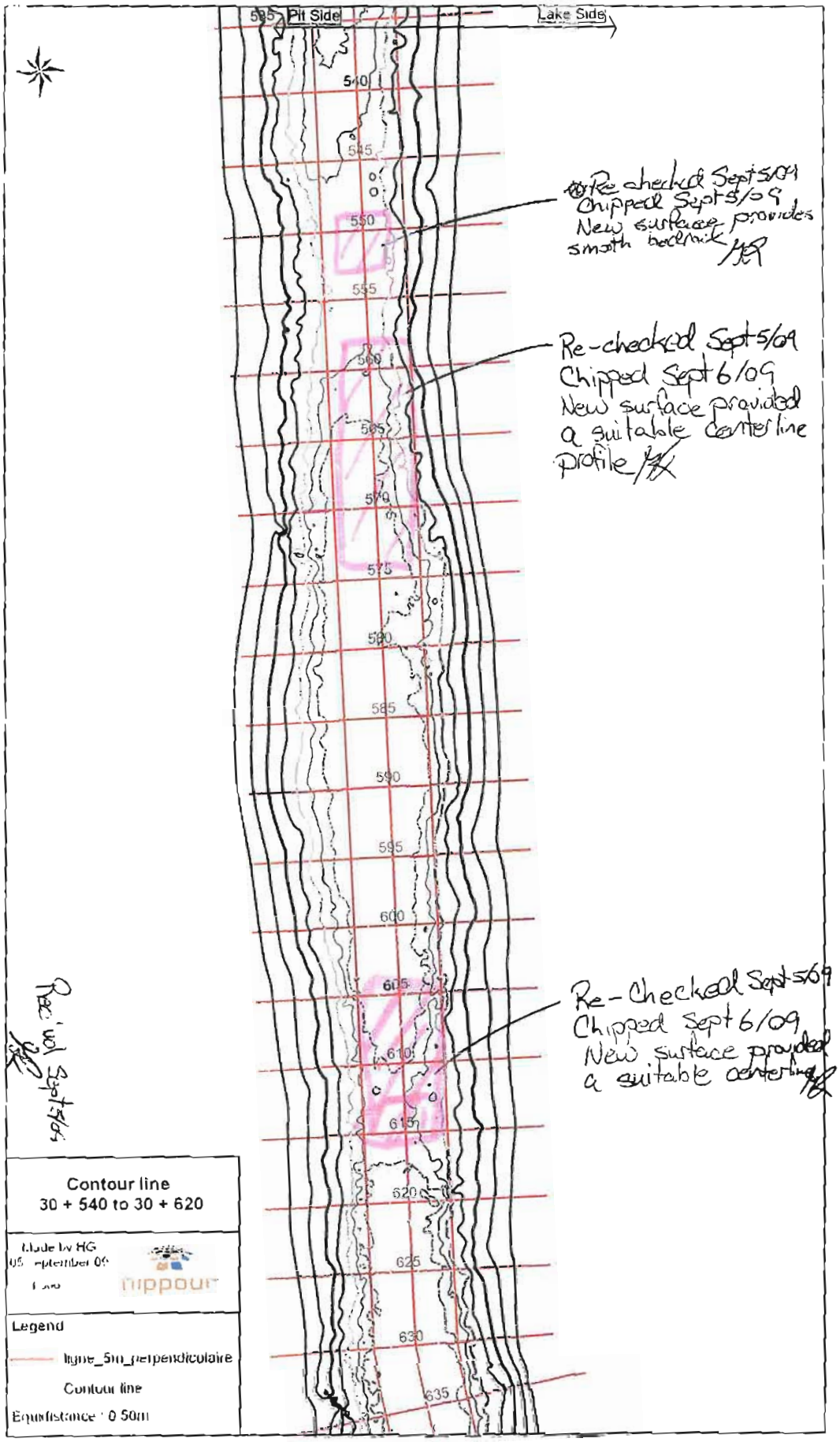
DEVIATIONS : (Attach list if necessary)
- Required to continuously clean sediment in front of advancing CB face

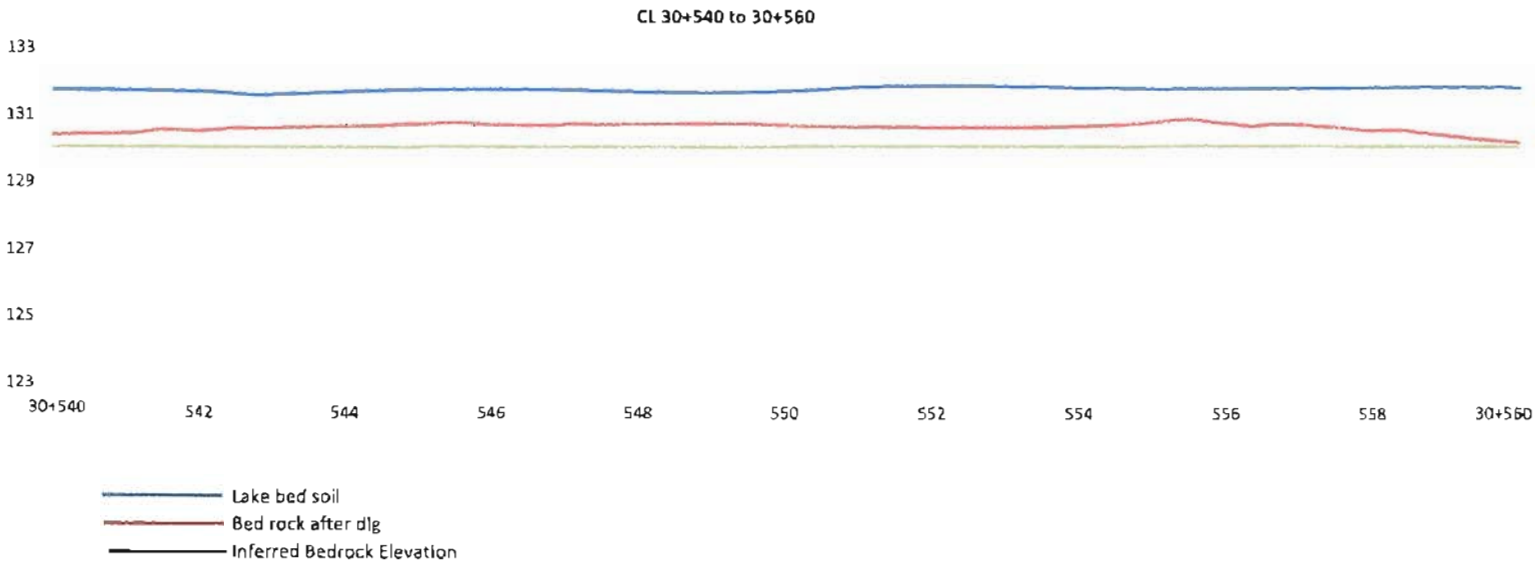
DATE OF RECTIFICATION :

SURVEY VERIFICATION	ACCEPTED BY QA Manager :	ACCEPTED BY OWNER :
NAME: Guy Morissette	NAME: Glen Rutherford	NAME:
SIGNATURE :	SIGNATURE :	SIGNATURE :
DATE 5 sept. 09	DATE 6 Sept 09	DATE

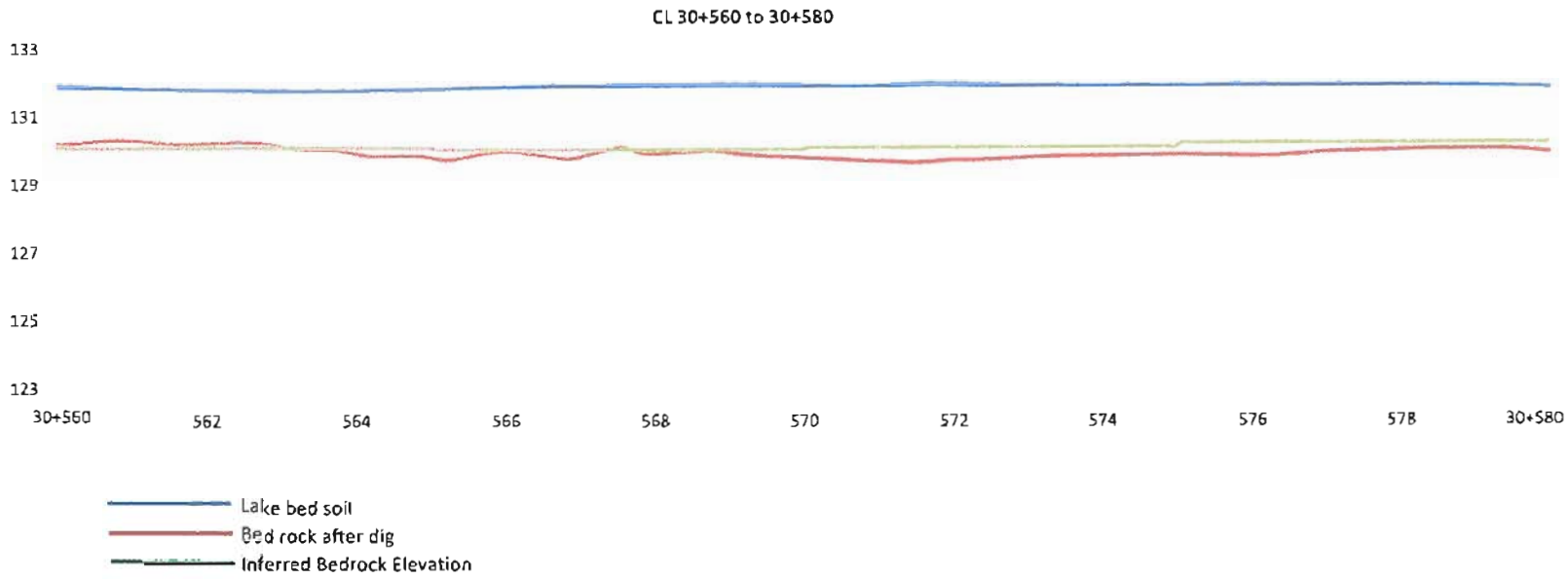
Remis à Glen le Golder
à 15 hrs le 5 sept. 09


Pit Side
Lake Side
540
545
550
555
560
565
570
575
580
585
590
595
600
605
610
615
620
625
630
635
Coverage point
30 + 540 to 30 + 620
Made by HG
September 09
1:300
nippour
Legend
ligne_5m_perpendiculaire
Contour line
Equidistance : 0.50m

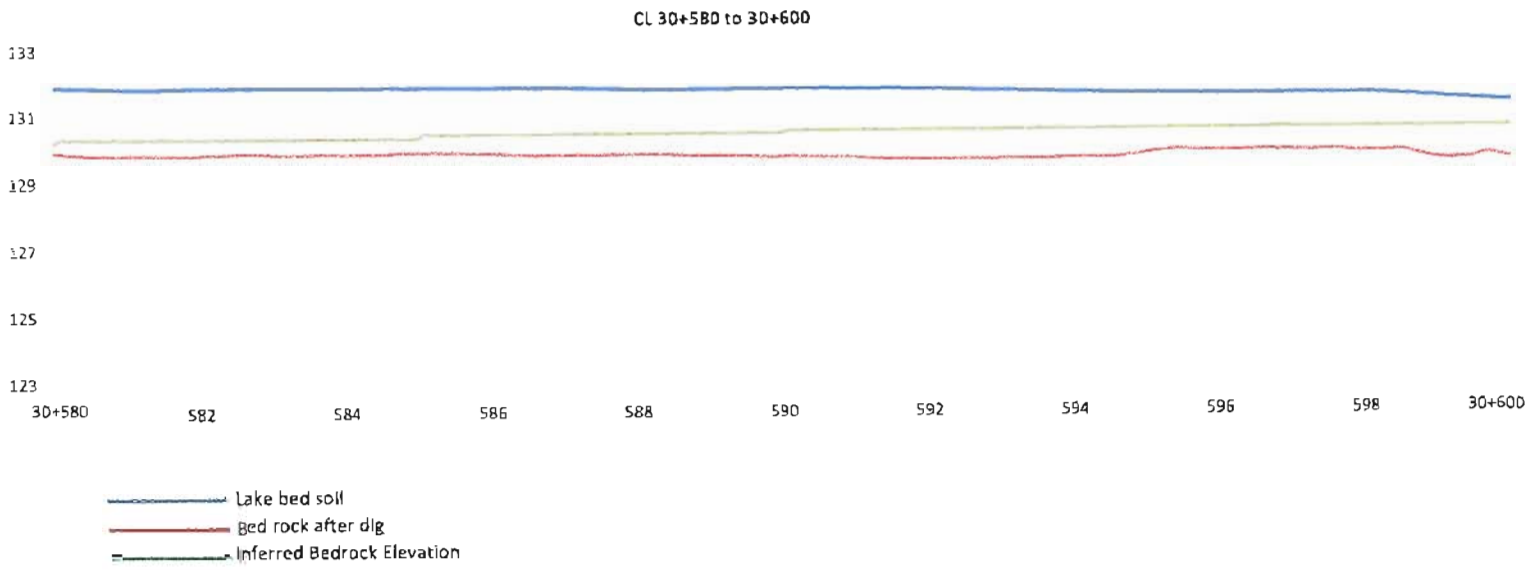

535
Pit Side
Lake Side
540
545
550
555
560
565
570
575
580
585
590
595
600
605
610
615
620
625
630
635
Re-checked Sept 5/09
Chipped Sept 6/09
New surface provided a suitable centerline profile
Re-checked Sept 5/09
Chipped Sept 6/09
New surface provided a suitable centerline
Re-checked Sept 5/09
Contour line
30 + 540 to 30 + 620
Made by HG
05 September 09
nippour
Legend
ligne_5m_perpendiculaire
Contour line
Equidistance : 0.50m



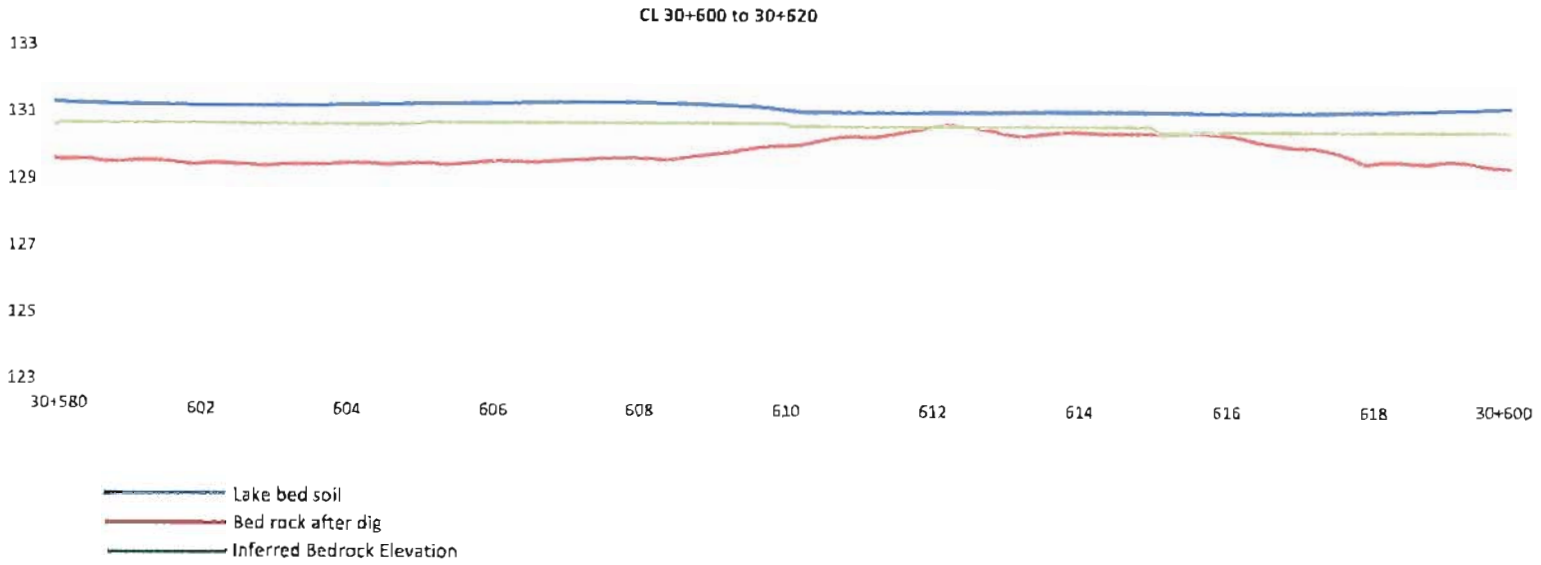
Rec'd Sept 5/05



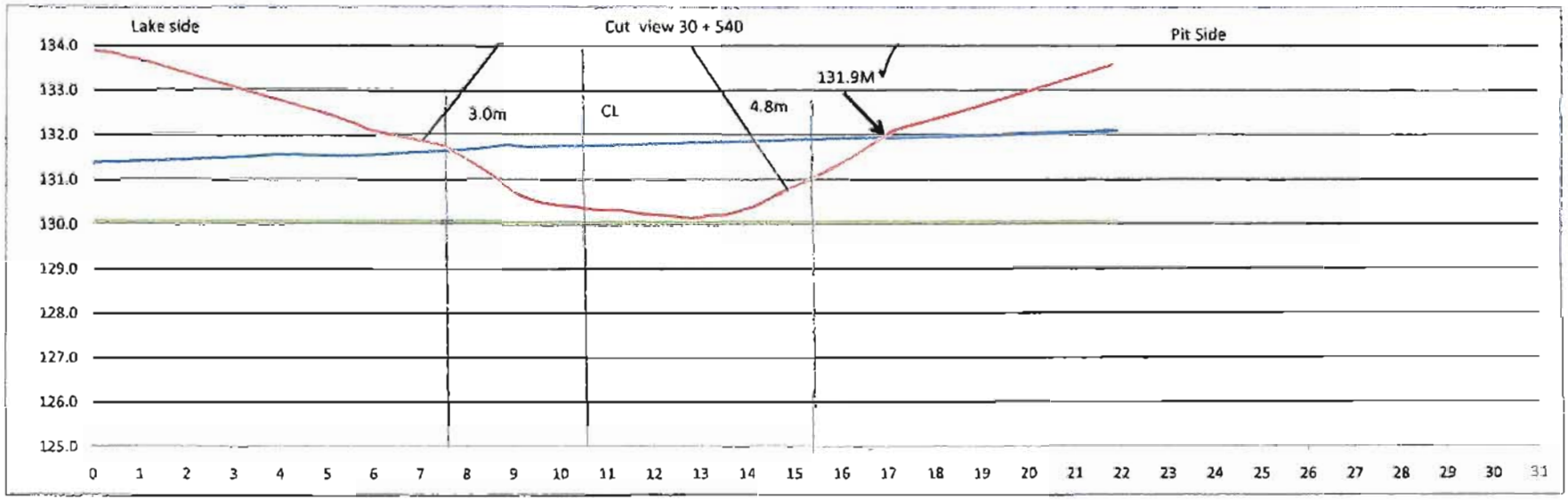
Rec'd Sept 5/08



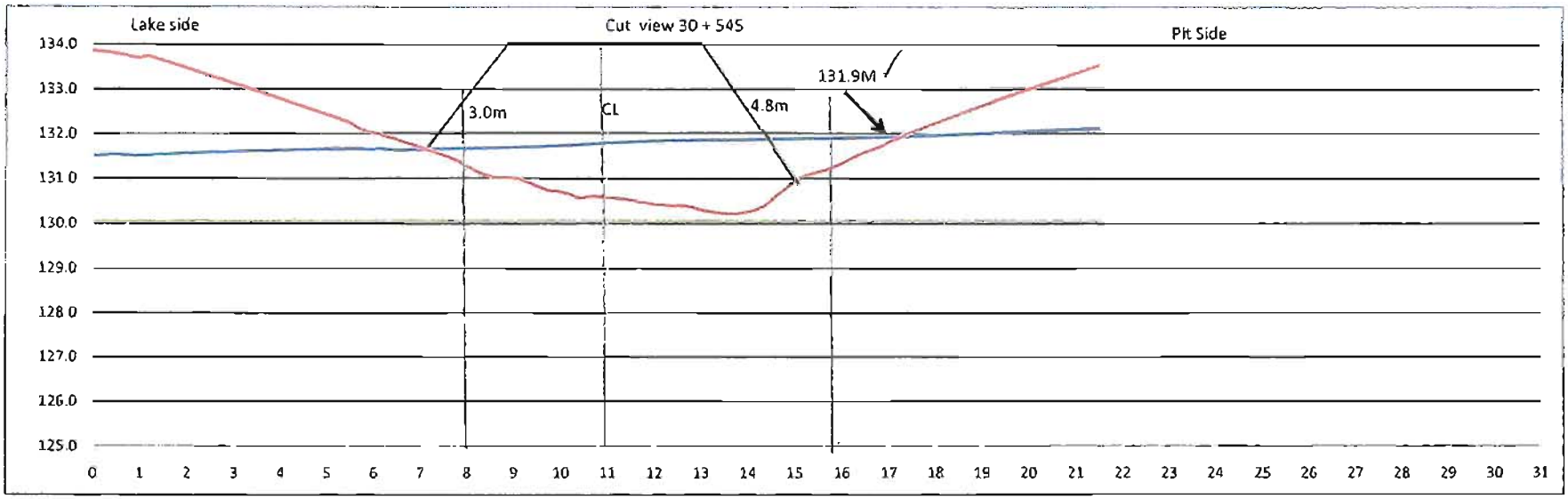
Rec'vd Sept 5/05



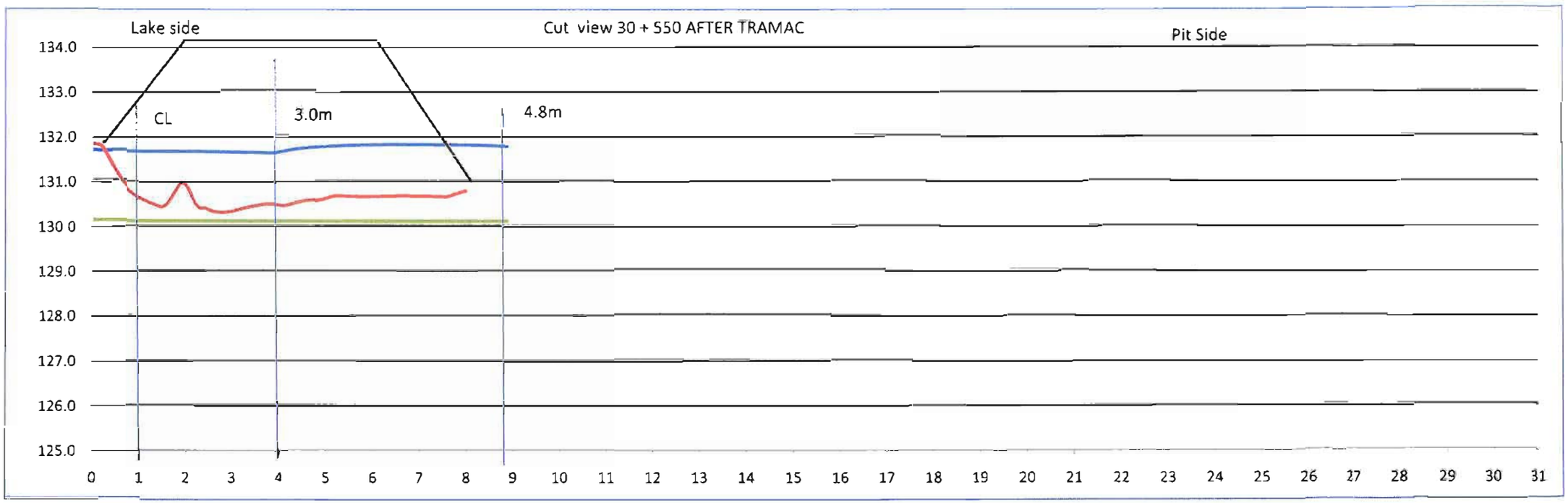
Rec'vd Sept 2019



Rec'd Sept 5/09

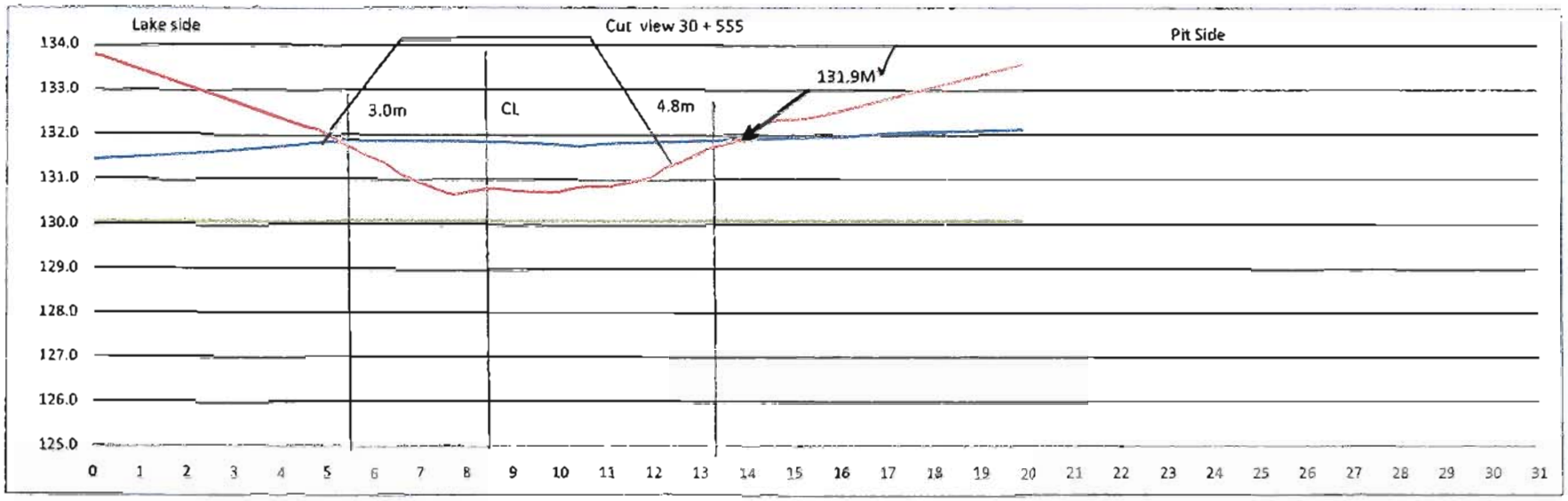


Rec'd Sept 8/09

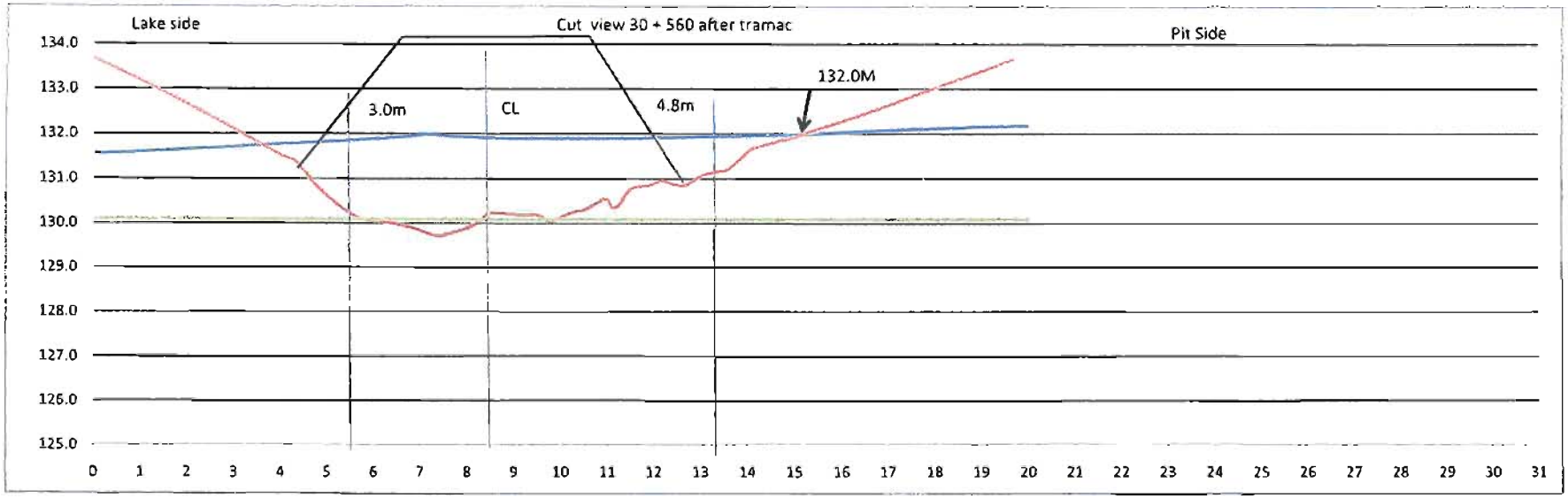


Section that SS'd section in the approval package

Rec'vd Sept 7/09



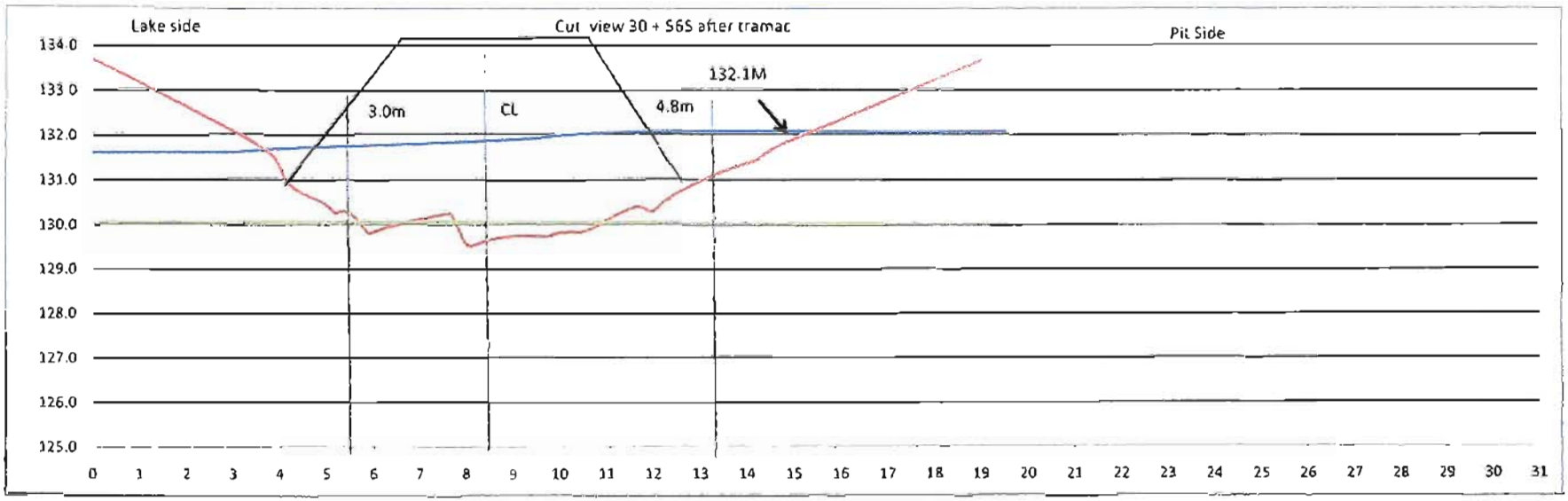
Rec'd Sept 5/06

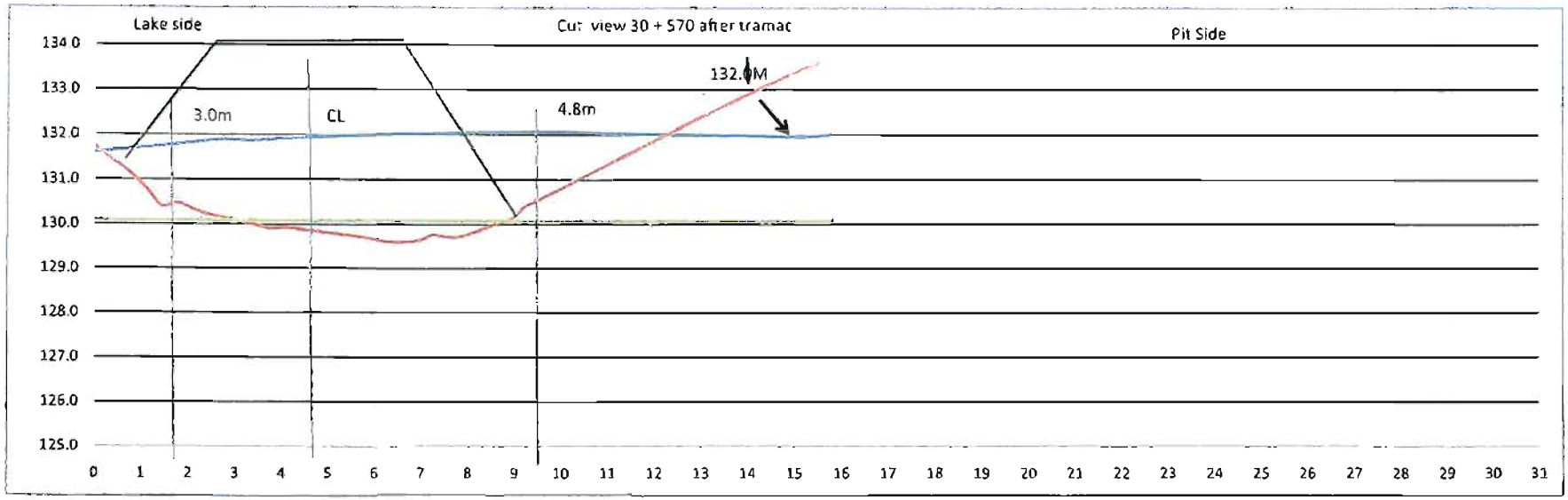


Lake bed soil
Dike
Infered bed rock

Date 2009-09-05
By HG

nippour

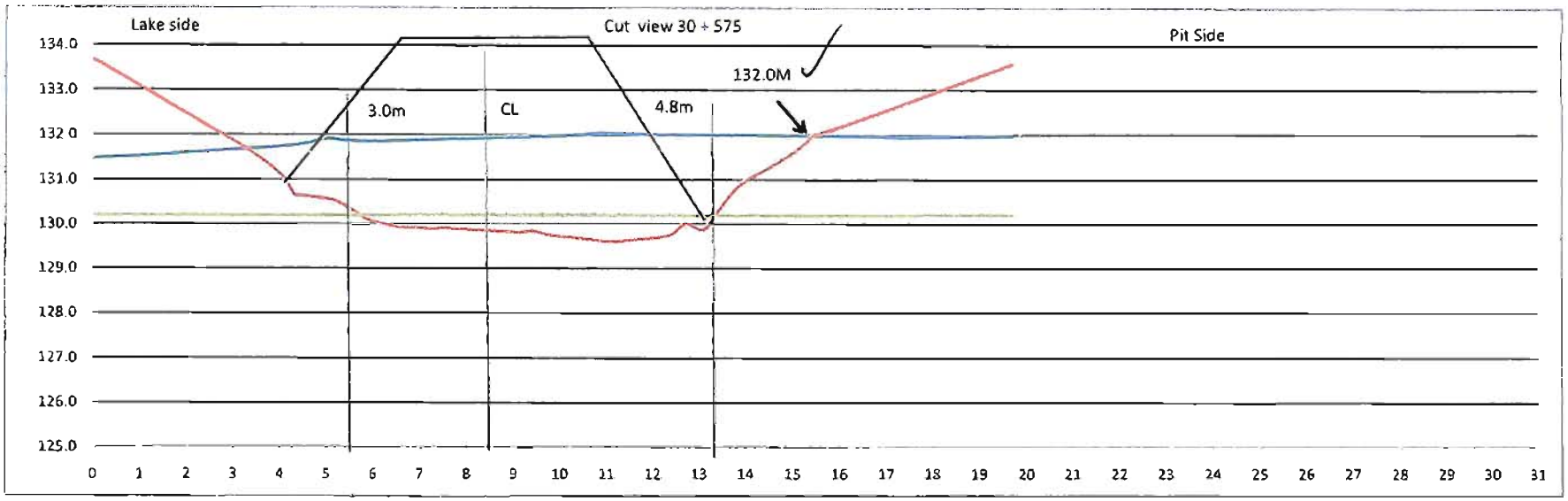

Lake side
Cut view 30 + 565 after tramac
Pit Side
134.0
133.0
132.0
131.0
130.0
129.0
128.0
127.0
126.0
125.0
132.1M
3.0m
CL
4.8m
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Lake bed soil
Dike
Infered bed rock
Date 2009-09-05
By: HG
nippour



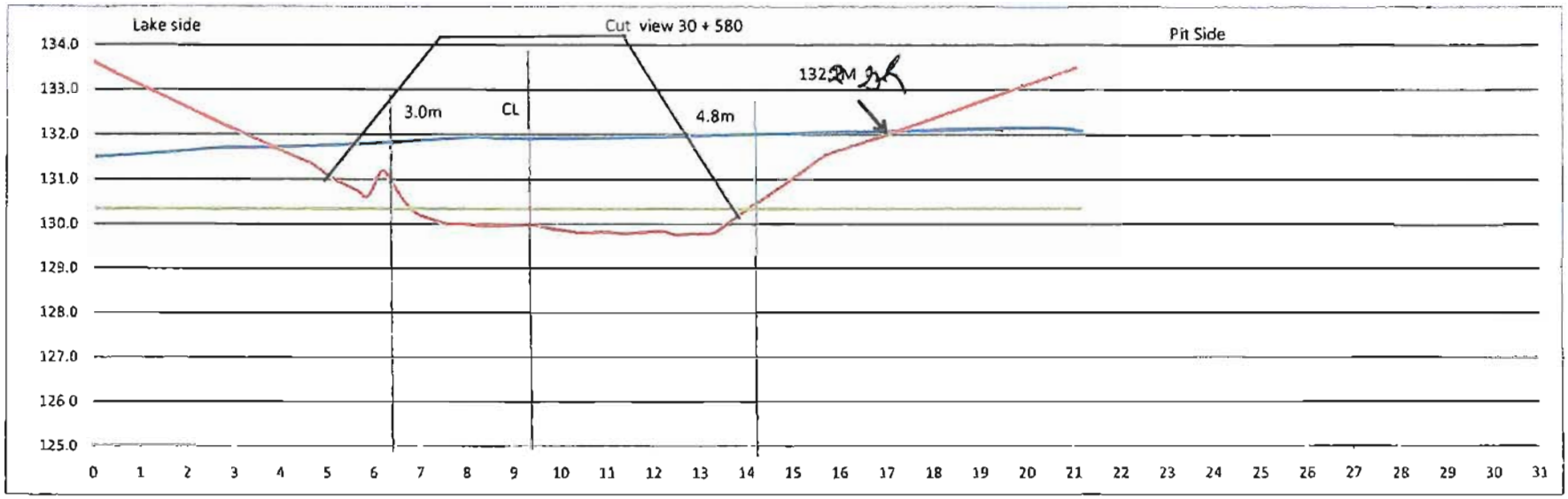
Lake bed soil
Dike
Infered bed rock

Date 2009-09-05
By: HG

nippour



Rec'd Sept 5/05

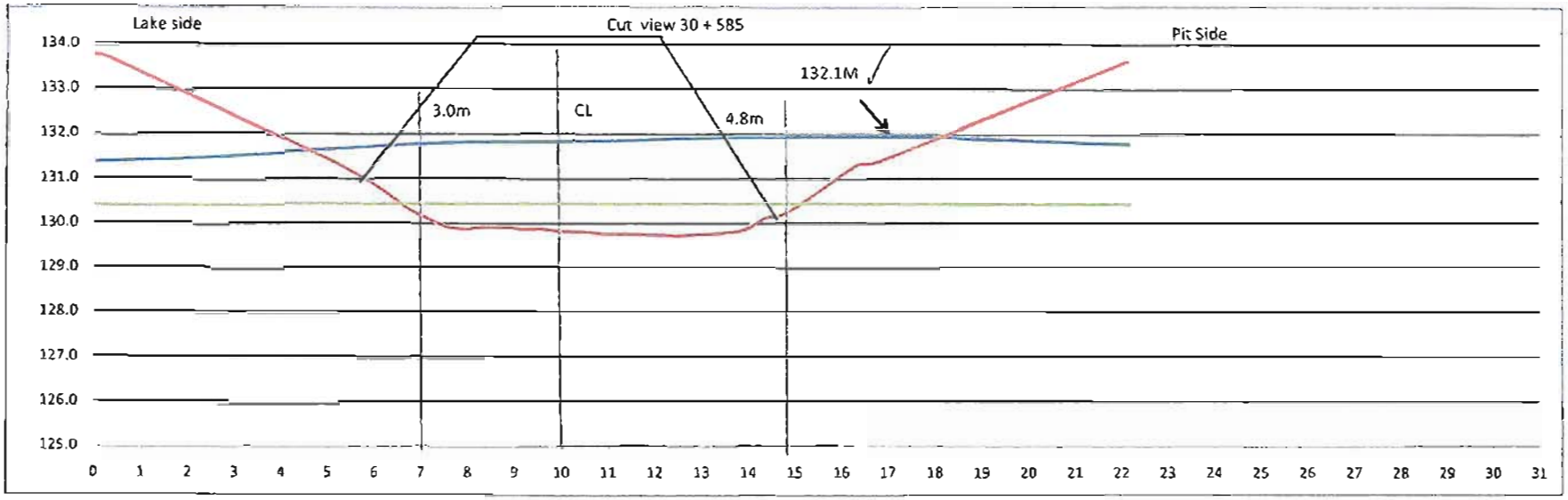


Lake bed soil
Dike
Infered bed rock

Date 2009-09-05
By: HG

nippour

Rec'vd Sept 5/07

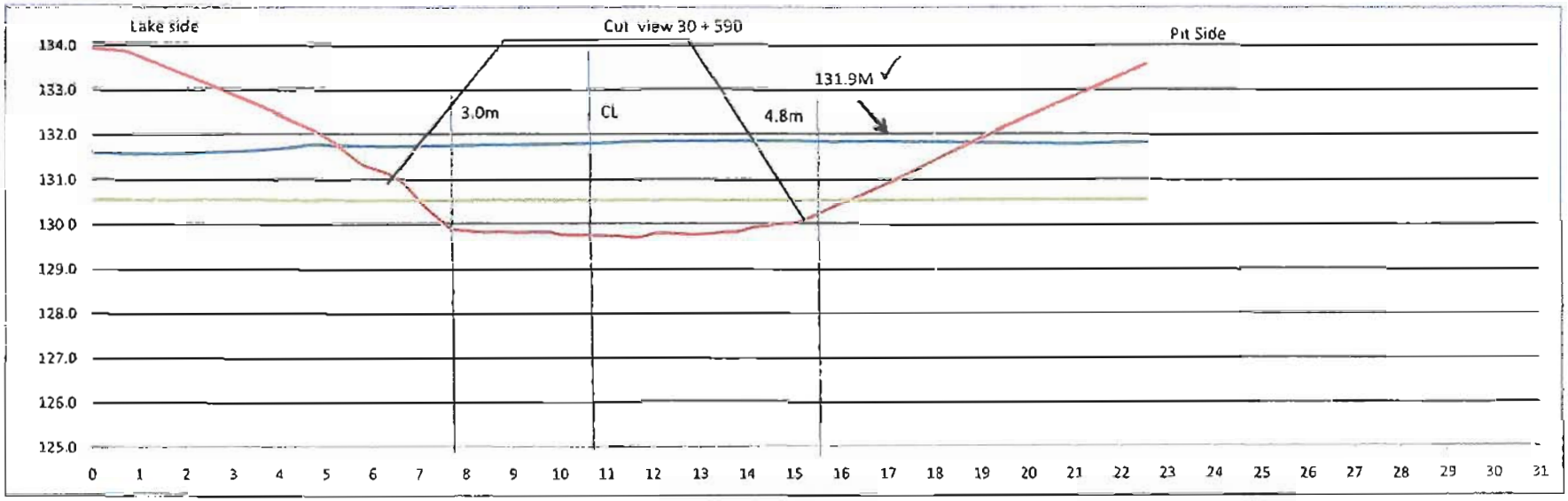


Lake bed soil
Dike
Infered bed rock

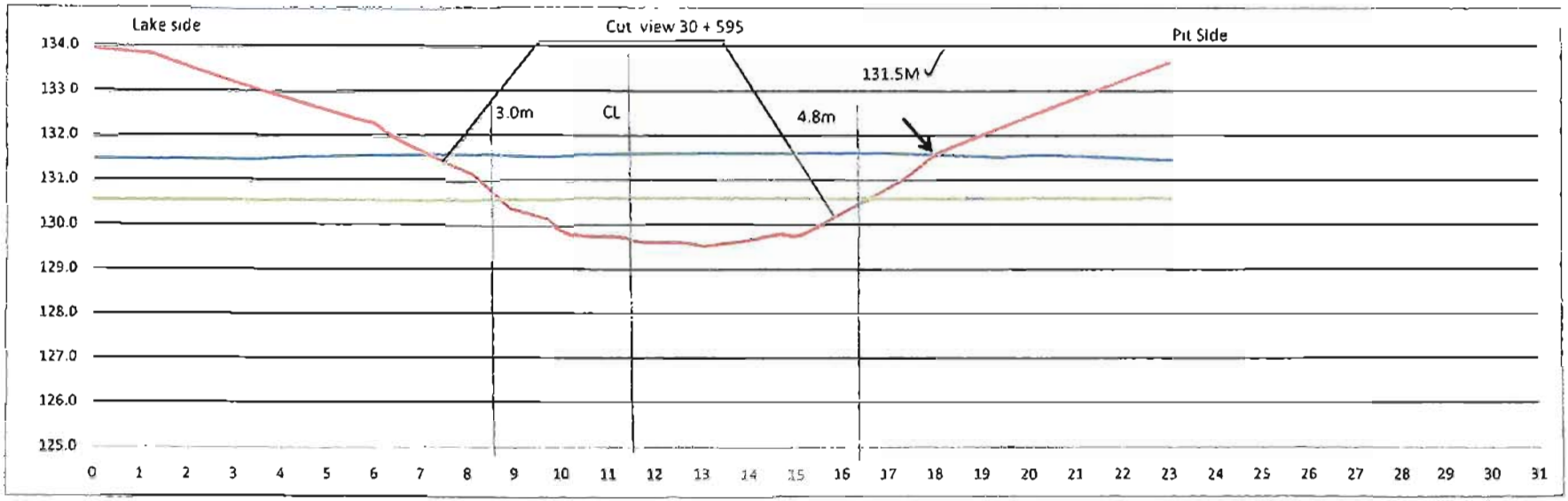
Date 2009-09-05
By: HG

nippour

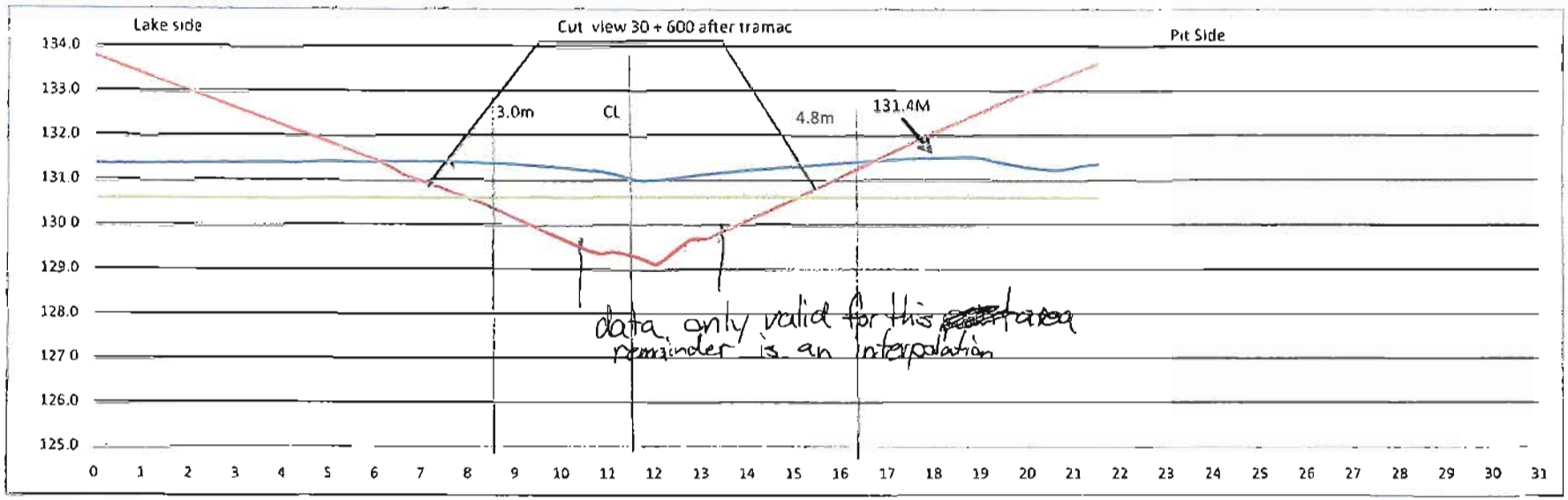
Received 2009-09-05



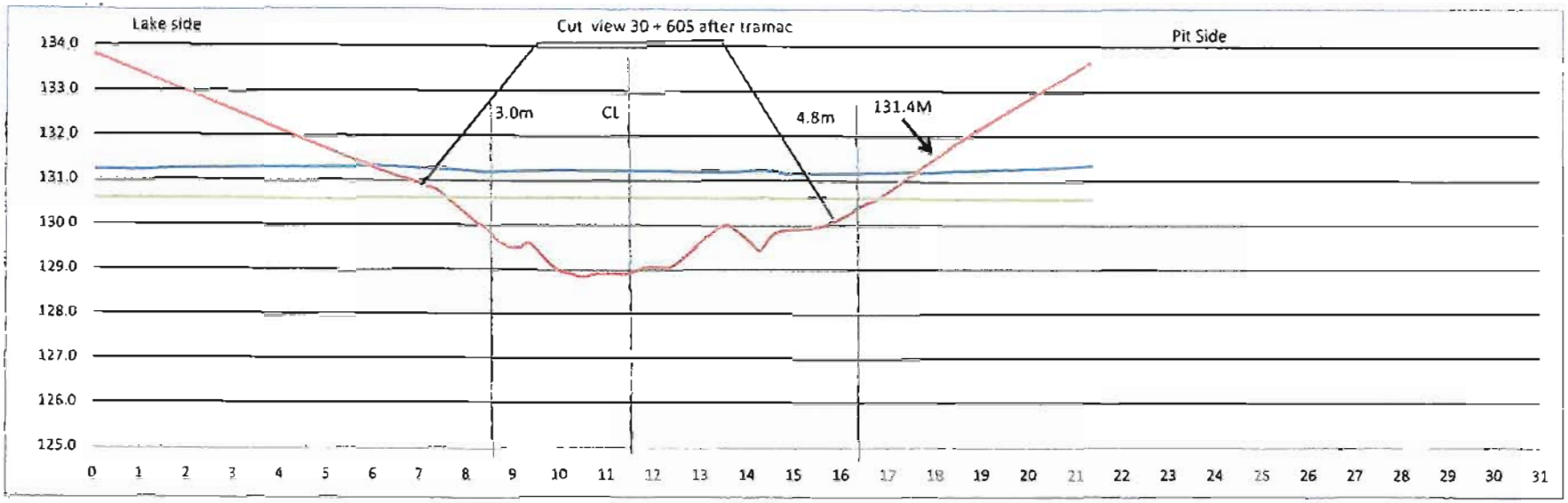
Rec'd Sept 5/09



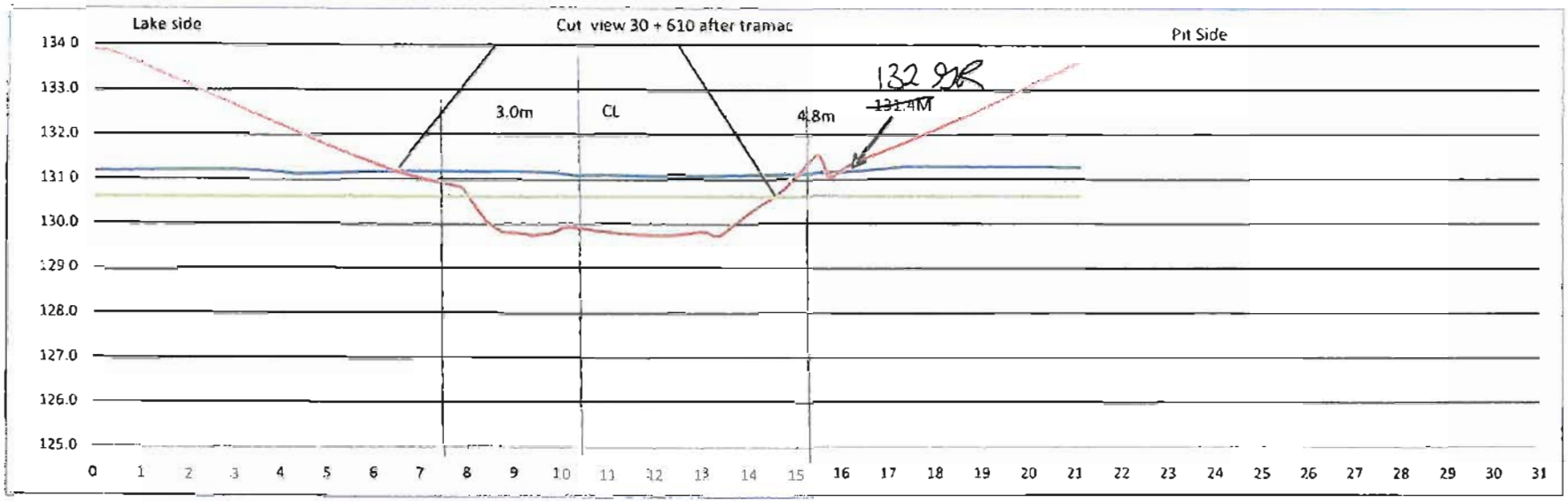
Rec'd Sept 5/09



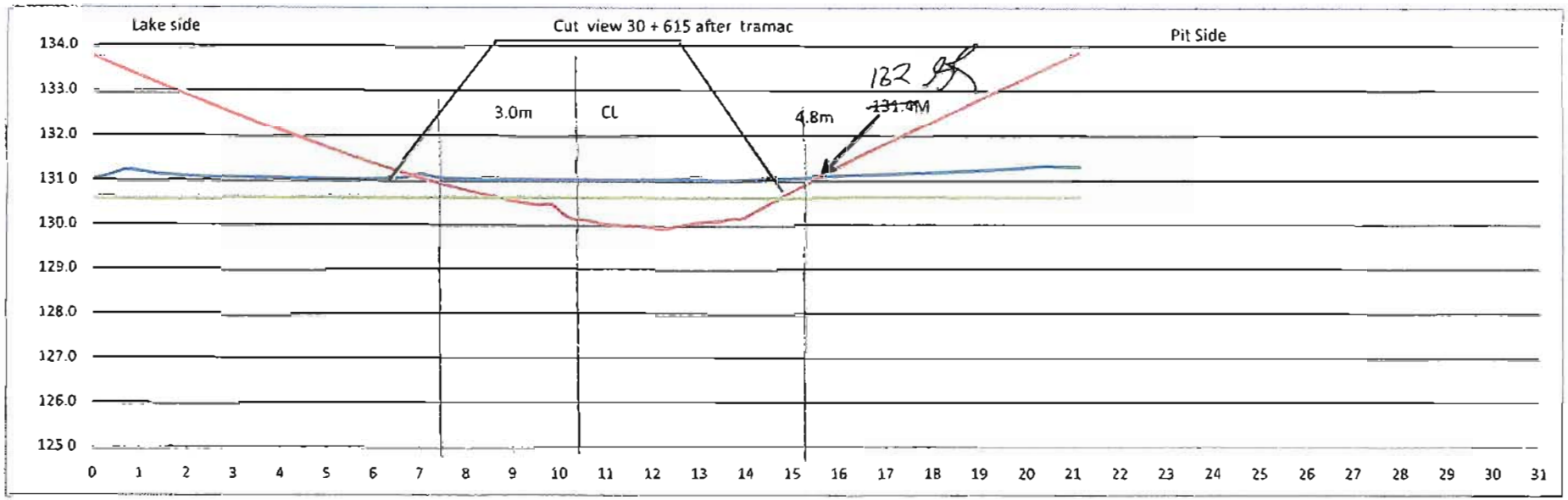
Received Sept 8/09



Rec'd Sept 6/09



Recieved Sept 6/09

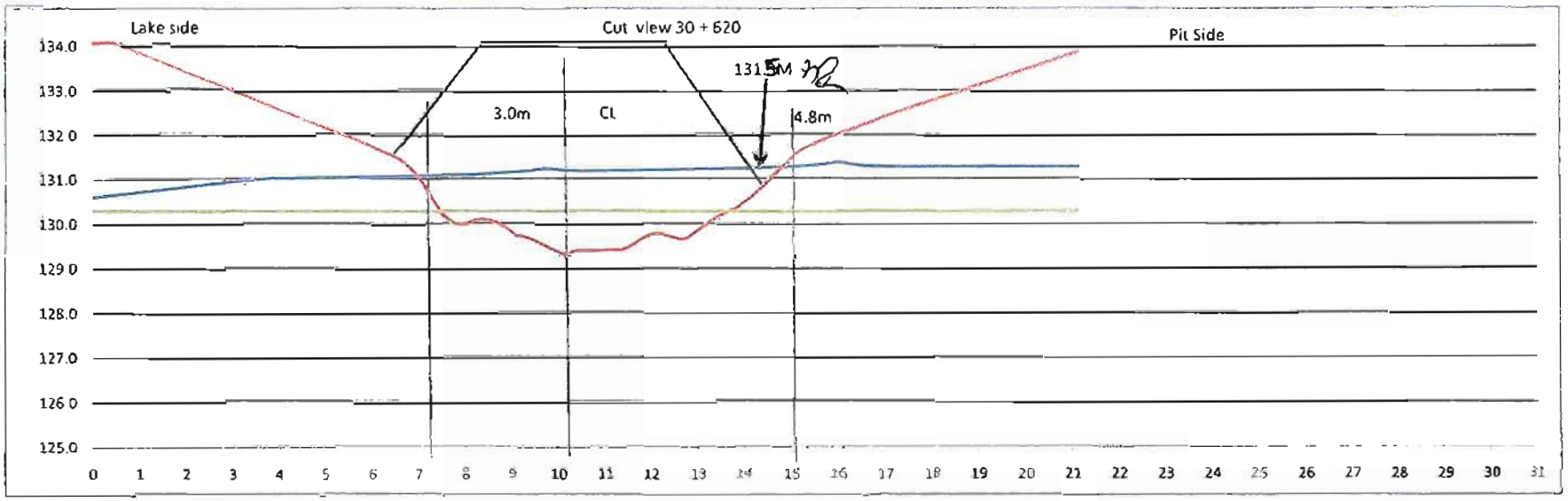


Lake bed soil
Dike
Infered bed rock

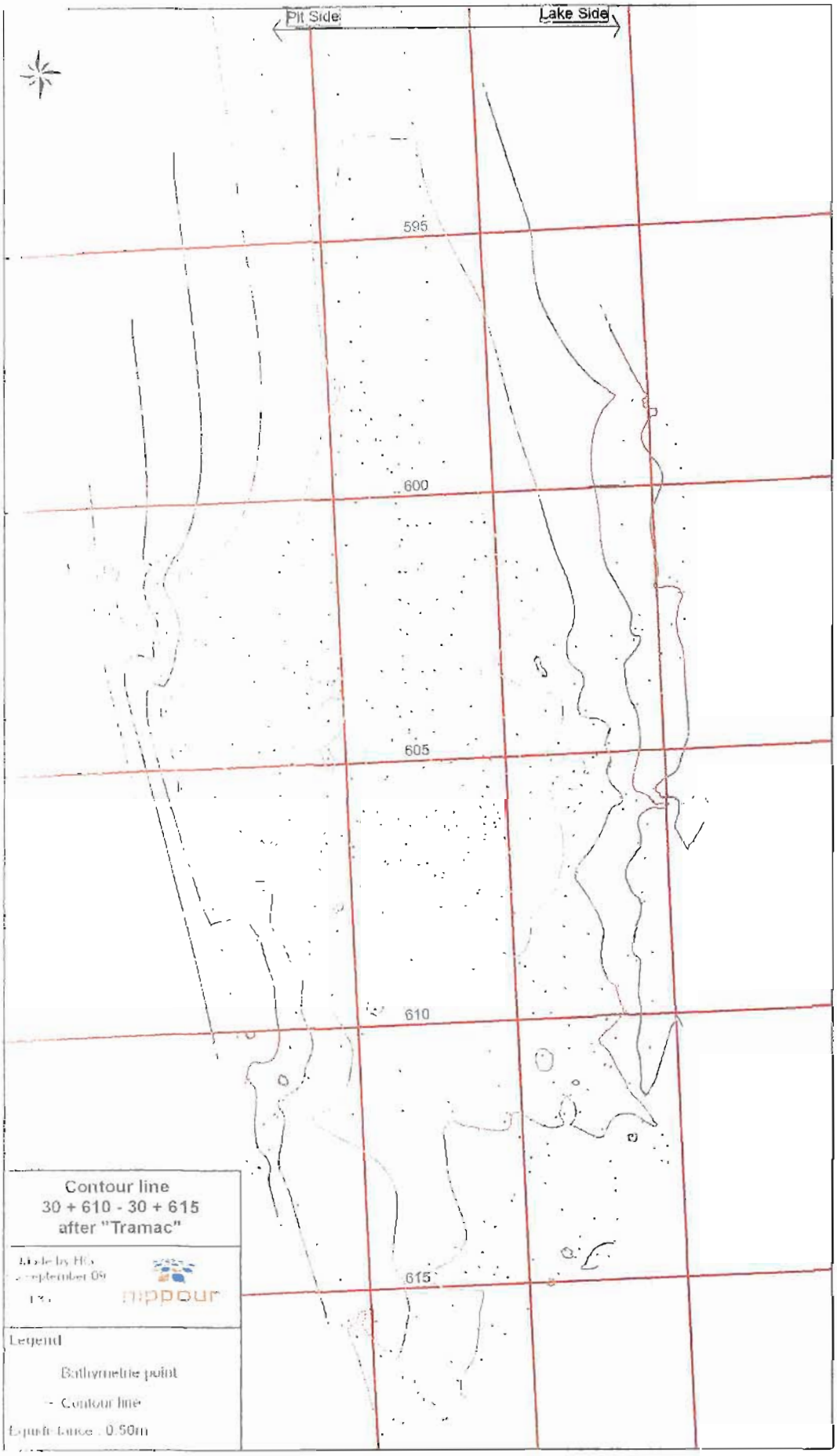
Date 2009-09-05
By: HG

nippour

Rec'vd Sept 6/09


Lake side
Cut view 30 + 620
Pit Side
131.5M
3.0m
CL
4.8m
134.0
133.0
132.0
131.0
130.0
129.0
128.0
127.0
126.0
125.0
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Lake bed soil
Dike
Infered bed rock
Date 2009-09-05
By. HG
nippour


Pit Side
Lake Side
550
555
560
565
570
575
580
Contour line
30 + 550 to 30 5670
after "Tramac"
Legend
ligne_5m_perpendiculaire
Contour line
Equidistance : 0.50m


Pit Side
Lake Side
595
600
605
610
615
Contour line
30 + 610 - 30 + 615
after "Tramac"
nippour
Legend
Bathymetrie point
Contour line
Equidistance : 0.50m

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 30+625 Offset 620	SHIFT: NIGHT: ☐ DAY ☒ ☐	DATE: Sept. 07/09	SHEET 1 OF 1
To Sta. 30+660 Offset	LOCATION:: MEADOW BANK - BAY GOOSE – ROCKFILL – EXCAVATION –		
EQUIPMENT:			

DESCRIPTION

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	✓	✓
2.	Storage areas planned for disposal of removed materials	—	—
3.	Occurrence of snow and ice removal method in place	—	—
4.	Occurrence of boulders and removal method in place	✓	✓
5.	Occurrence of hummocks and scalping method in place	✓	✓
6.	Occurrence of surface and ground water and its impact mitigation in place	—	✓
7.	Presence of other unsuitable materials and removal method in place	✓	✓
8.	Soil frozen or thawed and measures taken	—	—
9.	Blasting requirement to remove unsuitable material and safety measure checked	—	—
10.	Adjustment made to suit design in field	✓	✓
11.	Final walkover inspection before re-sloping or fill placement	✓	✓
12.	"As-excavated" survey conducted	✓	✓
13.	Final sounding conducted of lake bottom surface	✓	✓

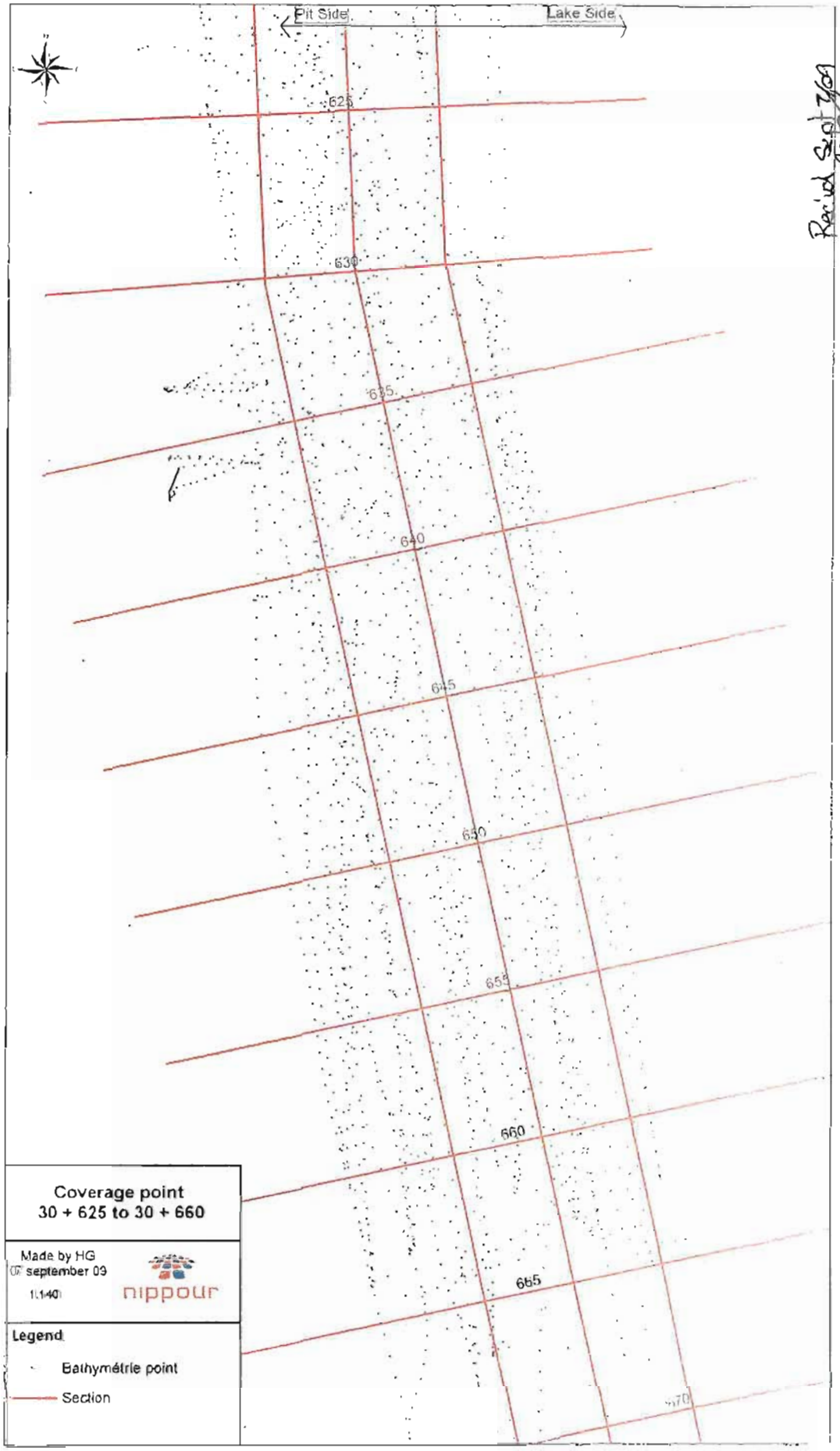
REMARKS: Complete submission package received (attached) Sept 7/09
Additional checking & chipping completed (Sept 8/09)
Pitside filter elevations provided to PGL

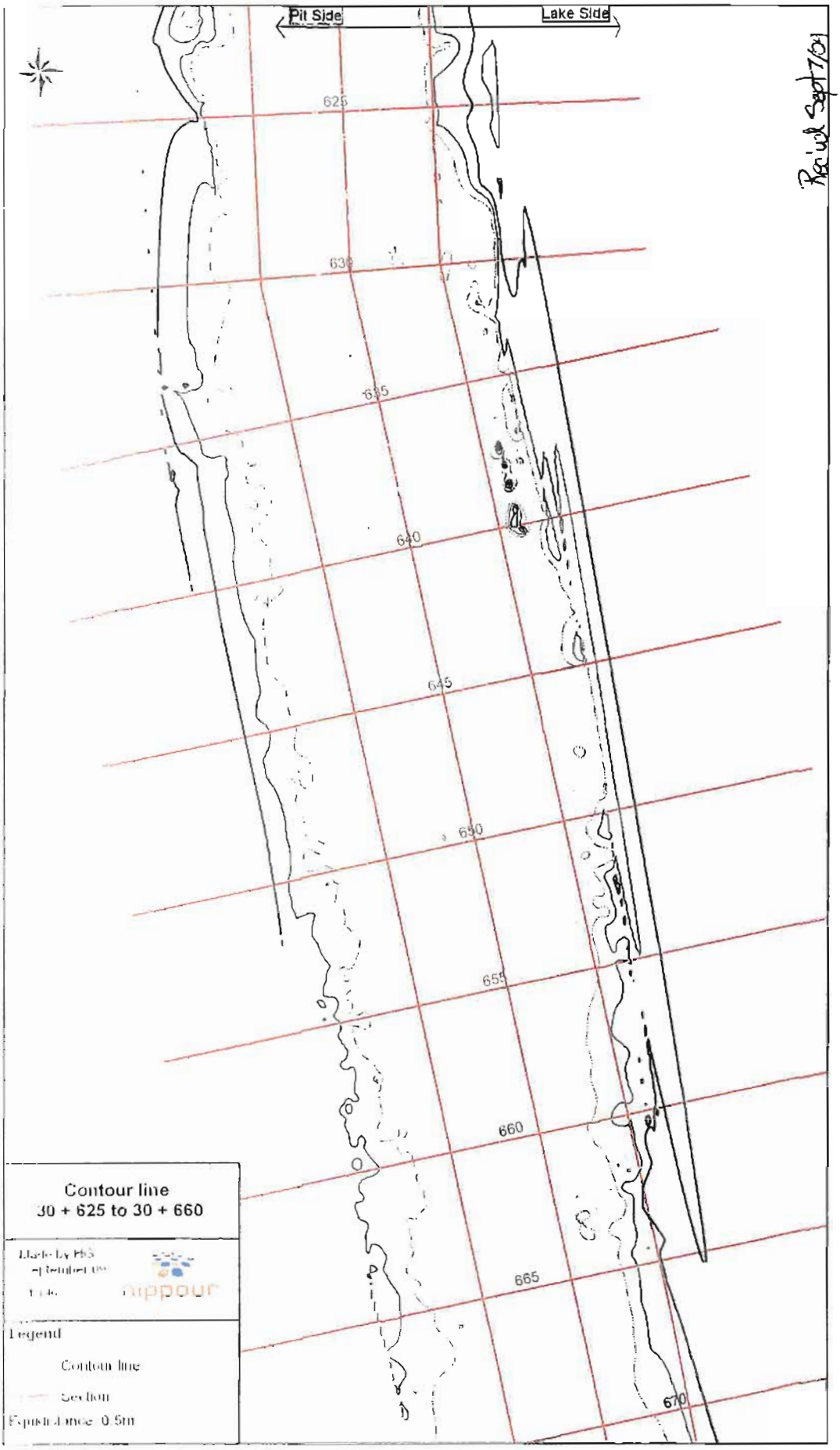
DEVIATIONS: (Attach list if necessary)
- Required to continuously clean sediment in front of advancing CB face and advancing pitside filter
- New 660 section to be submitted (from bathymetry survey)

DATE OF RECTIFICATION:

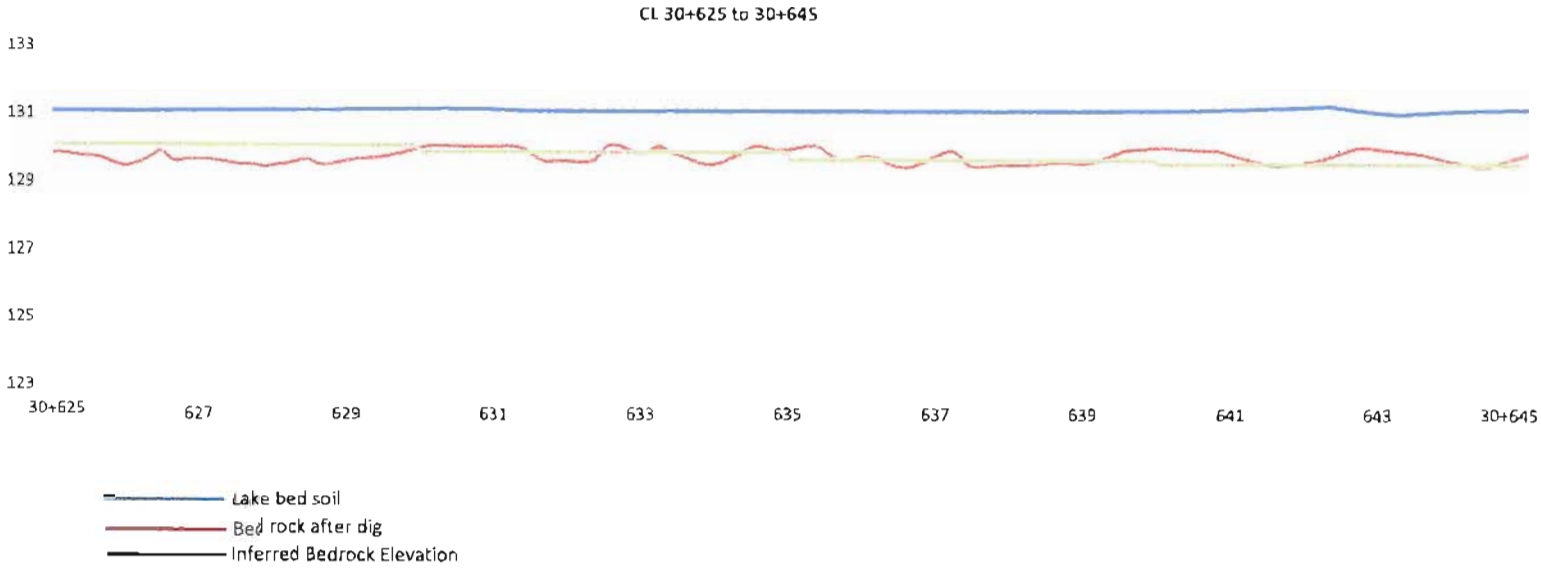
SURVEY VERIFICATION	ACCEPTED BY QA Manager:	ACCEPTED BY OWNER:
NAME: Guy Morissette	NAME: Glen Rutherford	NAME:
SIGNATURE: Guy Morissette	SIGNATURE:	SIGNATURE:
DATE 7 sept. 09	DATE 8 Sept 09	DATE

Remis à Glen de Golder
à ± 18 hrs le 7 sept. 09

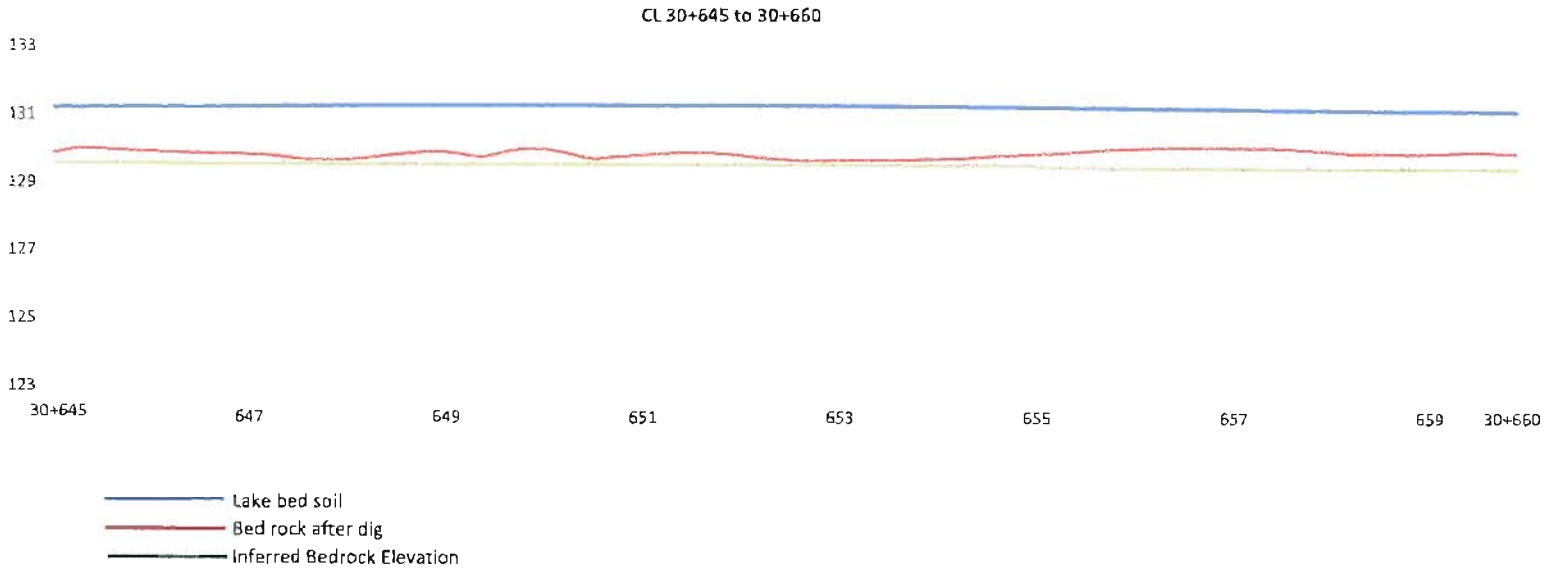

Pit Side
Lake Side
625
630
635
640
645
650
655
660
665
Coverage point
30 + 625 to 30 + 660
Made by HG
07 september 09
1:1400
nippour
Legend
Bathymétrie point
Section



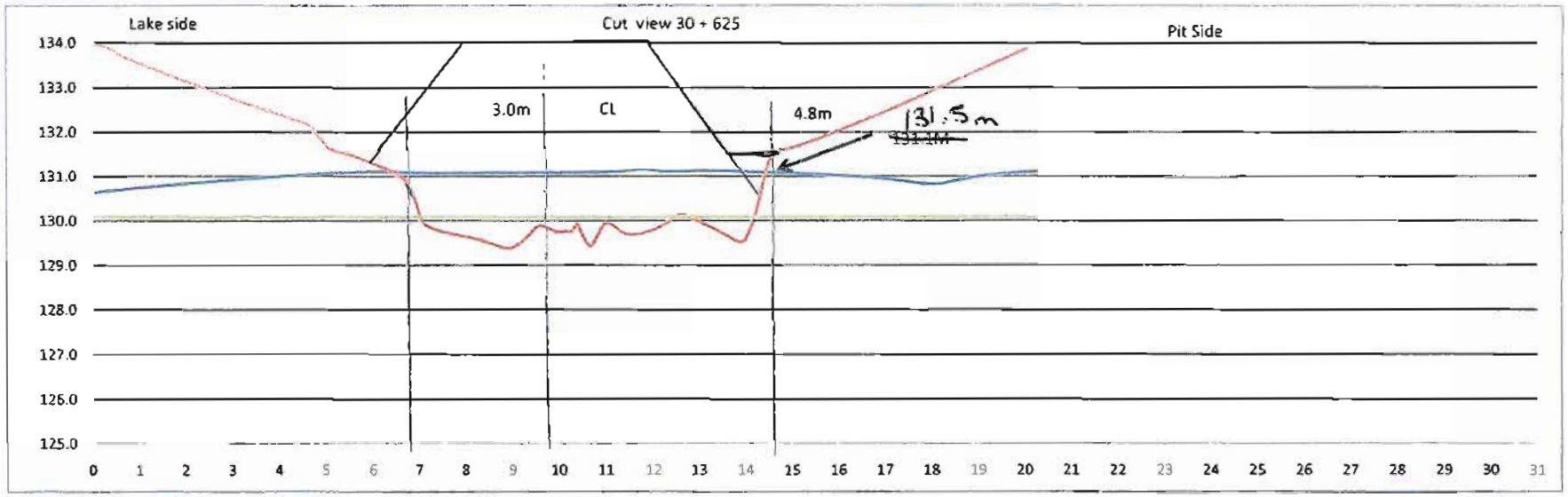
Revised Sept 7/01



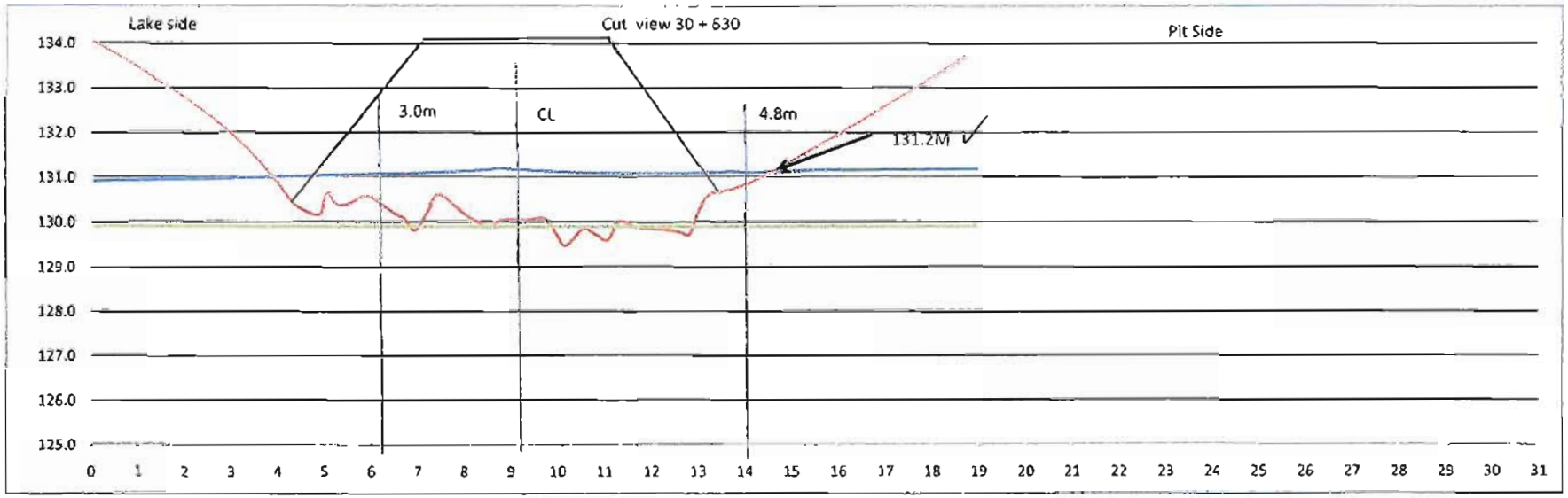
Rec'vd Sept 7/05



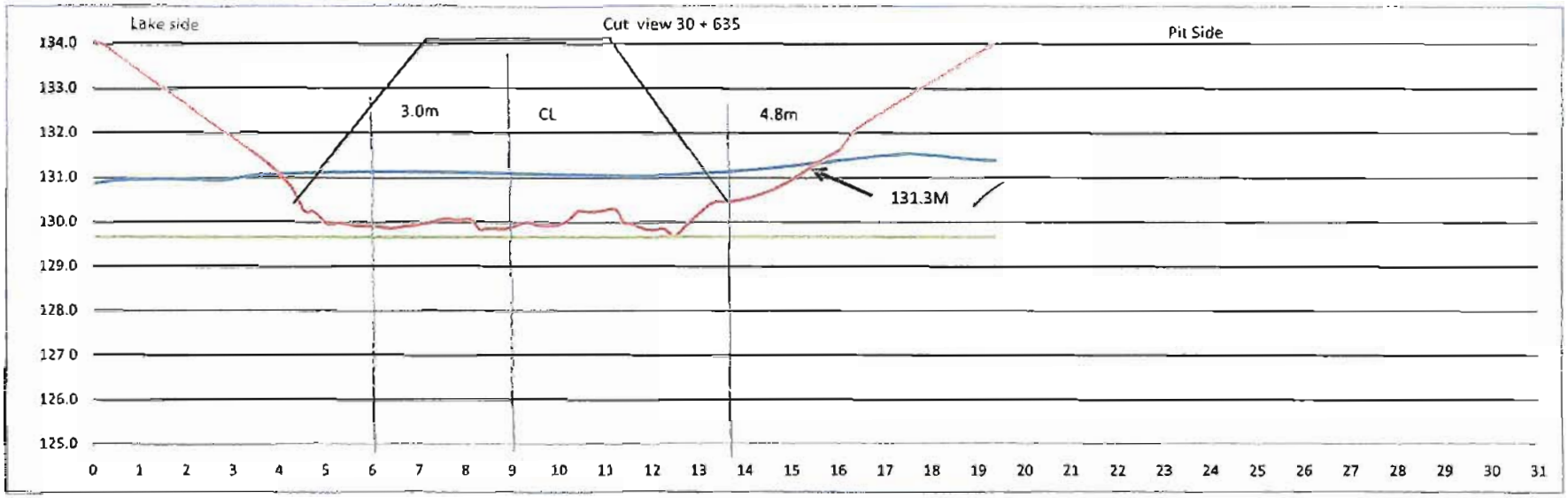
Rec'vd Sept 7/09



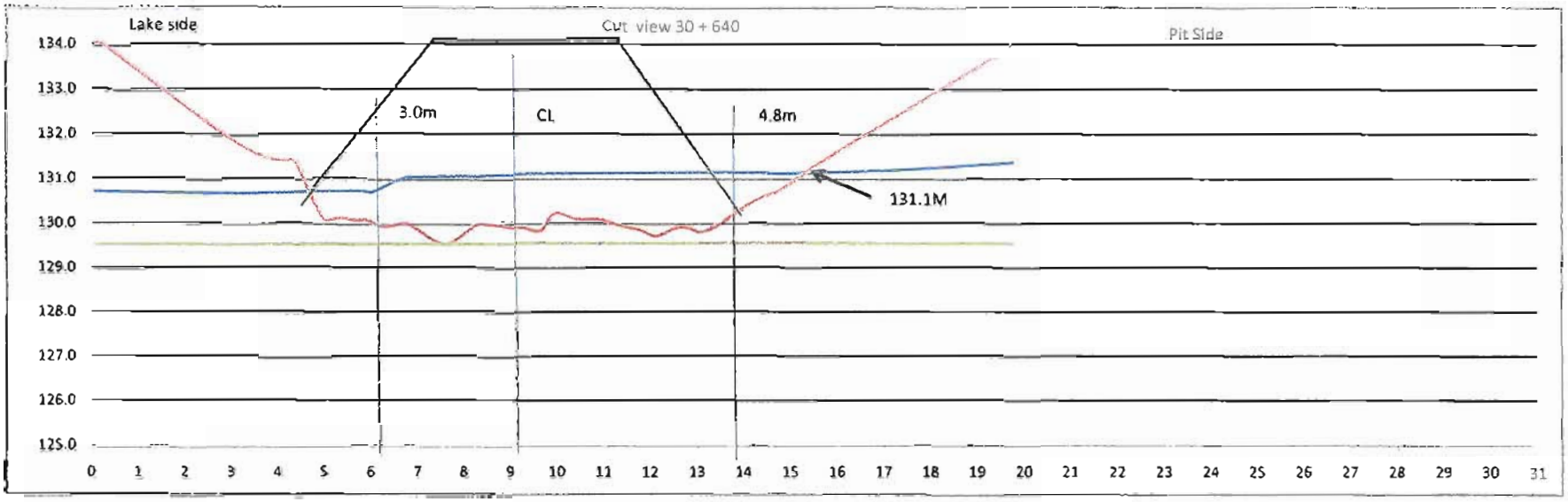
Rec'vd Sept 7/09



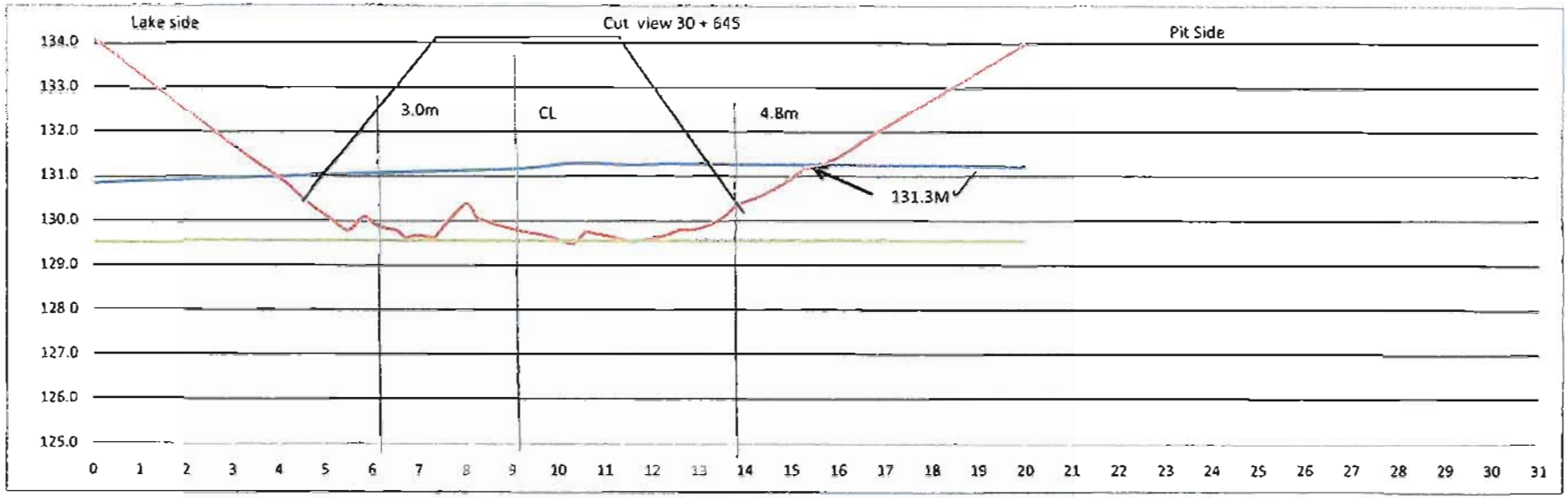
Rec'd Sept 7/09



Rec'vd Sept 7/09



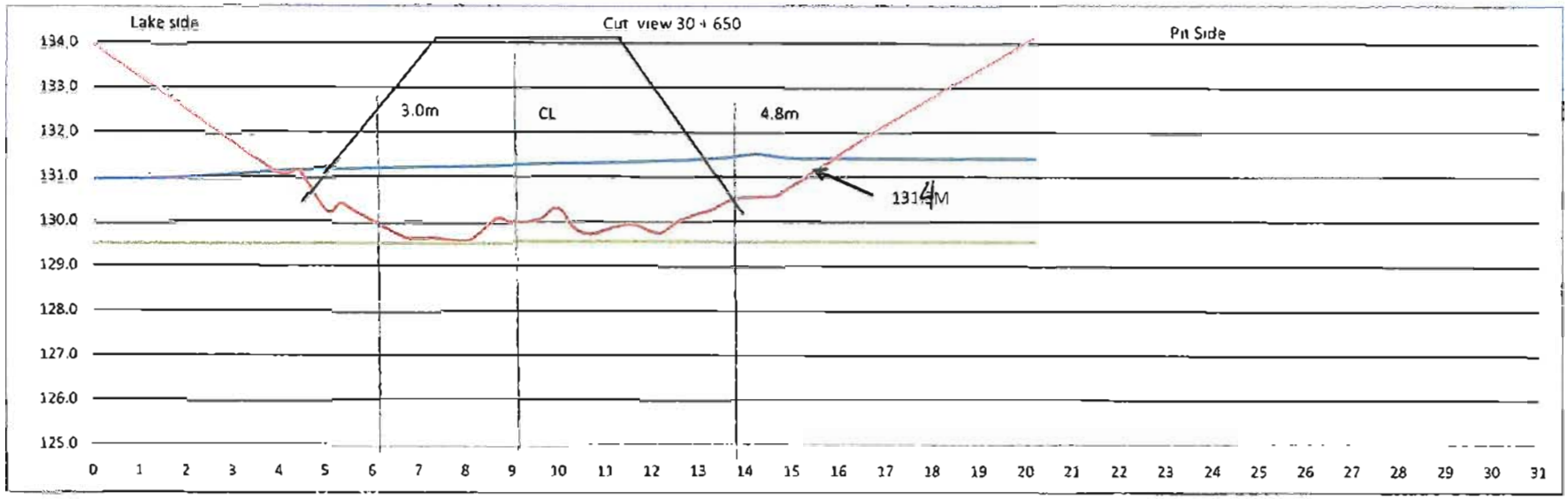
Rec'ved Sept 7/09



Date 2009-09-07
By: HG

nippour

Rec'vd Sept 7/09

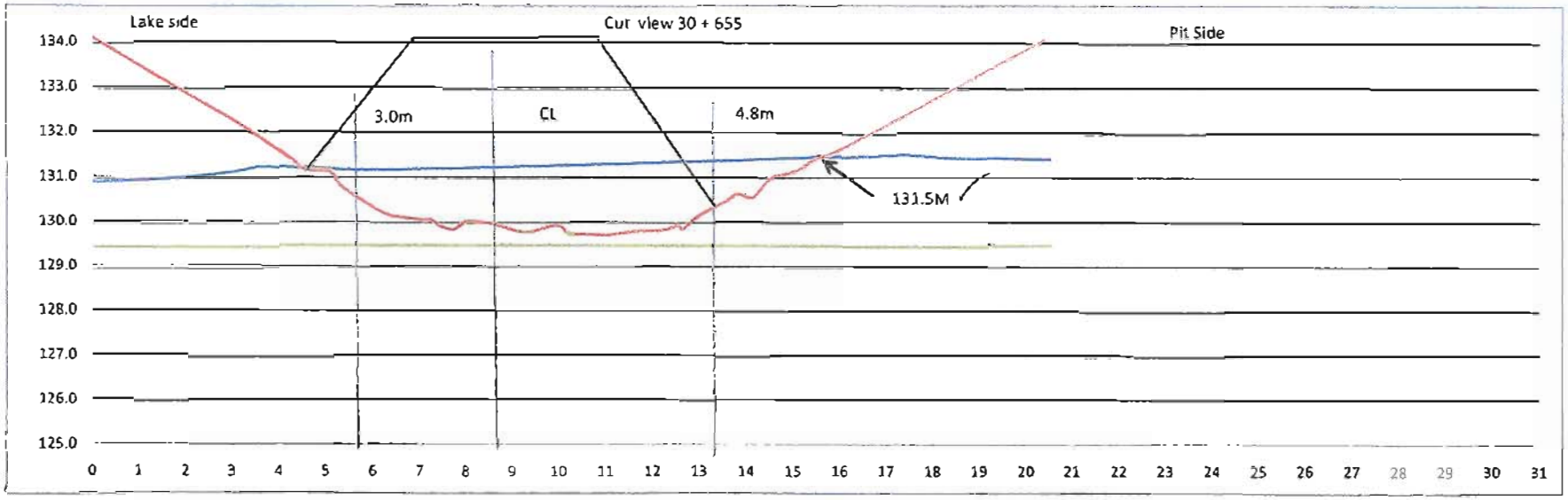


Lake bed soil
Dike
Infered bed rock

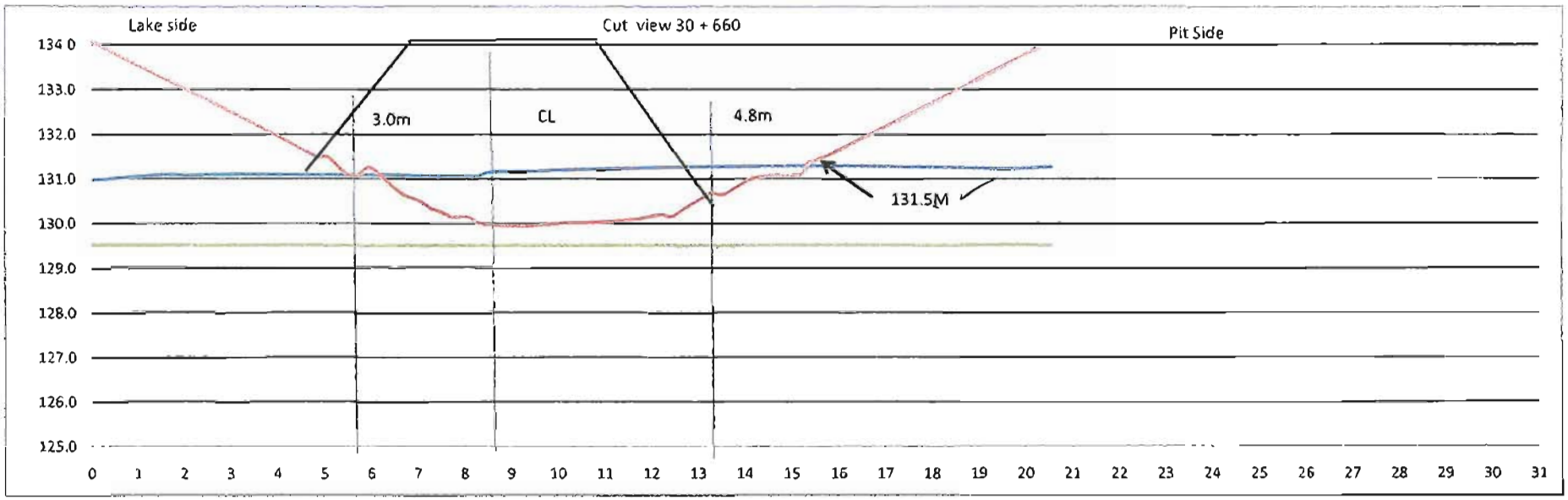
Date 2009-09-07
By: HG

nippour

Rec'vd Sept 7/09



Recivd Sept 7/09



Lake bed soil
Dike
Infered bed rock

Date 2009-09-07
By: HG

nippour

Rec'd Sept 7/09

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 30+665 Offset	SHIFT: NIGHT ☐ DAY ☒ ☐	DATE: Sept. 08/09	SHEET 1 OF 1
To Sta. 30+705 Offset	LOCATION: MEADOW BANK - BAY GOOSE - ROCKFILL - EXCAVATION -		
EQUIPMENT:			
DESCRIPTION			

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	✓	✓
2.	Storage areas planned for disposal of removed materials	—	—
3.	Occurrence of snow and ice removal method in place	—	—
4.	Occurrence of boulders and removal method in place	✓	✓
5.	Occurrence of hummocks and scalping method in place	✓	✓
6.	Occurrence of surface and ground water and its impact mitigation in place	—	—
7.	Presence of other unsuitable materials and removal method in place	✓	✓
8.	Soil frozen or thawed and measures taken	—	—
9.	Blasting requirement to remove unsuitable material and safety measure checked	—	—
10.	Adjustment made to suit design in field	✓	✓
11.	Final walkover inspection before re-sloping or fill placement	✓	✓
12.	"As-excavated" survey conducted	✓	✓
13.	Final sounding conducted of lake bottom surface	✓	✓

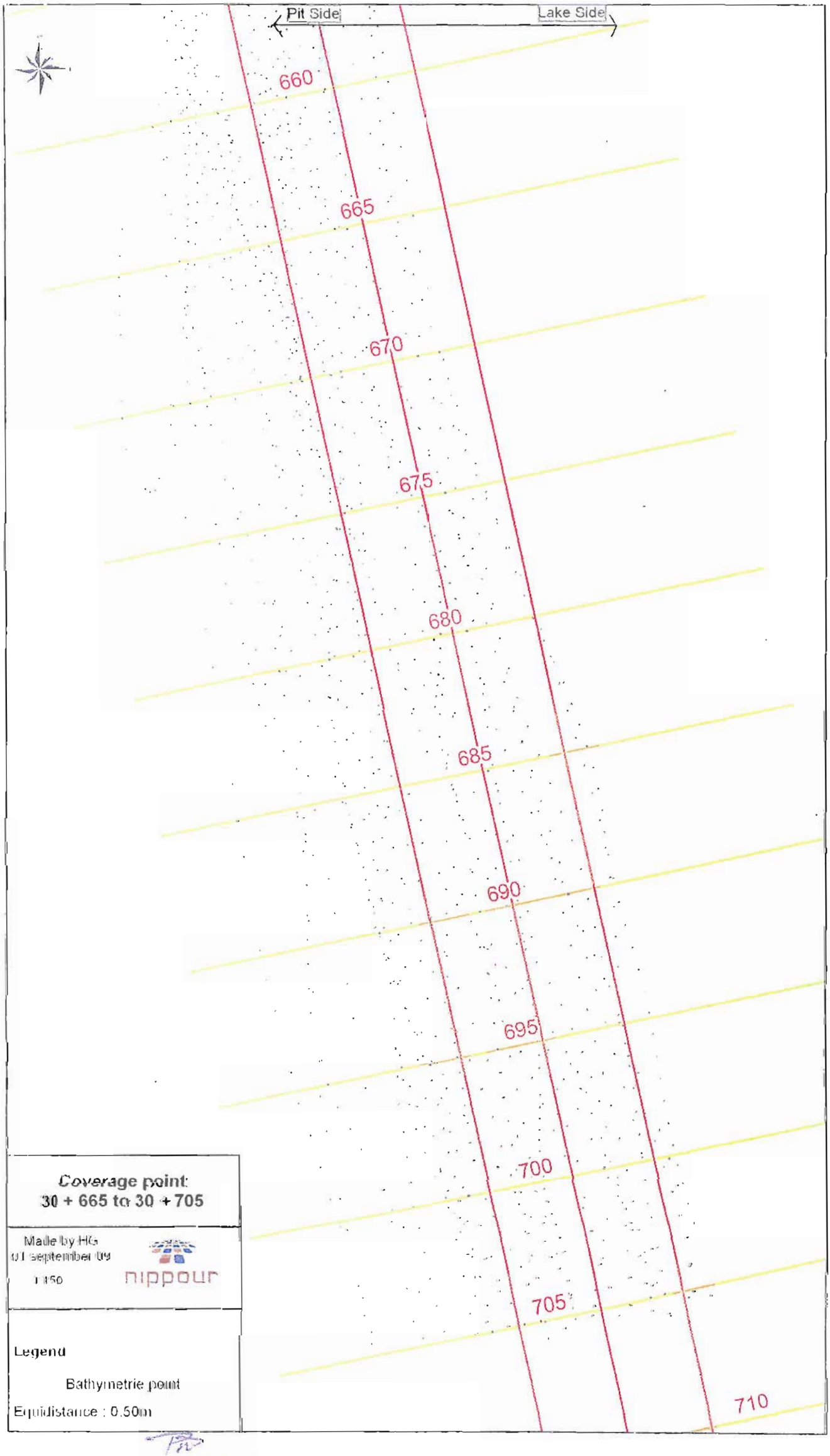
REMARKS: COMPLETE PERIMETER REC'D + REVIEWED 08 SEP 2009. ADDITIONAL CLEANING PERFORMED 09 SEP 2009 – REC'D UPDATED X-S'S. PIT SIDE FILTER GRADATION INDICATES BY FGL ACCEPTABLE.

DEVIATIONS: (Attach list if necessary)
- REC'D TO CONTINUOUSLY CLEAN SEDIMENT IN FRONT OF ADVANCING CD FACE + ADVANCING PIT SIDE FILTER.

DATE OF RECTIFICATION:

SURVEY VERIFICATION	ACCEPTED BY QA Manager:	ACCEPTED BY OWNER:
NAME: Guy Morissette	NAME: Phil Baker	NAME:
SIGNATURE: Guy Morissette	SIGNATURE:	SIGNATURE:
DATE 9 sept. 09	DATE 09 SEP 2009	DATE

Remis à Glen de Golder à 18 hrs le 8 sept. 09.



Coverage point:
30 + 665 to 30 + 705

Made by HG
01 septembre 09
1/150

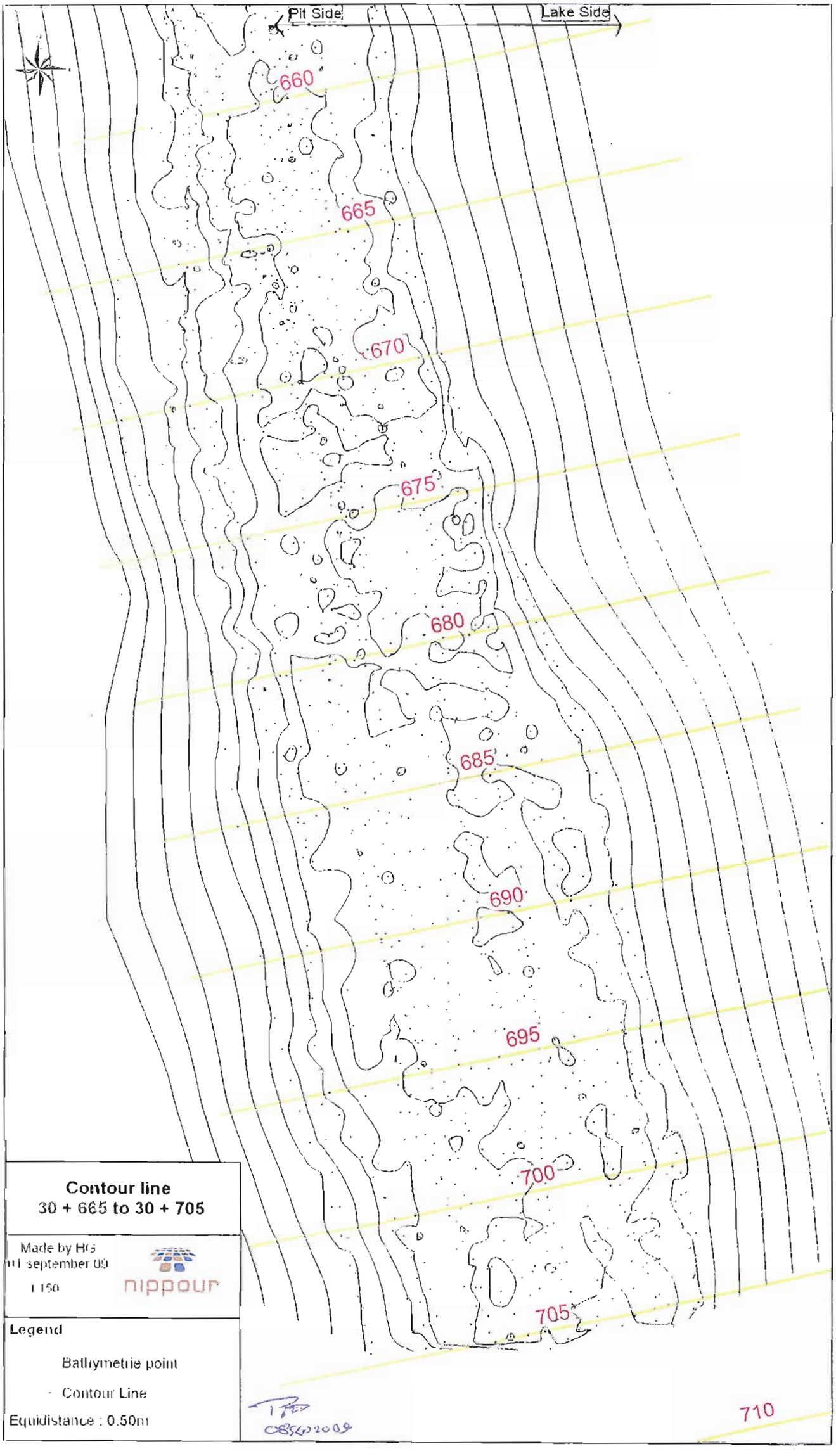
nippour

Legend

Bathymetrie point

Equidistance : 0.50m

08/12/08



Contour line
30 + 665 to 30 + 705

Made by HG
11 september 09
1 / 50

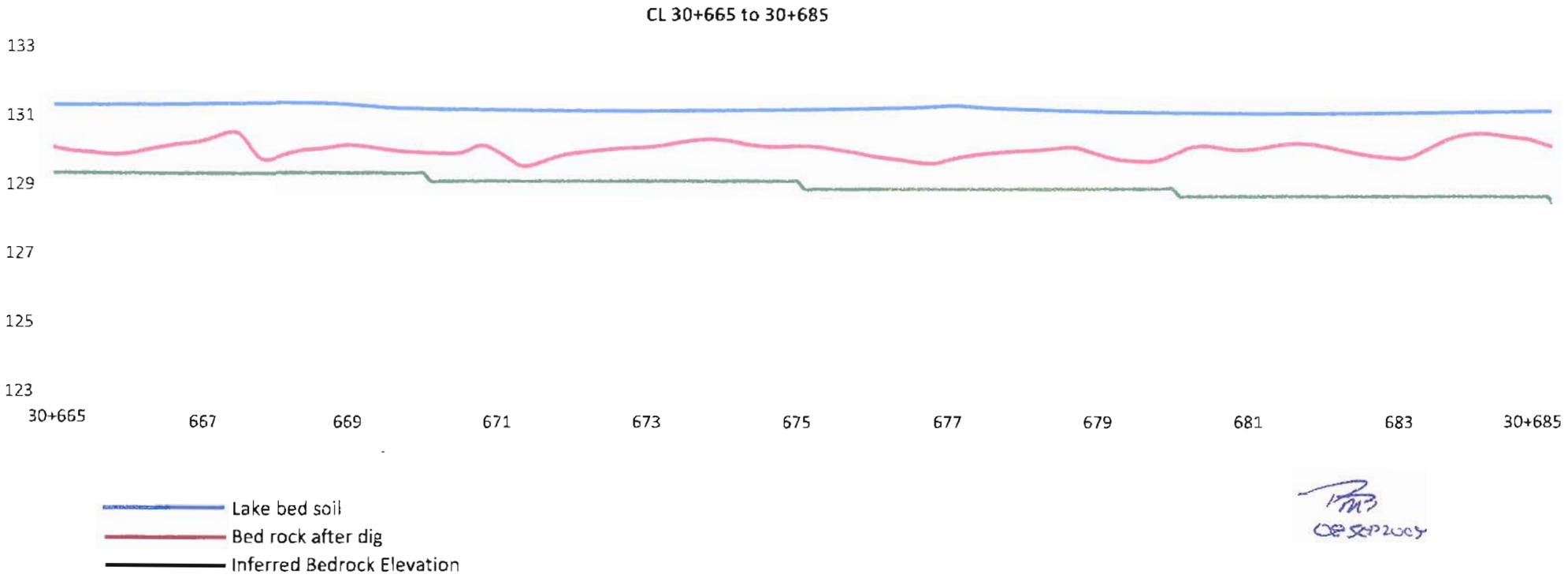
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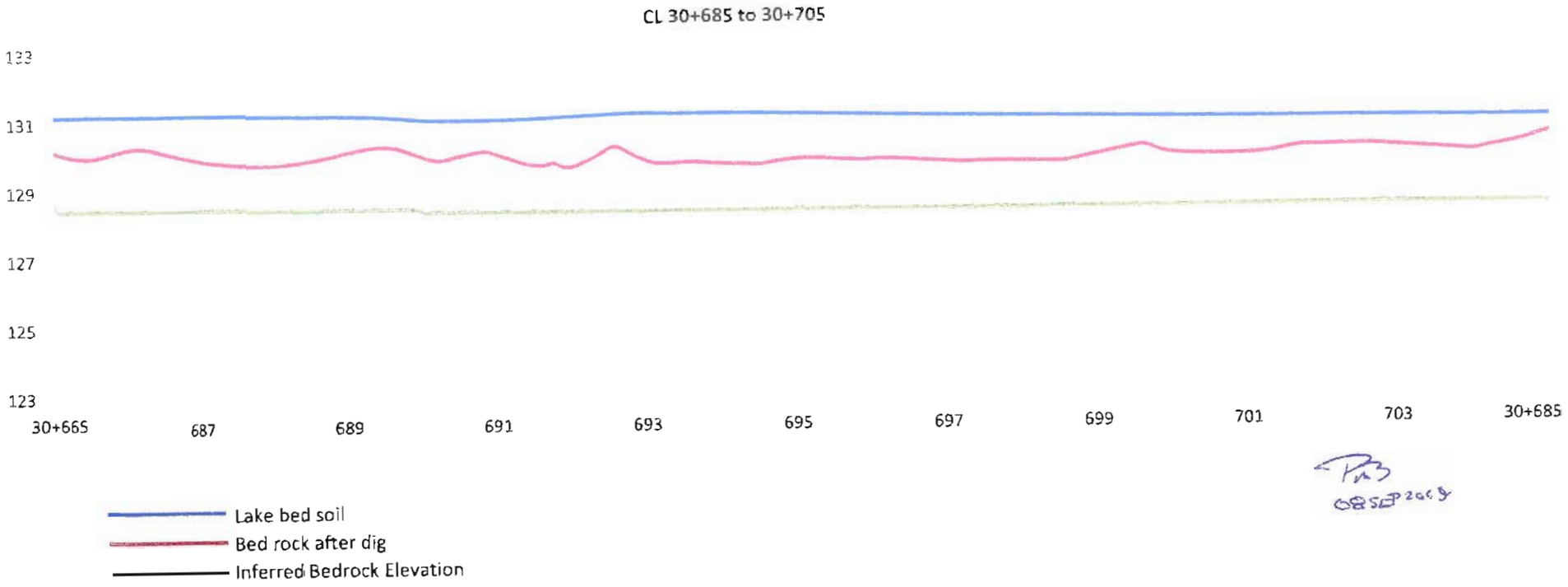
Legend

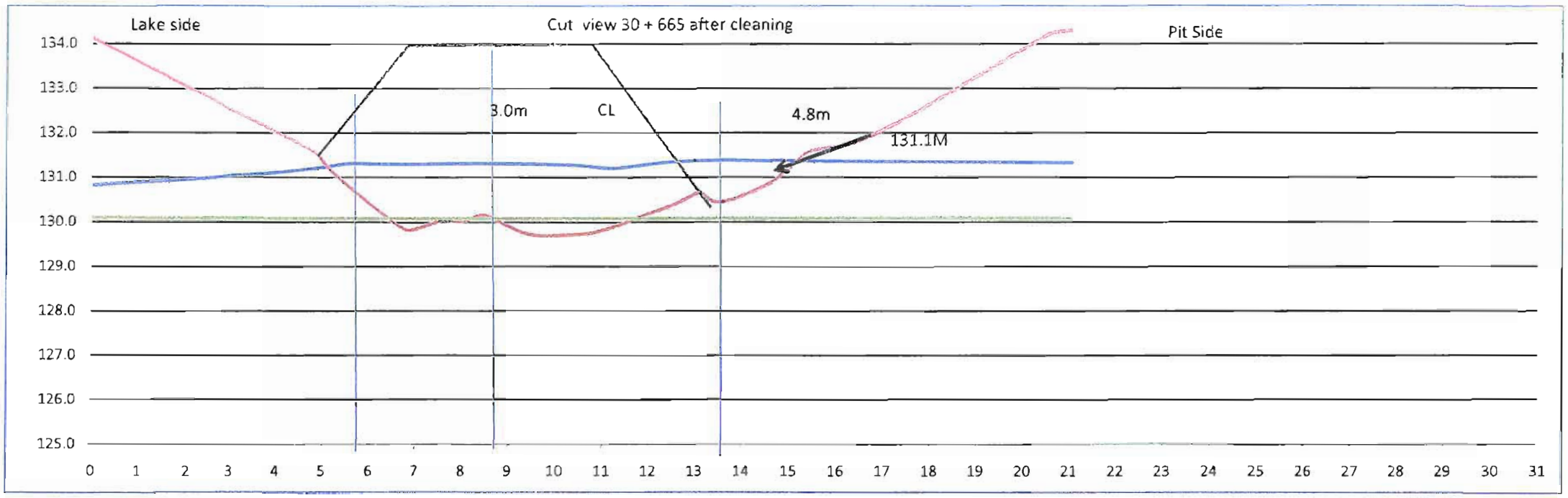
Bathymetrie point

Contour Line

Equidistance : 0.50m


CL 30+665 to 30+685
133
131
129
127
125
123
30+665
667
669
671
673
675
677
679
681
683
30+685
Lake bed soil
Bed rock after dig
Inferred Bedrock Elevation


CL 30+685 to 30+705
133
131
129
127
125
123
30+665
687
689
691
693
695
697
699
701
703
30+685
Lake bed soil
Bed rock after dig
Inferred Bedrock Elevation



Lake bed soil

Dike

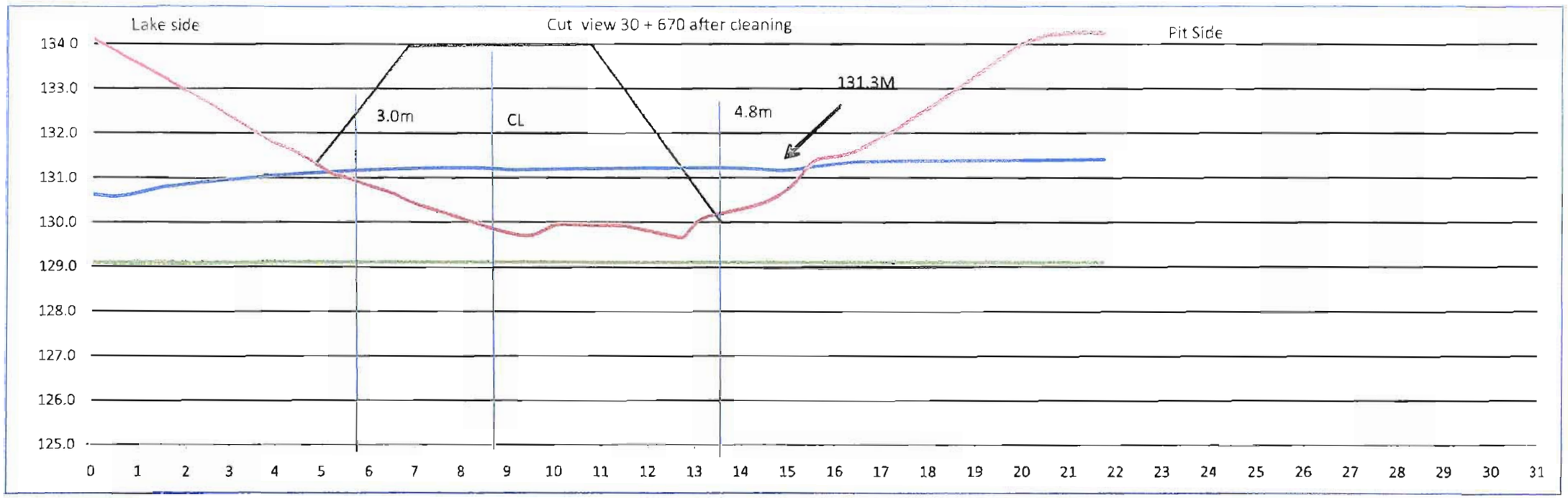
Infered bed rock

Date 2009-09-09

By: HG

nippour

09Sep2009.

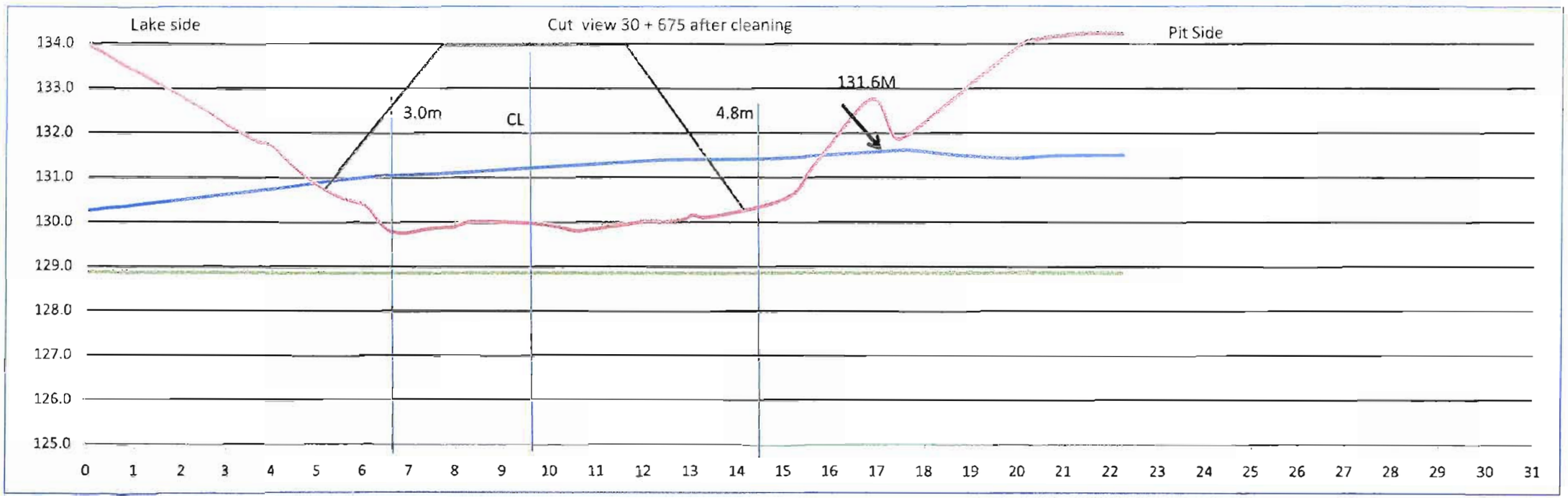


Lake bed soil
Dike
Infered bed rock

Date 2009-09-08
By: HG

09SEP2009

nippour

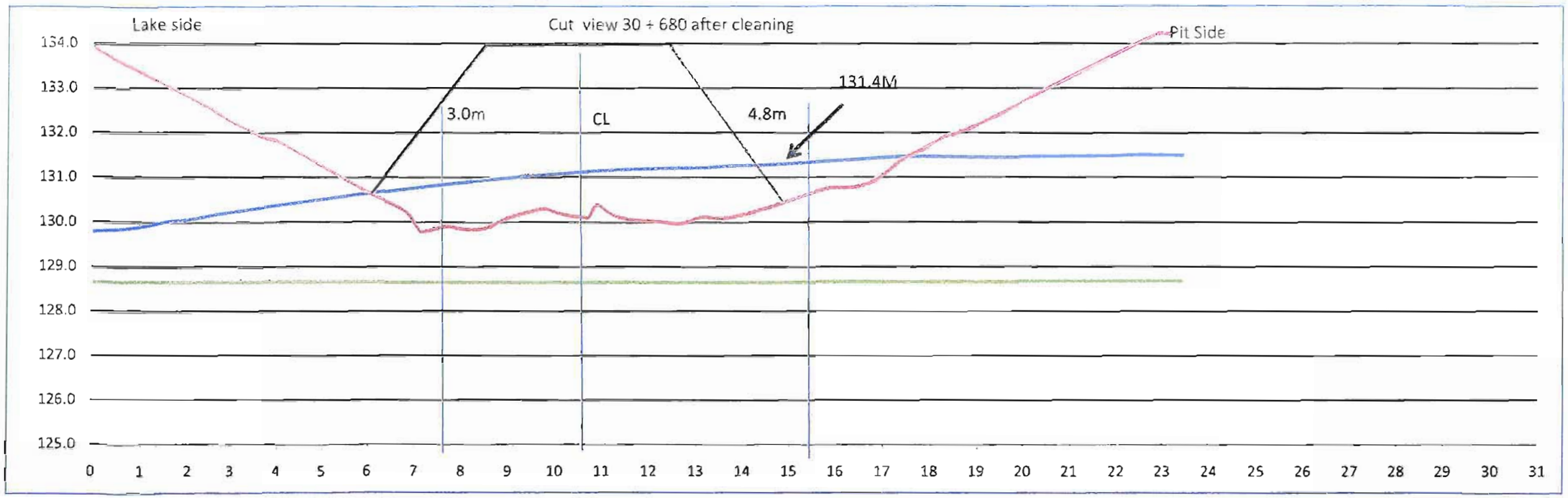


Lake bed soil
Dike
Infered bed rock

Date 2009-09-09
By: HG

nippour

09 SEP 2009

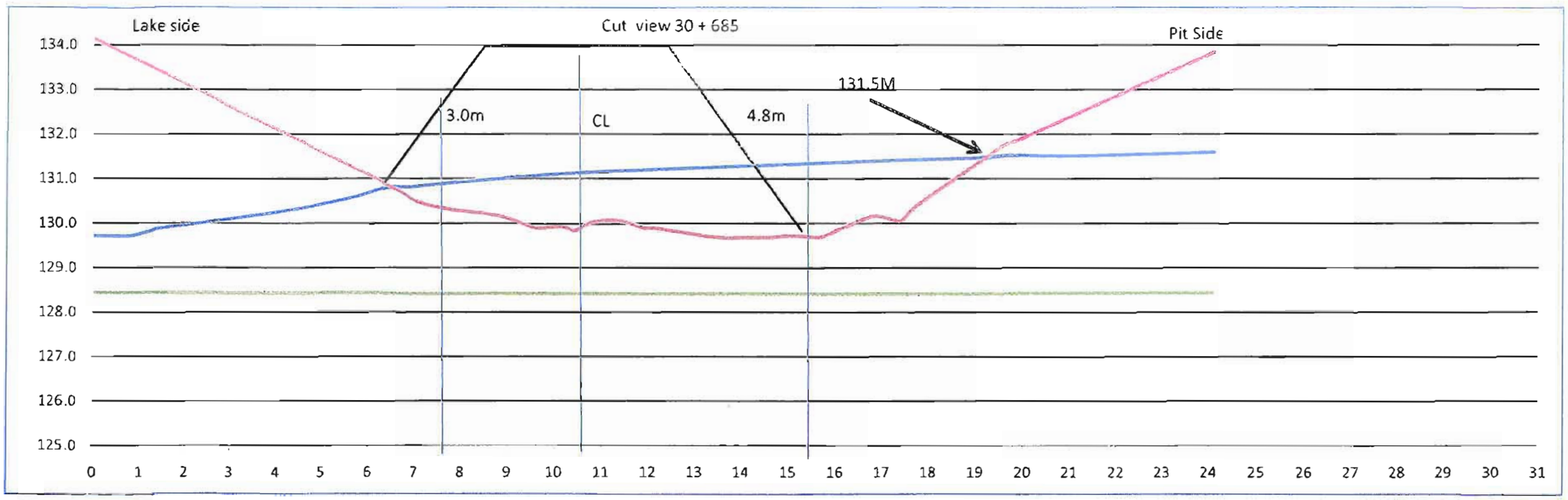


Lake bed soil
Dike
Infered bed rock

Date 2009-09-09
By: HG

05 SEP 2009

nippour



Lake bed soil

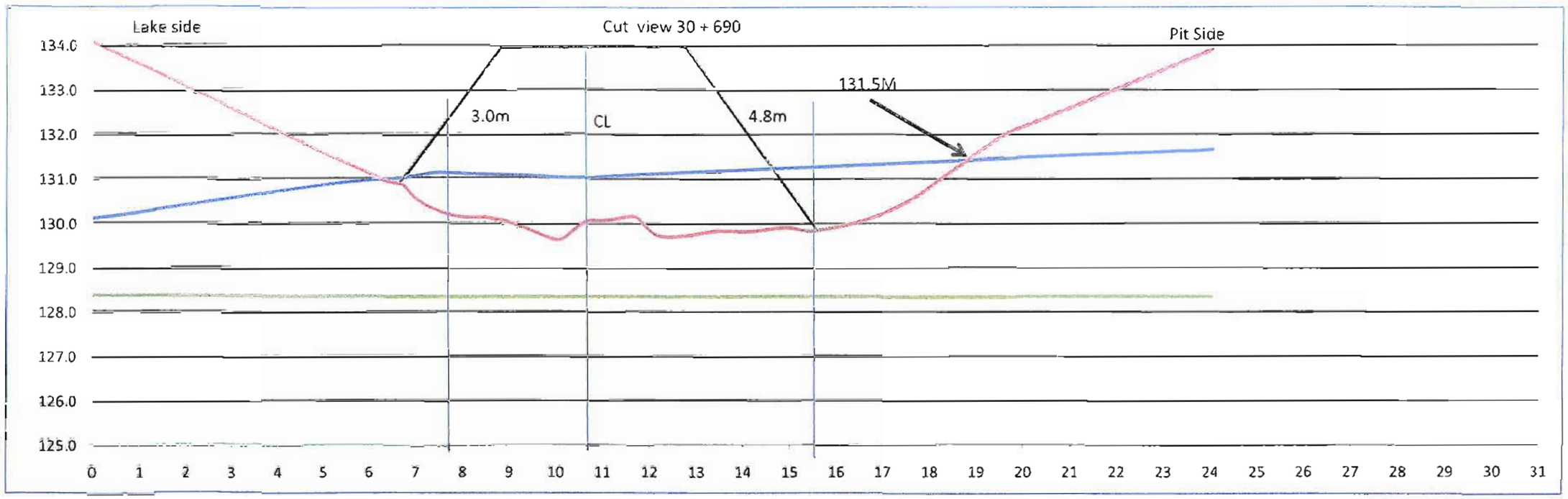
Dike

Infered bed rock

Date 2009-09-08

By: HG

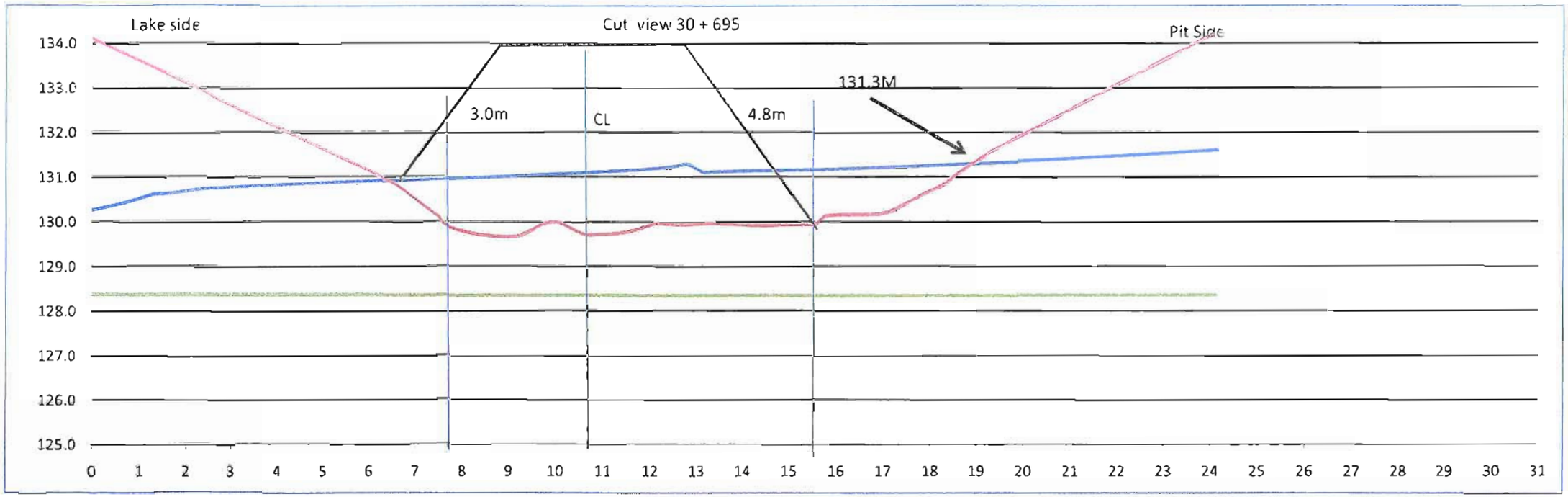
nippour



Lake bed soil
Dike
Infered bed rock

Date 2009-09-08
By: HG

nippour



Lake bed soil

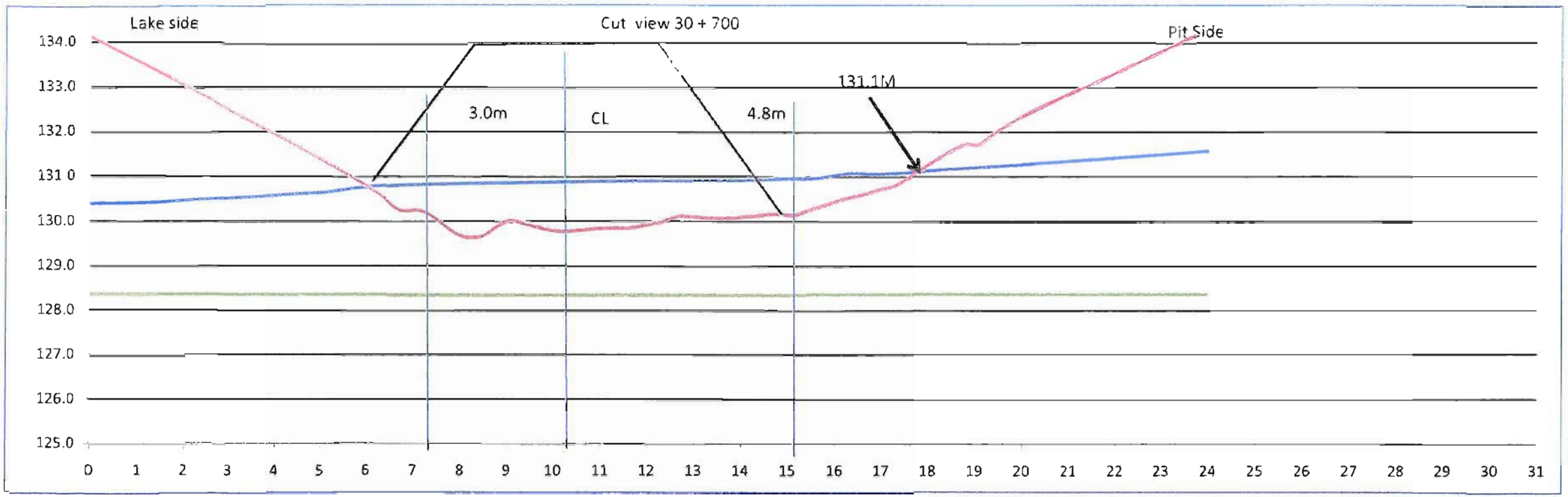
Dike

Infered bed rock

Date 2009-09-08

By: HG

nippour

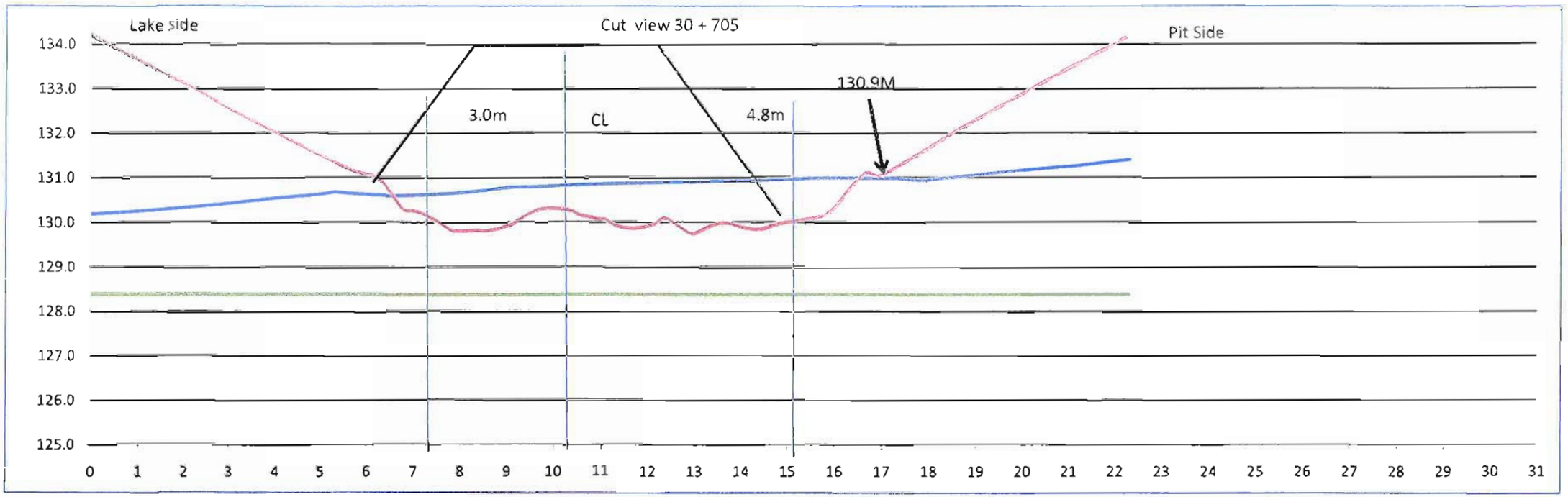


Lake bed soil
Dike
Infered bed rock

Date 2009-09-08
By: HG

nippour

08SEP2009



Lake bed soil
Dike
Infered bed rock

Date 2009-09-08
By: HG

nippour

28 SEP 2009

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 30+710 Offset	SHIFT. NIGHT :☐ DAY ☐ X	DATE: Sept. 09/09	SHEET 1 OF 1
To Sta. 30+800 Offset	LOCATION: MEADOW BANK - BAY. GOOSE - ROCKFILL - EXCAVATION -		
EQUIPMENT:			

DESCRIPTION

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings		
2.	Storage areas planned for disposal of removed materials	—	—
3	Occurrence of snow and ice removal method in place	—	—
4	Occurrence of boulders and removal method in place		
5.	Occurrence of hummocks and scalping method in place		
6.	Occurrence of surface and ground water and its impact mitigation in place	—	—
7.	Presence of other unsuitable materials and removal method in place		
8.	Soil frozen or thawed and measures taken	—	—
9.	Blasting requirement to remove unsuitable material and safety measure checked	—	—
10	Adjustment made to suit design in field		
11	Final walkover inspection before re-sloping or fill placement		
12.	"As-excavated" survey conducted		
13	Final sounding conducted of lake bottom surface		

REMARKS: COMPLETE PACKAGE RECD (SEE ATTACHED) INCLUDING ADDITIONAL CHECKLIST PLACEMENT INSPECTIONS — SEE NEXT PAGE.

DEVIATIONS: Attach list if necessary.

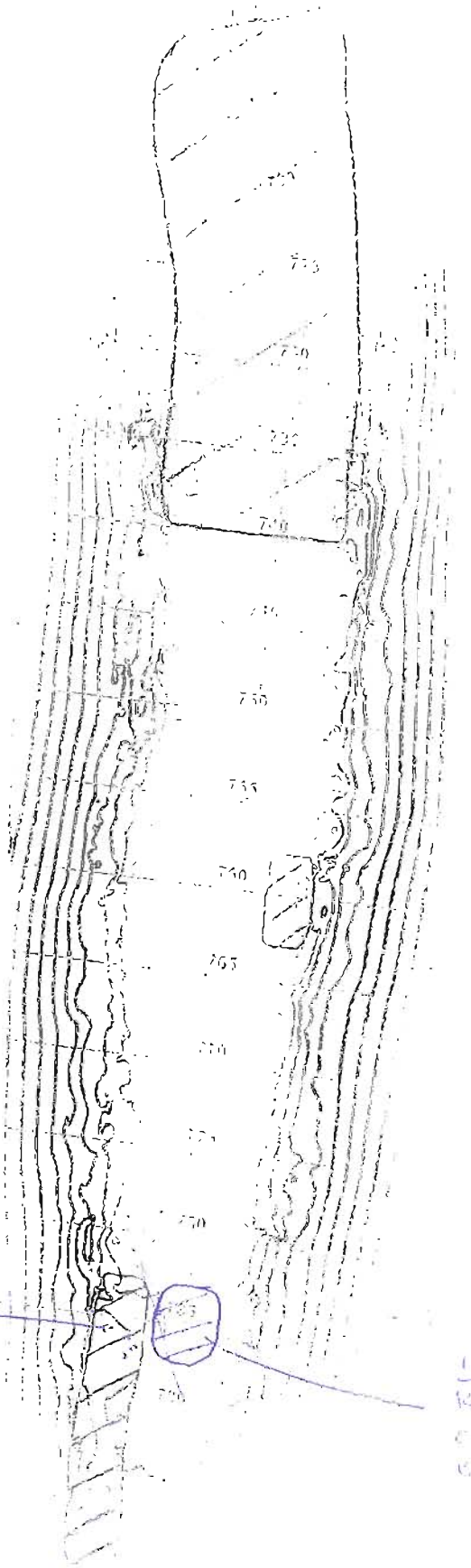
- RE SURVEYING RECD FROM STA 30+710 TO STA 30+780 (SEE NEXT PAGE) PRIOR TO BACKFILLING. BACKFILL APPROVED IN SPITE OF #15 - SEE NEXT PAGE FOR D/S CHAINAGE SURVEY REQUIREMENTS - RE SURVEYED RECD'D [illegible]

SUPERINTENDENT: GUY MORISSETTE

ACCEPTED: [illegible]

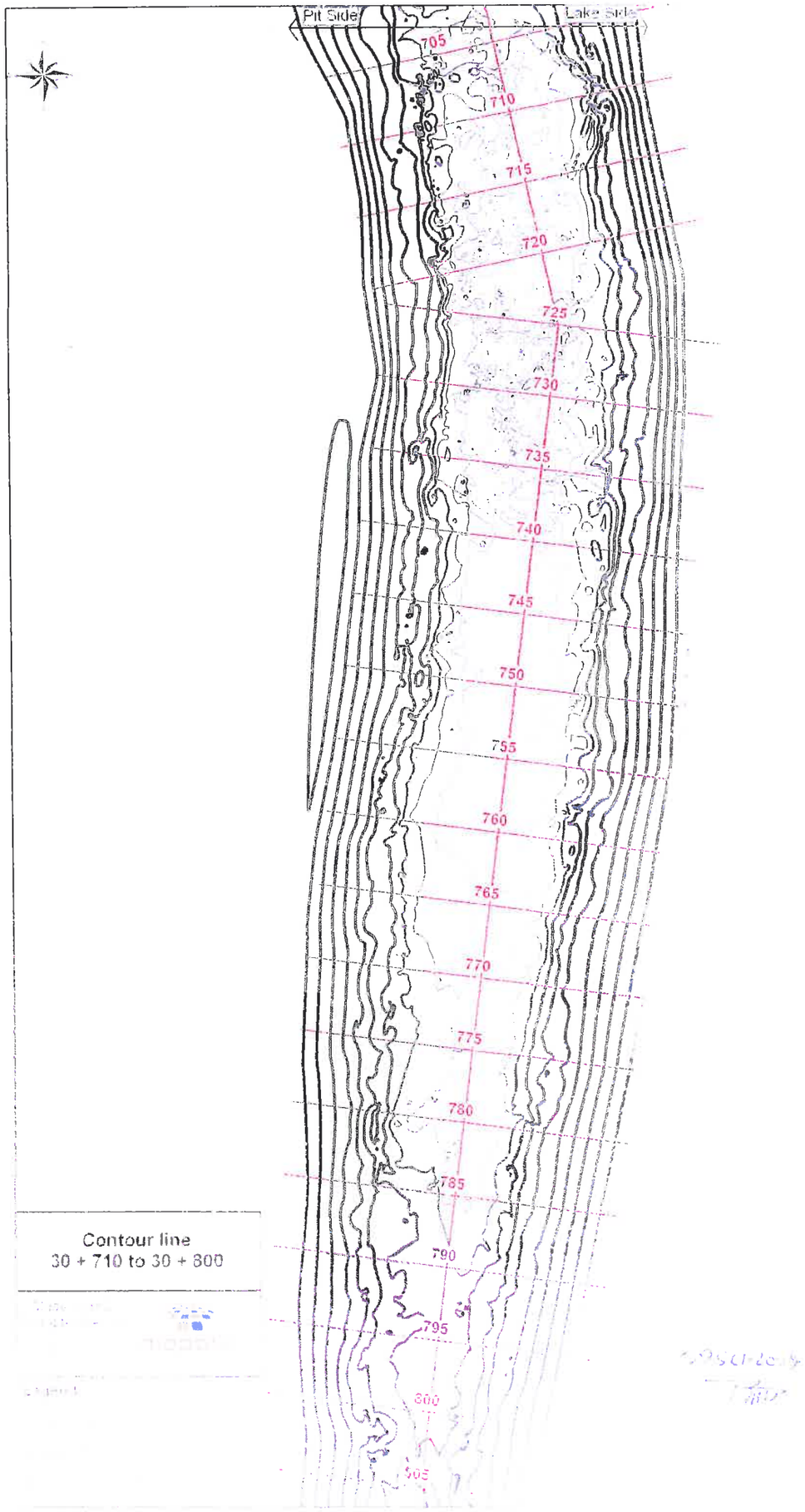
QC Supt. [illegible]

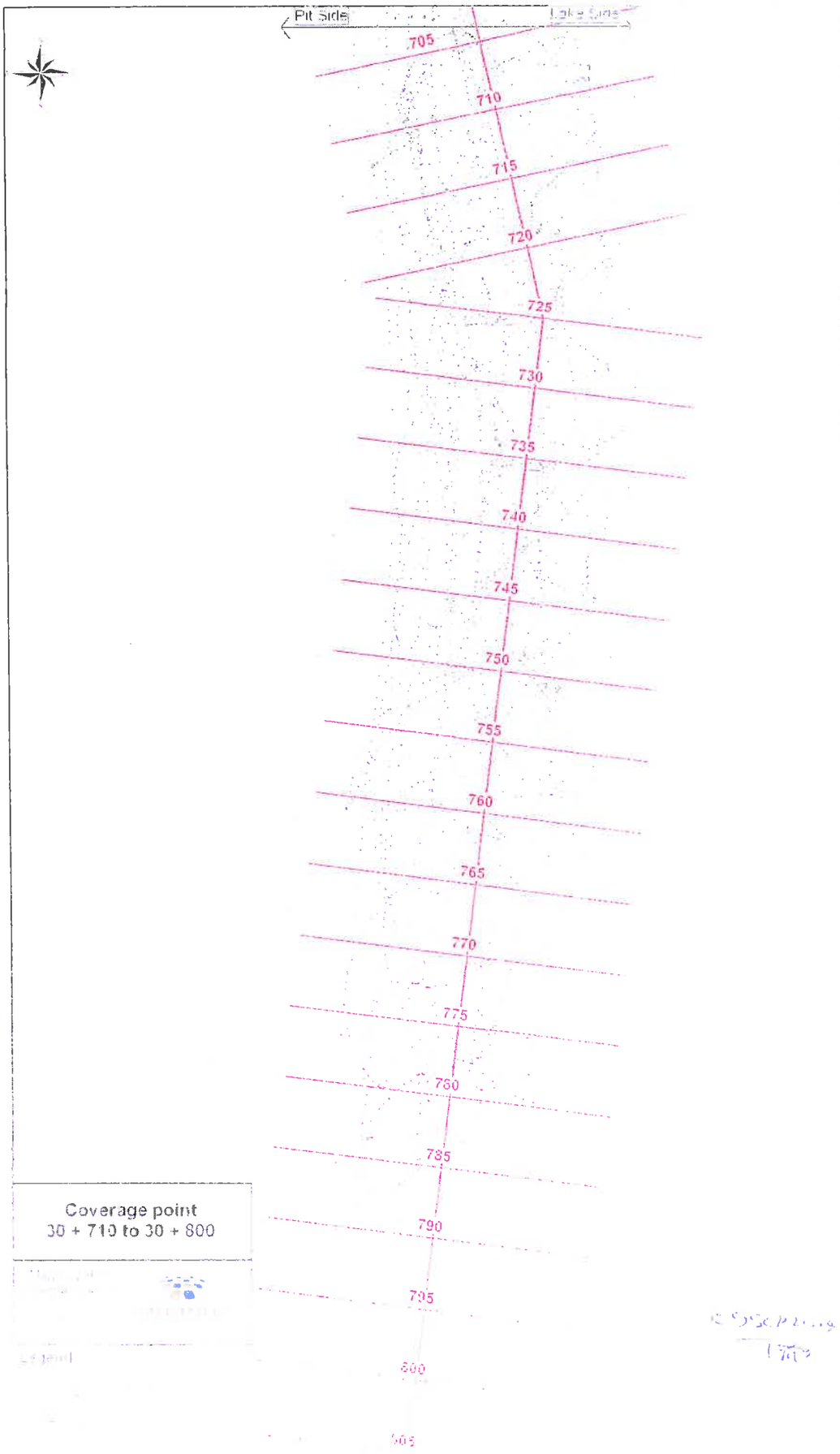
D/S
(Pit Side)

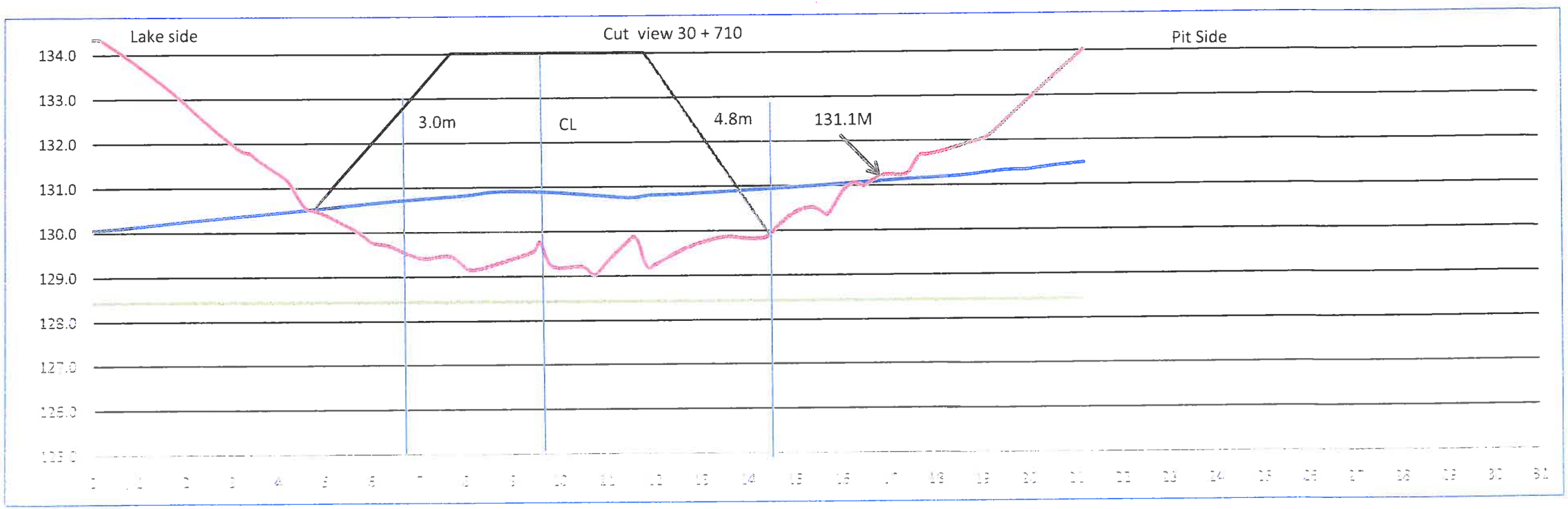


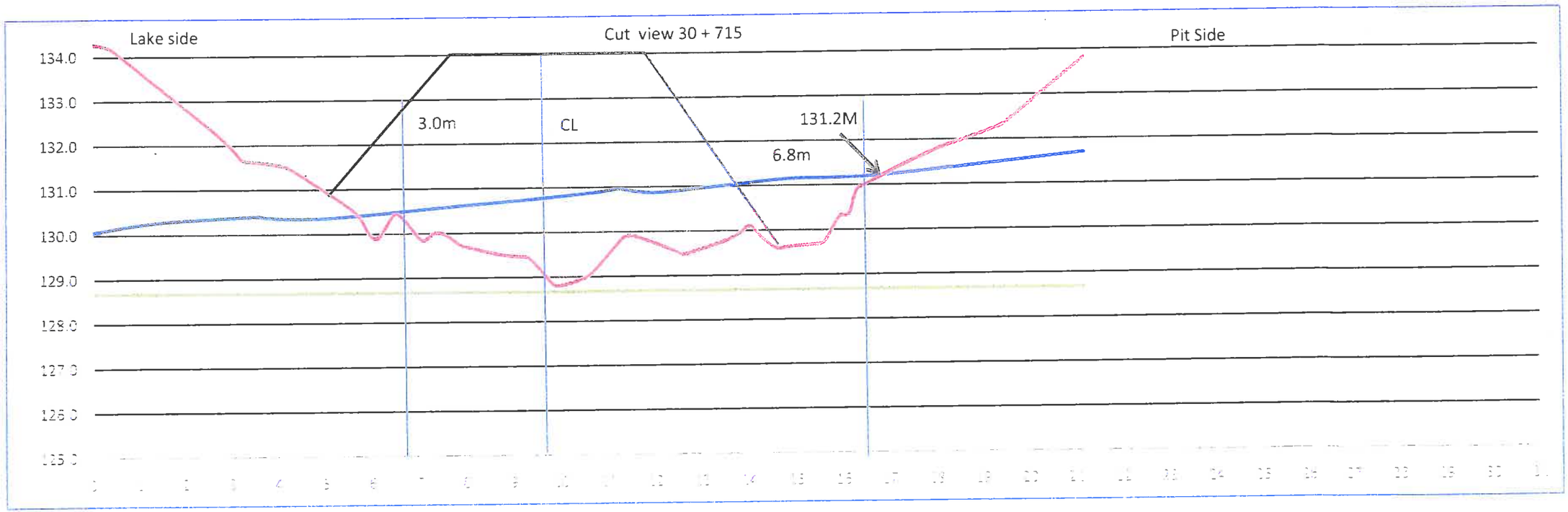
10 SEP 2009
APPROVED FOR
FILL PLACEMENT
(AFTER RE SURVEYING)
FROM STA. 30 + 710
TO STA. 30 + 775

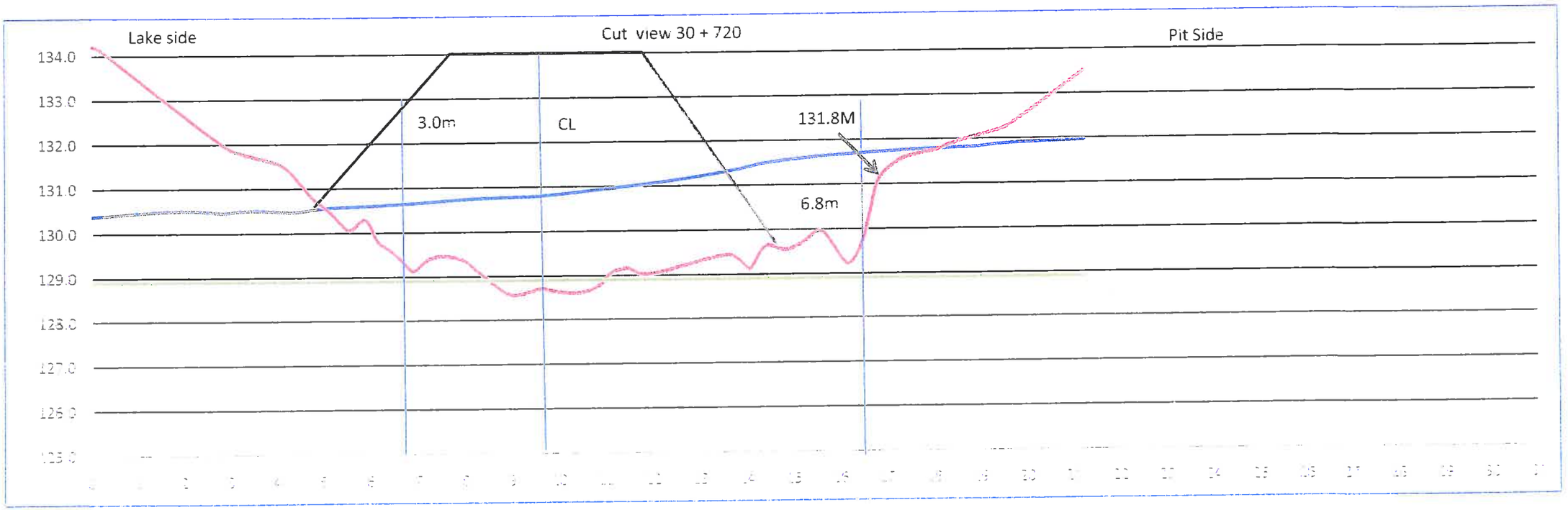
10 SEP 2009
CLEAN + ACCEPTED
FOR FILL
PLACEMENT

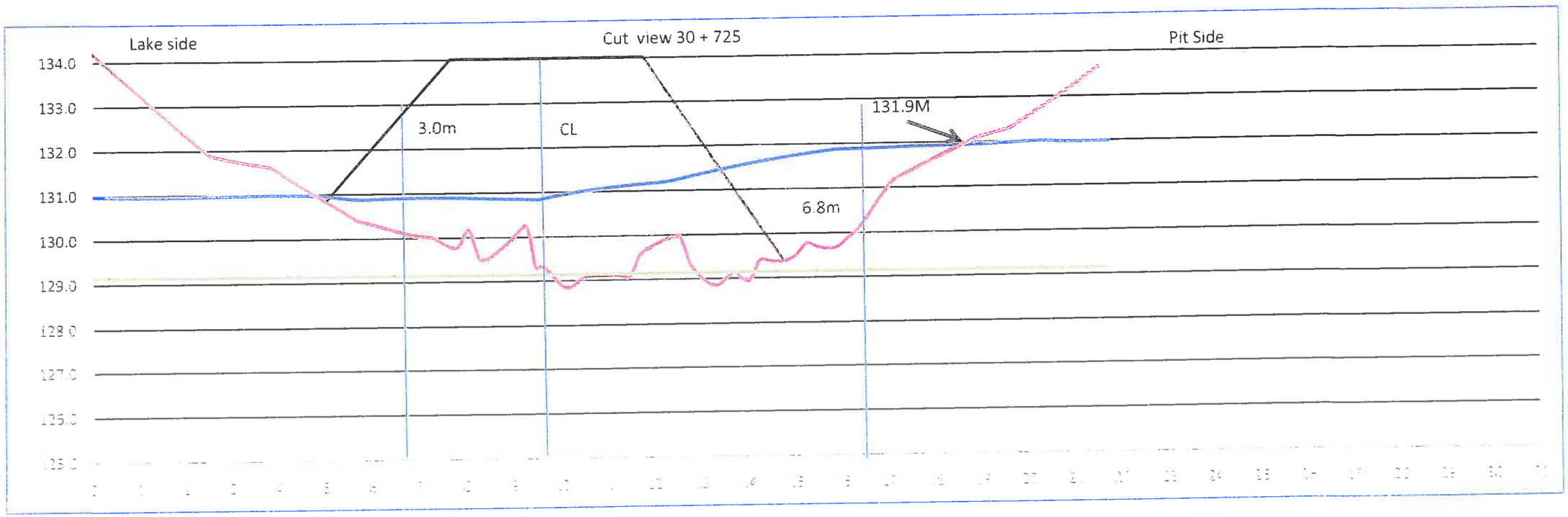

Pit Side
Lake Side
705
710
715
720
725
730
735
740
745
750
755
760
765
770
775
780
785
790
795
800
805
Contour line
30 + 710 to 30 + 800

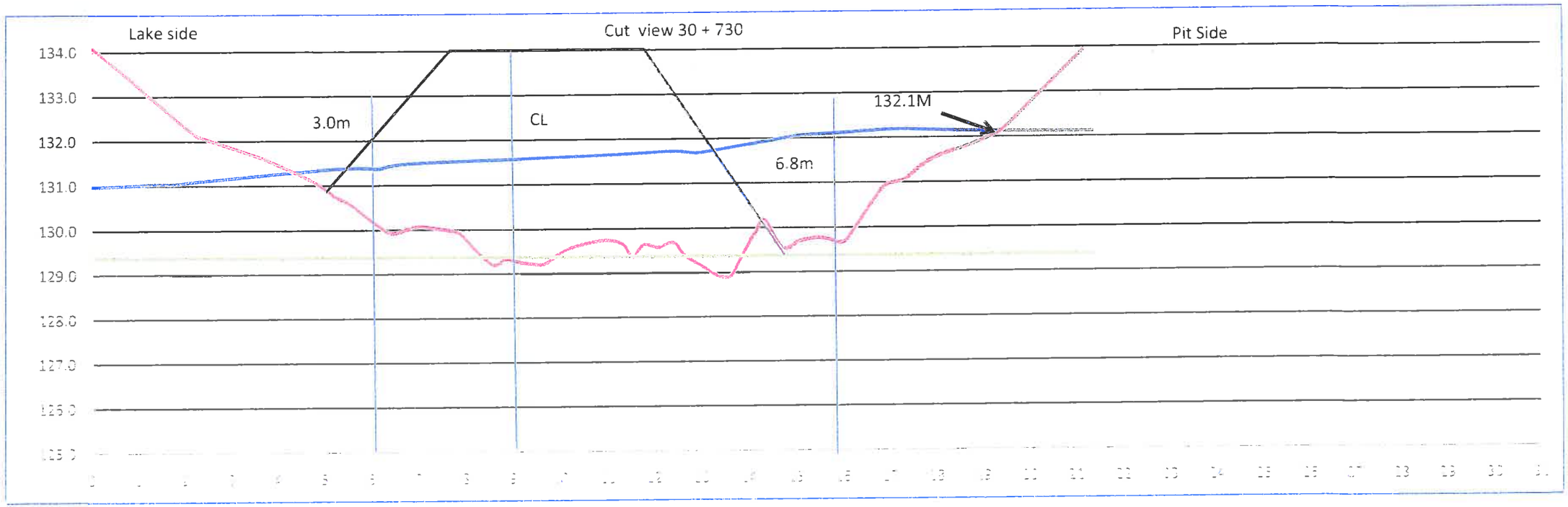

Pit Side
705
710
715
720
725
730
735
740
745
750
755
760
765
770
775
780
785
790
795
800
805
Coverage point
30 + 710 to 30 + 800

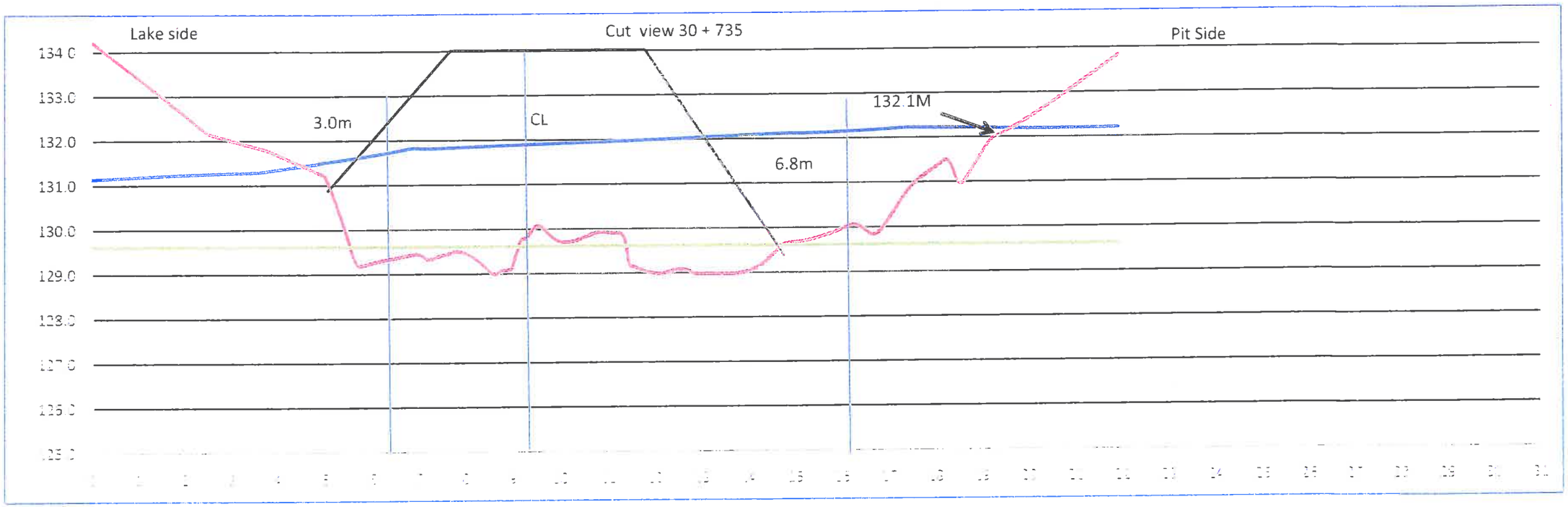

Lake side
Cut view 30 + 710
Pit Side
134.0
133.0
132.0
131.0
130.0
129.0
3.0m
CL
4.8m
131.1M

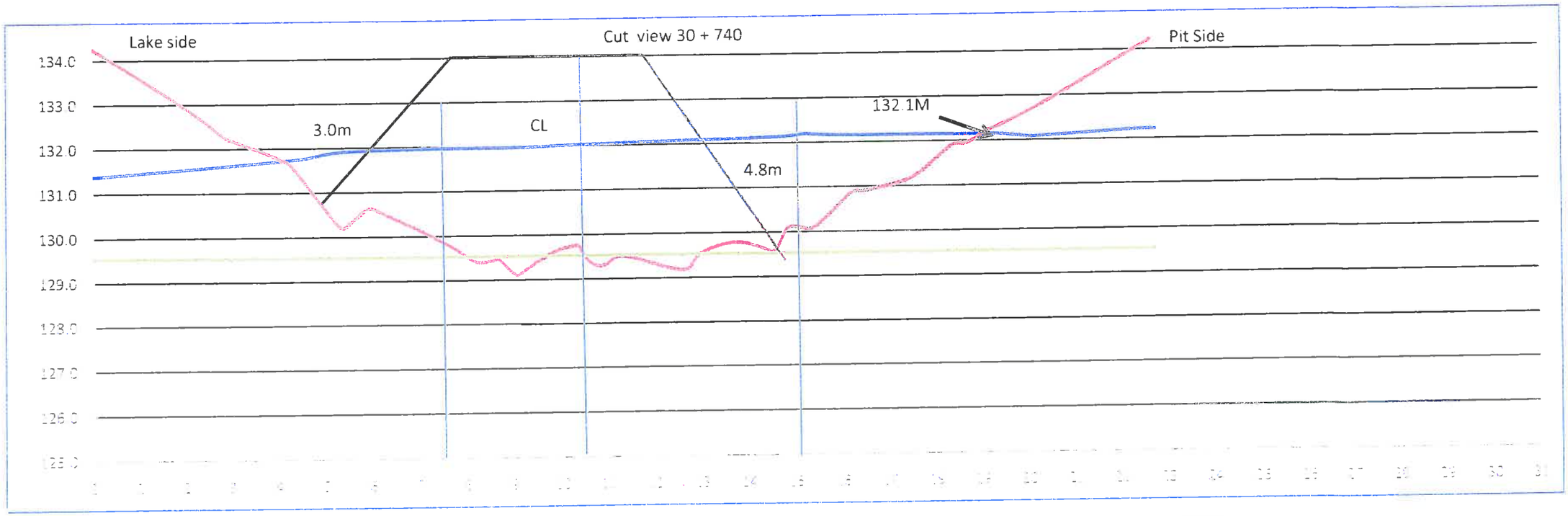

Lake side
Cut view 30 + 715
Pit Side
134.0
133.0
132.0
131.0
130.0
129.0
128.0
127.0
126.0
125.0
3.0m
CL
131.2M
6.8m

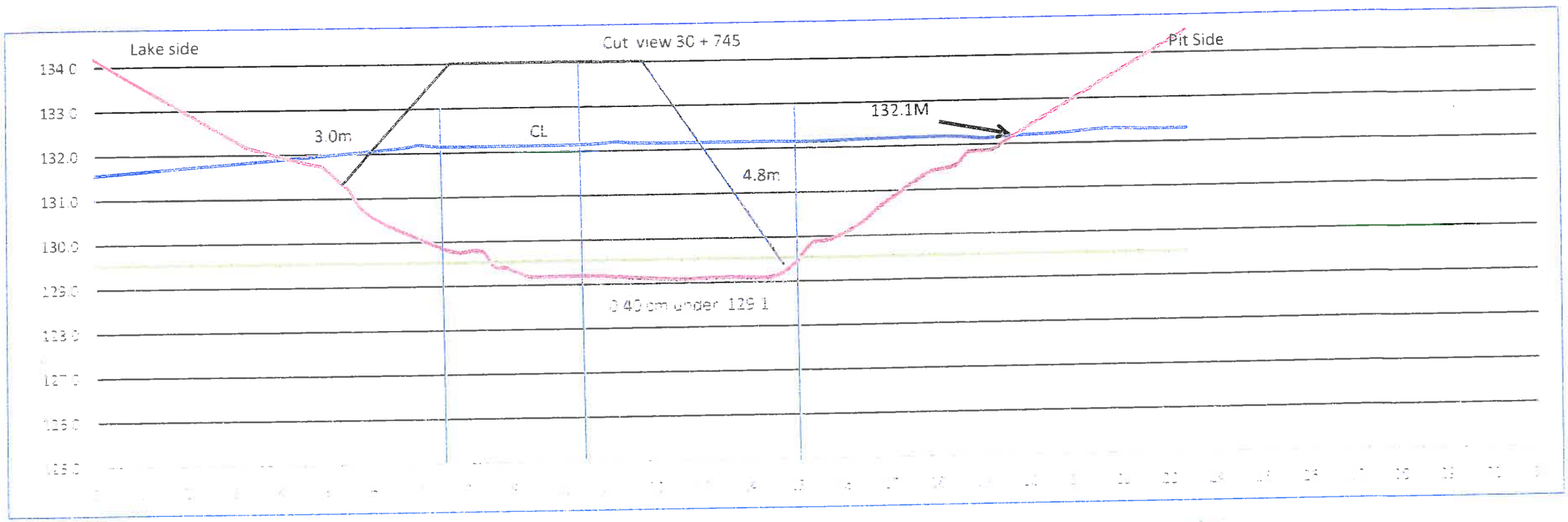

Lake side
Cut view 30 + 720
Pit Side
134.0
133.0
132.0
131.0
130.0
129.0
128.0
127.0
126.0
125.0
3.0m
CL
131.8M
6.8m

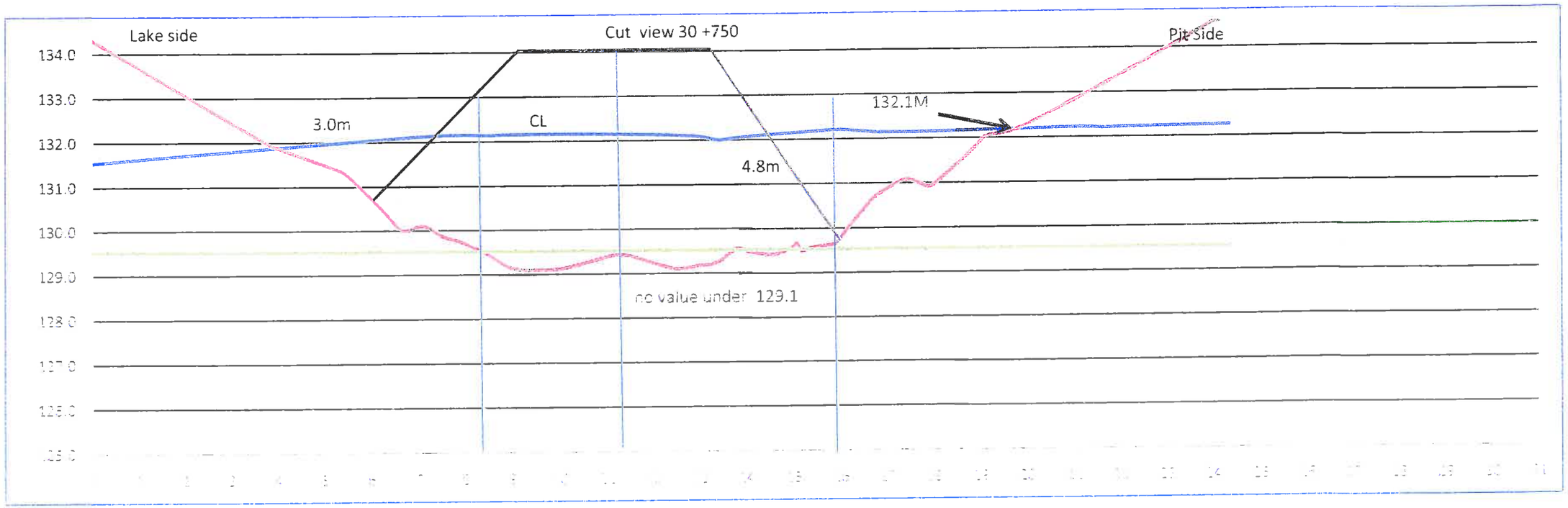

Lake side
Cut view 30 + 725
Pit Side
134.0
133.0
132.0
131.0
130.0
129.0
3.0m
CL
131.9M
6.8m

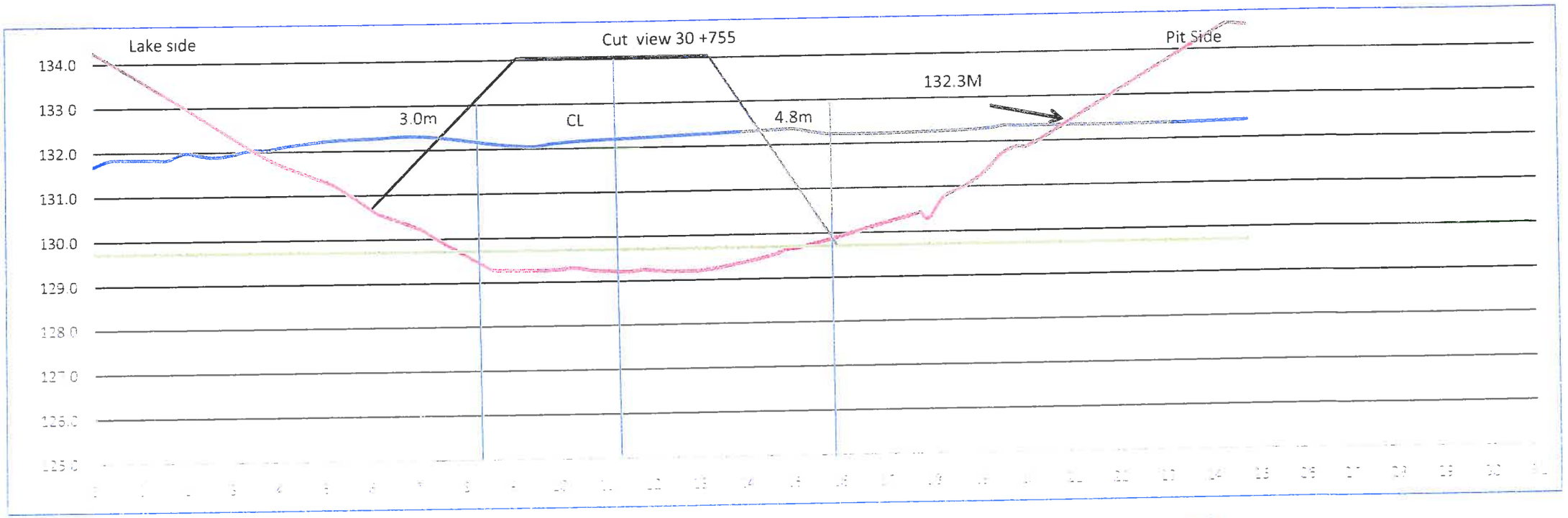

Lake side
Cut view 30 + 730
Pit Side
134.0
133.0
132.0
131.0
130.0
129.0
128.0
127.0
126.0
125.0
3.0m
CL
6.8m
132.1M

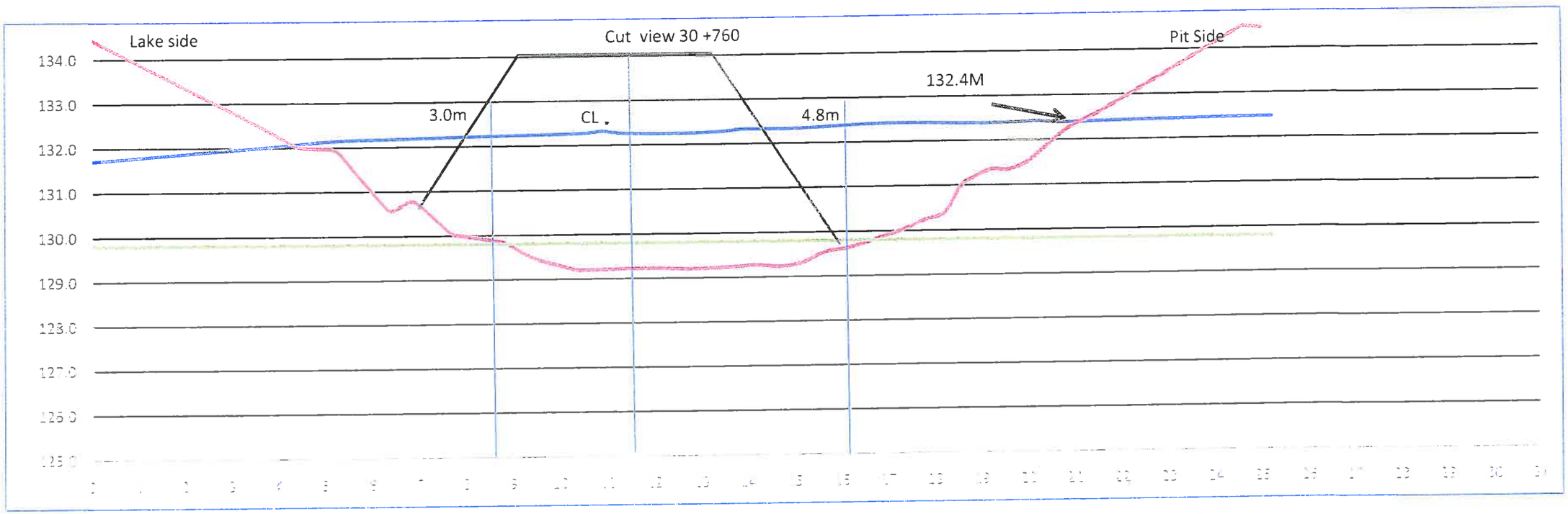

Lake side
Cut view 30 + 735
Pit Side
134.0
133.0
132.0
131.0
130.0
129.0
128.0
127.0
126.0
125.0
3.0m
CL
6.8m
132.1M

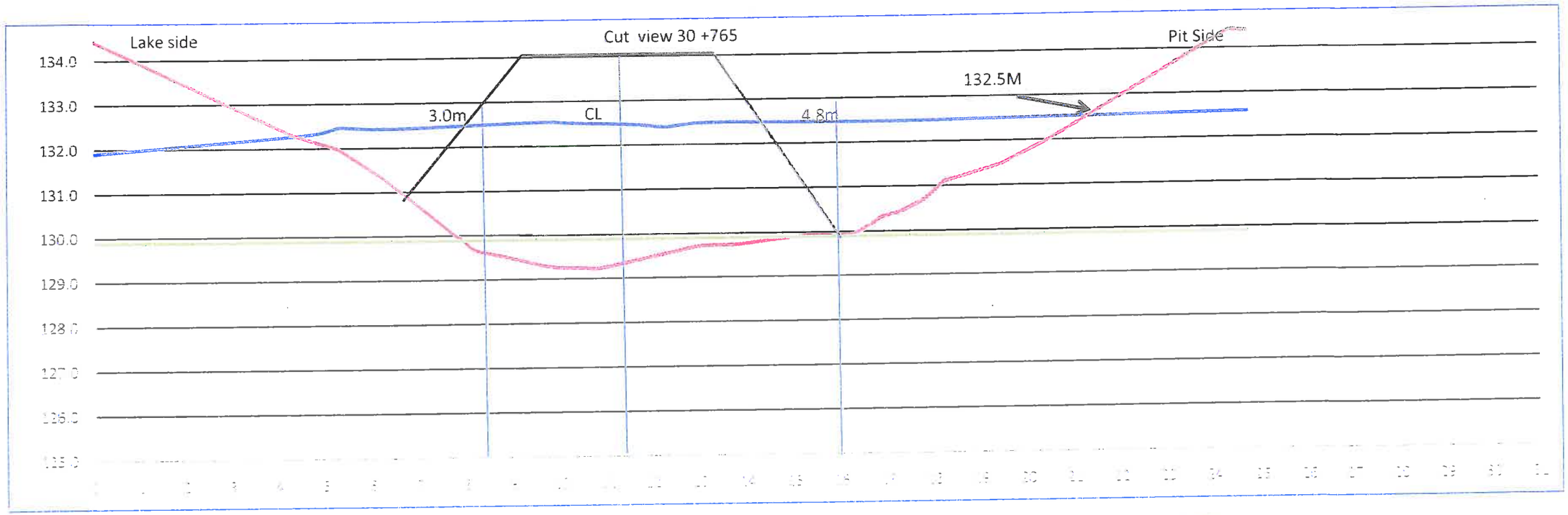

Lake side
Cut view 30 + 740
Pit Side
134.0
133.0
132.0
131.0
130.0
129.0
128.0
127.0
126.0
125.0
3.0m
CL
4.8m
132.1M

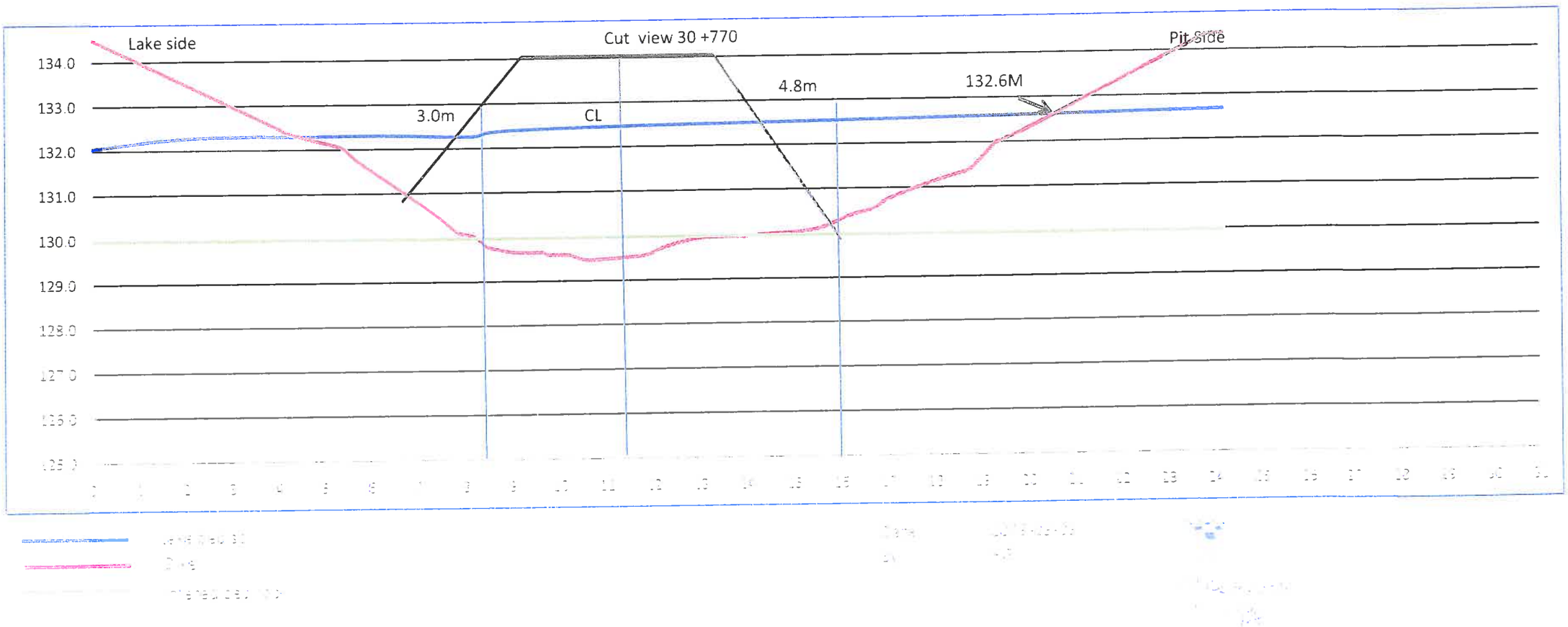

Lake side
Cut view 30 + 745
Pit Side
134.0
133.0
132.0
131.0
130.0
129.0
128.0
127.0
126.0
125.0
3.0m
CL
4.8m
132.1M
0.40 cm under 129.1

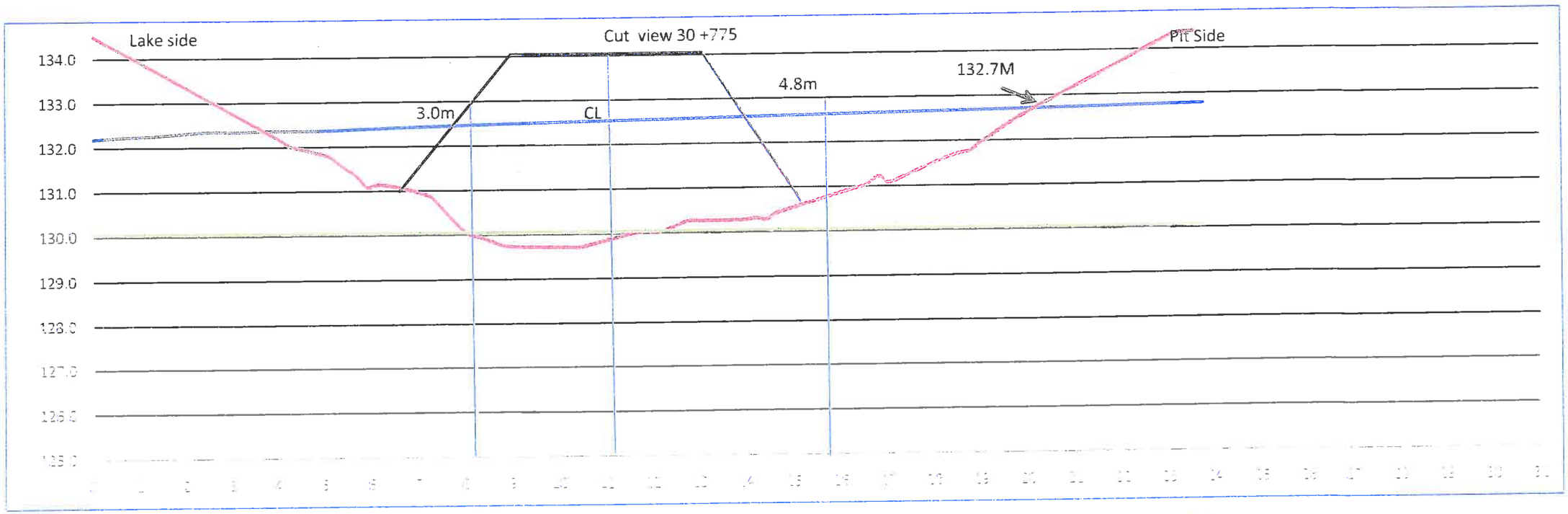

Lake side
Cut view 30 +750
Pit Side
134.0
133.0
132.0
131.0
130.0
129.0
3.0m
CL
4.8m
132.1M
no value under 129.1

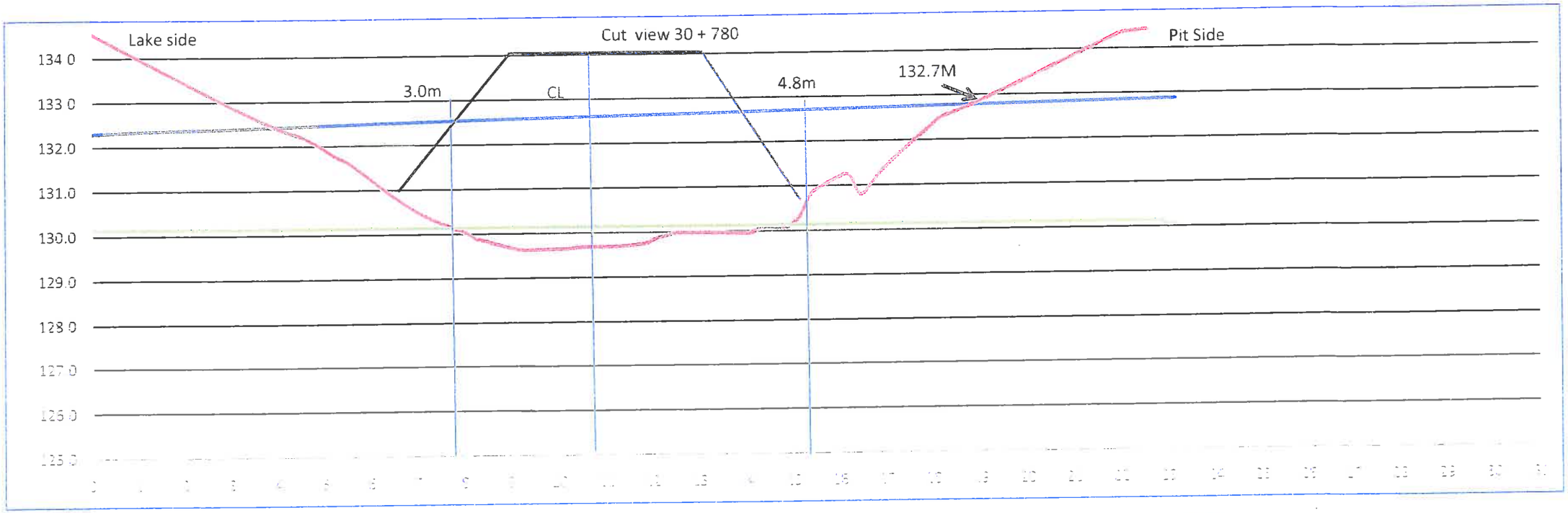

Lake side
Cut view 30 +755
Pit Side
134.0
133.0
132.0
131.0
130.0
129.0
128.0
127.0
126.0
125.0
3.0m
CL
4.8m
132.3M

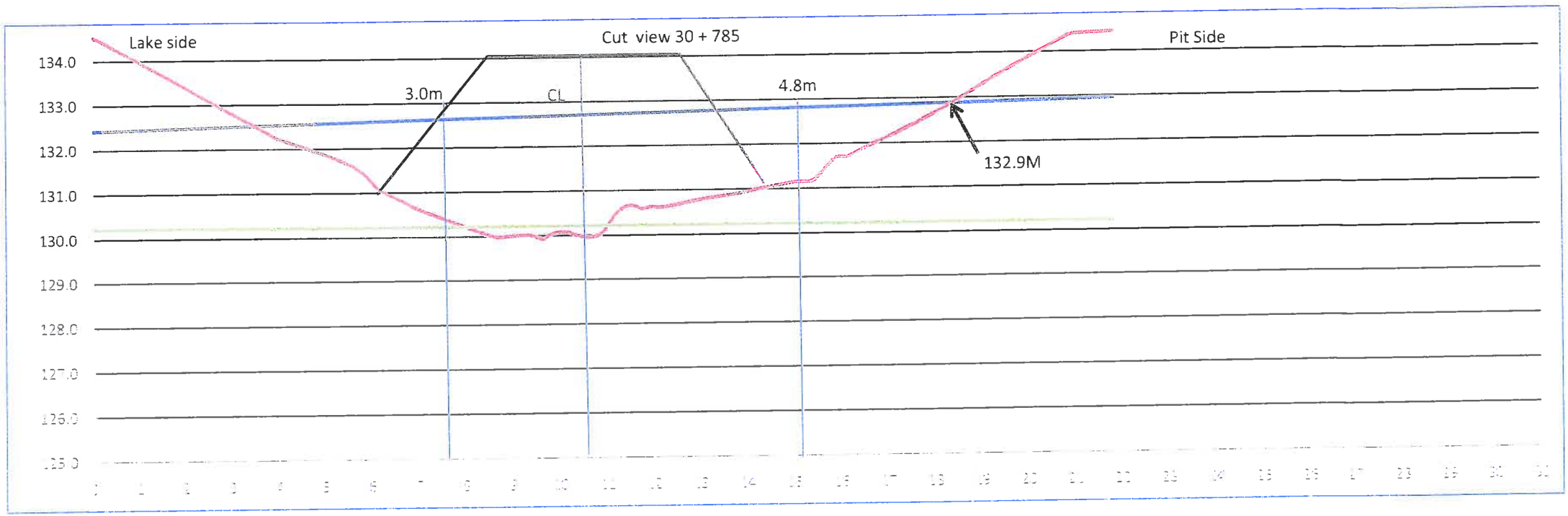

Lake side
Cut view 30 +760
Pit Side
134.0
133.0
132.0
131.0
130.0
129.0
128.0
127.0
126.0
125.0
3.0m
CL
4.8m
132.4M

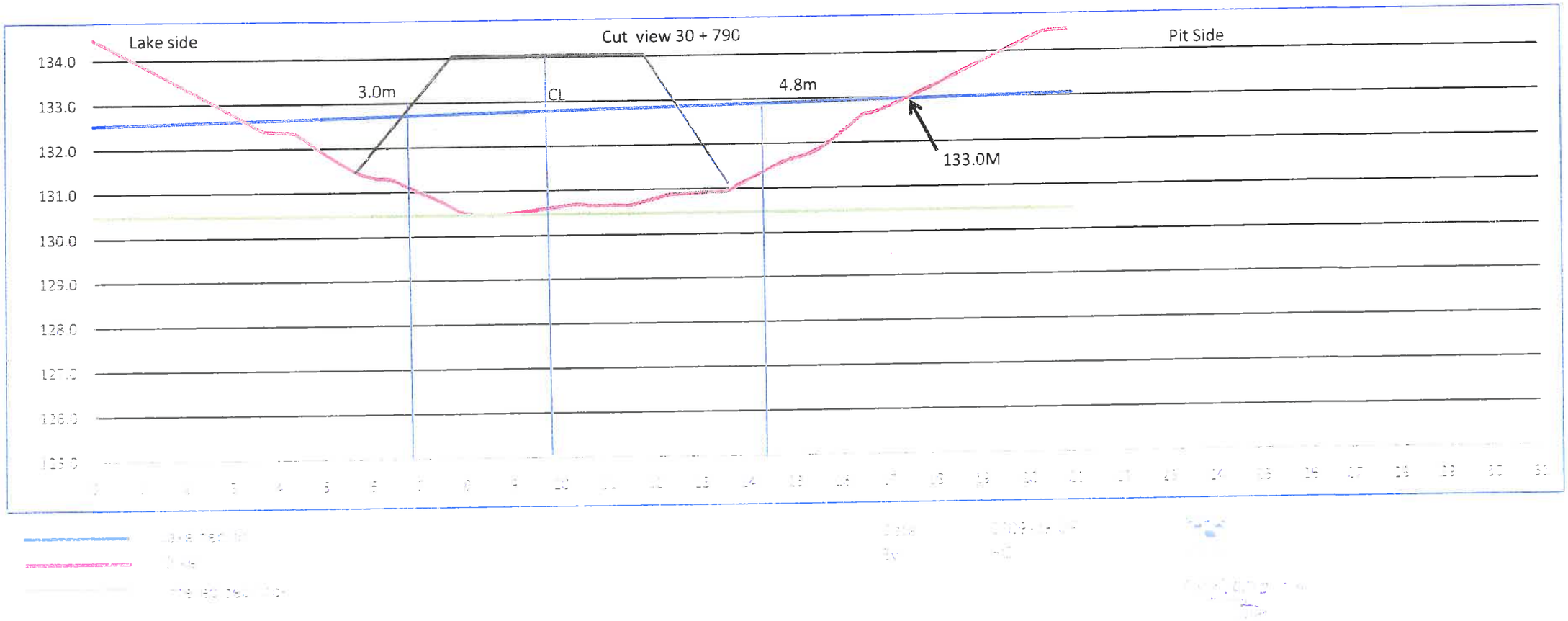

Lake side
Cut view 30 +765
Pit Side
134.0
133.0
132.0
131.0
130.0
129.0
3.0m
CL
4.8m
132.5M

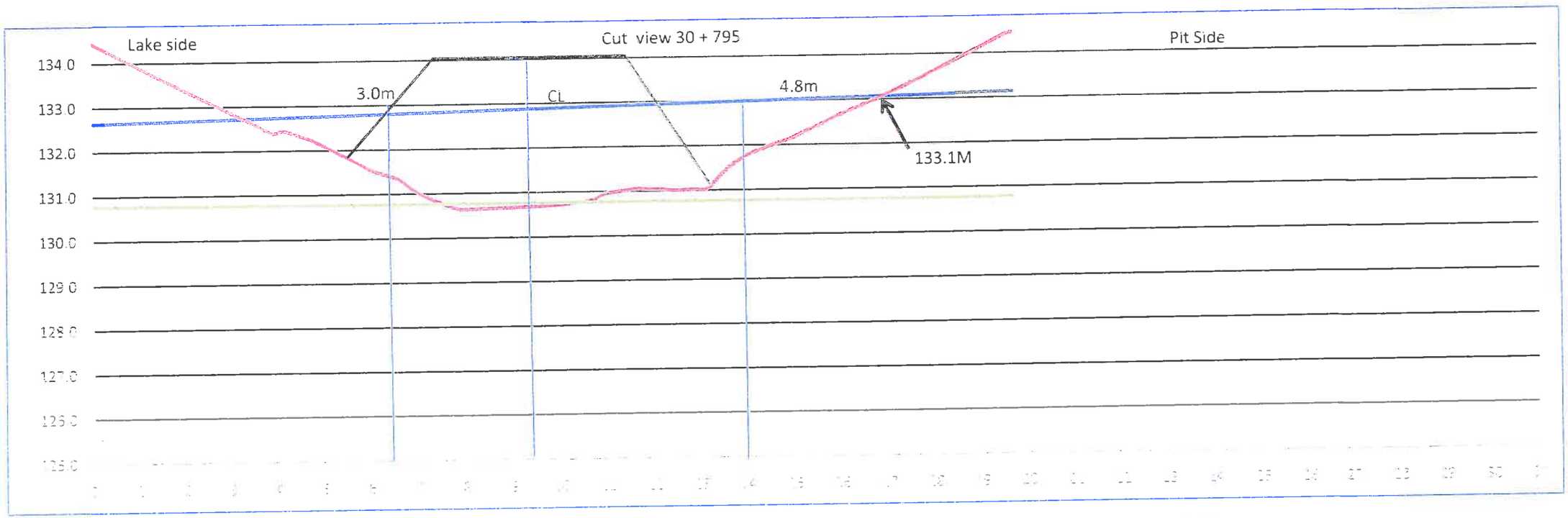

Lake side
Cut view 30 +770
Pit side
134.0
133.0
132.0
131.0
130.0
129.0
128.0
3.0m
CL
4.8m
132.6M

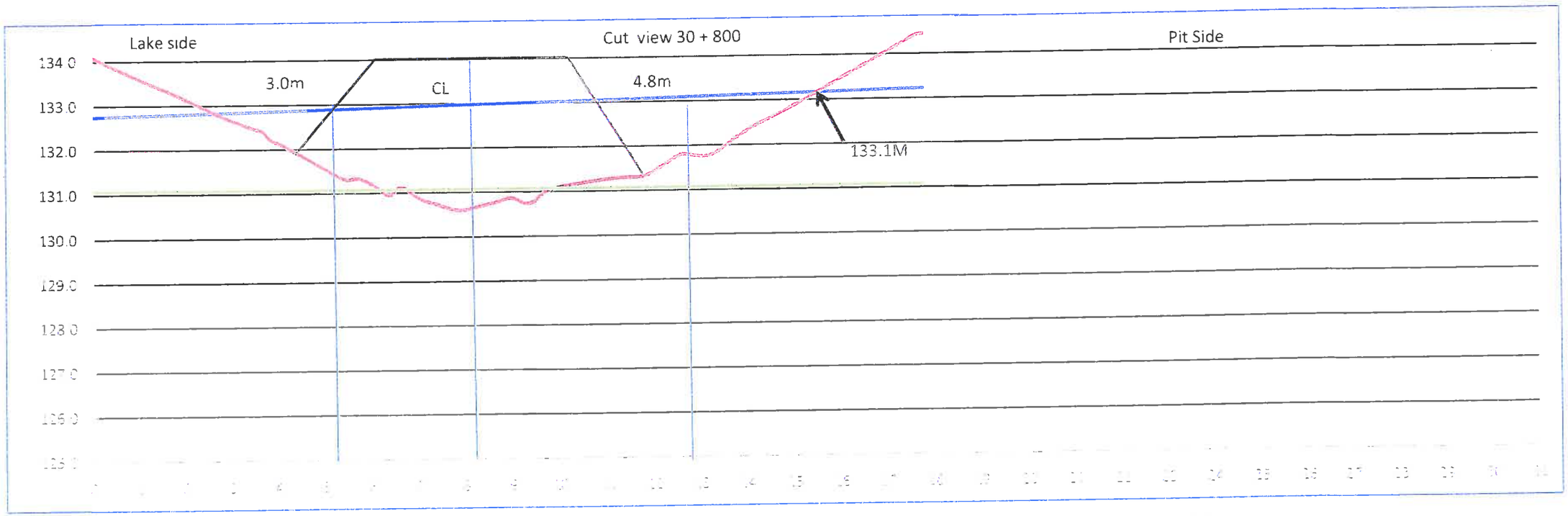

Lake side
Cut view 30 +775
Pit Side
134.0
133.0
132.0
131.0
130.0
129.0
128.0
127.0
126.0
125.0
3.0m
CL
4.8m
132.7M

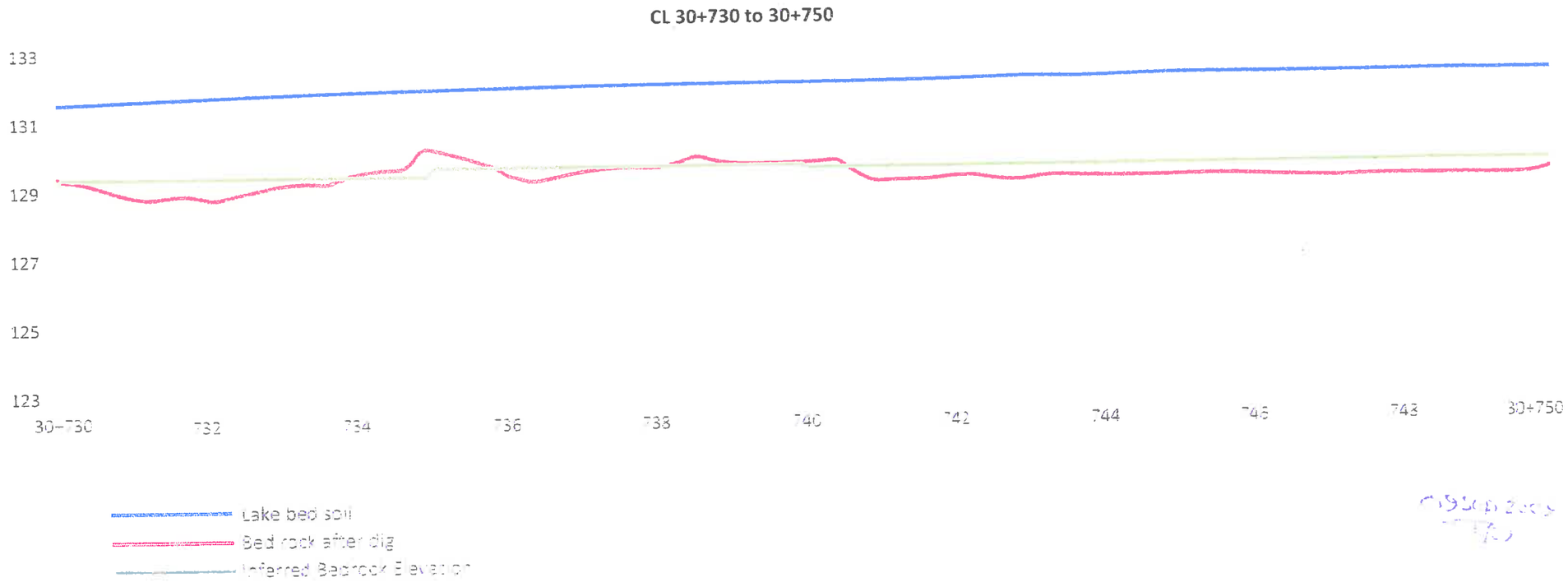

Lake side
Cut view 30 + 780
Pit Side
134 0
133 0
132.0
131.0
130.0
129.0
128 0
127 0
126 0
125 0
3.0m
CL
4.8m
132.7M

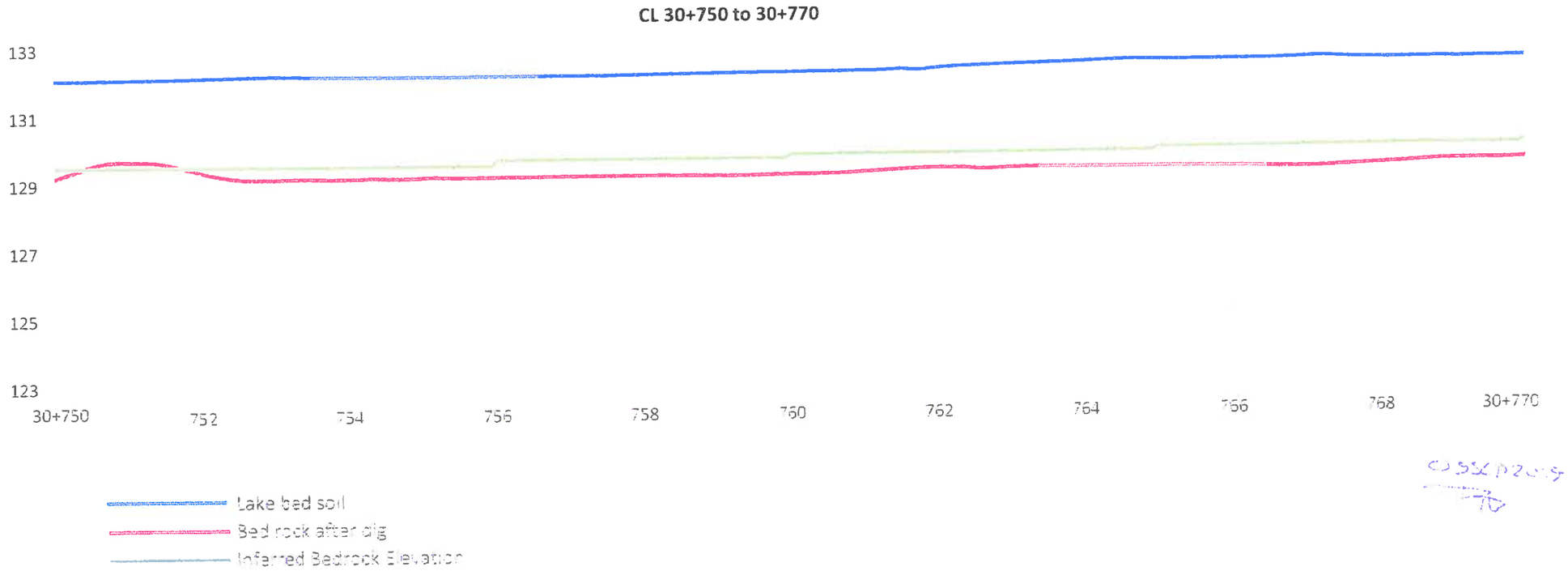

Lake side
Cut view 30 + 785
Pit Side
134.0
133.0
132.0
131.0
130.0
129.0
128.0
127.0
126.0
125.0
3.0m
CL
4.8m
132.9M

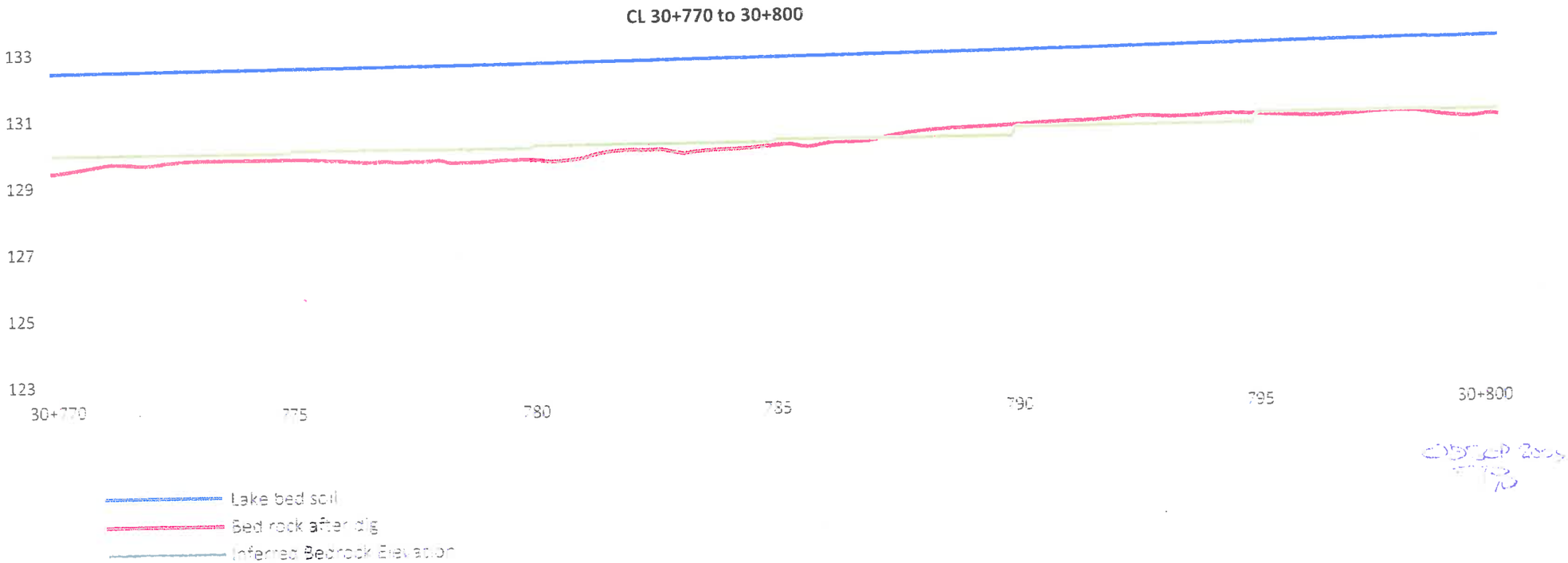

Lake side
Cut view 30 + 790
Pit Side
134.0
133.0
132.0
131.0
130.0
129.0
128.0
127.0
126.0
125.0
3.0m
CL
4.8m
133.0M


Lake side
Cut view 30 + 795
Pit Side
134.0
133.0
132.0
131.0
130.0
129.0
128.0
127.0
126.0
125.0
3.0m
CL
4.8m
133.1M


Lake side
Cut view 30 + 800
Pit Side
134.0
133.0
132.0
131.0
130.0
129.0
128.0
127.0
126.0
3.0m
CL
4.8m
133.1M


CL 30+730 to 30+750
133
131
129
127
125
123
30+730
732
734
736
738
740
742
744
746
748
30+750
Lake bed soil
Bed rock after dig
Inferred Bedrock Elevation


CL 30+750 to 30+770
133
131
129
127
125
123
30+750
752
754
756
758
760
762
764
766
768
30+770
Lake bed soil
Bed rock after dig
Inferred Bedrock Elevation


CL 30+770 to 30+800
133
131
129
127
125
123
30+770
775
780
785
790
795
30+800
Lake bed soil
Bed rock after dig
Inferred Bedrock Elevation

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 30+800 Offset	SHIFT: NIGHT: ☐ DAY: X ☐	DATE: Sept. 09/15	SHEET 1 OF 1
To Sta. 30+860 Offset	LOCATION: Meadow Bank - Bay Goose - Rock Fill - Excavation -		
EQUIPMENT:			

DESCRIPTION

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	[signature]	[signature]
2.	Storage areas planned for disposal of removed materials	—	—
3.	Occurrence of snow and ice removal method in place	—	—
4.	Occurrence of boulders and removal method in place	[signature]	[signature]
5.	Occurrence of hummocks and scalping method in place	[signature]	[signature]
6.	Occurrence of surface and ground water and its impact mitigation in place	—	—
7.	Presence of other unsuitable materials and removal method in place	[signature]	[signature]
8.	Soil frozen or thawed and measures taken	—	—
9.	Blasting requirement to remove unsuitable material and safety measure checked	—	—
10.	Adjustment made to suit design in field	[signature]	[signature]
11.	Final walkover inspection before re-sloping or fill placement	[signature]	[signature]
12.	"As-excavated" survey conducted	[signature]	[signature]
13.	Final sounding conducted of lake bottom surface	[signature]	[signature]

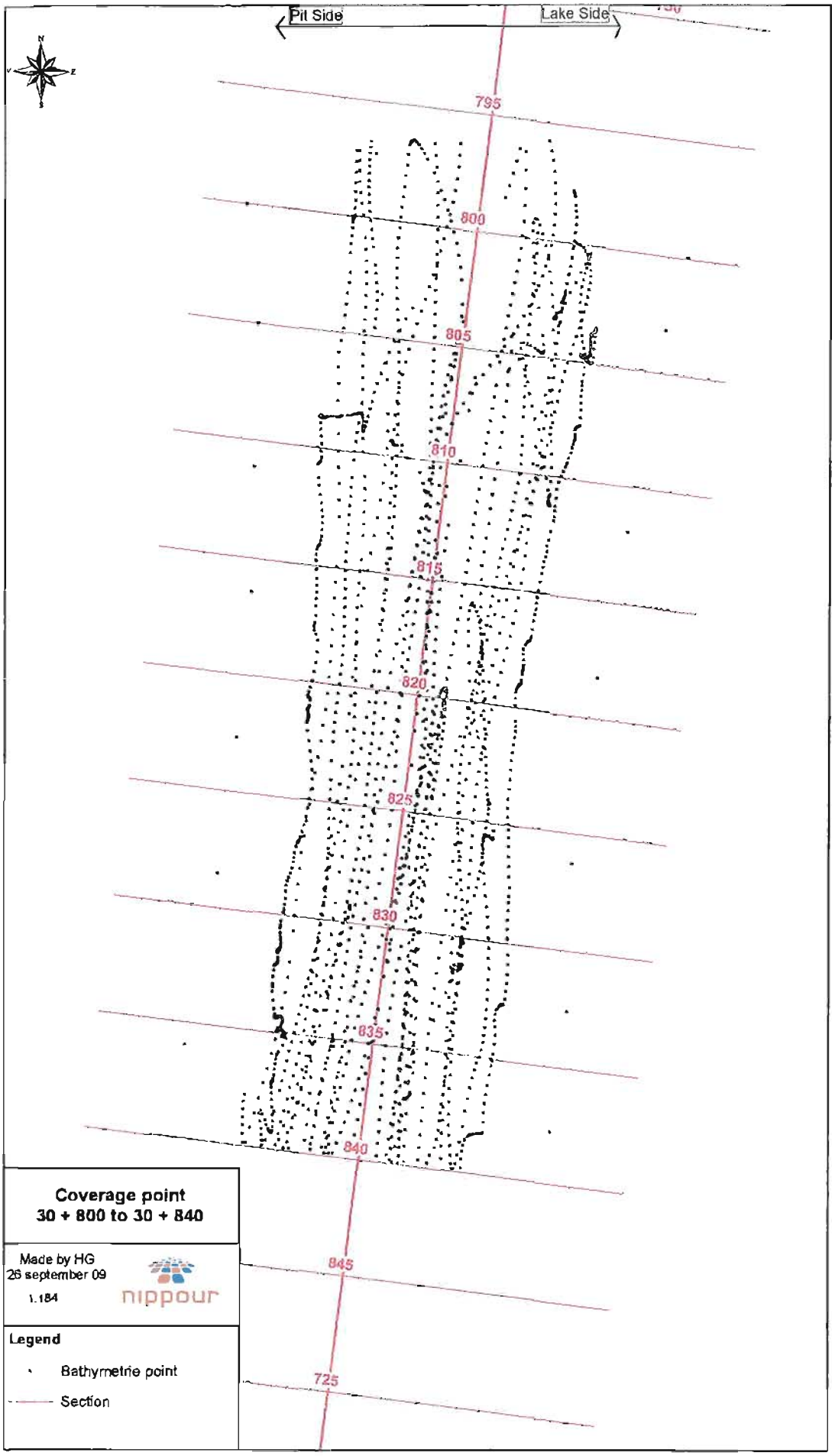
REMARKS: Package received 26 Sept 09 (see attached)
Additional checking + chipping conducted, see attached.

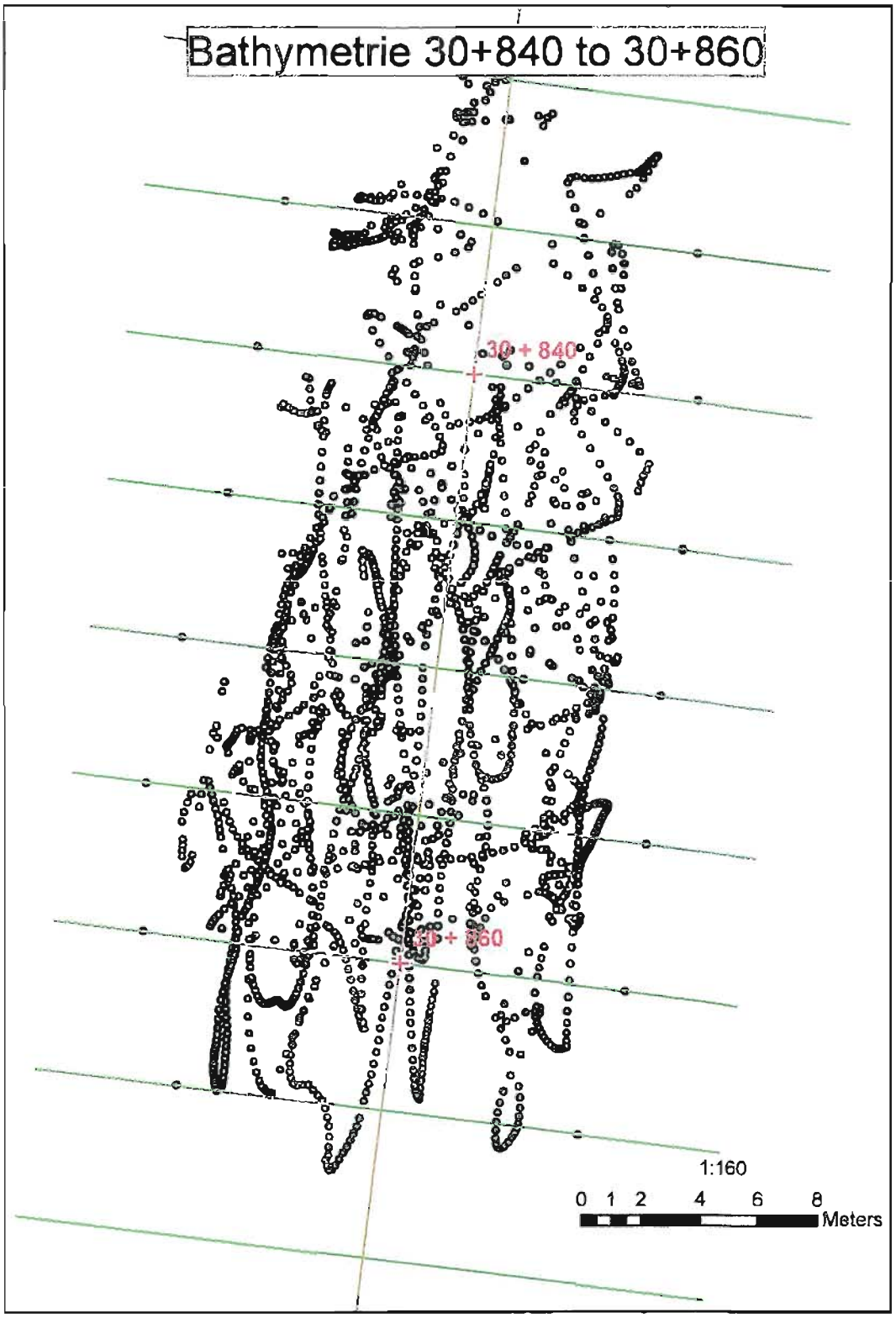
DEVIATIONS: (Attach list if necessary)
- Required to continuously clean sediment in front of advancing CB and pitside filter face.

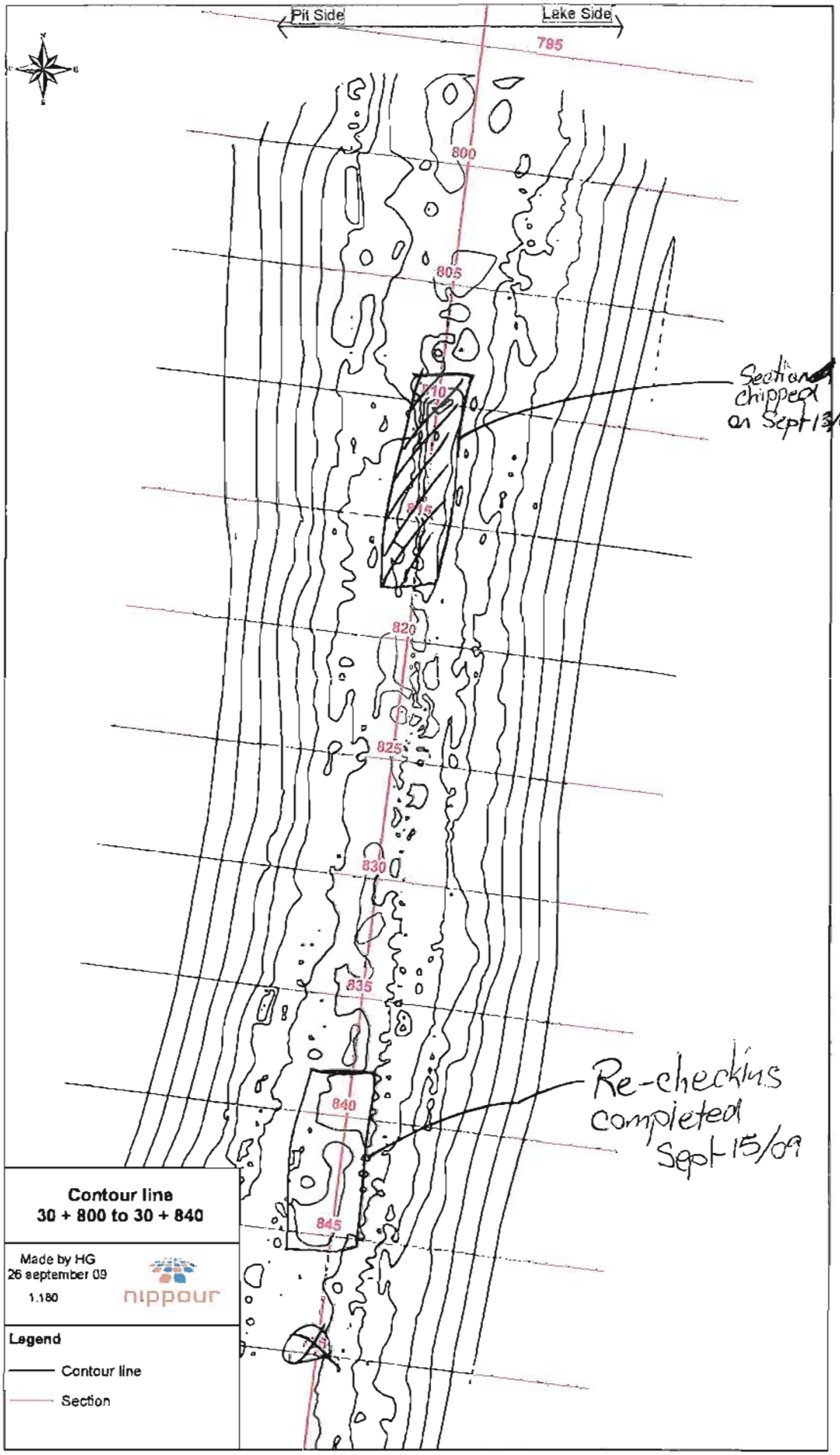
DATE OF RECTIFICATION:

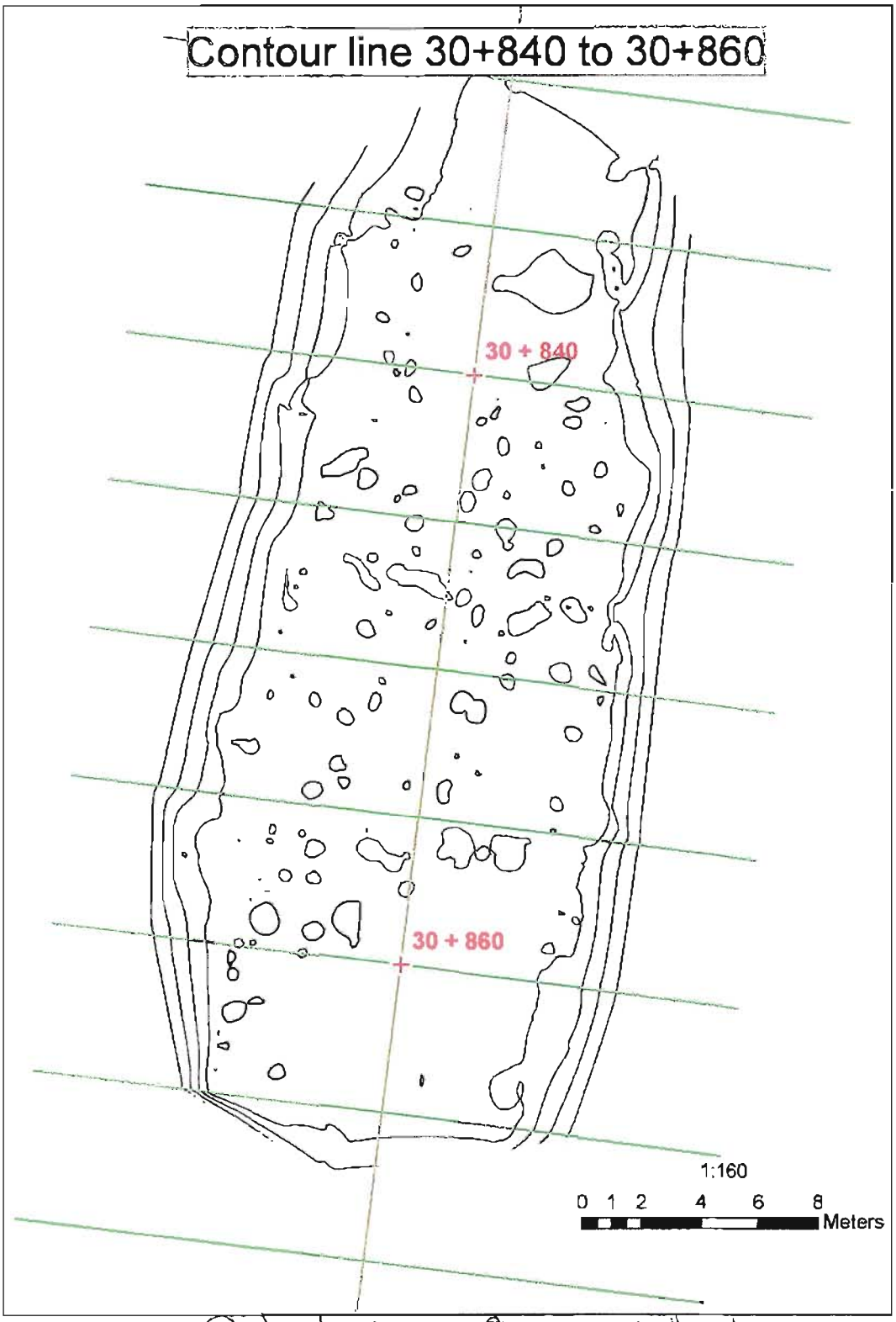
SURVEY VERIFICATION	ACCEPTED BY QA Manager:	ACCEPTED BY OWNER:
NAME: Guy Morissette	NAME: Michel Julien	NAME:
SIGNATURE: [signature]	SIGNATURE: [signature]	SIGNATURE:
DATE 26 sept. 09	DATE 29-09-2009	DATE

Retransmis à Michel Julien de Golder.
Le 26 Sept. 09 vers 13:45 hres

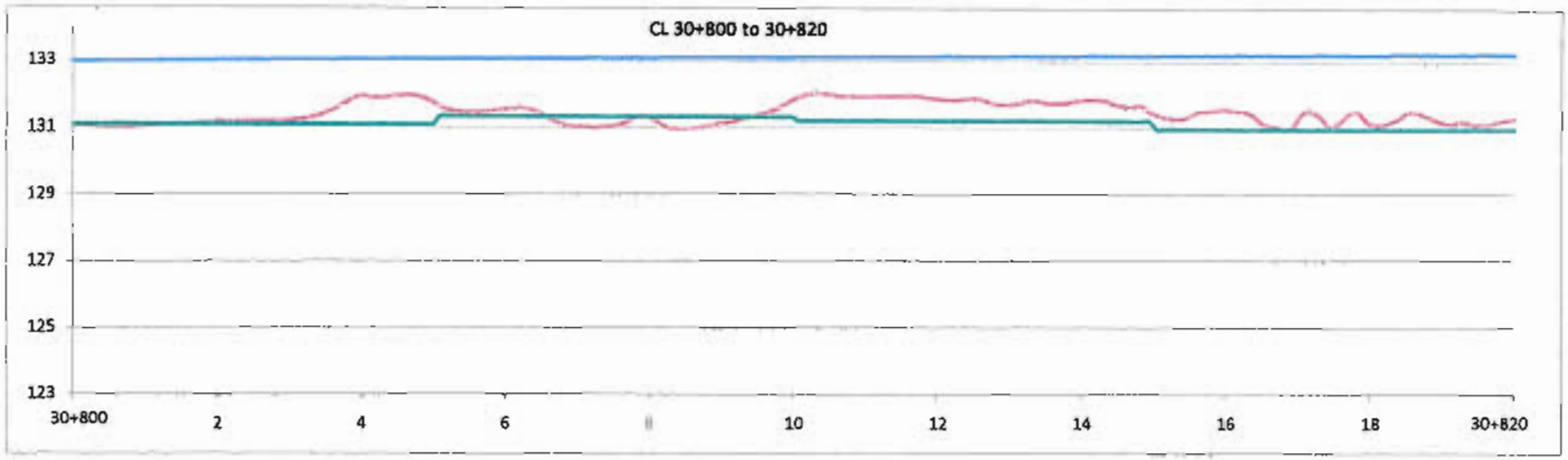

Pit Side
Lake Side
795
800
805
810
815
820
825
830
835
840
845
725
Coverage point
30 + 800 to 30 + 840
Made by HG
26 september 09
1:184
nippour
Legend
Bathymetrie point
Section

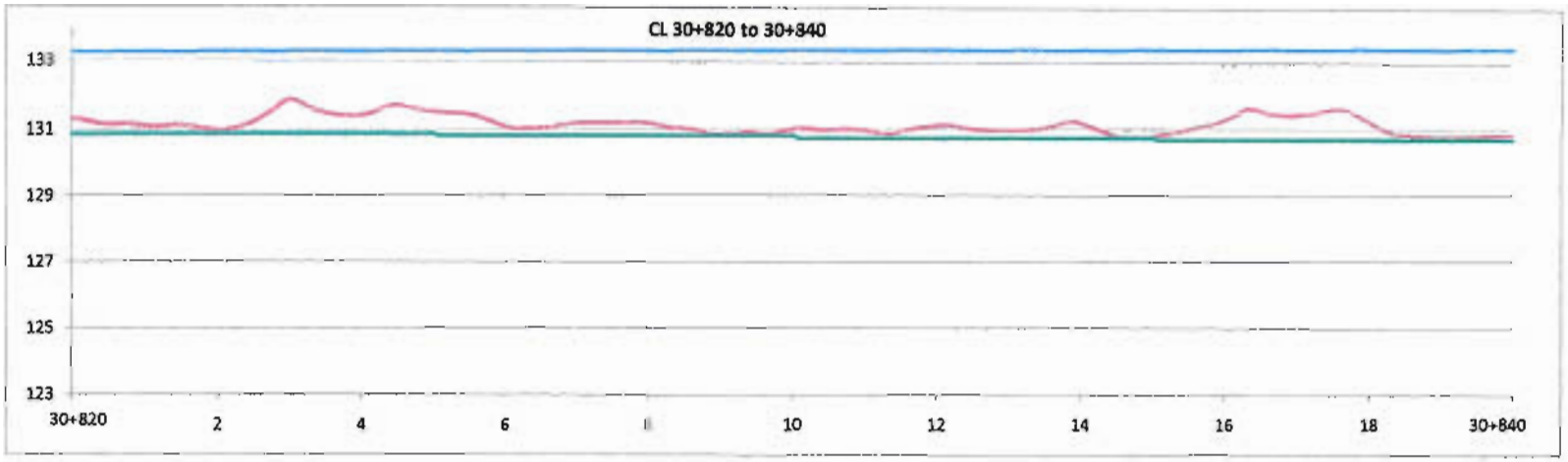

Bathymetrie 30+840 to 30+860
30 + 840
30 + 860
1:160
0 1 2 4 6 8
Meters

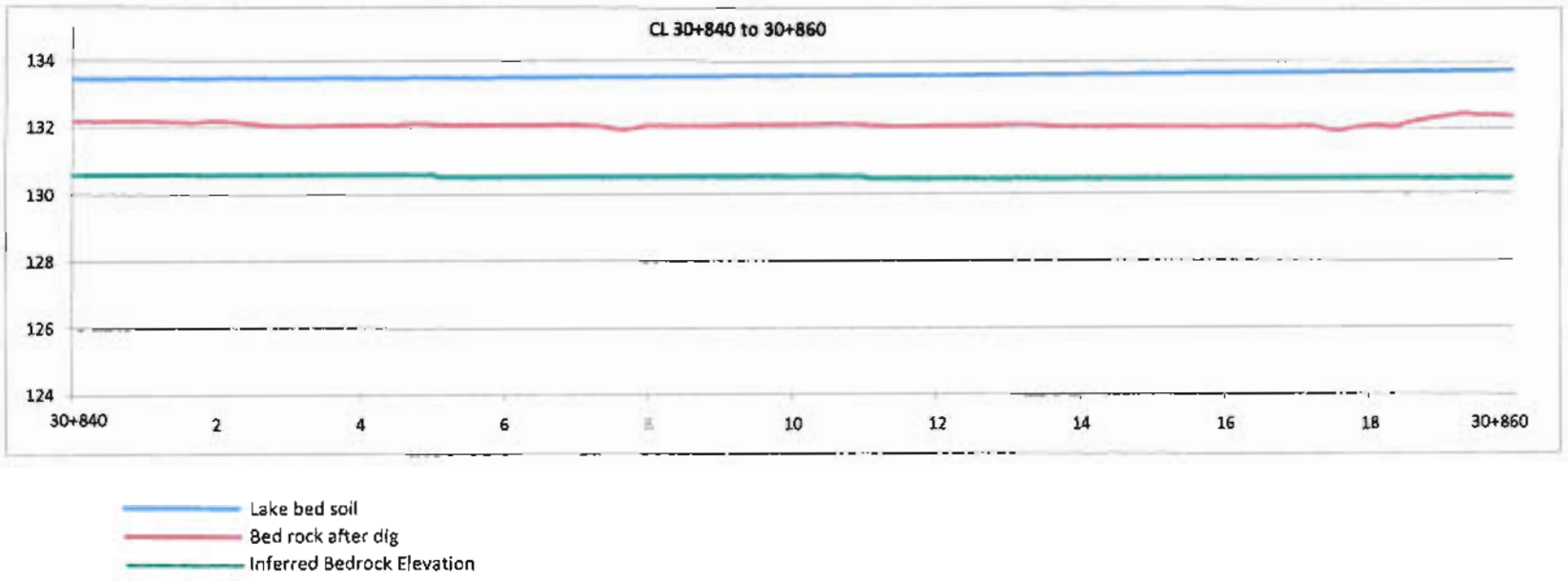

Pit Side
Lake Side
795
800
805
810
815
820
825
830
835
840
845
Section chipped on Sept 13/09
Re-checking completed Sept 15/09
Contour line
30 + 800 to 30 + 840
Made by HG
26 september 09
1:180
nippour
Legend
Contour line
Section

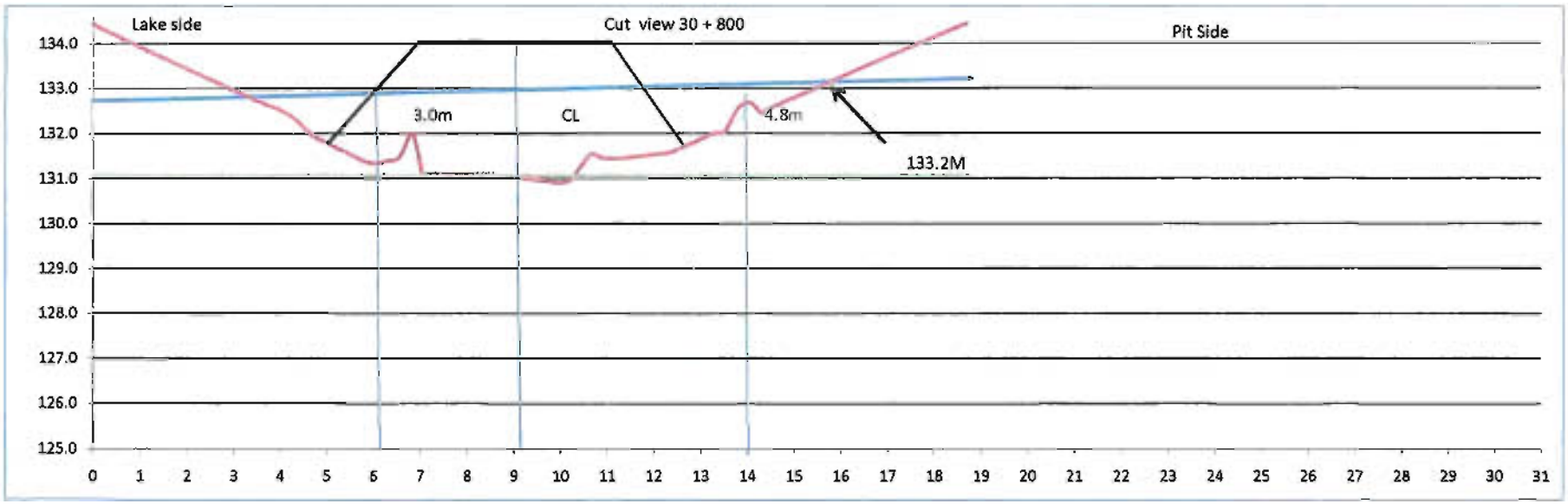


Post chipping + Clearing bathymetry


CL 30+800 to 30+820
133
131
129
127
125
123
30+800
2
4
6
10
12
14
16
18
30+820
Lake bed soil
Bed rock after dig
Inferred Bedrock Elevation


CL 30+820 to 30+840
133
131
129
127
125
123
30+820
2
4
6
8
10
12
14
16
18
30+840
Lake bed soil
Bed rock after dig
Inferred Bedrock Elevation

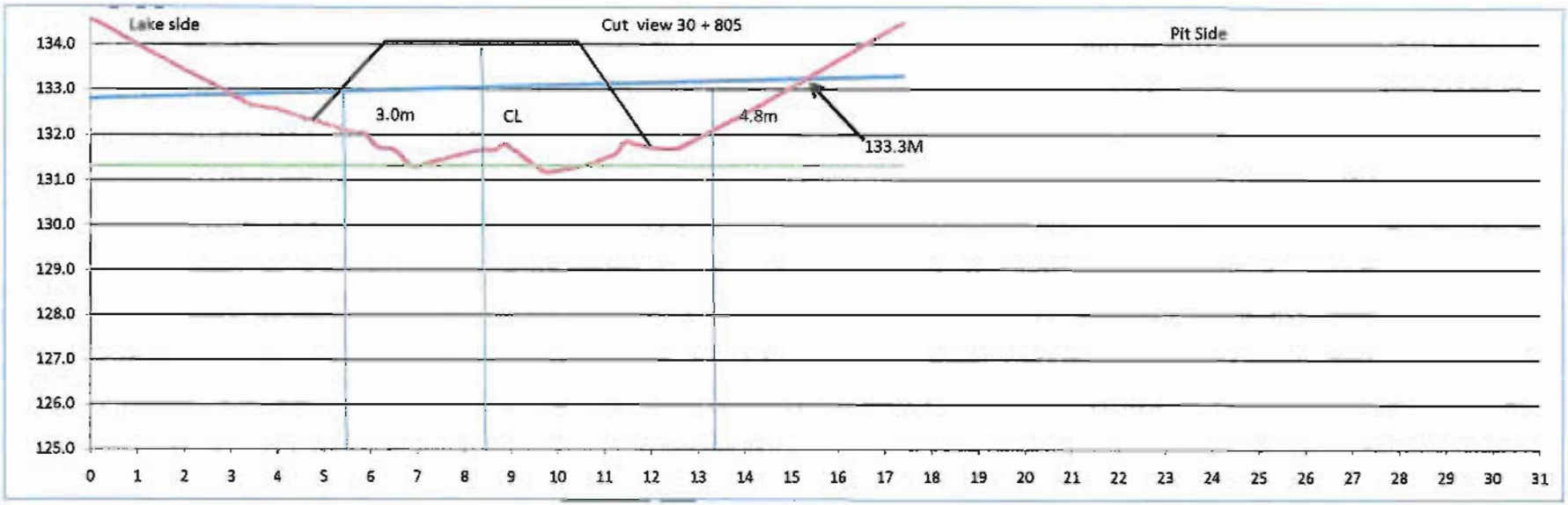

CL 30+840 to 30+860
134
132
130
128
126
124
30+840
2
4
6
8
10
12
14
16
18
30+860
Lake bed soil
Bed rock after dig
Inferred Bedrock Elevation



Lake bed soil
Dike
Infered bed rock

Date 2009-09-12
By: PD

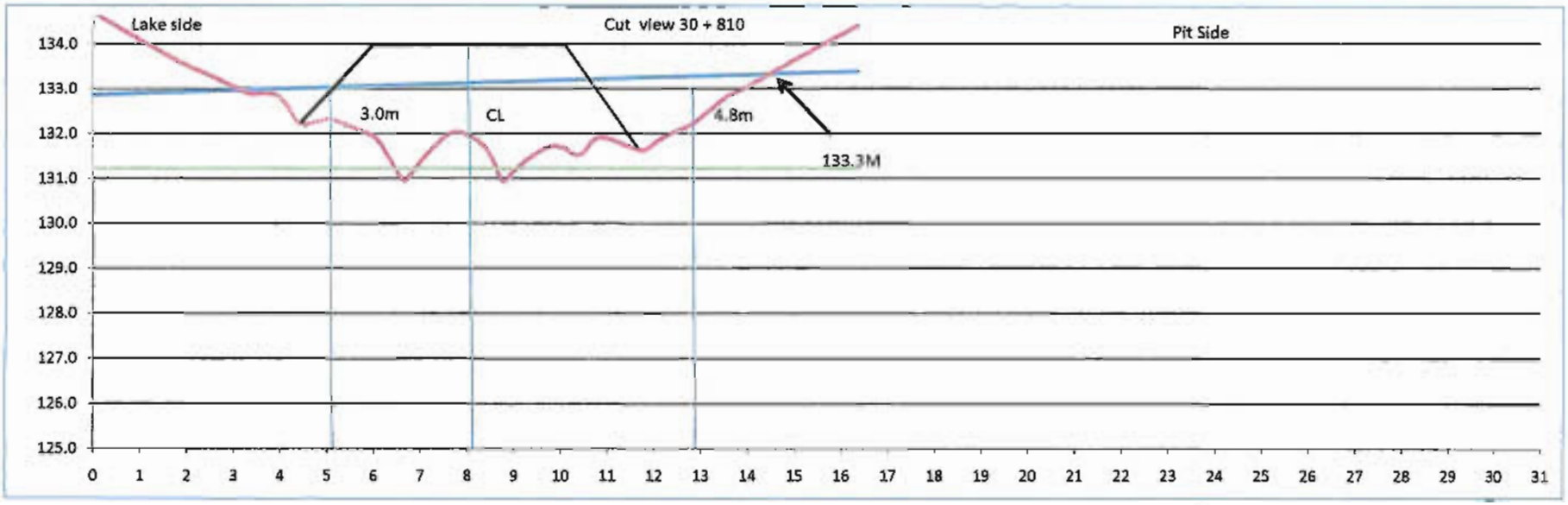
nippour



Lake bed soil
Dike
Infered bed rock

Date 2009-09-12
By: PO

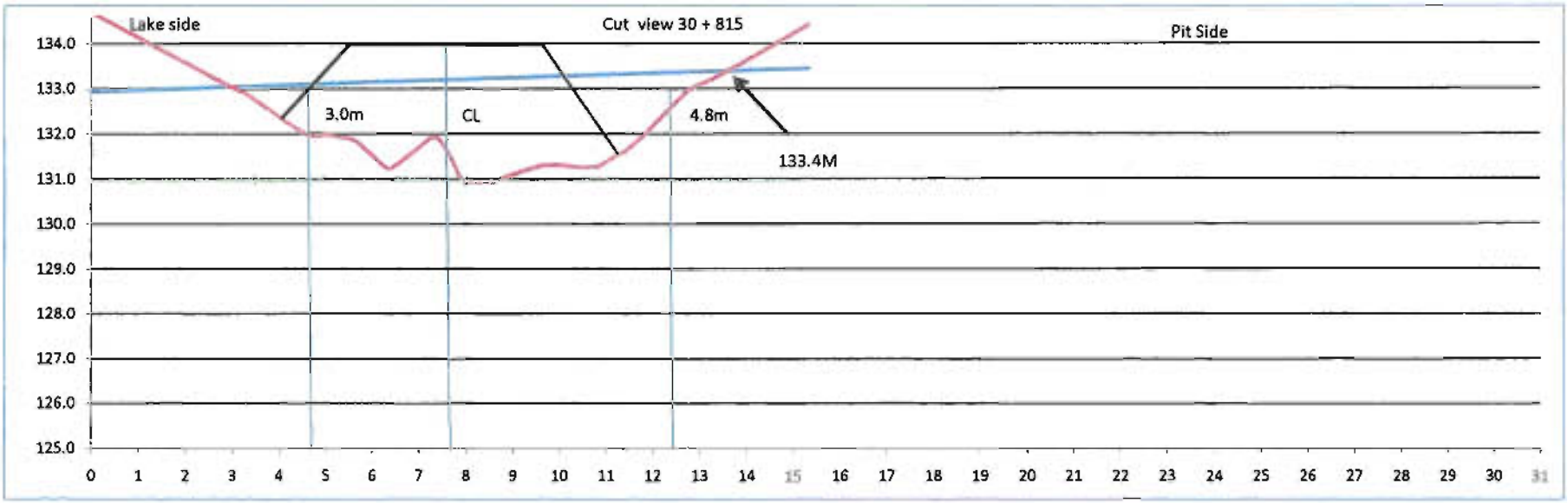
nippour



Lake bed soil
Dike
Infered bed rock

Date 2009-09-12
By: PD

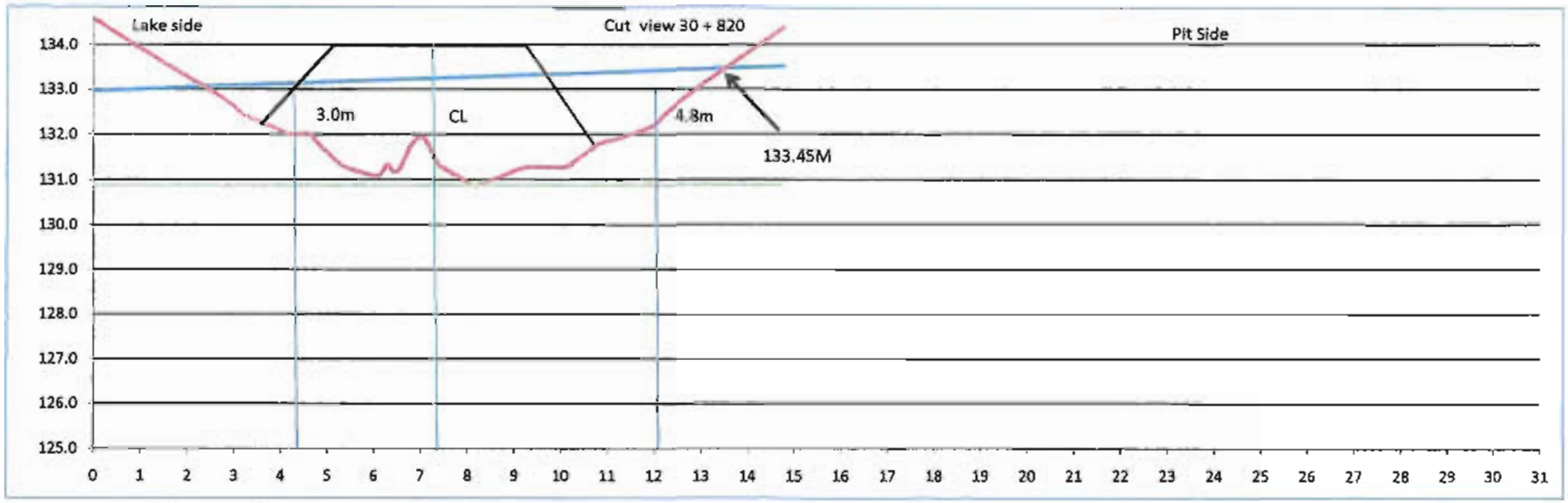
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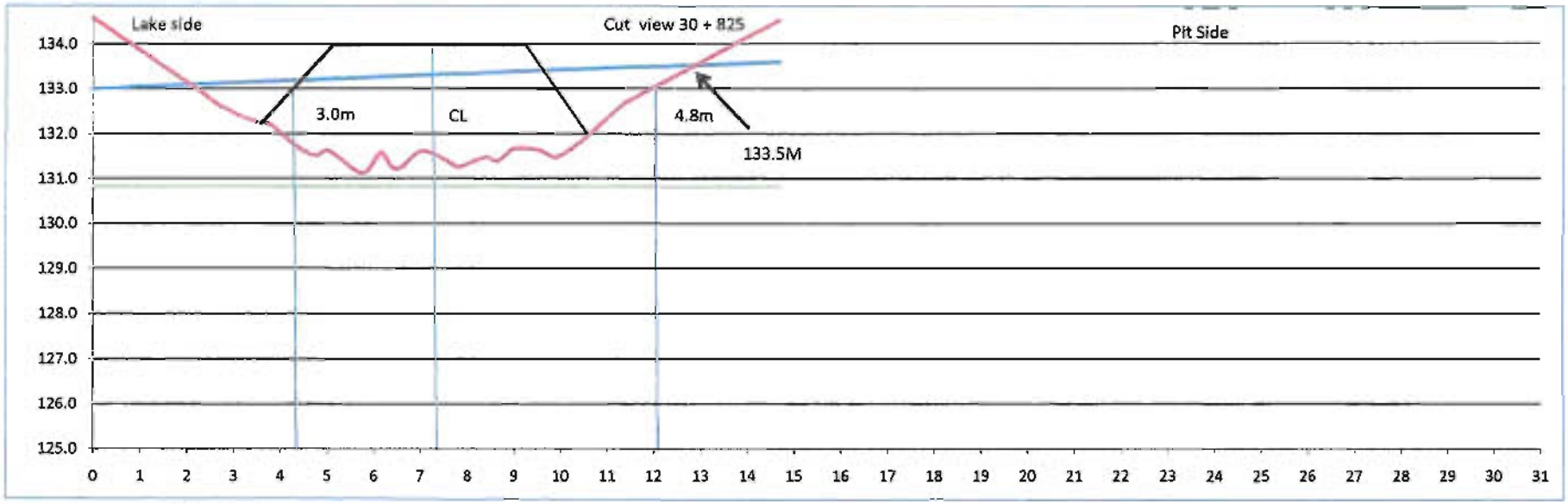


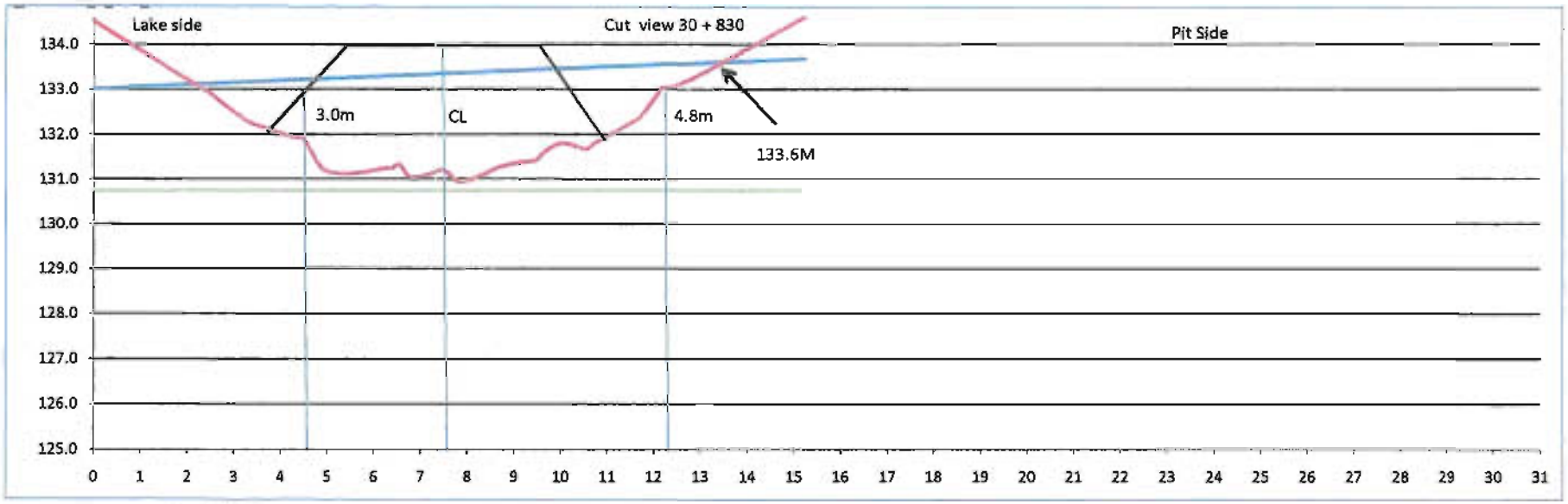
Lake bed soil
Dike
Infered bed rock

Date 2009-09-12
By: PD

nippour


Lake side
Cut view 30 + 820
Pit Side
134.0
133.0
132.0
131.0
130.0
129.0
128.0
127.0
126.0
125.0
3.0m
CL
4.8m
133.45M
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Lake bed soil
Dike
Infered bed rock
Date 2009-09-12
By: PD
nippour


Lake side
Cut view 30 + 825
Pit Side
134.0
133.0
132.0
131.0
130.0
129.0
128.0
127.0
126.0
125.0
3.0m
CL
4.8m
133.5M
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Lake bed soil
Dike
Infered bed rock
Date 2009-09-12
By: PD
nippour



Lake bed soil
Dike
Infered bed rock

Date 2009-09-12
By: PD

nippour

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 30+860 Offset	SHIFT: NIGHT: ☐ DAY: ☒	DATE: Aug 14, 2010	SHEET 1 OF
To Sta. Offset	LOCATION: :		
EQUIPMENT:	BAY GOOSE DIKE SOUTH PORTION		
DESCRIPTION			

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	MS	GB
2.	Storage areas planned for disposal of removed materials	MS	GB
3.	Occurrence of snow and ice removal method in place	MS	GB
4.	Occurrence of boulders and removal method in place	MS	GB
5.	Occurrence of hummocks and scalping method in place	MS	GB
6.	Occurrence of surface and ground water and its impact mitigation in place	MS	GB
7.	Presence of other unsuitable materials and removal method in place	MS	GB
8.	Soil frozen or thawed and measures taken	MS	GB
9.	Blasting requirement to remove unsuitable material and safety measure checked	N/A MS	N/A GB
10.	Adjustment made to suit design in field	MS	GB
11.	Final walkover inspection before re-sloping or fill placement	MS	GB
12.	"As-excavated" survey conducted	MS	GB
13.	Final sounding conducted of lake bottom surface	MS	GB

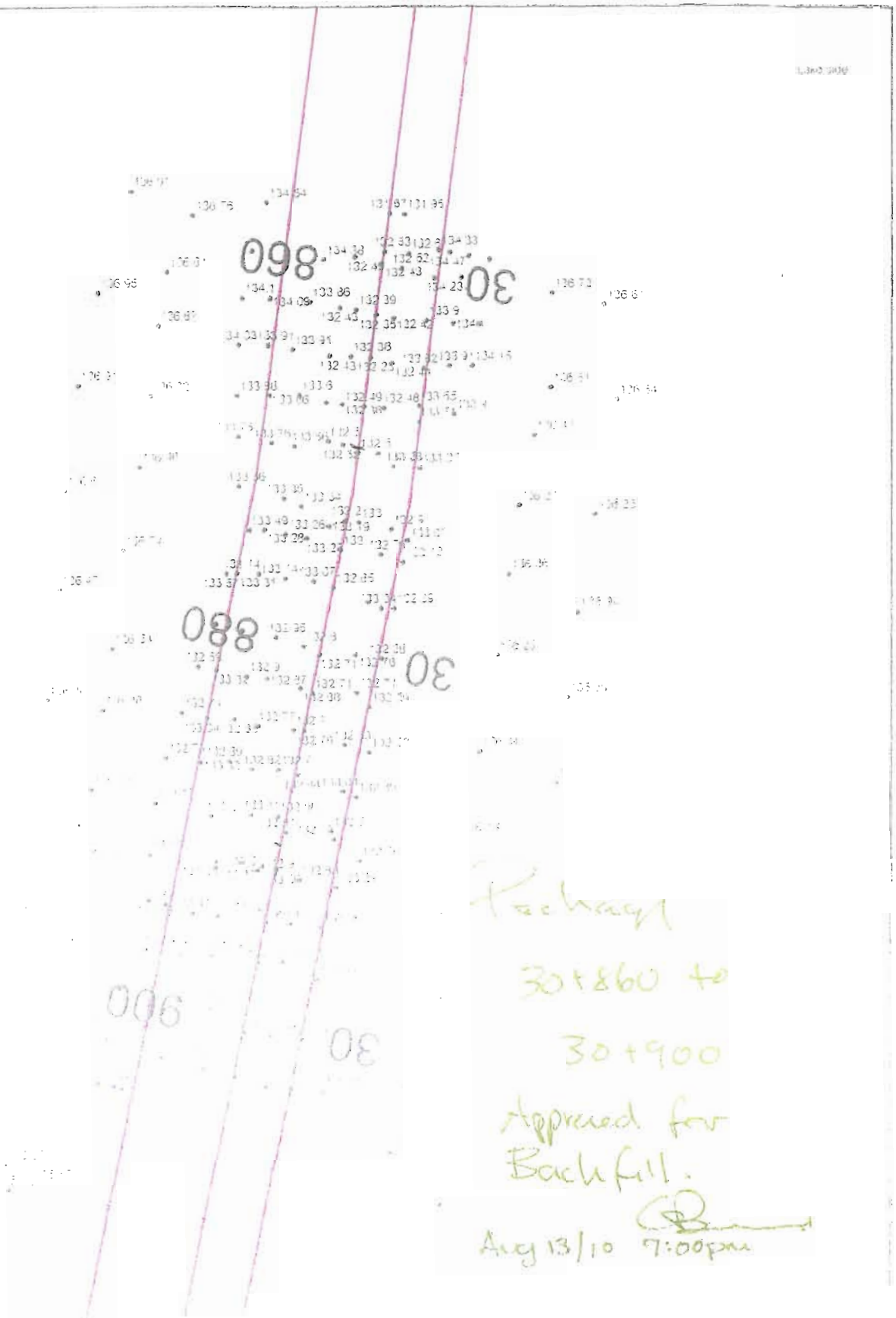
REMARKS : (1) GB was onsite during cleaning & checking of excavated walls
(2) Approved to Backfill.

DEVIATIONS : (Attach list if necessary)

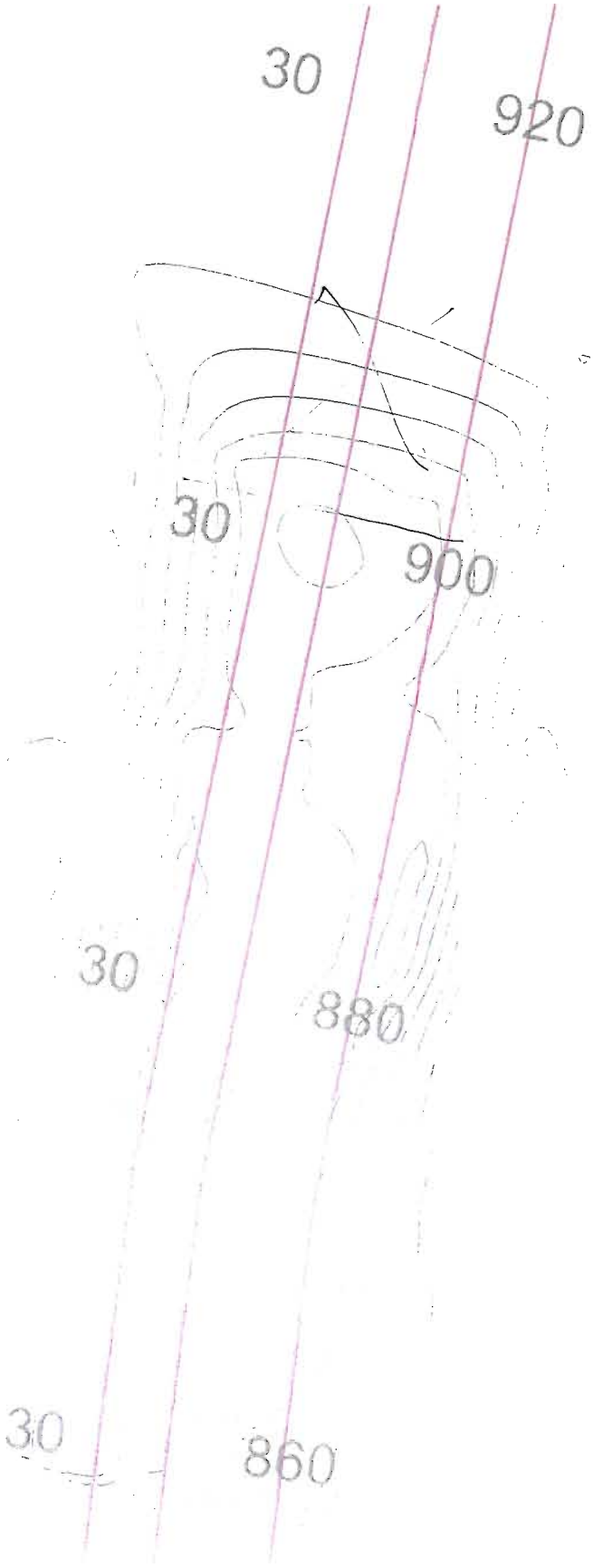
DATE OF RECTIFICATION :

SURVEY VERIFICATION	ACCEPTED BY QA Manager :	ACCEPTED BY OWNER :
NAME: MAXIME GILBERT	NAME: GRANT BURNS	NAME:
SIGNATURE :	SIGNATURE :	SIGNATURE :
DATE Aug 14, 2010	DATE Aug 14, 2010	DATE

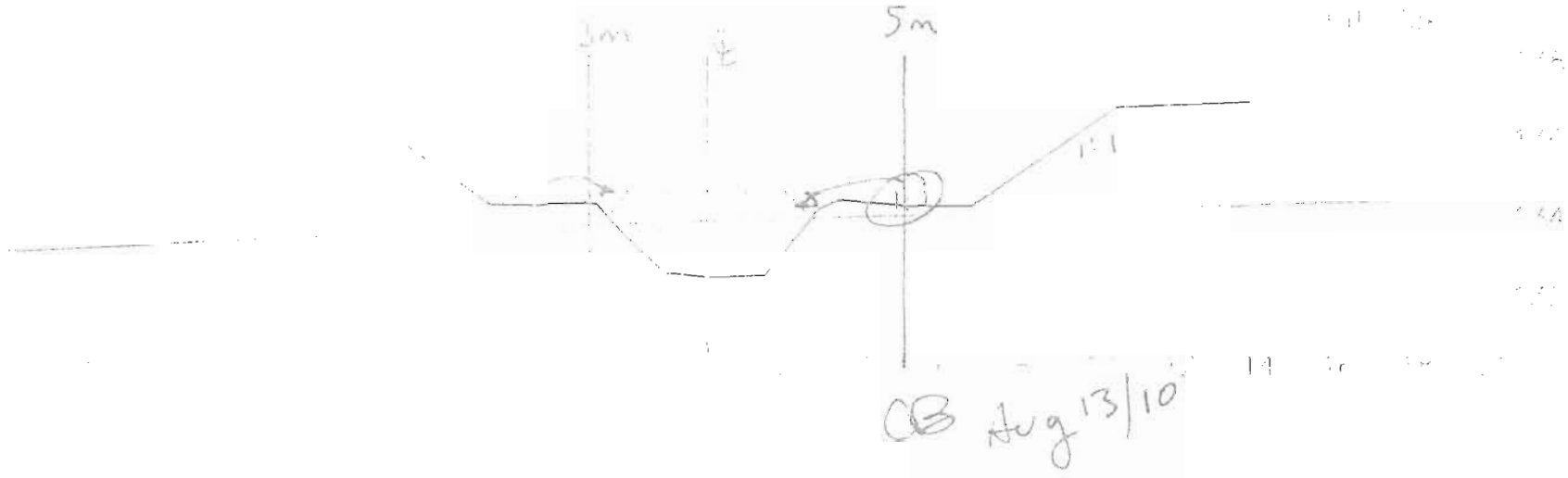
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Tachagi
30+860 to
30+900
Approved for
Backfill.
Aug 13/10 7:00pm

3/12

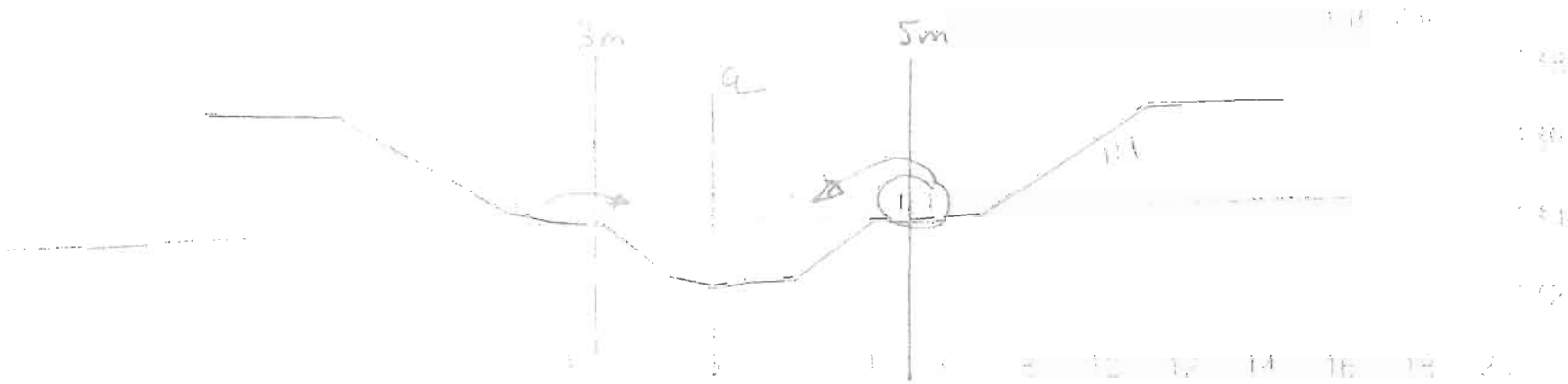


Aug 13/10



Date: 130810

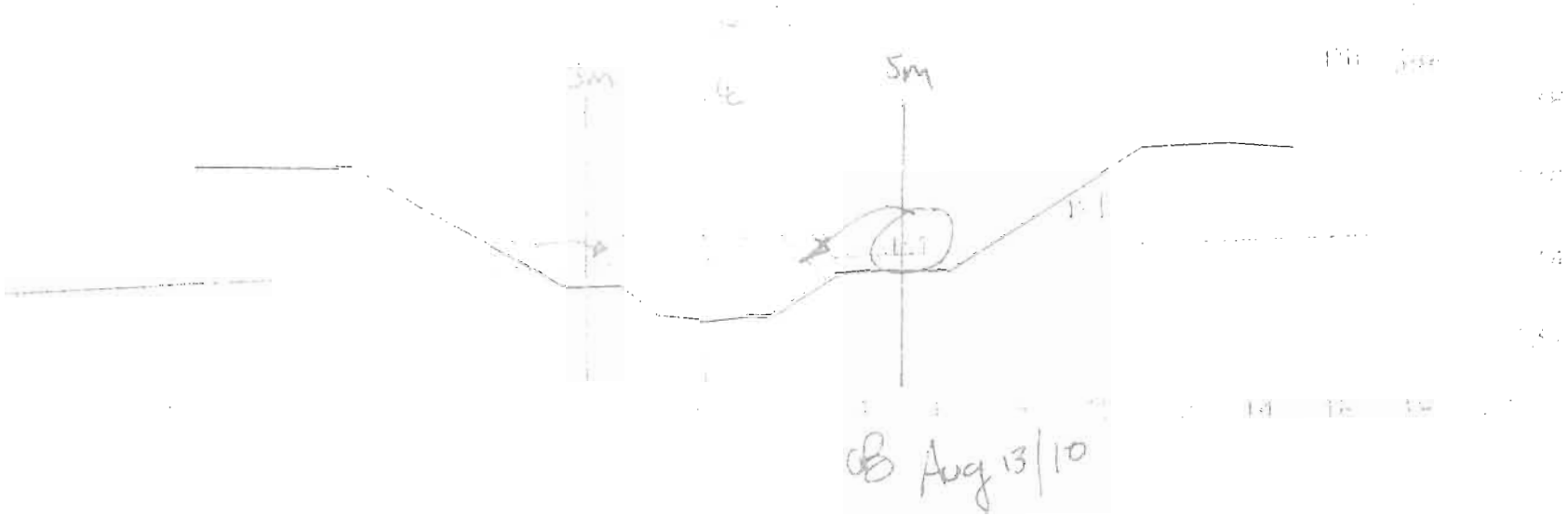
Par: Alex Lalancette et Pascale Martel



CB Aug 13/10

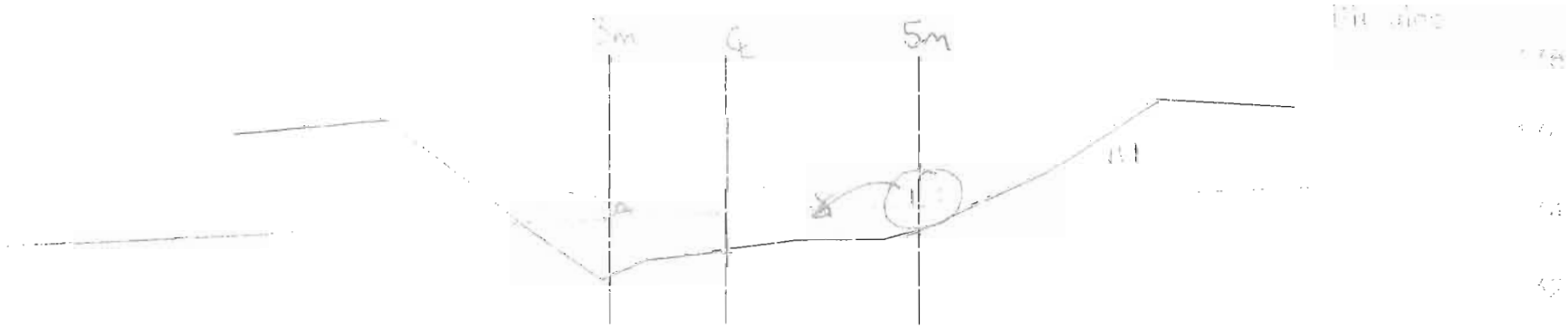
Date: 130810

Par: Alex Lalancette et Pascale Martel



Date: 130810

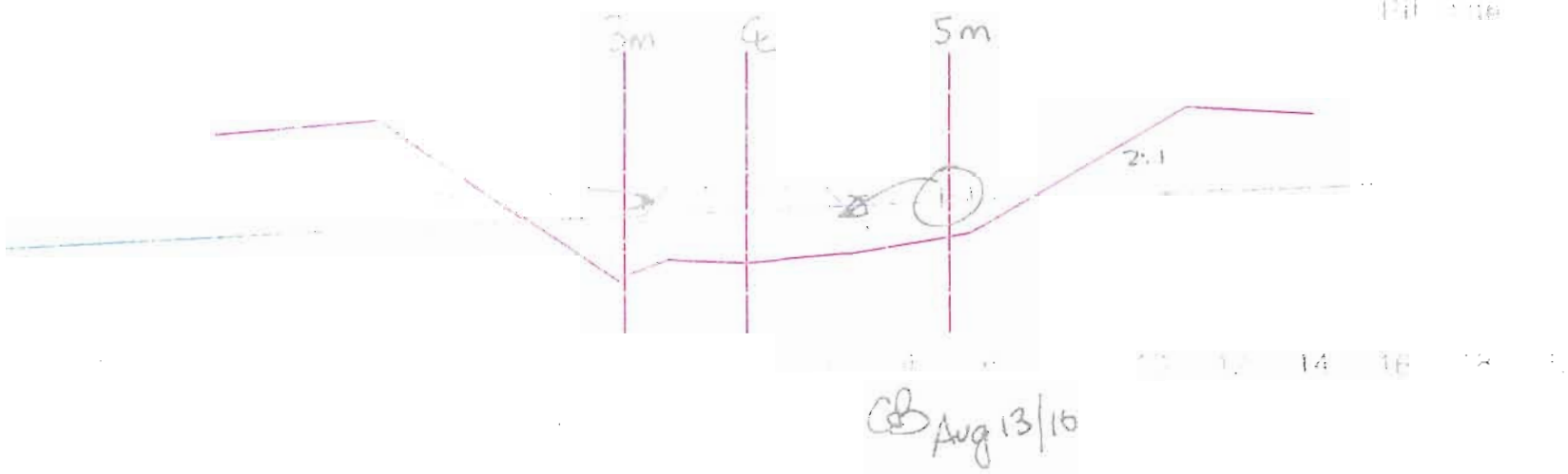
Par: Alex Lalancette et Pascale Martel



Aug 13/10

Date: 130810

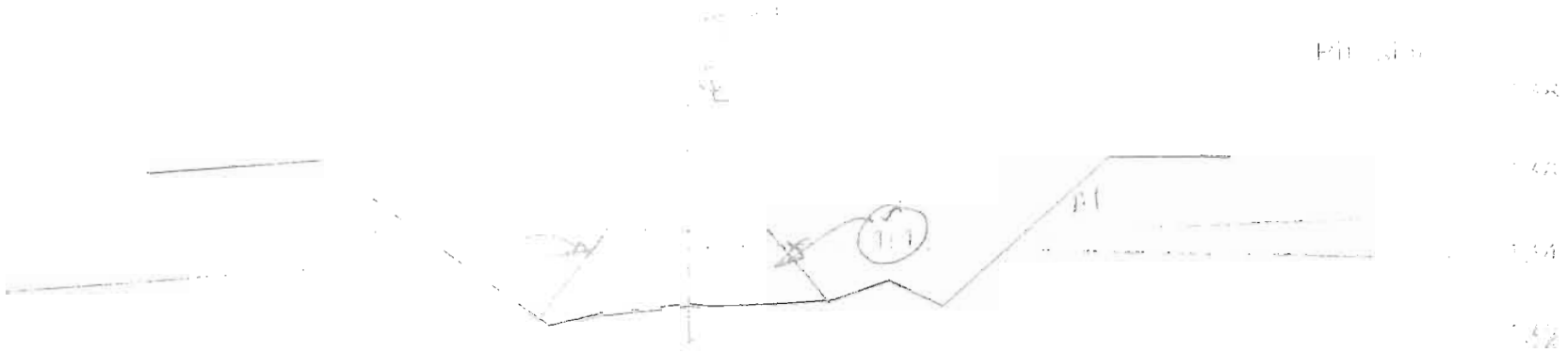
Par: Alex Lalancette et Pascale Martel



Date: 130810

Page: 8/13

Par: Alex Lalancette et Pascale Martel



Aug 13/10

Date: 130810

Par: Alex Lalancette et Pascale Martel

Date: 130810

Par: Alex Lalancette et Pascale Martel

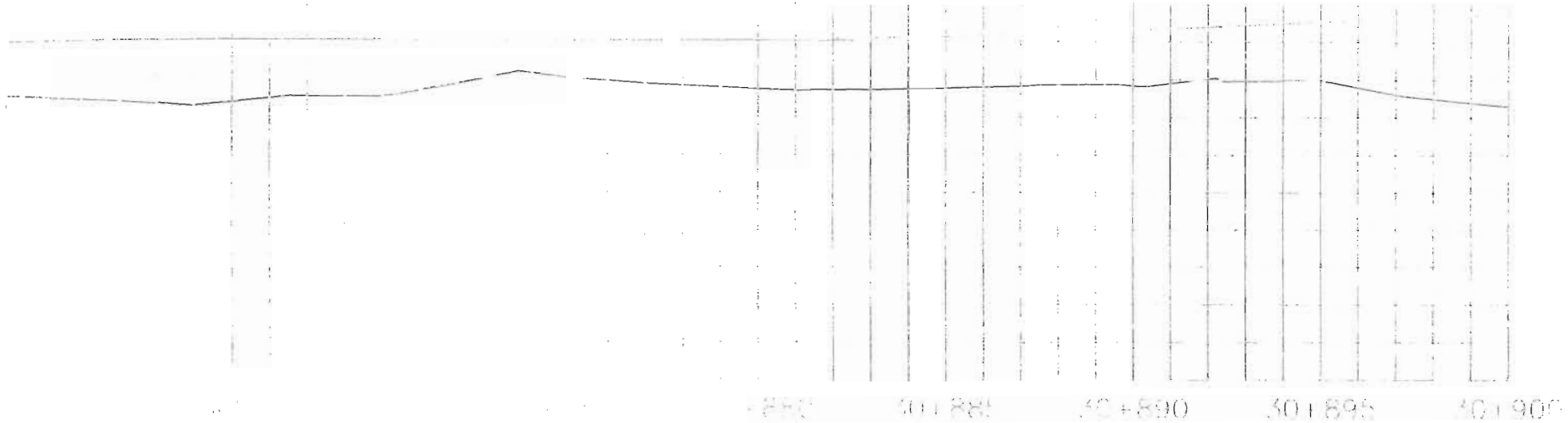


Aug 13/10

Date: 130810

Par: Alex Lalancette et Pascale Martel

12/12



Date: 130810

Par: Alex Lalancette et Pascale Martel

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 30+900 Offset	SHIFT: NIGHT : ☐ DAY : ☒	DATE :	SHEET 1 OF 1
To Sta. 30+915 Offset	LOCATION: : BAY-GOOSE DIKE - SOUTH PORTION		
EQUIPMENT:			
DESCRIPTION			

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings		—
2.	Storage areas planned for disposal of removed materials	MS	GB.
3.	Occurrence of snow and ice removal method in place	MS.	GB.
4.	Occurrence of boulders and removal method in place	MS.	GB.
5.	Occurrence of hummocks and scalping method in place	MS	GB.
6.	Occurrence of surface and ground water and its impact mitigation in place	MS	GB
7.	Presence of other unsuitable materials and removal method in place	MS	GB.
8.	Soil frozen or thawed and measures taken		—
9.	Blasting requirement to remove unsuitable material and safety measure checked	N/A MS	N/A GB.
10.	Adjustment made to suit design in field	—	—
11.	Final walkover inspection before re-sloping or fill placement	—	—
12.	"As-excavated" survey conducted	—	—
13.	Final sounding conducted of lake bottom surface	—	—

REMARKS : • GOLDER FIELD STAFF ONSITE DURING EXCAVATION (SEE ATTACHED)
• REVIEWED ADJACENT RECORDS FOR CONTINUITY.
• NO SURVEY / SOUNDINGS CARRIED OUT

~~DEVIATIONS : (Attach list if necessary)~~

X As no survey carried out additional attention will be taken during excavation work. X

DATE OF RECTIFICATION :

SURVEY VERIFICATION	ACCEPTED BY QA Manager :	ACCEPTED BY OWNER :
NAME: MAXIME GILBERT	NAME: GRANT BURN	NAME:
SIGNATURE :	SIGNATURE :	SIGNATURE :
DATE Aug 14, 2010	DATE Aug 14, 2010	DATE

Copy of original 1/2

Golder Associates

Project No. 09-1428-5007
Date July 25/10
Shift: Day ☒ Night ☐
Time Arrived on Site _____ (hrs)
Time Left Site _____ (hrs)
Time on Site _____
Travel Time _____
Total Time _____

ENGINEER'S / INSPECTOR'S DAILY REPORT

Project Name : MEADOWBANK: BAY GOOSE DIKE CONSTRUCTION cont'd
Weather : _____ Temperature Range : _____ °C
Contractor's Working Hours : _____

WORK CARRIED OUT : BAY GOOSE DIKE, SOUTH PORTION cont...

- 385 OPERATORS SANDING TRUCKS WITH CLEAN ROCKFILL TO STA. 31+640 AND DOZ WITH SOIL/FILL TO THE DUMP.

@ 10:45 am I DROVE DOWN TO SOUTH END OF CAUSEWAY TO PERFORM INSPECTION OF ROCKFILL ON CAUSEWAY.
- NOTICED A FEW OVERSIZED ROCKS NEAR SURFACE OF FILL AND REMINDED DG OPERATOR THAT THOSE SHOULD BE REMOVED FROM MATERIAL PRIOR TO PLACEMENT (MENTIONED TO QA MANAGER LATER IN THE DAY)
- NOTED BOLT PLACEMENT IN WATER ON DOWNSTREAM SIDE ALMOST COMPLETE (GOLDTECH AND ADH SURVEYOR) → BOLTS USED TO 'STAKE' DESIGN WIDTH OF THE PLATFORM

2 11:15 am QA MANAGER (YVES) ARRIVED ON SITE. MENTIONED:
- BEDROCK ABOVE WATER LEVEL ADDED. PROFILE MATCHES LESS WHEN ABOVE WATER LEVEL.
- DISCUSSED TRIMMING (ROCK BLANKET) INTERFACE WITH PATRICE. TOLD IT WAS IN STOP SEATING ATTACHED TO ANOTHER EXCAVATOR.
- MENTIONED ALSO THAT IF FIELD STAFF FEELS TRIMMING REQUIRED, QA MANAGER MUST BE CONSULTED.

1pm FIELD STAFF 'GOOSEMAN' GIVEN TOPO OF DOZ OPERATIONS IN TRENCH BETWEEN 31+000 NORTH TO 30+900
→ OPERATOR NOTICED BEDROCK FRIABLE BETWEEN STATIONS 30+970 AND 30+935 SO EXCAVATION BELOW WATER LEVEL FOR MAJORITY OF WIDTH

2pm FIELD STAFF 'GOOSEMAN' GIVEN FOR ST 31+000, SOUTH TO 31+020

Distribution	Initials

Engineer / Inspector: REGINA ROBERTS

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 30+915 Offset	SHIFT: NIGHT ☐ DAY ☒	DATE July 27, 2010	SHEET 1 OF 1
To Sta. 31+025 Offset	LOCATION: Bay Goose dike - South portion Platform trench excavation		
EQUIPMENT: 385			
DESCRIPTION A# Rockfill Platform trench excavation to bedrock			

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	ok	ok
2.	Storage areas planned for disposal of removed materials	ok	ok
3.	Occurrence of snow and ice removal method in place	ok	ok
4.	Occurrence of boulders and removal method in place	ok	ok
5.	Occurrence of hummocks and scalping method in place	ok	ok
6.	Occurrence of surface and ground water and its impact miligation in place	ok	ok
7.	Presence of other unsuitable materials and removal method in place	ok	ok
8.	Soil frozen or thawed and measures taken	ok	ok
9.	Blasting requirement to remove unsuitable material and safety measure checked	N/A	N/A
10.	Adjustment made to suit design in field	ok	ok
11.	Final walkover inspection before re-sloping or fill placement	ok	ok
12.	"As-excavated" survey conducted	ok	ok
13.	Final sounding conducted of lake bottom surface	ok	ok

REMARKS :
Core backfill could be placed from 30+915 to 31+015.

DEVIATIONS : (Attach list if necessary)

DATE OF RECTIFICATION :

SURVEY VERIFICATION	ACCEPTED BY QA Manager	ACCEPTED BY OWNER
NAME: GUY MORISSETTE	NAME: Yves Boulianne	NAME
SIGNATURE :	SIGNATURE :	SIGNATURE
DATE 27 JUILLET 2010	DATE July 27, 2010	DATE

Copy of original. YB

1909

FGL

FERNAND GILBERT Ltée
[illegible] Talbot [illegible]
[illegible] (Québec) [illegible]
Tél. (418) 849 [illegible]

ENVOYEZ À

DE GUY MORISSETTE ing.

M. Yves Boulianne ing
GOLDER

Bay [illegible]
27 [illegible] De [illegible]
[illegible] pour
Acceptation

MESSAGE

PACKAGE POUR ACCEPTATION DES FORMATIONS
DE 30+915 À 31+030

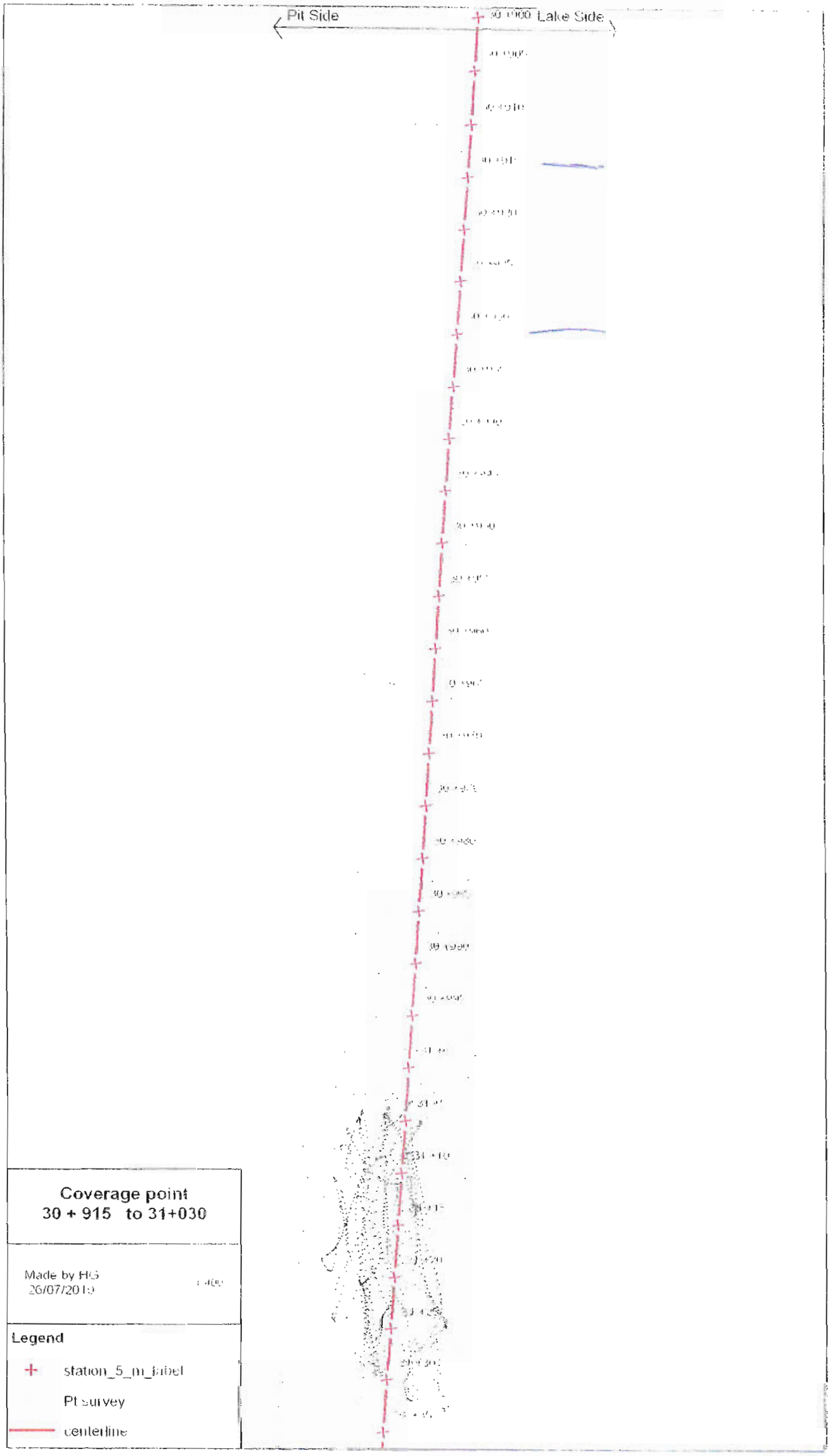
2025/11/13
11:15
July 27/10

Guy Morissette
[illegible]

REMIS À

BLANCHE: CLIENT / JAUNE: COMPTABILITÉ ROSE: [illegible]

1 de 31

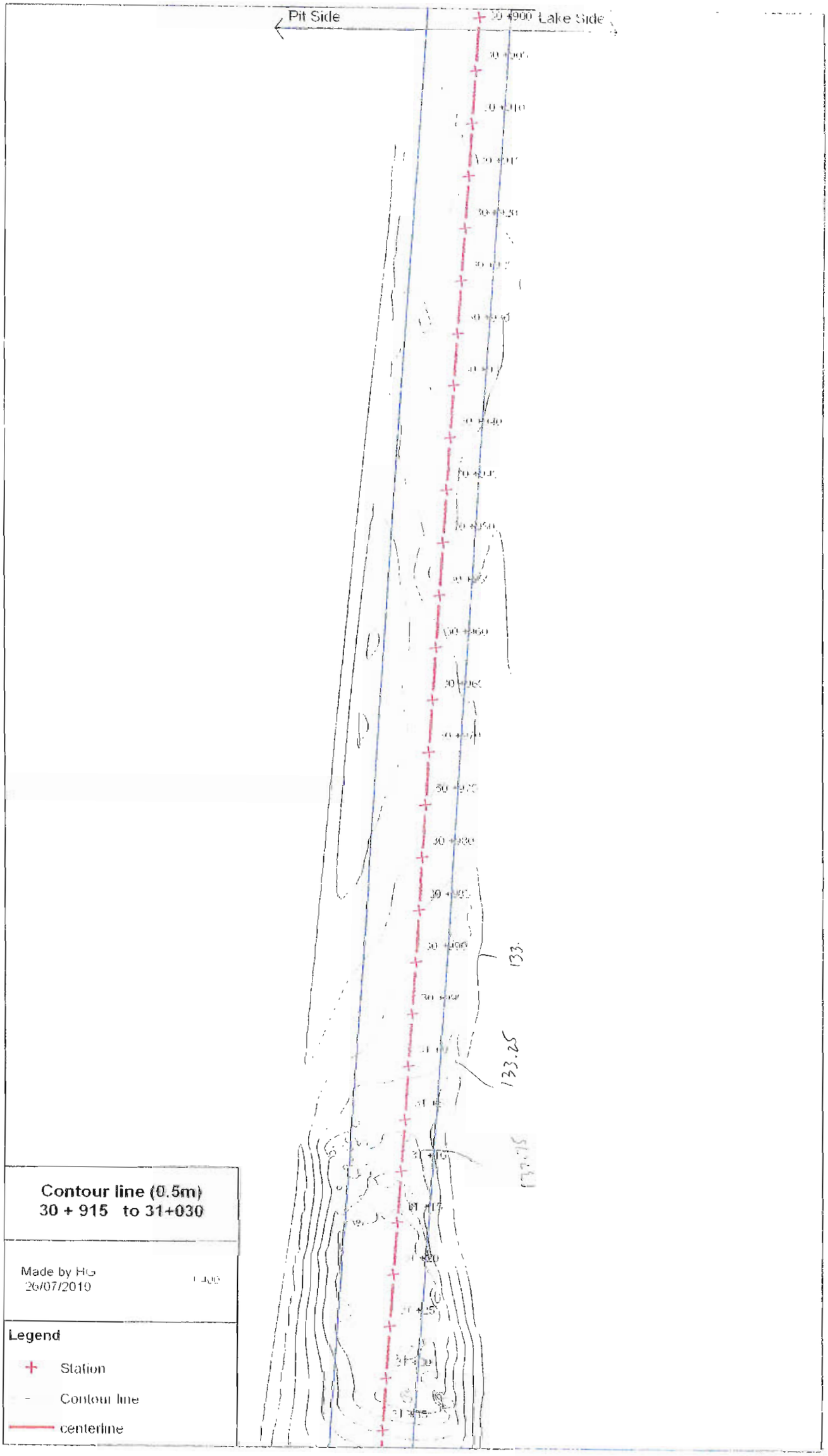


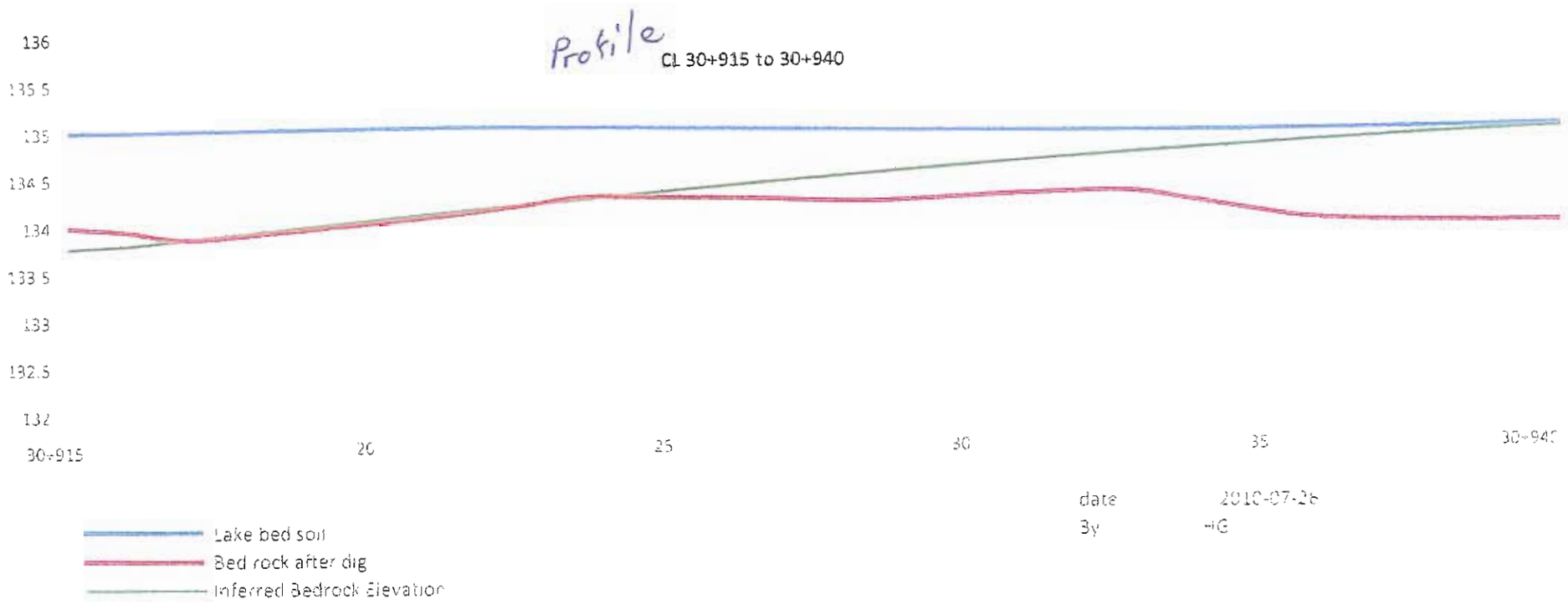
Coverage point
30 + 915 to 31+030

Made by HG
26/07/2015

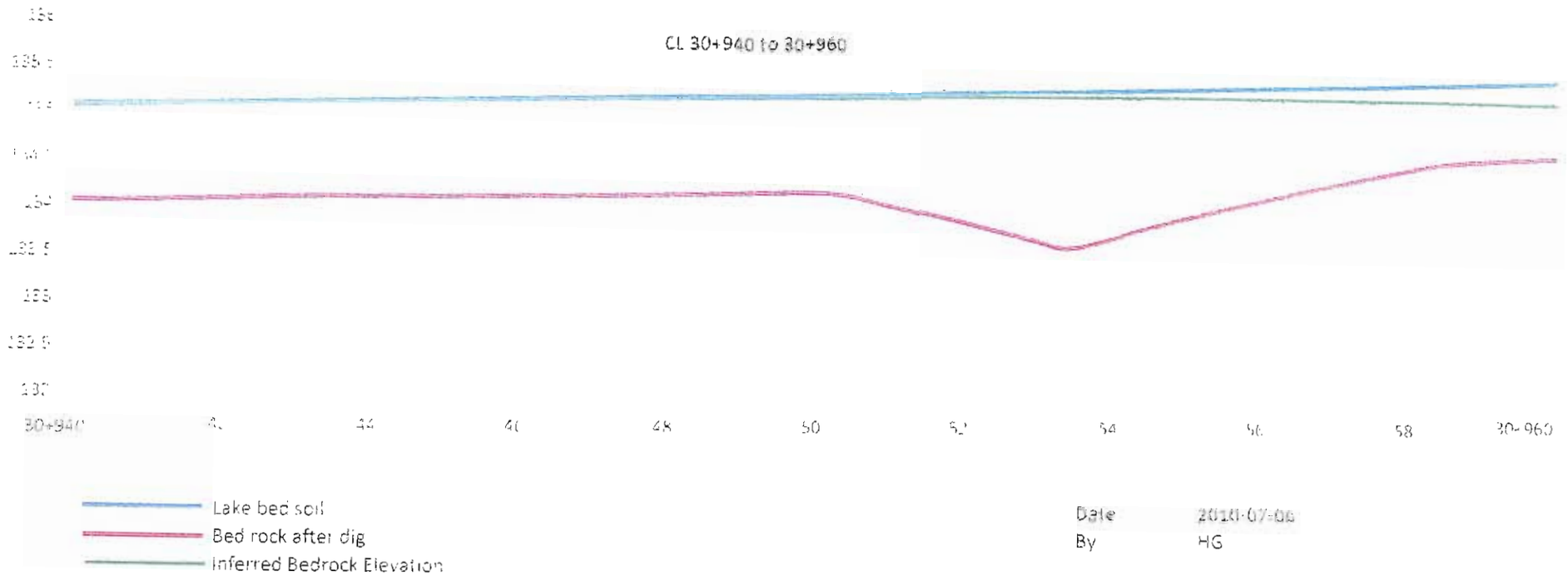
Legend

- station_5_m_label
- Pt survey
- centerline

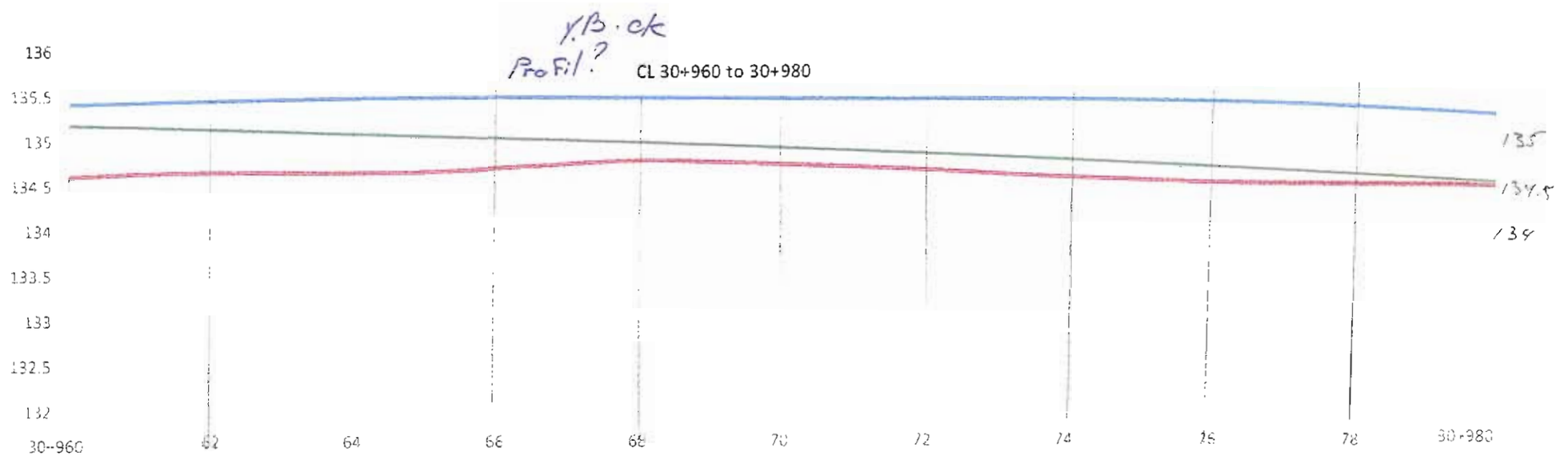

Pit Side
Lake Side
133.
133.25
Contour line (0.5m)
30 + 915 to 31+030
Made by HG
26/07/2019
Legend
Station
Contour line
centerline


Profile
CL 30+915 to 30+940
136
135.5
135
134.5
134
133.5
133
132.5
132
30+915
20
25
30
35
30+940
date 2010-07-26
By HG
Lake bed soil
Bed rock after dig
Inferred Bedrock Elevation

Page 31

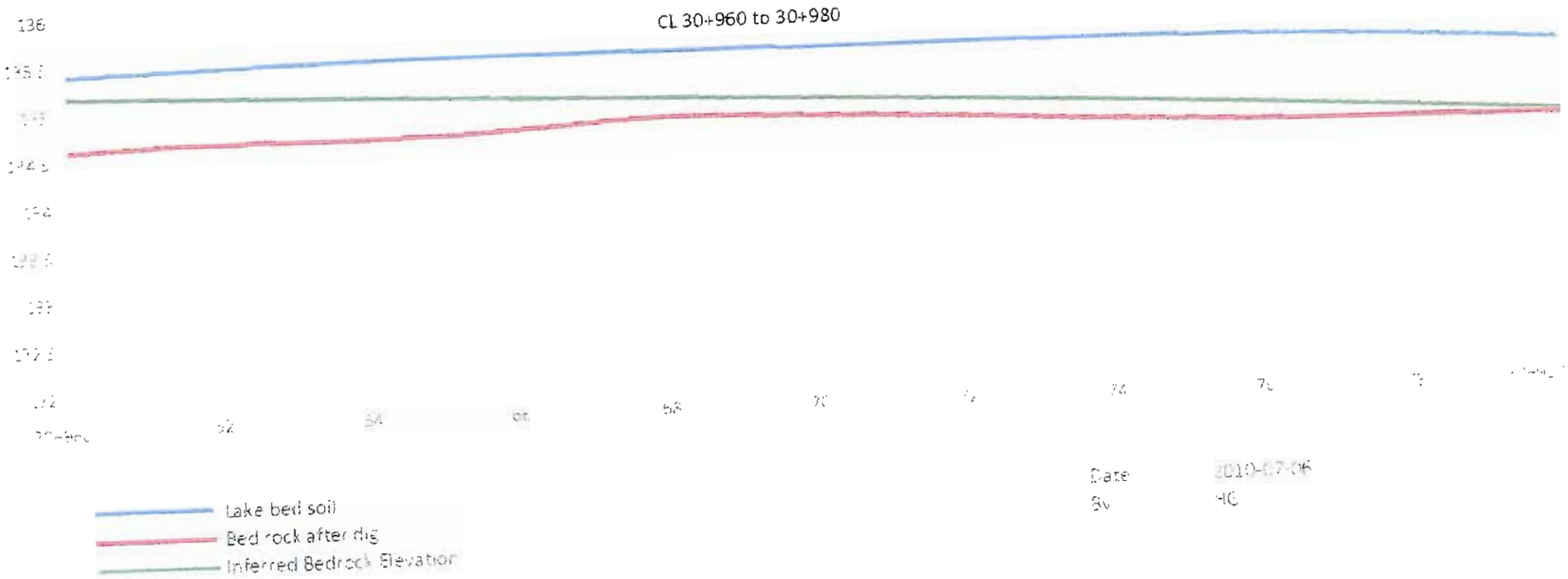

CL 30+940 to 30+960
30+940
44
46
48
50
52
54
56
58
30+960
Lake bed soil
Bed rock after dig
Inferred Bedrock Elevation
Date 2020-07-06
By HG

Y.B. ck
Profil?



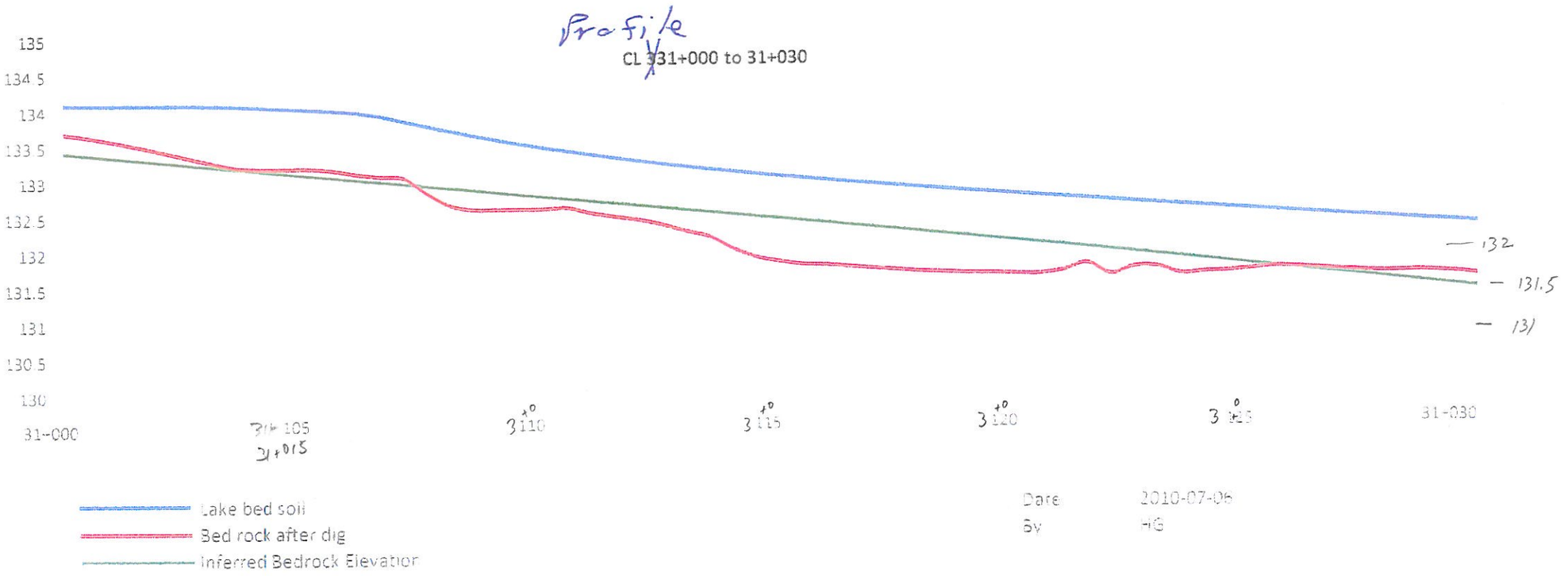
is fog

Y.B. ok Profile?

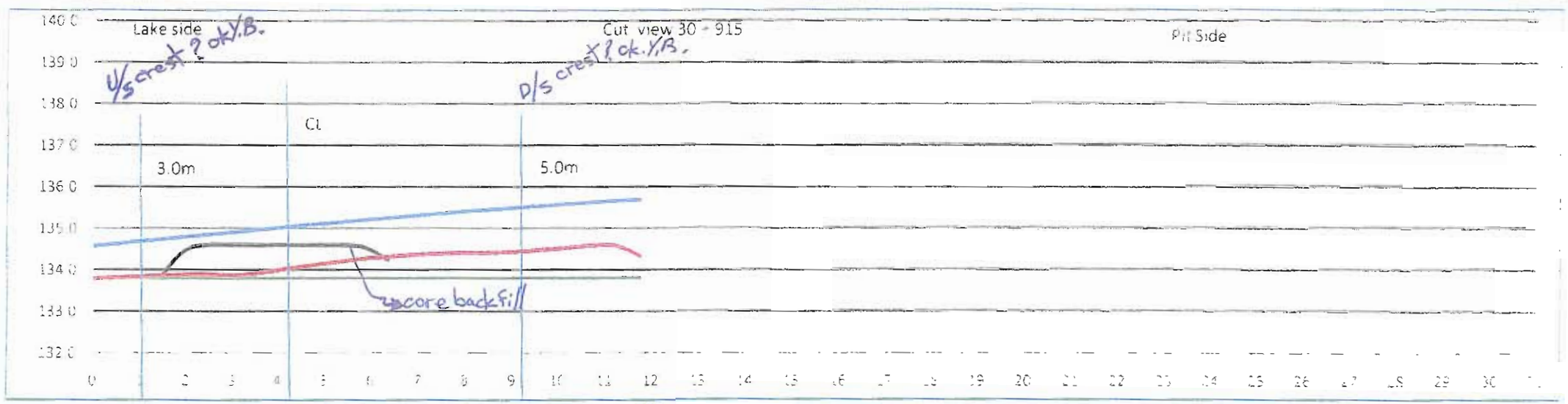


7 of 31

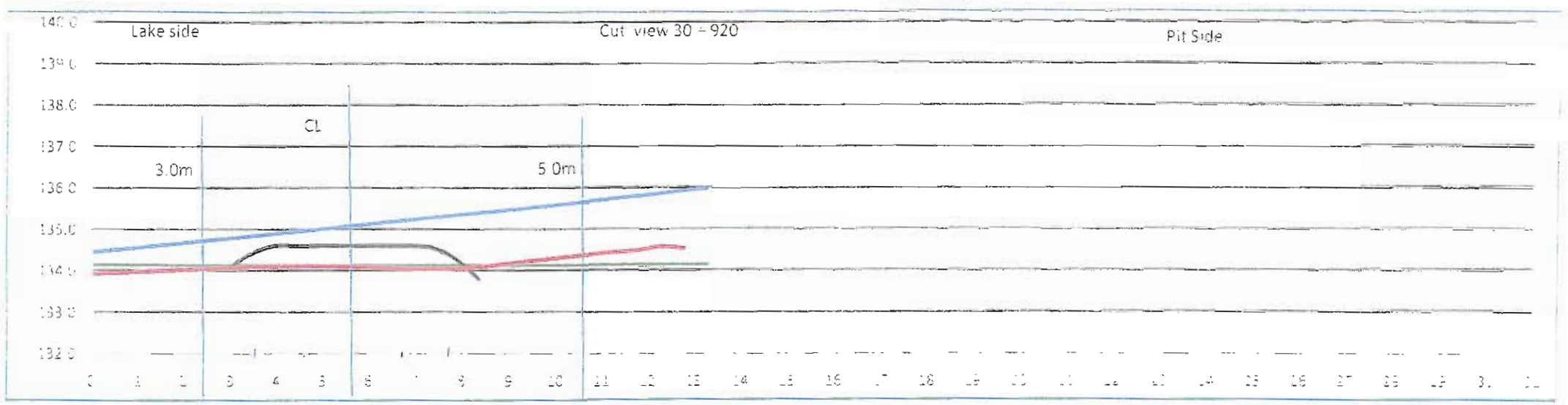
Profile view from the ℄? Y.B ok



8 of 12

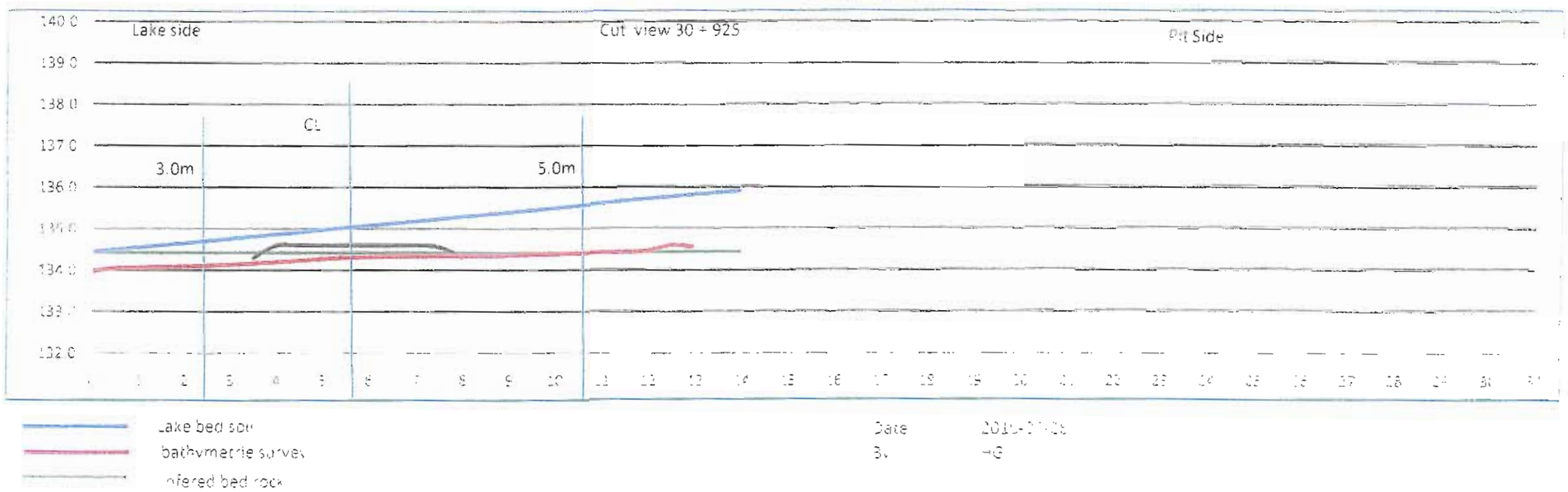


Approved
Y.B. July 27, 2010



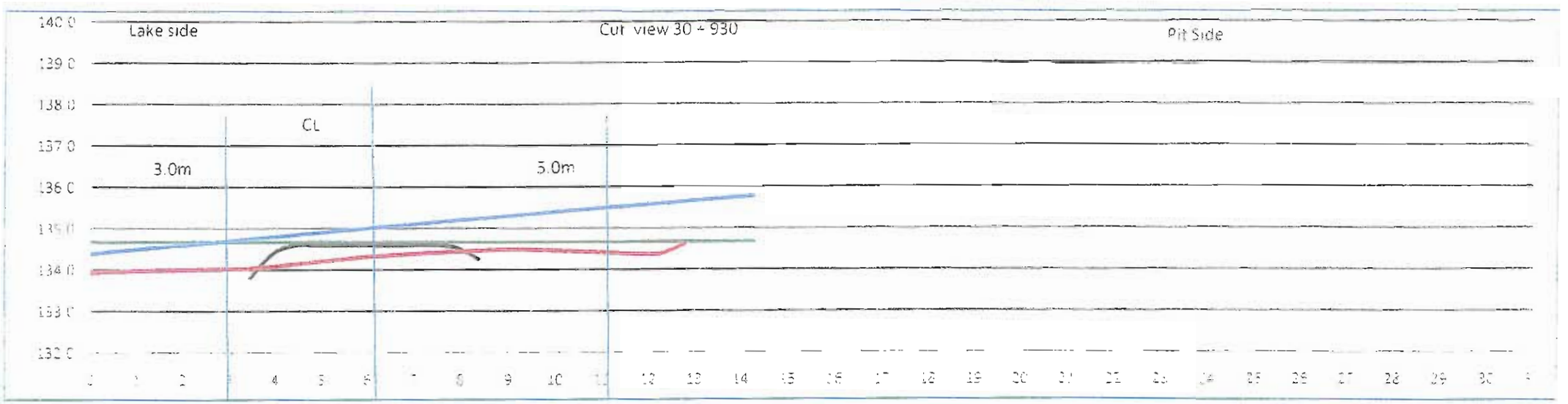
Approved by: K.S. July 27/2010

ie. pa 01

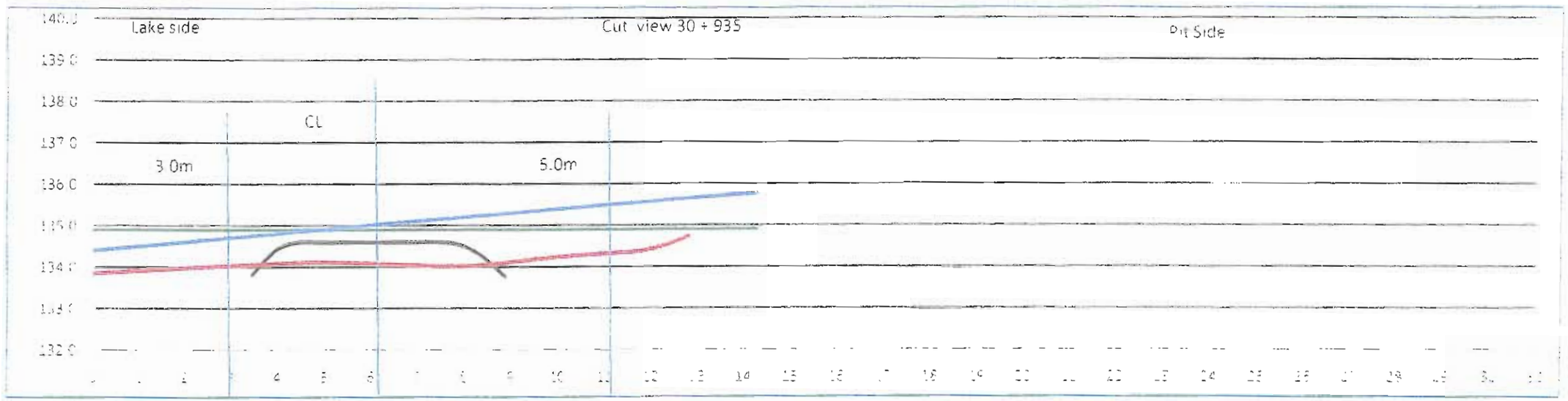


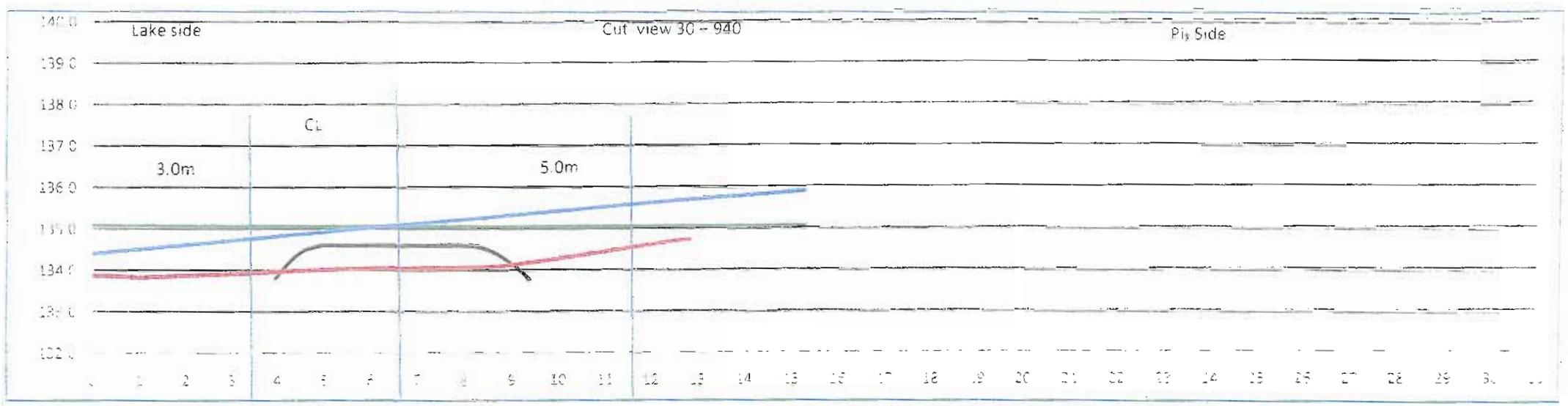
Approved by I.B. July 27, 2010

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Approved by Y.B. July 27/2010


Lake side
Cut view 30 + 935
Pit Side
CL
3.0m
5.0m
Lake bed soil
bathymetric survey
Date
Approved by Y.B. July 27, 2010



Lake bed soil

Bathymetric survey

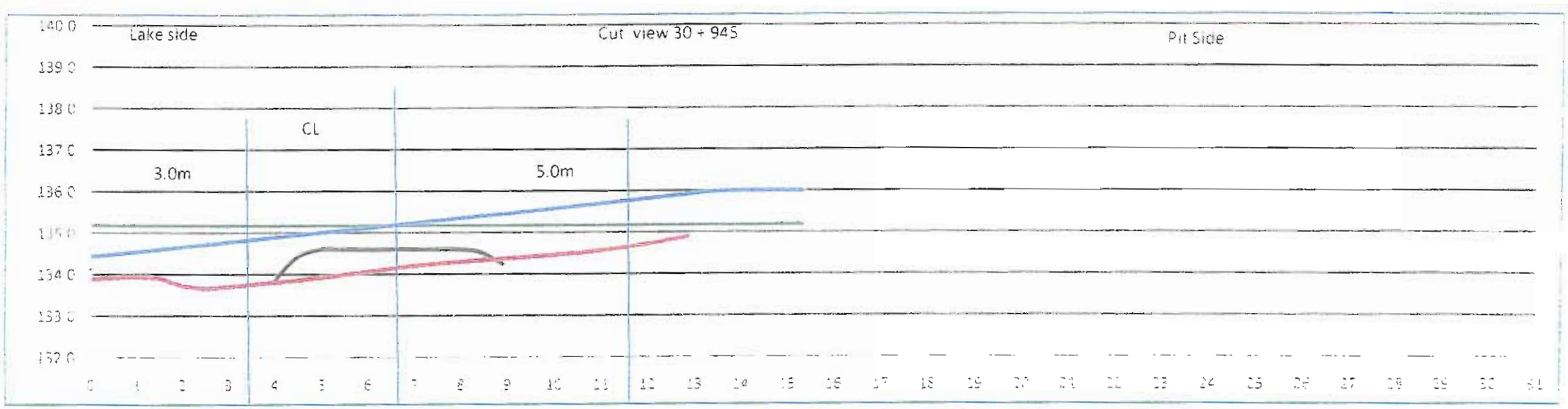
Inferred bedrock

Date 2010-07-29

By HB

Approved by V.B. July 27, 2010

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Lake bed soil

Bathymetric survey

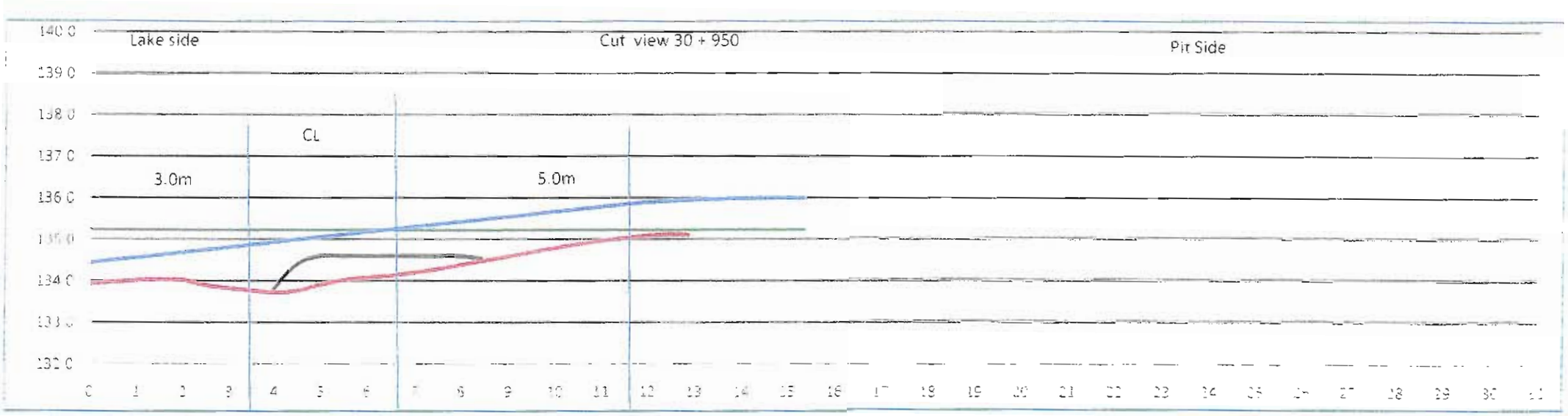
Inferred bed rock

Date 2010-07-26

By HG

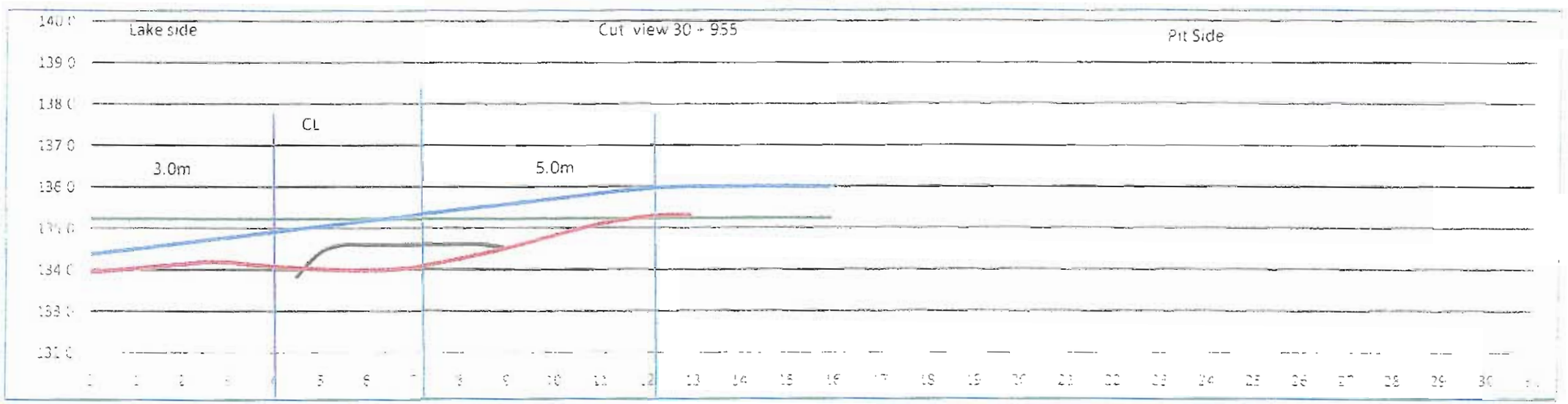
Approved by KB. July 27, 2010

13 of 91

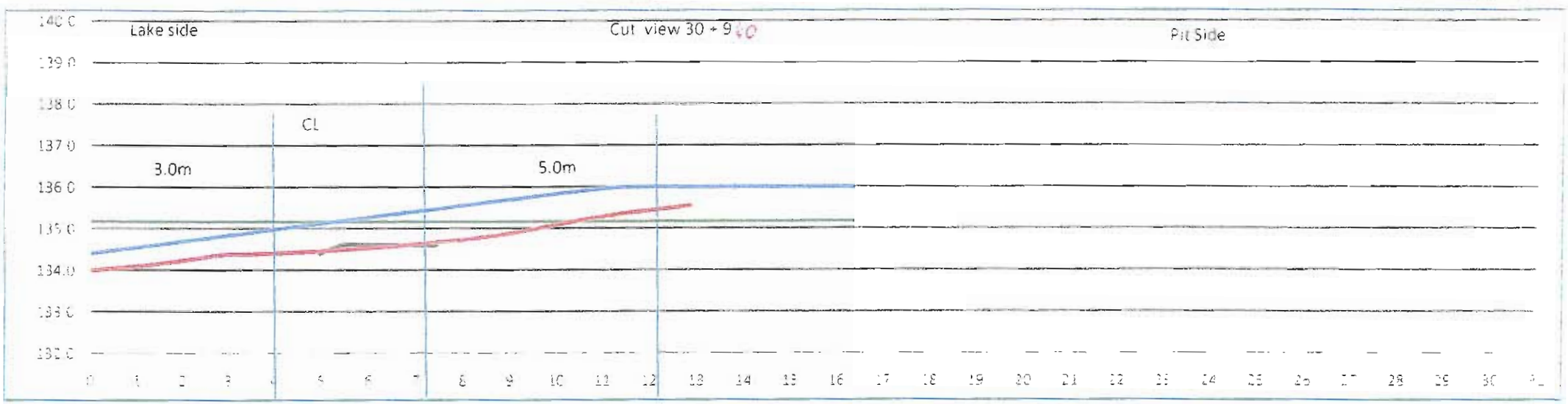


Date 2010-07-26
By HG

Approved by Y.B. July 27, 2010

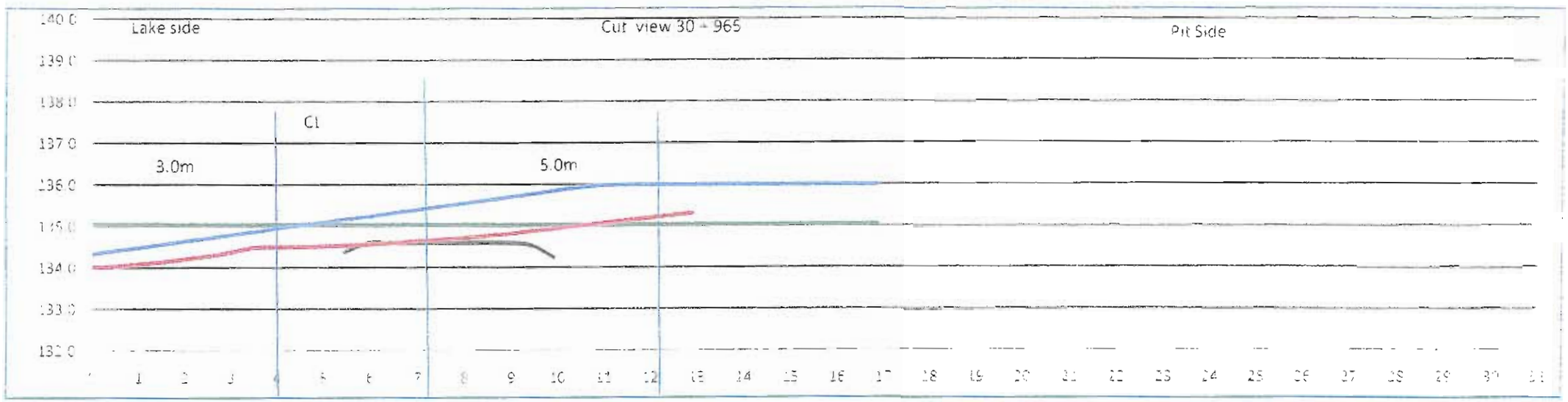


Approved by K.B. July 27, 2010



Approved by Y.B. July 27, 2010

Ic fa 81



Lake bed soil

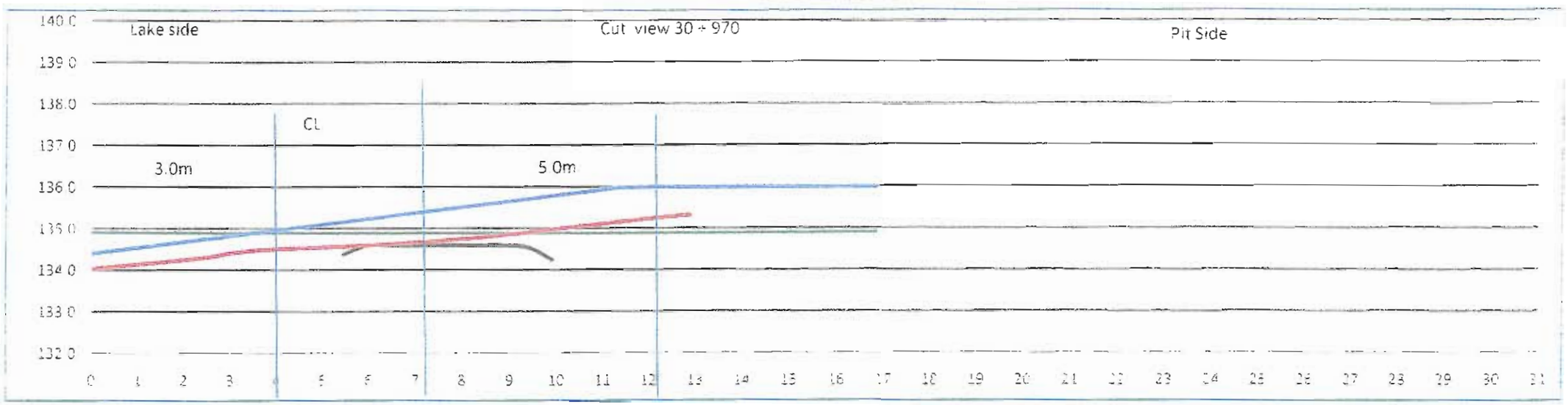
bathymetric survey

Inferred bed rock

Date 2010-07-26

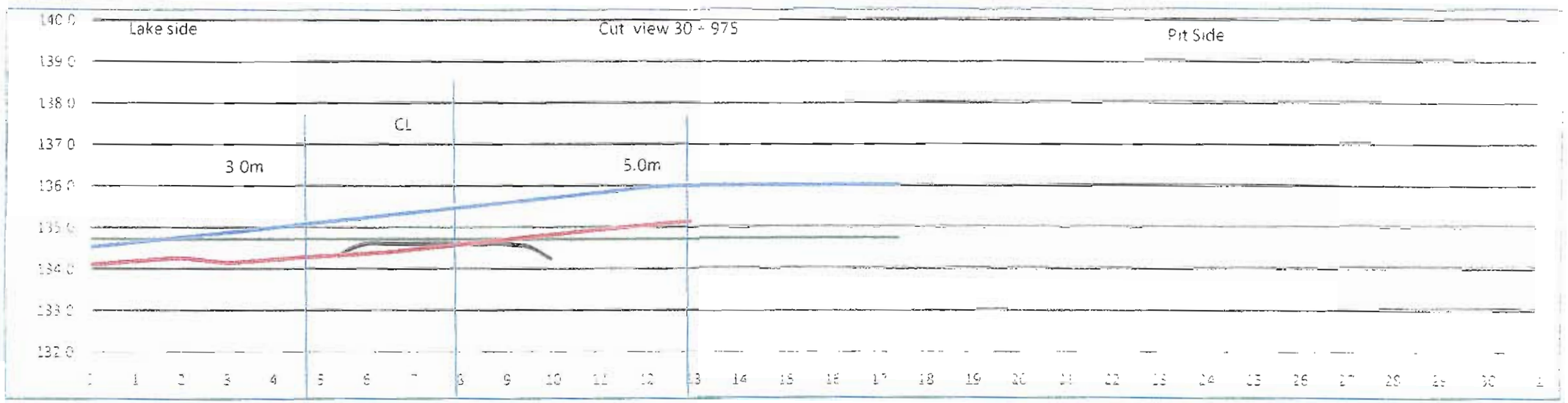
By HG

Approved by Y.B. July 2010



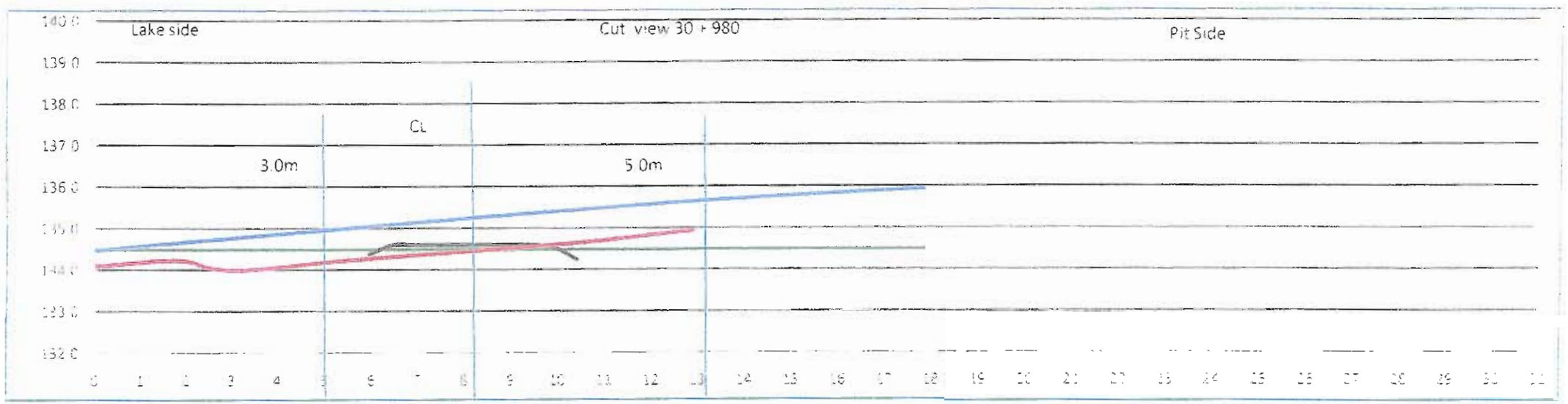
Date 2010-07-26
By HG

Approved by Y.B. July 27, 2010



Date 2010-07-26
By HG

Approved by Y.B. July 27, 2010



Lake bed soil

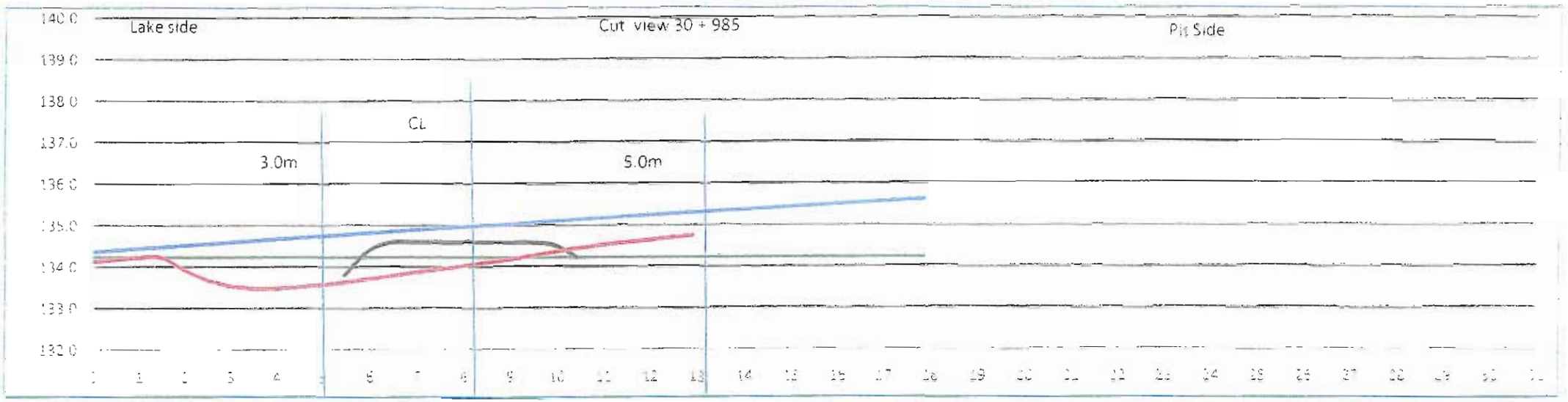
bathymetric survey

altered bed rock

Date 2010-07-26

By HG

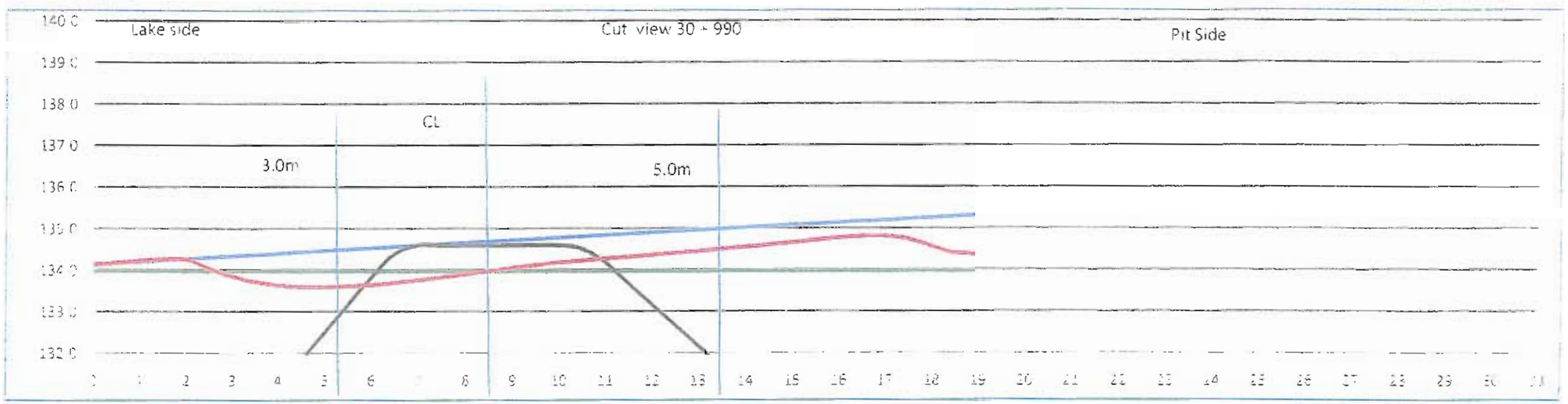
Approved by Y.B. July 27, 2010



Date 2010-07-26

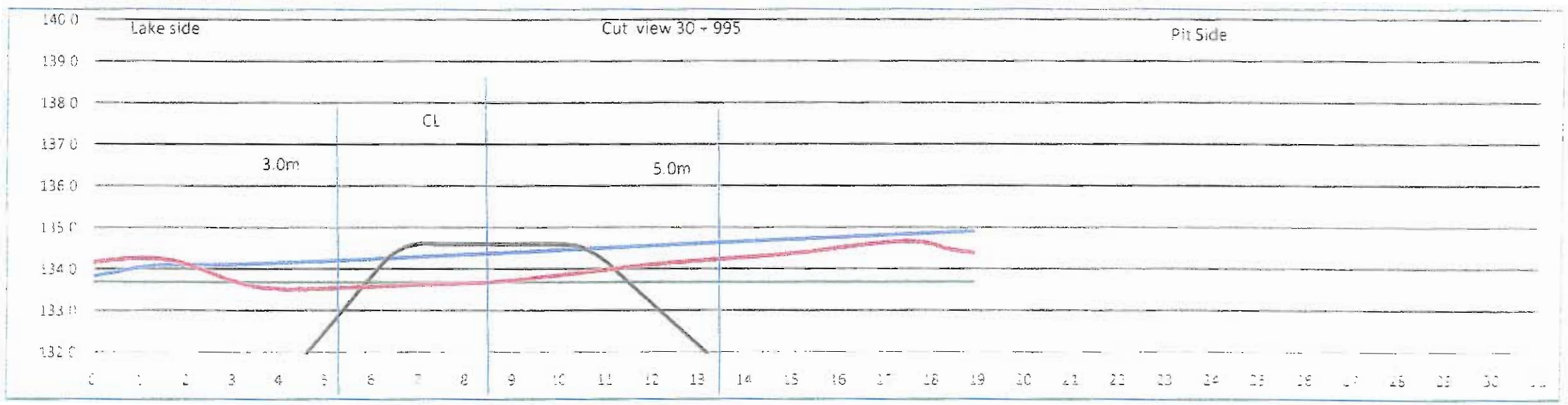
By HG

Approved by Y.B. July 27, 2010



Date 2010-07-26
By [illegible]

Approved by Y.B. July 27, 2010

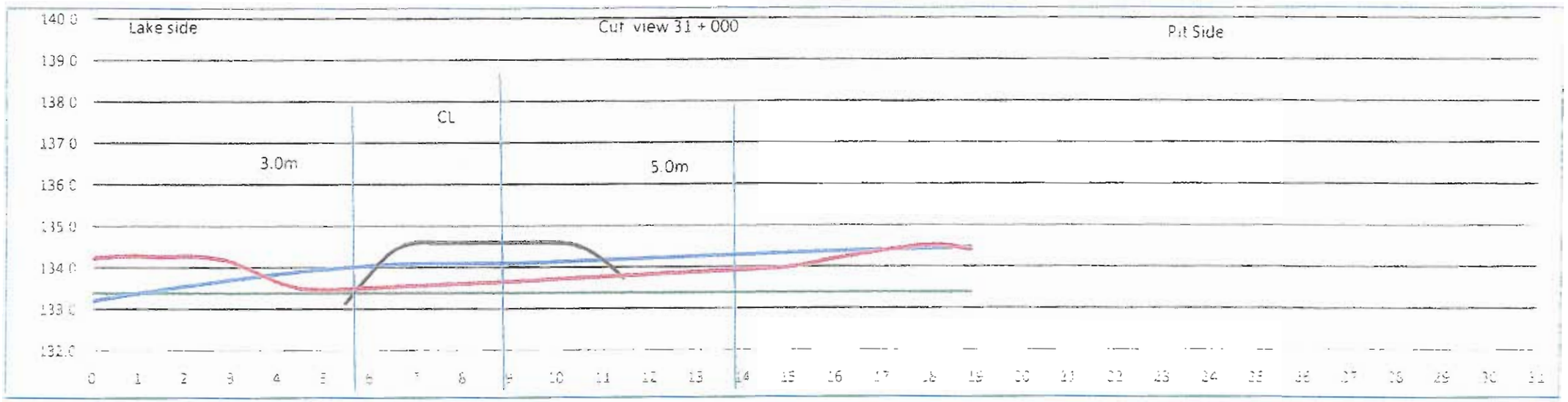


Date 2010-07-26

By HG

Approved by V.B. July 27, 2010

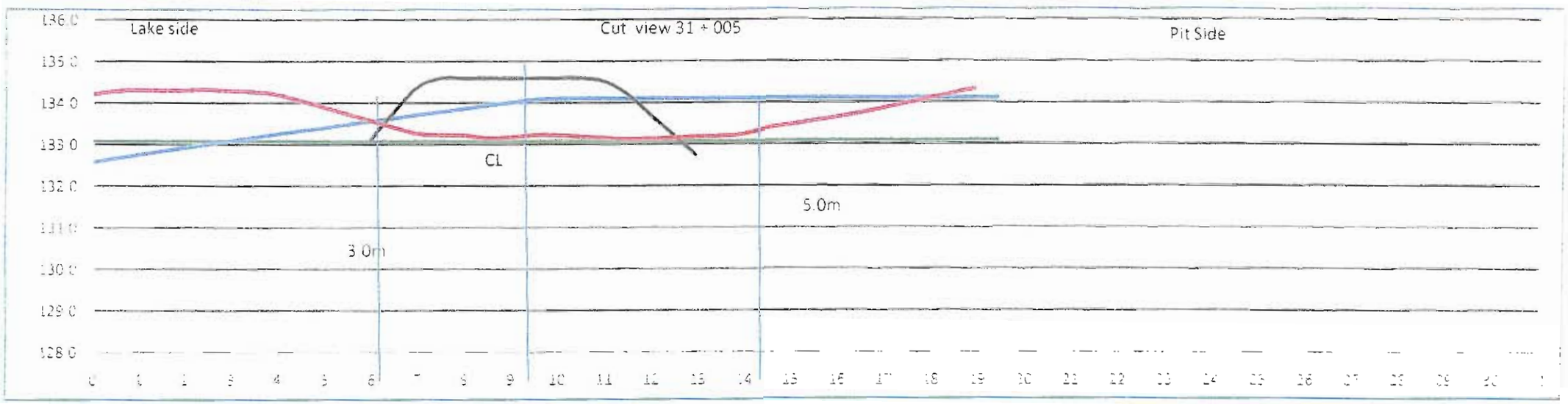
25 of 31



Lake bed soil
bathymetric survey
altered bed rock

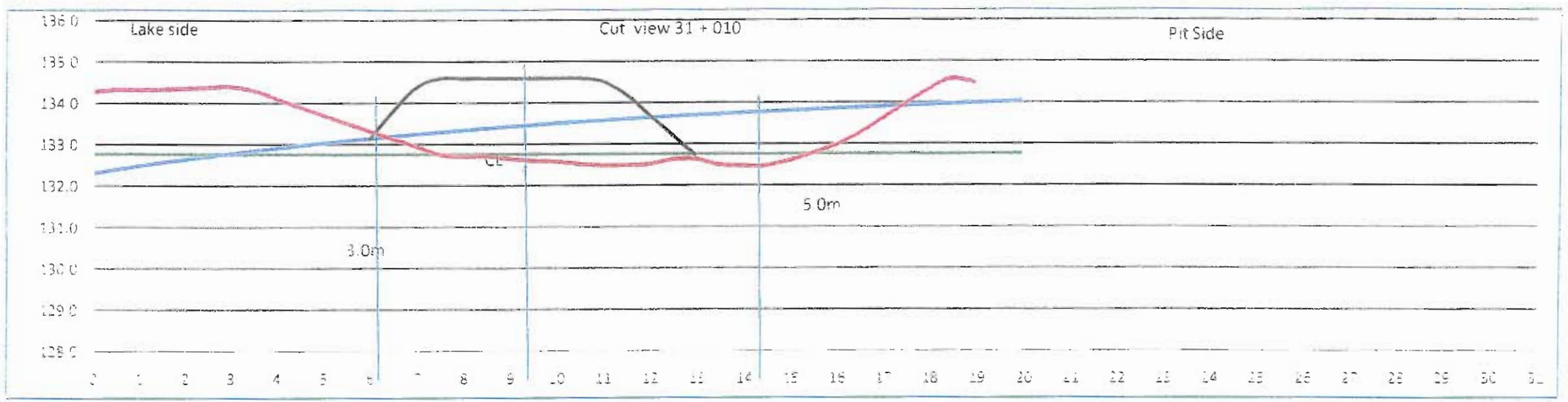
Date 2010-07-26
By -G

Approved by V.B. July 27, 2010

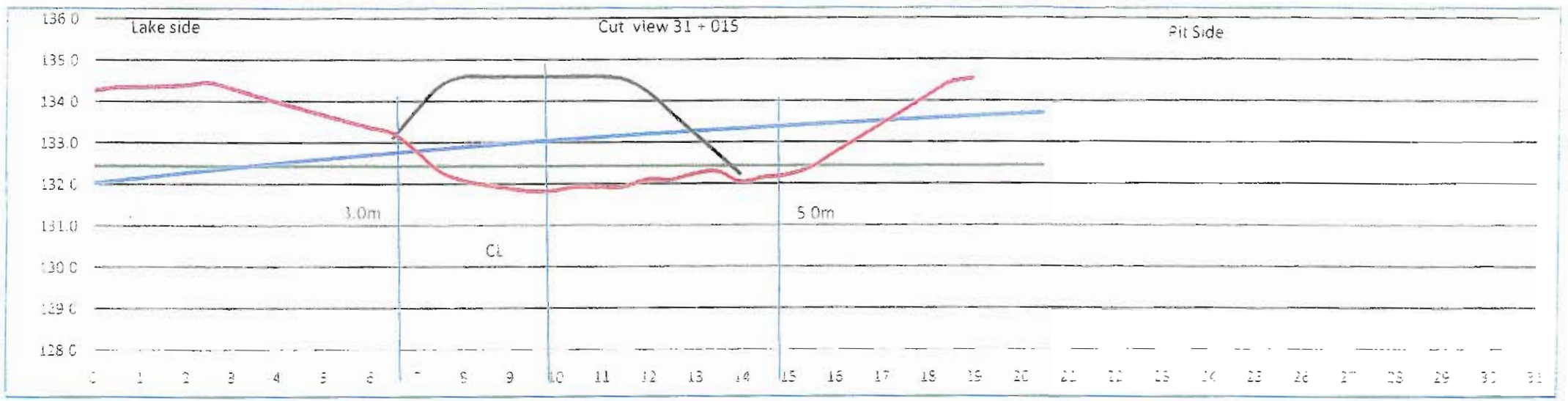


Approved by: B. July 27, 2010

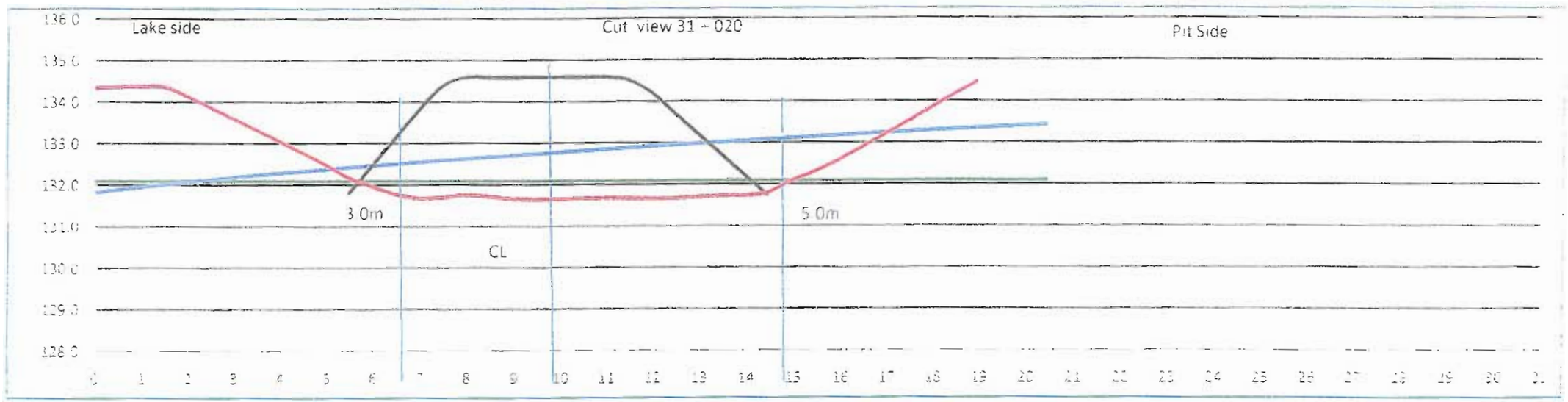
27 of 31



approved by V.B. July 27, 2010

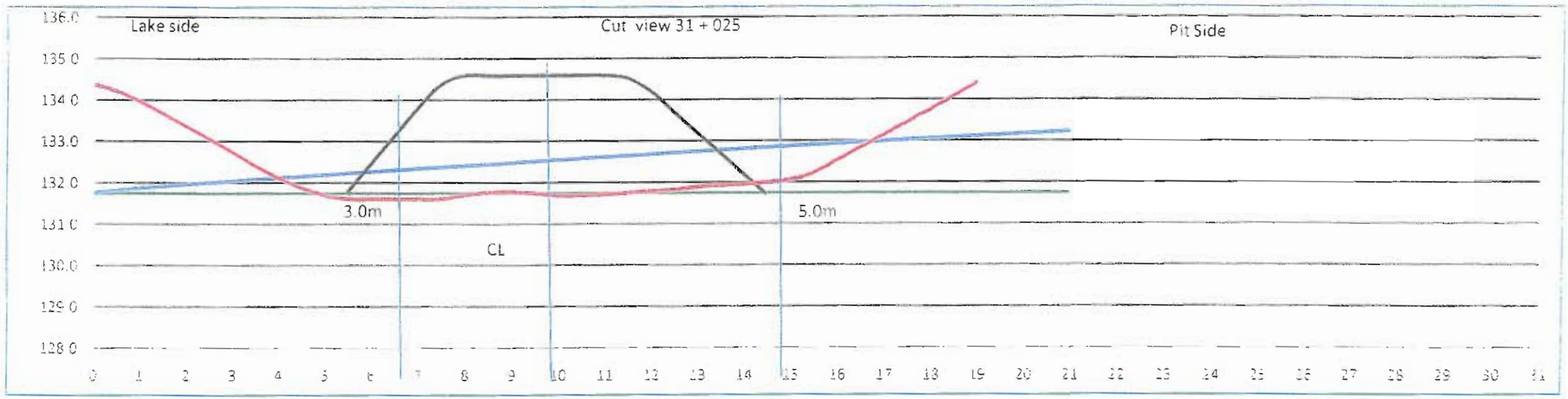


approved by TB Nov 27, 2010



Approved by KB July 27, 2010

30/31



Approved by I.B. July 27, 2010

31/31

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 31+030 Offset	SHIFT: NIGHT: ☐ DAY: ☒	DATE: July 28, 2010	SHEET 1 OF 20
To Sta. 31+105 Offset	LOCATION:: Bay Goose Dike South Portion		
EQUIPMENT:			

DESCRIPTION

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	GM	Y.B.
2.	Storage areas planned for disposal of removed materials	GM	Y.B.
3.	Occurrence of snow and ice removal method in place	GM	Y.B.
4.	Occurrence of boulders and removal method in place	GM	Y.B.
5.	Occurrence of hummocks and scalping method in place	GM	Y.B.
6.	Occurrence of surface and ground water and its impact mitigation in place	GM	Y.B.
7.	Presence of other unsuitable materials and removal method in place	GM	Y.B.
8.	Soil frozen or thawed and measures taken	GM	Y.B.
9.	Blasting requirement to remove unsuitable material and safety measure checked	N/A GM	N/A Y.B.
10.	Adjustment made to suit design in field	GM	Y.B.
11.	Final walkover inspection before re-sloping or fill placement	GM	Y.B.
12.	"As-excavated" survey conducted	GM	Y.B.
13.	Final sounding conducted of lake bottom surface	GM	Y.B.

REMARKS :
Filter to be placed from 30+043 to 30+067 at elev. 130.6m, which is about 3.1m below actual water level (133.7m).

DEVIATIONS : (Attach list if necessary)

DATE OF RECTIFICATION :

SURVEY VERIFICATION	ACCEPTED BY QA Manager :	ACCEPTED BY OWNER :
NAME: GUY MORISSETTE	NAME: Yves Boulianne	NAME:
SIGNATURE : Guy Morissette	SIGNATURE :	SIGNATURE :
DATE 29 July 2010	DATE July 29, 2010	DATE

Copy of original Y.B.

1/20 21

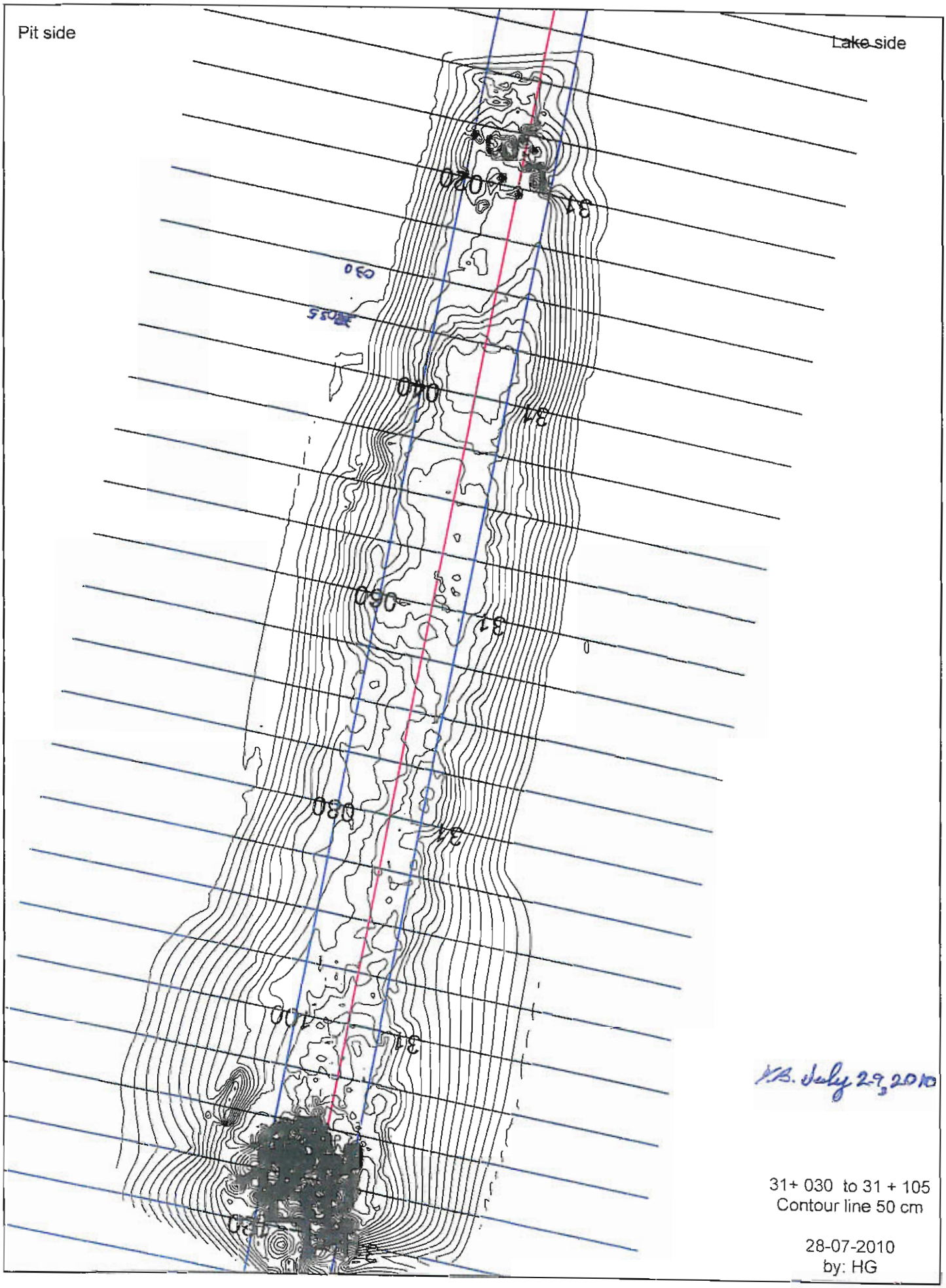


K.B. July 29, 2010

31+ 030 to 31 + 105
Coverage point

28-07-2010
by: HG

2/21

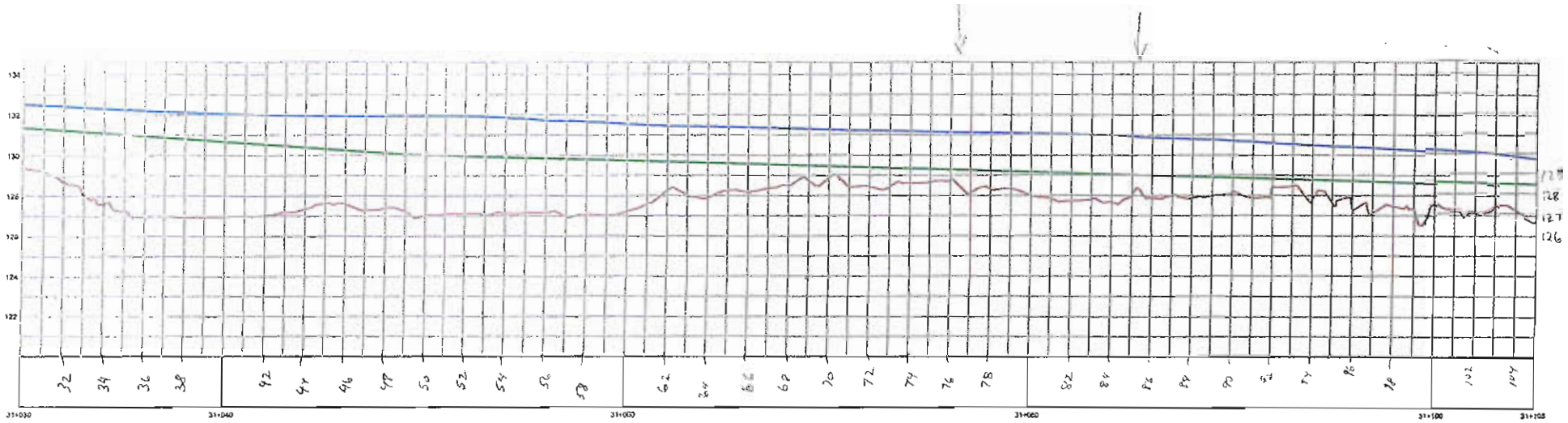


K.B. July 29, 2010

31+ 030 to 31 + 105
Contour line 50 cm

28-07-2010
by: HG

3/21



& elev. extrapolate by TIN method.
Note considered valuable for this use. Y.B.

Lake bed surface

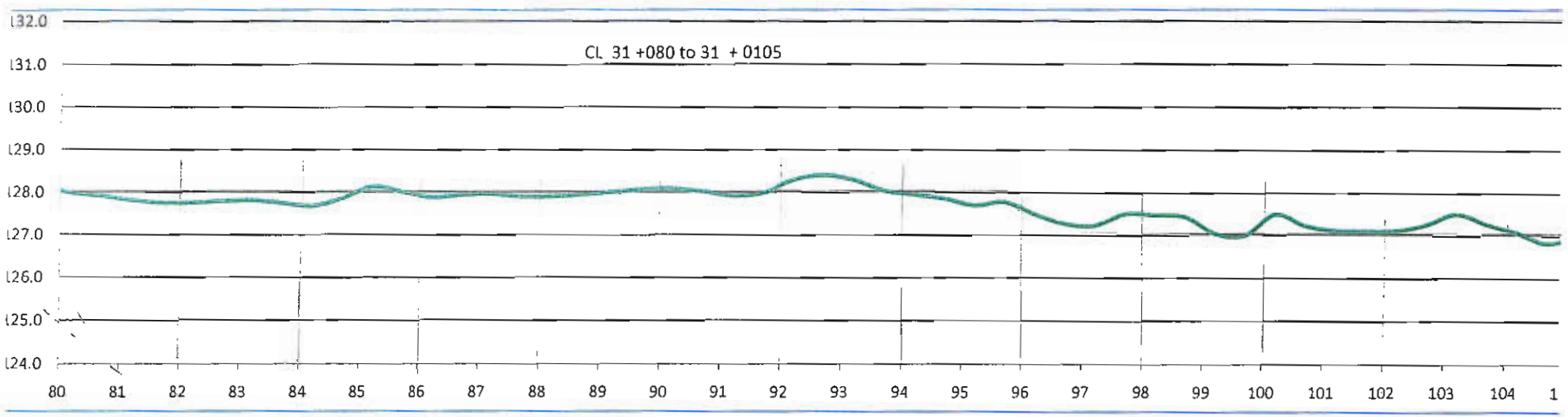
Dike

Target surface

Date: 27juillet 2010

Par: Alex Lalancette

Y.B. July 29, 2010
1/121



Date: 28 july, 2010

par: Alex Lalancette

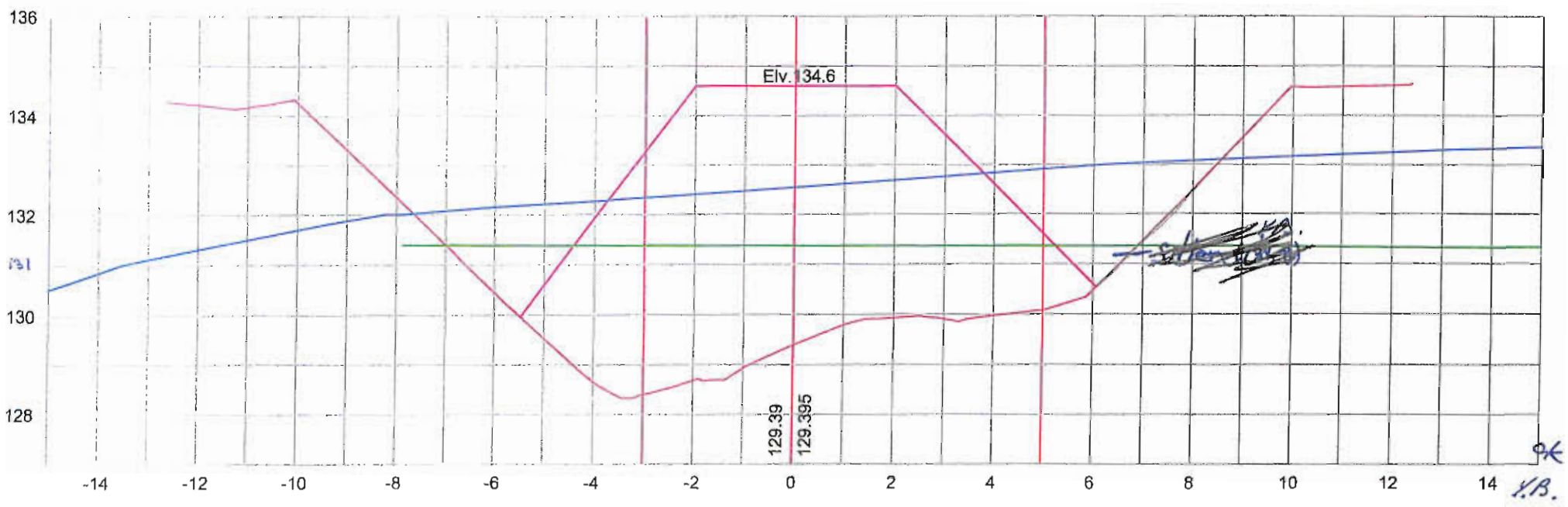
& elev. extrapolate by the natural neighbor

Y.B.

Lake Side

Pit Side

31+030



Lake bed surface

Dike

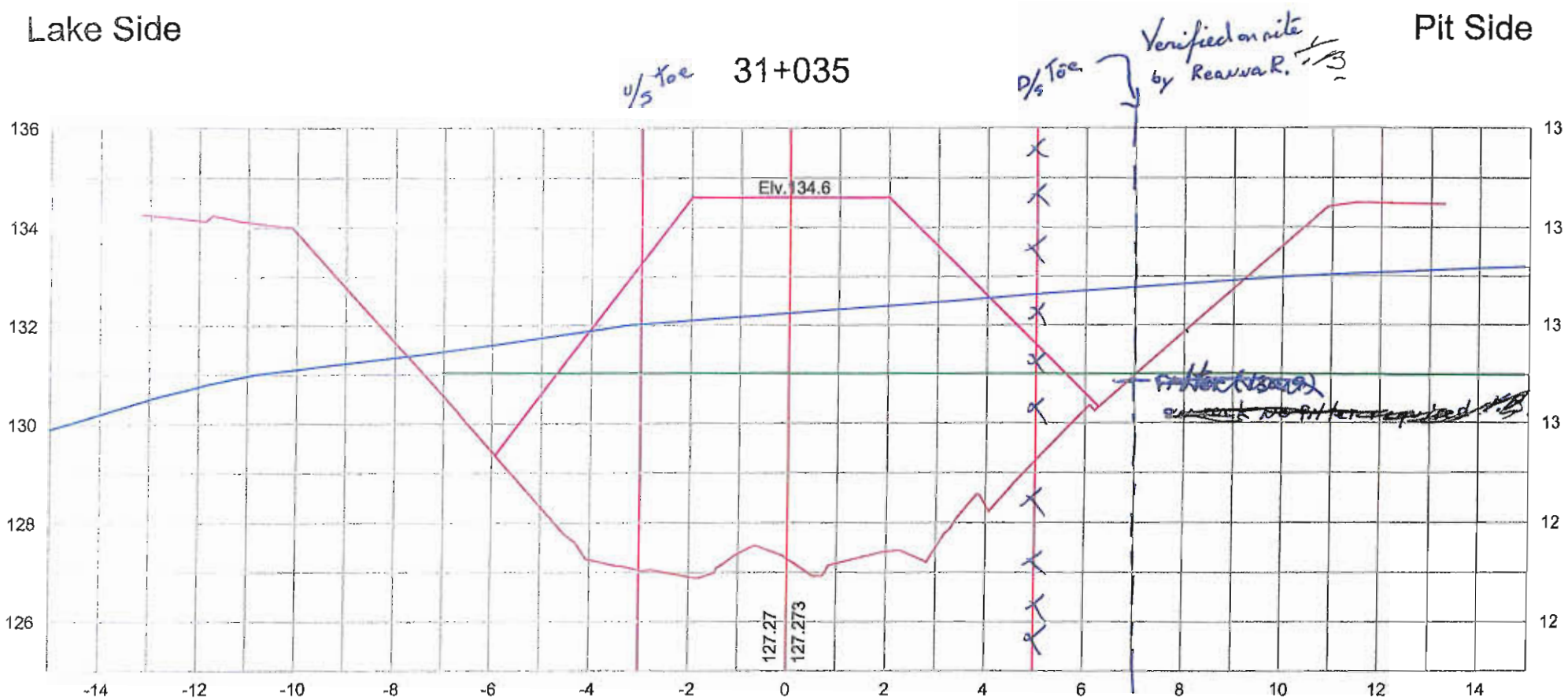
Target surface

Date: 28 juillet 2010

Par: Alex Lalancette

Lake Side

Pit Side



Lake bed surface

Dike

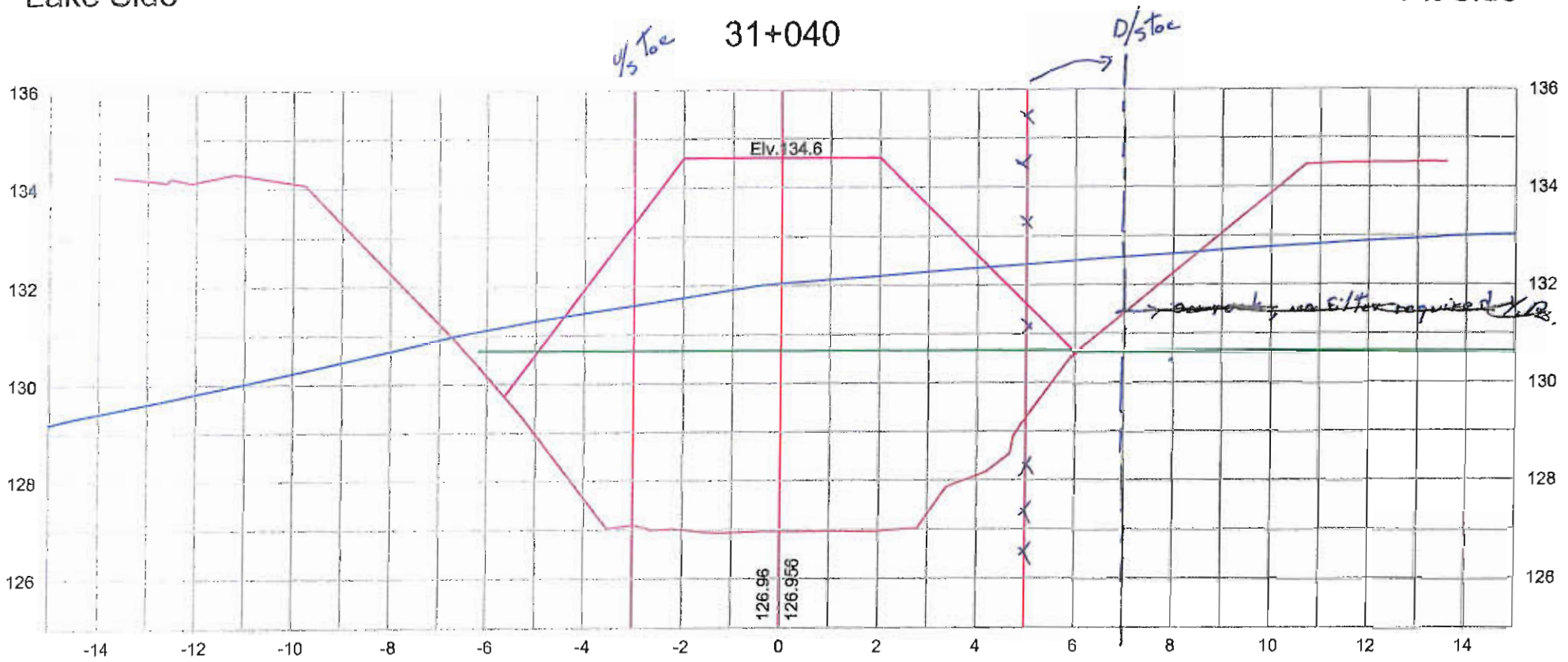
Target surface

Date: 28 juillet 2010

Par: Alex Lalancette

Lake Side

Pit Side



Lake bed surface

Dike

Target surface

Date: 28 juillet 2010

Par: Alex Lalancette

Lake Side

Pit Side



Lake bed surface

Dike

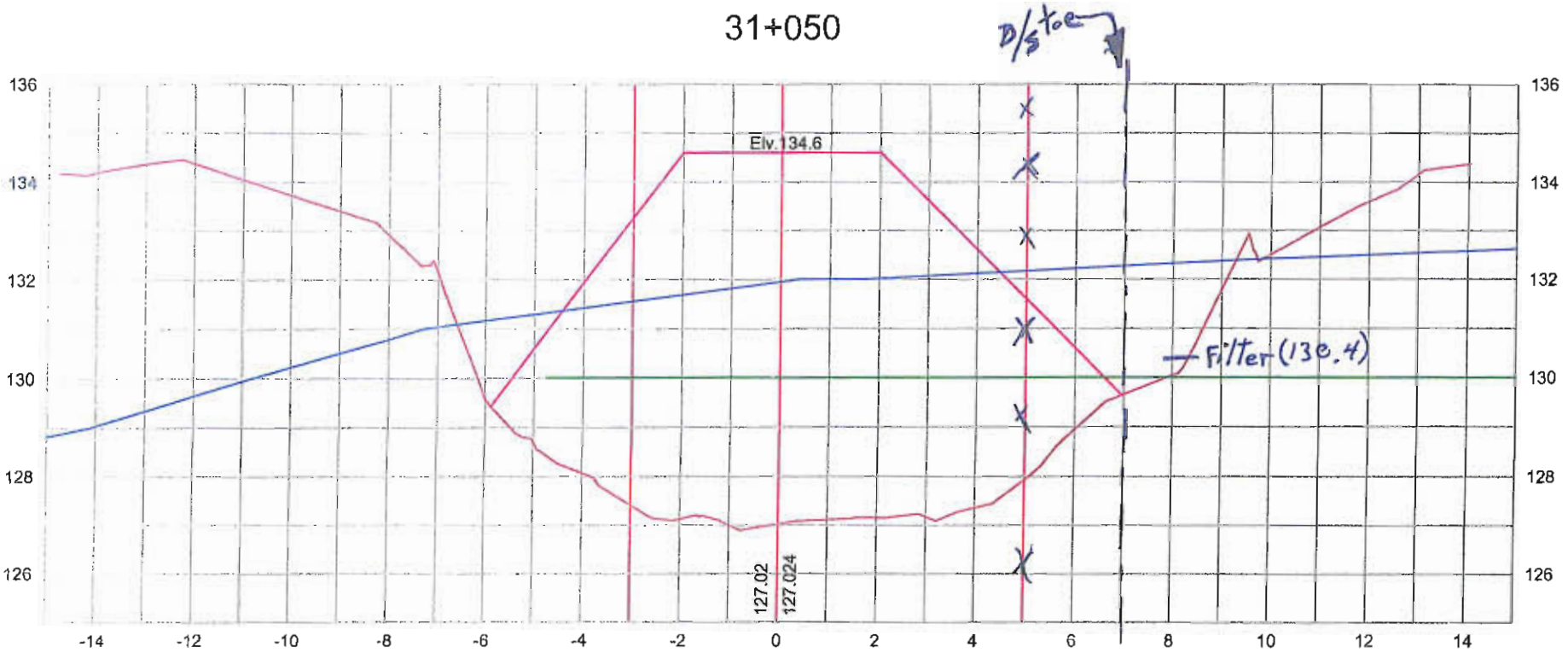
Target surface

Date: 28 juillet 2010

Par: Alex Lalancette

Lake Side

Pit Side



Lake bed surface

Dike

Target surface

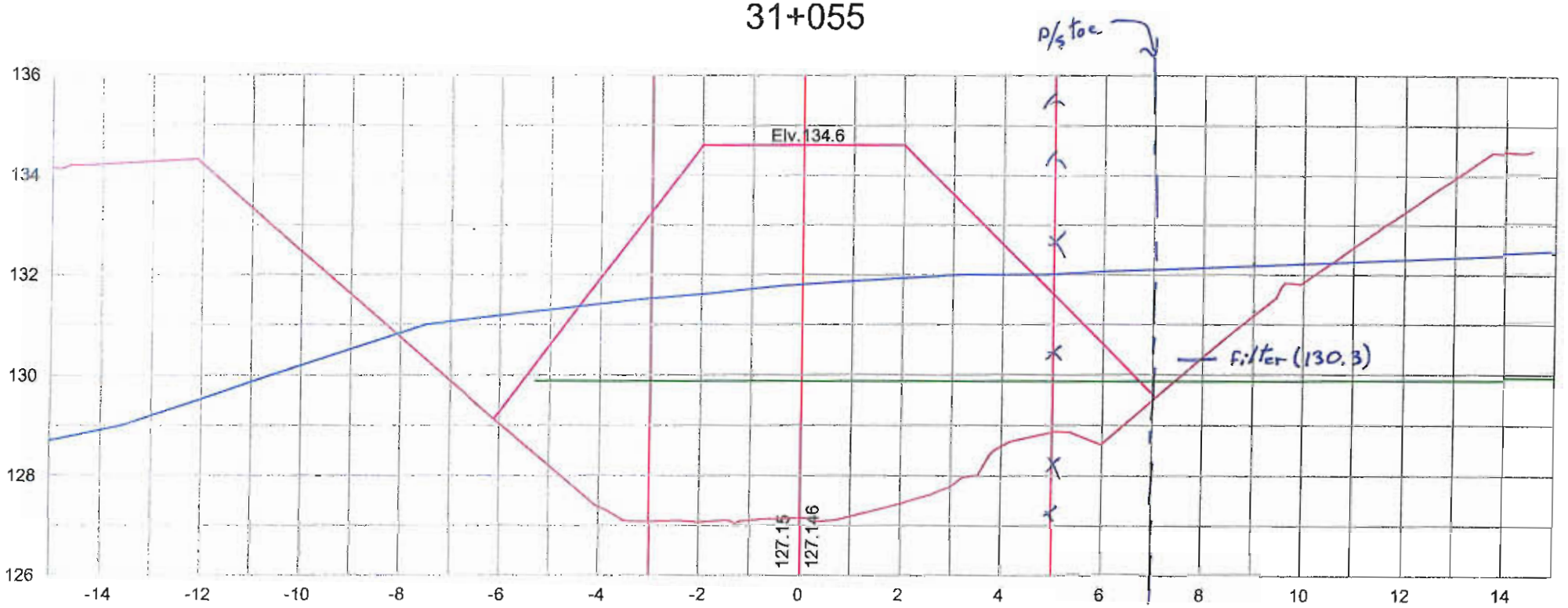
Date: 28 juillet 2010

Par: Alex Lalancette

Lake Side

Pit Side

31+055



Lake bed surface

Dike

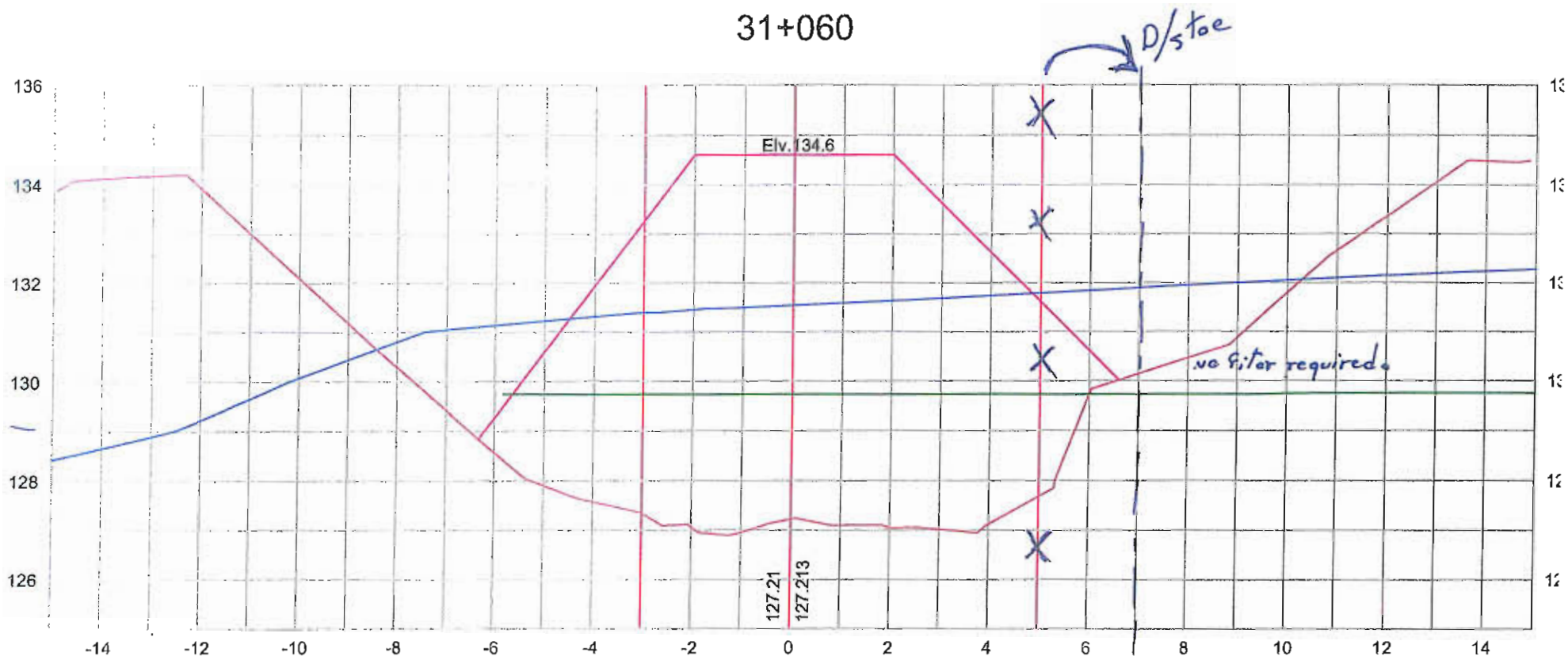
Target surface

Date: 28 juillet 2010

Par: Alex Lalancette

Lake Side

Pit Side



Lake bed surface

Dike

Target surface

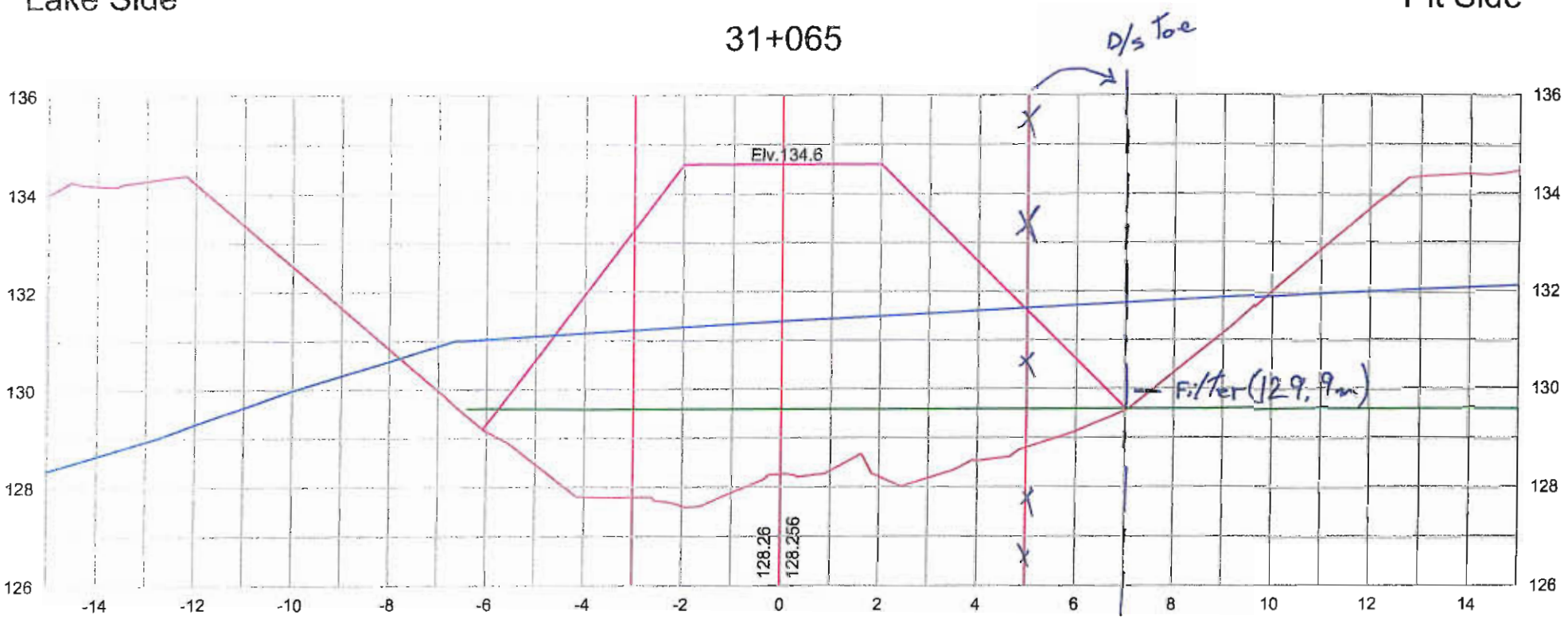
Date: 28 juillet 2010

Par: Alex Lalancette

Lake Side

Pit Side

31+065



Lake bed surface

Dike

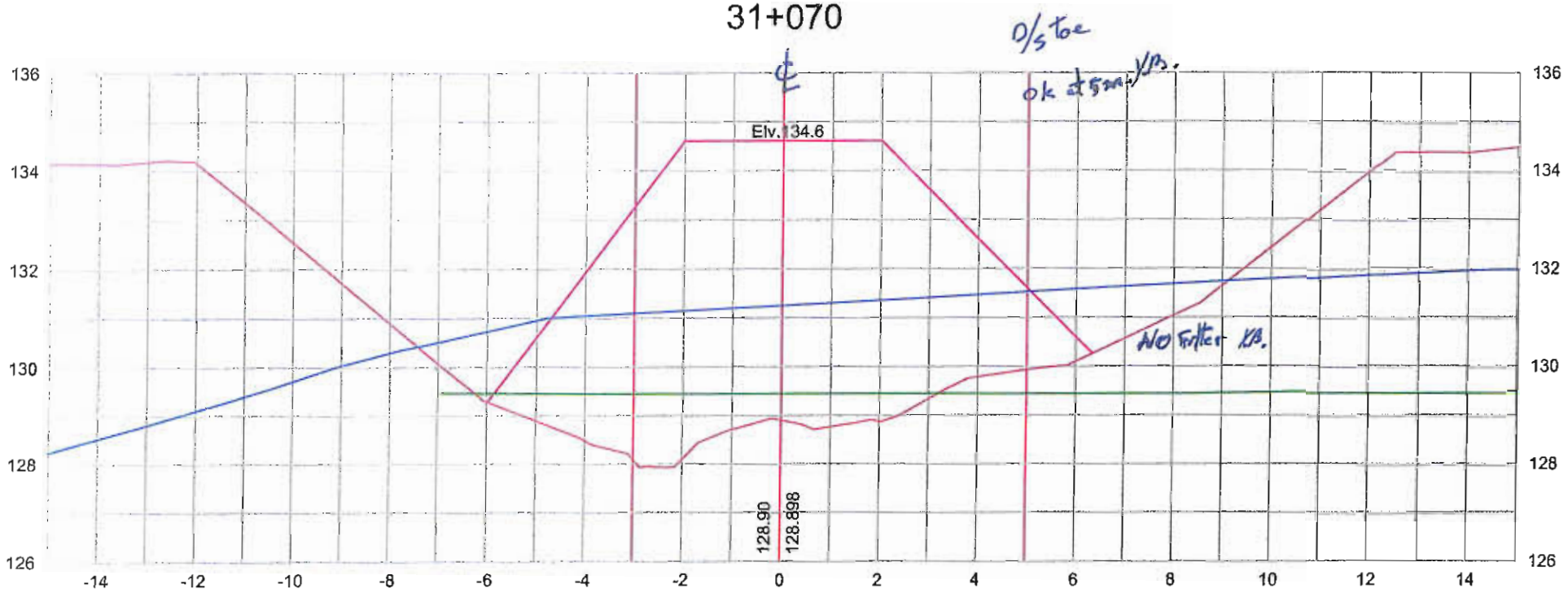
Target surface

Date: 28 juillet 2010

Par: Alex Lalancette

Lake Side

Pit Side



Lake bed surface

Dike

Target surface

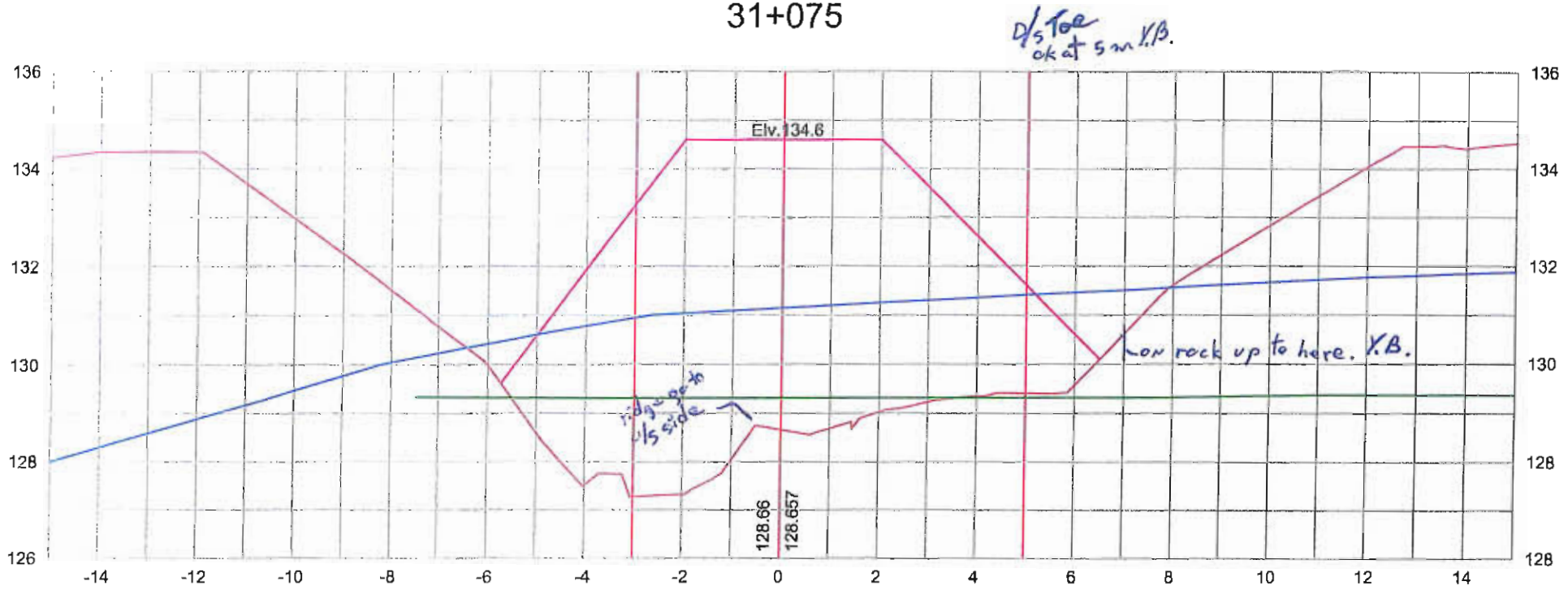
Date: 28 juillet 2010

Par: Alex Lalancette

Lake Side

Pit Side

31+075



Lake bed surface

Dike

Target surface

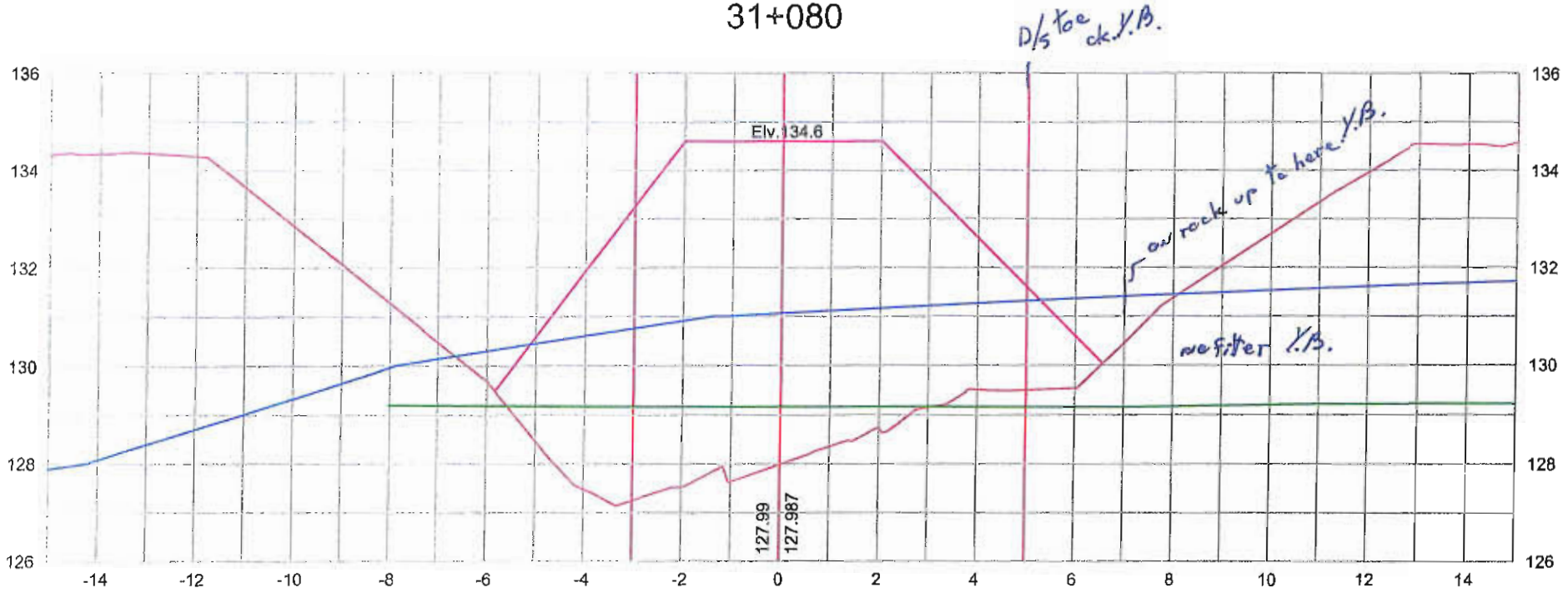
Date: 28 juillet 2010

Par: Alex Lalancette

Lake Side

Pit Side

31+080



Lake bed surface

Dike

Target surface

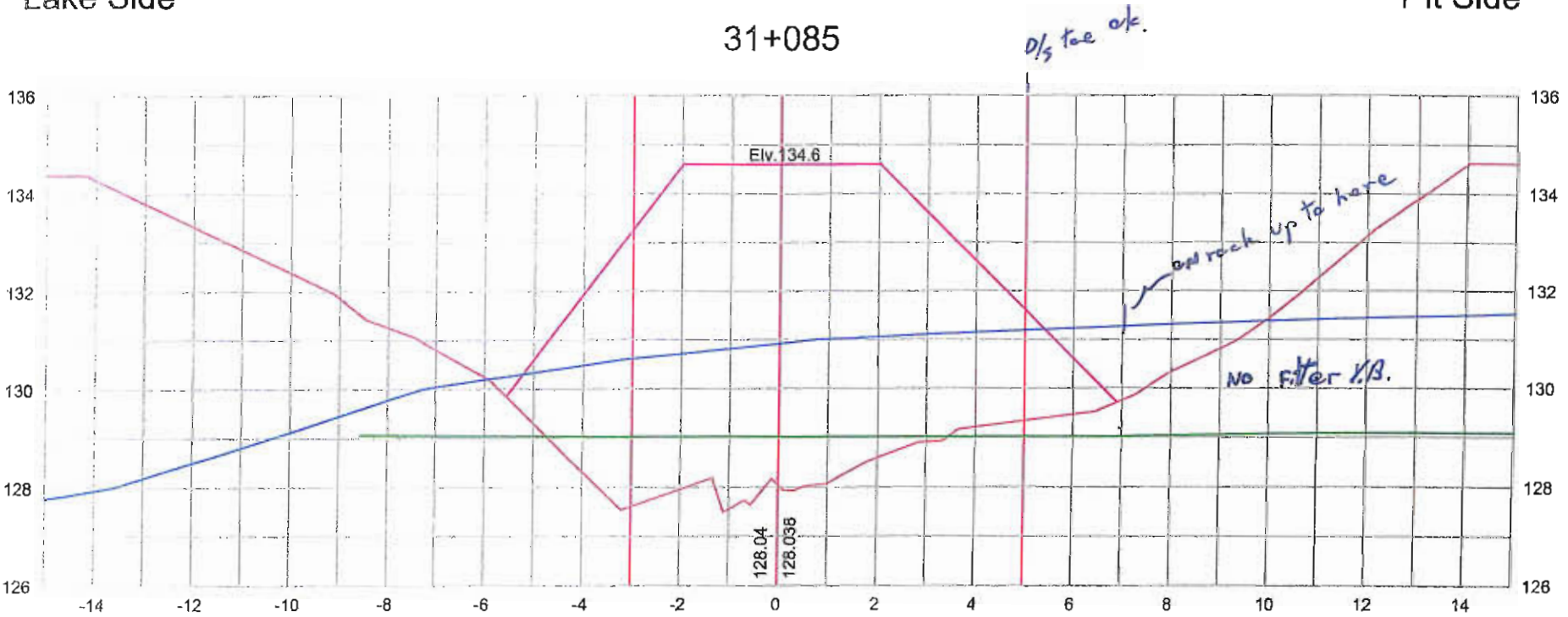
Date: 28 juillet 2010

Par: Alex Lalancette

Lake Side

Pit Side

31+085



Lake bed surface

Dike

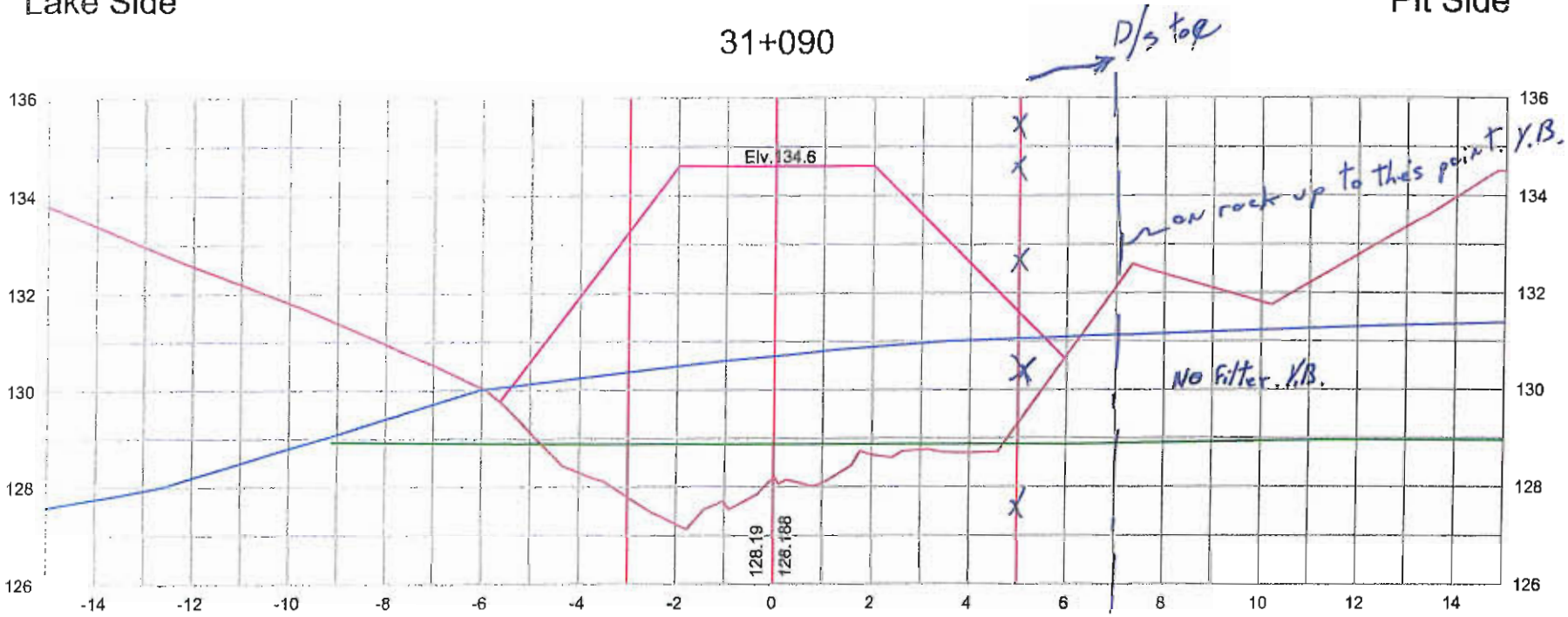
Target surface

Date: 28 juillet 2010

Par: Alex Lalancette

Lake Side

Pit Side



Lake bed surface

Dike

Target surface

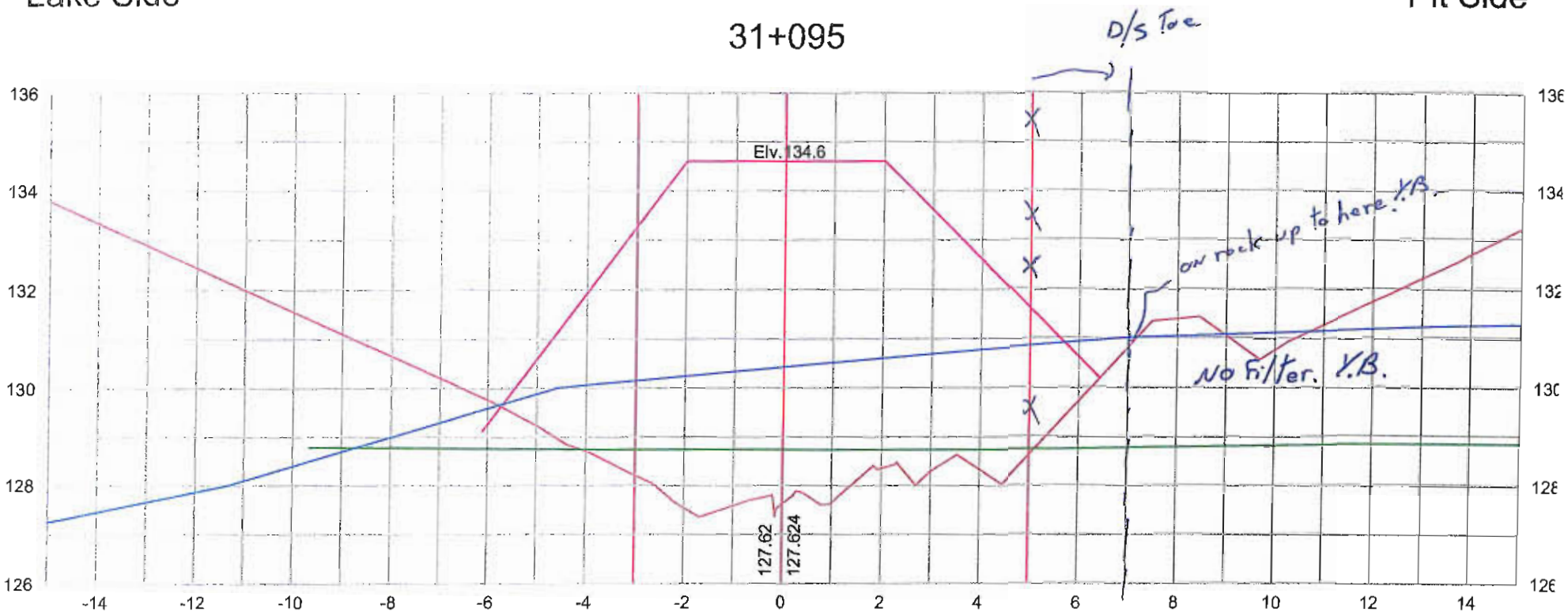
Date: 28 juillet 2010

Par: Alex Lalancette

Lake Side

Pit Side

31+095



Lake bed surface

Dike

Target surface

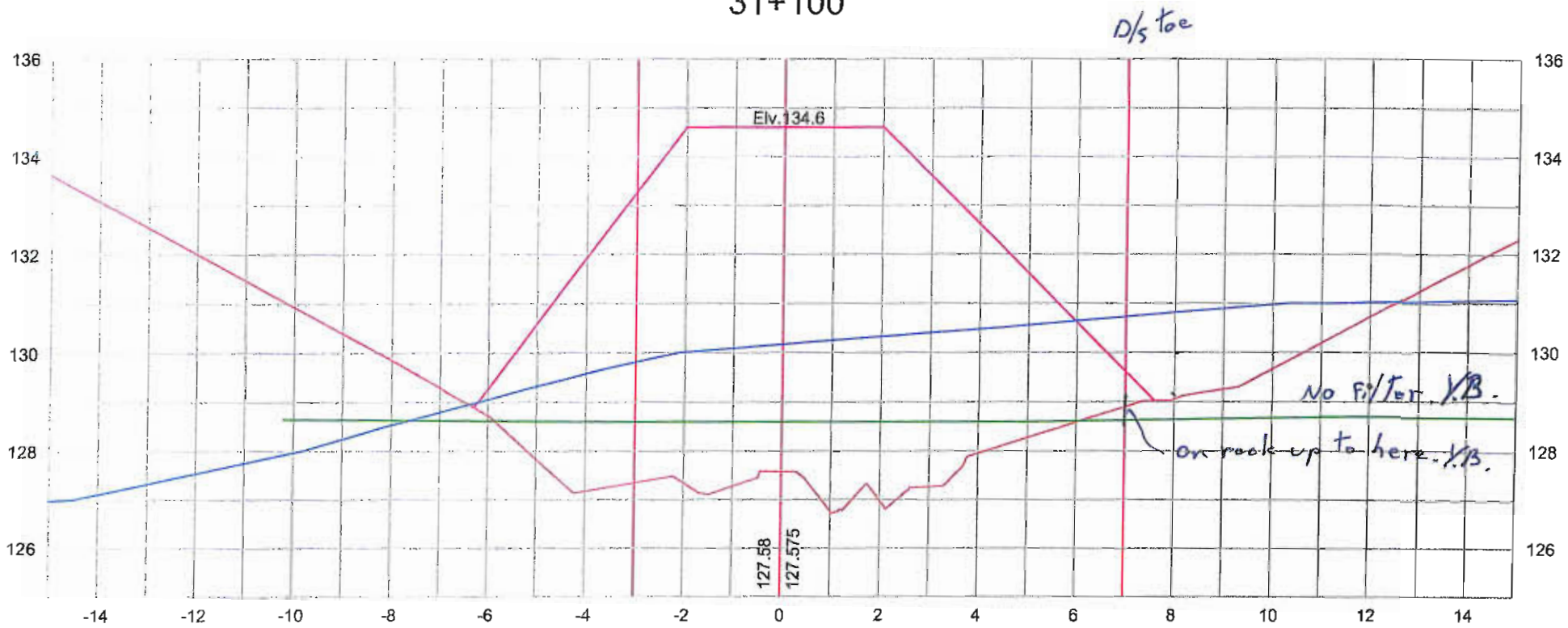
Date: 28 juillet 2010

Par: Alex Lalancette

Lake Side

Pit Side

31+100



Lake bed surface

Dike

Target surface

Date: 28 juillet 2010

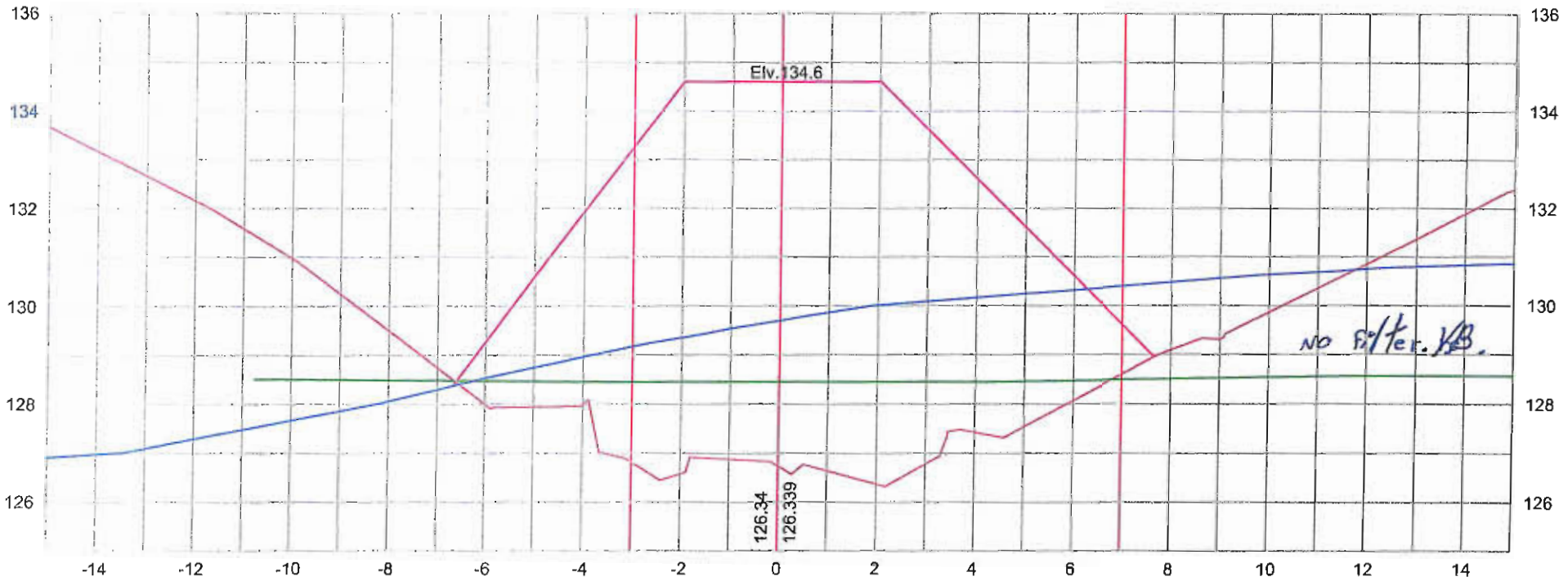
Par: Alex Lalancette

Lake Side

Pit Side

31+105

D/S toe



Lake bed surface

Dike

Target surface

Date: 28 juillet 2010

Par: Alex Lalancette

KB July 23/10

21/21

19/19

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 31+110 Offset	SHIFT: NIGHT: ☐ DAY: ☒ July 30, 2010	DATE :	SHEET OF
To Sta. 31+140 Offset	LOCATION: Bay Goose Dike South Portion		
EQUIPMENT:			
DESCRIPTION			

NO	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1	Survey lines and layout checked to ensure the locations conform with the Drawings		
2.	Storage areas planned for disposal of removed materials		
3.	Occurrence of snow and ice removal method in place		
4.	Occurrence of boulders and removal method in place		
5.	Occurrence of hummocks and scalping method in place		
6.	Occurrence of surface and ground water and its impact mitigation in place		
7	Presence of other unsuitable materials and removal method in place		
8.	Soil frozen or thawed and measures taken		
9.	Blasting requirement to remove unsuitable material and safety measure checked	N/A	
10.	Adjustment made to suit design in field		
11.	Final walkover inspection before re-sloping or fill placement		
12.	"As-excavated" survey conducted		
13	Final sounding conducted of lake bottom surface		

REMARKS Soft silty clay material of around 0,9 to 1,6m thick was found between 31+110 & 31+140.

DEVIATIONS : (Attach list if necessary)

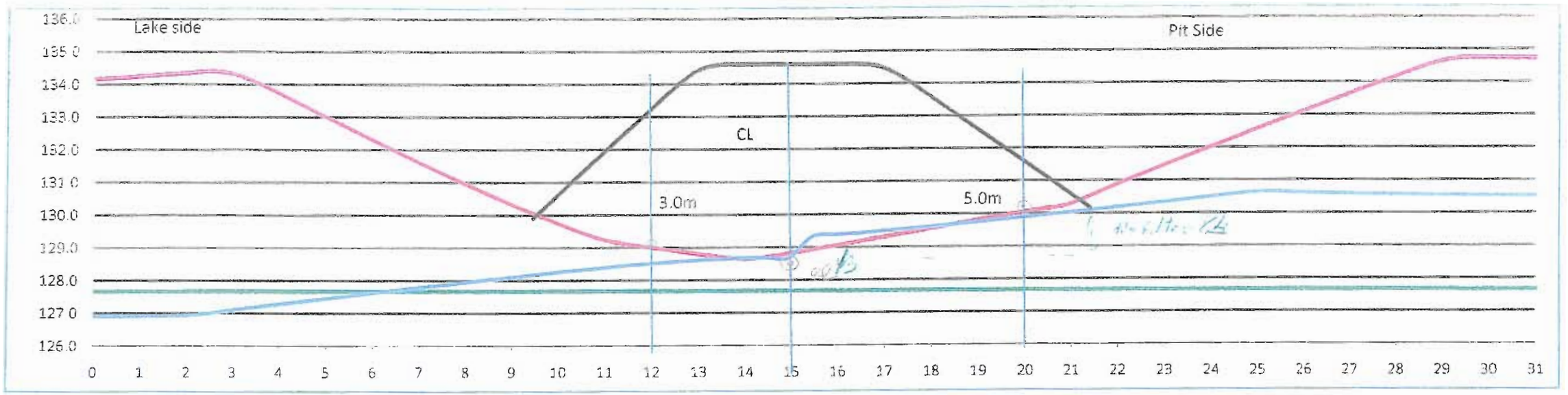
In discussion on the site with F.-L. A.E.M., Fill is allowed to advance the core backfill but the fine material shall be compacted before. The compaction will be completed on a 20m length and then the core backfill will be advanced.

DATE OF RECTIFICATION :

SURVEY VERIFICATION	ACCEPTED BY QA Manager	ACCEPTED BY OWNER
NAME: Guy Morissette	NAME: Yves Boudreault	NAME:
SIGNATURE:	SIGNATURE:	SIGNATURE
DATE 30 juillet 7:30 AM	DATE July 30, 2010	DATE

copy of original Y.B.

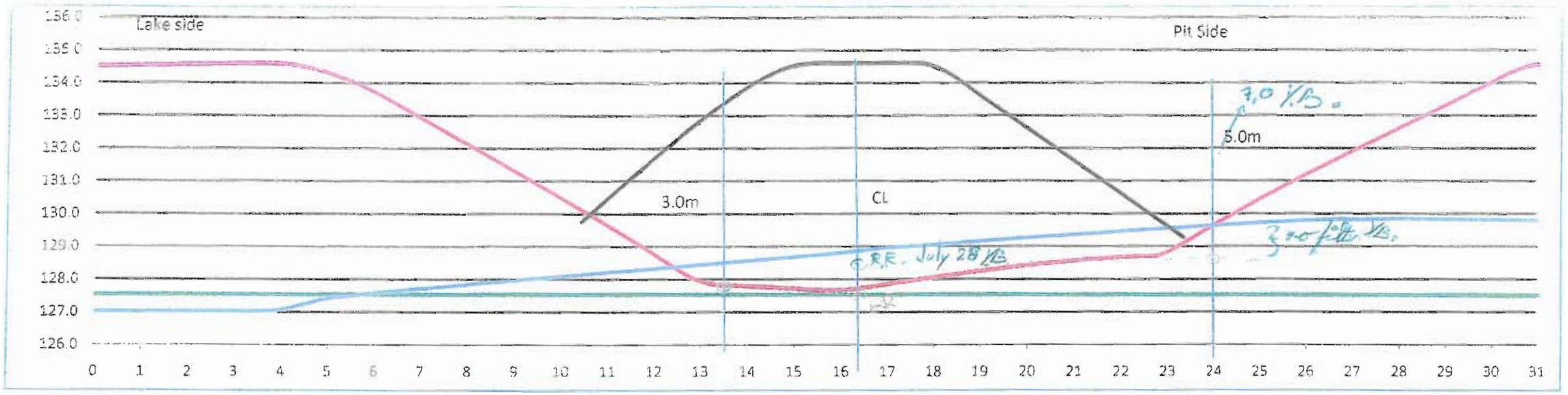
Cut view (manuel probing) 31 +110



Lake bed soil
manuel probing
Infered bed rock

Date 2010-07-30
By: HG

Cut view (manuel probing) 31 +115

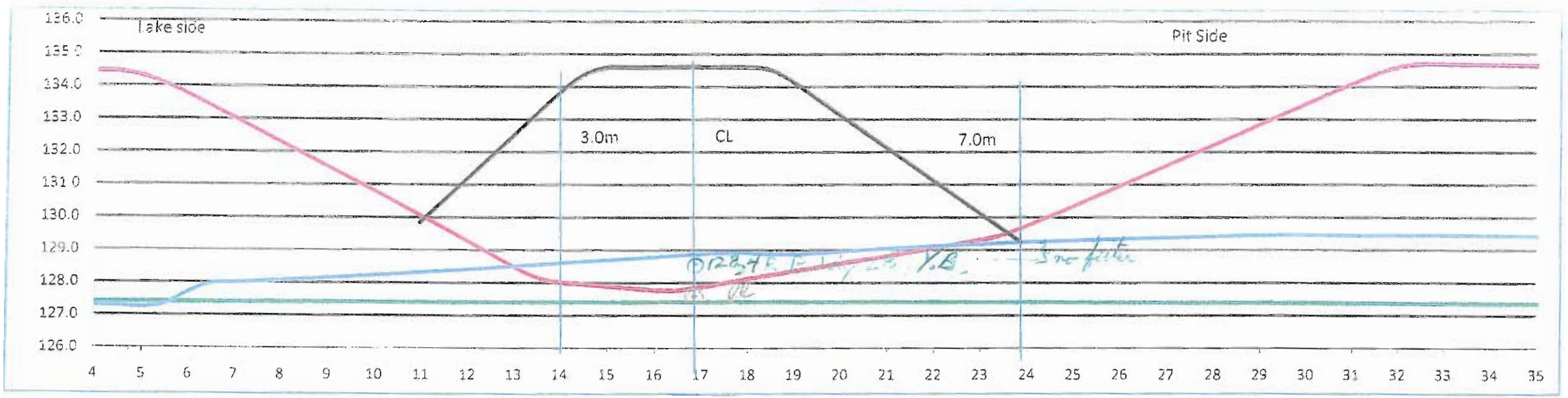


Lake bed soil
Manuel probing
infered bed rock

Date 2010-07-29
By: HG

Y.B. July 30, 2010

Cut view (manuel probing) 31 +120



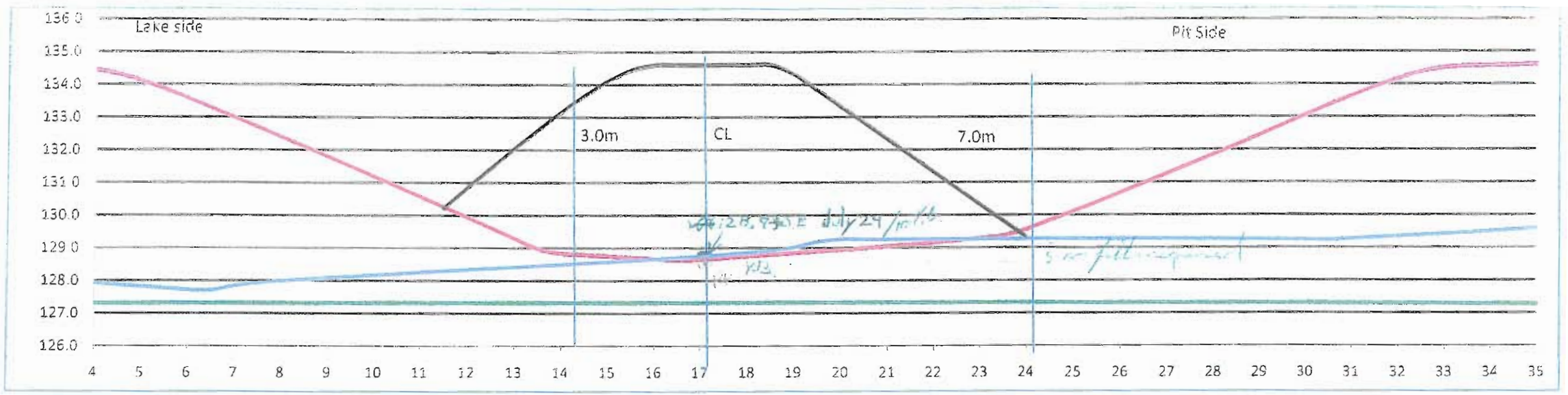
Lake bed soil
Manuel probing
Infered bed rock

Date 2010-07-29
By: HG

H.G. July 30/10

4/9

Cut view (manuel probing) 31 +125



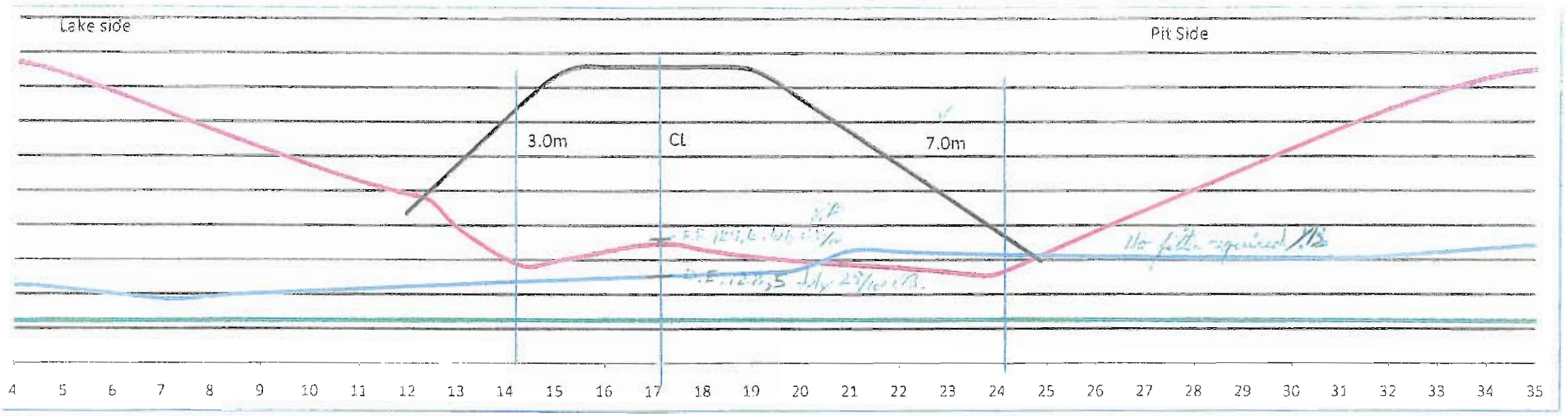
Lake bed soil
Manuel probing
Infered bed rock

Date 2010-07-29
By: HC

July 30/10

5/9

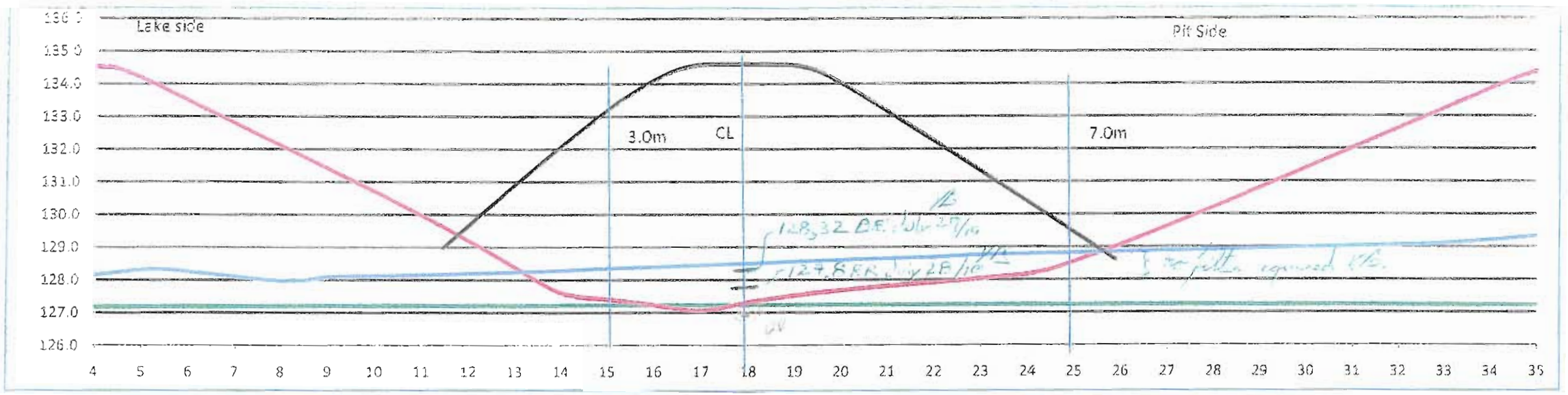
Cut view (manuel probing) 31 +130



Lake bed soil
Manuel probing
Infered bed rock

Date 2010-07-29
By: HG

Cut view (manuel probing) 31 +135

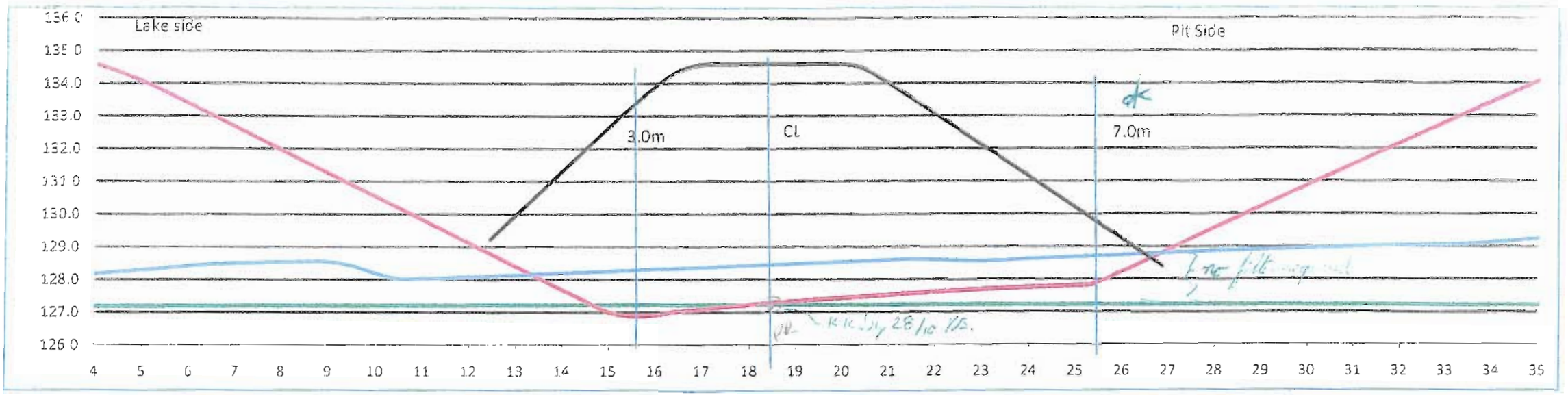


Lake bed soil
Manuel probing
Infered bed rock

Date 2010-07-29
By: HG

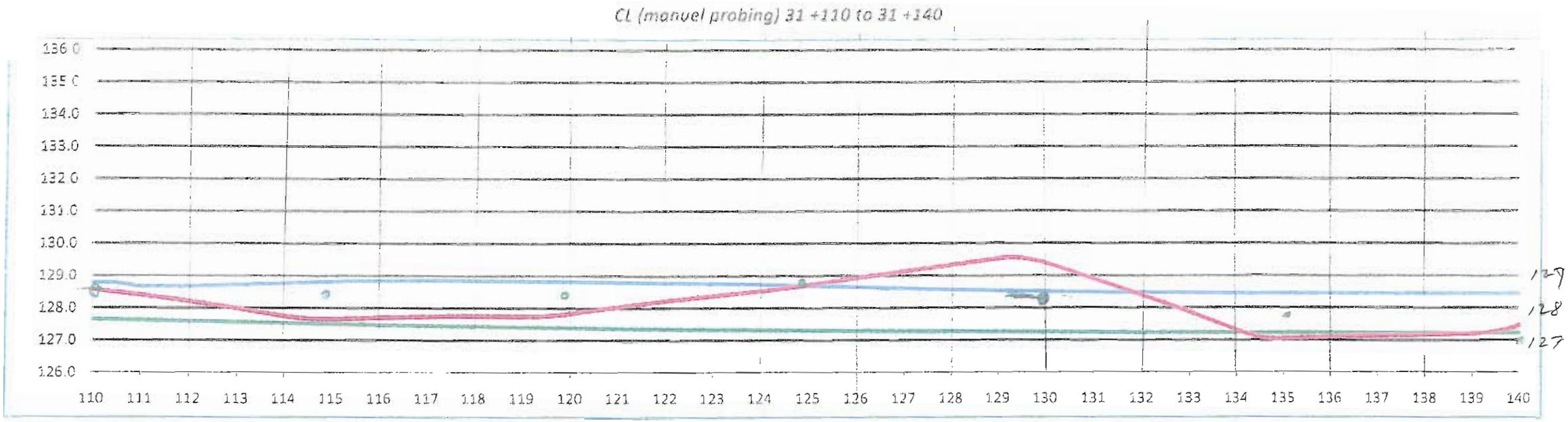
7/9

Cut view (manuel probing) 33 +140



Lake bed soil
Manuel probing
Infered bed rock

Date 2010-07-29
By: HG

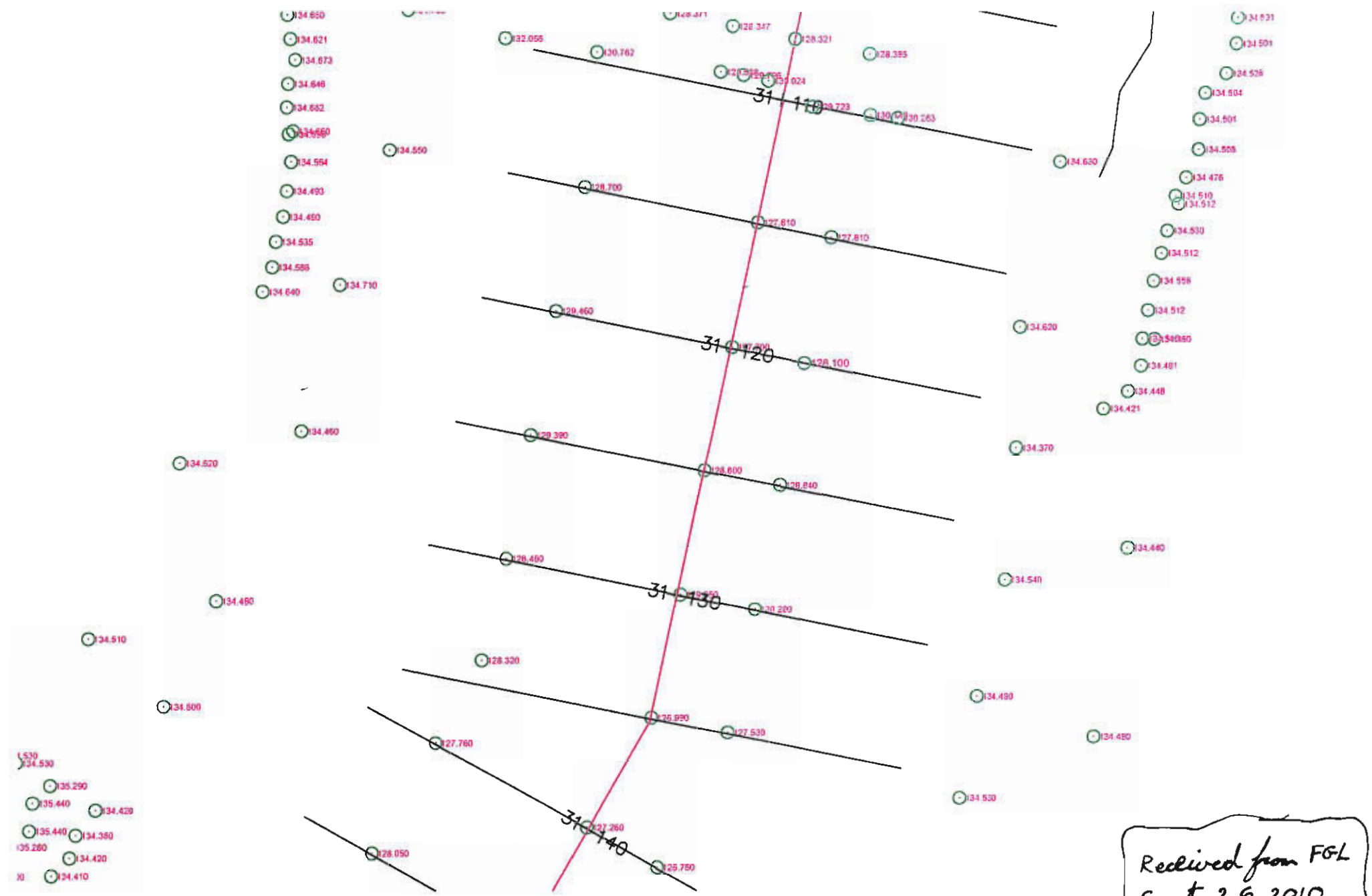


Lake bed soil
Manuel probing
Infered bed rock

Date 2010-07-29
By: HG

ø = fordelt manuel probing dev. ±3.

9/9



Station: 31+110 @ 31+140

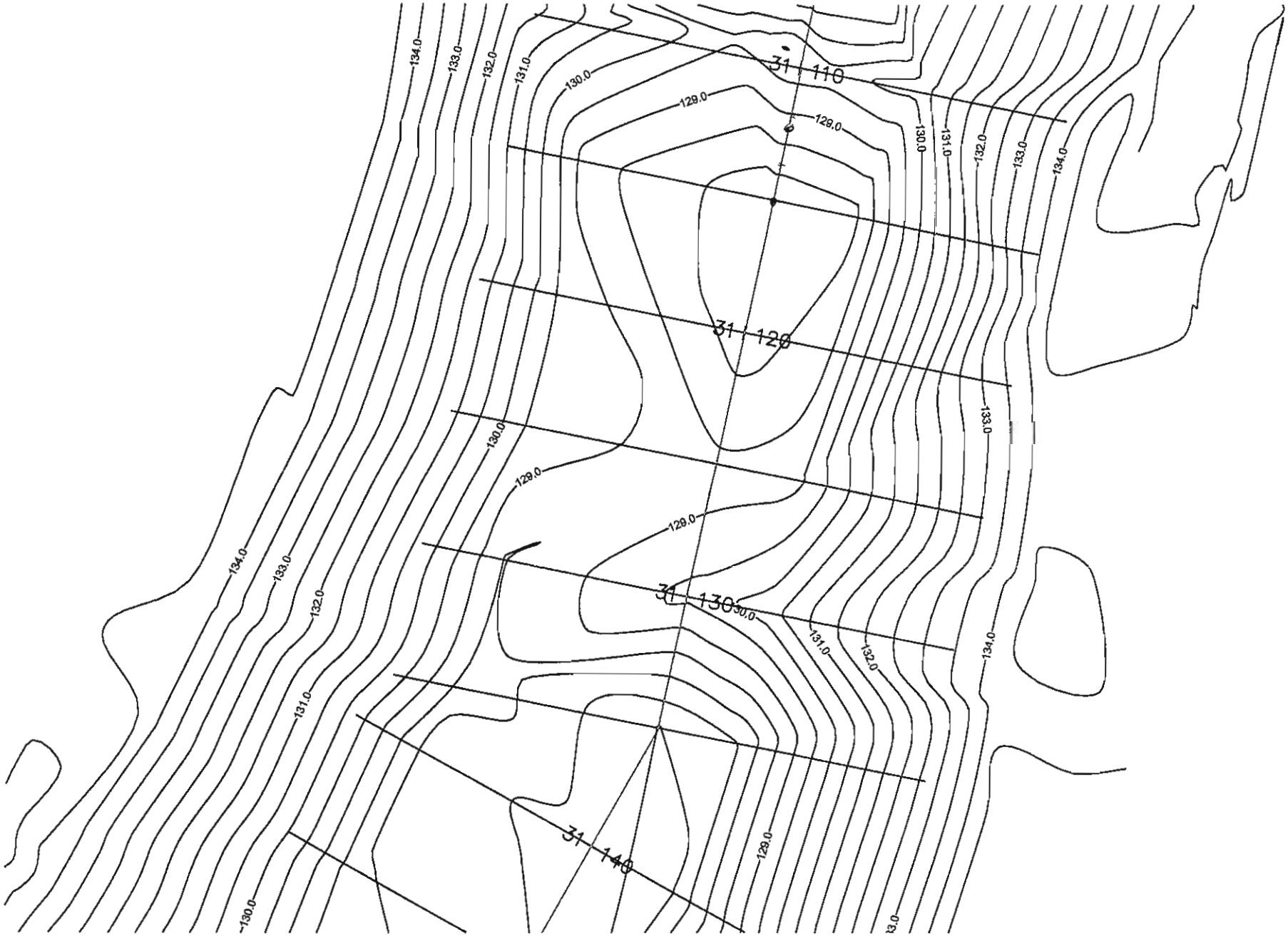
Scale: 1:200

Date: 260910

Page: 2/?

Par: Alex Lalancette

Received from FGL
Sept. 26, 2010
VB P. 1 of 2



Station: 31+110@ 31+140

Scale: 1:200

Date: 260910

Page: 3/?

Par: Alex Lalancette

P. 2 of 2

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 31+145 Offset	SHIFT: NIGHT ☐ DAY : ☒ July 30	DATE :	SHEET OF
To Sta. 31+160 Offset	LOCATION: Bay Goose Dike South Portion		
EQUIPMENT:			

DESCRIPTION

NO	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1	Survey lines and layout checked to ensure the locations conform with the Drawings	GM	V.B.
2	Storage areas planned for disposal of removed materials	GM	V.B.
3	Occurrence of snow and ice removal method in place	GM	V.B.
4.	Occurrence of boulders and removal method in place	GM	V.B.
5.	Occurrence of hummocks and scalping method in place	GM	V.B.
6.	Occurrence of surface and ground water and its impact mitigation in place	GM	V.B.
7	Presence of other unsuitable materials and removal method in place	GM	V.B.
8.	Soil frozen or thawed and measures taken	GM	V.B.
9	Blasting requirement to remove unsuitable material and safety measure checked	N/a GM	V.B. N/A
10	Adjustment made to suit design in field	GM	V.B.
11	Final walkover inspection before re-sloping or fill placement	GM	V.B.
12	"As-excavated" survey conducted	GM	V.B.
13	Final sounding conducted of lake bottom surface	GM	V.B.

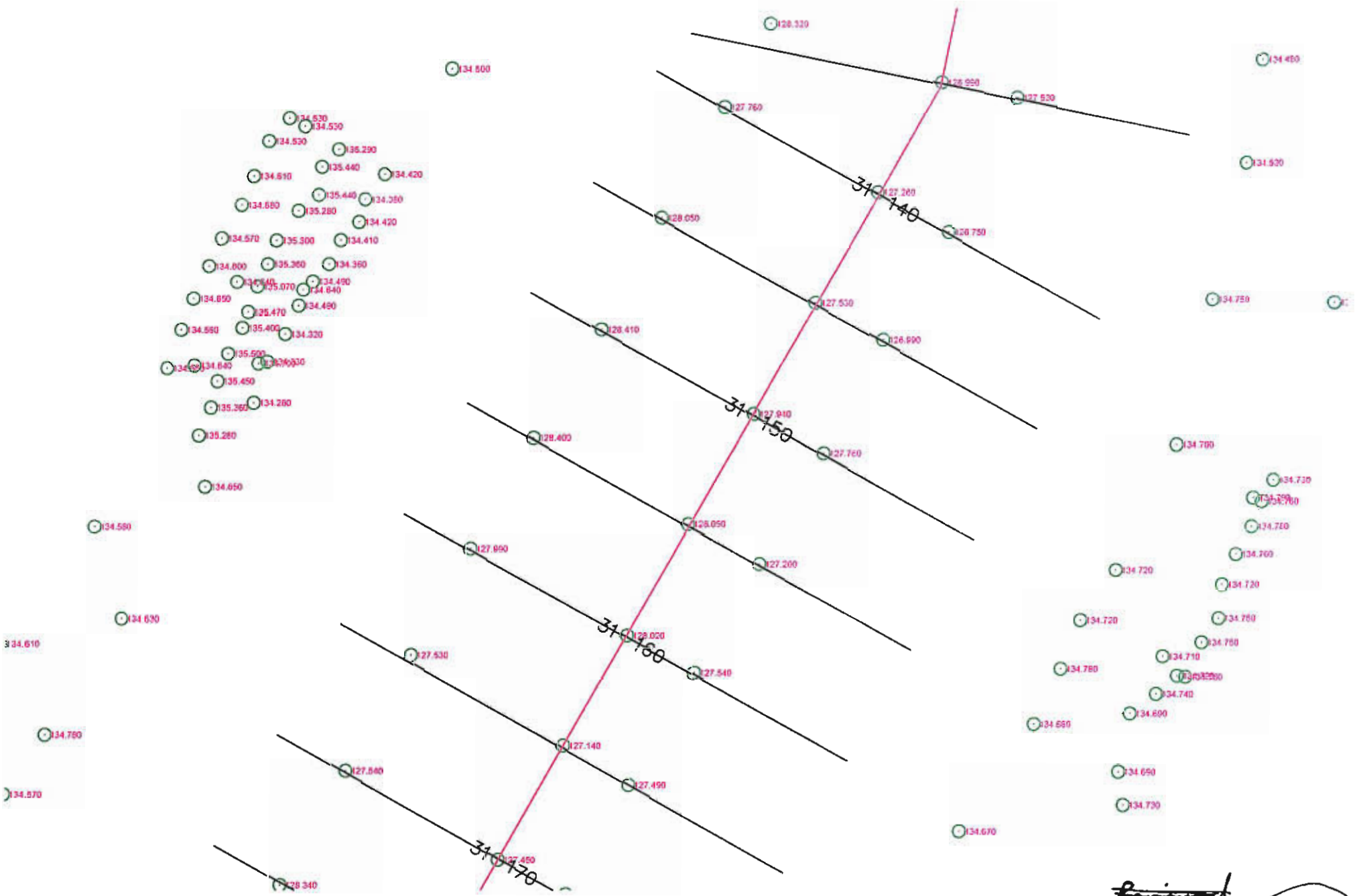
REMARKS :
No filter required for this section (31+145 to 160). Some ~~de~~ minor cleanings and re-rounding have been performed to the satisfaction of QA field supervisor. V.B.

DEVIATIONS : (Attach list if necessary)

DATE OF RECTIFICATION :

SURVEY VERIFICATION	ACCEPTED BY QA Manager :	ACCEPTED BY OWNER
NAME: Guy Mousette	NAME: Yves Boubanna	NAME:
SIGNATURE: Guy Mousette	SIGNATURE :	SIGNATURE :
DATE 30 juillet 22 hrs	DATE July 31/10	DATE

Copy of original V.B.



Station: 31+145 @ 31+160

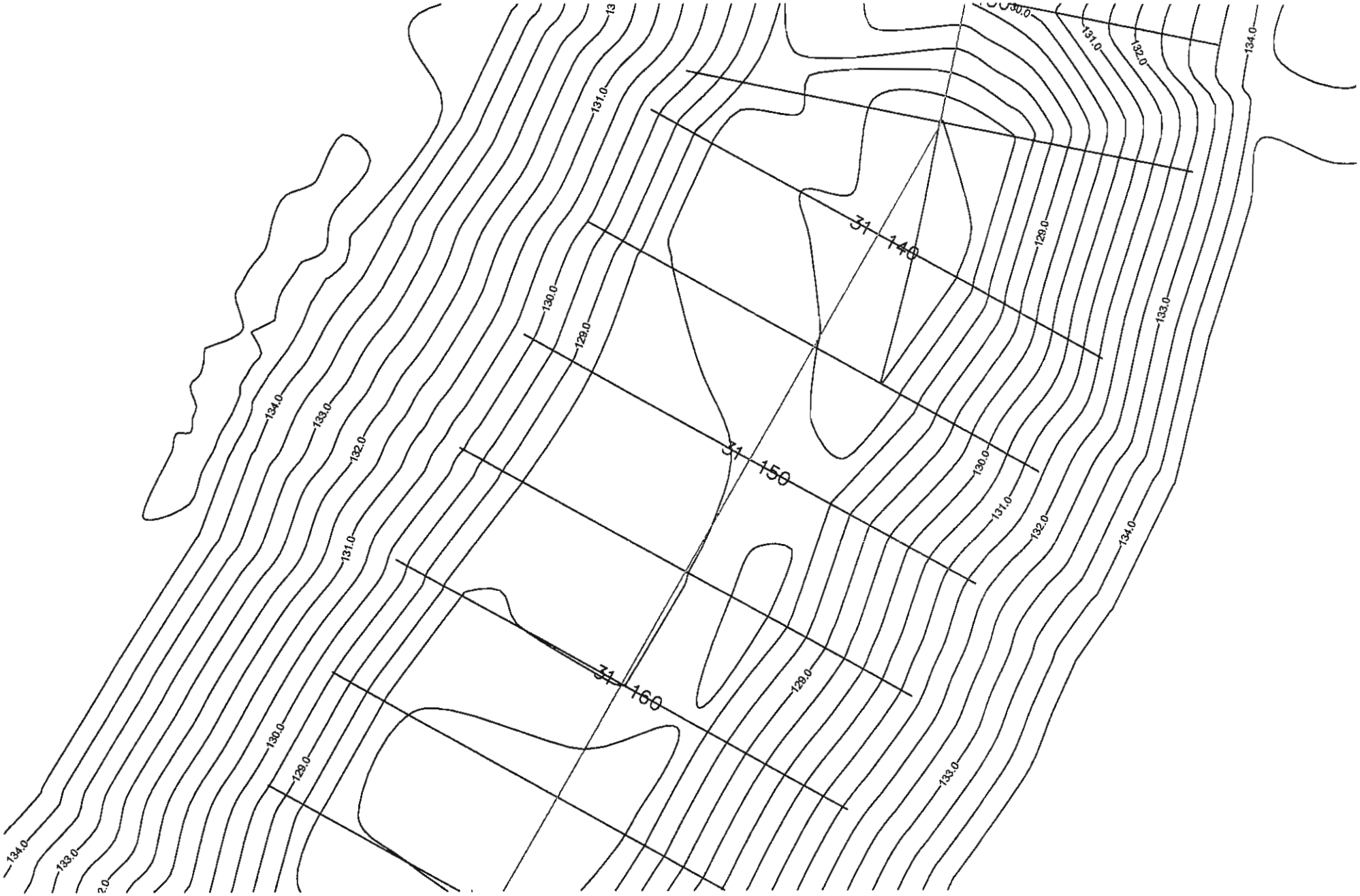
Scale: 1:200

Date: 260910

Page: 2/?

Par: Alex Lalancette

~~Received~~
Received from FGL
Sept. 26, 2010
V/B. P.1 of 2



Station: 31+140@ 31+160

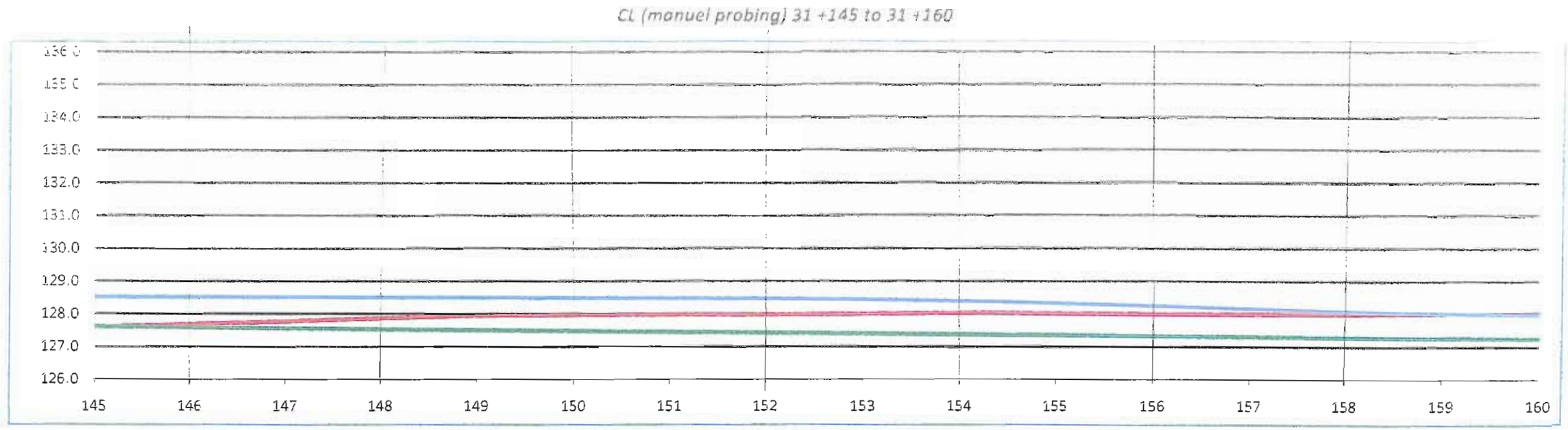
Scale: 1:200

Date: 260910

Page: 3/?

Par: Alex Lalancette

YB
P.2 of 2



Lake bed soil
Manuel probing
Infered bed rock

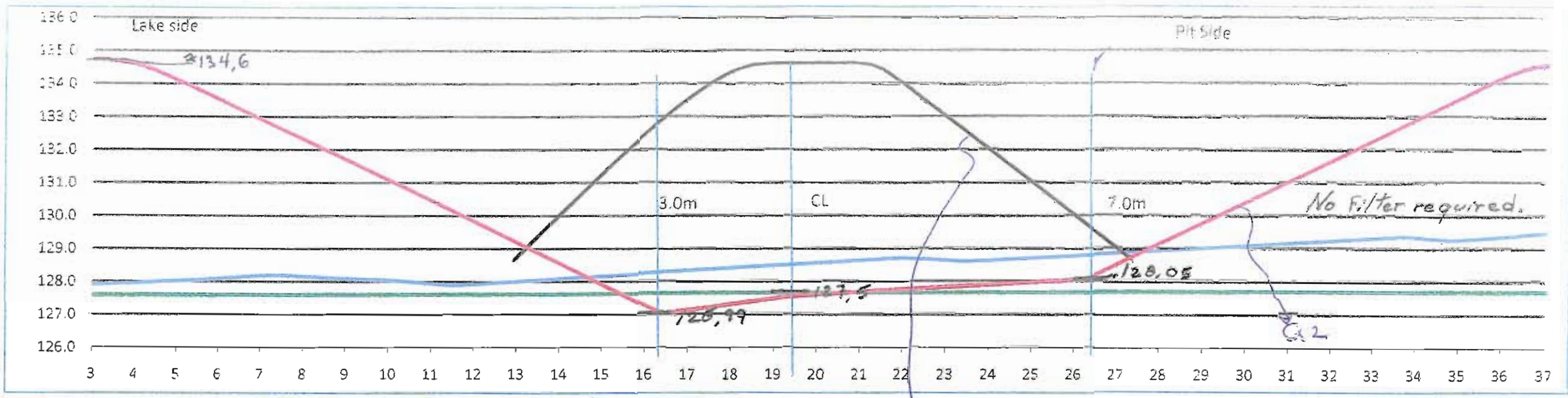
Date 2010-07-29
By: HG

N. Roberts Manual Reading of Trench bottom:

station	℄	U/S 3m	D/S 7m
31+140	6,49	6,53	6,24
145	6,17	6,71	5,65
150	5,76	5,94	5,29
155	5,65	6,50	5,30
160	5,68	6,16	5,71

*reading from lake surface (133,7m)

Cut view (manuel probing) 31 +145



Lake bed soil (Golder IFC Drawing)
manuel probing (with long pole)
infered bed rock (Golder IFC Drawing)

Date: 2010-07-30
By: HG

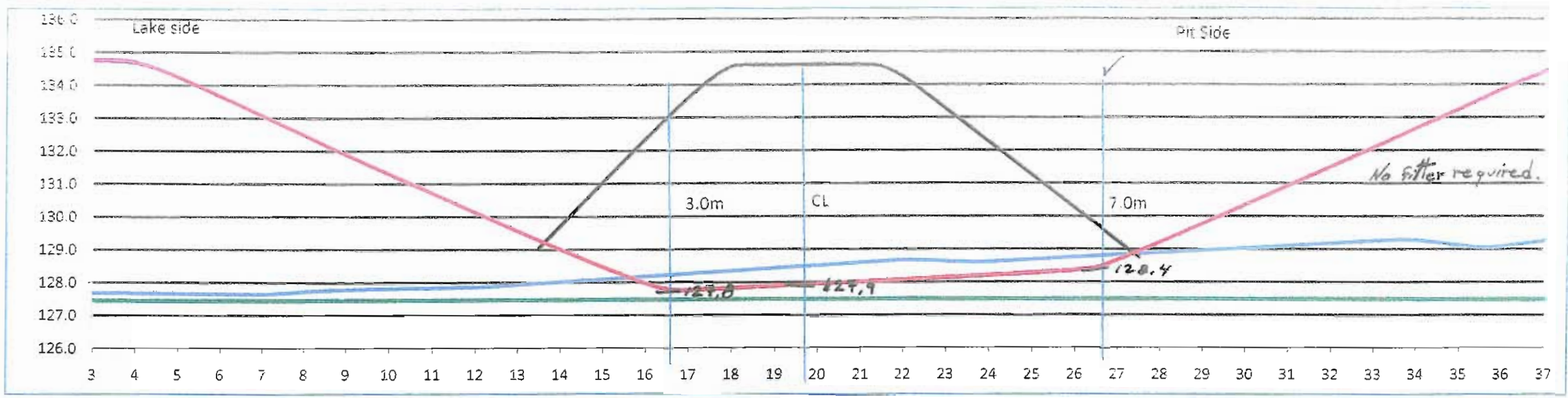
Page 1 of 5

Q1 : Slope du core back fill basé sur quoi ? - Pas A1 planté.

Q2 : Slope de la digue basé sur quoi ?

M. Lalonde 31/10

Cut view (manuel probing) 31 +150

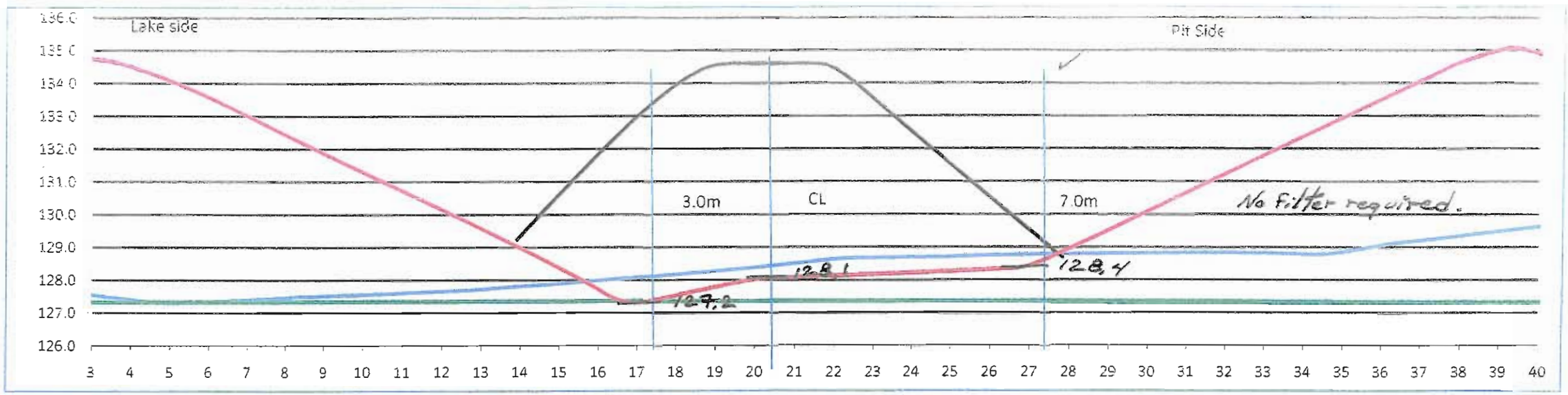


Lake bed soil
manuel probing
Infered bed rock

Date 2010-07-30
By: HG

July 31/10

Cut view (manuel probing) 31 +155

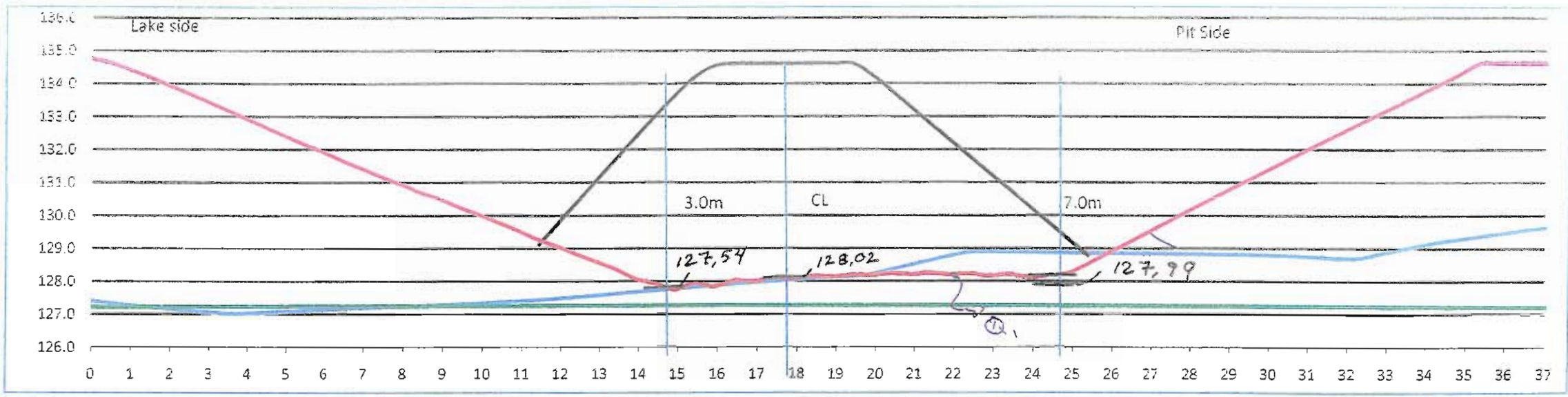


Lake bed soil
manuel probing
Infered bed rock

Date 2010-07-30
By: HG

J.H. Lindsay 31/10

Cut view (manuel probing) 31 +160



Lake bed soil
manuel probing
infered bed rock

Date 2010-07-30
By: HG

Q1 Pourquoi
aussi peu droite ?

Y.B. July 31/10

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 31+165 Offset	SHIFT: NIGHT ☐ DAY ☒ July 31, 2010	DATE :	SHEET 1 OF 6
To Sta. 31+180 Offset	LOCATION : BAY GOOSE DIKE SOUTH PORTION		
EQUIPMENT:			

DESCRIPTION

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	GM	V.B.
2.	Storage areas planned for disposal of removed materials	GM	V.B.
3.	Occurrence of snow and ice removal method in place	GM	V.B.
4.	Occurrence of boulders and removal method in place	GM	V.B.
5.	Occurrence of hummocks and scalping method in place	GM	V.B.
6.	Occurrence of surface and ground water and its impact mitigation in place	GM	V.B.
7.	Presence of other unsuitable materials and removal method in place	GM	V.B.
8	Soil frozen or thawed and measures taken	GM	V.B.
9.	Blasting requirement to remove unsuitable material and safely measure checked	N/A GM	V.B. N/A
10.	Adjustment made to suit design in field	GM	V.B.
11.	Final walkover inspection before re-sloping or fill placement	GM	V.B.
12.	"As-excavated" survey conducted	GM	V.B.
13.	Final sounding conducted of lake bottom surface	GM.	V.B.

REMARKS : No filter required for this package. Cleaning occur between 31+160 to 31+180, re-sounding with a plombob were completed and less than 0,2 m ~~of~~ soft material was found.

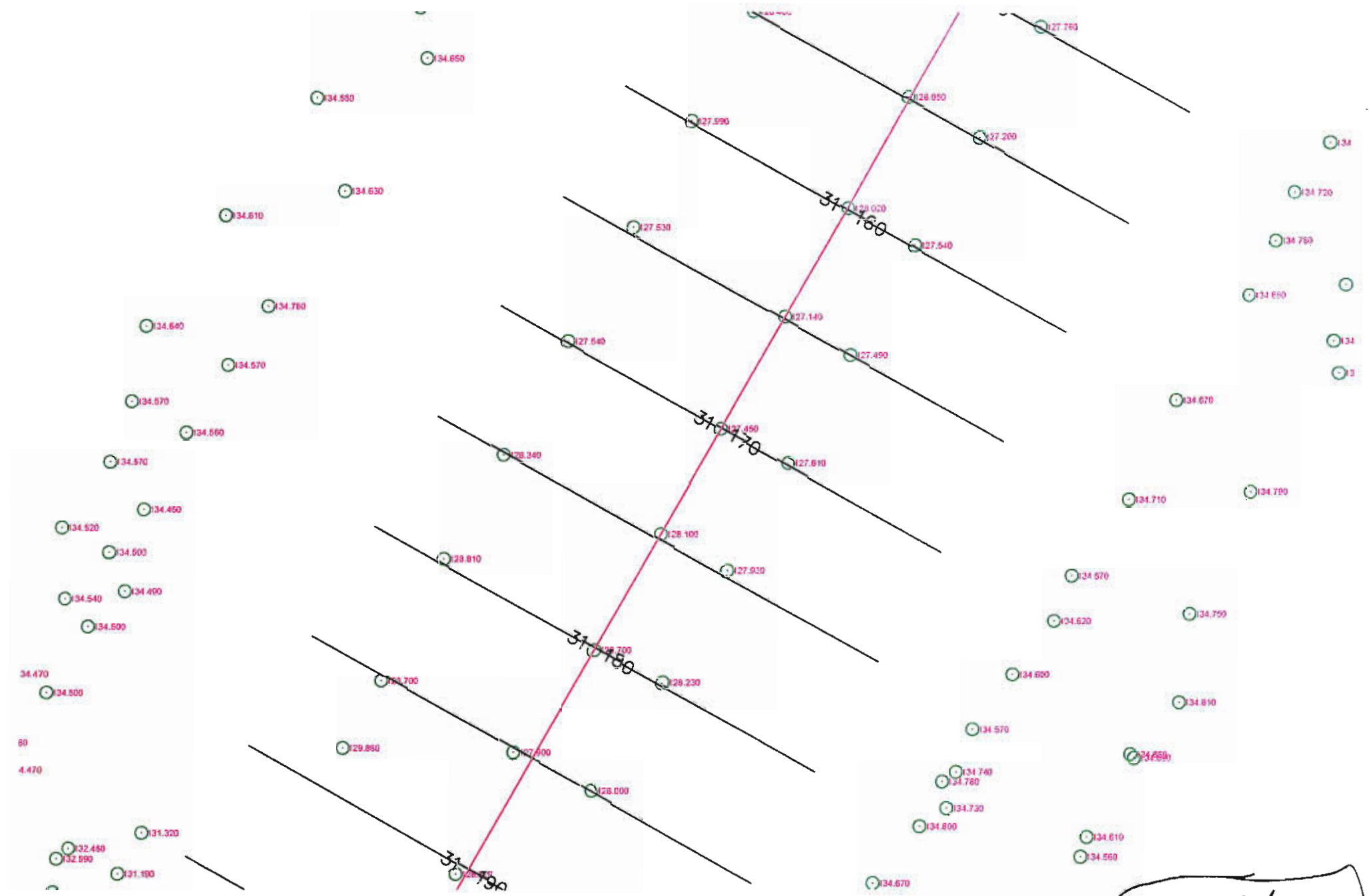
DEVIATIONS : (Attach list if necessary)

DATE OF RECTIFICATION

SURVEY VERIFICATION	ACCEPTED BY QA Manager :	ACCEPTED BY OWNER
NAME: GUY MORISSETTE	NAME: Kes Boulianne	NAME:
SIGNATURE : GM	SIGNATURE :	SIGNATURE
DATE 31 July / 16:30 hr	DATE July 31, 2010	DATE

Golder Associates

original Golder Copy V.B.



Station: 31+165 @ 31+180

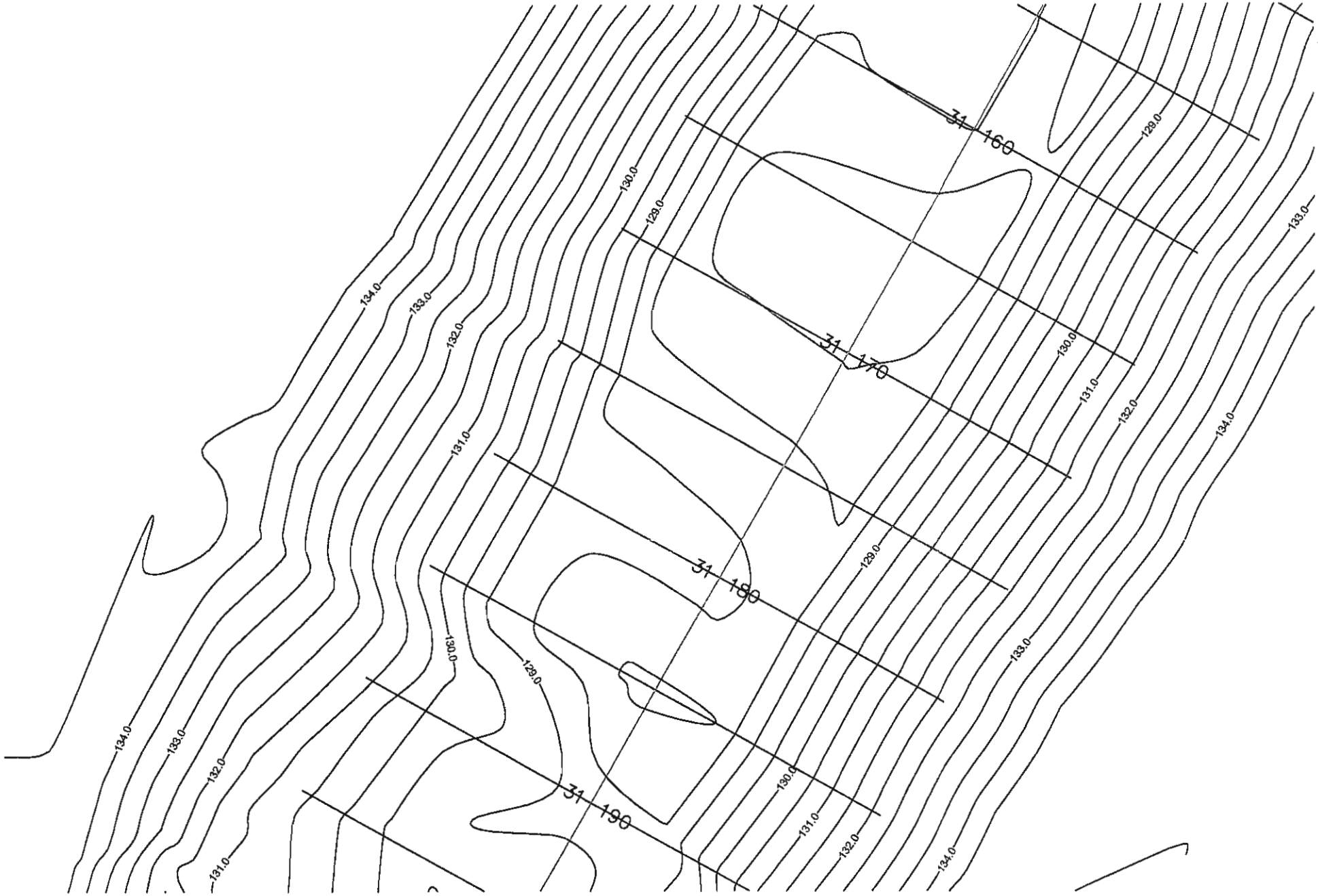
Scale: 1:200

Date: 260910

Page: 2/?

Par: Alex Lalancette

Received from FGL
Sept. 26, 2010
V/B p. 1 of 2



Station: 31+165@ 31+180

Scale: 1:200

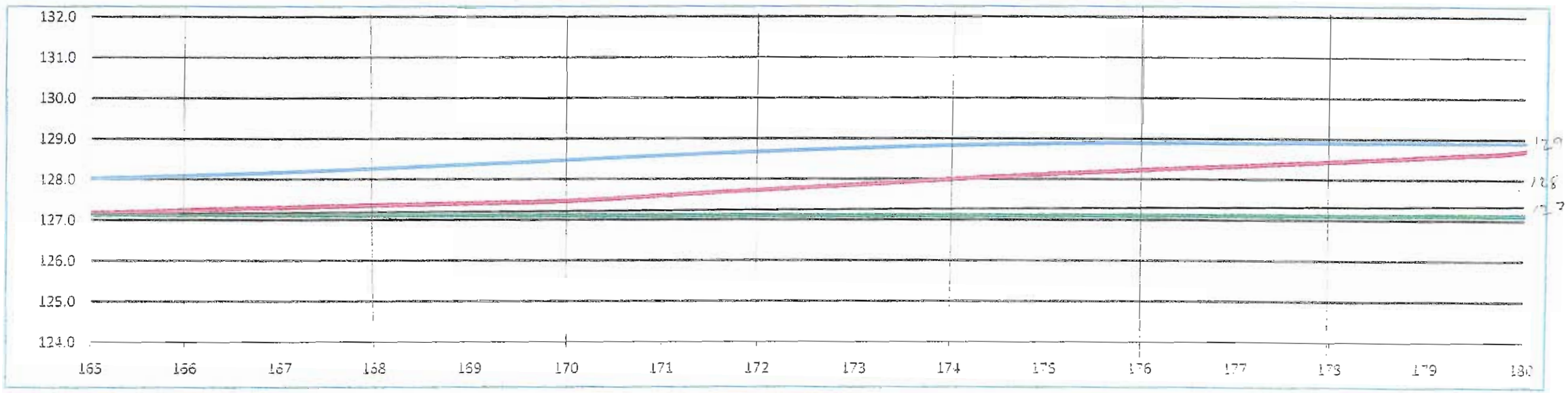
Date: 260910

Page: 3/?

Par: Alex Lalancette

YB
P.2 of 2

CL 31+ 165 to 31 + 180

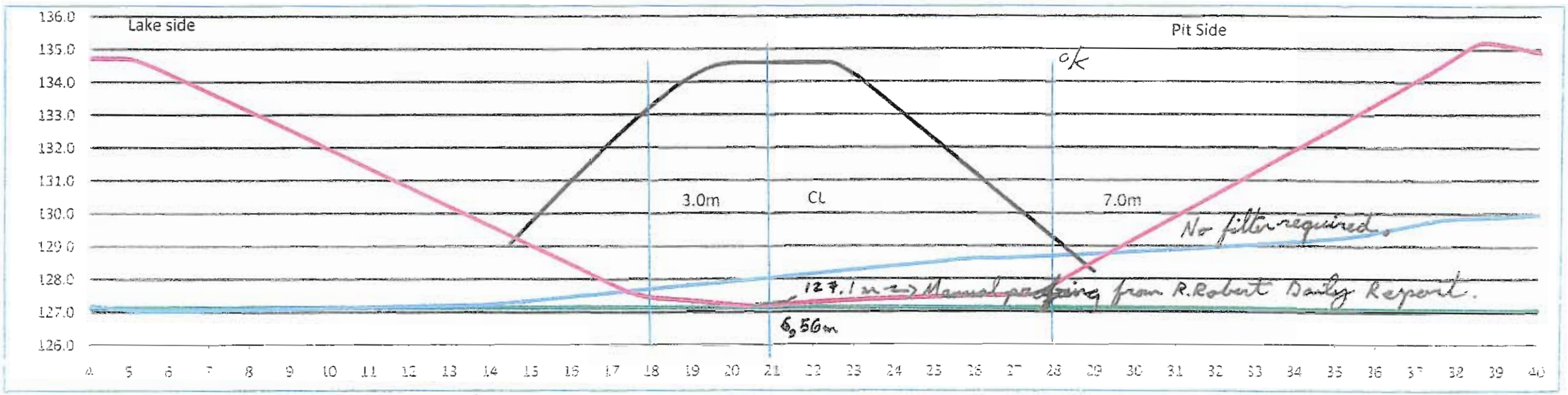


Lake bed soil
Manuel probing
Infered bed rock

Date 2010-07-31
By HG

K.B. July 31/10

Cut view (manuel probing) 31 +165

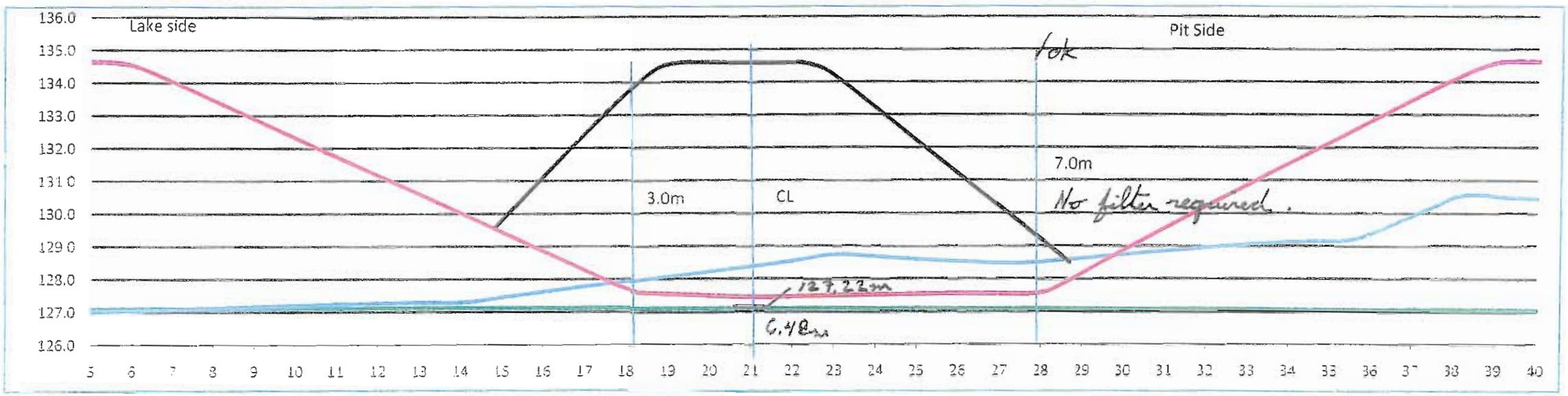


Lake bed soil (Golder IFC Drawing)
manuel probing (With long hard probe)
fered bed rock (Golder IFC Drawing)

Date 2010-07-30
By MG

KB.
July 31/10

Cut view (manuel probing) 31 +170

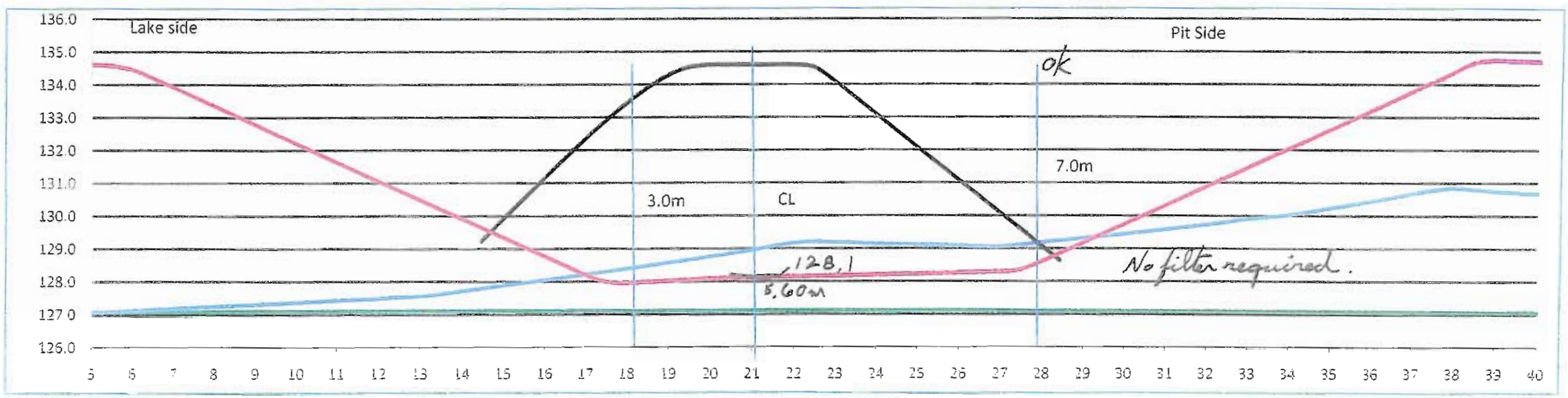


Lake bed soil
manuel probing
Intered bed rock

Date 2010-07-31
By: HG

K.B. July 31/10

Cut view (manuel probing) 31 +175

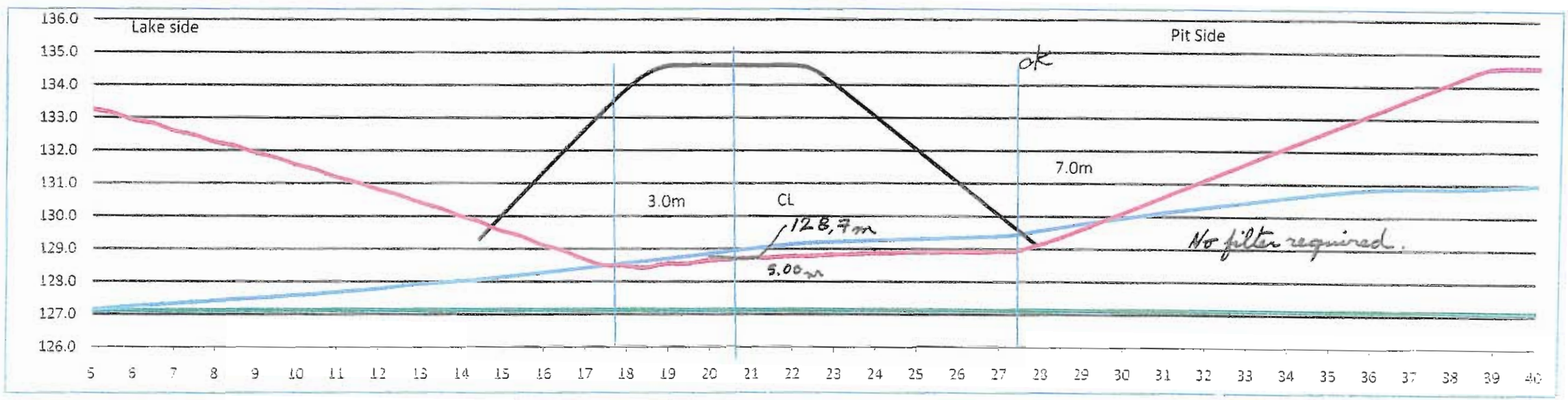


Lake bed soil
manuel probing
Infered bed rock

Date 2010-07-31
By HG

V.B. July 31/10

Cut view (manuel probing) 31 +180



Date 2010-07-31

By HG

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta 31+185 Offset	SHIFT: NIGHT [ ] DAY [X]	DATE: 1 AOUT 2010	SHEET 1 of 7
To Sta. 31+200 Offset	LOCATION: BAY GOOSE DIKE SOUTH PORTION		
EQUIPMENT:			

DESCRIPTION

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	GM	
2.	Storage areas planned for disposal of removed materials	GM	
3.	Occurrence of snow and ice removal method in place	GM	
4.	Occurrence of boulders and removal method in place	GM	
5	Occurrence of hummocks and scalping method in place	GM	
6.	Occurrence of surface and ground water and its impact mitigation in place	GM	
7.	Presence of other unsuitable materials and removal method in place	GM	
8	Soil frozen or thawed and measures taken	GM	
9	Blasting requirement to remove unsuitable material and safety measure checked	N/A GM	
10	Adjustment made to suit design in field	GM	
11.	Final walkover inspection before re-sloping or fill placement	GM	
12.	"As-excavated" survey conducted	GM	
13.	Final sounding conducted of lake bottom surface	GM	

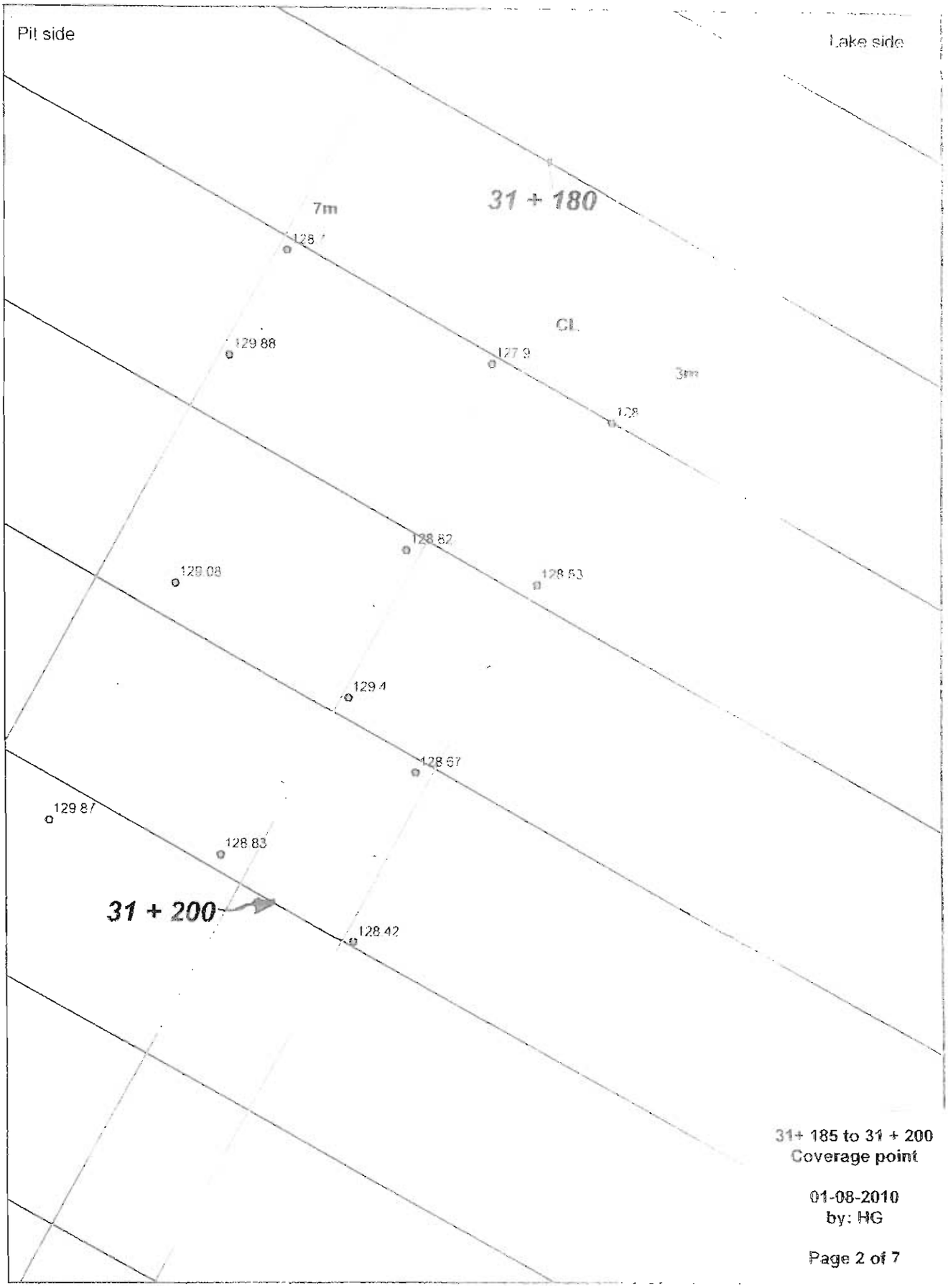
REMARKS :

DEVIATIONS (Attach list if necessary)

DATE OF RECTIFICATION :

SURVEY VERIFICATION	ACCEPTED BY QA Manager	ACCEPTED BY OWNER
NAME: Guy Morissette	NAME: Yves Boulianne	NAME
SIGNATURE : Guy Morissette	SIGNATURE :	SIGNATURE
DATE 1 aout 2010	DATE Aug 1, 2010	DATE

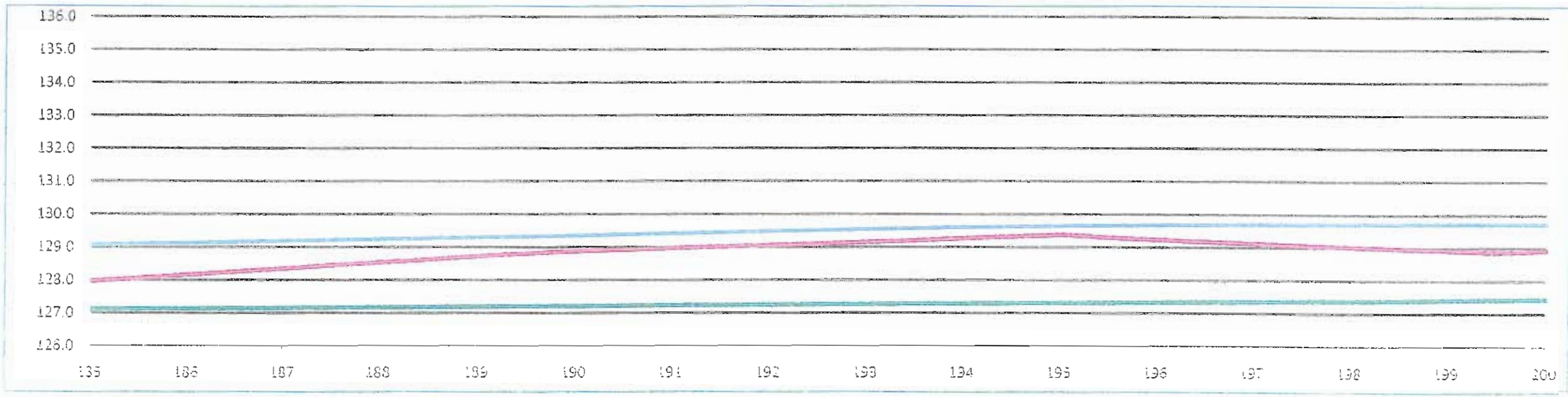
original Golder copy Y.D.



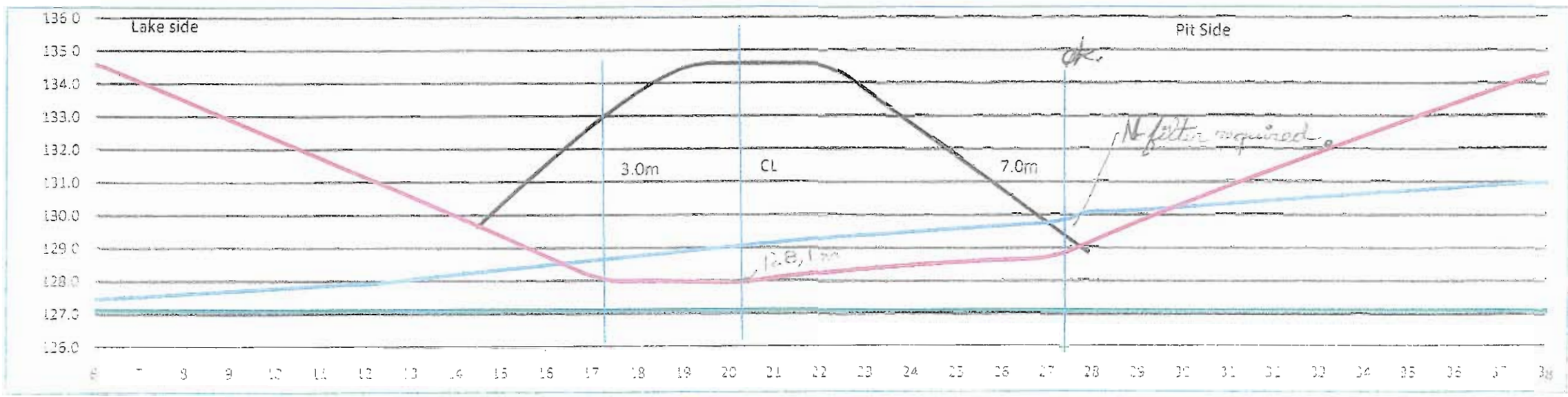
31+ 185 to 31 + 200
Coverage point

01-08-2010
by: HG

CL (manuel probing) 31 +185 to 31 +200



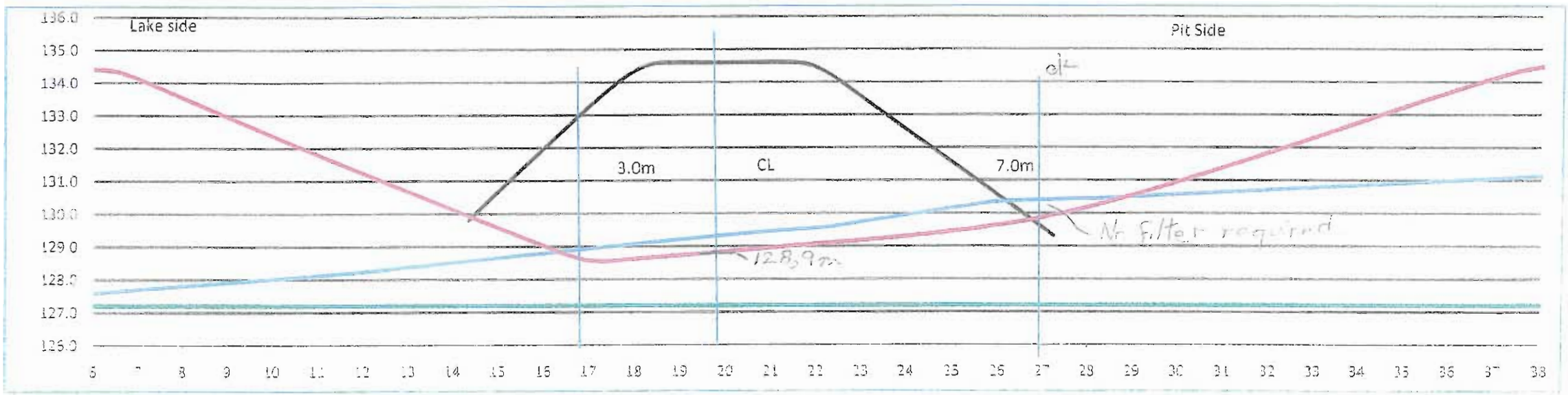
Cut view 31+185



Lake bed soil
bathymetrie survey
offered bed rock

Date 2013-08-01
By HG

Cut view 31+190



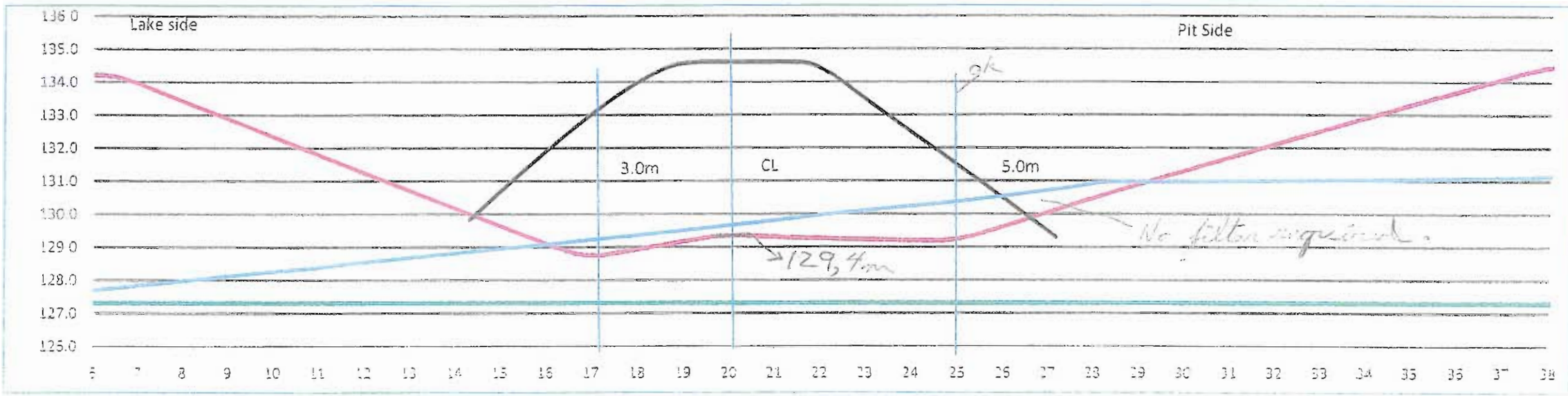
Lake bed soil

bathymetrie survey

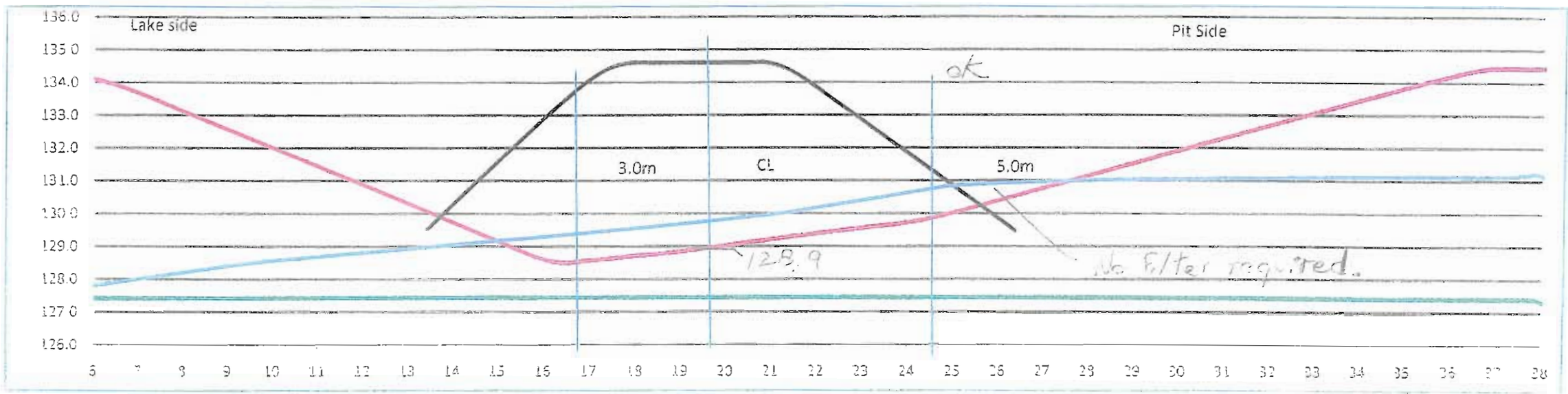
Date 2010-03-01

By HG

Cut view 31+195



Cut view 31+200



Lake bed soil
bathymetrie survey
weathered bed rock

Date 2010-08-01
By MG

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 31+200 Offset	SHIFT: NIGHT [ ] DAY [X]	DATE 2 August	SHEET 1 of 15
To Sta 31+250 Offset	LOCATION: BAY Goose Dike, Jean Lake		
EQUIPMENT:			

DESCRIPTION

NO	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	CHECKED BY QA Manager
1	Survey lines and layout checked to ensure the locations conform with the Drawings	[illegible]	[illegible]
2	Storage areas planned for disposal of removed materials	[illegible]	[illegible]
3.	Occurrence of snow and ice removal method in place	[illegible]	[illegible]
4	Occurrence of boulders and removal method in place	[illegible]	[illegible]
5	Occurrence of hummocks and scalping method in place	[illegible]	[illegible]
6.	Occurrence of surface and ground water and its impact mitigation in place	[illegible]	[illegible]
7	Presence of other unsuitable materials and removal method in place	[illegible]	[illegible]
8.	Soil frozen or thawed and measures taken	[illegible]	[illegible]
9.	Blasting requirement to remove unsuitable material and safety measures checked	N/A [illegible]	[illegible]
10	Adjustment made to suit design in field	[illegible]	[illegible]
11.	Final walkover inspection before re-sloping or fill placement	[illegible]	[illegible]
12	"As-excavated" survey conducted	[illegible]	[illegible]
13	Final sounding conducted of lake bottom surface	[illegible]	[illegible]

REMARKS: No filter required, No cleaning of soft material was necessary in this approved section. We haven't been able to track the TSS sedimentation due to the surveyor availability.

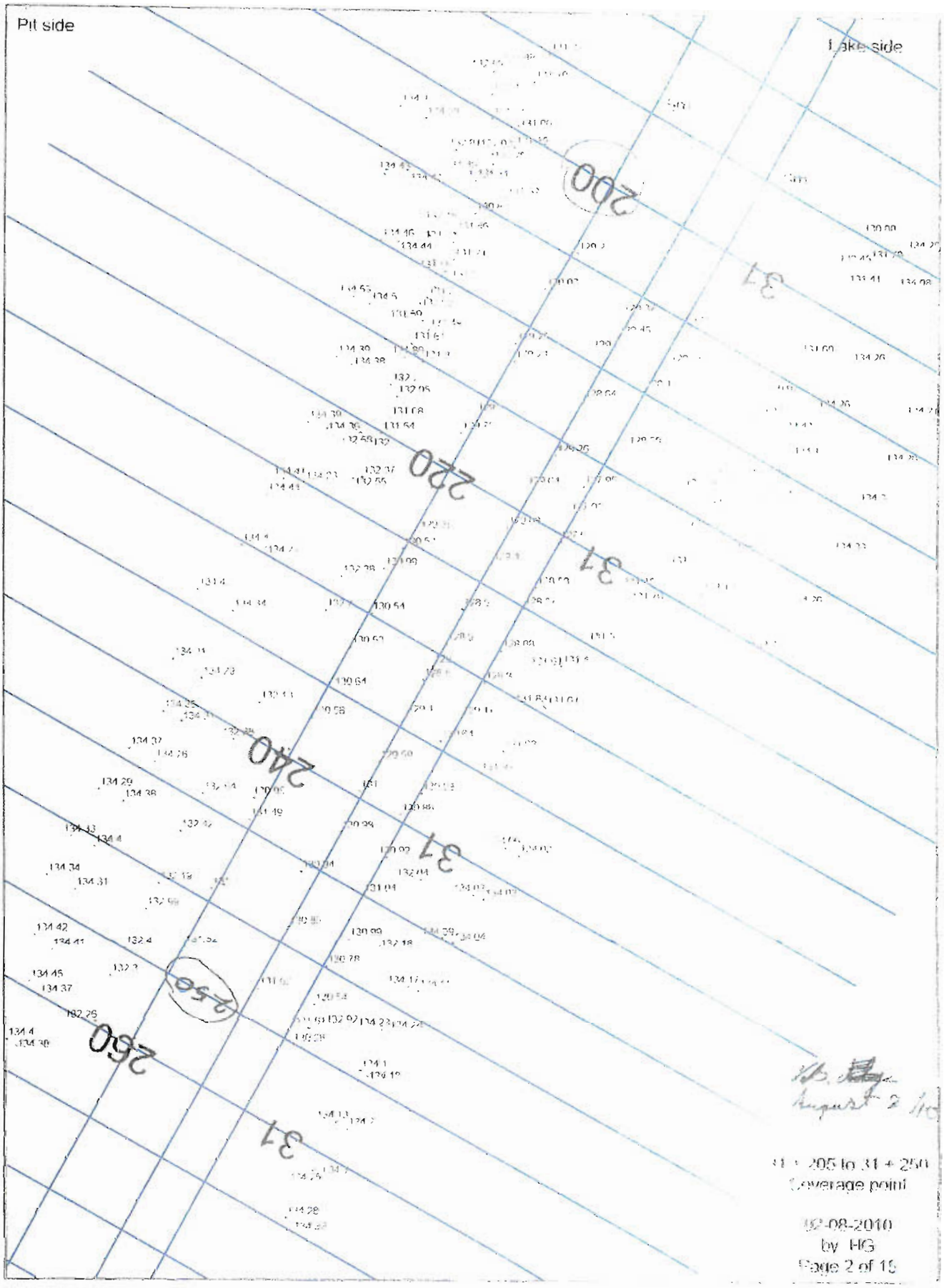
DEVIATIONS (Attach list if necessary)

DATE OF RECEIPT/LOCATION

SURVEY VERIFICATION	ACCEPTED BY QA Manager	ACCEPTED BY [illegible]
NAME: Guy Morissette	NAME: Yves Boutin	NAME
SIGNATURE: [illegible] Morissette	SIGNATURE: [illegible]	SIGNATURE
DATE 2 Aout 2010	DATE August 2, 2010	DATE

16 hrs

original / Golder copy
YB Aug 2/10



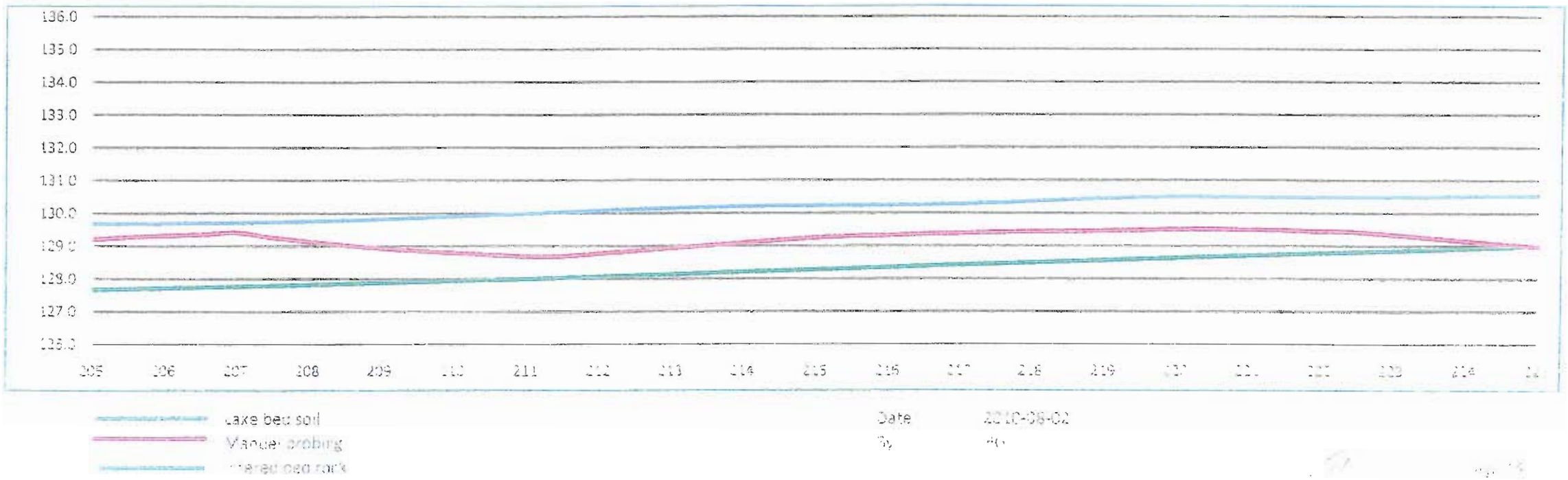
31 + 205 to 31 + 250
Coverage point

02-08-2010
by HG
Page 2 of 15

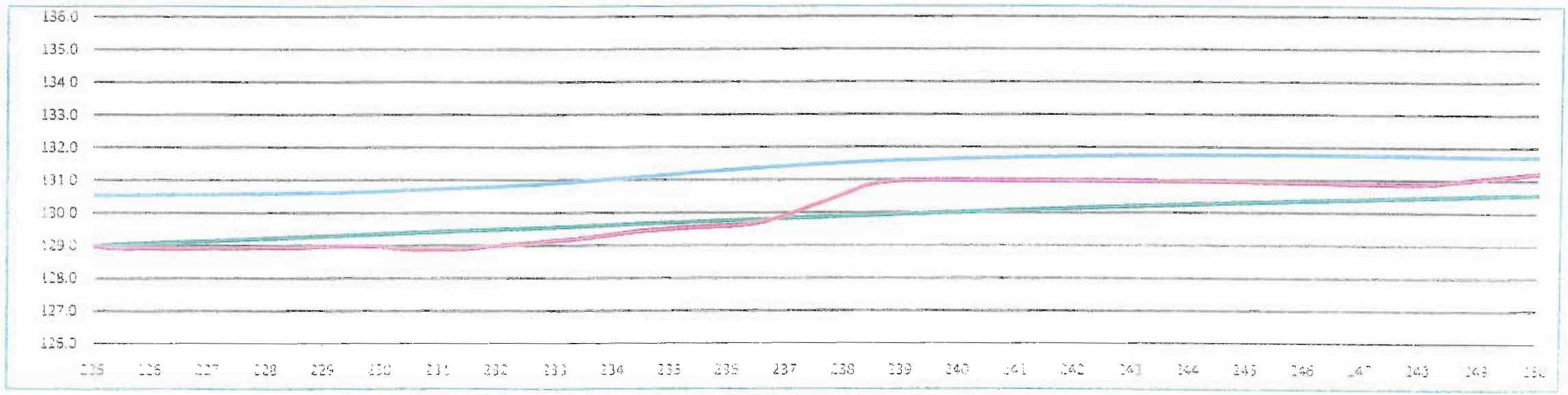
31 + 205 to 31 + 250
ontour line (50cm)

1:400
02-08-2010
by HG

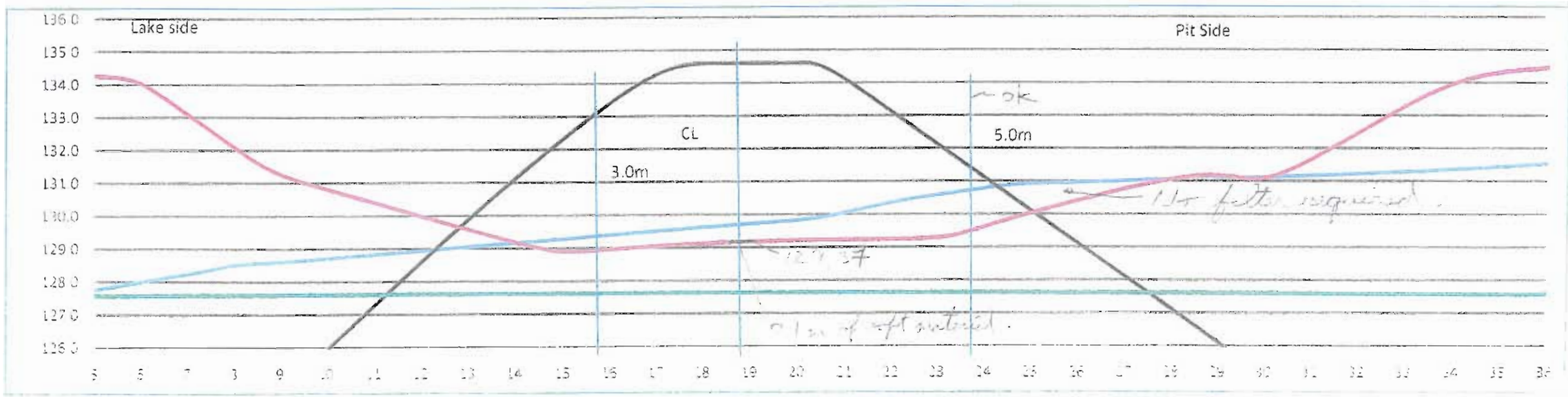
CL (manuel probing) 31 +205 to 31 +225



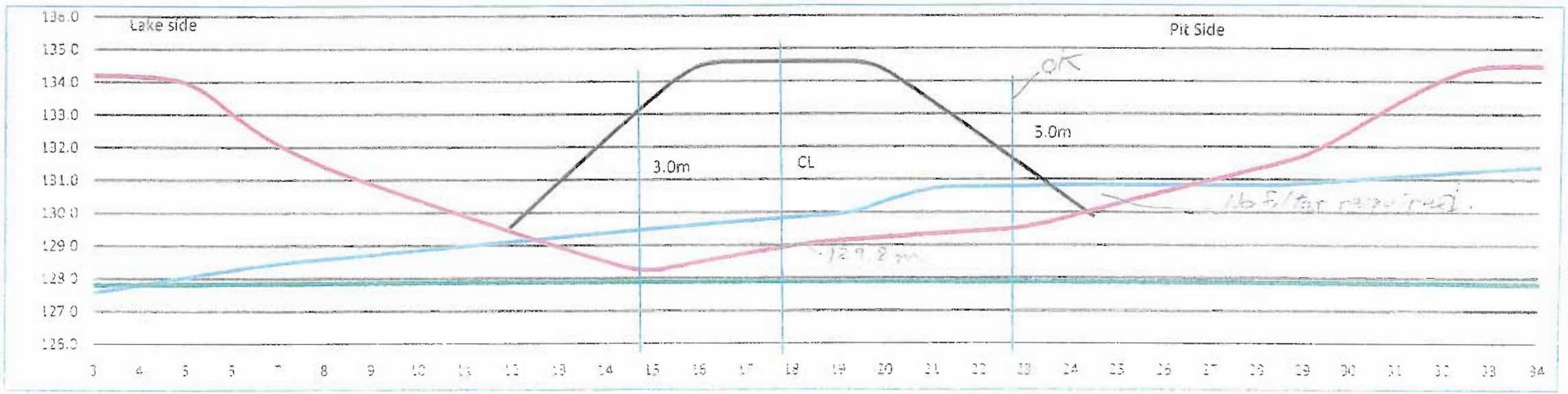
CL (manuel probing) 31 +225 to 31 +250



Cut view 31+205



Cut view 31+210



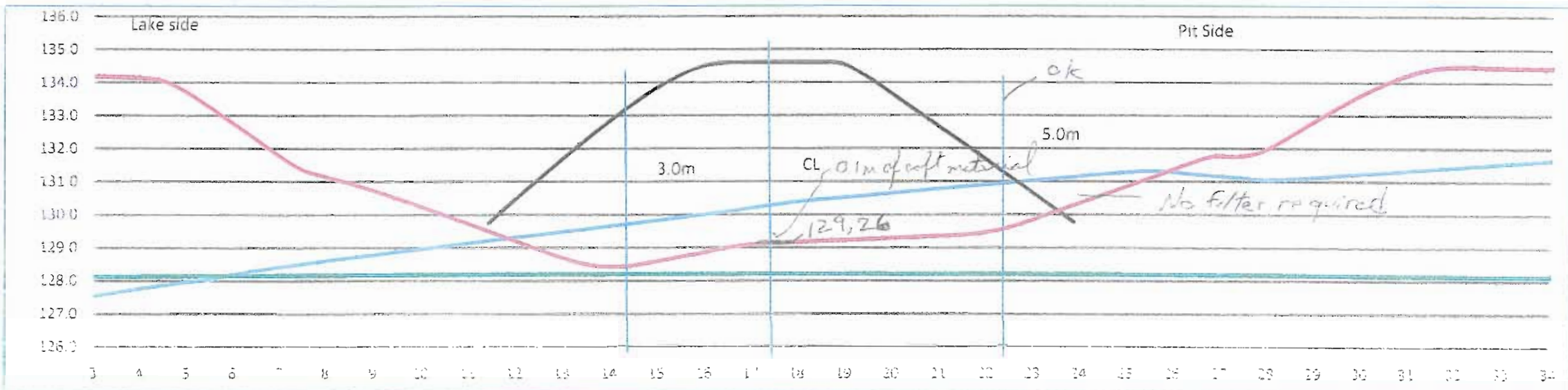
Lake bed soil

bathymetric survey

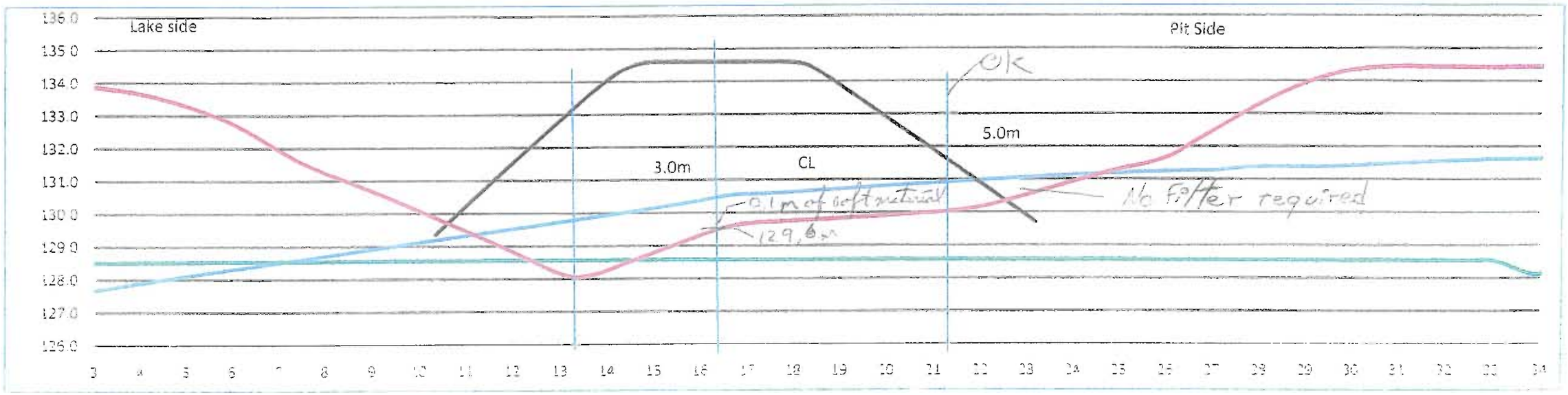
Date 2010-09-01

By HO

Cut view 31+215



Cut view 31+220



Lake bed soil

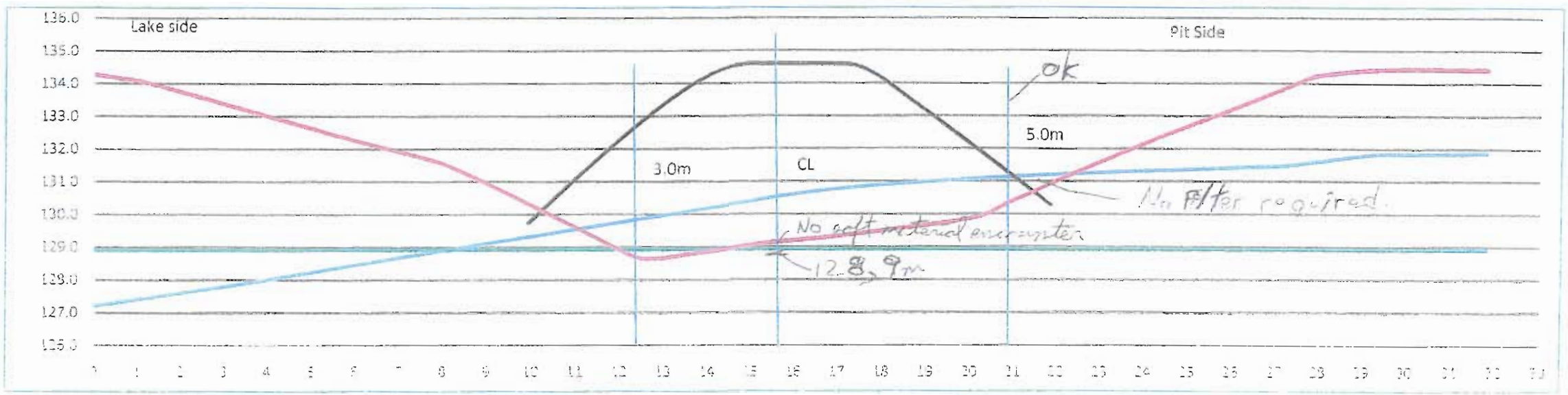
Bathymetric survey

Offset bed rock

Date 2010-08-12

By PG

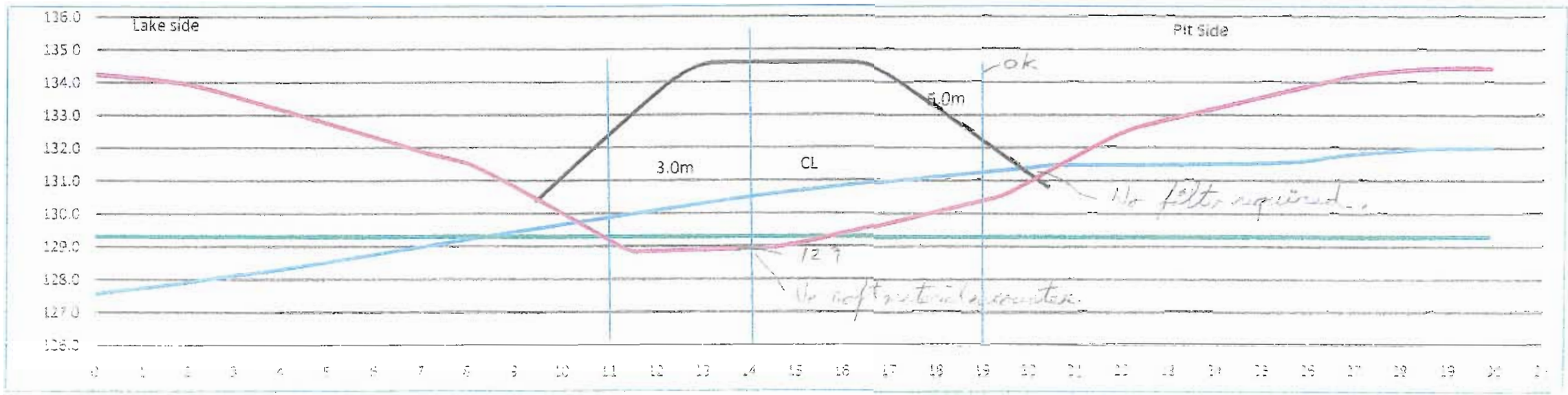
Cut view 31+225



Lake bed scr
Bathymetric survey
Revised bed profile

Date 2010-08-02
By

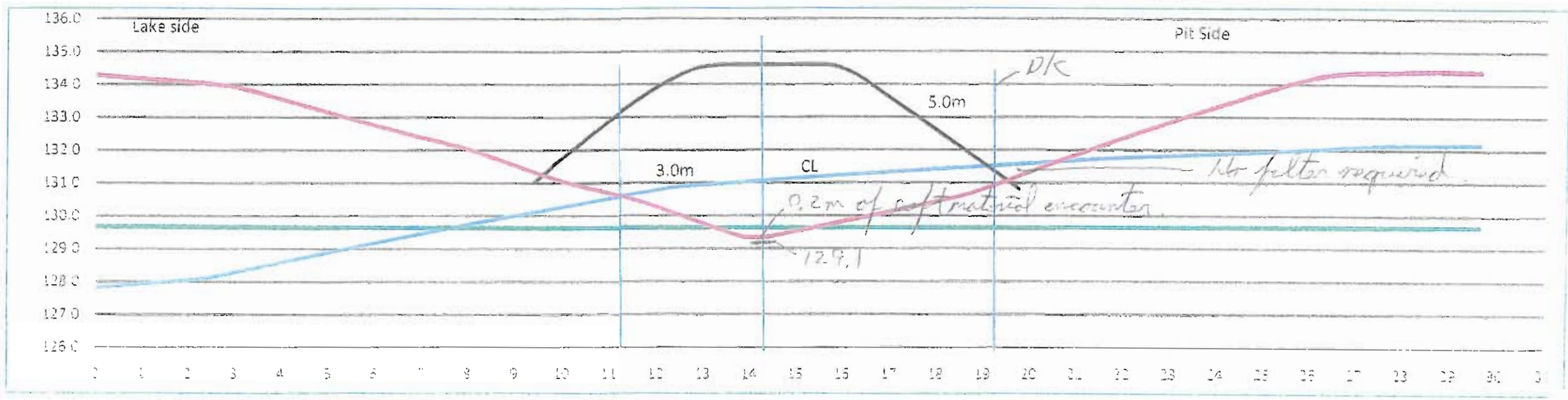
Cut view 31+230



Lake bed soil
Bathymetric survey
Bedrock

Date 2012-08-[illegible]
By [illegible]

Cut view 31+235



Lake bed soil

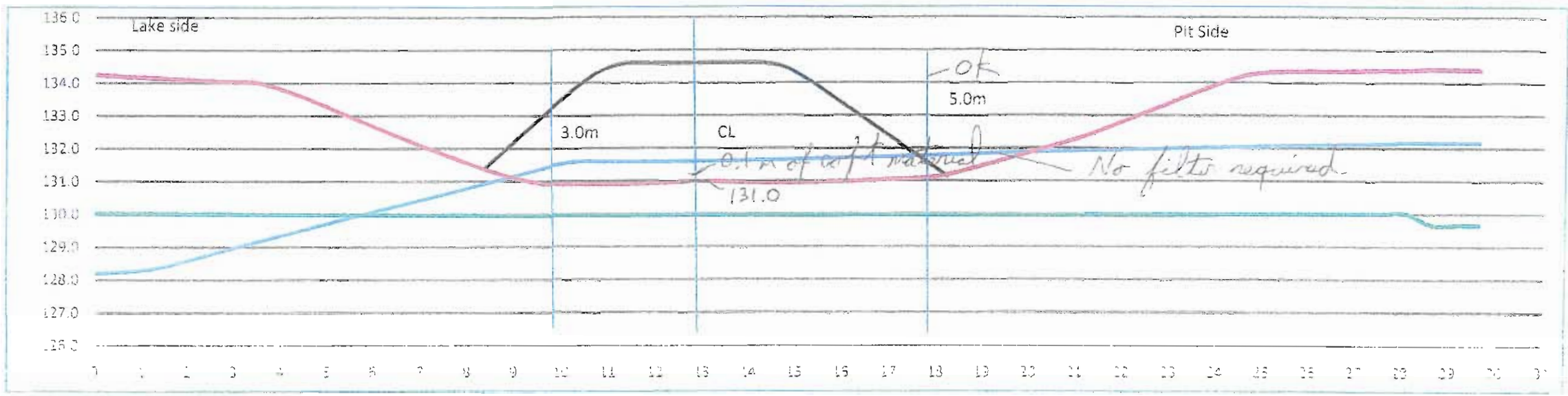
Bathymetric survey

Inferred bed rock

Date 2011-03-02

By HB

Cut view 31+240



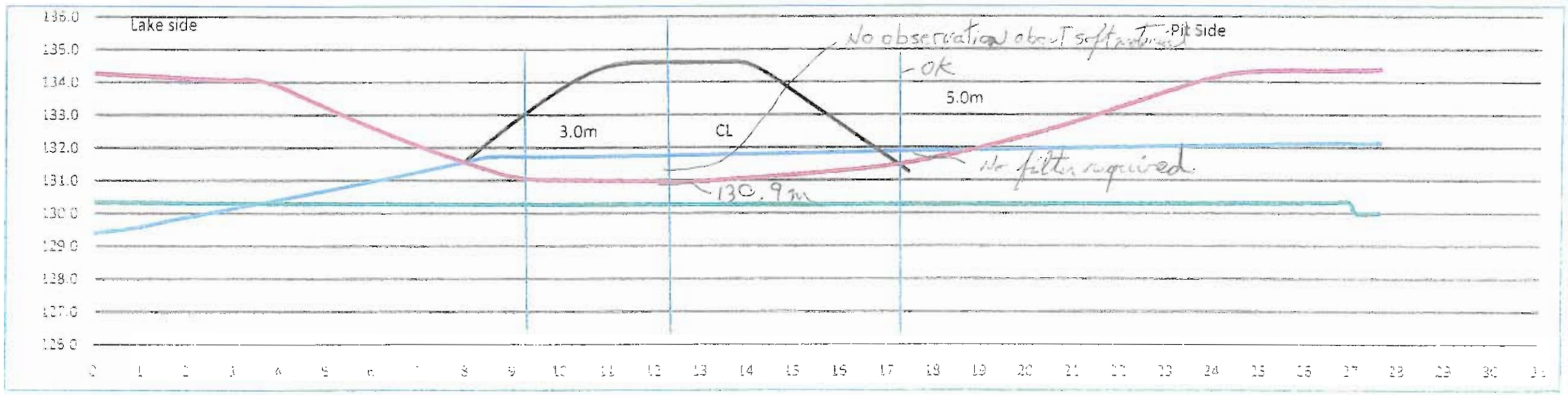
Lake bed soil

bathymetric survey

Date 2010-08-02

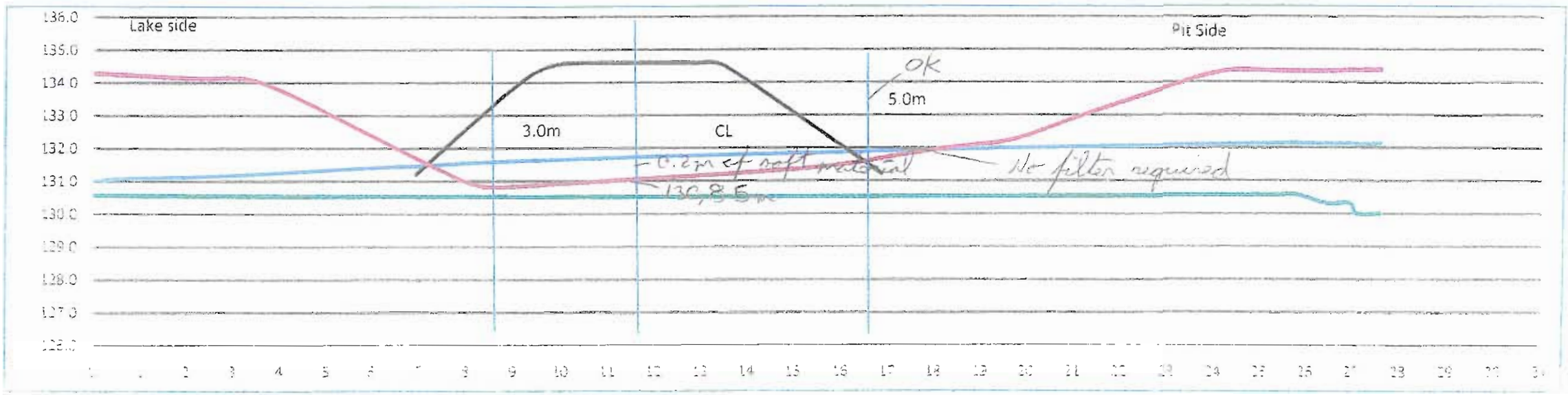
By HO

Cut view 31+245



Lake bed soil
bathymetric survey
Date
By

Cut view 31+250



Lake bed 2014
Bathymetric survey
Revised bed [illegible]

Date [illegible]
Sv [illegible]

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 31+255 Offset | SHIFT: NIGHT :☐ DAY :☒ | DATE : Aug 3/10 | SHEET 1 OF 7

To Sta. 31+265 Offset | LOCATION: : BAY GOOSE DIKE SOUTH PORTION

EQUIPMENT:

DESCRIPTION

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	GM	VB
2.	Storage areas planned for disposal of removed materials	GM	VB
3.	Occurrence of snow and ice removal method in place	GM	VB
4.	Occurrence of boulders and removal method in place	GM	VB
5.	Occurrence of hummocks and scalping method in place	GM	VB
6.	Occurrence of surface and ground water and its impact mitigation in place	GM	VB
7.	Presence of other unsuitable materials and removal method in place	GM	VB
8.	Soil frozen or thawed and measures taken	GM	VB
9.	Blasting requirement to remove unsuitable material and safety measure checked	N/A GM	VB N/A
10.	Adjustment made to suit design in field	GM	VB
11.	Final walkover inspection before re-sloping or fill placement	GM	VB
12.	"As-excavated" survey conducted	GM	VB
13.	Final sounding conducted of lake bottom surface	GM	VB

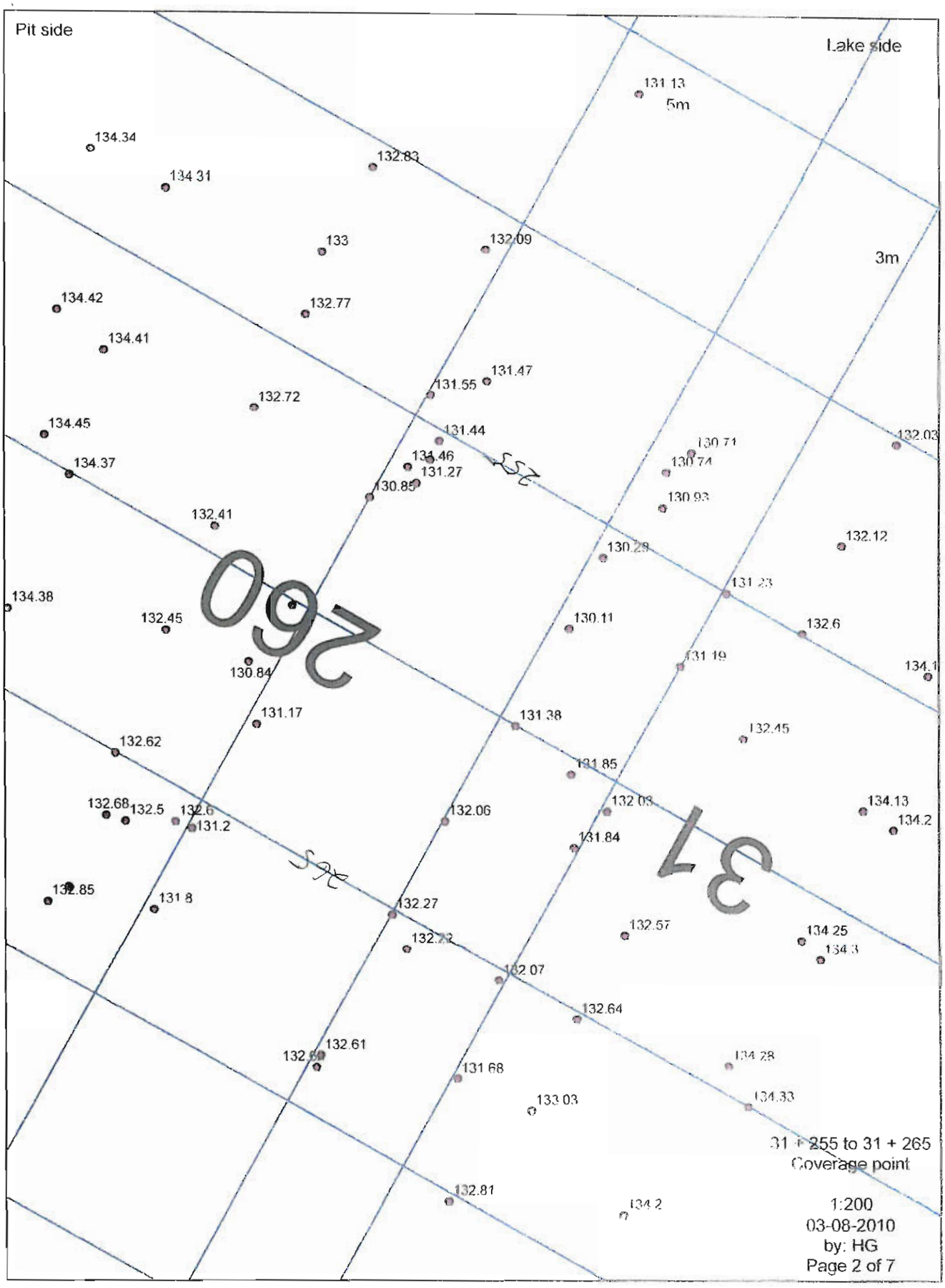
REMARKS : No filter required, As discussed at the "Construction Meeting" this morning, spot check at are necessary to the satisfaction of QA field staff. at every 5.0 m.

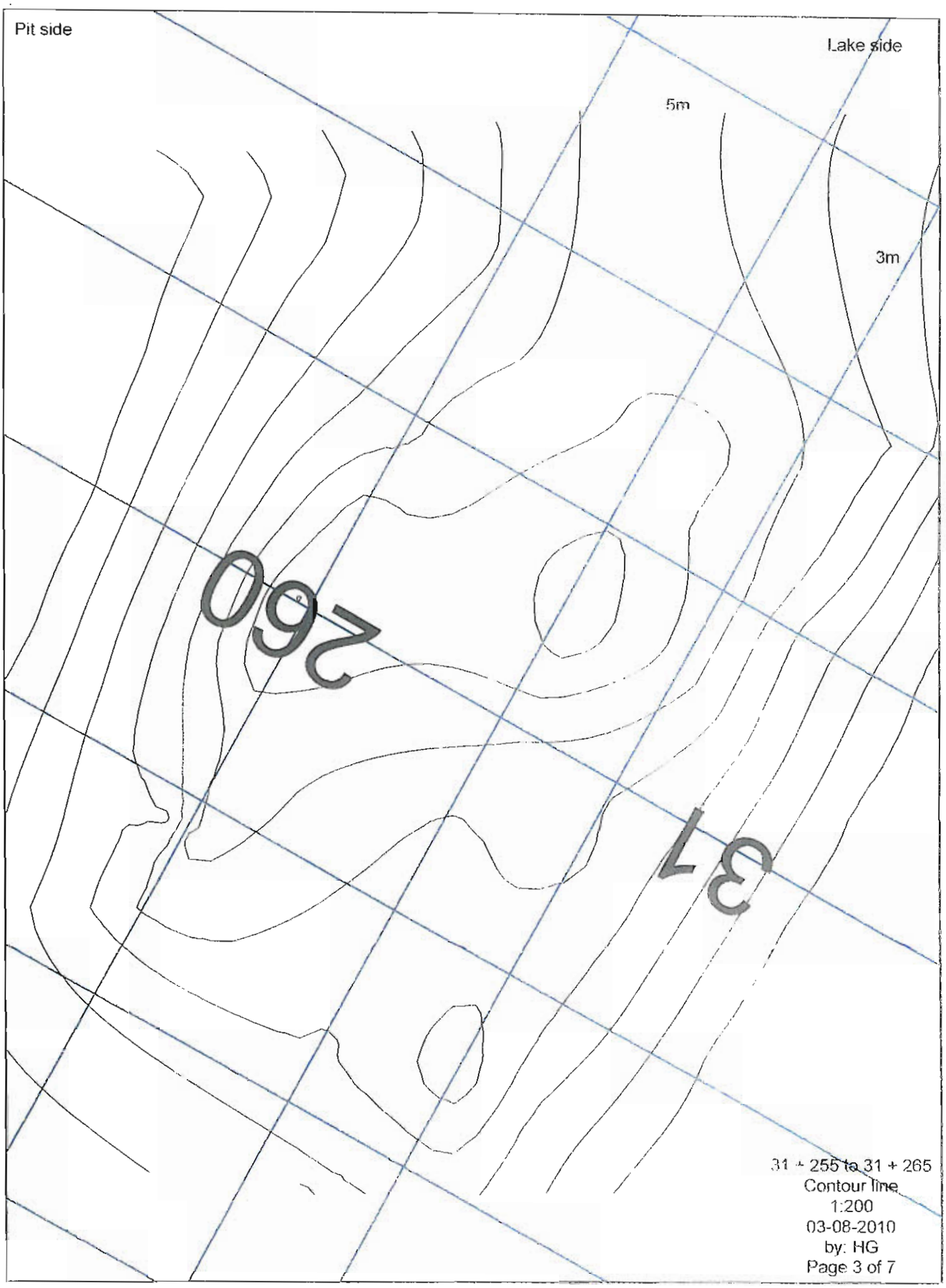
DEVIATIONS : (Attach list if necessary)

DATE OF RECTIFICATION :

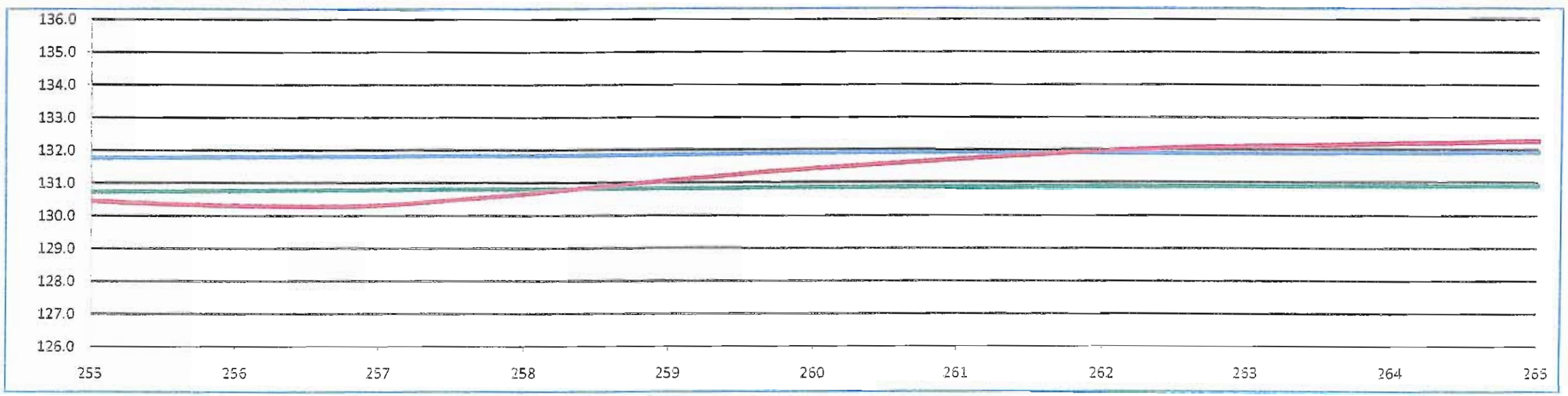
SURVEY VERIFICATION	ACCEPTED BY QA Manager :	ACCEPTED BY OWNER
NAME: Guy Morissette	NAME: Yves Bouliane	NAME:
SIGNATURE :	SIGNATURE :	SIGNATURE :
DATE 3 août 2010	DATE Aug 3/10	DATE

20:15 hrs.


Pit side
Lake side
5m
3m
134.34
134.31
132.83
131.13
133
132.09
134.42
132.77
134.41
131.47
131.55
132.72
134.45
131.44
134.46
131.27
134.37
130.85
132.41
130.71
130.74
130.93
132.03
132.12
130.29
134.38
131.23
132.45
130.11
132.6
130.84
131.19
134.1
131.17
131.38
132.62
132.45
131.85
132.68
132.5
132.6
131.2
132.06
132.03
134.13
134.2
131.84
132.85
131.8
132.27
132.57
134.25
134.3
132.07
132.64
132.61
132.68
131.68
134.28
133.03
134.33
132.81
134.2
260
31
25E
25E
31 + 255 to 31 + 265
Coverage point
1:200
03-08-2010
by: HG
Page 2 of 7


Pit side
Lake side
5m
3m
260
37
31 + 255 to 31 + 265
Contour line
1:200
03-08-2010
by: HG
Page 3 of 7

CL (manuel probing) 31 +255 to 31 +265

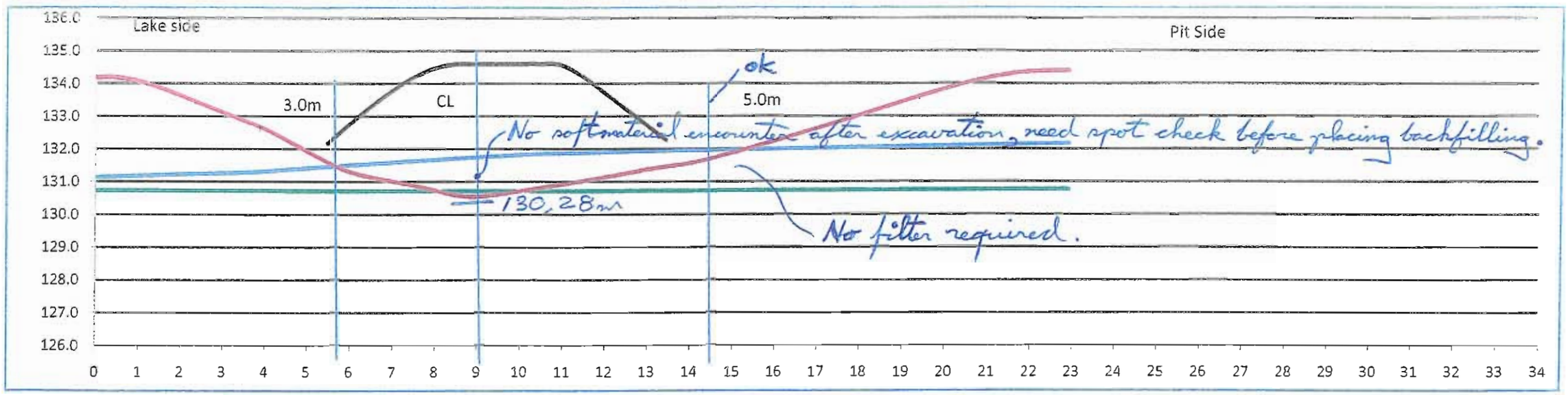


Lake bed soil
Manuel probing
Infered bed rock

Date 2010-08-01
By: HG

HG.
Aug 3/10

Cut view 31+255

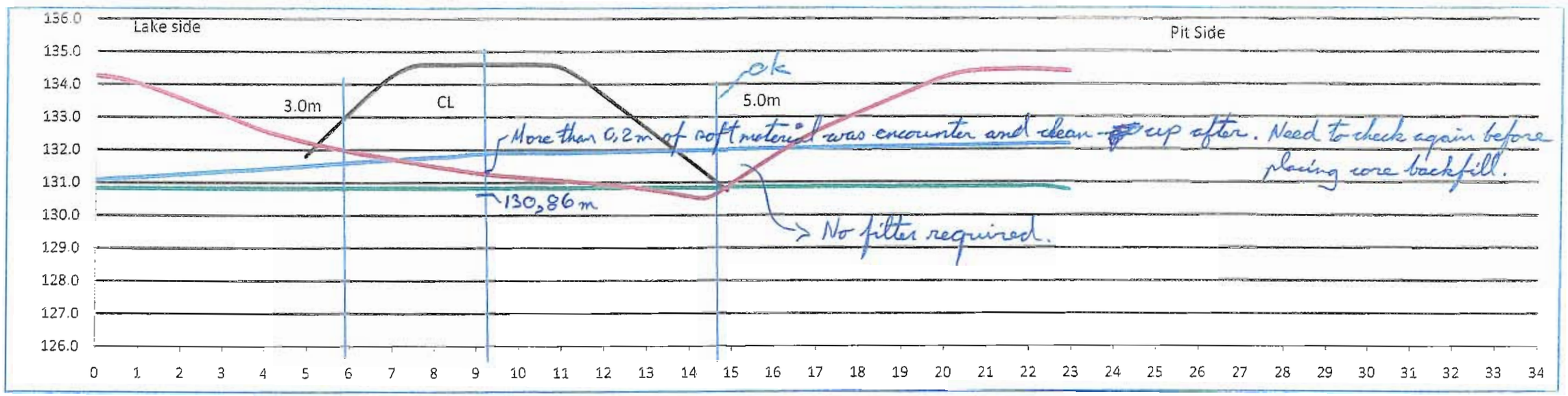


Lake bed soil
bathymetrie survey
Infered bed rock

Date 2010-08-03
By: HG

HG.
Aug 3, 2010

Cut view 31+260

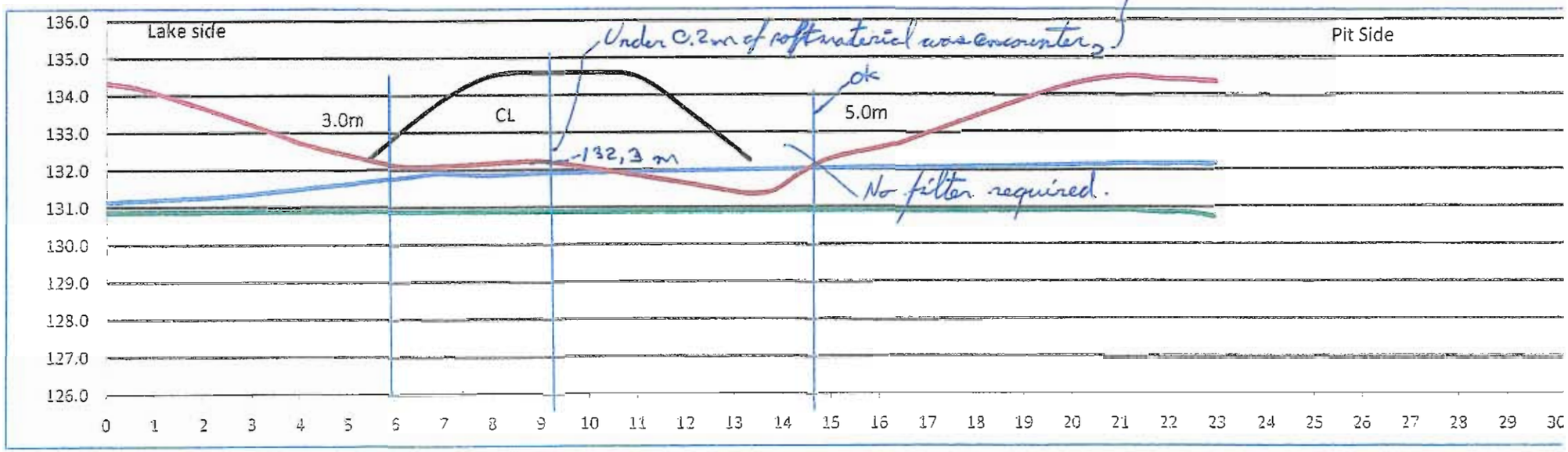


Lake bed soil
bathymetrie survey
Infered bed rock

Date 2010-08-03
By: HG

Aug 3/10

Cut view 31+265



Lake bed soil
bathymetrie survey
Infered bed rock

Date 2010-08-03
By: HG

Aug 3

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST FOUNDATION PREPARATION and EXCAVATION

From Sta. 31+270 Offset	SHIFT: NIGHT [ ] DAY [X]	DATE 3 Aout 2010	SHEET 1 OF 11
To Sta. 31+300 Offset	LOCATION: .		
EQUIPMENT:			

DESCRIPTION

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1	Survey lines and layout checked to ensure the locations conform with the Drawings		
2	Storage areas planned for disposal of removed materials		
3.	Occurrence of snow and ice removal method in place		
4.	Occurrence of boulders and removal method in place		
5	Occurrence of hummocks and scalping method in place		
6	Occurrence of surface and ground water and its impact mitigation in place		
7	Presence of other unsuitable materials and removal method in place		
8.	Soil frozen or thawed and measures taken		
9	Blasting requirement to remove unsuitable material and safety measure checked	N/a	
10	Adjustment made to suit design in field		
11	Final walkover inspection before re-sloping or fill placement		
12	"As-excavated" survey conducted		
13.	Final sounding conducted of lake bottom surface		

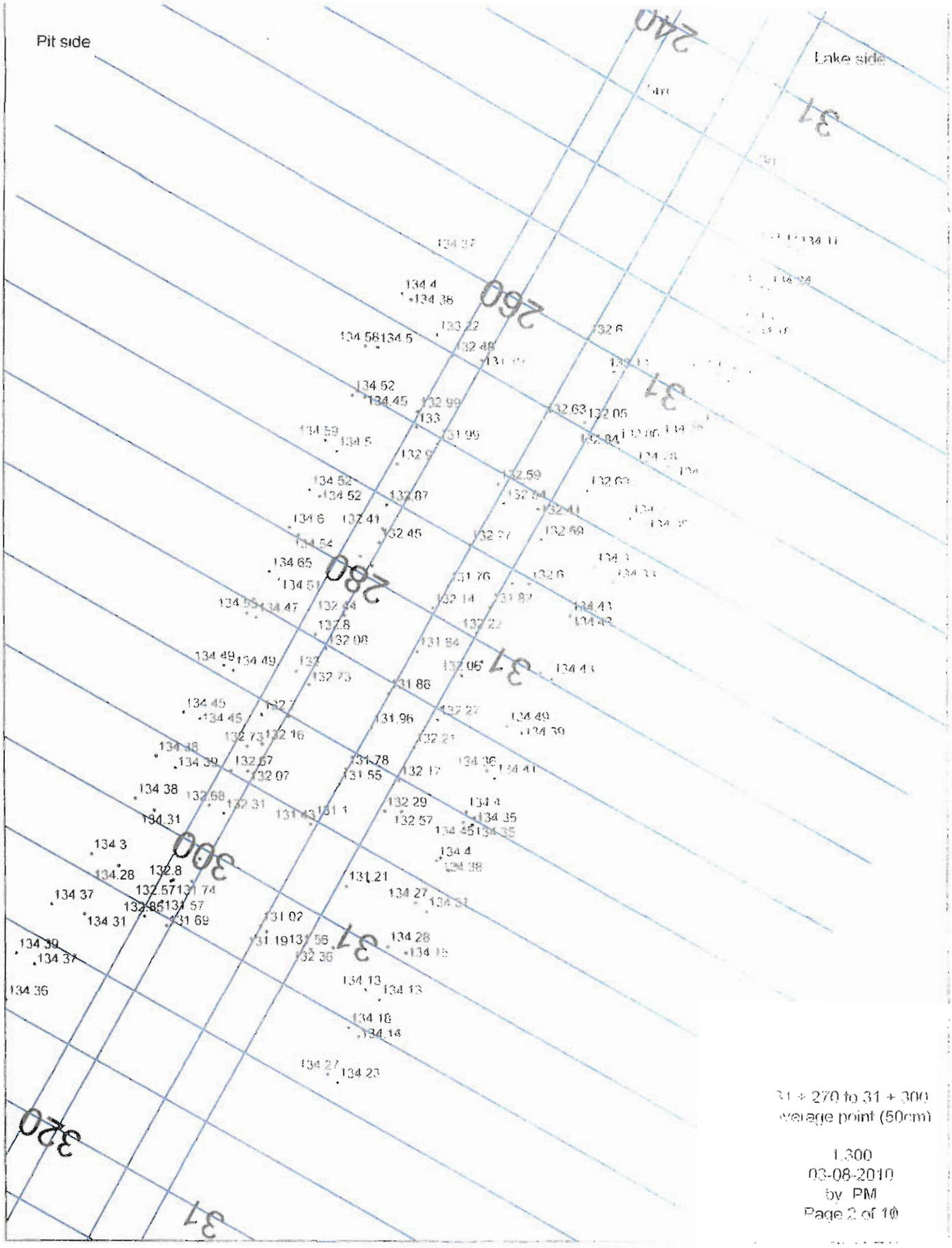
REMARKS : No filter required.
Soft material check at every 5m before & placing core backfill.

DEVIATIONS . (Attach list if necessary)

DATE OF RECTIFICATION:

SURVEY VERIFICATION	ACCEPTED BY QA Manager	ACCEPTED BY OWNER
NAME: Guy Morissette	NAME: Yves Boutiquue	NAME
SIGNATURE	SIGNATURE :	SIGNATURE
DATE 3 Aout 2010	DATE Aug 3 /2010	DATE

20 ; 40 hrs

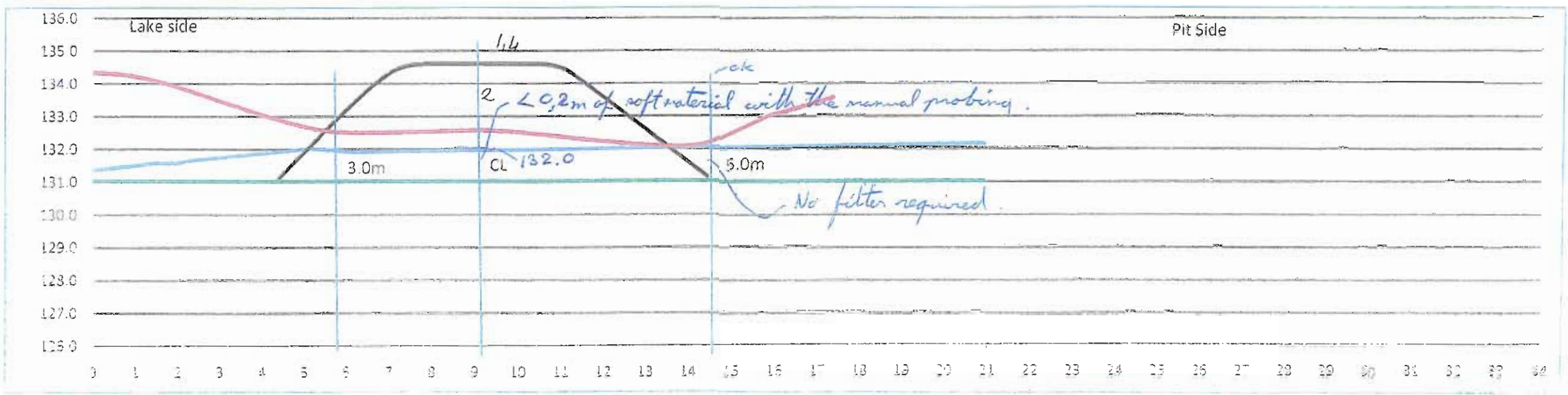


31 + 270 to 31 + 300
average point (50cm)

1:300
03-08-2010
by PM
Page 2 of 10

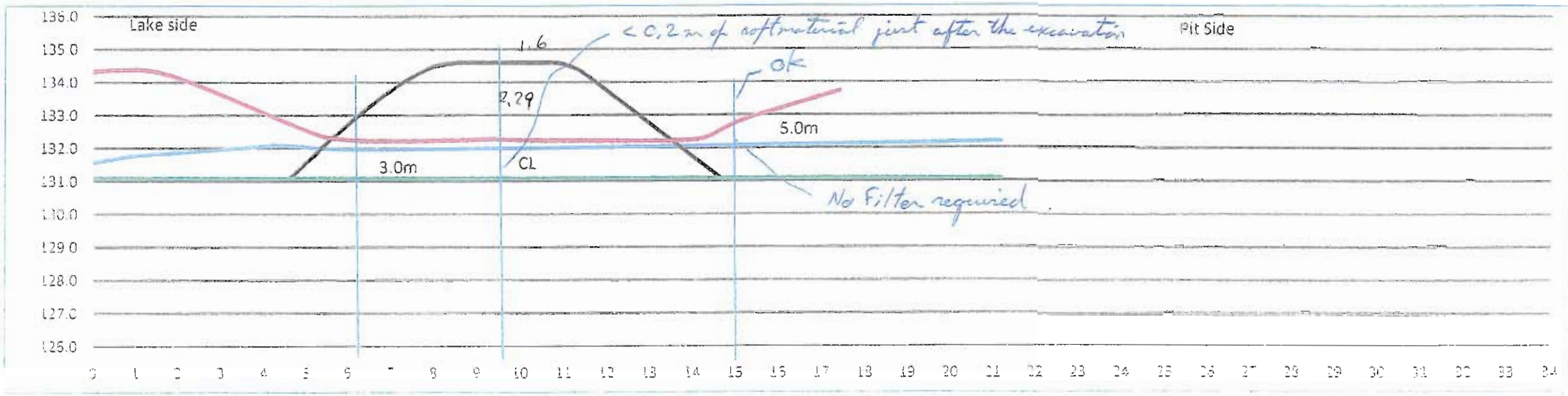
Pit side
Lake side
5m
3m
260
280
300
320
34
34
34
34
31 + 270 to 31 + 300
Contour line (50cm)
1:275
03-08-2010
by: PM
Page 3 of 10

Cut view 31+270



Aug. 3 / 2010

Cut view 31+275



Lake bed soil

bathymetric survey → Manual Pointing

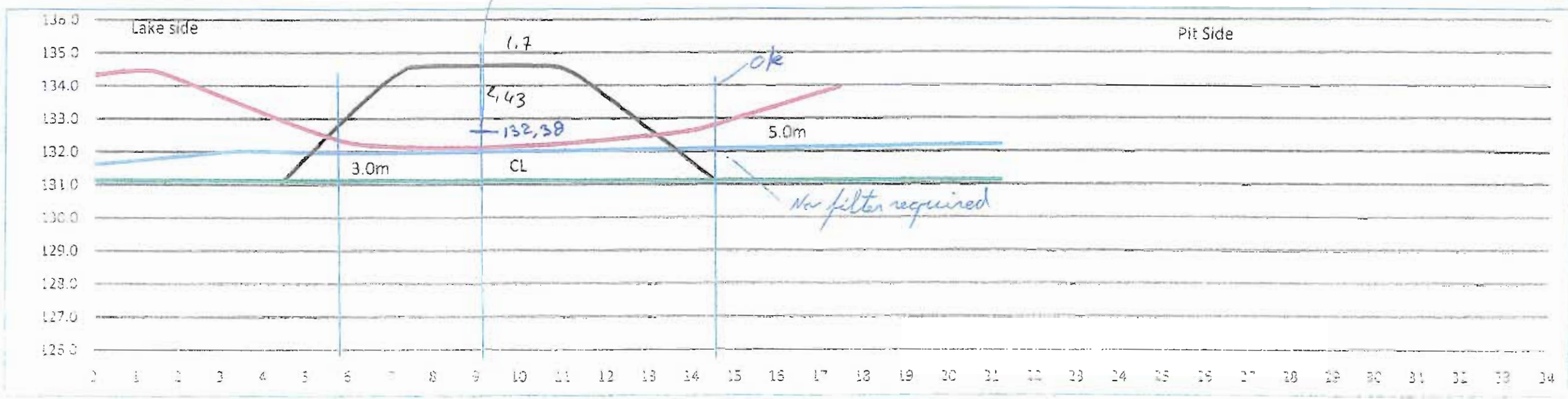
Inferred bed rock

Date 2010-08-03

By PM

No soft material after being excavated

Cut view 31+280



Lake bed soil

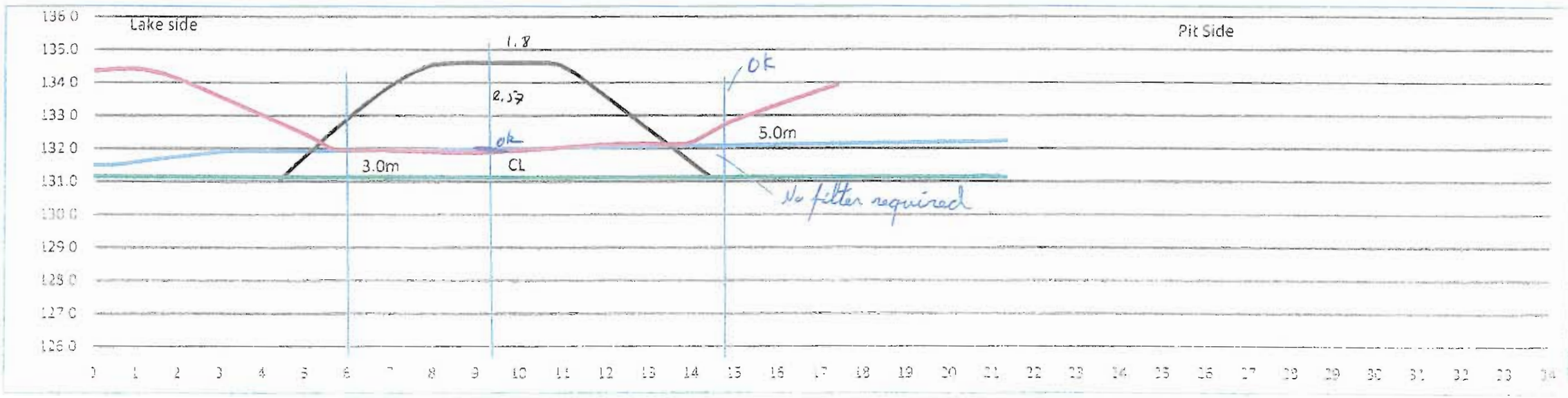
bathymetric survey -> Manual Pasting

Date 2010-08-23

By PM

OK
Aug 3 /10

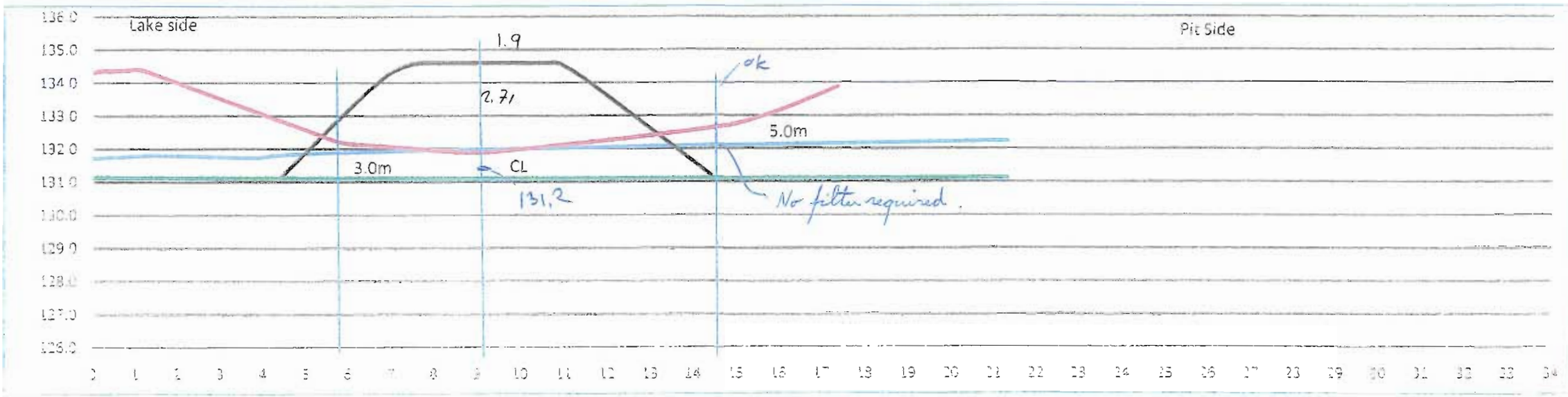
Cut view 31+285



Lake bed soil
bathymetric survey
offered bed rock

Date 2010-08-03
By PM

Cut view 31+290



Lake bed soil

Bathymetric survey

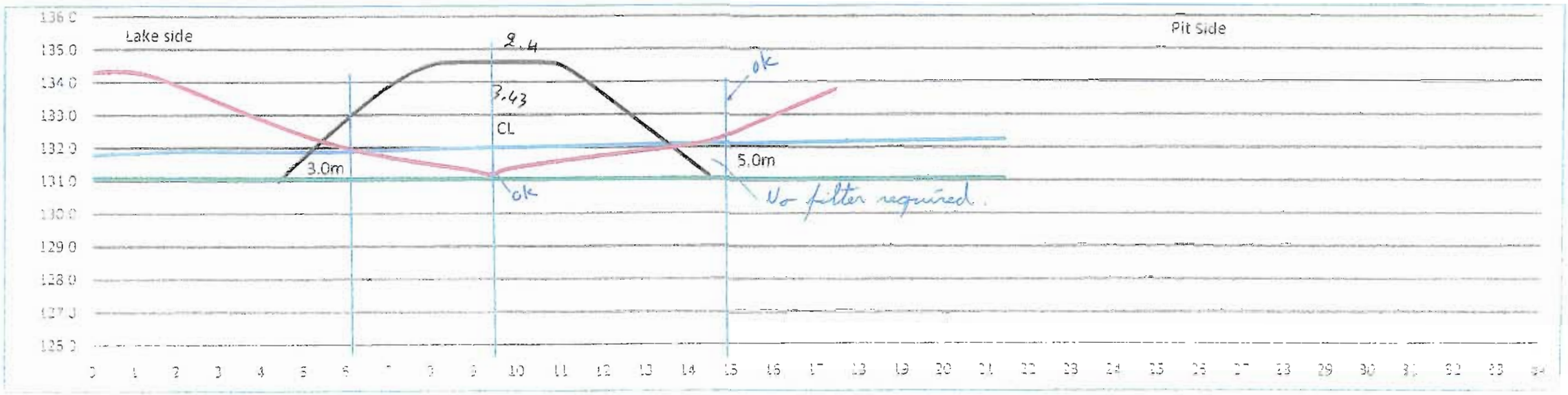
Date 2010-08-03

By PM

1/3

Aug 3/10

Cut view 31+295



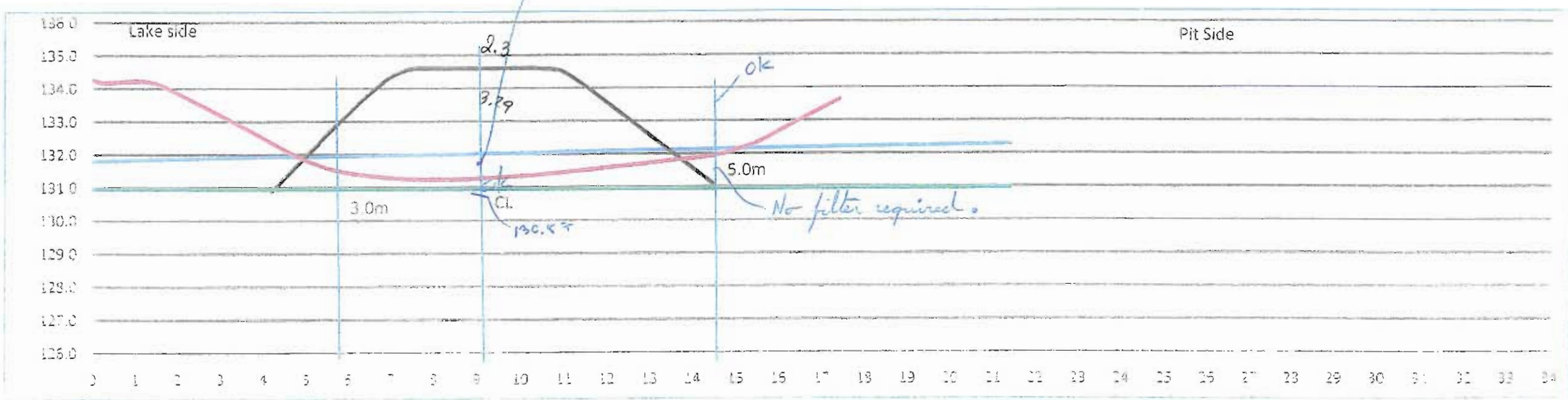
Lake bed soil
Bathymetric survey

Date 2010-08-31
By PM

Aug 3 / 10

0.3 m of soft material was cleaned.

Cut view 31+300



Lake bed soil

Bathymetric survey

Hand placed rock

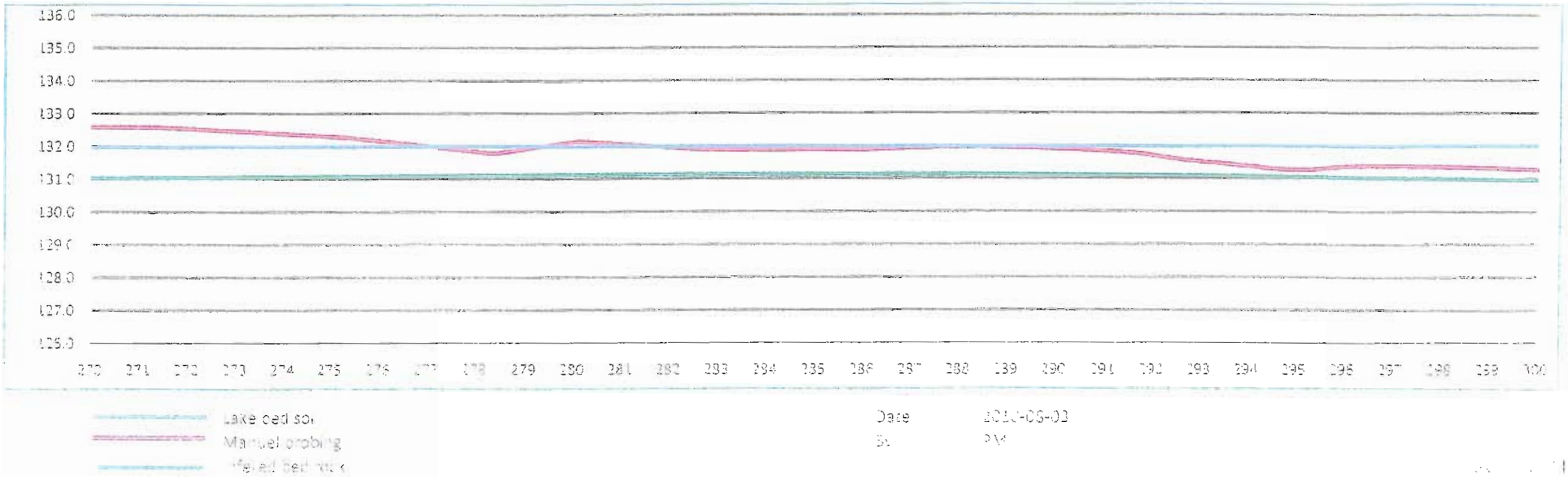
Manual Placing

Date 2010-08-03

By AM

Aug 3/10

CL (manuel probing) 31 +270 to 31 + 300



Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 31+305 Offset	SHIFT: NIGHT :☐ DAY :☑	DATE : 4 AOUT 2010	SHEET 1 OF 14
To Sta. 31+345 Offset	LOCATION: : BAY GOOSE DIKE SOUTH PORTION		
EQUIPMENT:			
DESCRIPTION			

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings		
2.	Storage areas planned for disposal of removed materials		
3.	Occurrence of snow and ice removal method in place		
4.	Occurrence of boulders and removal method in place		
5.	Occurrence of hummocks and scalping method in place		
6.	Occurrence of surface and ground water and its impact mitigation in place		
7.	Presence of other unsuitable materials and removal method in place		
8.	Soil frozen or thawed and measures taken		
9.	Blasting requirement to remove unsuitable material and safety measure checked	N/A	
10.	Adjustment made to suit design in field		
11.	Final walkover inspection before re-sloping or fill placement		
12.	"As-excavated" survey conducted		
13.	Final sounding conducted of lake bottom surface		

REMARKS : Approved but have requested additional points u/s + d/s toe.

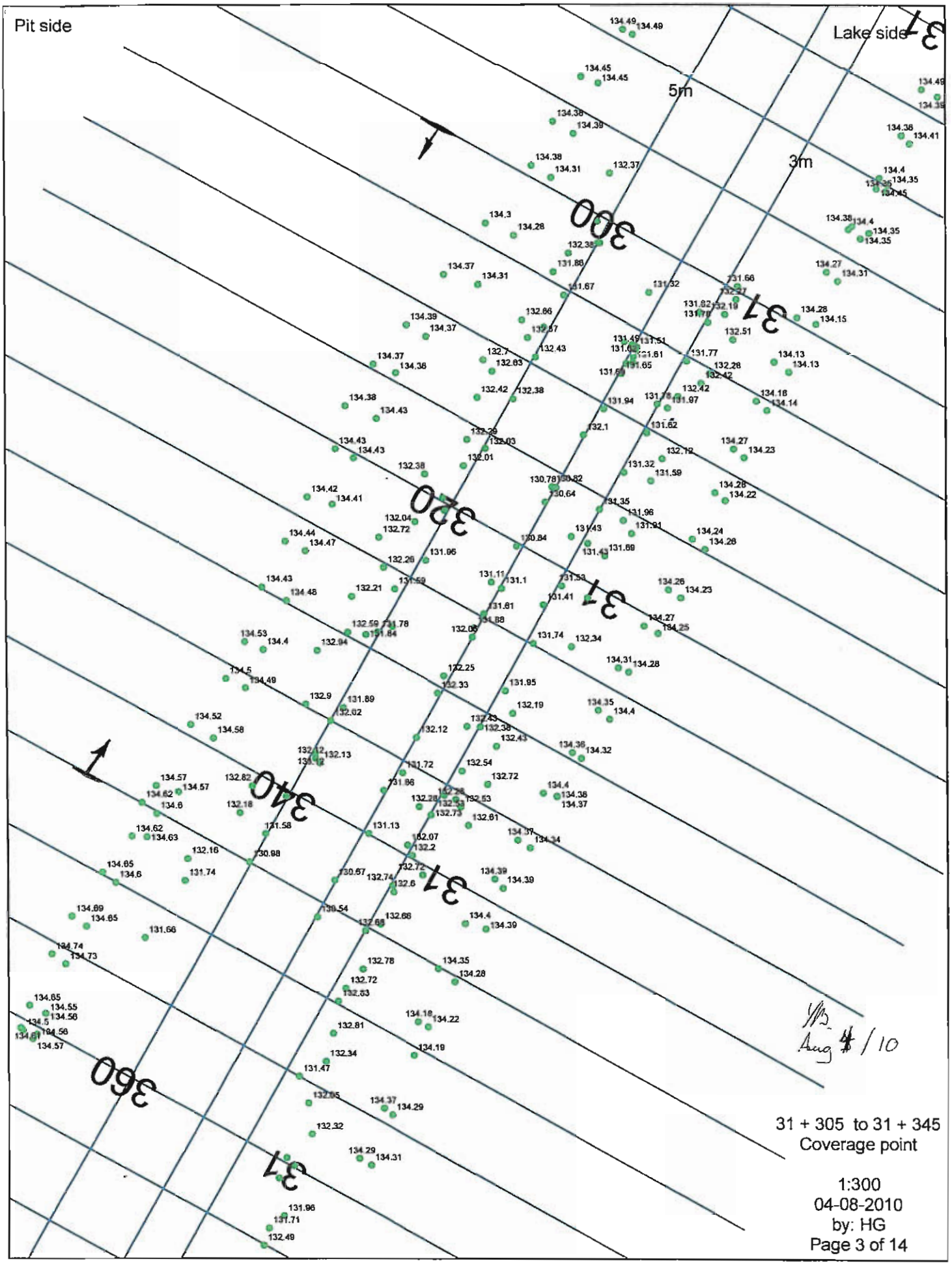
DEVIATIONS : (Attach list if necessary)

DATE OF RECTIFICATION :

SURVEY VERIFICATION	ACCEPTED BY QA Manager :	ACCEPTED BY OWNER :
NAME: GUY MORISSETTE	NAME: GRANT BLAIN	NAME:
SIGNATURE :	SIGNATURE :	SIGNATURE :
DATE 4 Aout 2010	DATE Aug 4, 2010	DATE

8 hrs AM.

COPY OF ORIGINAL 1/15


Pit side
Lake side
5m
3m
300
320
340
360
31 + 305 to 31 + 345
Coverage point
1:300
04-08-2010
by: HG
Page 3 of 14

2/15

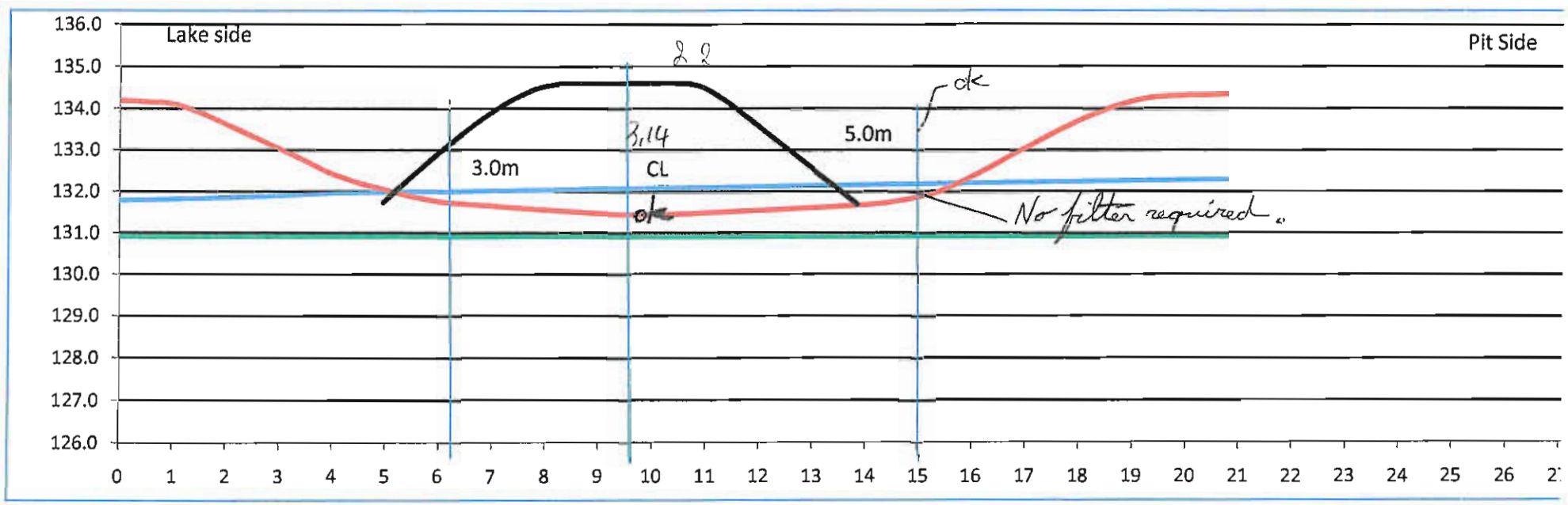
YB
Aug 4/10

31 + 305 to 31 + 345
Contour line (50cm)

1:300
04-08-2010
by: HG
Page 2 of 14

3/15

Cut view 31+305



Lake bed soil

~~bathymetric survey~~ ⇒ Manuel Probing

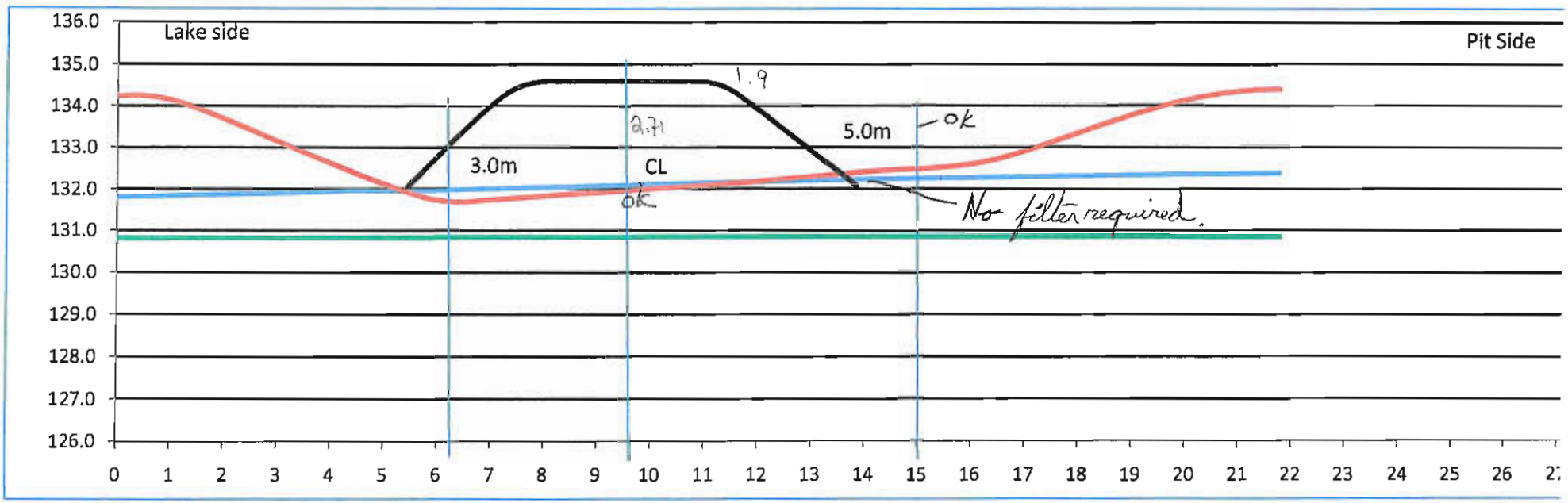
Infered bed rock

Date 2010-08-04

By: HG

5/11

Cut view 31+310



Lake bed soil

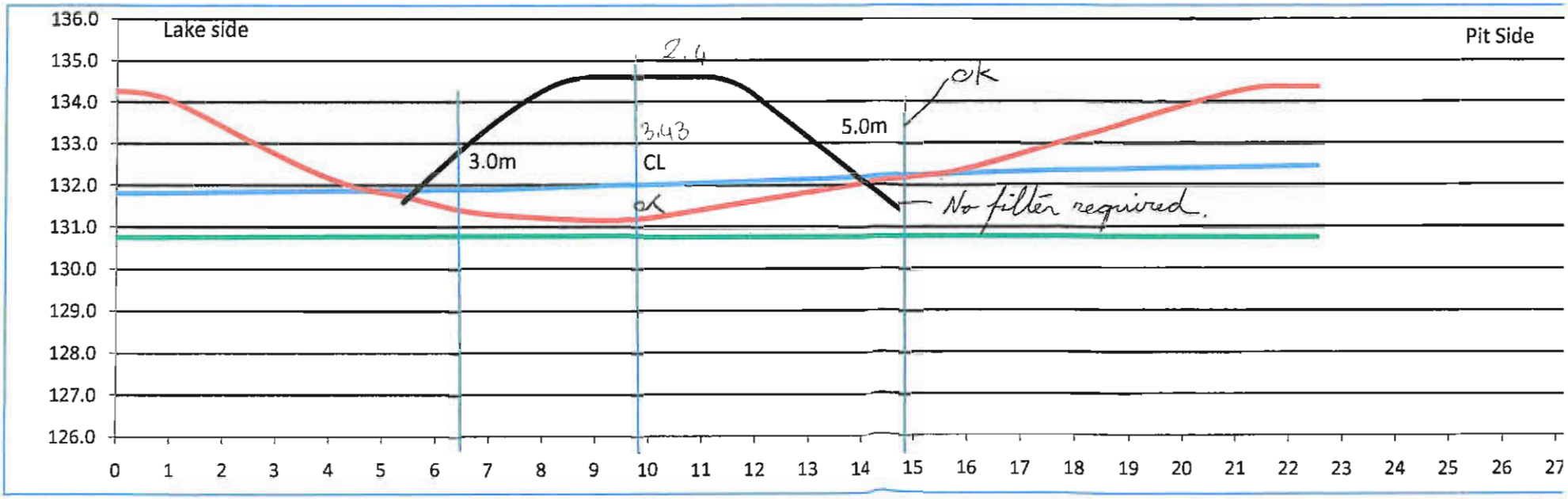
~~bathymetrie survey~~ → Manual Probing

Infered bed rock

Date 2010-08-04

By: HG

Cut view 31+315



Lake bed soil

~~bathymetrie survey~~ Manual Probing

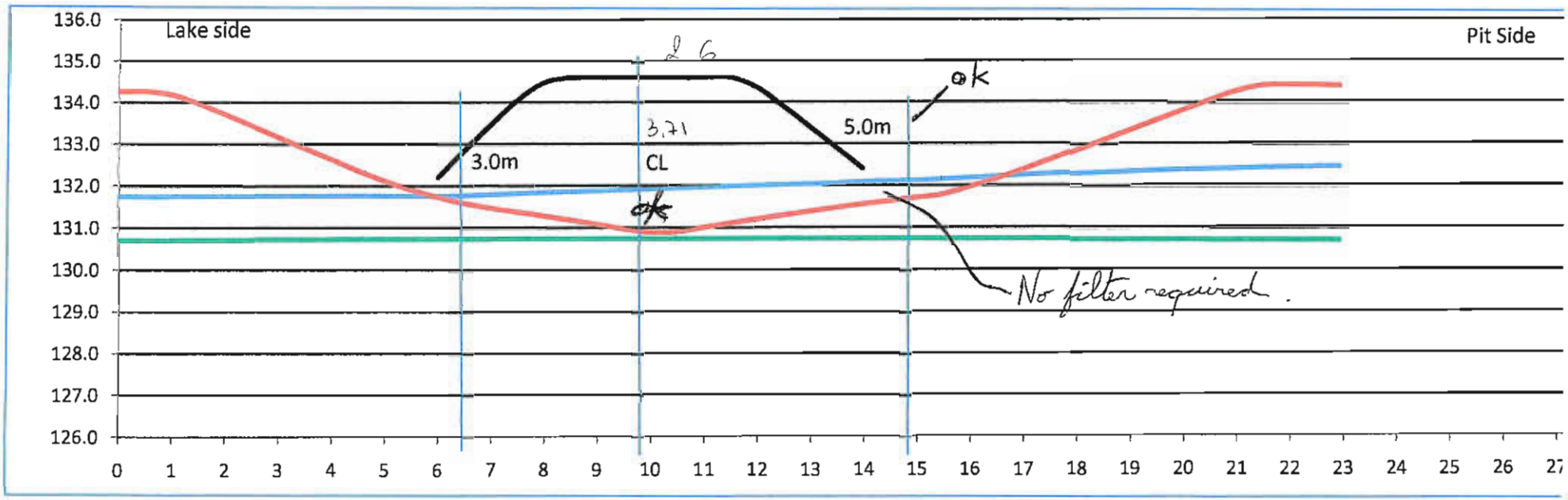
Infered bed rock

Date 2010-08-04

By: HG

5/7

Cut view 31+320



Lake bed soil

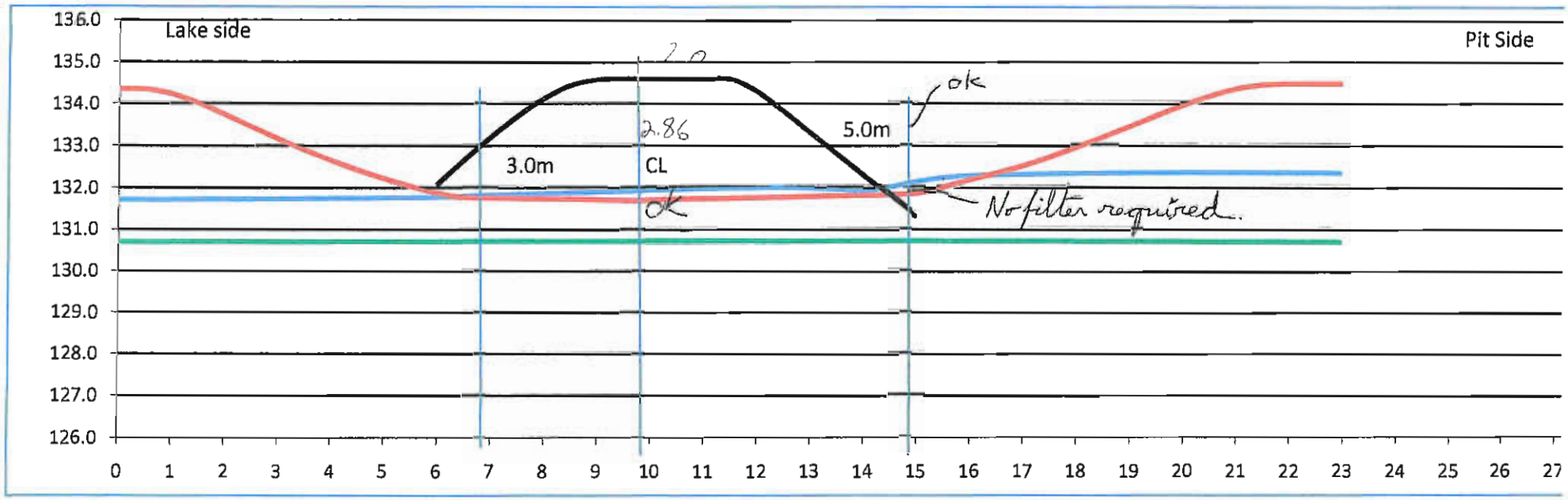
~~bathymetric survey~~ → Manual Probing

Infered bed rock

Date 2010-08-04

By: HG

Cut view 31+325



Lake bed soil

~~bathymetrie survey~~ → Manual Probing

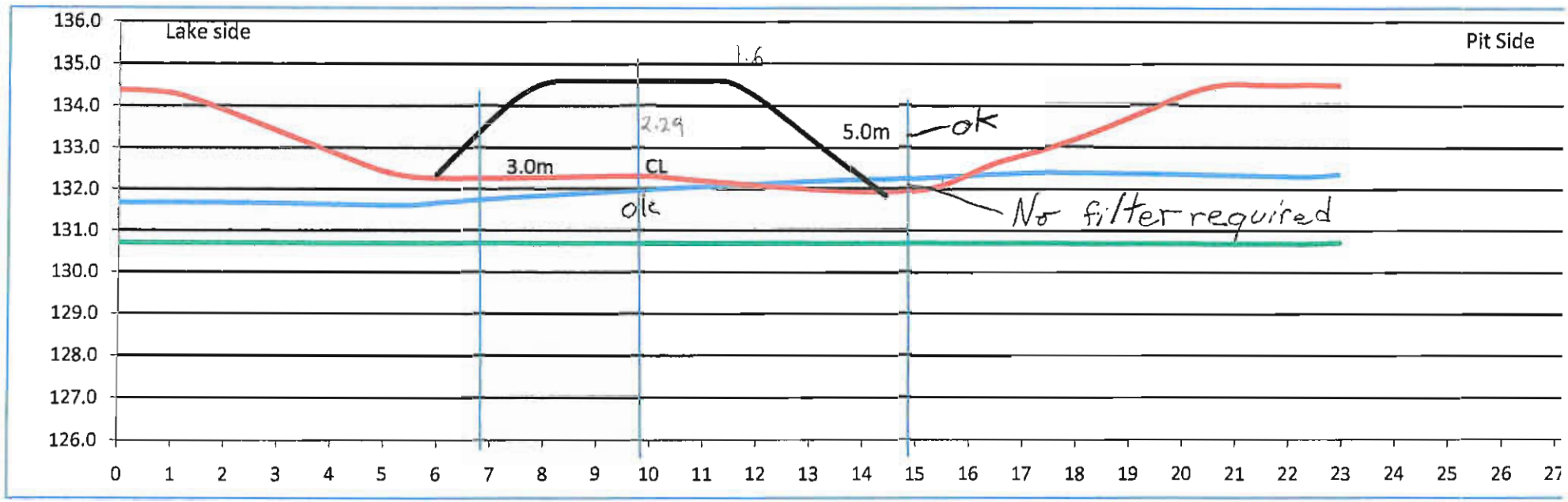
Infered bed rock

Date 2010-08-04

By: HG

5/5

Cut view 31+330



Lake bed soil

~~bathymetrie survey~~ → Manual Probing

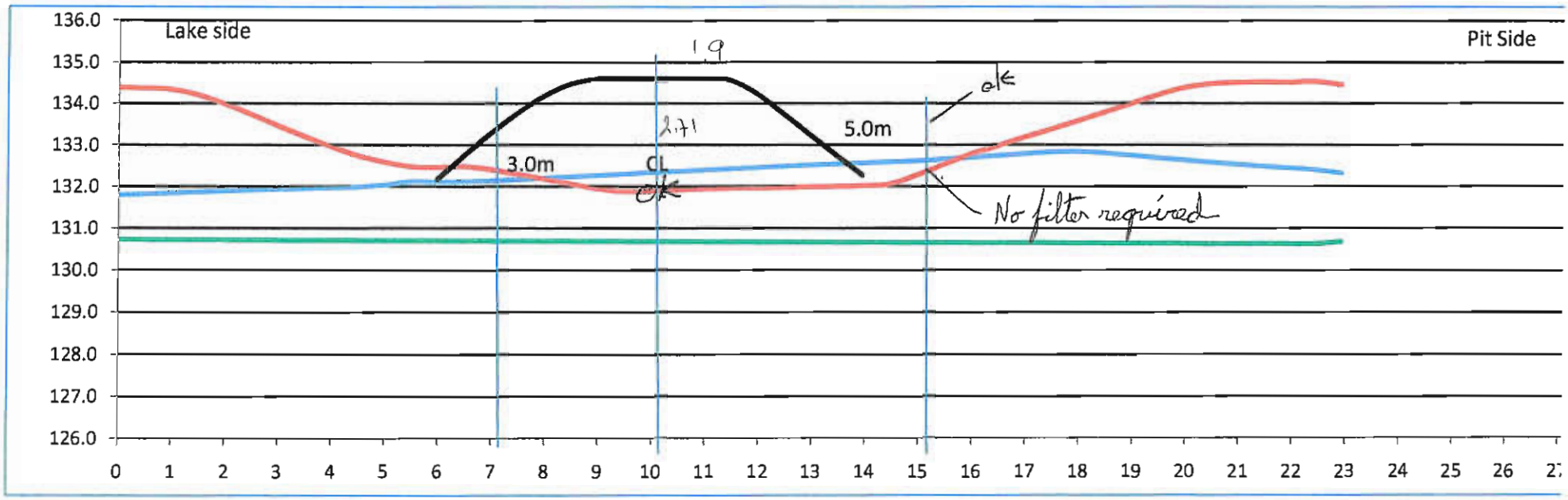
Infered bed rock

Date 2010-08-04

By: HG

5/10

Cut view 31+335



Lake bed soil

~~bathymetrie survey~~ → Manual Probing

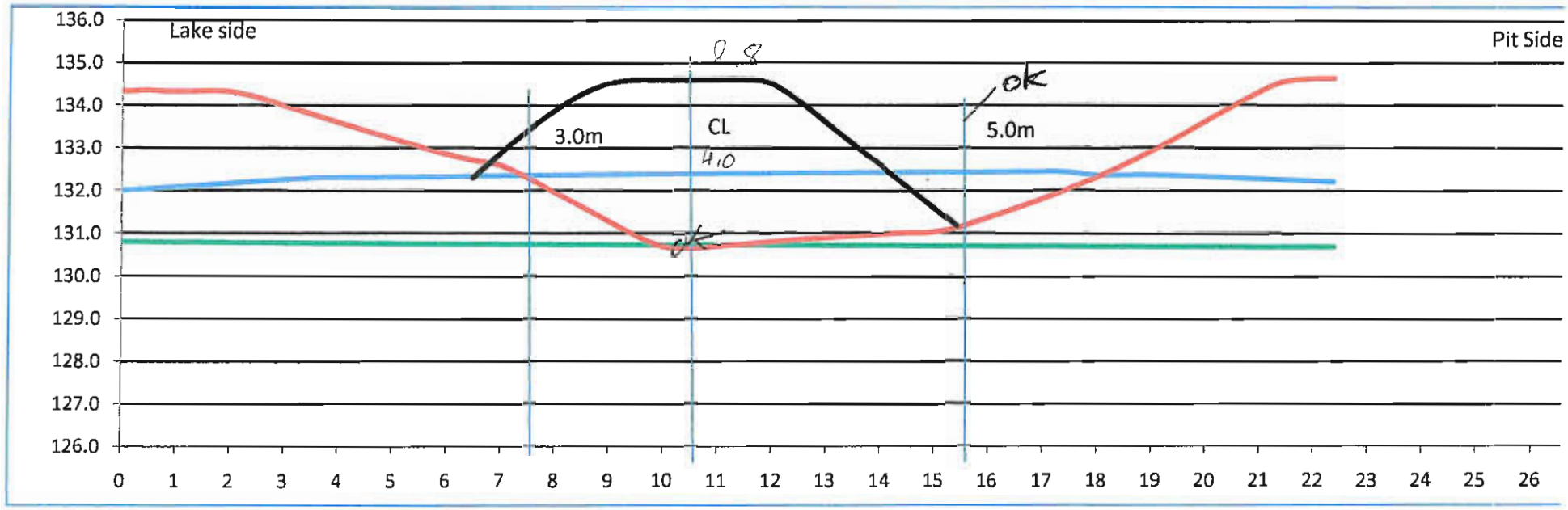
Infered bed rock

Date 2010-08-04

By: HG

11/15

Cut view 31+345



Lake bed soil

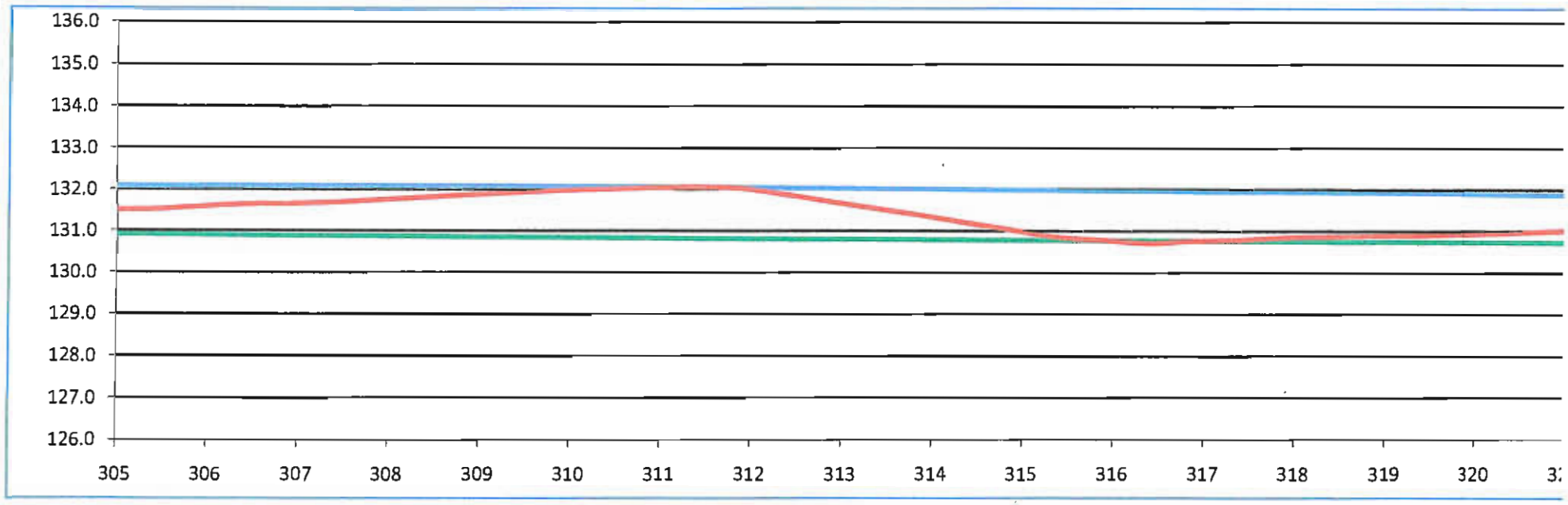
~~bathymetrie survey~~ > Manual Probing

Infered bed rock

Date 2010-08-04

By: HG

CL (manuel probing) 31 + 305 to 31 + 325

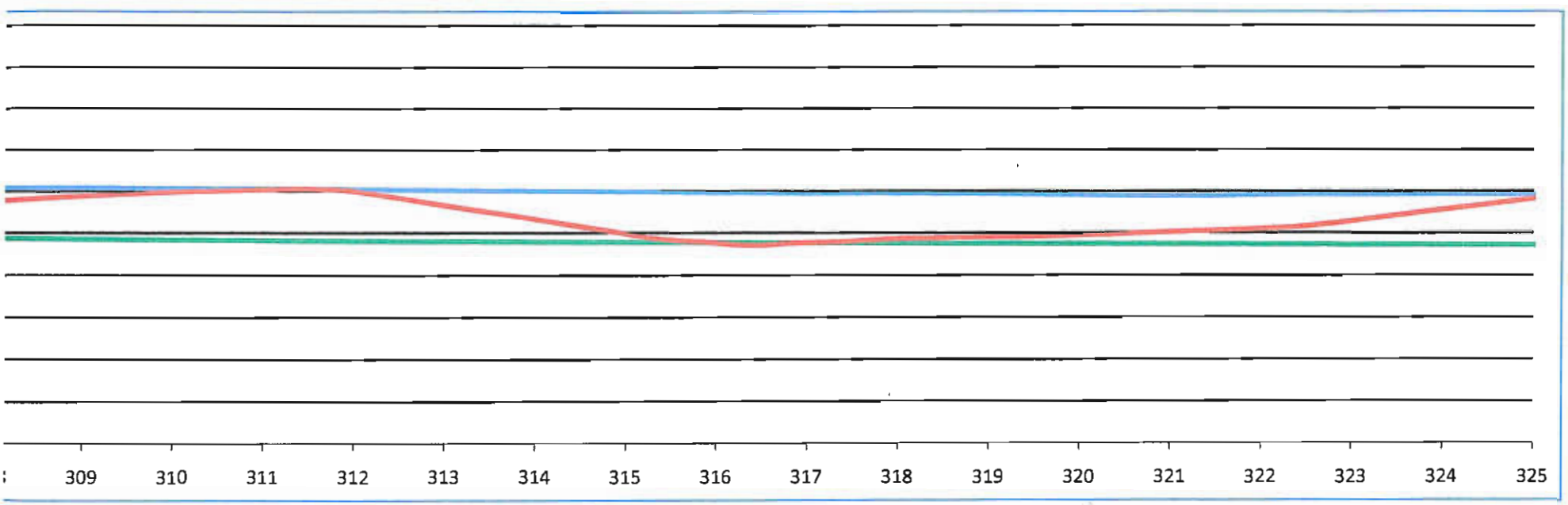


Date 2010-08-04

By: HG

13/15

CL (manuel probing) 31 + 305 to 31 + 325

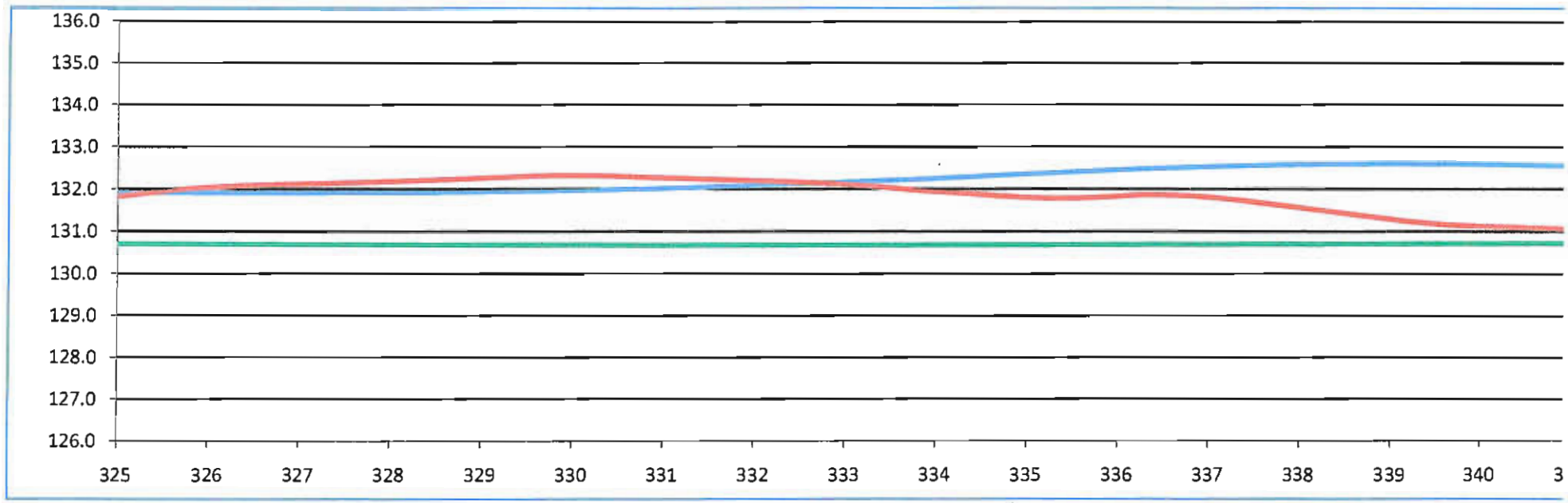


l
)ing
rock

Date 2010-08-04
By: HG

HG. Aug 4/2010

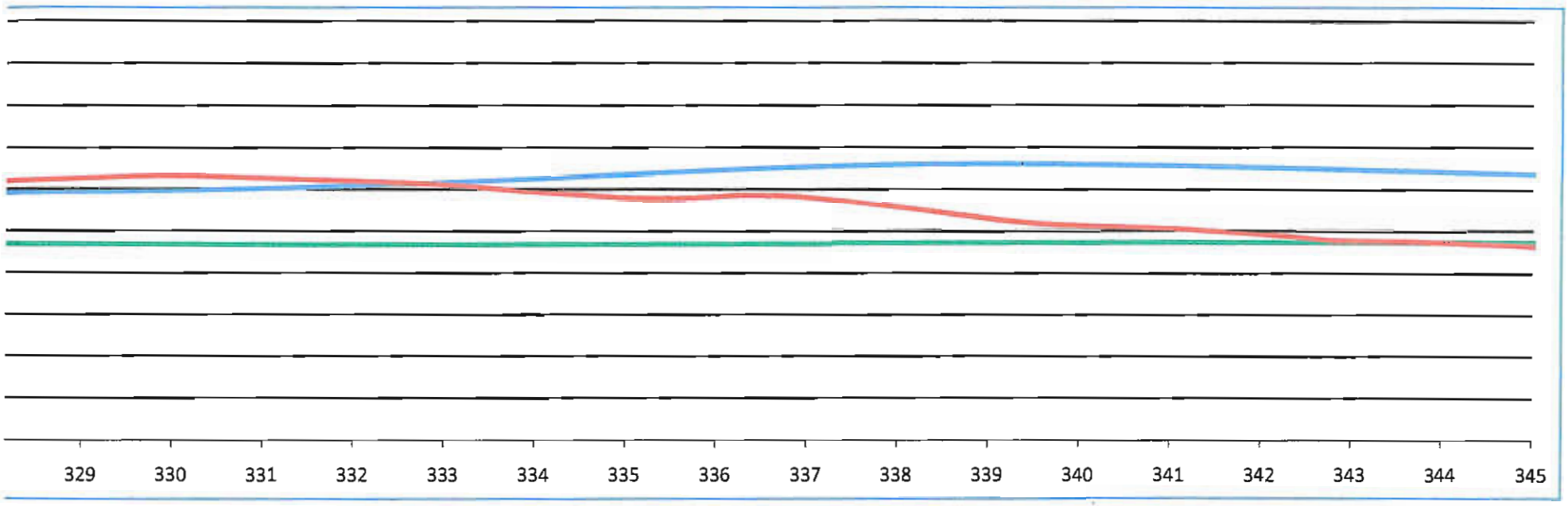
CL (manuel probing) 31 + 325 to 31 + 345



Date 2010-08-04

By: HG

CL (manuel probing) 31 + 325 to 31 + 345



ing
ock

Date 2010-08-04
By: HG

Aug 4/2010

15/15

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta 31+350 Offset
To Sta 31+375 Offset
SHIFT: NIGHT ☐ DAY ☒
DATE 5 AOUT 10
SHEET 1 OF 10
LOCATION: BAY GOOSE DIKE - SOUTH PORTION
EQUIPMENT:
DESCRIPTION

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1	Survey lines and layout checked to ensure the locations conform with the Drawings	✓	GB
2	Storage areas planned for disposal of removed materials	✓	GB
3	Occurrence of snow and ice removal method in place	✓	GB
4	Occurrence of boulders and removal method in place	✓	GB
5	Occurrence of hummocks and scalping method in place	✓	GB
6	Occurrence of surface and ground water and its impact mitigation in place	✓	GB
7	Presence of other unsuitable materials and removal method in place	✓	GB
8	Soil frozen or thawed and measures taken	✓	GB
9	Blasting requirement to remove unsuitable material and safety measure checked	N/A ✓	N/A GB
10.	Adjustment made to suit design in field	✓	GB
11	Final walkover inspection before re-sloping or fill placement	✓	GB
12	"As-excavated" survey conducted	✓	GB
13.	Final sounding conducted of lake bottom surface	✓	GB

REMARKS: ADDITIONAL SURVEY POINTS PROVED USEFUL. WILL REQUEST ADDITIONAL CLEANING @ 31+350 ALONG Q & W.S. USE THERMIC IF REQUIRED. TO BE SPOT CHECK PRIOR TO BACKFILL. SPOT CHECKS ALONG Q REQUIRED EARLY SUN PRIOR TO BACKFILL PLACEMENT

DEVIATIONS : (Attach list if necessary)

DATE OF RECTIFICATION

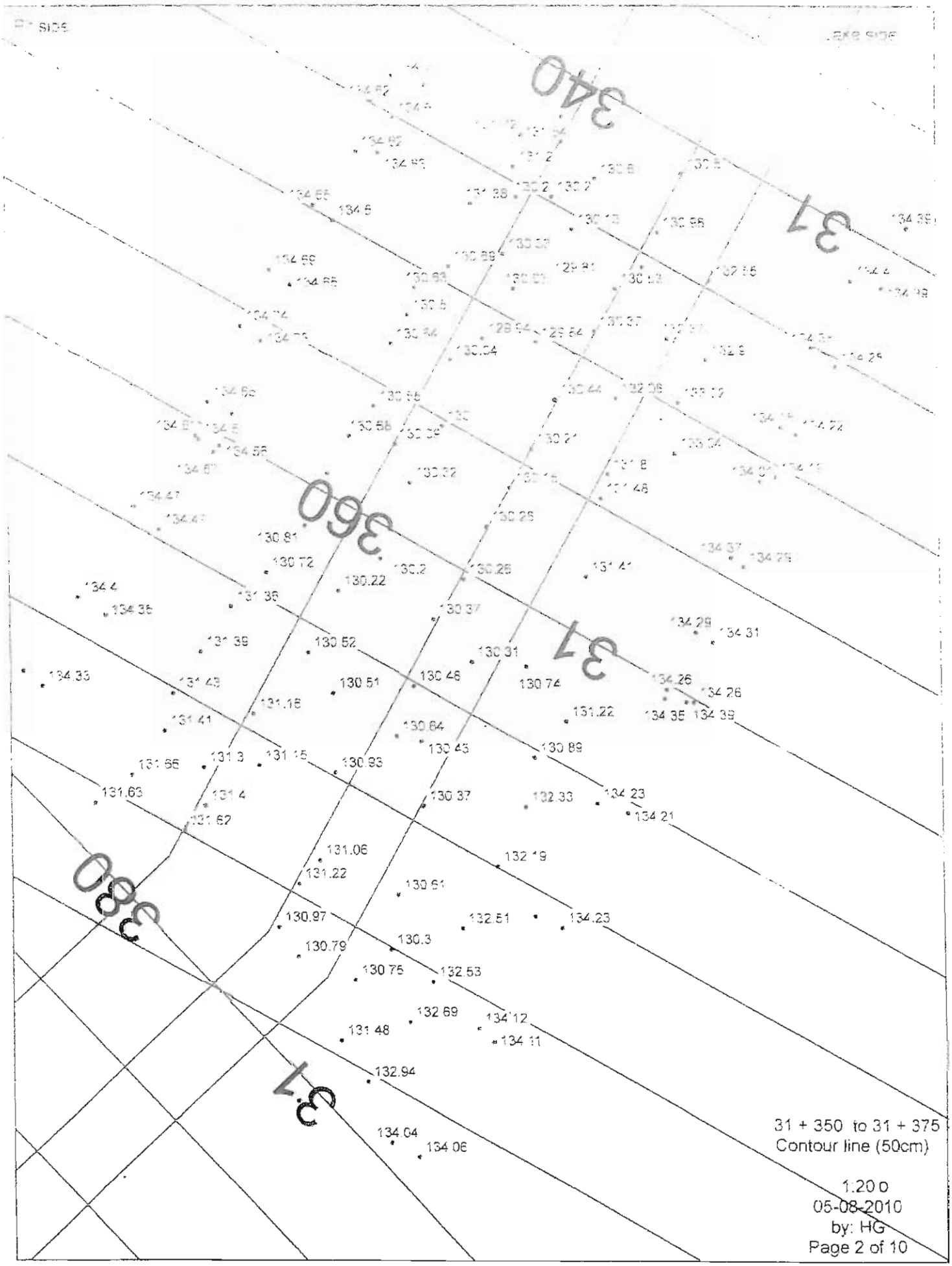
SURVEY VERIFICATION	ACCEPTED BY QA Manager :	ACCEPTED BY OWNER :
NAME: GUY MARISSEAU	NAME: GRANT BURNS	NAME:
SIGNATURE :	SIGNATURE : GB	SIGNATURE :
DATE 5 AOUT 2010	DATE Aug 5, 2010	DATE

7:15 AM
11:15 AM. GB

COPY OF ORIGINAL 1/11

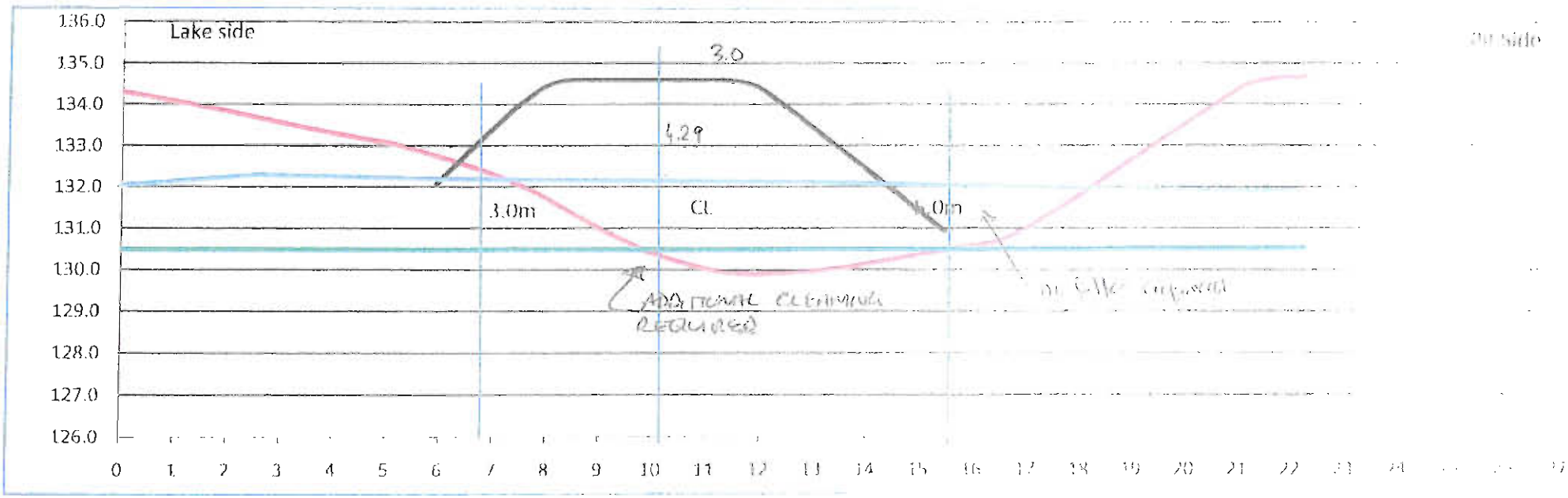
31 + 350 to 31 + 375
Contour line (50cm)

1:200
05-08-2010
by: HG
Page 3 of 10


340
31
360
31
380
37
31 + 350 to 31 + 375
Contour line (50cm)
1:200
05-08-2010
by: HG
Page 2 of 10

3/11

Cut view 31 + 350



Lake bed soil

~~bathymetric survey~~ removed previously

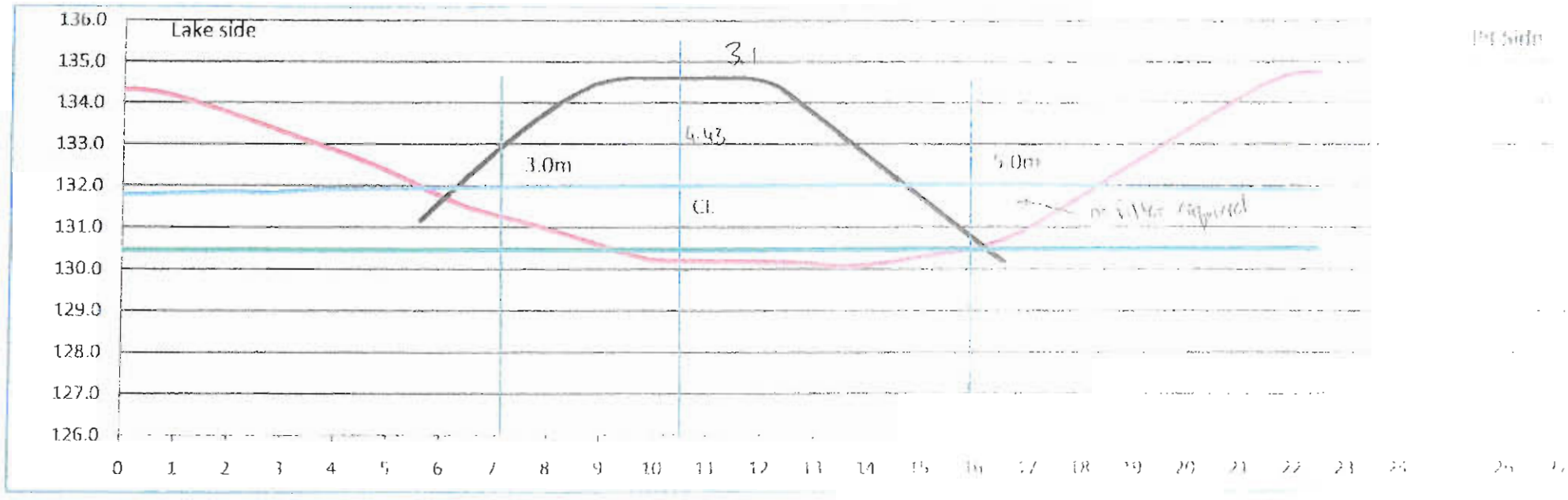
Infered bed rock

Date 2010 08 05

By. DG

Any scour protection required along this section

Cut view 11 + 155



Lake bed soil

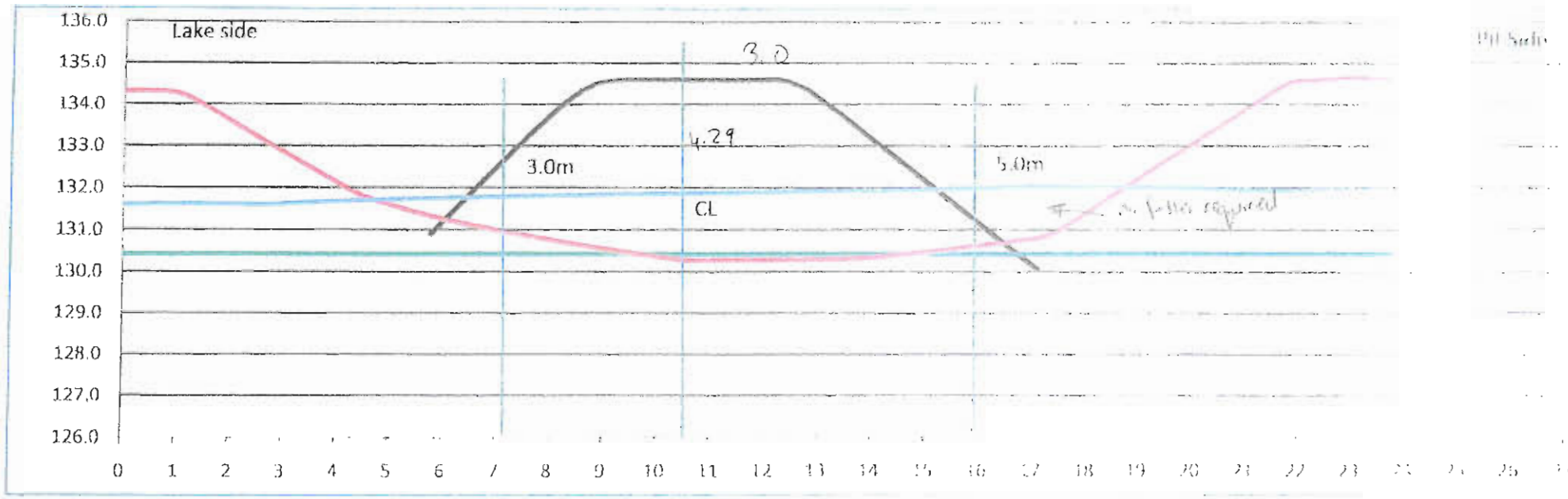
~~bathymetric survey~~ manual probing

Infered bed rock

Date 2010 08 05

By HG

Cut view 11 + 360



Lake bed soil

~~bathymetric survey~~ manual probing

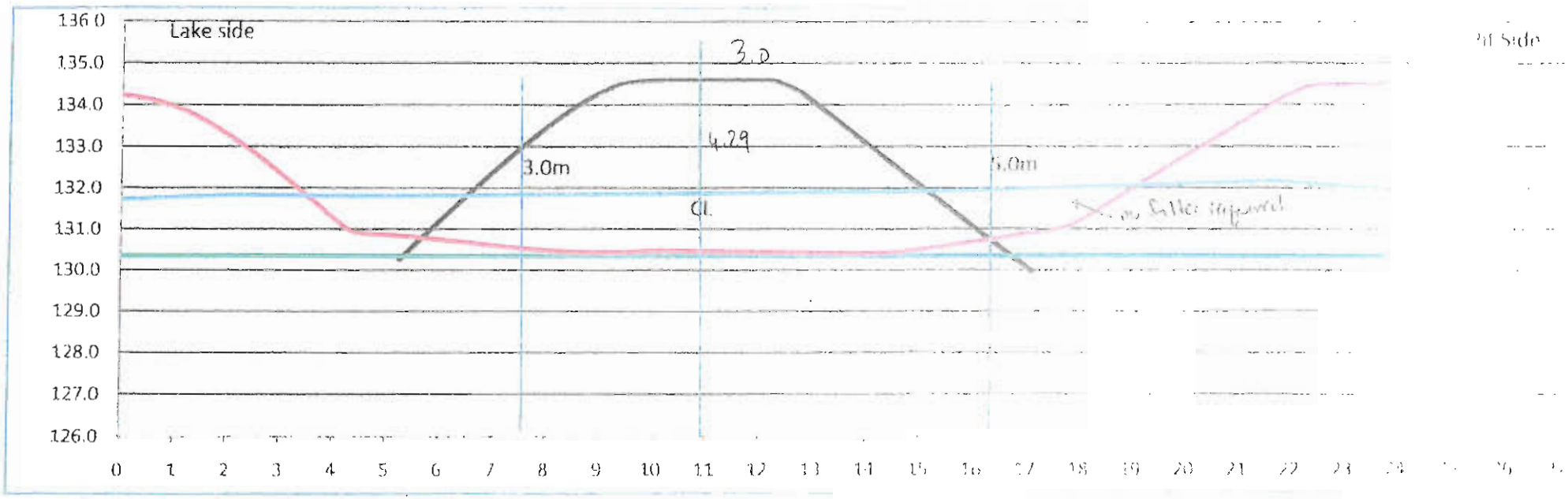
Infered bed rock

Date 2010 08 06

By HG

CB Aug 9/10

Cut view 31 + 365



Lake bed soil

~~bathymetric survey~~ Manual probing

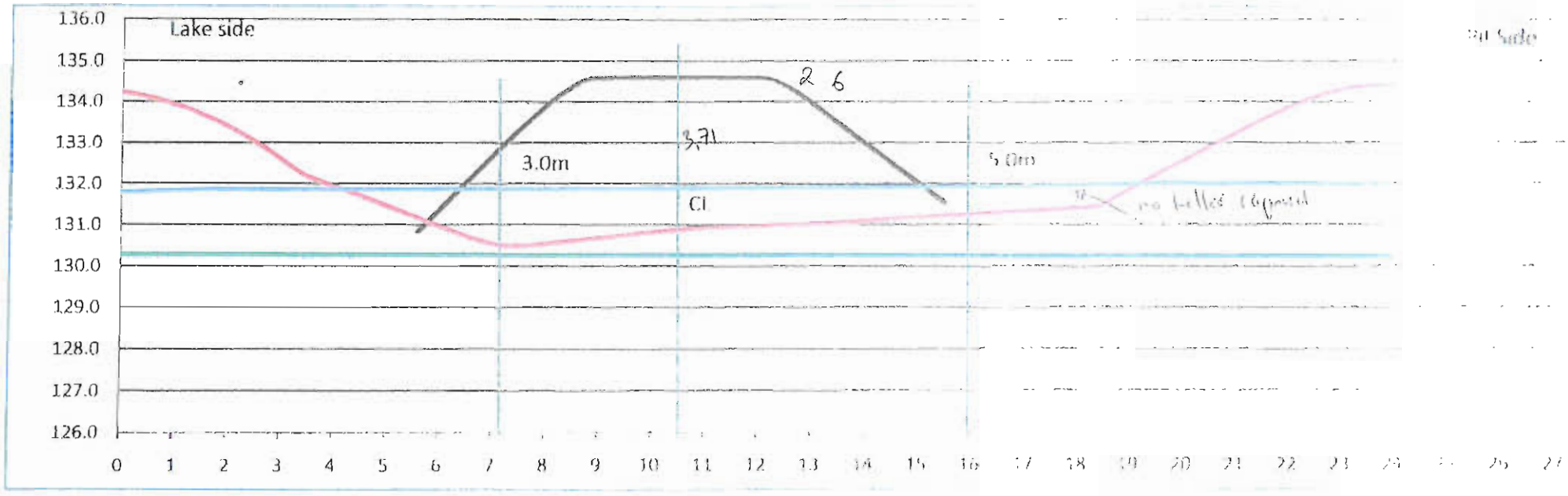
Infered bed rock

Date 2010.08.05

By. HG

CB Acquired

Cut view 31 + 370



Lake bed soil

~~bathymetrie survey~~ manual probing

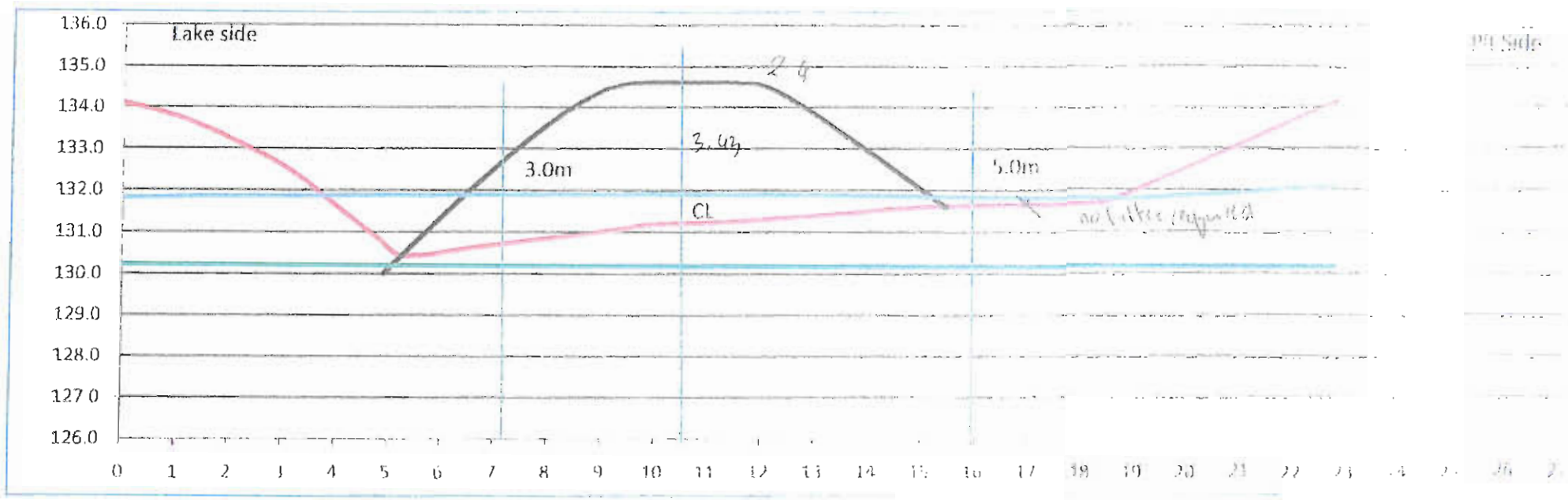
Infered bed rock

Date

By.

03 Aug 5/ic

Cut view 31 + 375



Lake bed soil

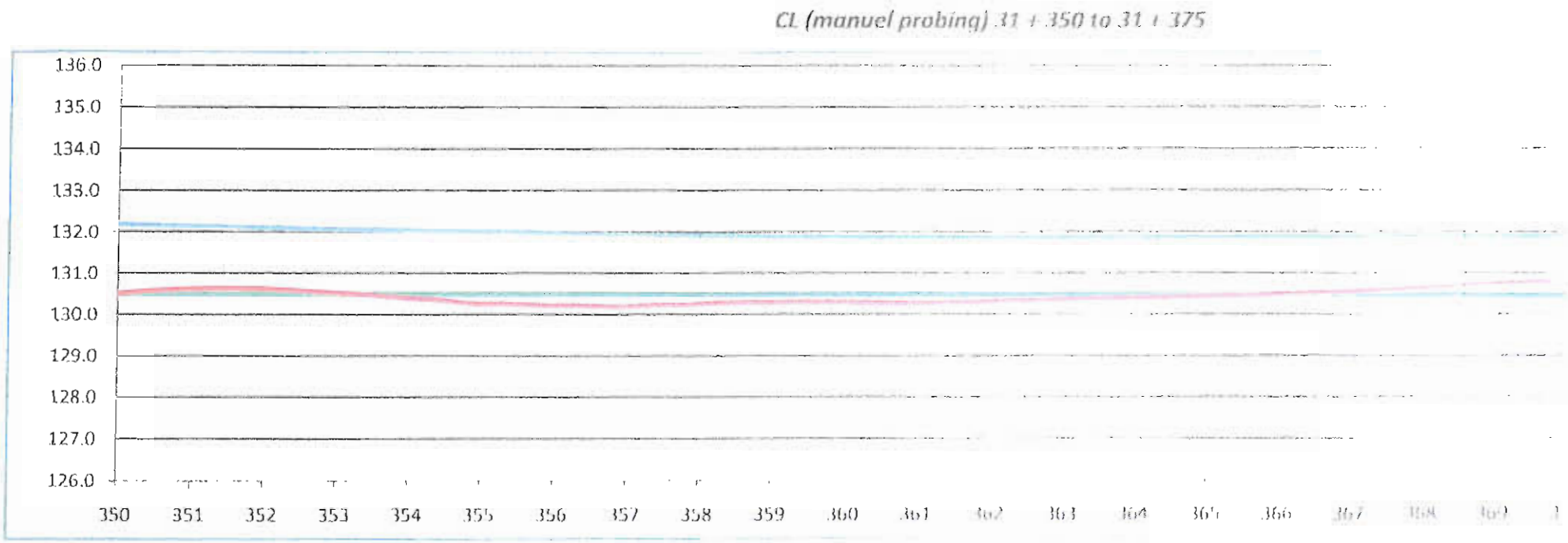
~~bathymetrie survey~~ manual probing

Infered bed rock

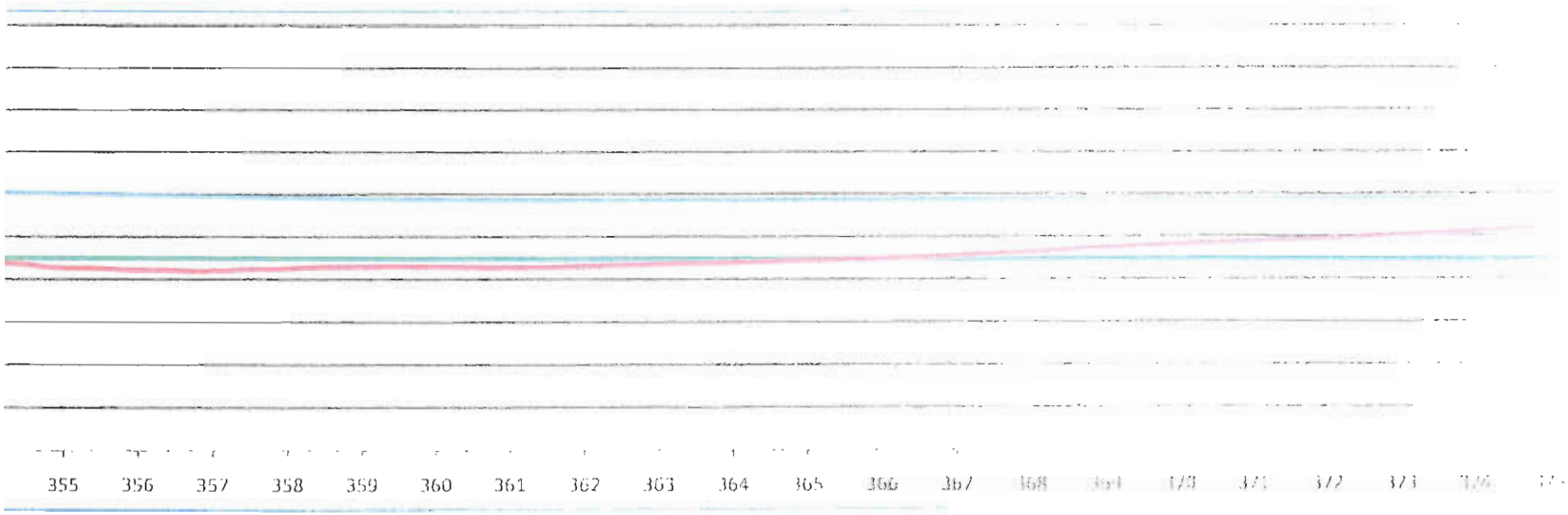
Date 2010 08 05

By. HG

CB Aug 5/10


CL (manuel probing) 31 + 350 to 31 + 375
136.0
135.0
134.0
133.0
132.0
131.0
130.0
129.0
128.0
127.0
126.0
350
351
352
353
354
355
356
357
358
359
360
361
362
363
364
365
366
367
368
369
Lake bed soil
Manuel probing
Infered bed rock

CL (manuel probing) 31 + 350 to 31 + 375



Date 2010 08 05

By: HG

05

Acq s/o

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 31+380 Offset	SHIFT: NIGHT :☐ DAY :☒	DATE :	SHEET 1 OF 8
To Sta. 31+395 Offset	LOCATION: : BAY GOOSE DIKE SOUTH PORTION		
EQUIPMENT:			

DESCRIPTION

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings		
2.	Storage areas planned for disposal of removed materials		
3.	Occurrence of snow and ice removal method in place		
4.	Occurrence of boulders and removal method in place		
5.	Occurrence of hummocks and scalping method in place		
6.	Occurrence of surface and ground water and its impact mitigation in place		
7.	Presence of other unsuitable materials and removal method in place		
8.	Soil frozen or thawed and measures taken		
9.	Blasting requirement to remove unsuitable material and safety measure checked	N/a	N/a
10.	Adjustment made to suit design in field		
11.	Final walkover inspection before re-sloping or fill placement		
12.	"As-excavated" survey conducted		
13.	Final sounding conducted of lake bottom surface		

REMARKS : APPROVED TO 31+390m. CHECK FOR SILT ACCUMULATION PRIOR TO BACKFILL PLACEMENT EVERY 5m. SPOT CHECK POTENTIAL USE AT 31+395 ON LAKE SIDE REQUIRED PRIOR TO BACKFILL PLACEMENT.

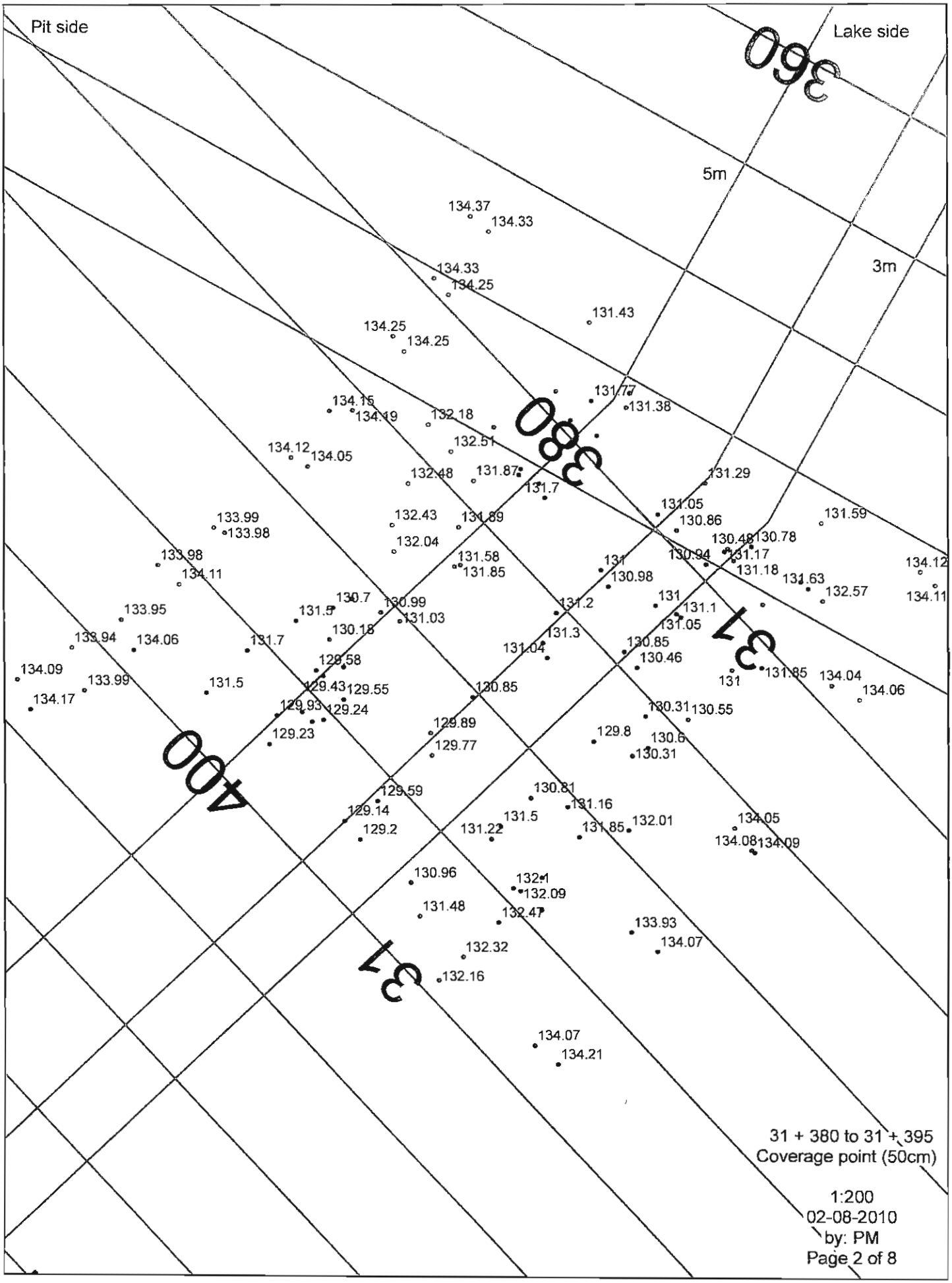
DEVIATIONS : (Attach list if necessary)

DATE OF RECTIFICATION :

SURVEY VERIFICATION	ACCEPTED BY QA Manager :	ACCEPTED BY OWNER :
NAME: Guy Morissette	NAME: GRANT BURNS	NAME:
SIGNATURE :	SIGNATURE :	SIGNATURE :
DATE 6 août 2010	DATE AUG 6, 2010	DATE

6:55 hrs AM

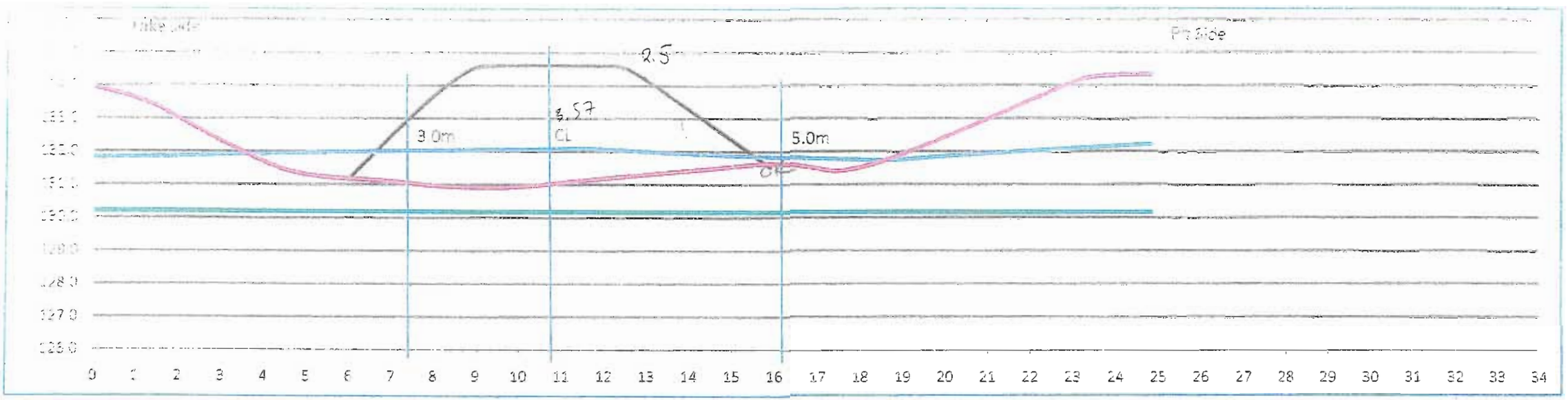
copy of original 1/8


Pit side
Lake side
360
380
400
31
5m
3m
134.37
134.33
134.33
134.25
131.43
134.25
134.25
131.77
131.38
134.15
134.19
132.18
132.51
134.12
134.05
132.48
131.87
131.7
131.29
131.05
131.59
133.99
133.98
132.43
131.89
130.86
132.04
130.48
130.78
133.98
131.58
131.85
130.94
131.17
134.12
134.11
131
131.18
131.63
132.57
130.98
134.11
130.7
131
131.1
133.95
131.5
130.99
131.2
131.05
131.03
133.94
134.06
131.7
130.18
131.3
131.04
130.85
128.58
130.46
134.09
133.99
131.5
129.43
129.55
130.85
131
131.85
134.04
134.06
134.17
129.93
129.24
130.31
130.55
129.23
129.89
129.8
129.77
130.6
130.31
129.59
130.81
131.16
129.14
131.5
132.01
134.05
129.2
131.22
131.85
134.08
134.09
130.96
132.1
132.09
131.48
132.47
133.93
134.07
132.32
132.16
134.07
134.21
31 + 380 to 31 + 395
Coverage point (50cm)
1:200
02-08-2010
by: PM
Page 2 of 8

31 + 380 to 31 + 395
Contour line (50cm)

1:200
02-08-2010
by: PM
Page 3 of 8

Cut view 314380



Lake bed soil

~~bathymetric survey~~ manual plotting

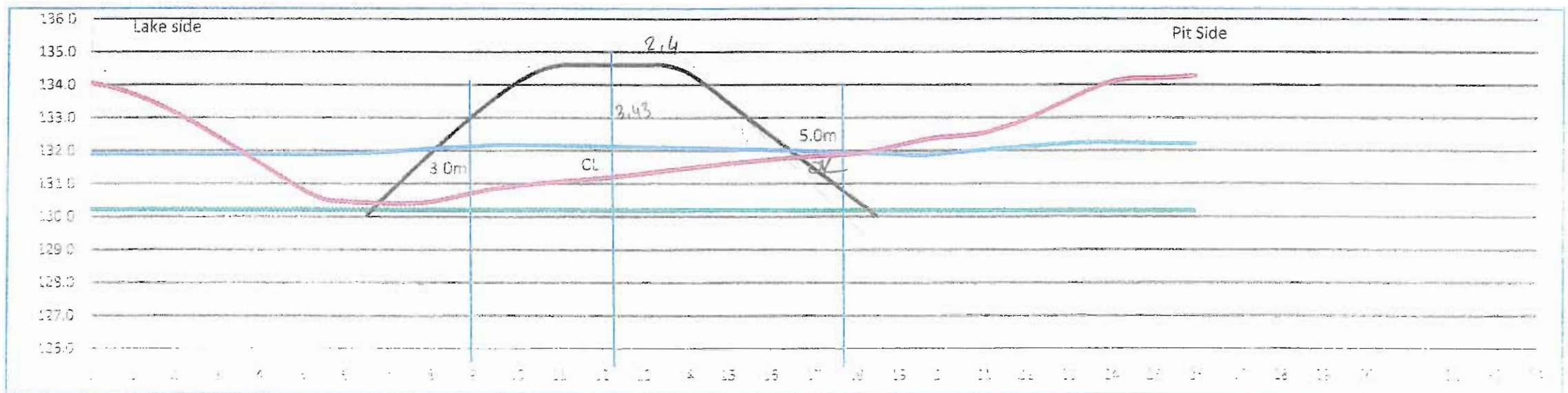
Infered bed rock

Date 2010-08-05

By: PM

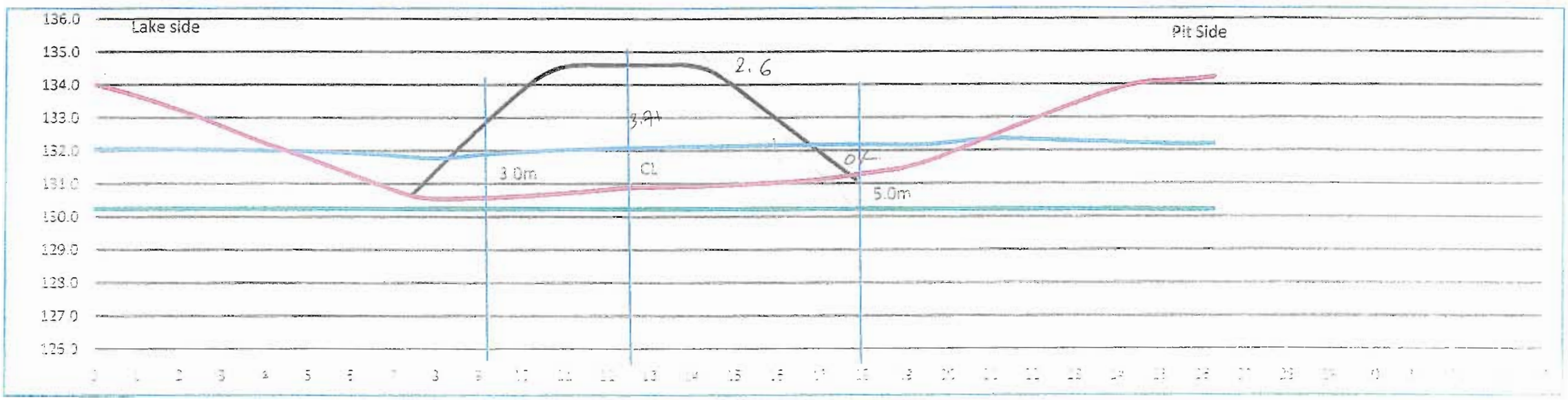
GB
Aug 6/10

Cut view 31+385



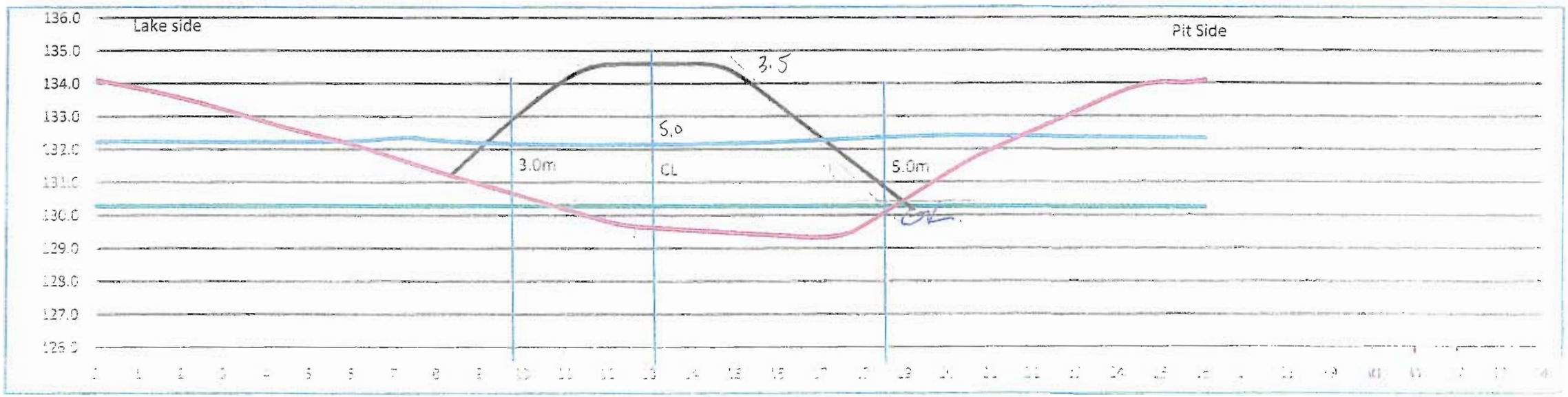
GB
Aug 6/10

Cut view 31+390



Aug 4/10

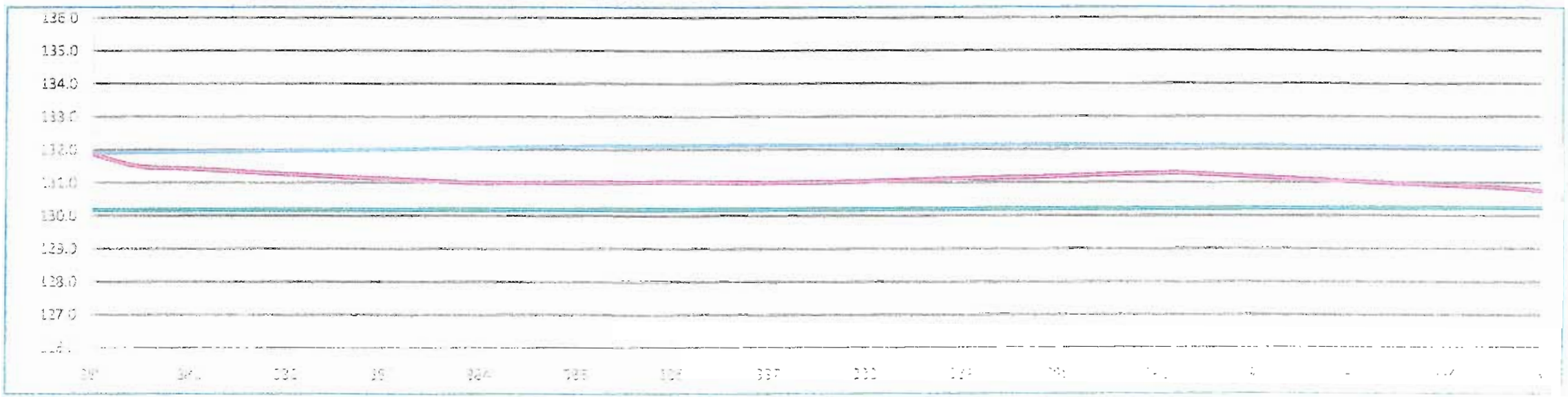
Cut view 31+395



CLEANING REQUIRED

GB Aug 6/10

CL (manuel probing) 31 + 380 to 31 + 395



JB
Aug 6/10

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 31+400 Offset	SHIFT: NIGHT: ☐ DAY: ☒	DATE: 6 Aout 10	SHEET 1 OF 15
To Sta 31+440 Offset	LOCATION: BAY GOOSE DIKE - SOUTH PORTION.		
EQUIPMENT:			
DESCRIPTION:			

NO	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1	Survey lines and layout checked to ensure the locations conform with the Drawings	✓	✓
2	Storage areas planned for disposal of removed materials	✓	✓
3	Occurrence of snow and ice removal method in place	✓	✓
4	Occurrence of boulders and removal method in place	✓	✓
5	Occurrence of hummocks and scalping method in place	✓	✓
6	Occurrence of surface and ground water and its impact mitigation in place	✓	✓
7	Presence of other unsuitable materials and removal method in place	✓	✓
8	Inspection of thawed and adjustments taken	✓	✓
9	Blasting requirements to remove unsuitable material and safety measures checked	N/A ✓	N/A ✓
10	Adjustment made to suit design in field	✓	✓
11	[illegible]	✓	✓
12	[illegible]	✓	✓
13	[illegible]	✓	✓

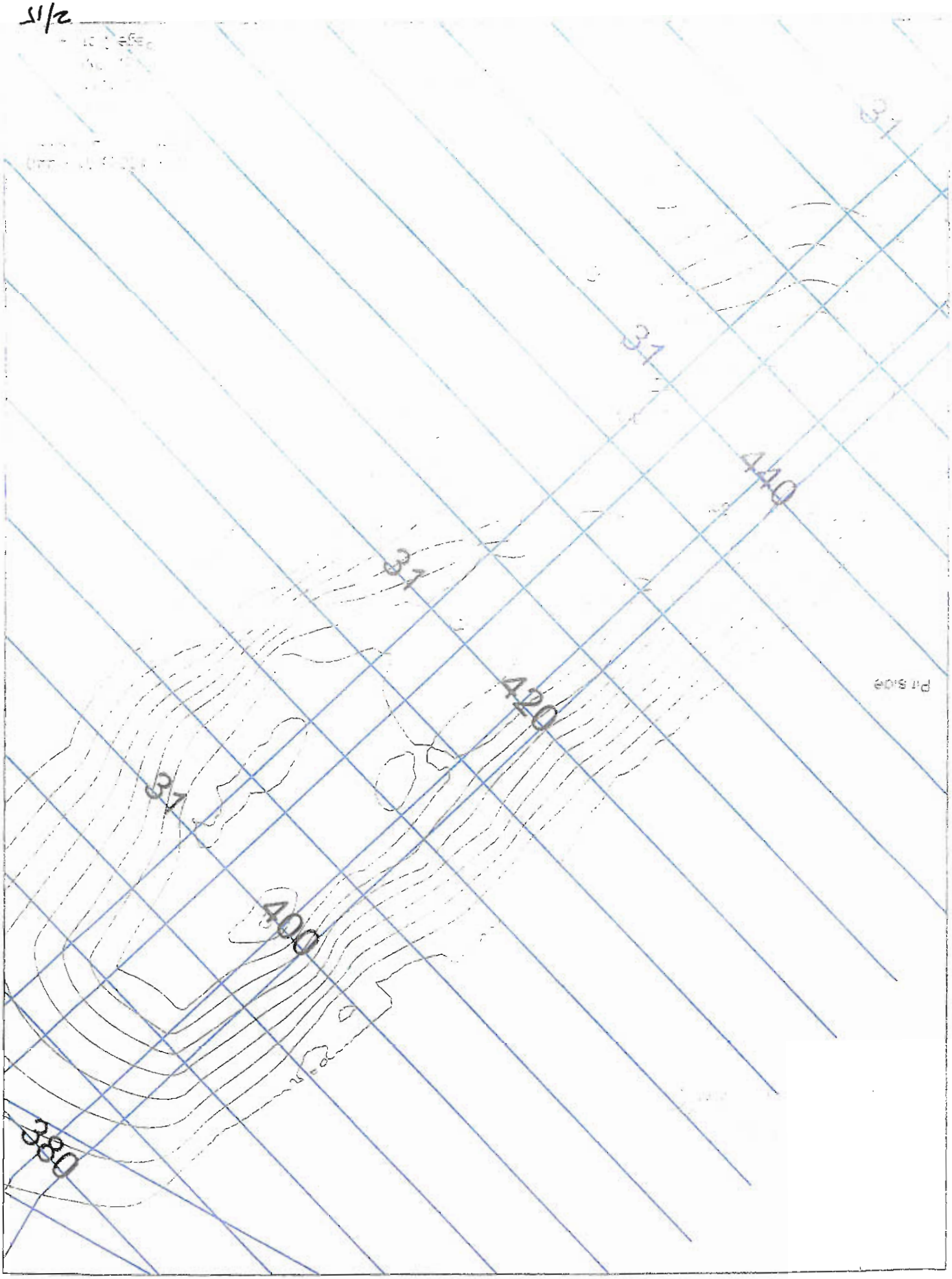
APPROVED TO BACKFILL TO 31+440 (toe)

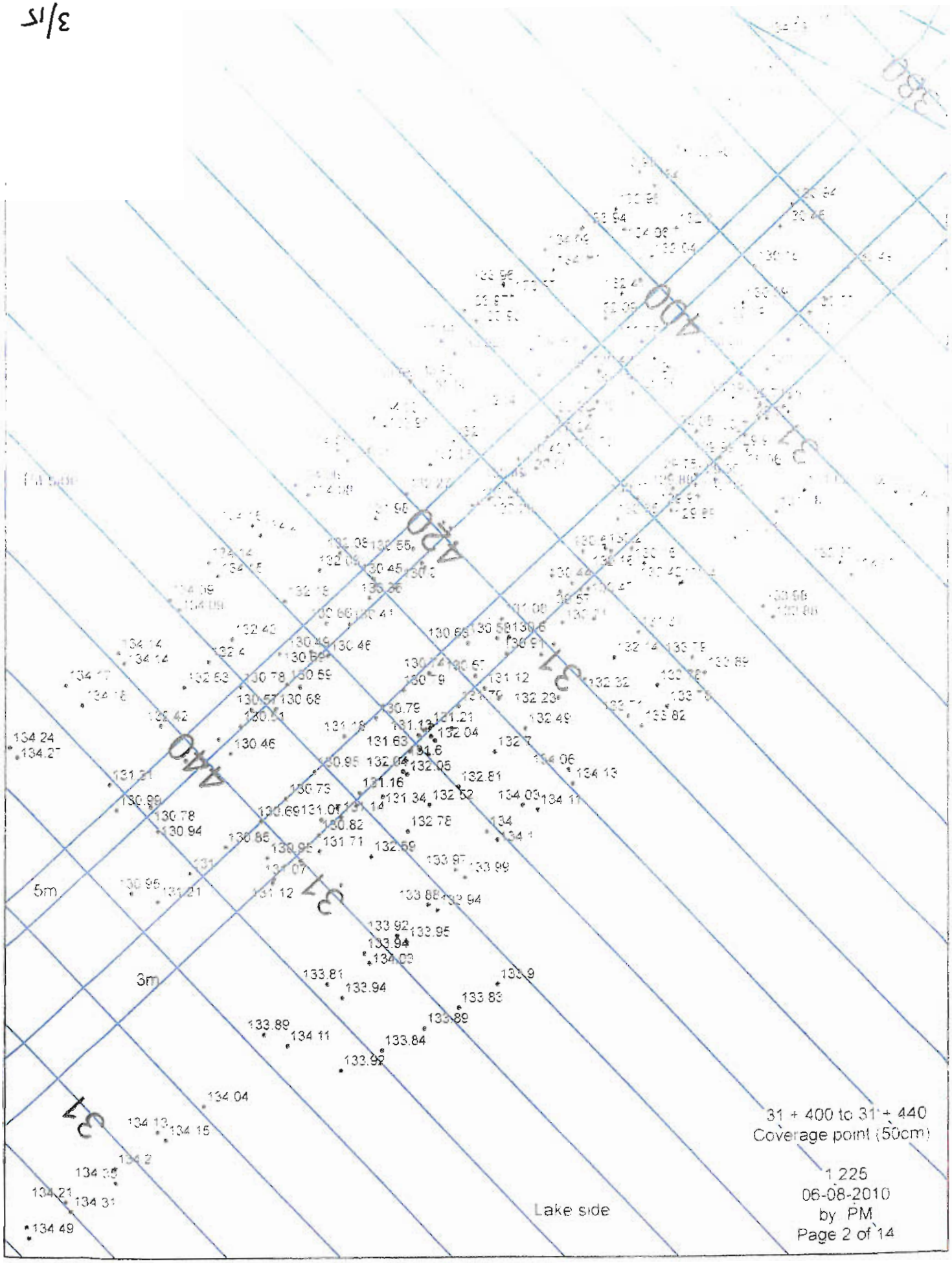
DATE OF RECOMMENDATION:

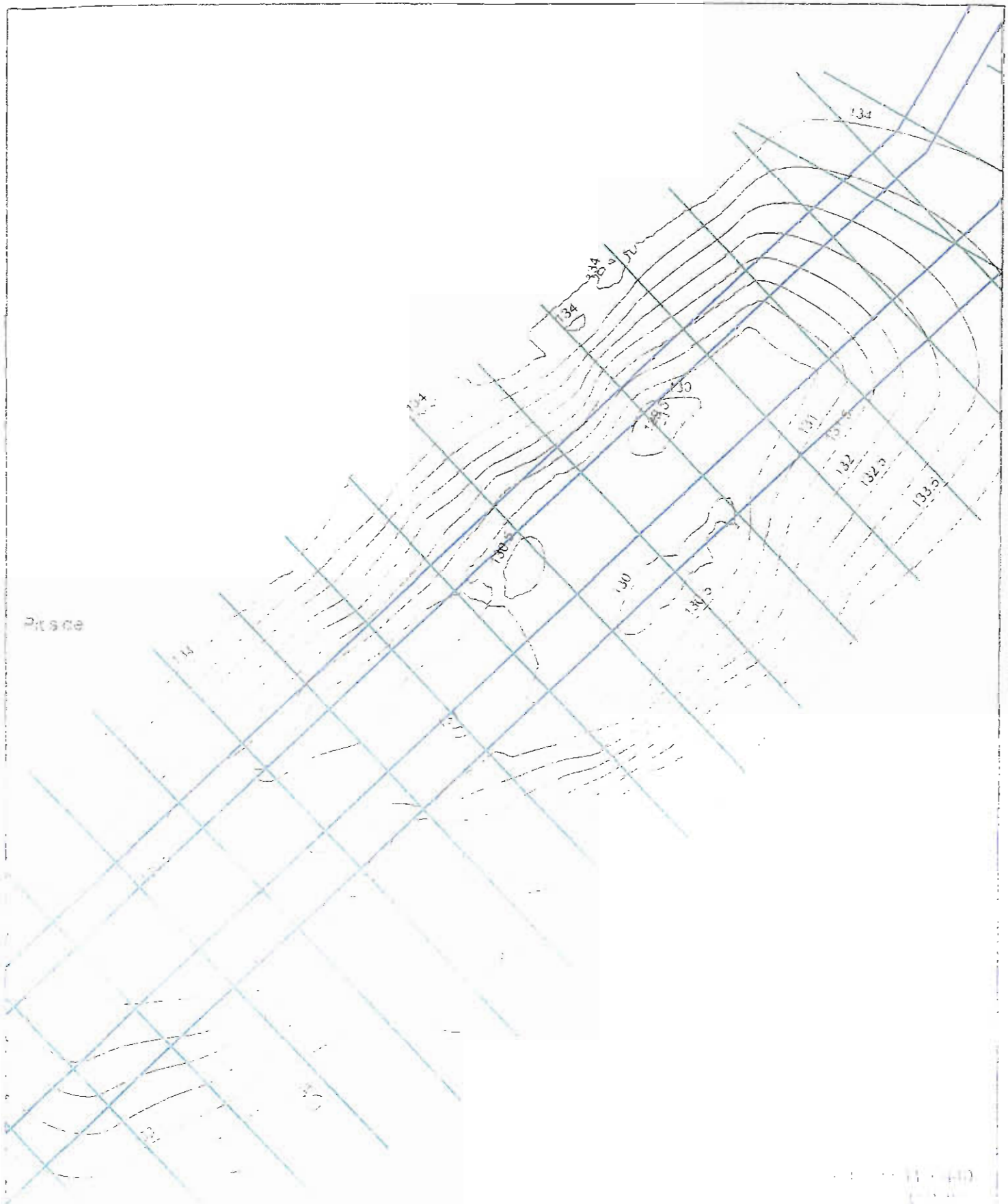
SUPERVISOR'S RECOMMENDATION	ACCEPTED BY QA Manager	ACCEPTED BY OWNER
NAME: GUY MARISSETTE	NAME: BRANT BURNS	NAME:
SIGNATURE:	SIGNATURE:	SIGNATURE:
DATE: 6 Aout 2010	DATE: Aug 7, 2010	DATE:

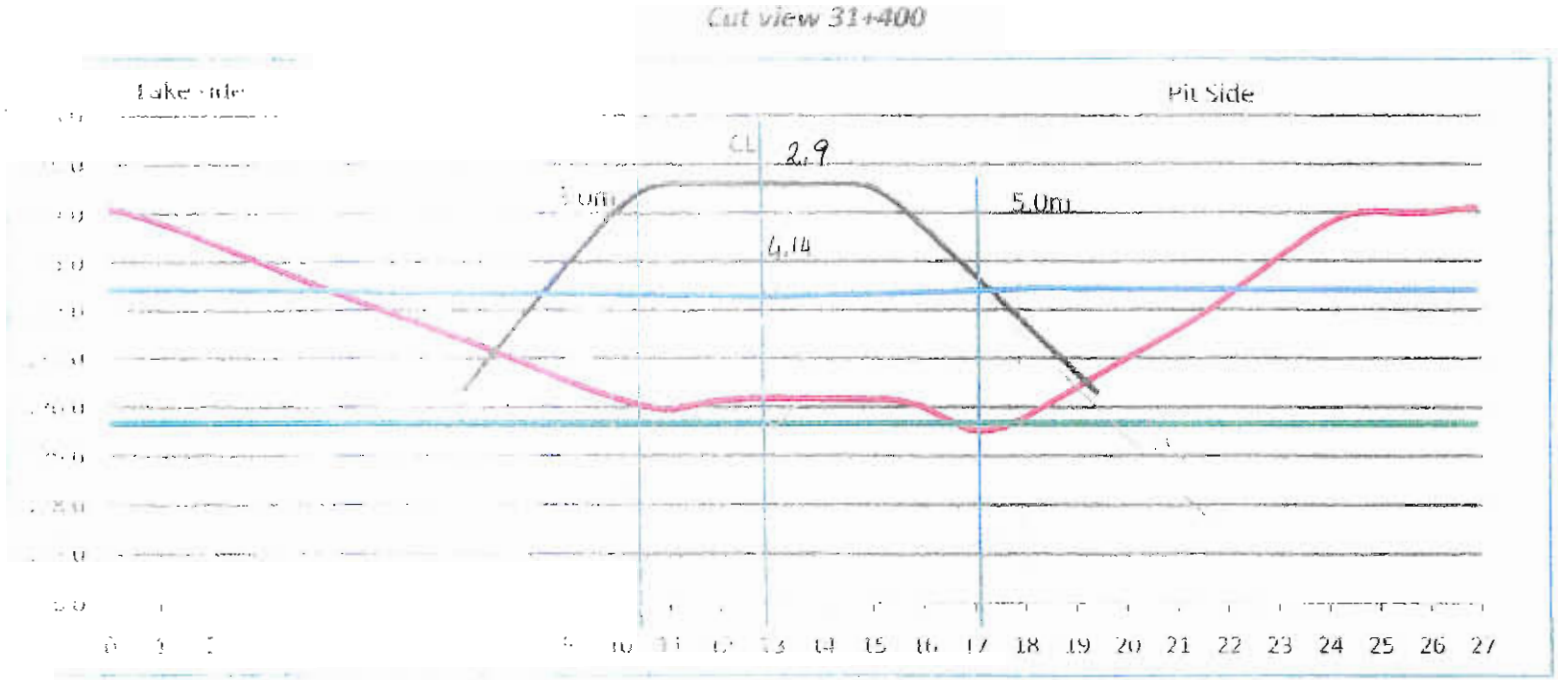
14+45 hrs
6:00 hrs AM

COPY OF ORIGINAL 1/15


31
31
440
31
420
31
400
380


5m
3m
Lake side
31 + 400 to 31 + 440
Coverage point (50cm)
1:225
06-08-2010
by PM
Page 2 of 14


134
134
135
134
135
131
132
132.5
133.5
130.5
130
130.5

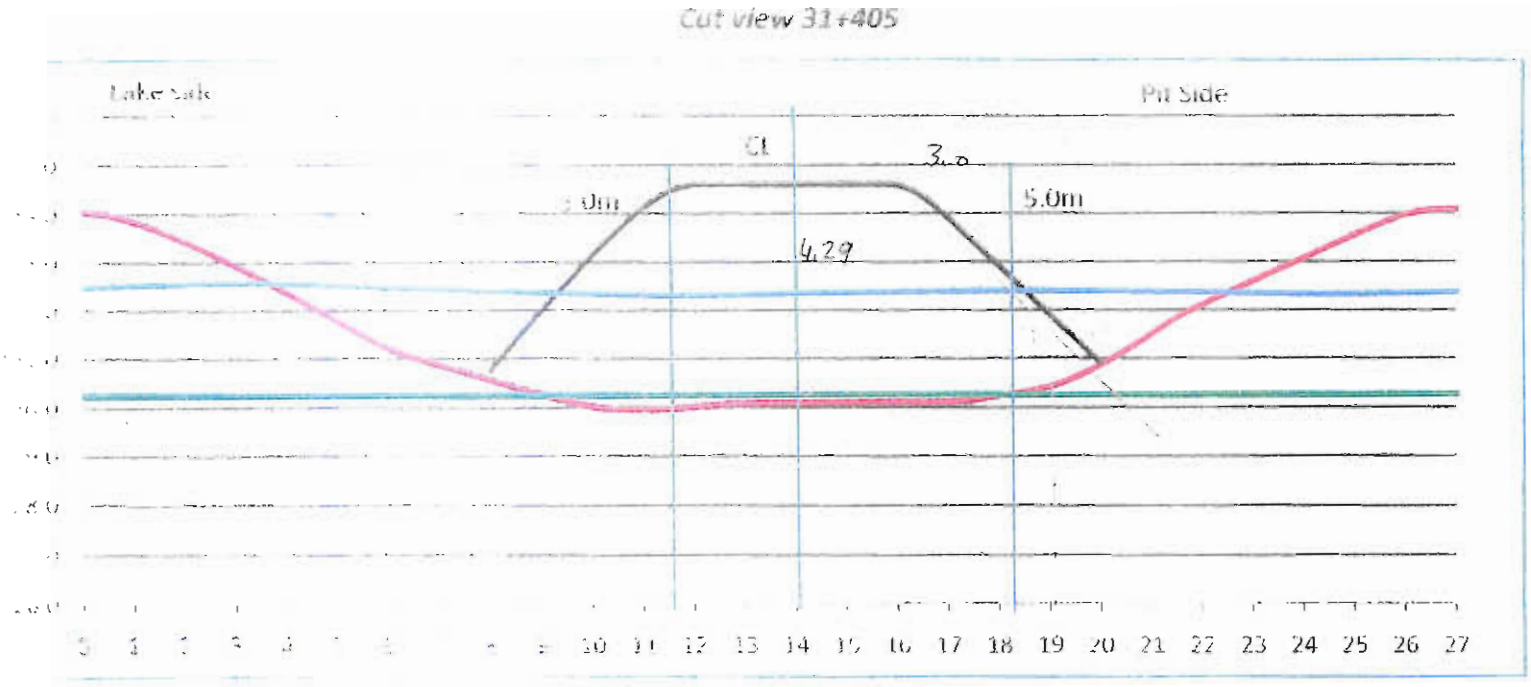


Date: 2010-08-07

By: PM

Aug 7/10

51/5



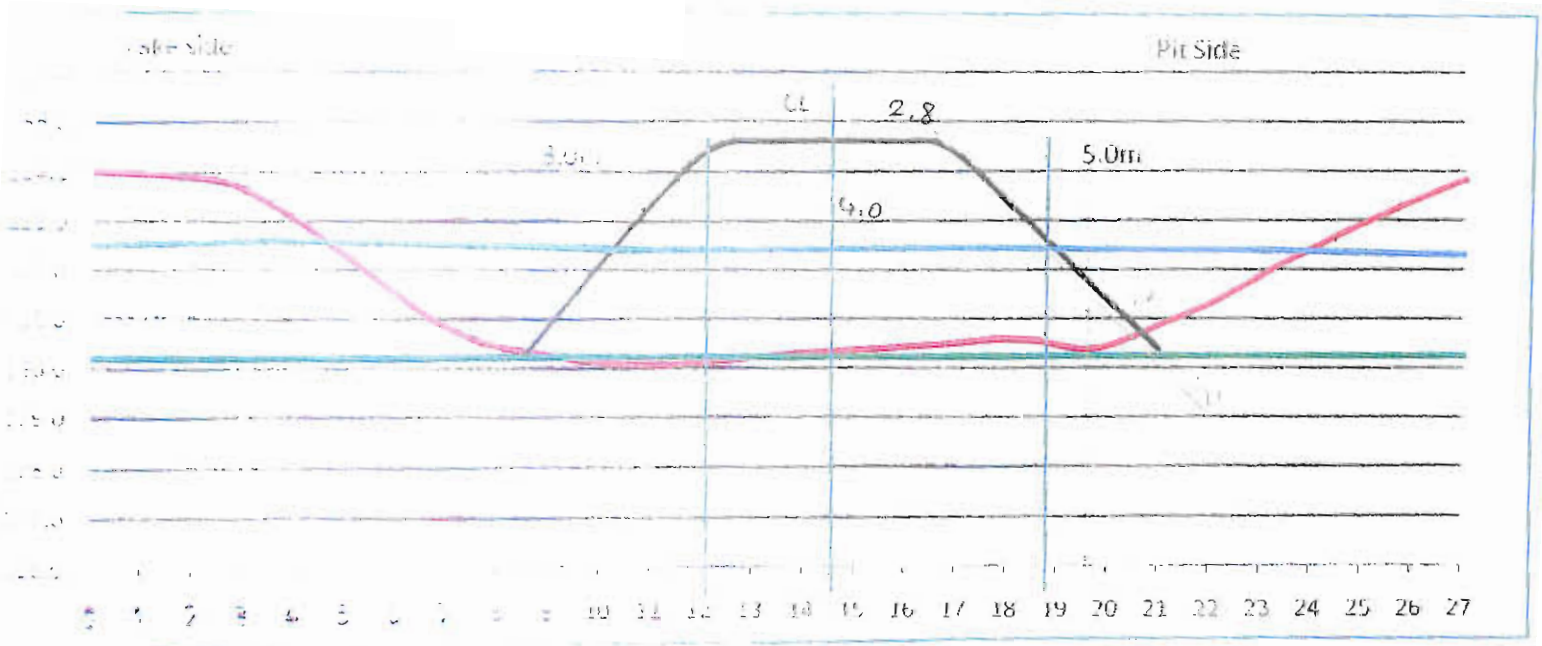
Date 2010-08-07

by: PM

CB Aug 7/10

51/9

Cut view 31+410



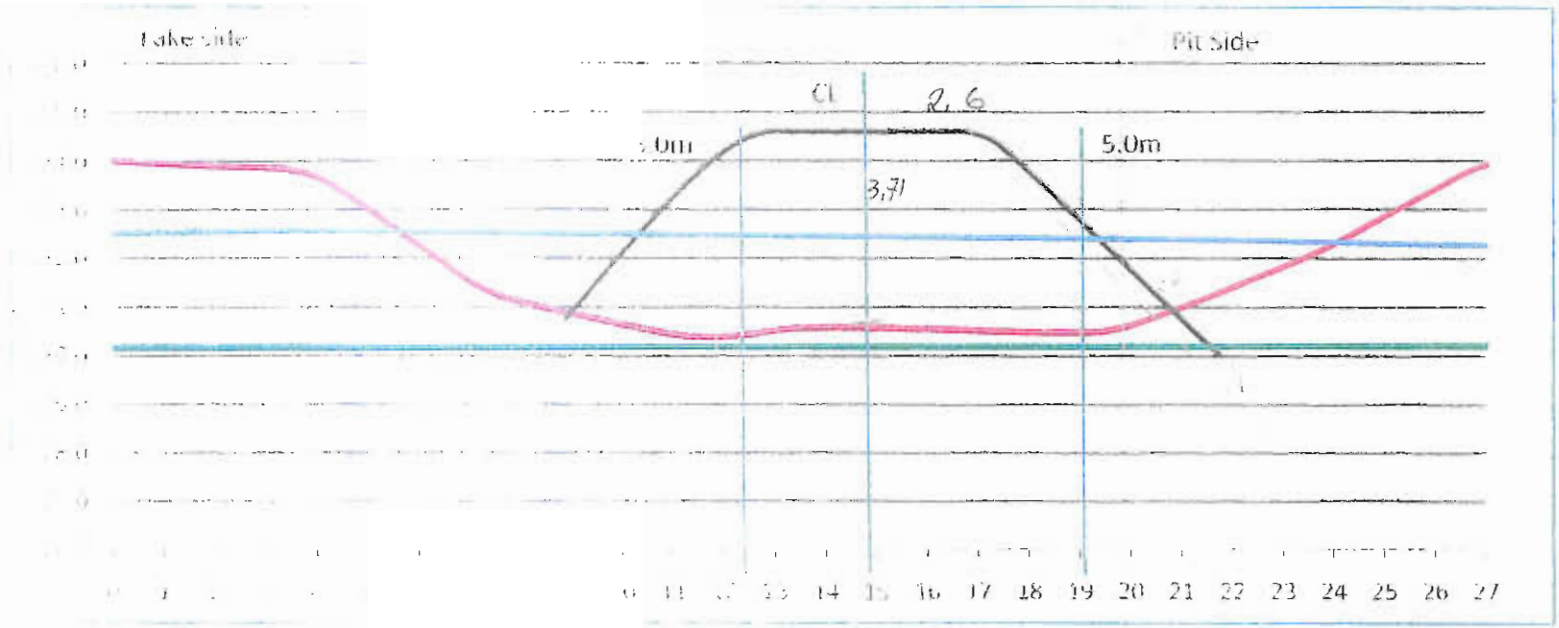
Date 2010-08-07

By PM

Aug 7/10

51/2

Cut view 31+415



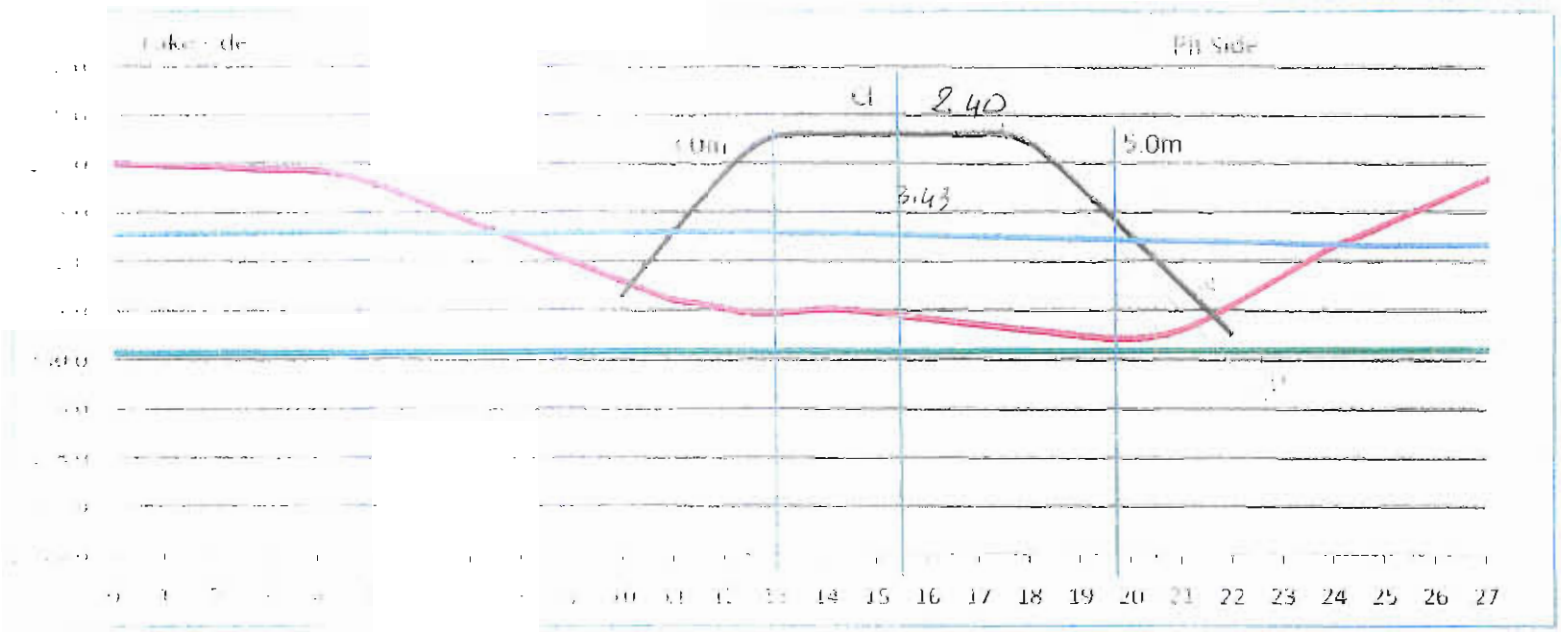
Date 2010-08-07

By: PM

Aug 7/10

5/18

Cut view 31+420

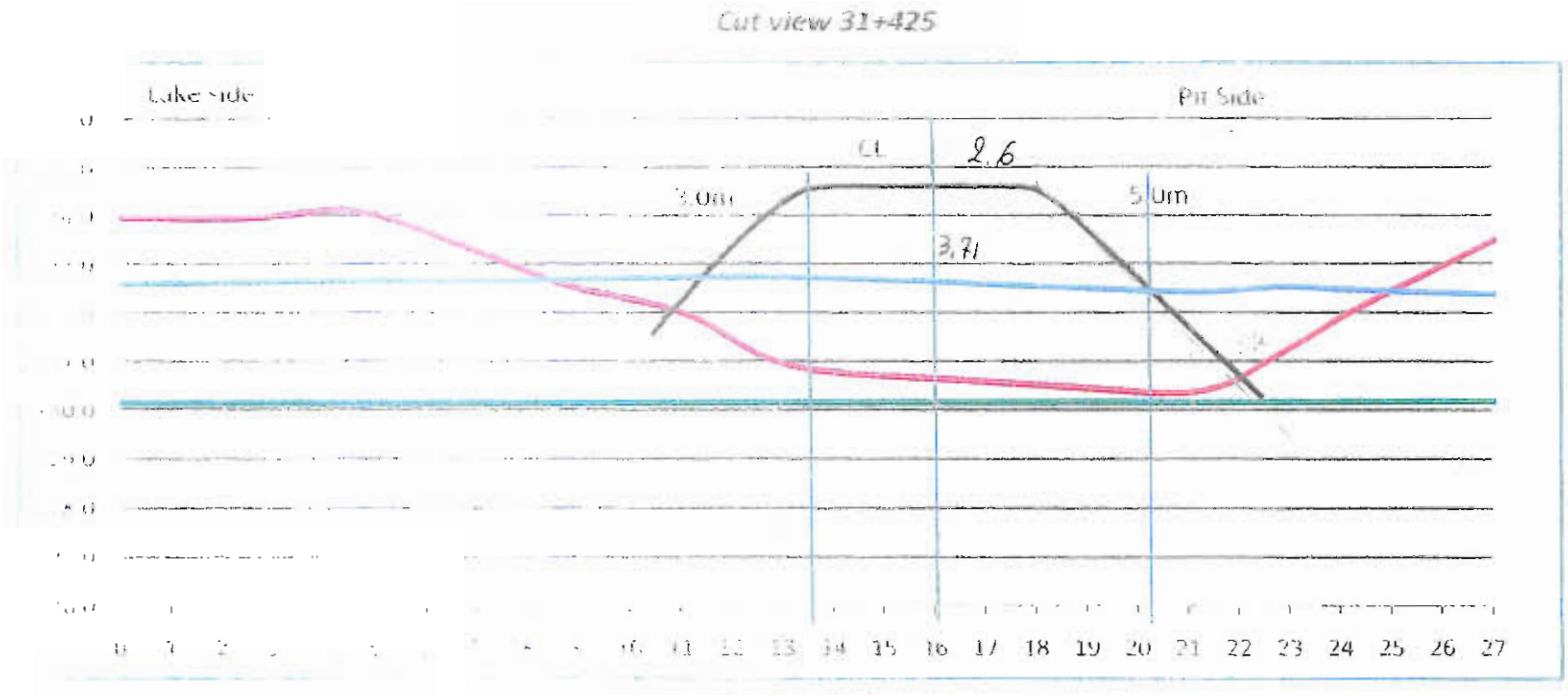


Date 2010-08-07

By PM

Aug 7/10

S1/6



Date 2010-08-07

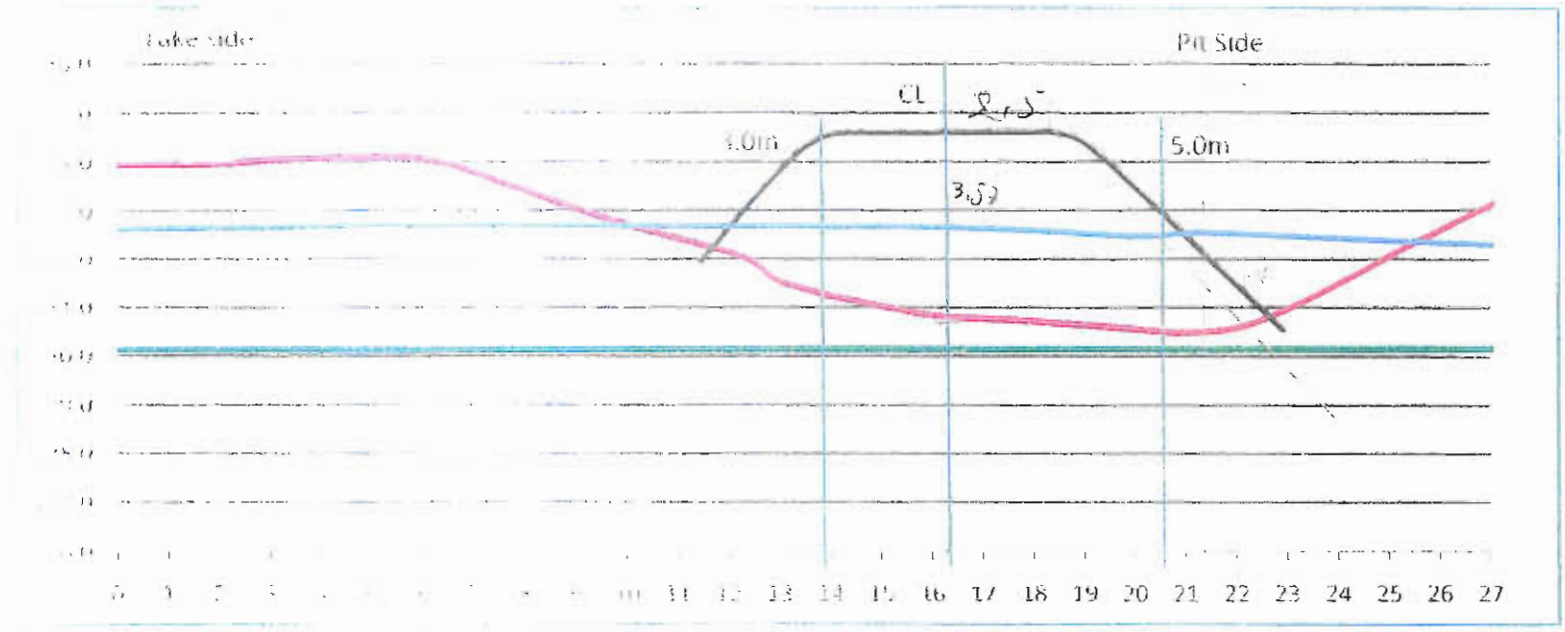
By: PM

Page 9 of 14

Aug 7/10

31/01

Cut view 31+430



Date 2010-08-07

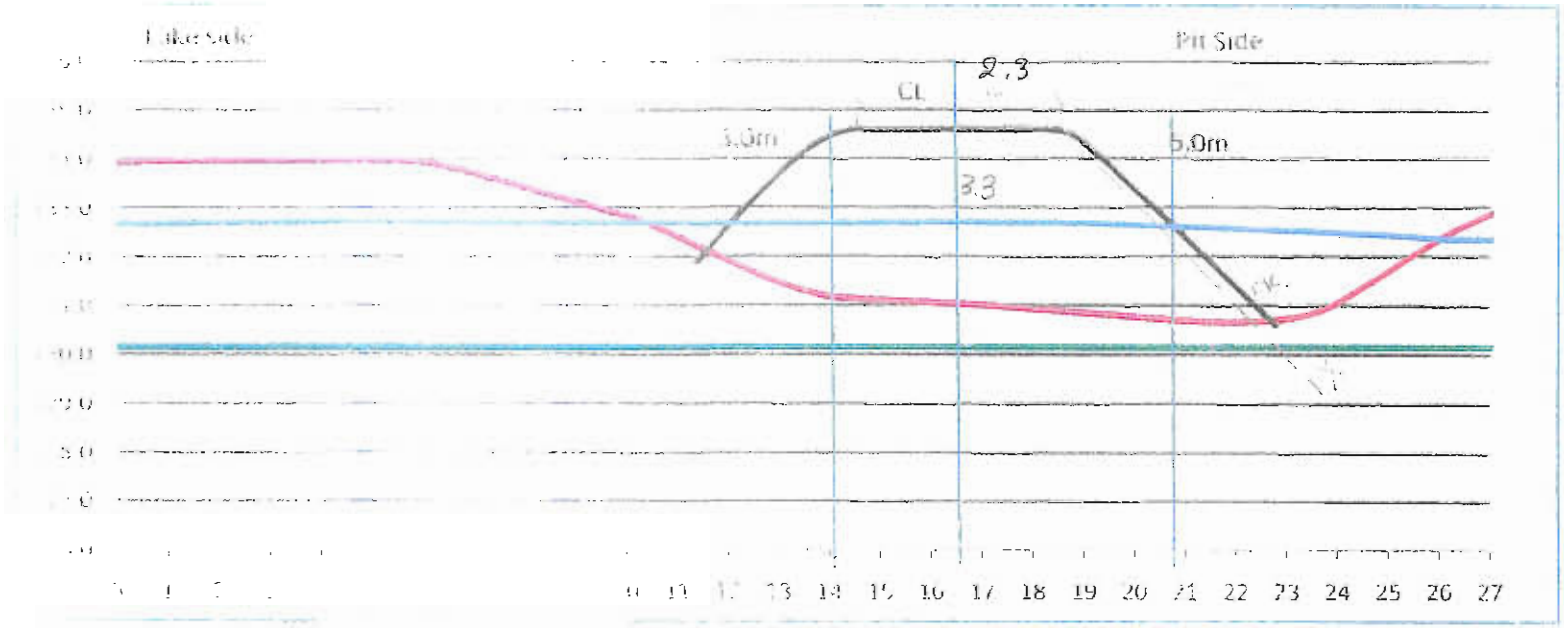
By: PM

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Aug 7/10

11/15

Cut view 31+435



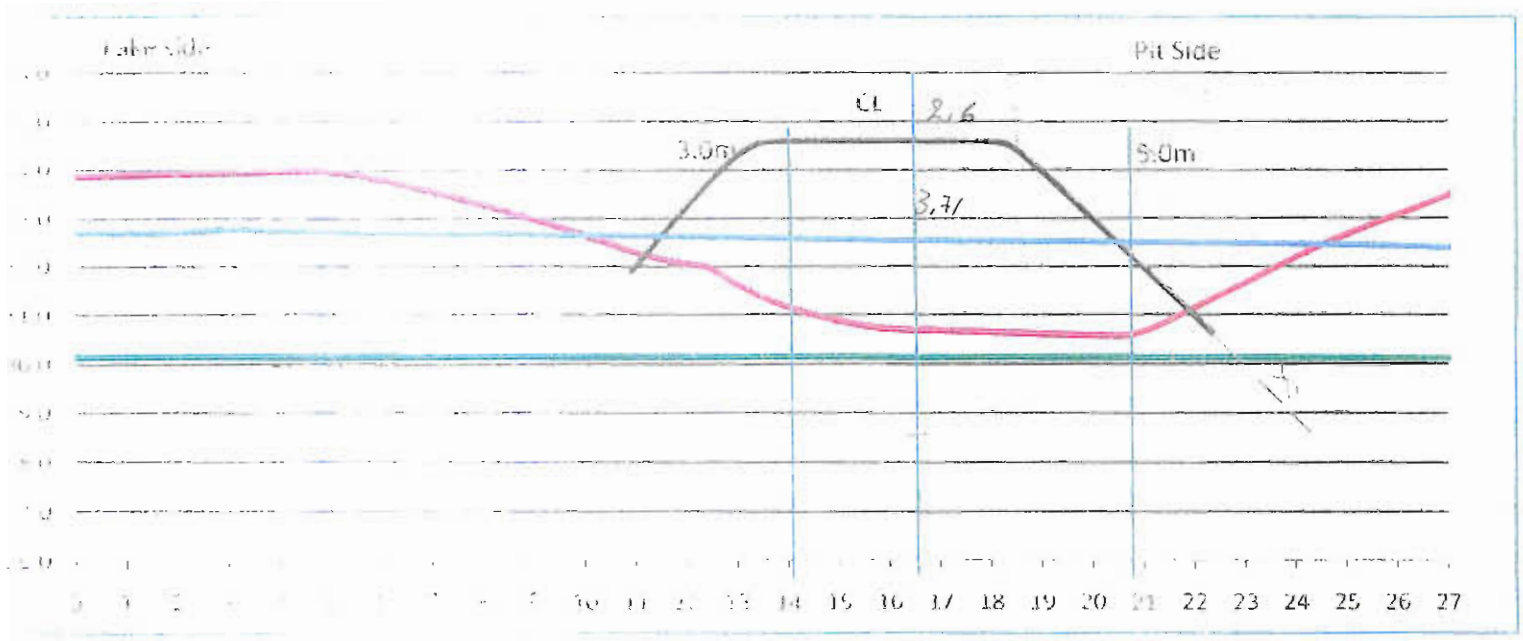
Date 2010-08-07

BY PM

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12/15

Cut view 31+440

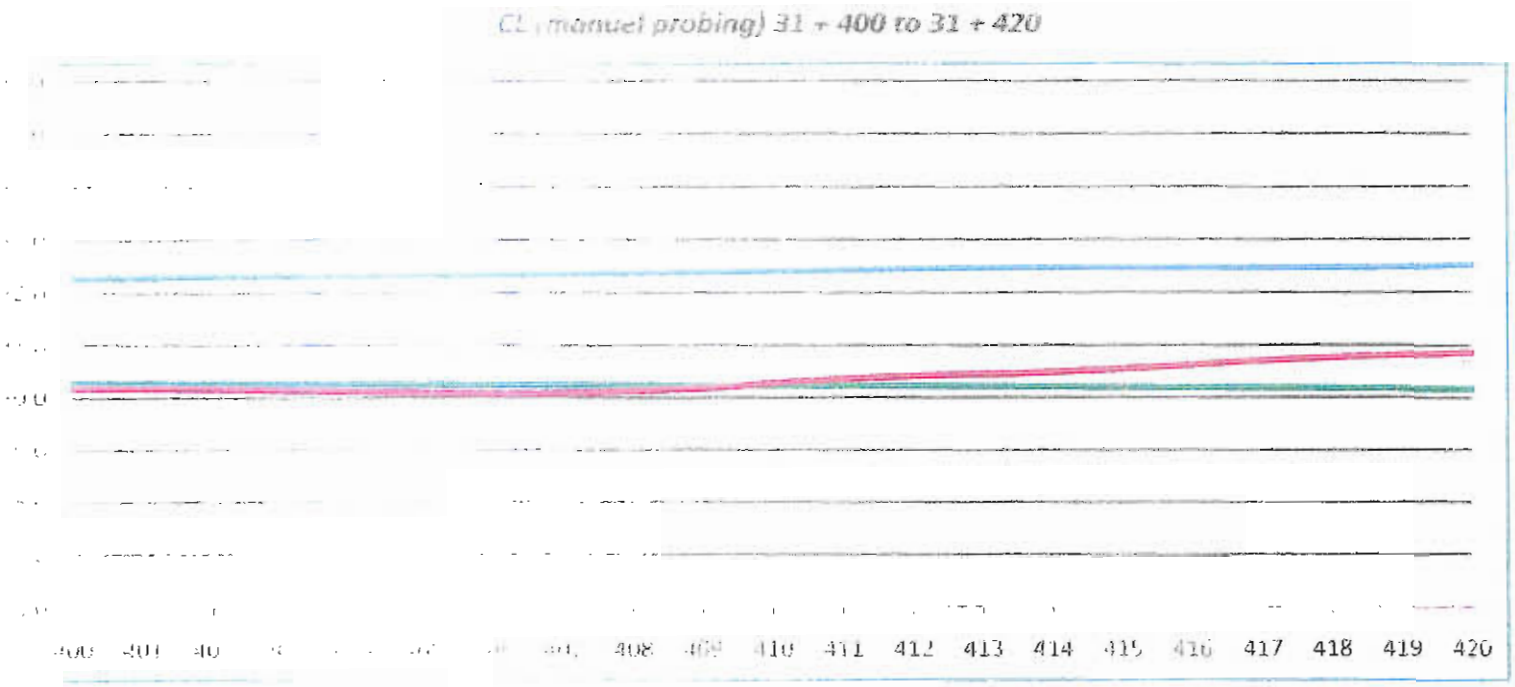


Date 2010-08 07

By. PM

Aug 7/10

13/14

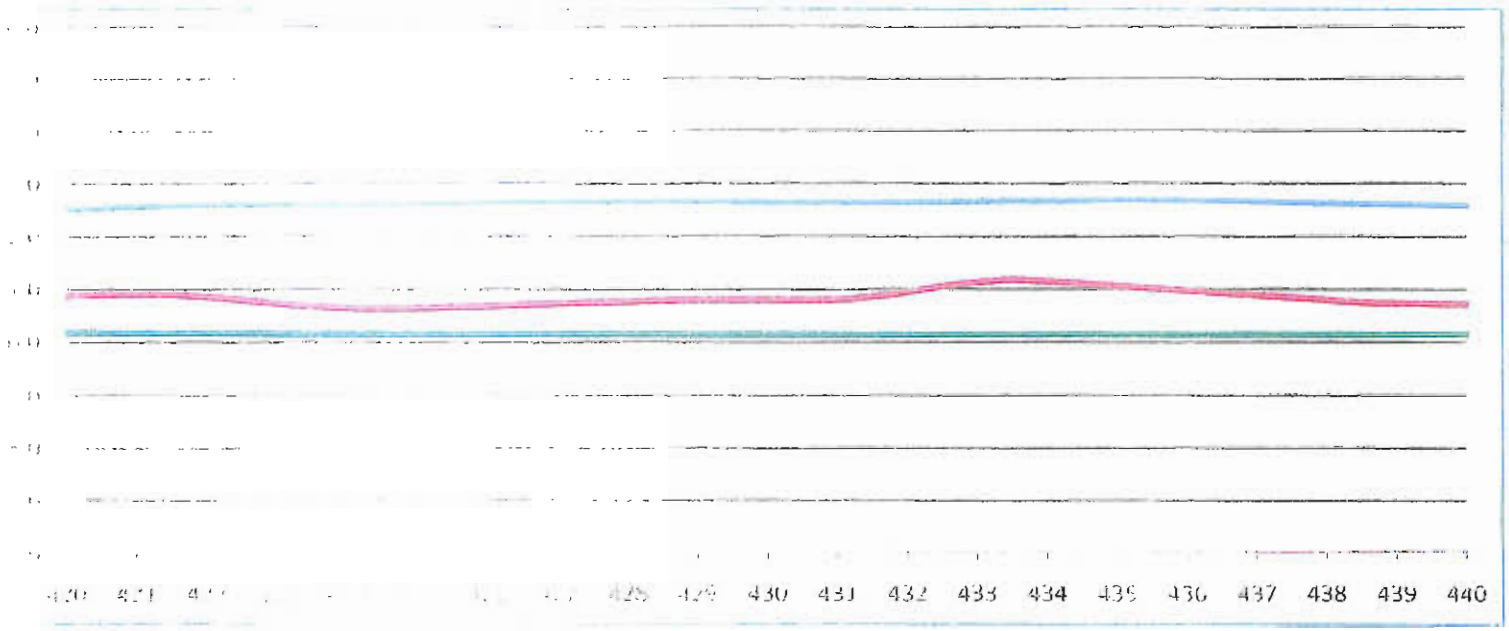


Date 2010-08-07

By: PM

page 13 to 14

CL (manuel probing) 31 + 420 to 31 + 440



Date 2010-08-07

By PM

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 31+445 Offset	SHIFT: NIGHT: ☐ DAY: ☒	DATE: 7 AOUT 2010	SHEET 1 OF
To Sta. 31+465 Offset	LOCATION: BAY Goose Dike, SOUTH PORTION		
EQUIPMENT:			
DESCRIPTION			

NO	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1	Survey lines and layout checked to ensure the locations conform with the Drawings	JM	GB.
2	Storage areas planned for disposal of removed materials	JM	GB.
3.	Occurrence of snow and ice removal method in place	JM	GB.
4	Occurrence of boulders and removal method in place	JM	GB.
5.	Occurrence of hummocks and scalping method in place	JM	GB.
6.	Occurrence of surface and ground water and its impact mitigation in place	JM	GB.
7	Presence of other unsuitable materials and removal method in place	JM	GB.
8	Soil frozen or thawed and measures taken	JM	GB.
9	Blasting requirement to remove unsuitable material and safety measure checked	N/a JM	N/A GB
10	Adjustment made to suit design in field	JM	GB.
11	Final walkover inspection before re-sloping or fill placement	JM	GB.
12	"As-excavated" survey conducted	JM	GB.
13	Echo sounding conducted of lake bottom surface	JM	GB.

REMARKS: APPROVED TO BACKFILL TO TOE OF 31+465 (~31+461 CREST) PRIOR TO BACKFILL REMOVE SILT ACCUMULATION

OBSERVATIONS (Attach list if necessary): NONE.

DATE OF RECTIFICATION:

SURVEY VERIFICATION	ACCEPTED BY QA Manager	ACCEPTED BY OWNER
NAME Guy Morissette	NAME Grant Burns	NAME
SIGNATURE Guy Morissette	SIGNATURE GB	SIGNATURE
DATE 7 Aout 2010	DATE Aug 7, 2010	DATE

30 Aug

Golder Associates

COPY OF ORIGINAL 1/9

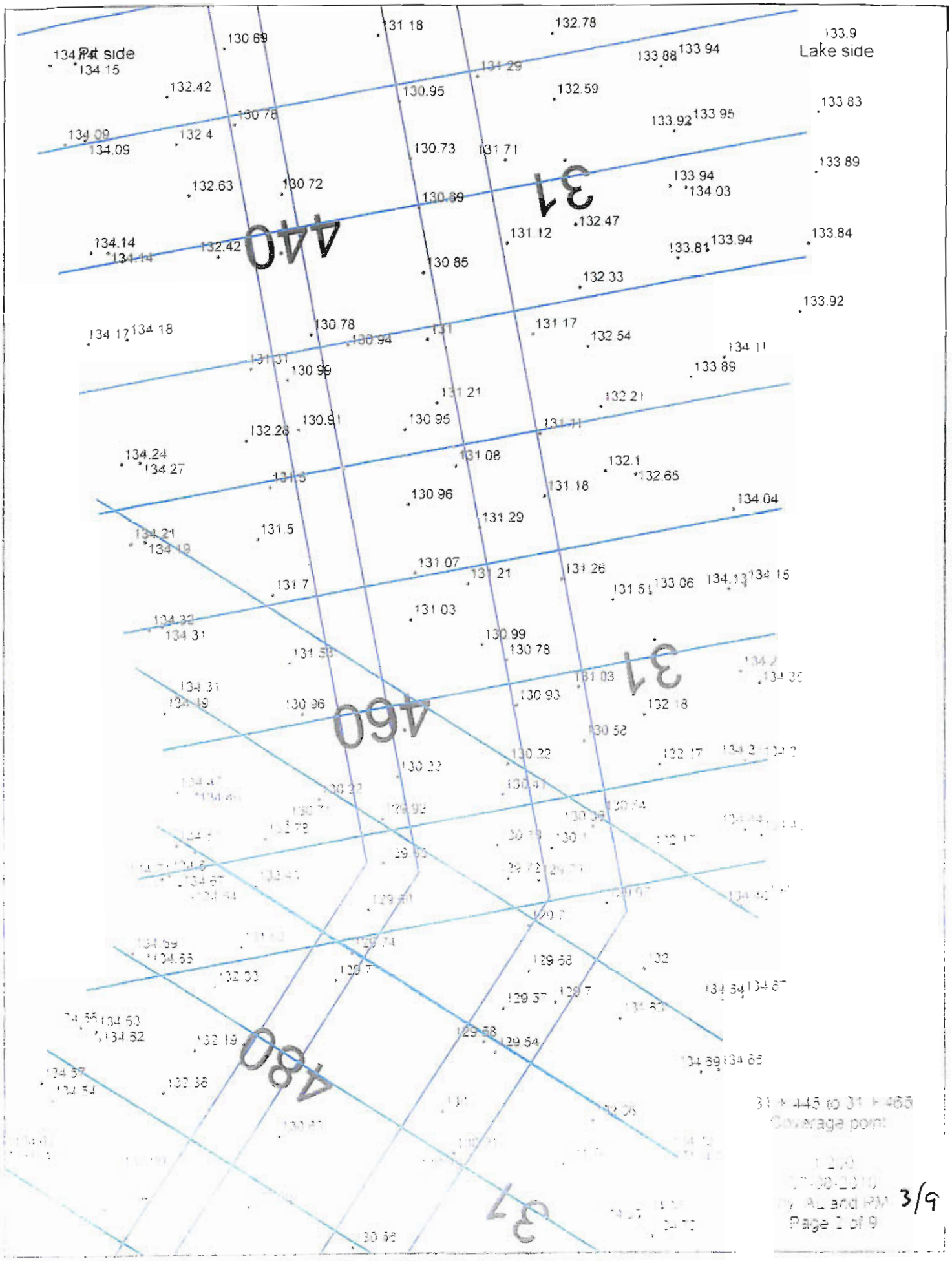
Pit side

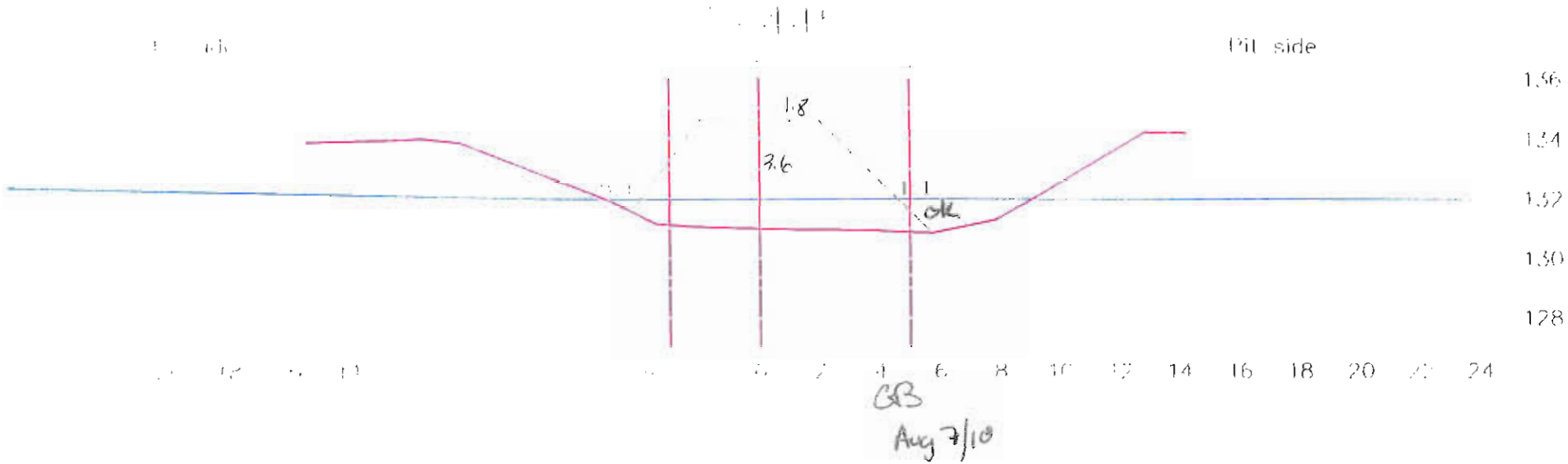
Lake side

31 + 445 to 31 + 485
Contour Line (50cm)

AL and PM

2/9


Pat side
Lake side
440
31
460
31
480
37
31 K 445 to 31 K 463
Coverage point
3/9
Page 1 of 9



GB
Aug 7/10

Lake bed soil

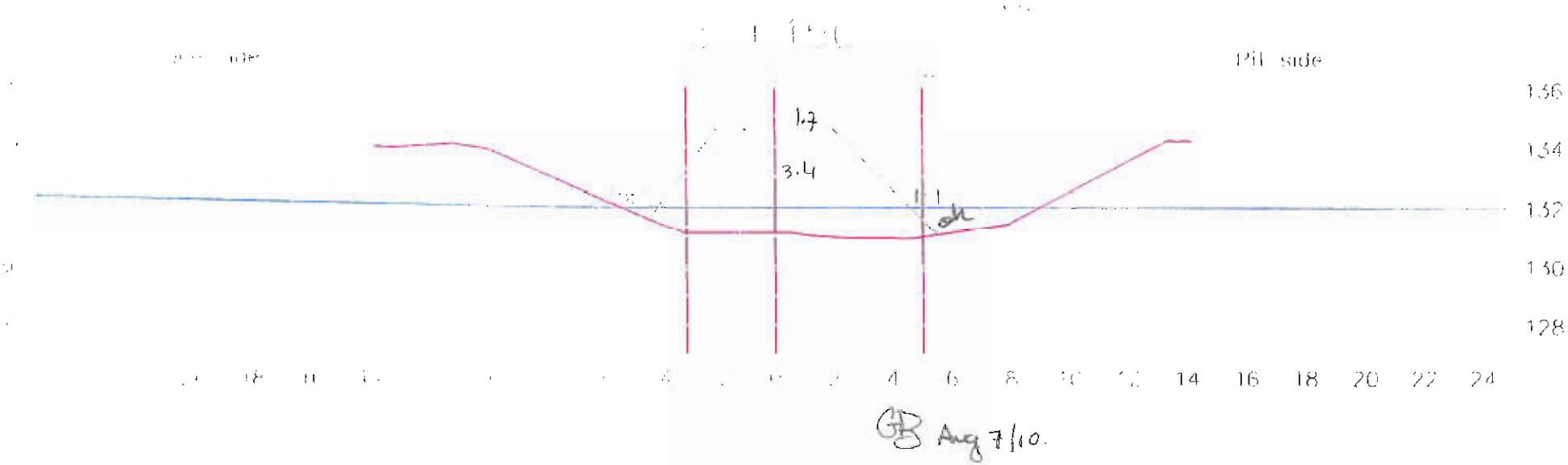
Dike

Inferred bed rock

Manual probing

Date: 070810

Par: Alex Lalancette et Pascale Martel



GB Aug 7/10.

Lake bed soil

Dike

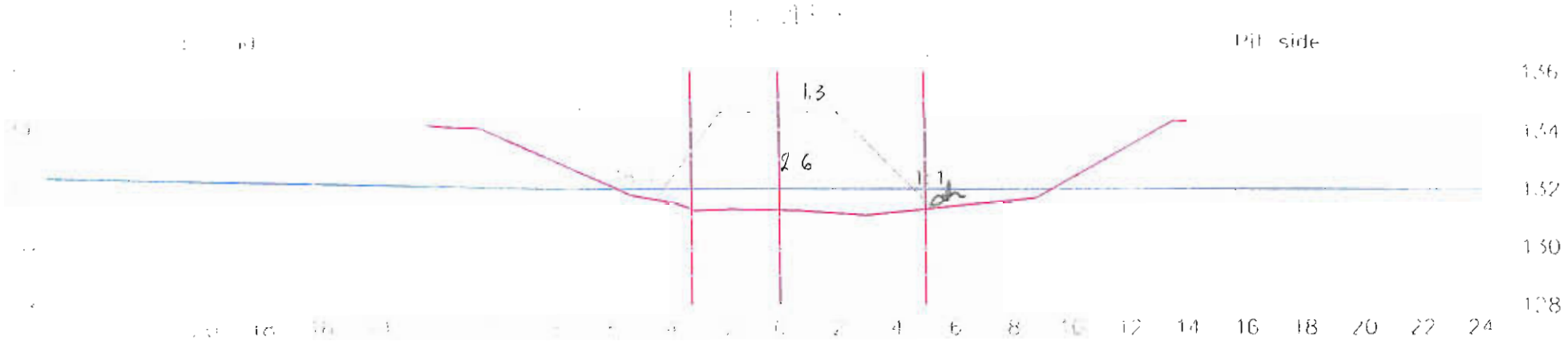
Inferred bed rock

Manual probing

Date: 070810

Par: Alex Lalancette et Pascale Martel

5/9



GB
Aug 12/10

Lake bed soil

Dike

Inferred bed rock

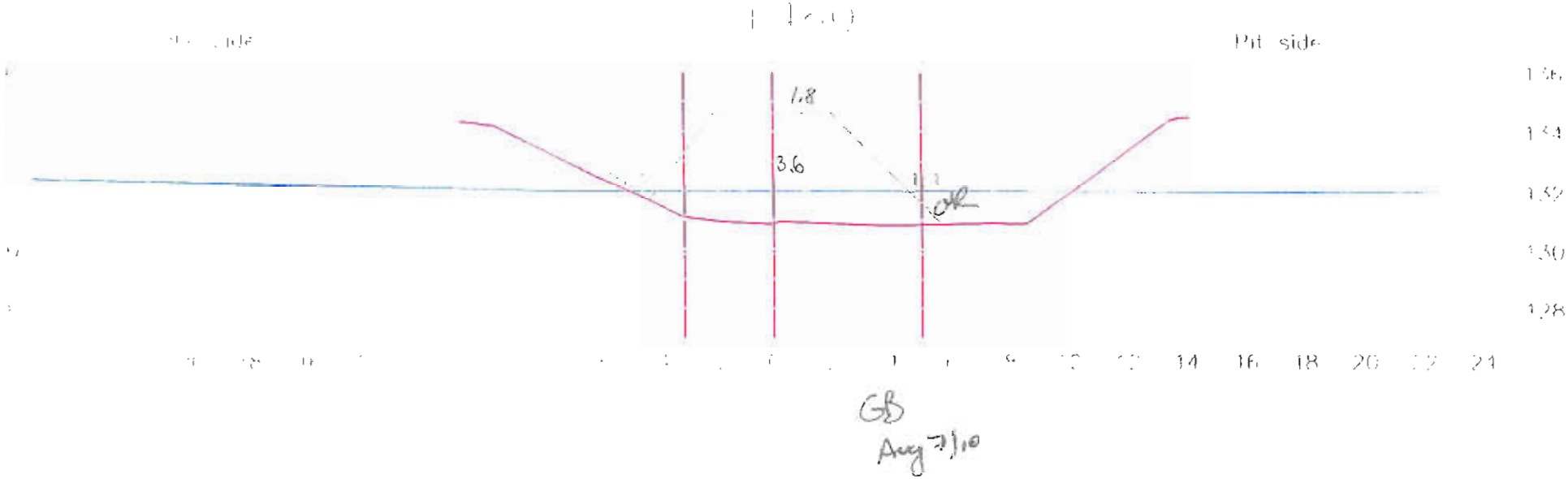
Manual probing

Date: 070810

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Par: Alex Lalancette et Pascale Martel

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Lake bed soil

Dike

Inferred bed rock

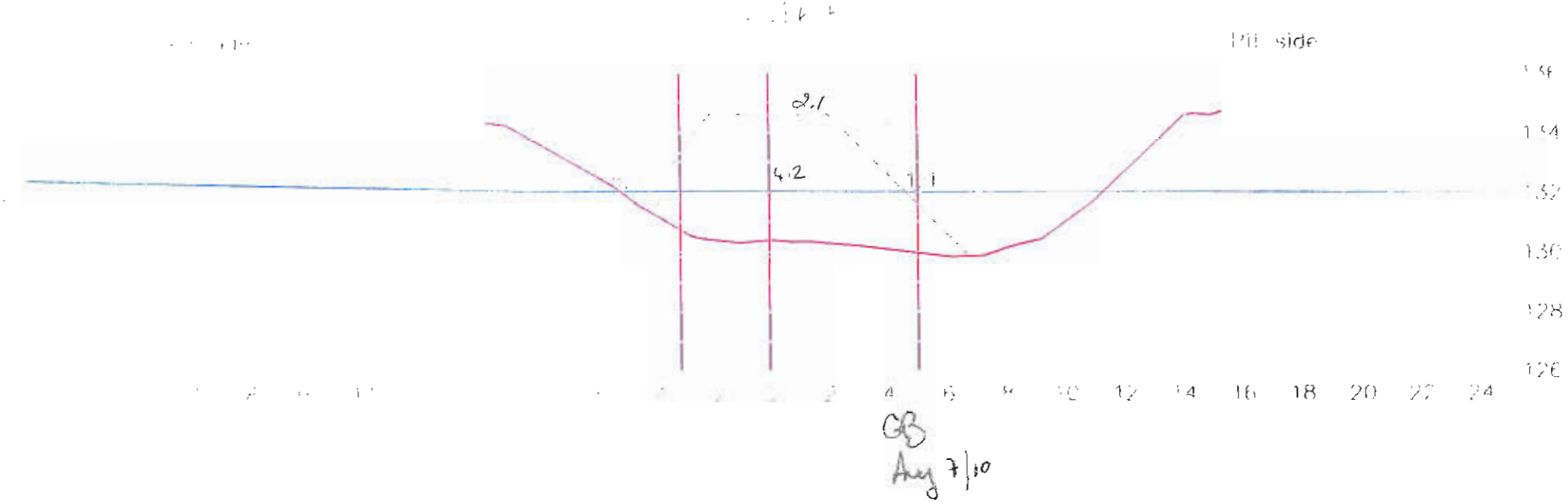
Manual probing

Date: 070810

Page: 7/9

Par: Alex Lalancette et Pascale Martel

7/9



GB
Aug 7/10

Lake bed soil

Dike

Inferred bed rock

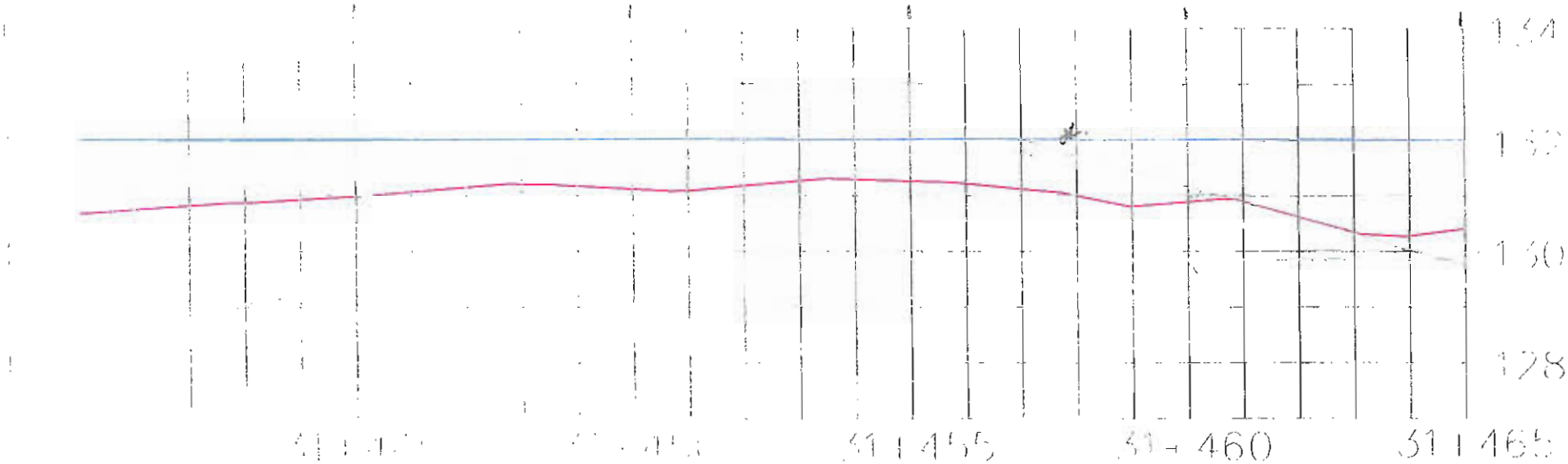
Manual probing

Date: 070810

Page: 8/9

Par: Alex Lalancette et Pascale Martel

6/8



Lake bed soil

Dike

Inferred bed rock

Manual probing

Date: 070810

Par: Alex Lalancette et Pascale Martel

6/6

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 31+470 Offset	SHIFT: NIGHT: ☐ DAY: ☒	DATE: 7 AOUT 2010	SHEET 1 OF
To Sta. 31 + 490 Offset	LOCATION: BAY GOOSE DIKE, SOUTH PORTION		
EQUIPMENT:			

DESCRIPTION

NO	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1	Survey lines and layout checked to ensure the locations conform with the Drawings	GM.	GB.
2.	Storage areas planned for disposal of removed materials	GM	GB.
3	Occurrence of snow and ice removal method in place	GM	GB.
4	Occurrence of boulders and removal method in place	GM	GB
5	Occurrence of hummocks and scalping method in place	GM	GB
6	Occurrence of surface and ground water and its impact mitigation in place	GM	GB.
7	Presence of other unsuitable materials and removal method in place	GM	GB.
8	Soil frozen or thawed and measures taken	GM	GB.
9	Blasting requirement to remove unsuitable material and safety measure checked	N/A GM	N/A GB.
10	Adjustment made to suit design in field	GM	GB.
11	Final walkover inspection before re-sloping or fill placement	GM	GB.
12	"As-excavated" survey conducted	GM	GB.
13	Final sounding conducted of lake bottom surface	GM	GB.

REMARKS (1) Remove only silt accumulation AFTER BACKFILL HAS BEEN PLACED FROM 31+490 to 31+465

(2) APPROVED TO BACKFILL TO 31+490 TOE (~31+486 CREST)

DEVIATIONS (Attach list if necessary)

PUSH ADDITIONAL BACKFILL CORE MATERIAL ON D/S SIDE BETWEEN ~31+462 to ~31+472 TO ACHIEVE ~1.5H:1V SLOPE TO ENSURE <2M BETWEEN FILTER + LAKEBED SOILS. DATE OF RECTIFICATION:

SURVEY VERIFICATION	ACCEPTED BY QA Manager	ACCEPTED BY OWNER
NAME Guy Morissette	NAME: GRANT BURNS	NAME:
SIGNATURE Guy Morissette	SIGNATURE GB	SIGNATURE
DATE 7 Aout 2010	DATE Aug 7, 2010	DATE

21115 hrs

22105 hrs

Golder Associates

COPY of ORIGINAL 1/9

Aug 7/0

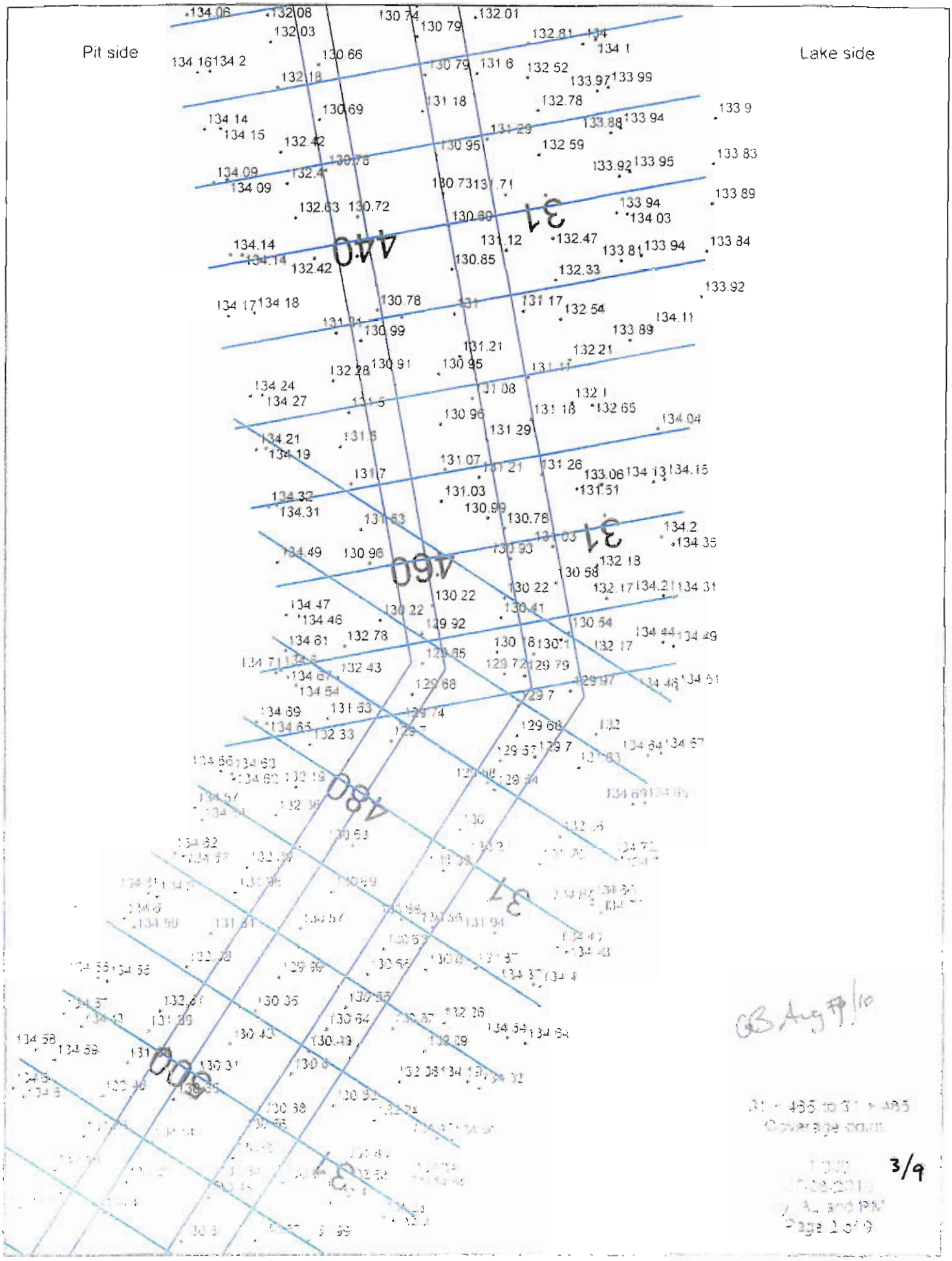
31 - 485 to 31 - 485
Contour line (50cm)

1:200
AL and PM
Page 2 of 9

2/9

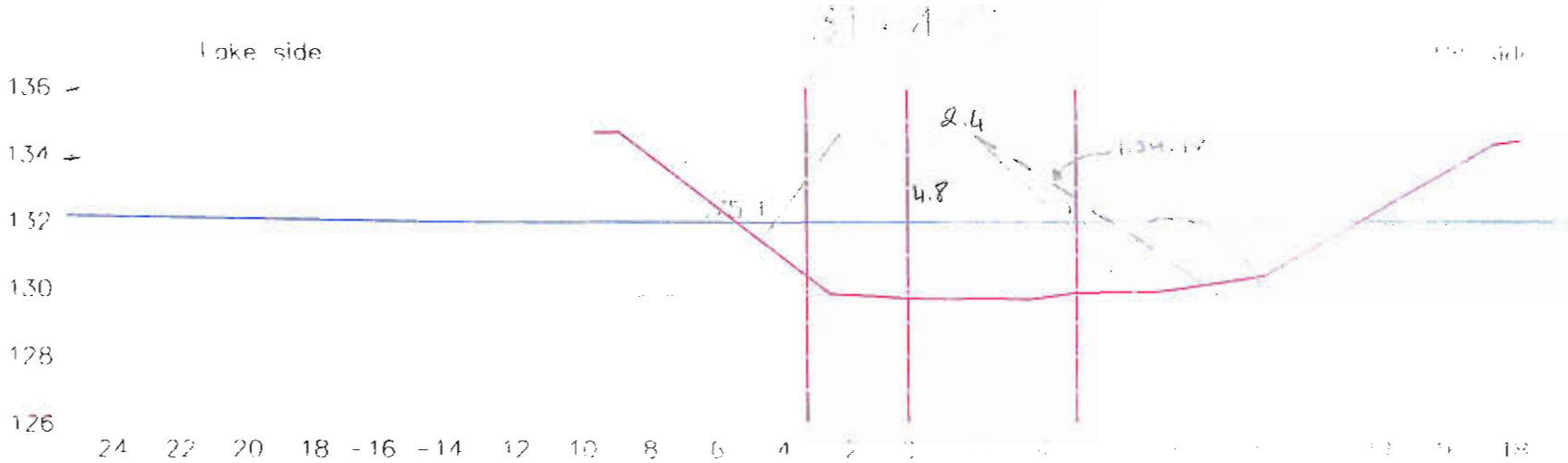
Pit side

Lake side



GB Aug 19/10

3/9



CB
Aug 7/10

PUSH ADDITIONAL BACKFILL LOSE BETWEEN 31+462 to 31+472m TO ENSURE A FLATTER SLOPE (1:5 ?) SURVEY SLOPE PRIOR TO COARSE FILTER 'WINDOW' PLACEMENT.

Lake bed soil

Dike

Inferred bed rock

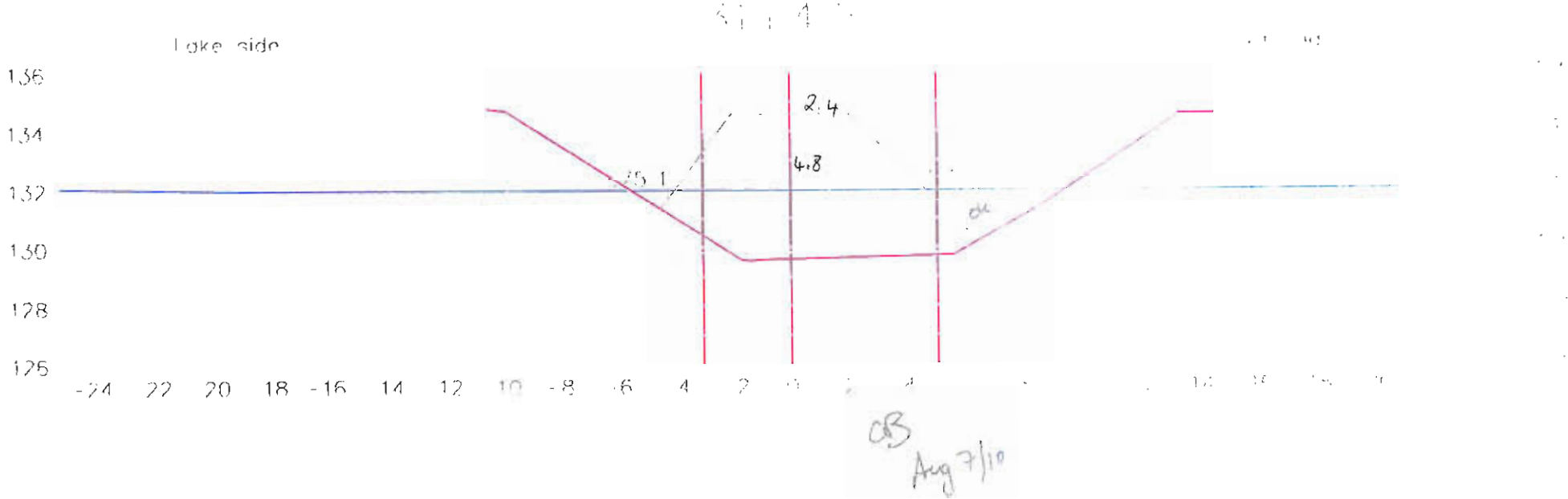
Manual probing

Date: 070810

Page: 4/9

Par: Alex Lalancette et Pascale Martel

4/9



Lake bed soil

Dike

Inferred bed rock

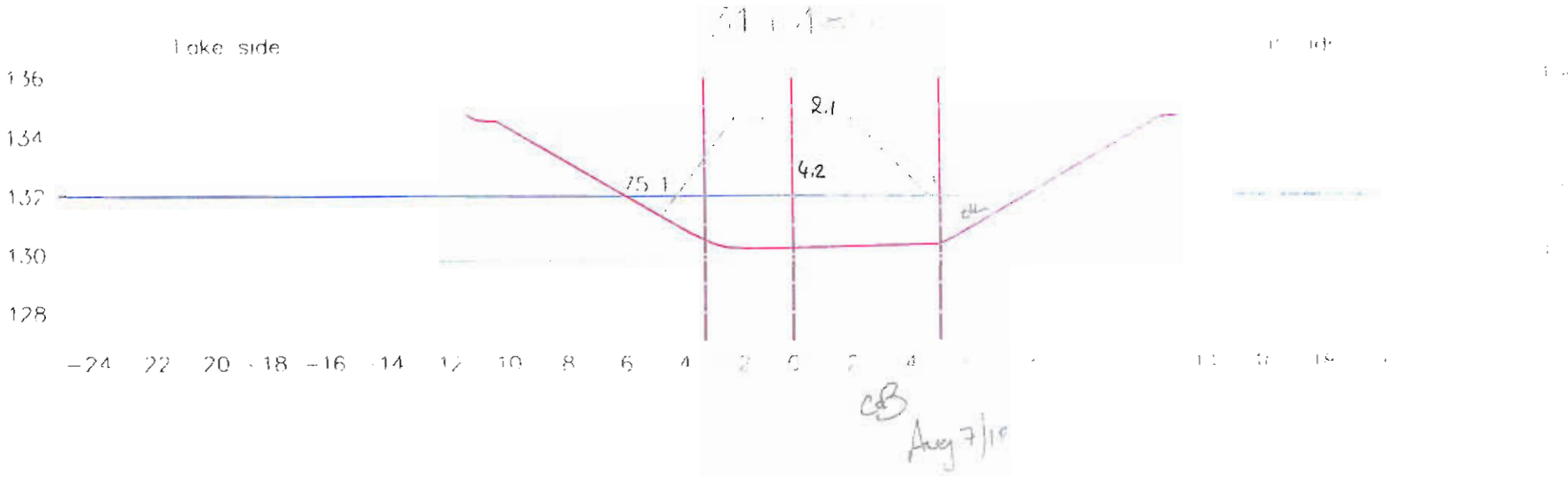
Manual probing

b/s

Date 070810

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Par Alex Lalancette et Pascale Mariol



Lake bed soil

Dike

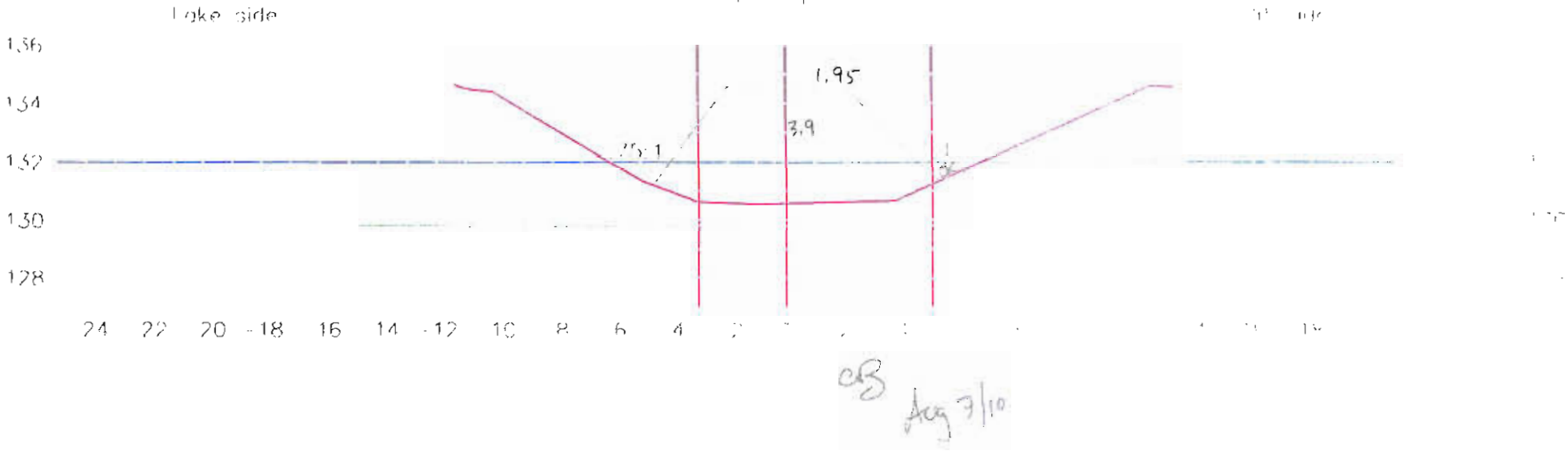
Inferred bed rock

Manual probing

Date 070810

Par Alex Lalancette et Pascale Martel

6/9



cfs Aug 7/10

Lake bed soil

Dike

Inferred bed rock

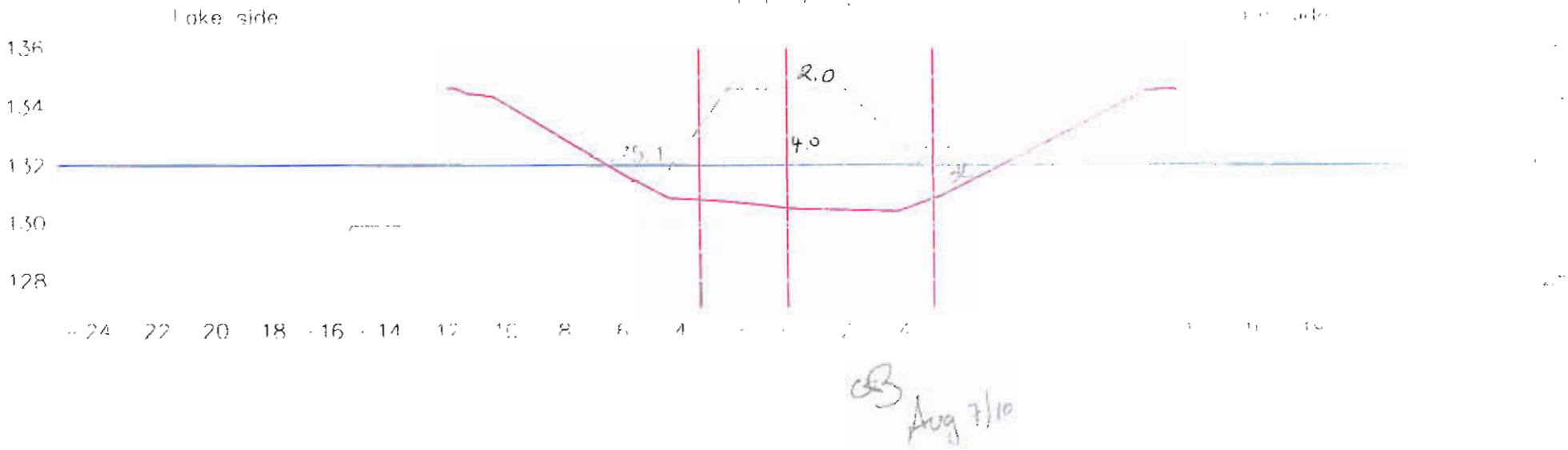
Manual probing

Date 070810

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Par Alex Lalancette et Pascale Martel

b/t



Avg 7/10

Lake bed soil

Dike

Inferred bed rock

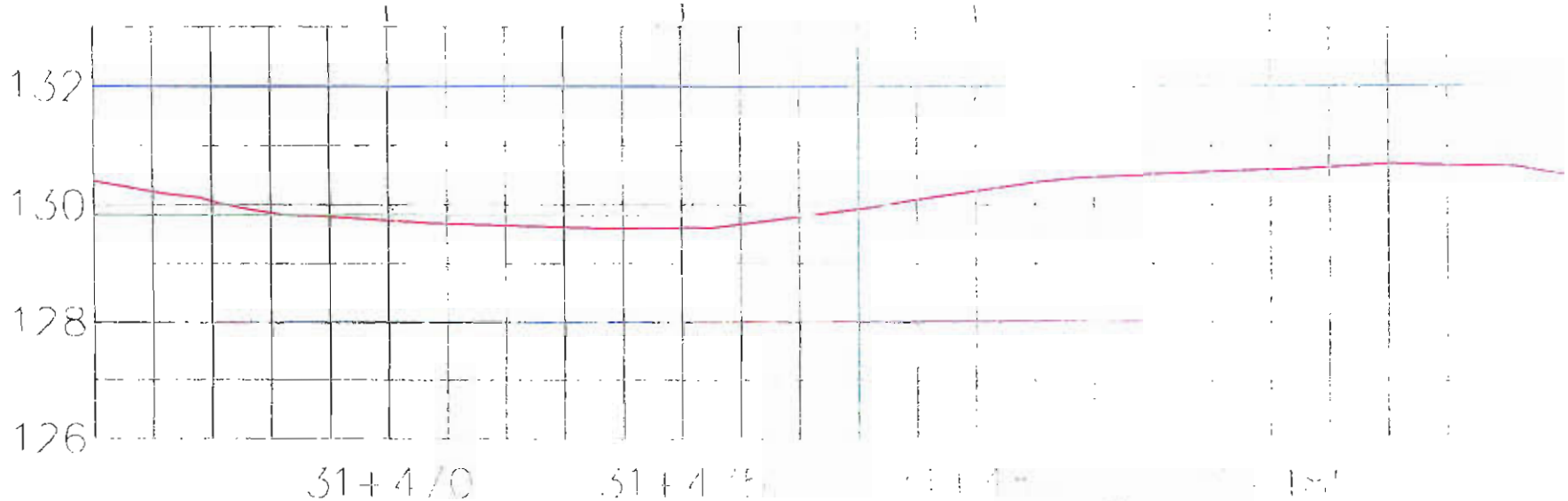
Manual probing

Date: 070810

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Par: Alex Lalancette et Pascale Martel

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Lake bed soil

Dike

Inferred bed rock

Manual probing

Date 070810

Page: 9/9

Par Alex Lalancette et Pascale Martel

5/6

Meadowbank Gold Project

Site Office

Project Number

Reviewed by

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta 31+495 Offset:	SHIFT: NIGHT ☐ DAY ☑	DATE 7 AOÛT 2010	SHEET 1 OF
To Sta 31+515 Offset:	LOCATION: BAY Goose Dike, SOUTH PORTION		
EQUIPMENT:			
DESCRIPTION:			

NO.	ITEM TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1	Survey lines and grade markers to ensure the excavation conforms with the Drawings	GM	GB
2	Storage areas planned for disposal of removed materials	GM	GB
3	Occurrence of snow and ice removal method in place	GM	GB
4	Occurrence of boulders and removal method in place	GM	GB
5.	Occurrence of hummocks and scalping method in place	GM	GB
6.	Occurrence of surface and ground water and its impact mitigation in place	GM	GB
7	Presence of other unsuitable materials and removal method in place	GM	GB
8	Soil frozen or thawed and measures taken	GM	GB
9.	Blasting requirement to remove unsuitable material and safety measure checked	N/A, GM	N/A GB
10.	Adjustment made to suit design in field	GM	GB
11.	Final walkover inspection before re-sloping or fill placement	GM	GB
12	'As-excavated' survey conducted	GM	GB
13.	Final sounding conducted of lake bottom surface	GM	GB

REMARKS: APPROVED TO BACKFILL TO TOE OF 31+515m (OC 31+511m CREST) AFTER SILT DAM PROVIDED & CLEAN UP COMPLETED TO ~31+520. WILL DO WALK OVER AFTER THE ABOVE DONE & WILL SIGN.

DEVIATIONS: (Attach list if necessary)

None.

DATE OF RECTIFICATION:

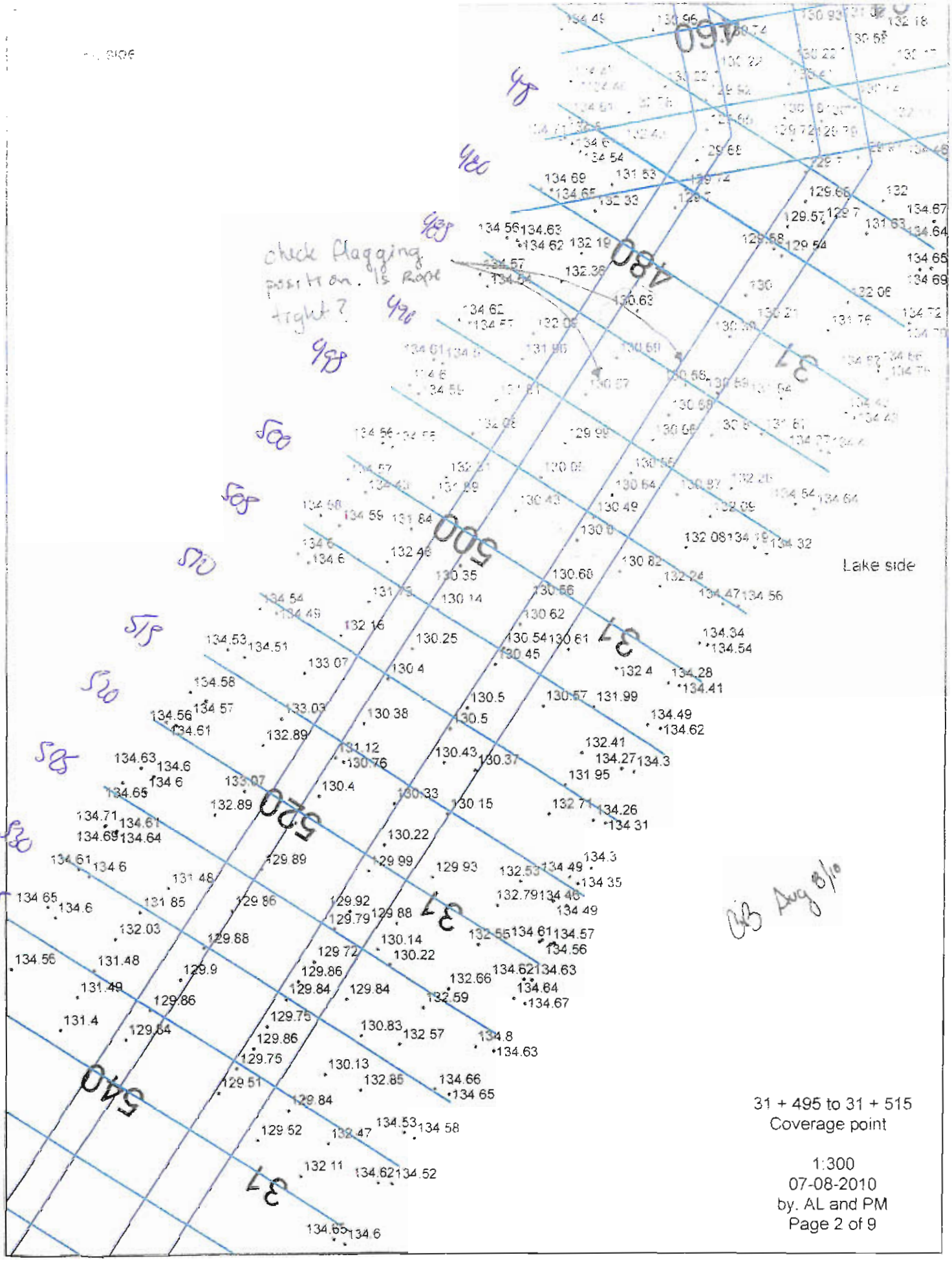
SURVEY VERIFICATION	ACCEPTED BY QA Manager:	ACCEPTED BY OWNER:
NAME: Guy Morissette	NAME: Grant Burns	NAME:
SIGNATURE: Guy Morissette	SIGNATURE: GB	SIGNATURE:
DATE: 8 Aout 2010	DATE: Aug 8, 2010	DATE:

~~+ 22 hrs~~

6 hrs AM GM

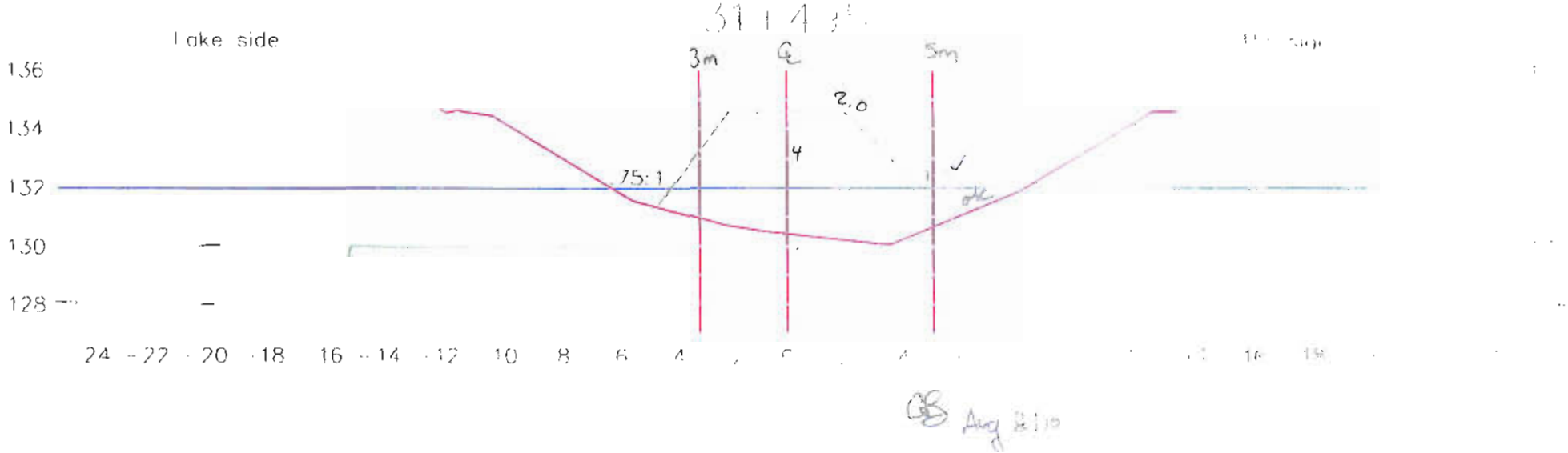
9 hrs AM. GB

Golder Associates


check flagging position. Is Rope tight?
Lake side
31 + 495 to 31 + 515
Coverage point
1:300
07-08-2010
by. AL and PM
Page 2 of 9

31 + 495 to 31 + 515
Contour line (50cm)

1:200
07-08-2010
by: AL and PM



Lake bed soil

Dike

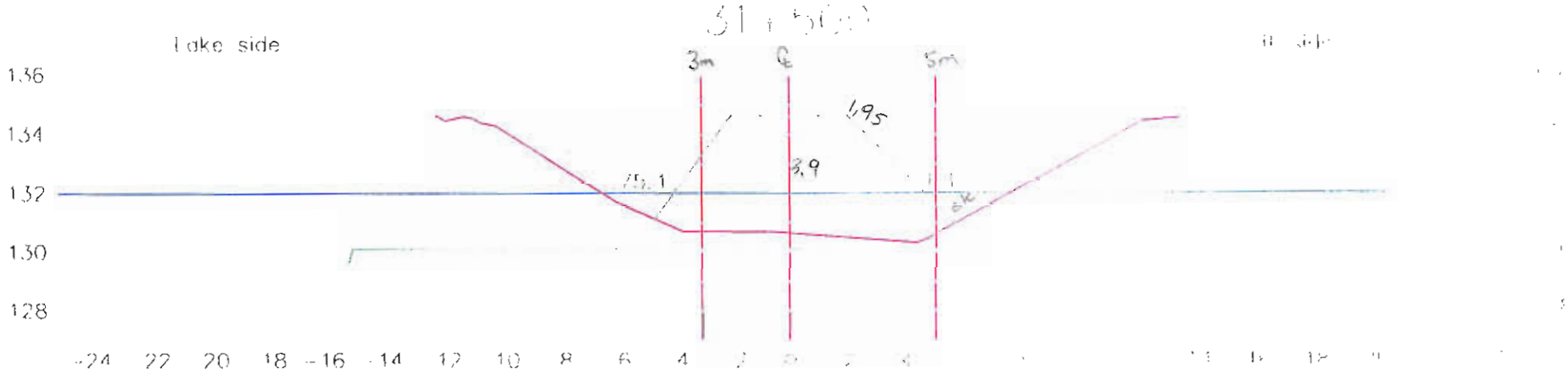
Inferred bed rock

Manual probing

Date: 070810

Page: 4/9

Par. Alex Lalancette et Pascale Martel



Aug 8/10

Lake bed soil

Dike

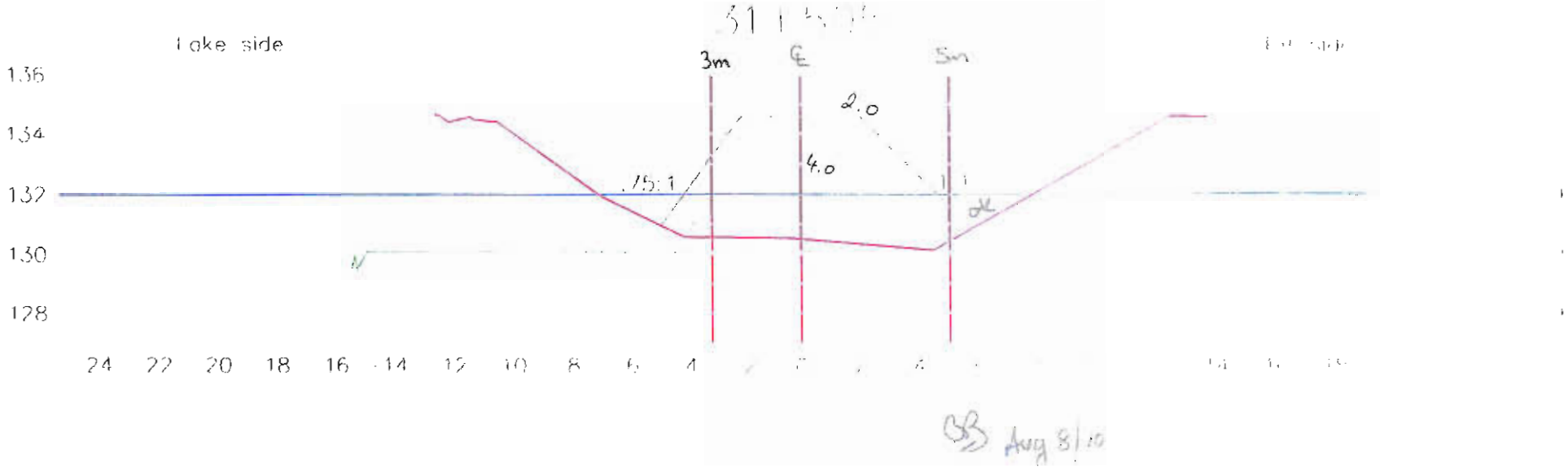
Inferred bed rock

Manual probing

Date: 070810

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Par: Alex Lalancette et Pascale Martel



Lake bed soil

Dike

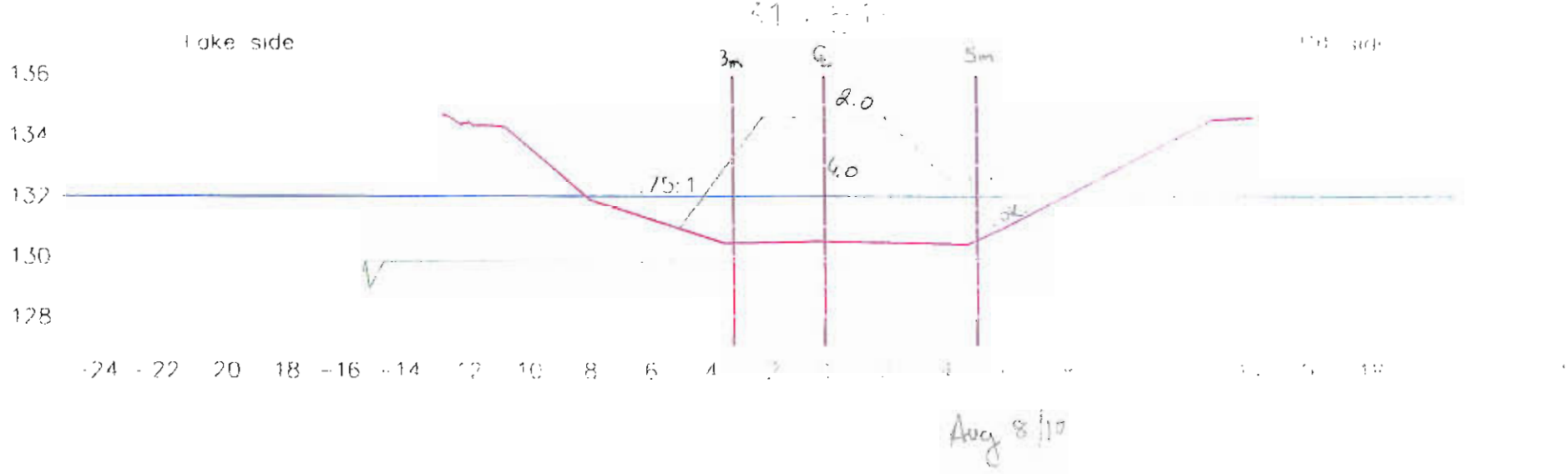
Inferred bed rock

Manual probing

Date: 070810

Page: 6/9

Par: Alex Lalancette et Pascale Martel



Lake bed soil

Dike

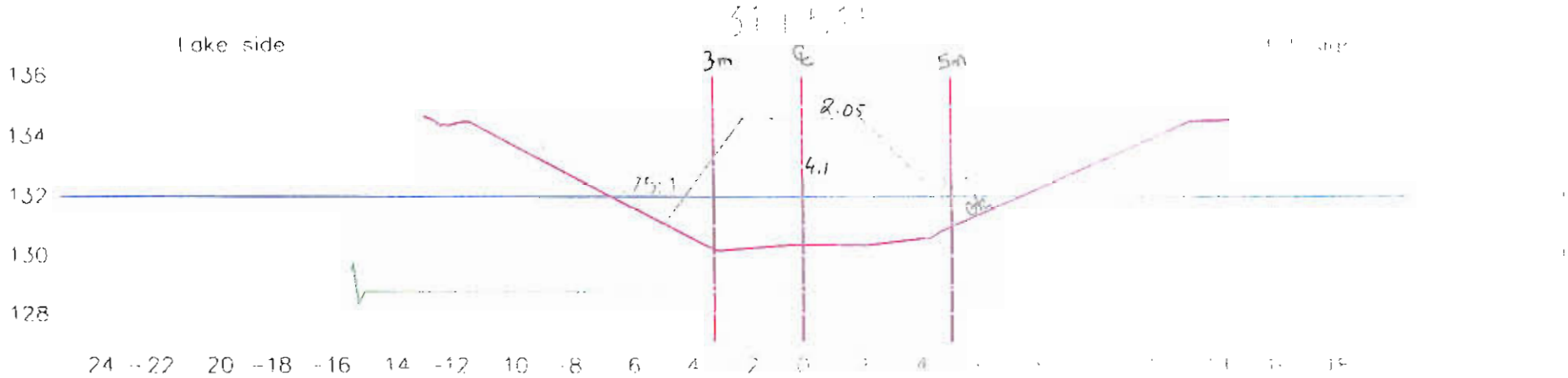
Inferred bed rock

Manual probing

Date: 070810

Page: 7/9

Par: Alex Lalancette et Pascale Martel



Avg 8 1:0

Lake bed soil

Dike

Inferred bed rock

Manual probing

Date: 070810

Page: 8/9

Par: Alex Lalancette et Pascale Mariol

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 31+520 Offset | SHIFT: NIGHT ☐ DAY ☒ | DATE: 7 AOUT 2010 | SHEET 1 OF

To Sta. 31+540 Offset | LOCATION: BAY GOOSE DIKE, SOUTH PORTION

EQUIPMENT: 535

DESCRIPTION

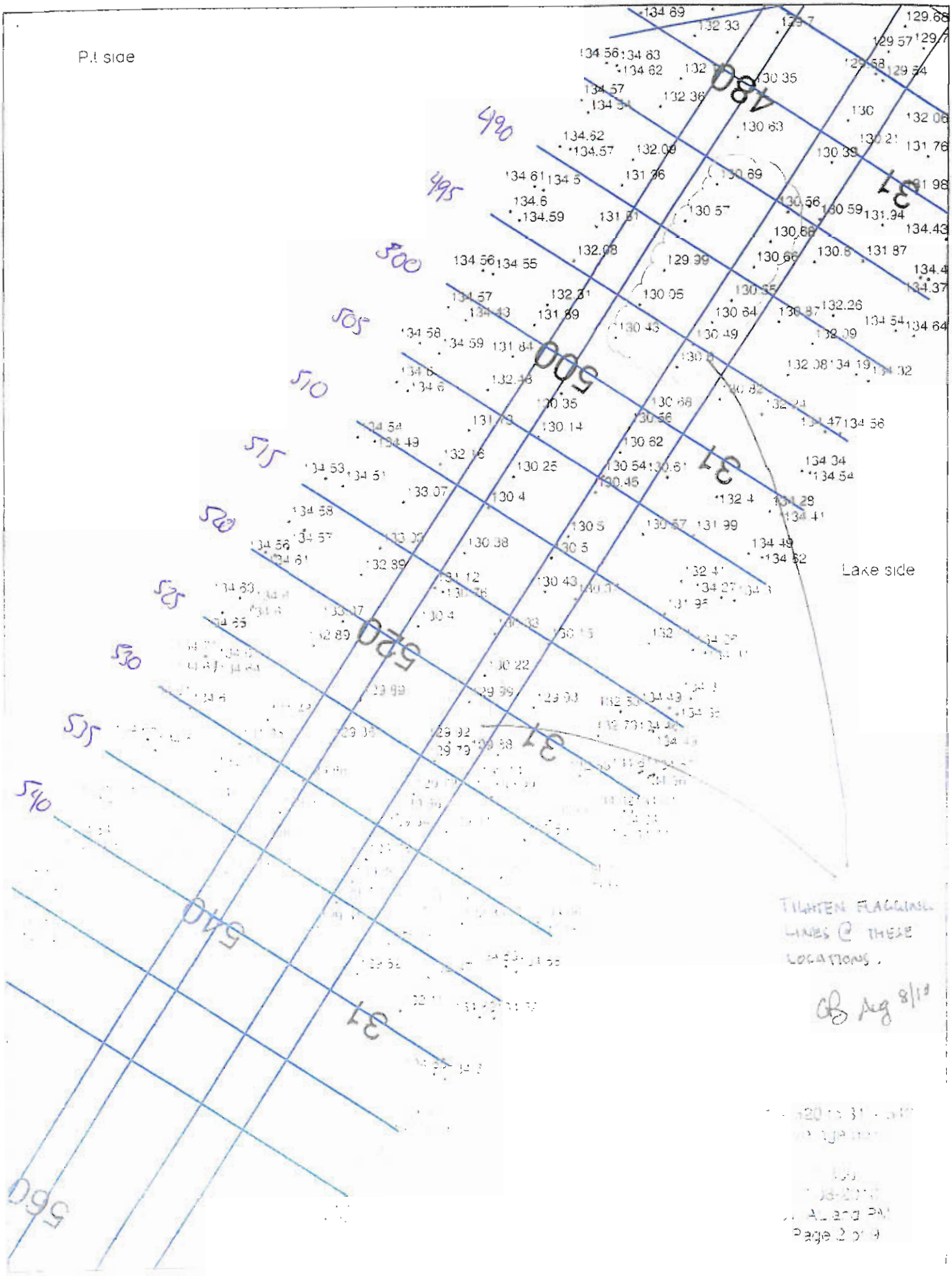
NO	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1	Survey lines and layout checked to ensure the locations conform with the Drawings	✓	GB.
2.	Storage areas planned for disposal of removed materials	✓	GB.
3	Occurrence of snow and ice removal method in place	✓	GB.
4	Occurrence of boulders and removal method in place	✓	GB.
5	Occurrence of hummocks and scalping method in place	✓	GB.
6	Occurrence of surface and ground water and its impact mitigation in place	✓	GB.
7	Presence of other unsuitable materials and removal method in place	✓	GB
8	Soil frozen or thawed and measures taken	✓	GB
9	Blasting requirement to remove unsuitable material and safety measure checked	N/A ✓	N/A GB.
10	Adjustment made to suit design in field	✓	GB.
11	Final walkover inspection before re-sloping or fill placement	✓	GB
12	"As excavated" survey conducted	✓	GB
13	Final sounding conducted at lake bottom surface	✓	GB.

REMARKS: (1) ADVANCE BACKFILL FROM CAST PACKAGE (TO 31+520m) FIRST
(2) CHECK SHOT DEPTH BY CLEAN SHOT FROM +515 to +540m
(3) ADVANCE CASE BACKFILL TO 31+535 NE (OR 31+531 CREST)

DATE OF RECTIFICATION

SURVEY VERIFICATION	ACCEPTED BY QA Manager	ACCEPTED BY OWNER
NAME: Gil Morissette	NAME: Grant Burns	NAME:
SIGNATURE:	SIGNATURE: GB	SIGNATURE:
DATE: 8 AOUT 2010	DATE: Aug 9, 2010	DATE:

~~1 Feb~~
6 Feb Aug

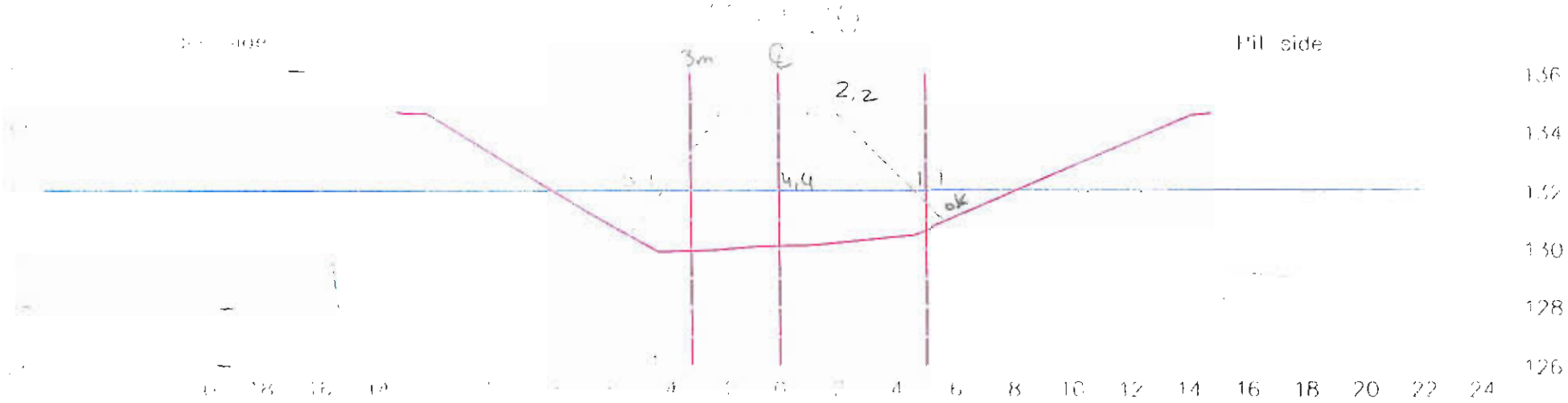


TIGHTEN FLAGGING LINES @ THESE LOCATIONS.

CB Aug 8/18

31 + 520 to 31 + 540
Contour line (50cm)

1:200
11-06-2018
AM and PM
Page 3 of 9



Lake bed soil

Dike

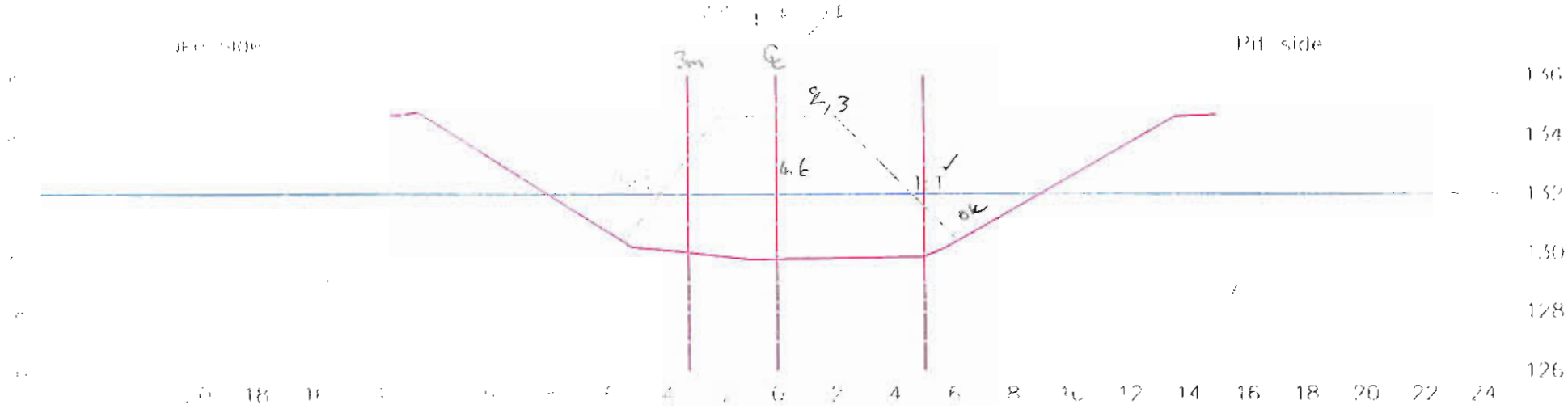
Inferred bed rock

Manual probing

Date: 070810

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Par: Alex Lalancette et Pascale Martel



Lake bed soil

Dike

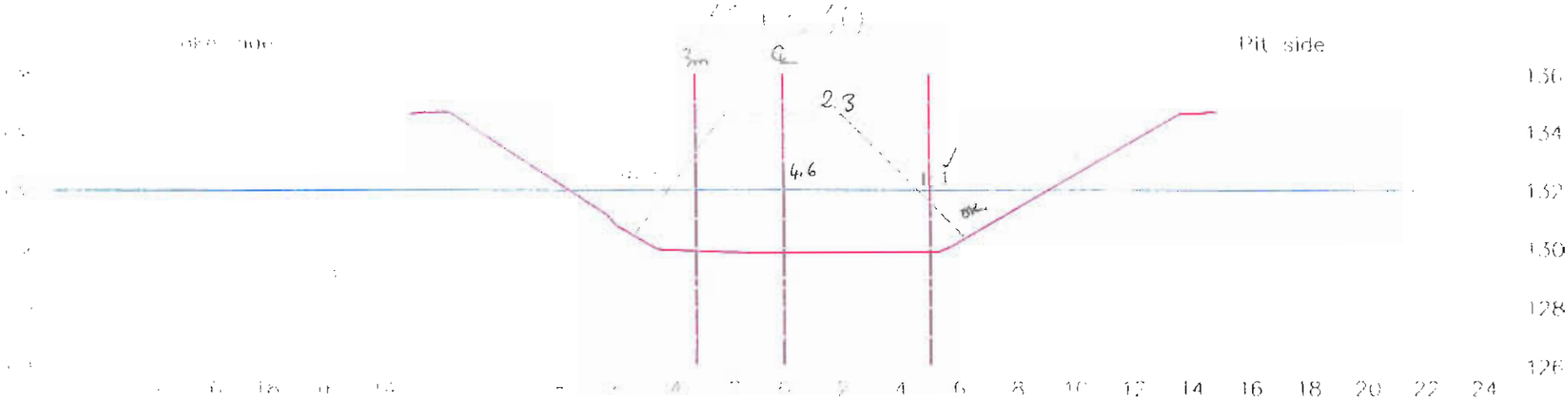
Inferred bed rock

Manual probing

Date: 070810

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Par: Alex Lalancette et Pascale Martel



Lake bed soil

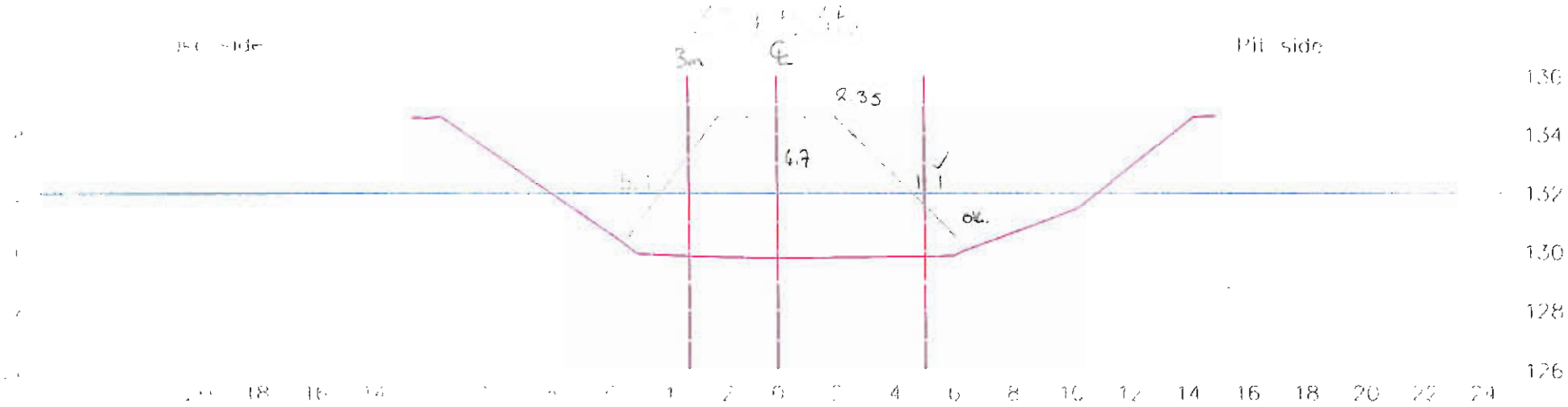
Dike

Inferred bed rock

Manual probing

Date: 070810

Par: Alex Lalancette et Pascale Martel



Lake bed soil

Dike

Inferred bed rock

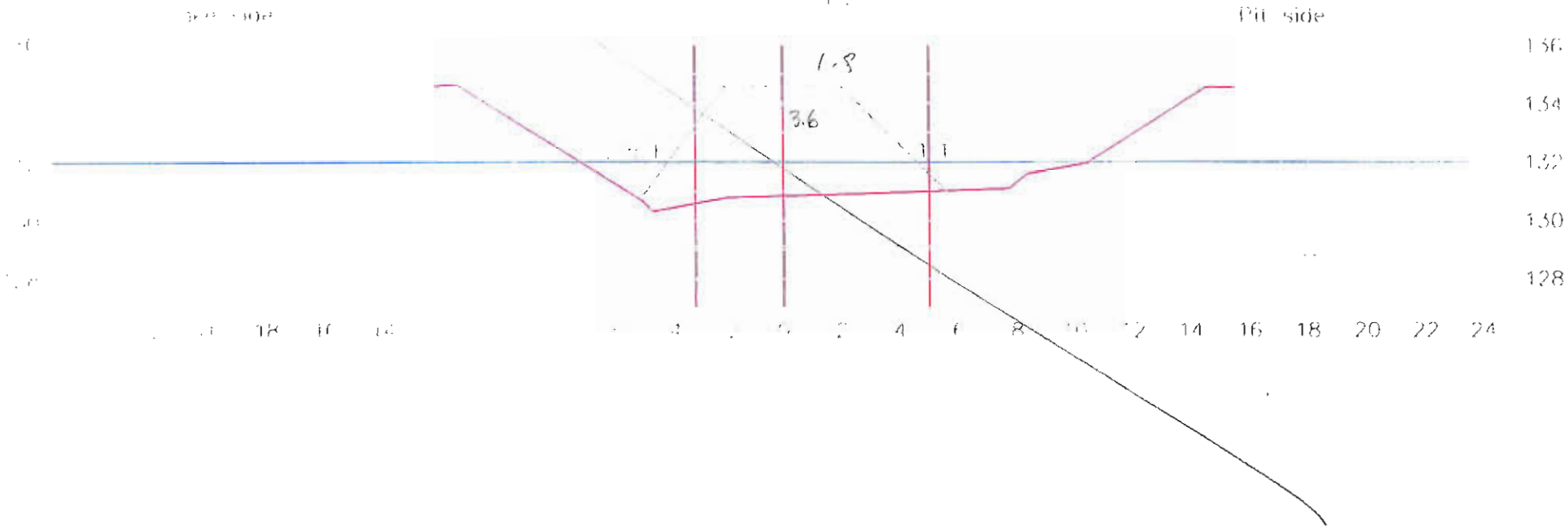
Manual probing

Date: 070810

Page: 7/9

Par: Alex Lalancette et Pascale Martel

MISSING DATA. FOR NEXT PACKAGE.



Lake bed soil

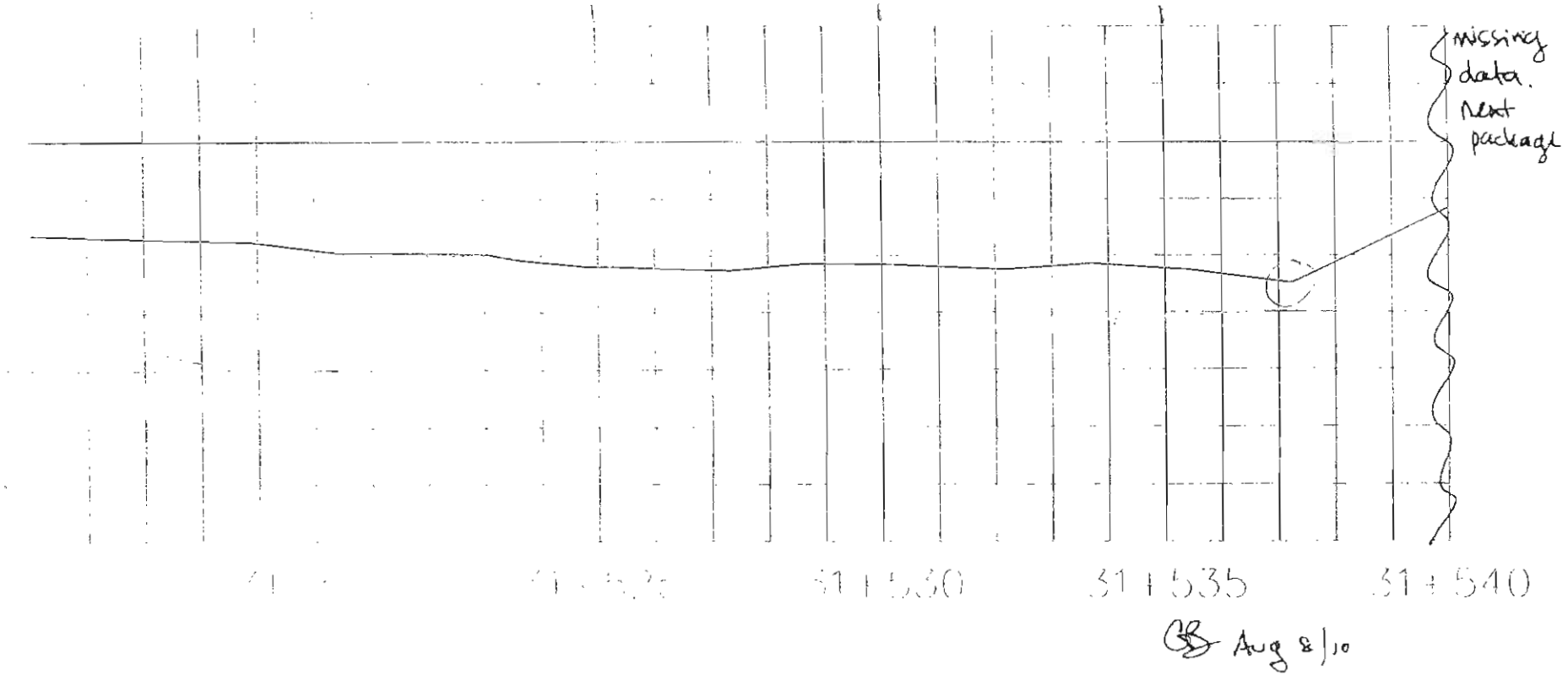
Dike

Inferred bed rock

Manual probing

Date: 070810

Par: Alex Lalancette et Pascale Martel



Lake bed soil

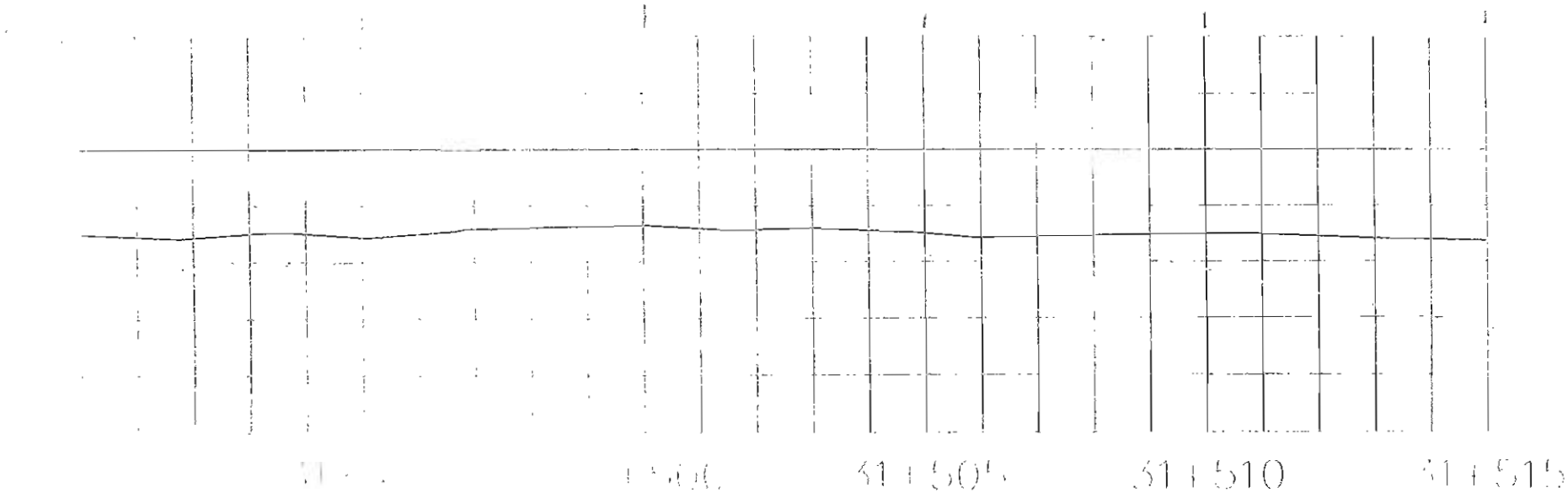
Dike

Inferred bed rock

Manual probing

Date: 070810

Par: Alex Lalancette et Pascale Martel



CB Aug 8/10

Lake bed soil

Dike

Inferred bed rock

Manual probing

Date: 070810

Par: Alex Lalancette et Pascale Martel

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 31+540 Offset	SHIFT: NIGHT :☐ DAY :☒	DATE : 9 Aout 2010	SHEET 1 OF
To Sta. 31+570 Offset	LOCATION: : BAY Goose Dike - SOUTH PORTION		
EQUIPMENT:			

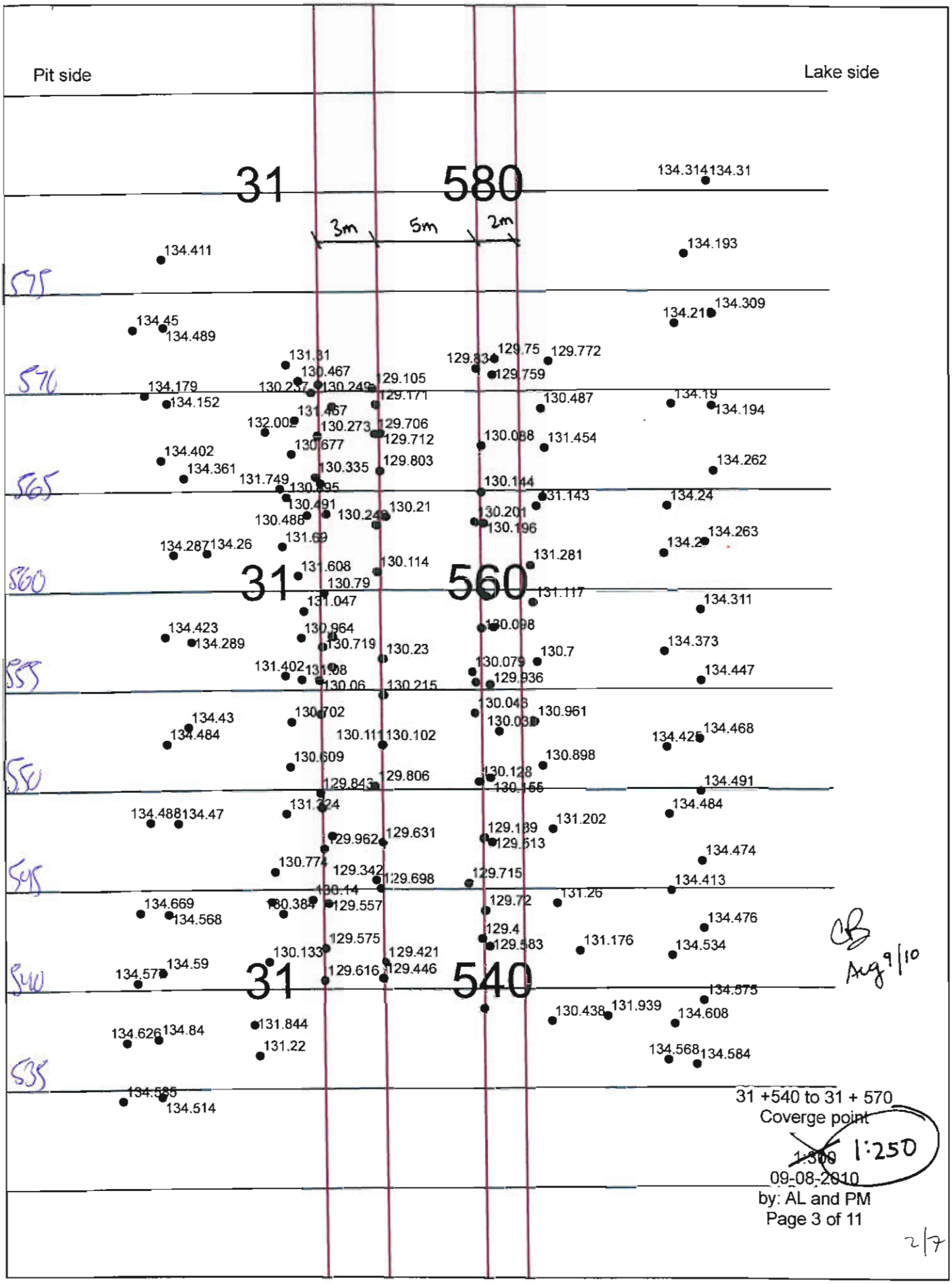
DESCRIPTION

#	ITEMS TO BE INSPECTED	INSPECTED BY QC Manage.	INSPECTED BY QA Manager
	Survey lines and pivot checked to ensure the locations conform with the Drawings	JM	GB
2.	Storage areas planned for disposal of removed materials	JM	GB
3.	Occurrence of snow and ice removal method in place	JM	GB
4.	Occurrence of boulders and removal method in place	JM	GB
5.	Occurrence of hummocks and scalping method in place	JM	GB
6.	Occurrence of surface and ground water and its impact mitigation in place	JM	GB
7.	Presence of other unsuitable materials and removal method in place	JM	GB
8.	Soil frozen or thawed and measures taken	JM	GB
9.	Blasting requirement to remove unsuitable material and safety measure checked	N/A JM	N/A GB
10.	Adjustment made to suit design in field	JM	GB
11.	Final walkover inspection before re-sloping or fill placement	JM	GB
12.	"Re-excavated" survey conducted	JM	GB
13.	Final sounding conducted of lake bottom surface	JM	GB

	ACCEPTED BY QC Manager	
NAME	Guy McIsaac / Grant Brown	NAME
SIGNATURE		SIGNATURE
DATE	9 Aout 2010 / 10 Aug 2010	DATE

COPY OF ORIGINAL

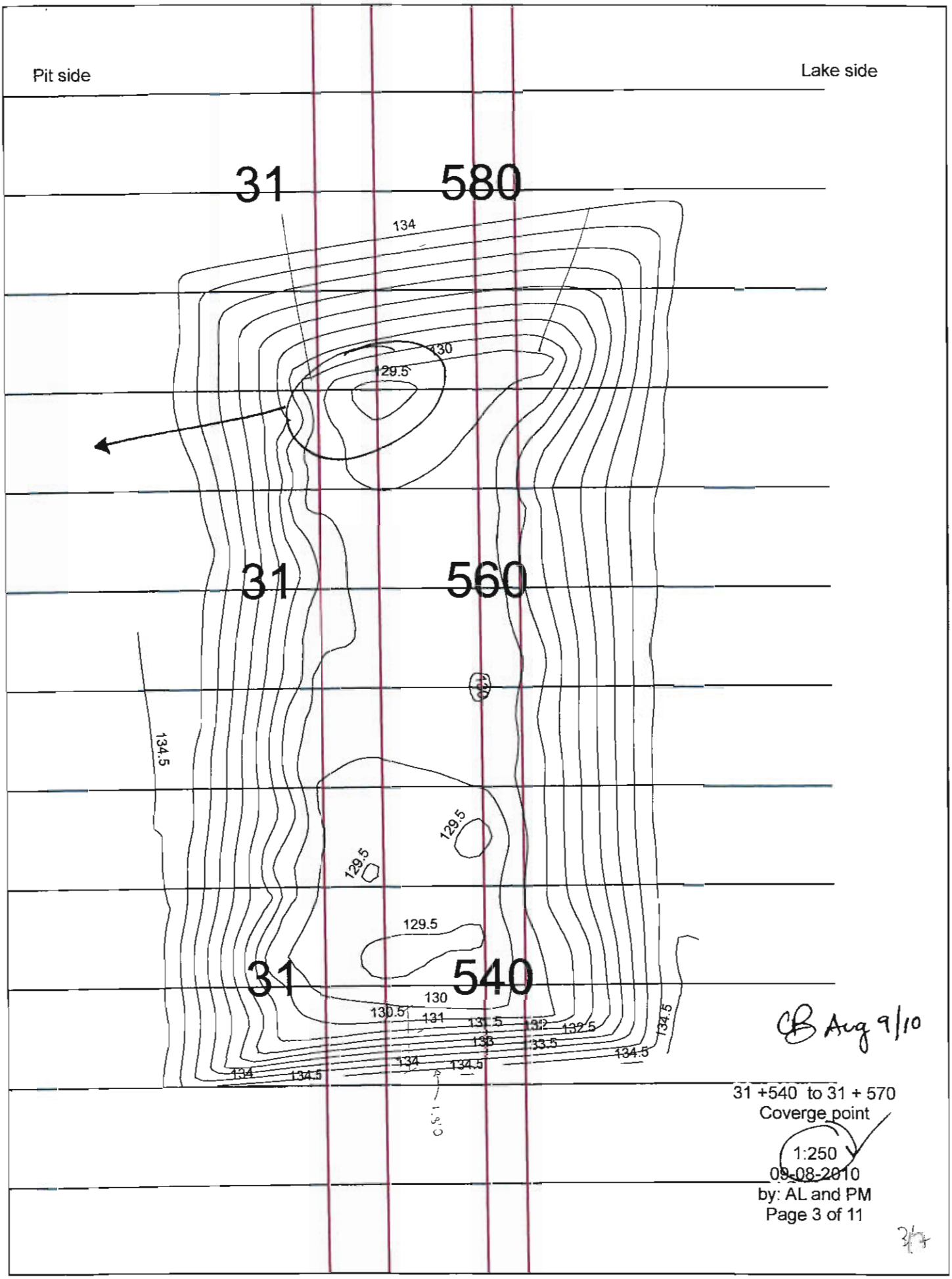
1/1



31 +540 to 31 + 570
Coverge point
~~1:300~~ 1:250
09-08-2010
by: AL and PM
Page 3 of 11

CB Aug 9/10

2/7

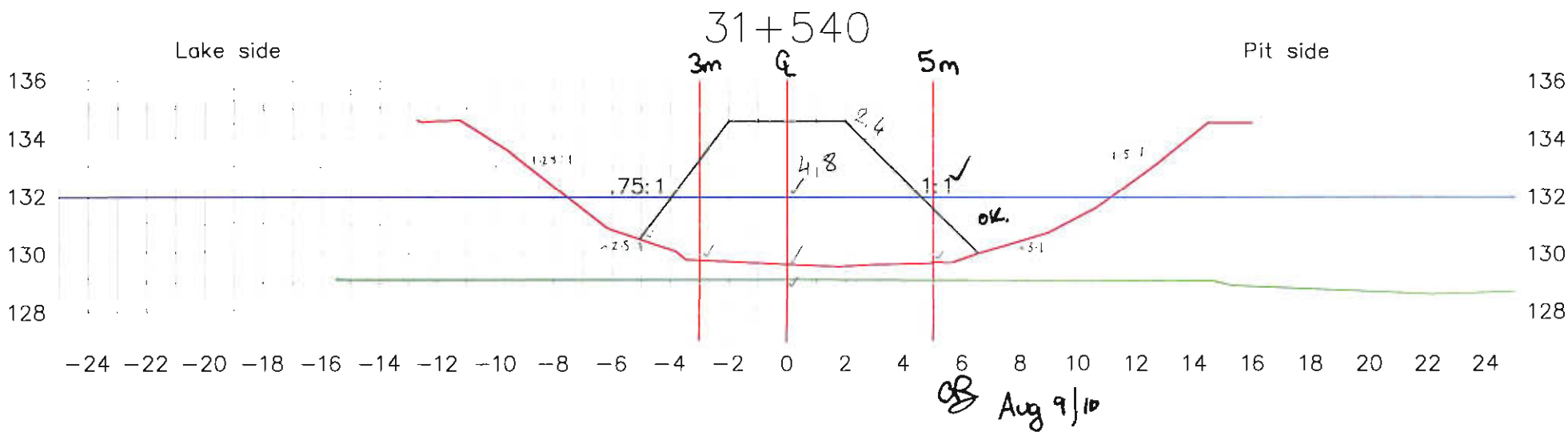


CB Aug 9/10

31 +540 to 31 + 570
Coverge point

1:250
09-08-2010
by: AL and PM

air track.



OB Aug 9/10

Lake bed soil

Dike

Inferred bed rock

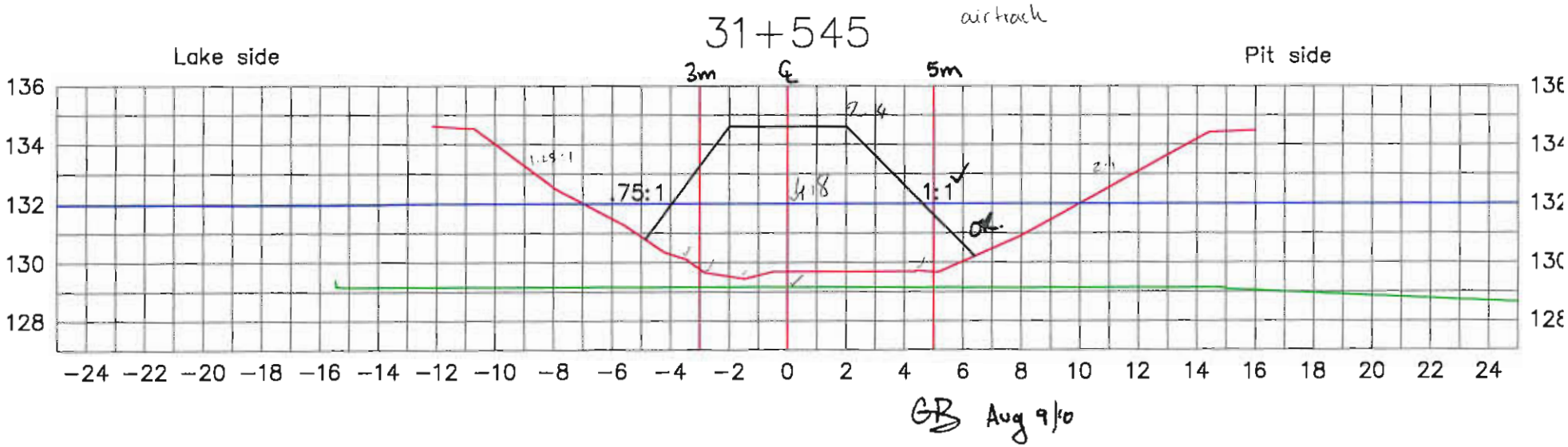
Manual probing

Date: 090810

Page: 4/11

Par: Alex Lalancette et Pascale Martel

4/11



Lake bed soil

Dike

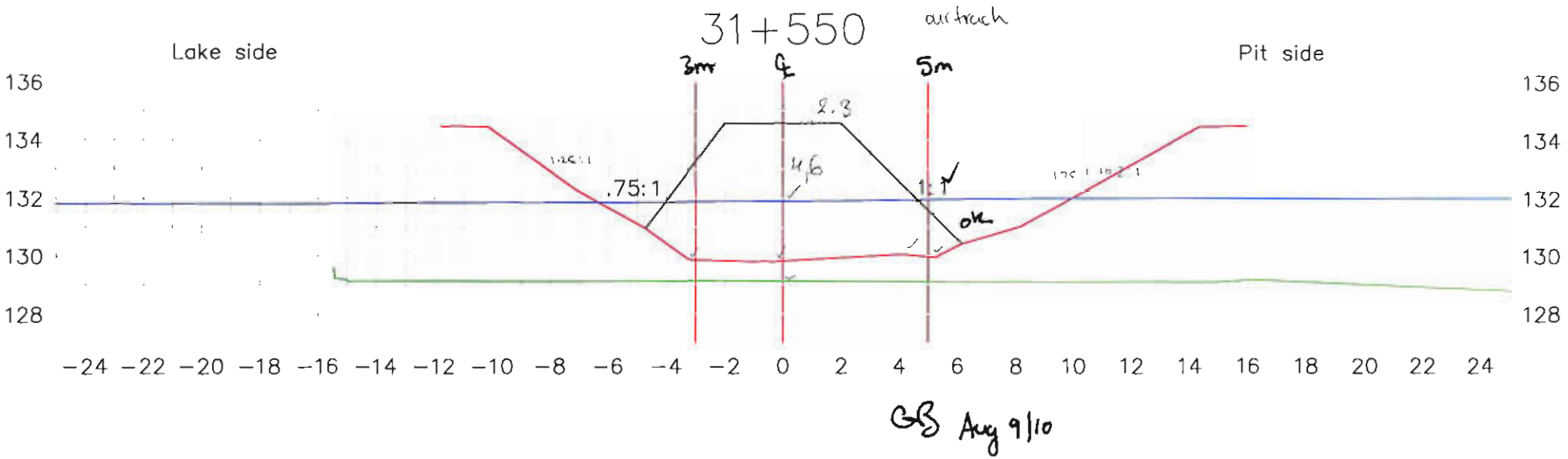
Inferred bed rock

Manual probing

Date: 090810

Page: 5/11

Par: Alex Lalancette et Pascale Martel



GB Aug 9/10

Lake bed soil

Dike

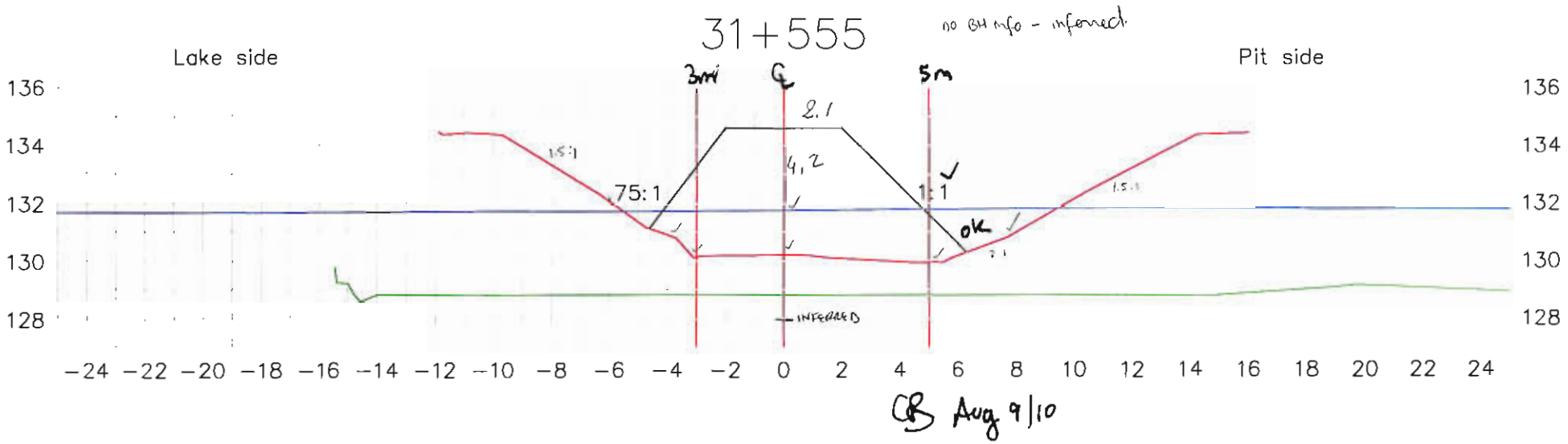
Inferred bed rock

Manual probing

Date: 090810

Page: 6/11

Par: Alex Lalancette et Pascale Martel



Lake bed soil

Dike

Inferred bed rock

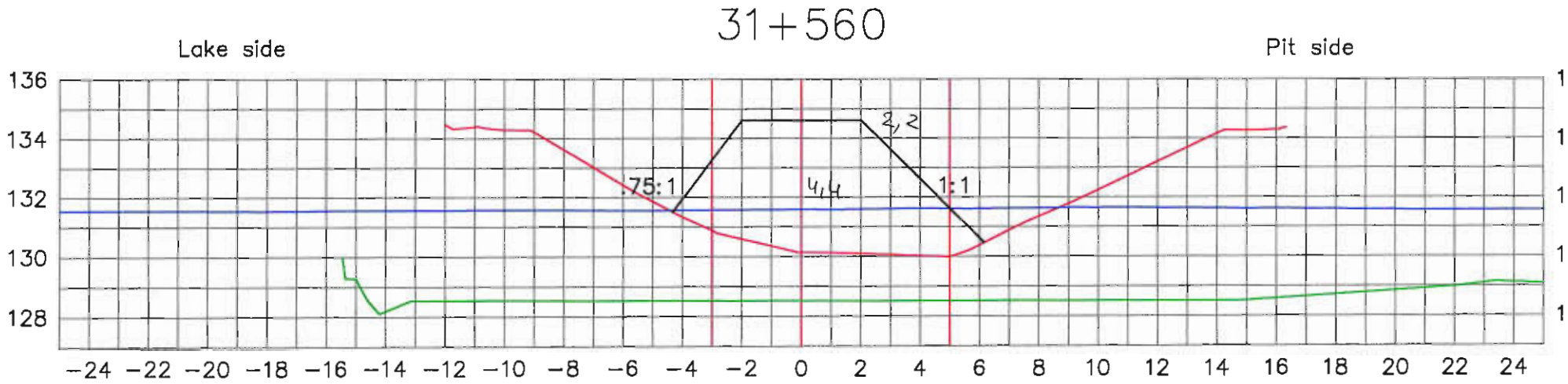
Manual probing

Date: 090810

Page: 7/11

Par: Alex Lalancette et Pascale Martel

4/4



Lake bed soil

Dike

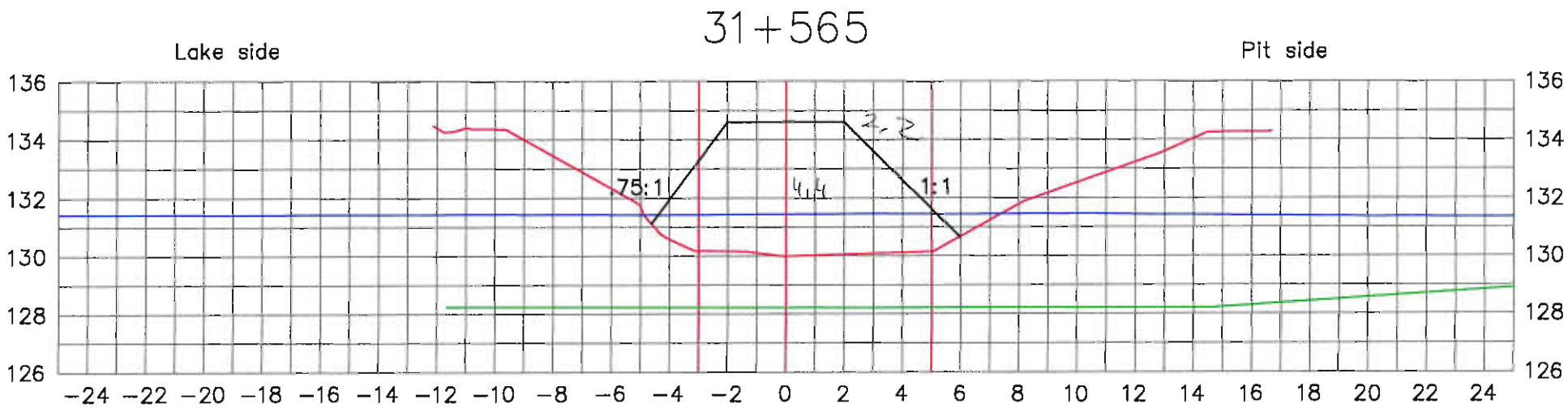
Inferred bed rock

Manual probing

Date: 090810

Page: 8/11

Par: Alex Lalancette et Pascale Martel



Lake bed soil

Dike

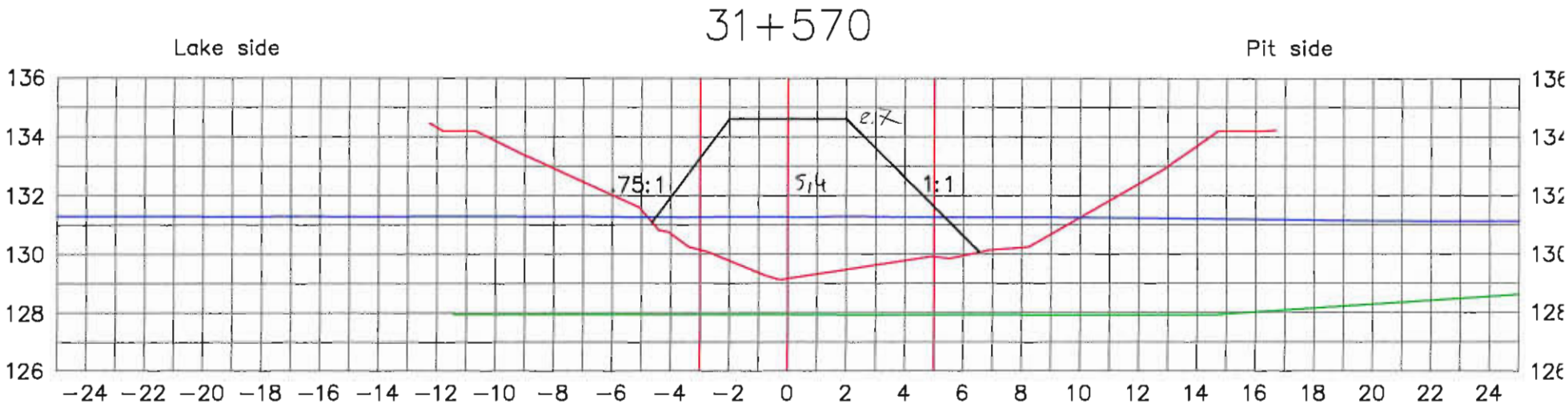
Inferred bed rock

Manual probing

Date: 090810

Page: 9/11

Par: Alex Lalancette et Pascale Martel



Lake bed soil

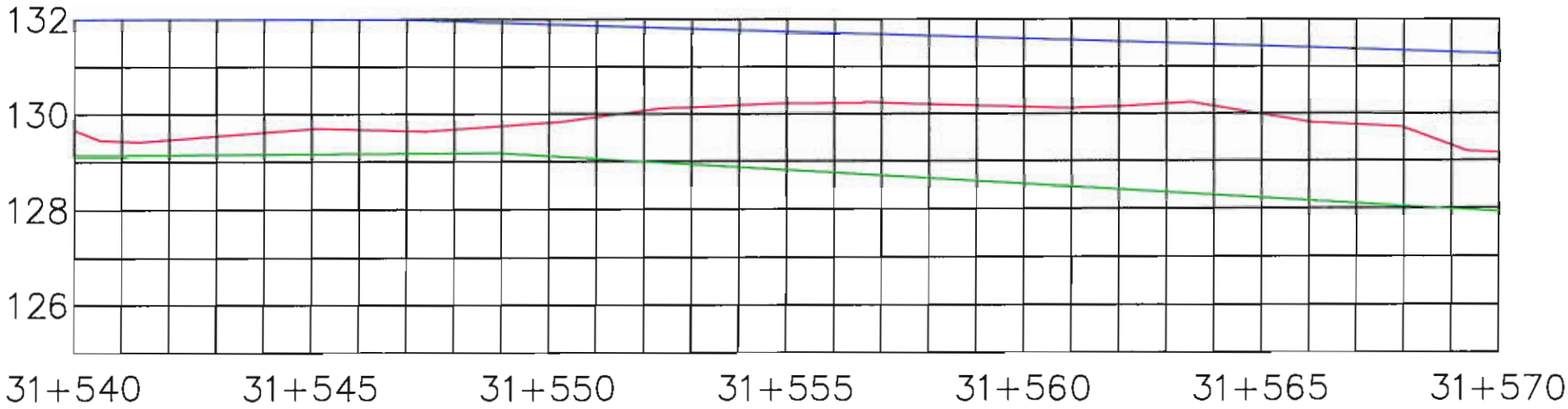
Dike

Inferred bed rock

Manual probing

Date: 090810

Par: Alex Lalancette et Pascale Martel



Lake bed soil

Dike

Inferred bed rock

Manual probing

Date: 090810

Par: Alex Lalancette et Pascale Martel

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 31+575 Offset	SHIFT: NIGHT: ☐ DAY: ☒	DATE: 10 Aout 2010	SHEET 1 OF 11
To Sta. 31+~~590~~ 600 Offset EQUIPMENT:	LOCATION: BAY GOOSE DIKE, SOUTH PORTION		

DESCRIPTION

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	GM	GB.
2.	Storage areas planned for disposal of removed materials	GM	GB.
3.	Occurrence of snow and ice removal method in place	GM	GB.
4.	Occurrence of boulders and removal method in place	GM	GB.
5.	Occurrence of hummocks and scalping method in place	GM	GB.
6.	Occurrence of surface and ground water and its impact mitigation in place	GM	GB.
7.	Presence of other unsuitable materials and removal method in place	GM	GB.
8.	Soil frozen or thawed and measures taken	GM	GB.
9.	Blasting requirement to remove unsuitable material and safety measure checked	N/A GM	N/A GB
10.	Adjustment made to suit design in field	GM	GB
11.	Final walkover inspection before re-sloping or fill placement	GM	GB.
12.	"As-excavated" survey conducted	GM	GB.
13.	Final sounding conducted of lake bottom surface	GM	GB.

REMARKS: ① PLACE ADDITIONAL FILTER PLACEMENT (SEE DRAWINGS)
② SPOT CHECK/CLEANING 31+575 to 31+605 (ABOVE TILL ... VERY IMPORTANT)
③ PROCEED WITH BACKFILL ④ SPOT CHECK DEEPEST SECTION AGAIN BEFORE TWO CORE BACKFILL FRONTS MEET.

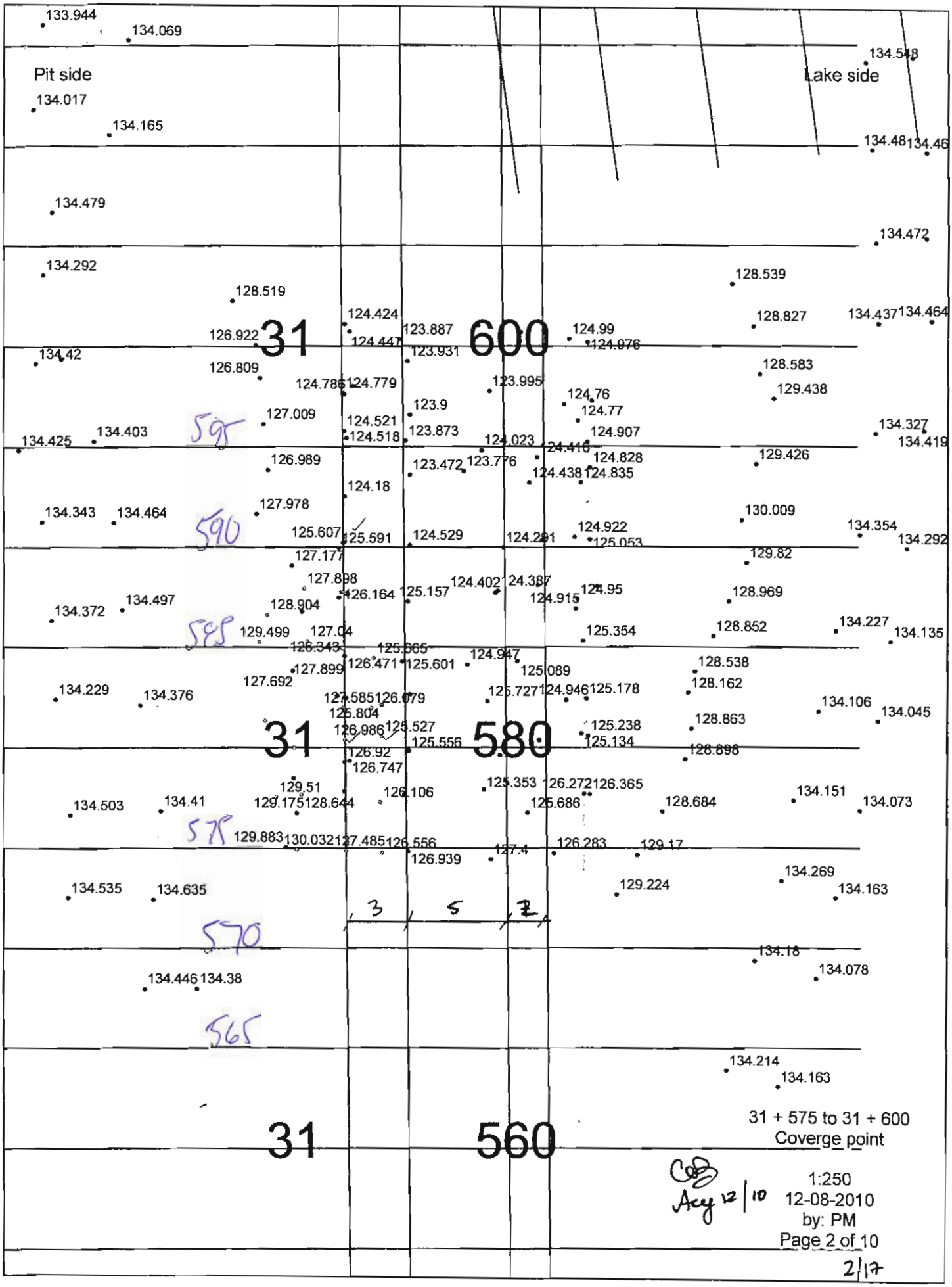
DEVIATIONS: (Attach list if necessary)
- ADDITIONAL FILTER PLACEMENT REQUIRED ON D/S SIDE 31+575 to 31+605m ELEV 129m (@ +575) to 127m (@ +600)

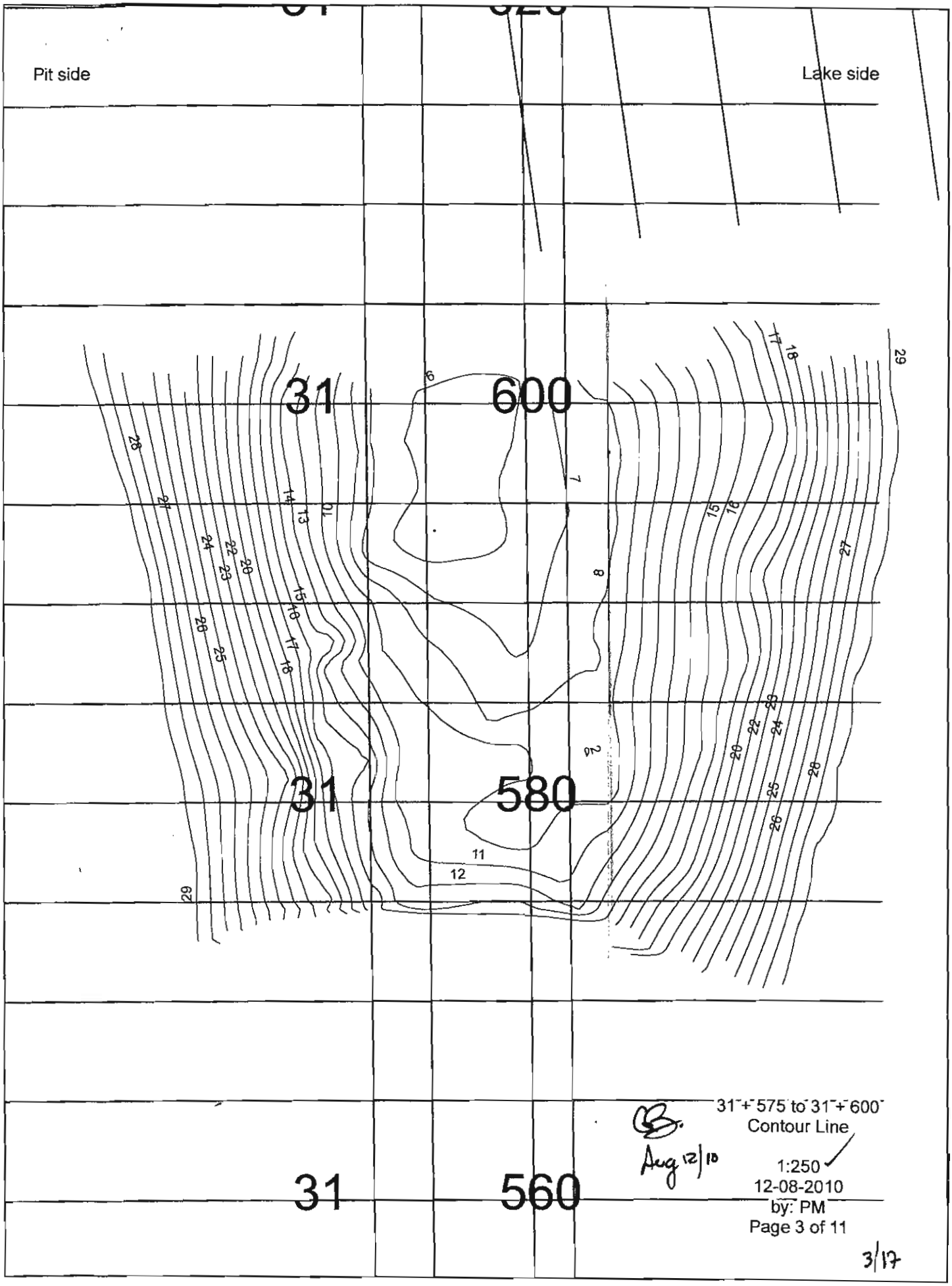
DATE OF RECTIFICATION:

SURVEY VERIFICATION	ACCEPTED BY QA Manager:	ACCEPTED BY OWNER:
NAME: Guy Morissette	NAME: C Burns	NAME:
SIGNATURE: Guy Morissette	SIGNATURE: GRANT BURNS	SIGNATURE:
DATE 12 AOUT 2010	DATE Aug 12, 2010	DATE

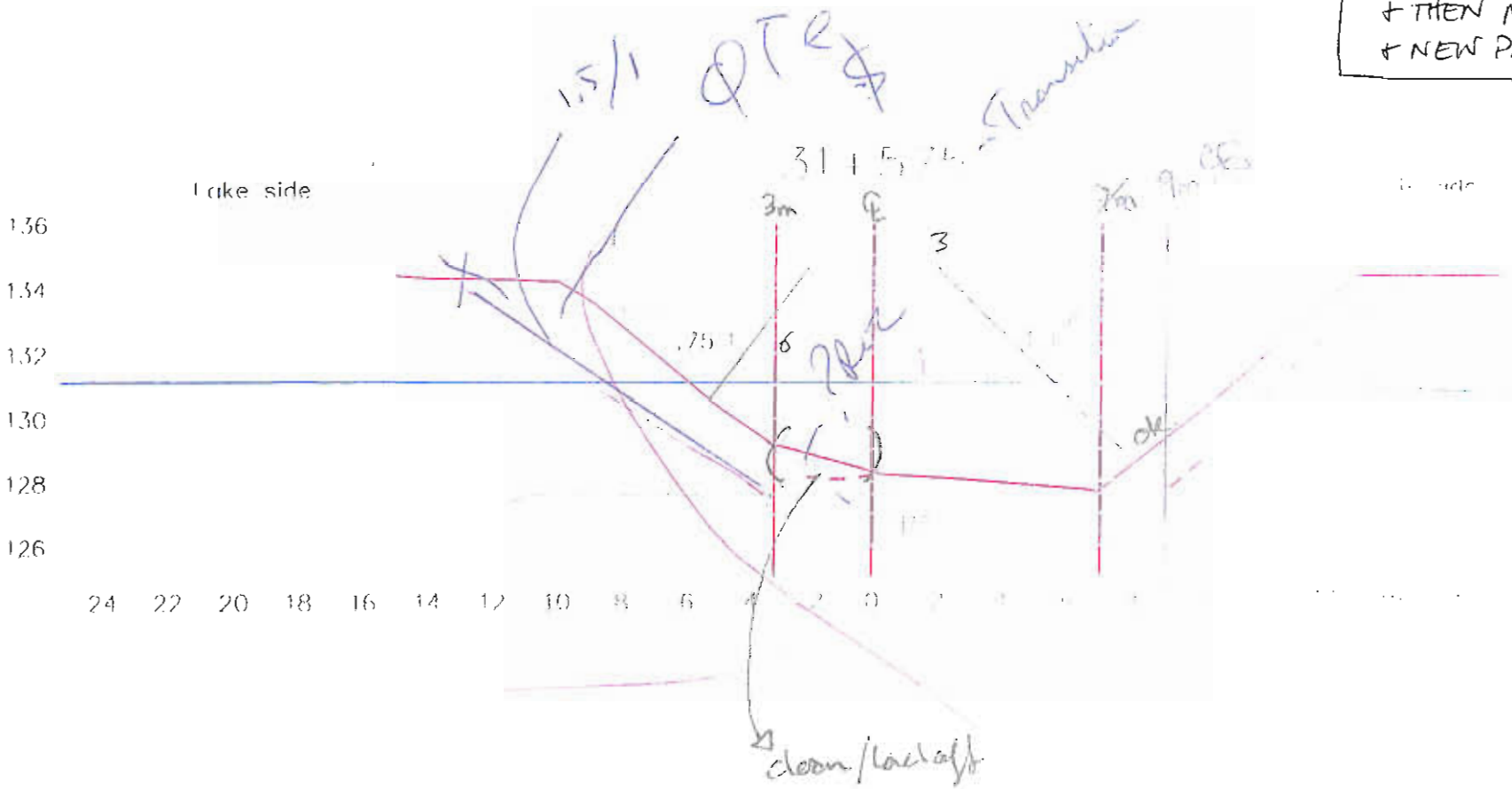
6:30 AM 8:45 AM.

COPY OF THE ORIGINAL. 1/17


Pit side
Lake side
31 600
31 580
31 560
595
590
585
575
570
565
3 5 7
31 + 575 to 31 + 600
Coverge point
1:250
12-08-2010
by: PM
Page 2 of 10
2/17


Pit side
Lake side
31 600
31 580
31 560
31+575 to 31+600
Contour Line
1:250
12-08-2010
by: PM
Page 3 of 11
Aug 12/10
3/17

1ST PACKAGE ... WIDENING
+ THEN MANUAL SOUNDING
+ NEW PACKAGE WILL COME



Lake bed soil

Dike

Inferred bed rock

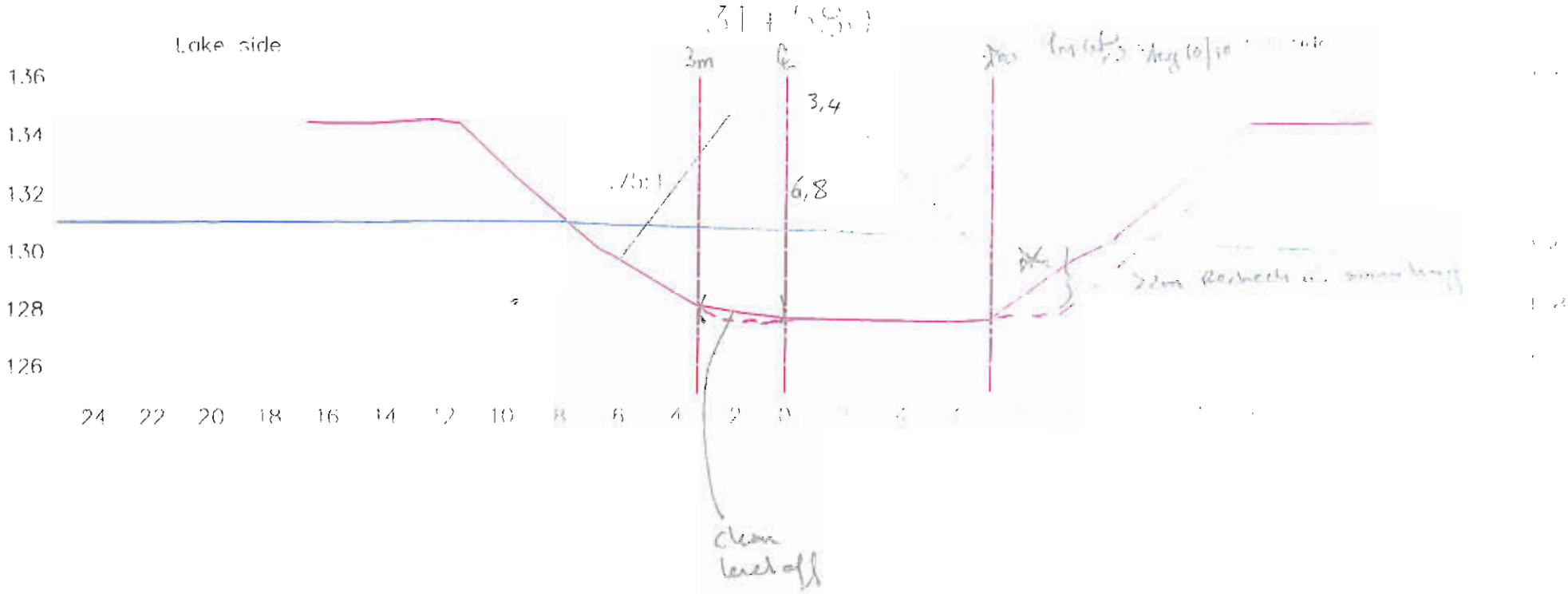
Manual probing

Date: 100810

Page: 4/8

Par: Alex Lafrancette et Pascale Morel

4/12



Lake bed soil

Dike

Inferred bed rock

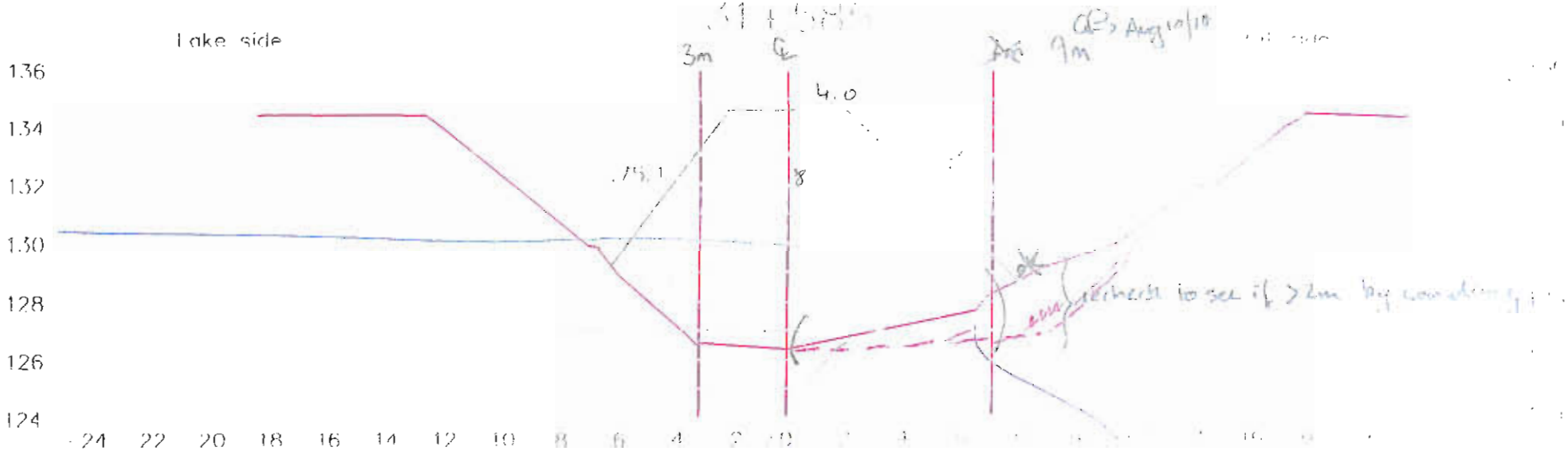
Manual probing

Date: 100810

Page: 5/8

Par: Alex Lalancette et Pascale Martel

tl/s



Lake bed soil

Dike

~~Inferred bed rock~~

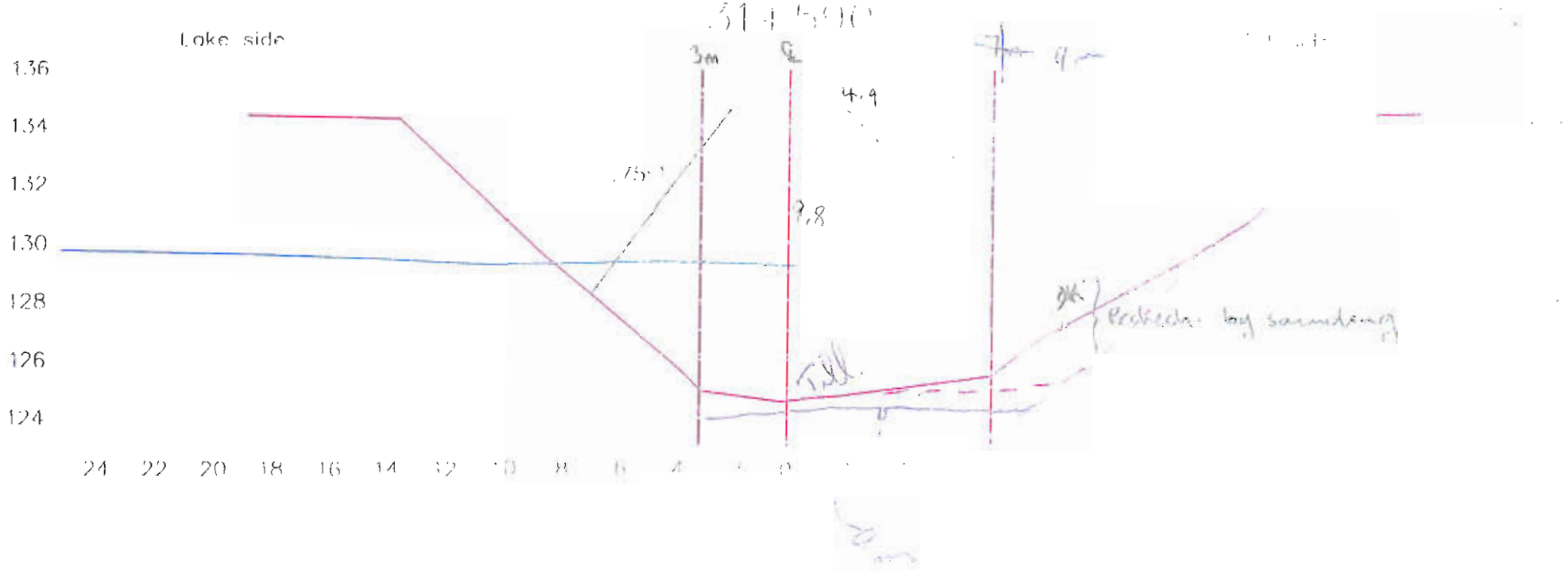
Manual probing

Date 1008 10

Page 6/8

Par. Alex Lalancette et Pascale Marlot

6/8



Lake bed soil

Dike

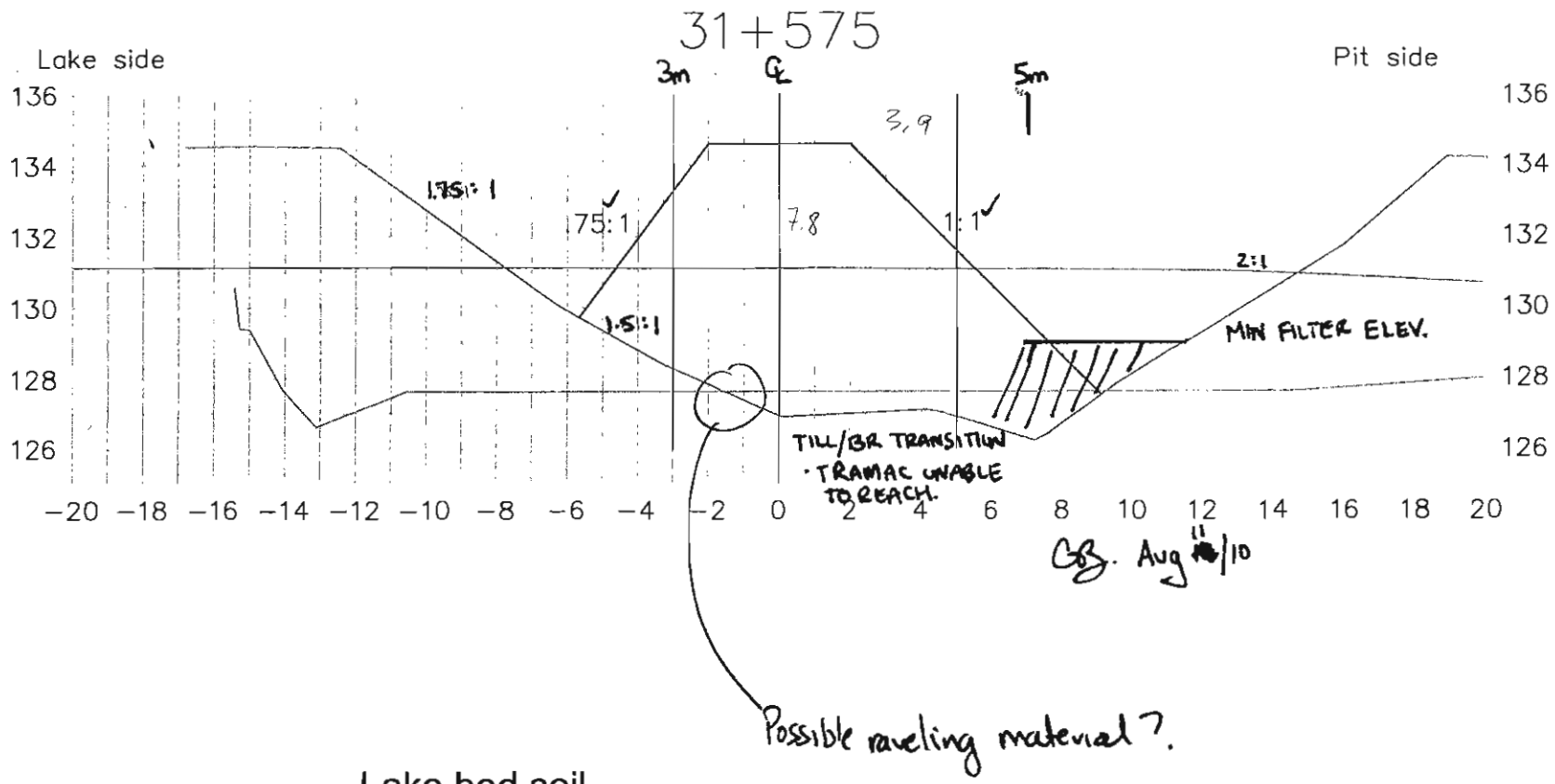
~~Inferred bed rock~~

Manual probing

Date 100810

Page 1/8

Par Alex Lalancette et Pascale Marcil



Lake bed soil

Dike

Target surface

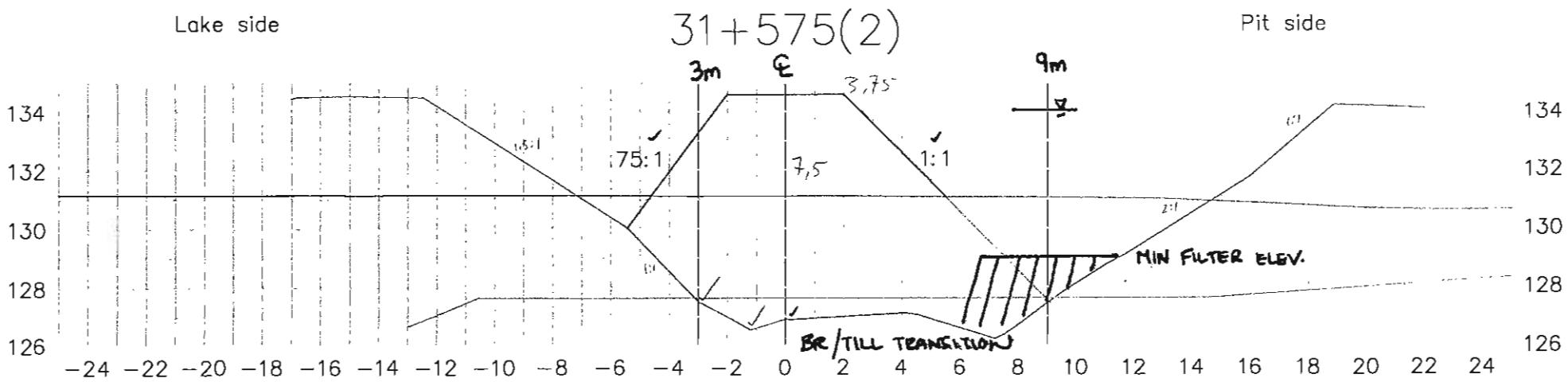
Manual probing

Date: 100810

Page: 4/10

Par: Alex Lalancette et Pascale Martel

4/6



GB Aug 12/10

YES, SHOULD ONLY BE 7m on D/S SIDE, MEASURED VERTICALLY (SHOULD LIKELY BE PERPENDICULAR TO TARGET LINE). ALSO, NOTE (12) ON DWG 4300-10 ... I NOW UNDERSTAND THIS IS MORE APPLICABLE FOR CHANNEL 1

Lake bed soil

Dike

Target surface

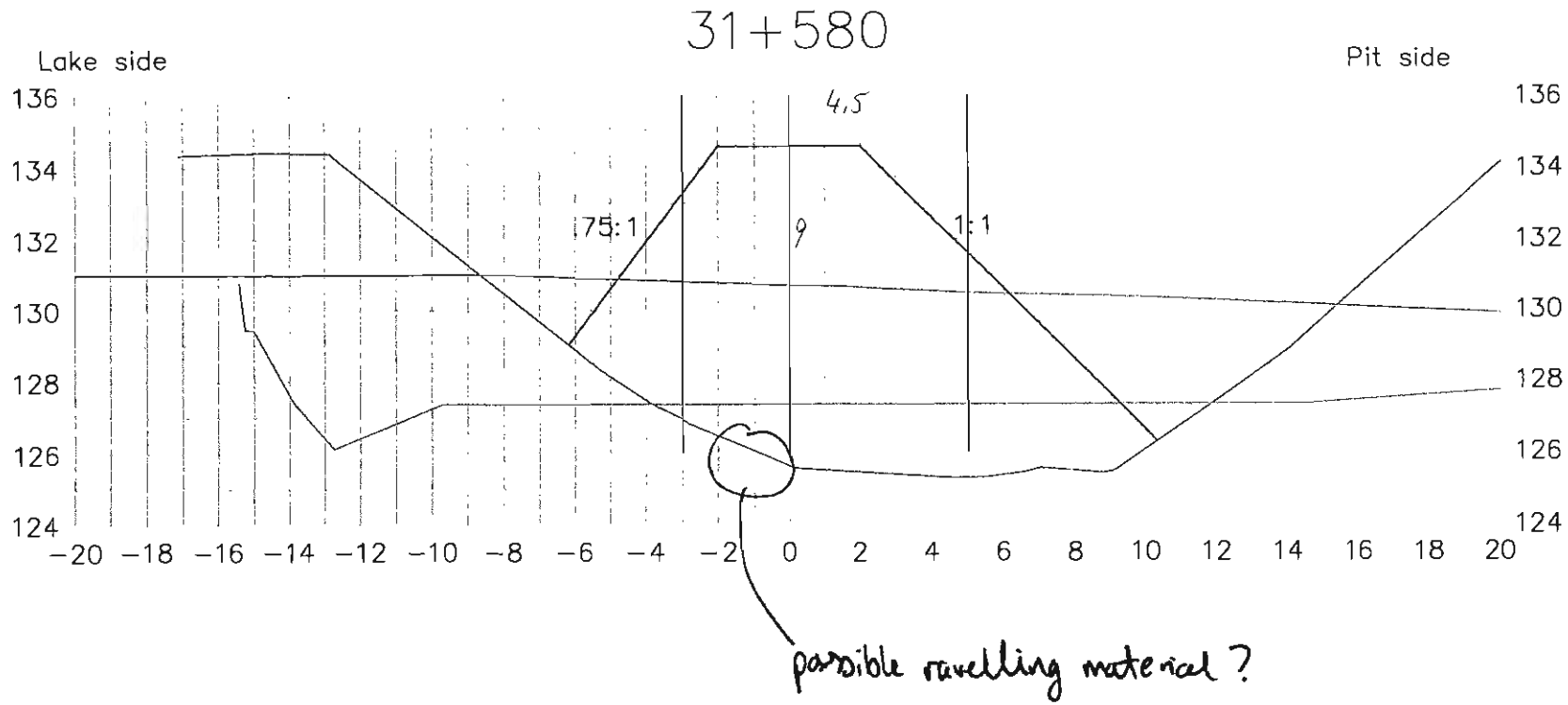
Manual probing

Date: 120810

Page: 4/10

Par: Alex Lalancette et Pascale Martel

4/6



Lake bed soil

Dike

Target surface

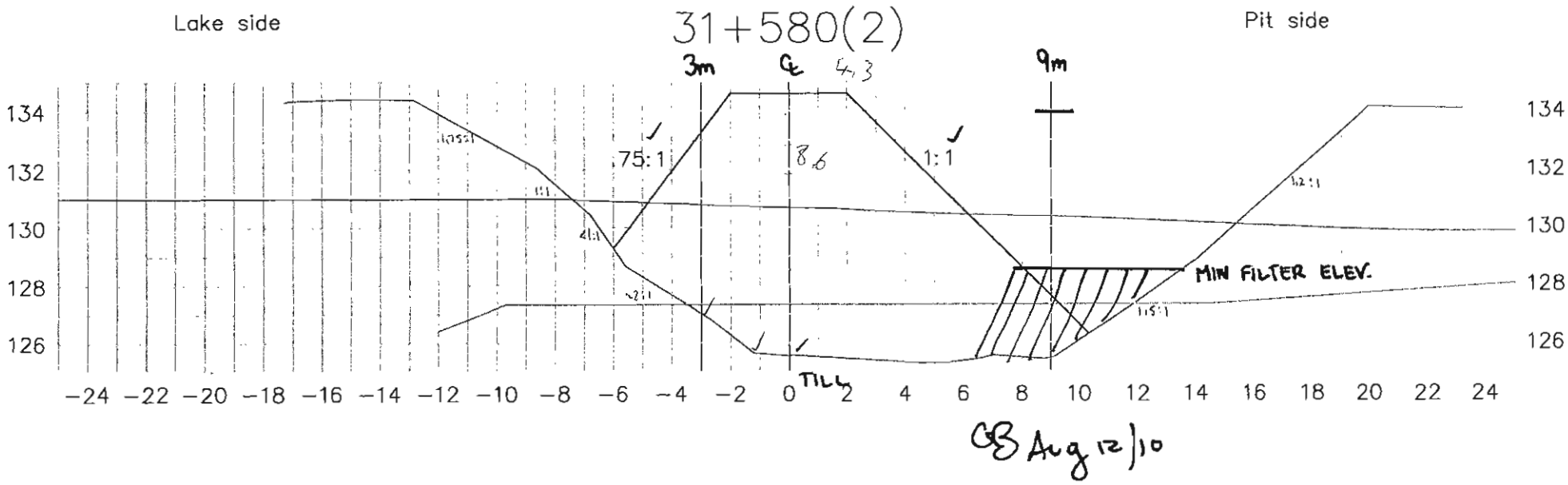
Manual probing

Date: 100810

Page: 5/10

Par: Alex Lalancette et Pascale Martel

10/11



Lake bed soil

Dike

Target surface

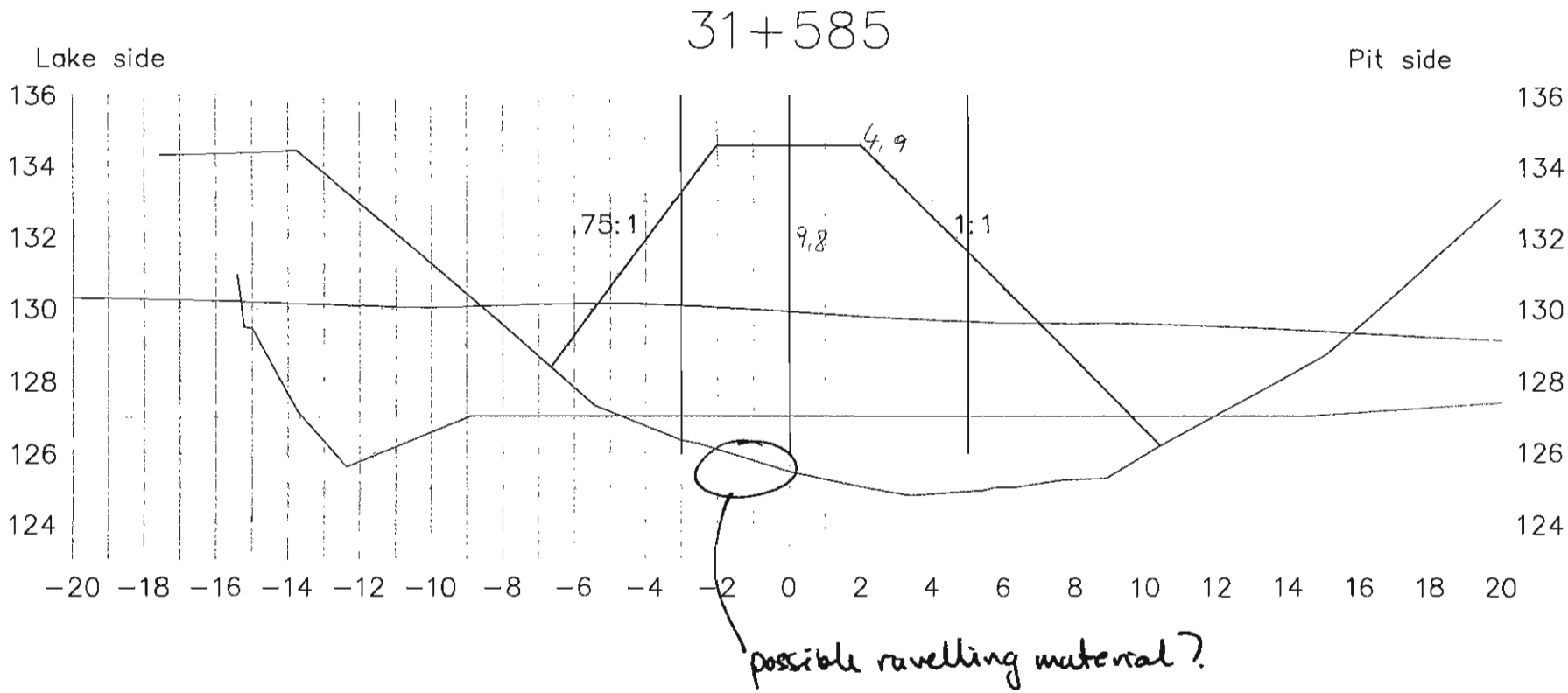
Manual probing

Date: 120810

Page: 5/10

Par: Alex Lalancette et Pascale Martel

11/14



Lake bed soil

Dike

Target surface

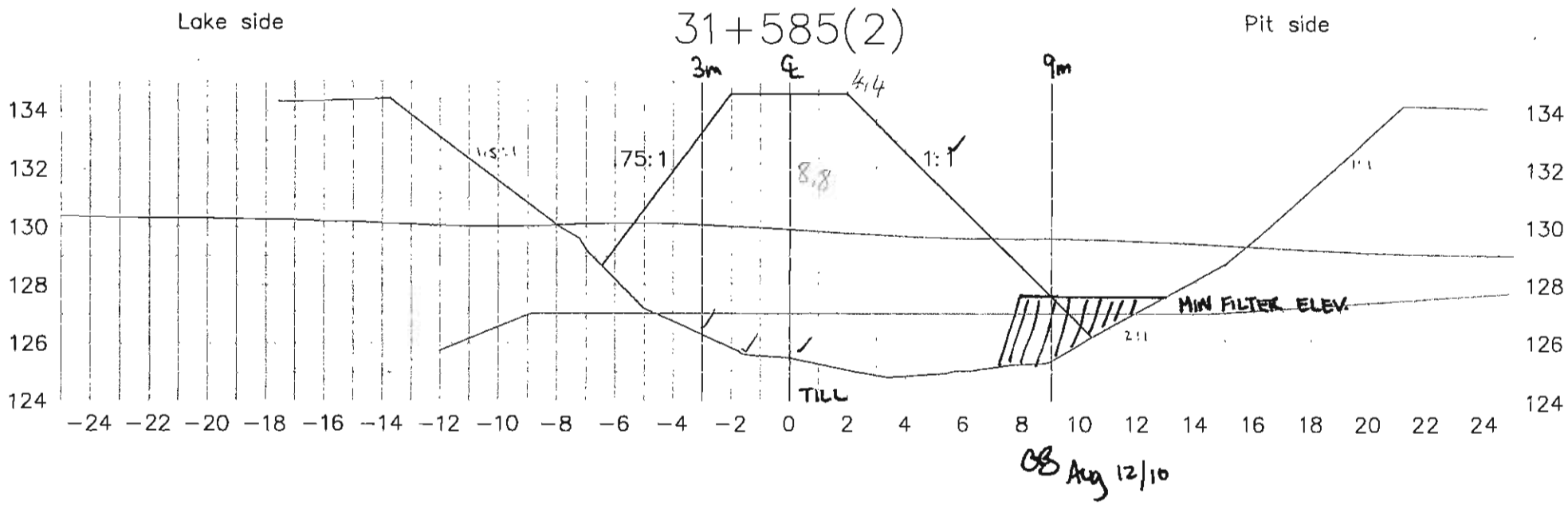
Manual probing

Date: 100810

Page: 6/10

Par: Alex Lalancette et Pascale Martel

12/21



Lake bed soil

Dike

Target surface

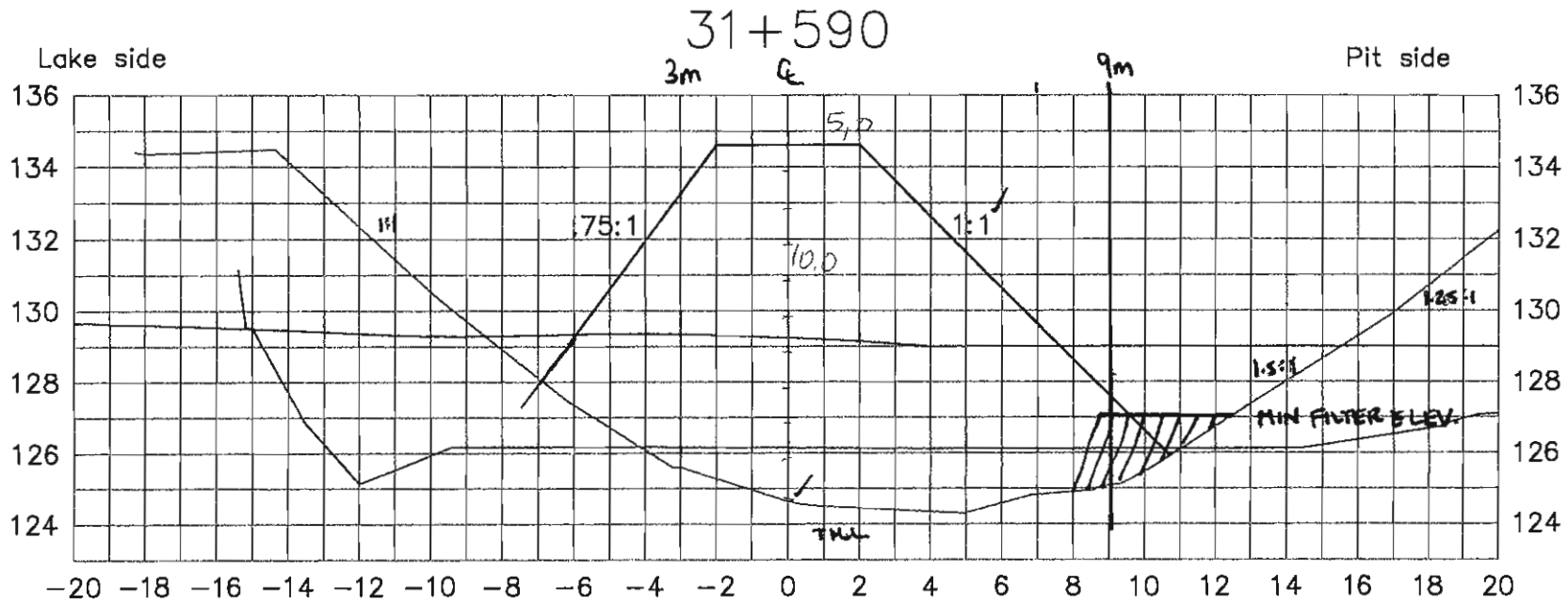
Manual probing

Date: 100810

Page: 6/10

Par: Alex Lalancette et Pascale Martel

13/13



Lake bed soil

Dike

Target surface

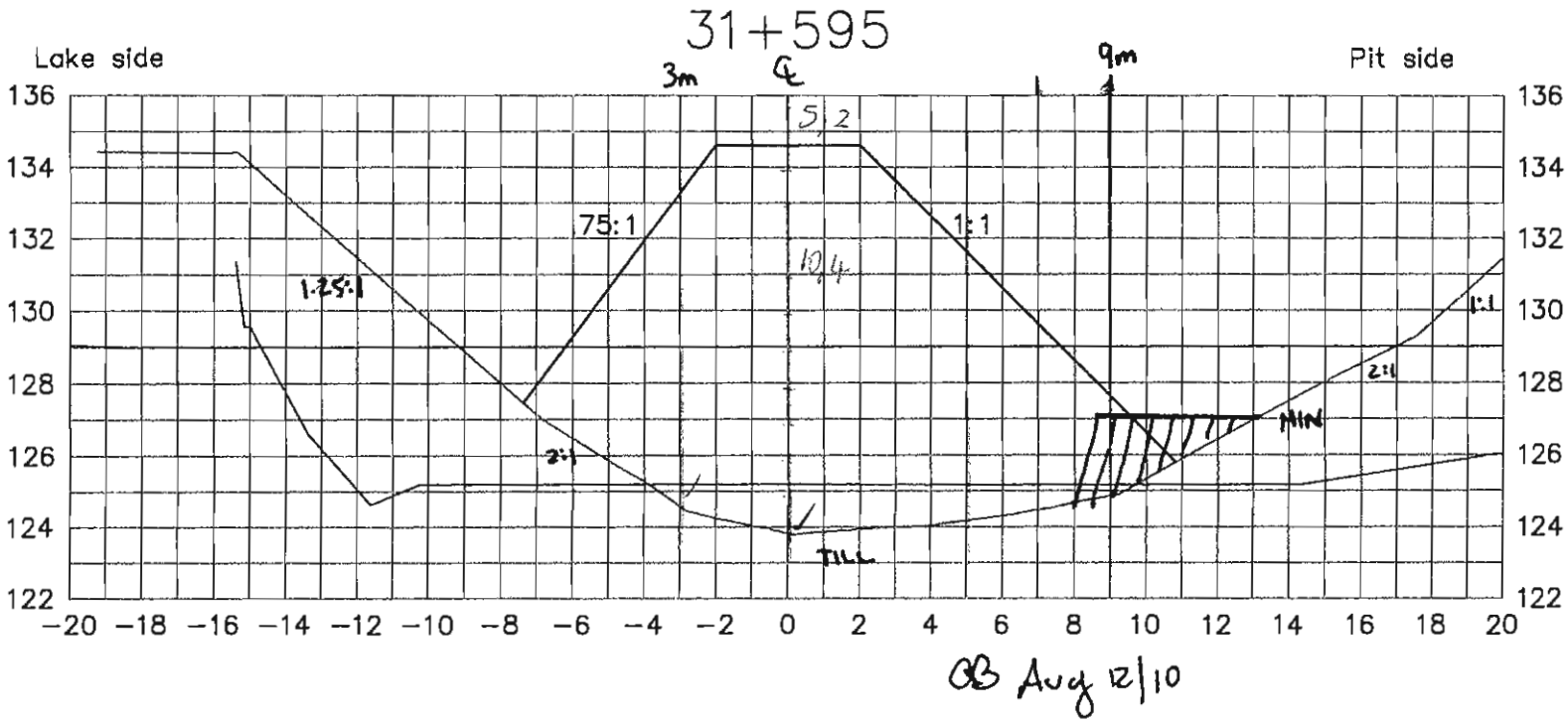
Manual probing

Date: 120810

Page: 7/10

Par: Alex Lalancette et Pascale Martel

14/17



Lake bed soil

Dike

Target surface

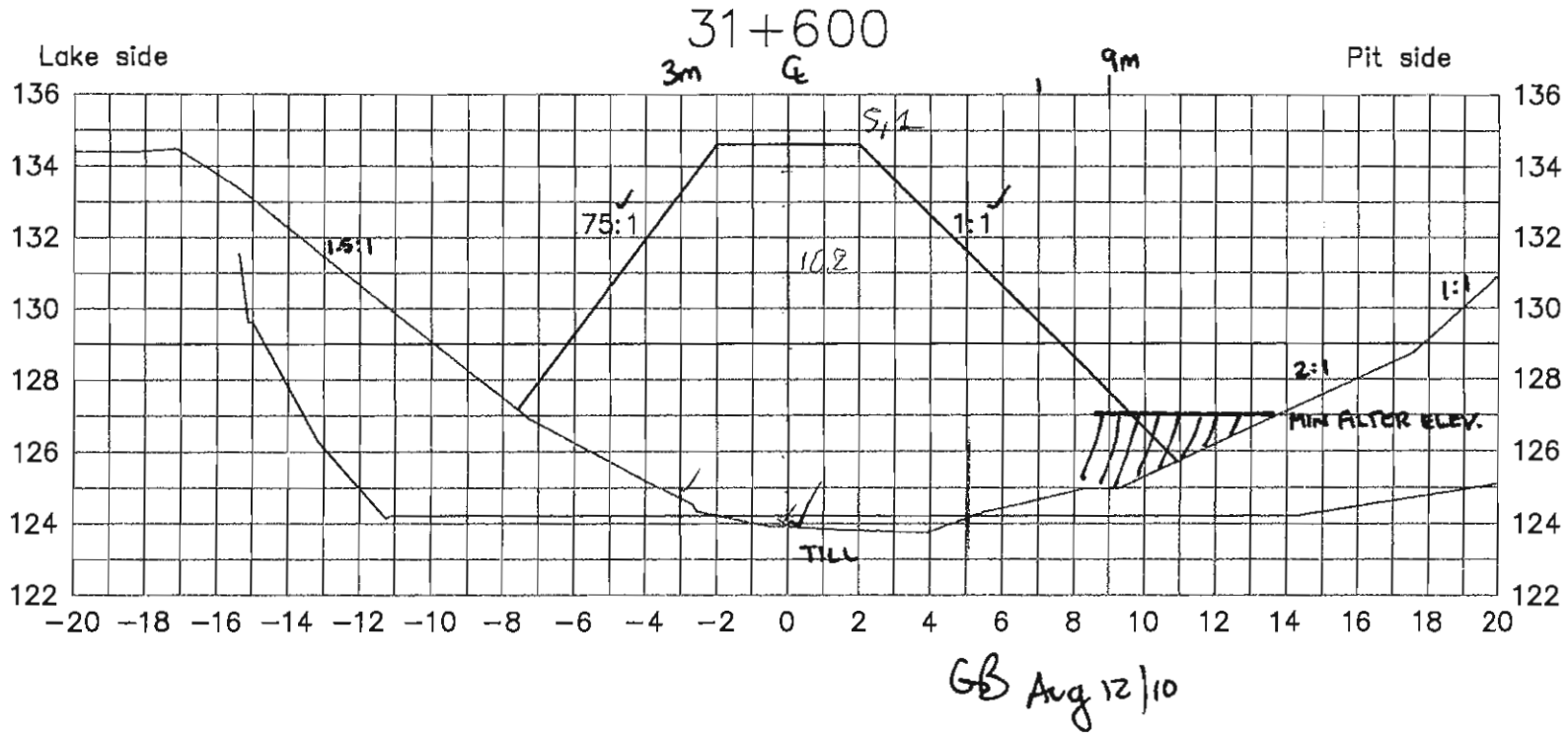
Manual probing

Date: 120810

Page: 8/10

Par: Alex Lalancette et Pascale Martel

15/18



GB Aug 12/10

Lake bed soil

Dike

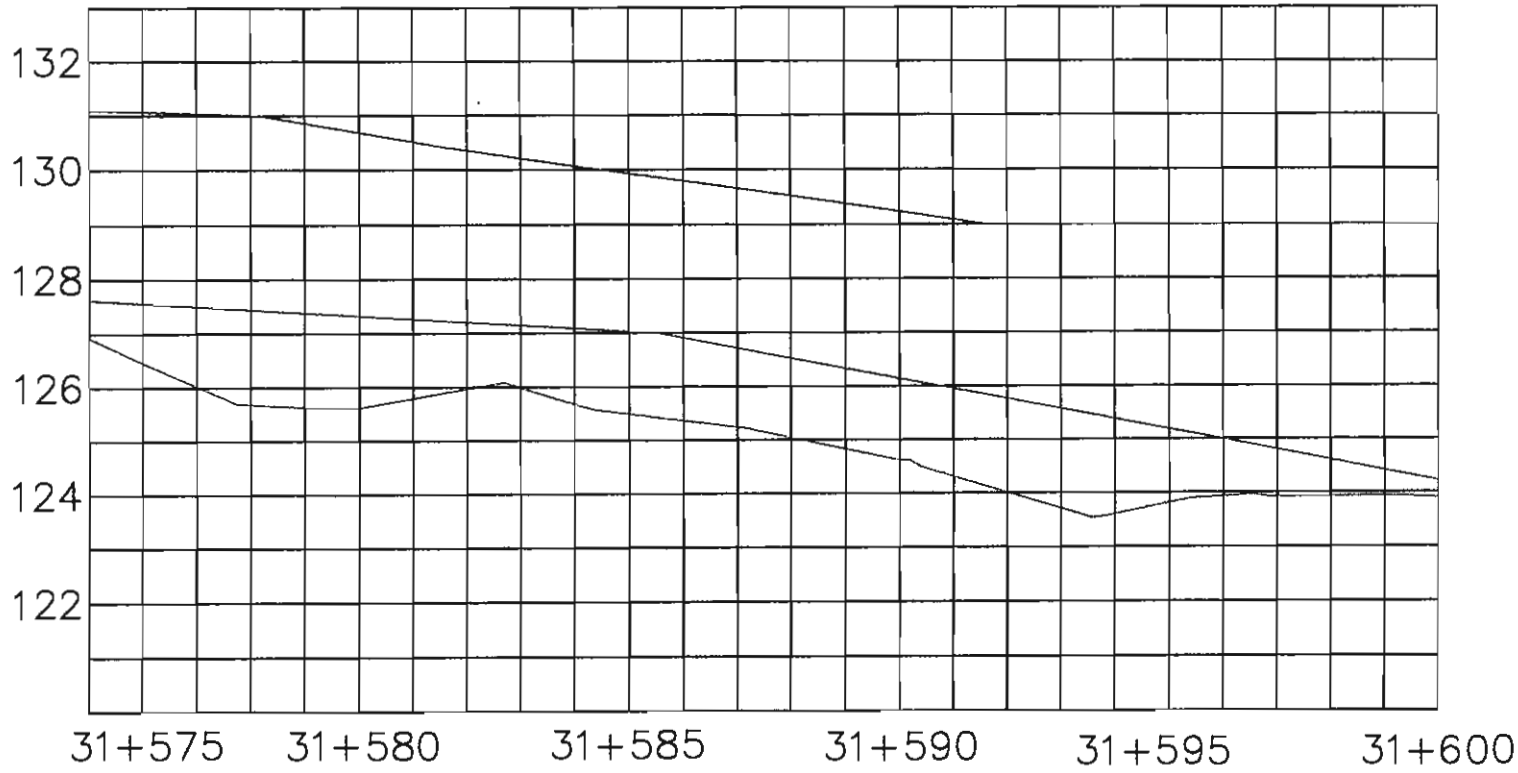
Target surface

Manual probing

Date: 120810

Page: 9/10

Par: Alex Lalancette et Pascale Martel



Aug 12/10

Lake bed soil

Dike

Target surface

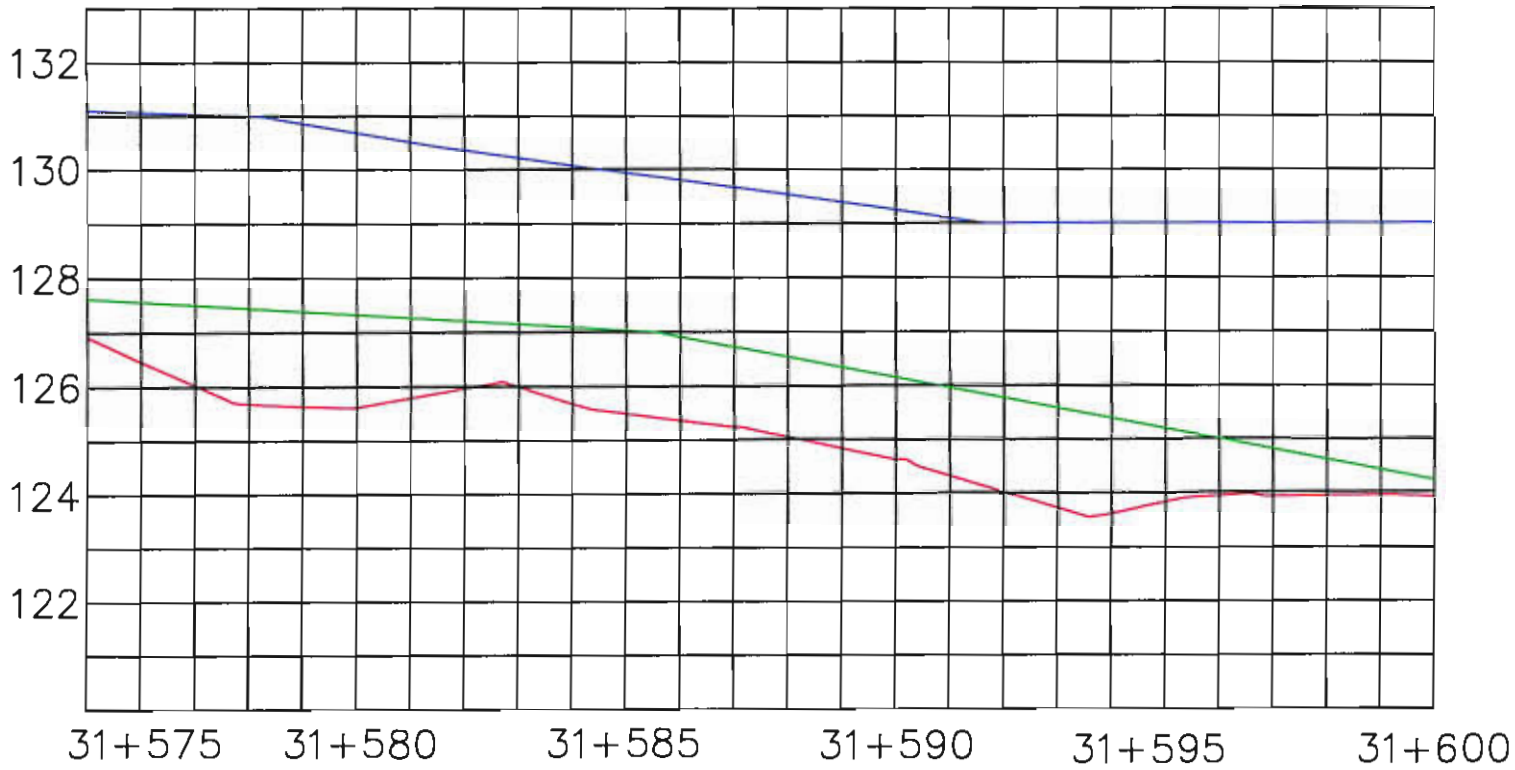
Manual probing

Date: 090810

Page: 10/10

Par: Alex Lalancette et Pascale Martel

17/17



Lake bed soil

Dike

Target surface

Manual probing

Date: 090810

Page: 10/10

Par: Alex Lalancette et Pascale Martel

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 31+605 Offset	SHIFT: NIGHT: ☐ DAY: ☒	DATE: July 11th	SHEET 1 OF 16
To Sta. 31+660 Offset	LOCATION: BAY GOOSE DIKE - SOUTH PORTION		
EQUIPMENT:			

DESCRIPTION

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	GJM	GB.
2.	Storage areas planned for disposal of removed materials	GJM	GB.
3.	Occurrence of snow and ice removal method in place	GJM	GB.
4.	Occurrence of boulders and removal method in place	GJM	GB.
5.	Occurrence of hummocks and scalping method in place	GJM	GB.
6.	Occurrence of surface and ground water and its impact mitigation in place	GJM	GB.
7.	Presence of other unsuitable materials and removal method in place	GJM	GB.
8.	Soil frozen or thawed and measures taken	GJM	GB.
9.	Blasting requirement to remove unsuitable material and safety measure checked	N/A. GJM	N/A GB.
10.	Adjustment made to suit design in field	GJM	GB.
11.	Final walkover inspection before re-sloping or fill placement	GJM	GB
12.	"As-excavated" survey conducted	GJM	GB.
13.	Final sounding conducted of lake bottom surface	GJM	GB.

REMARKS: (1) SPOT CHECK @ +610 & IF SOIL SMOOTH OUT
(2) CLEAN SILT
(3) PLACE FILTER ON DOWNSTREAM (PIT) SIDE +600 to +612 m
(4) PROCEED TO ADVANCEMENT OF CORE BACKFILL.

DEVIATIONS: (Attach list if necessary)

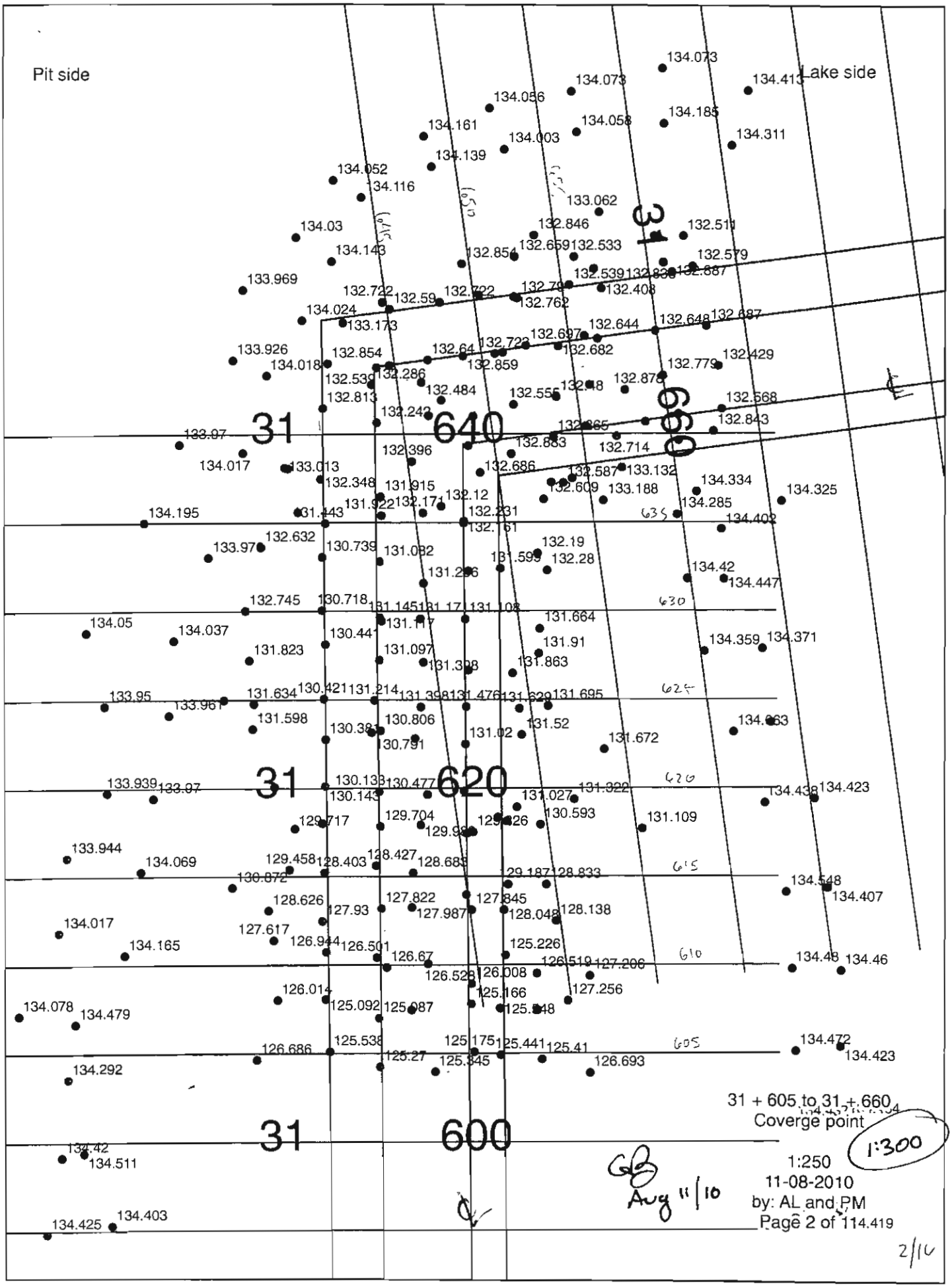
DATE OF RECTIFICATION:

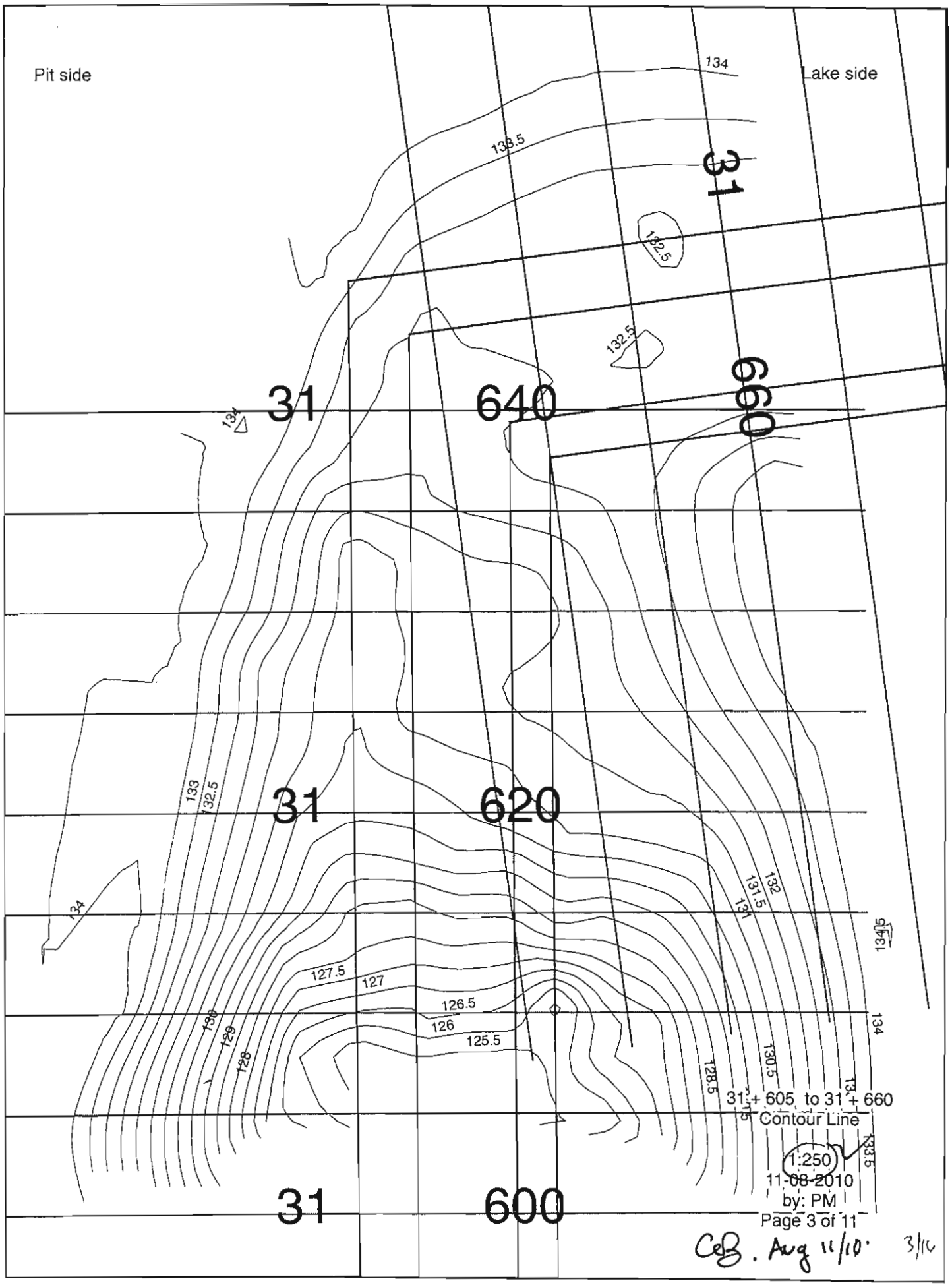
SURVEY VERIFICATION	ACCEPTED BY QA Manager:	ACCEPTED BY OWNER:
NAME: Guy Morissette	NAME: Grant Burns	NAME:
SIGNATURE: GJ Morissette	SIGNATURE: GB	SIGNATURE:
DATE 11 août 2010	DATE July 11, 2010	DATE

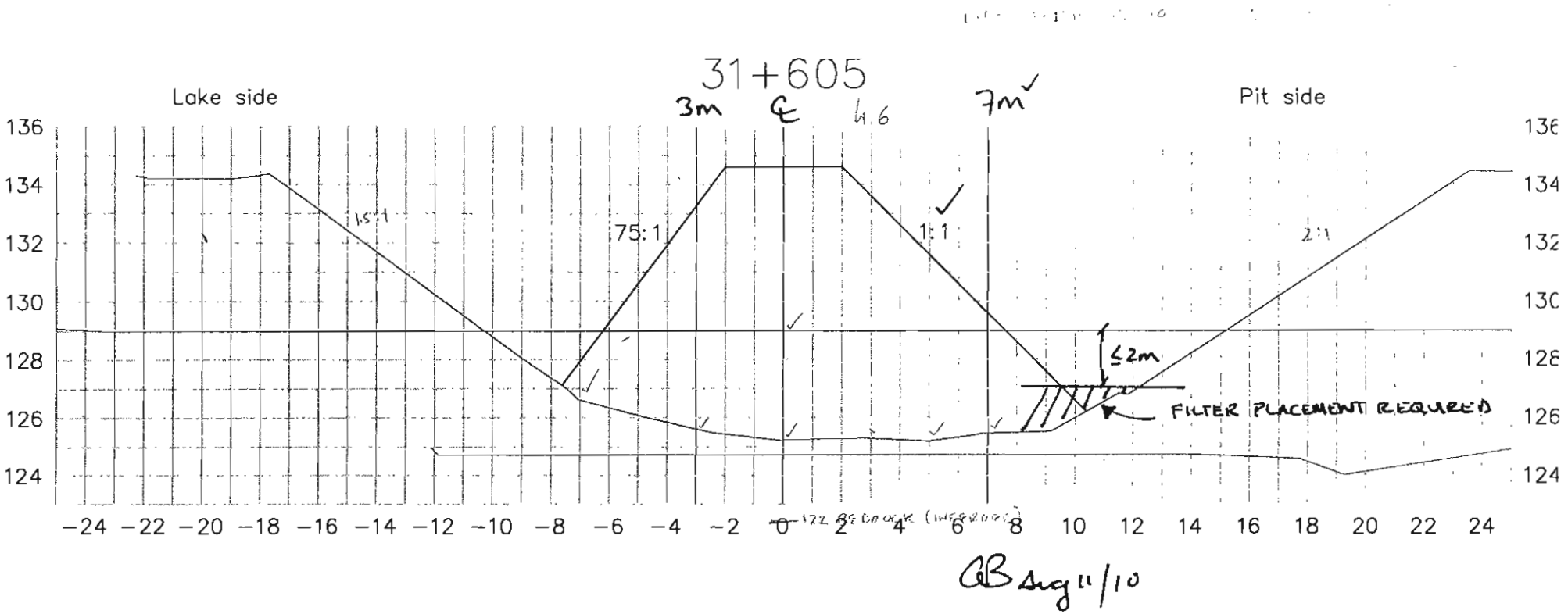
7:30 AM

14:00 hrs

COPY OF ORIGINAL


Pit side
Lake side
31 640
31 620
31 600
634
635
630
625
620
615
610
605
31 + 605 to 31 + 660
Coverge point
1:300
1:250
11-08-2010
by: AL and PM
Page 2 of 114.419
Aug 11/10
2/10


Pit side
Lake side
31
640
660
31
620
31
600
134
133.5
132.5
132.5
134
133
132.5
134
127.5
127
126.5
126
125.5
130
129
128
132
131.5
131
134
130.5
128.5
31 + 605 to 31 + 660
Contour Line
1:250
11-08-2010
by: PM
Page 3 of 11
CeB. Aug 11/10.
3/11



AB Aug 11/10

Lake bed soil

Dike

Target surface

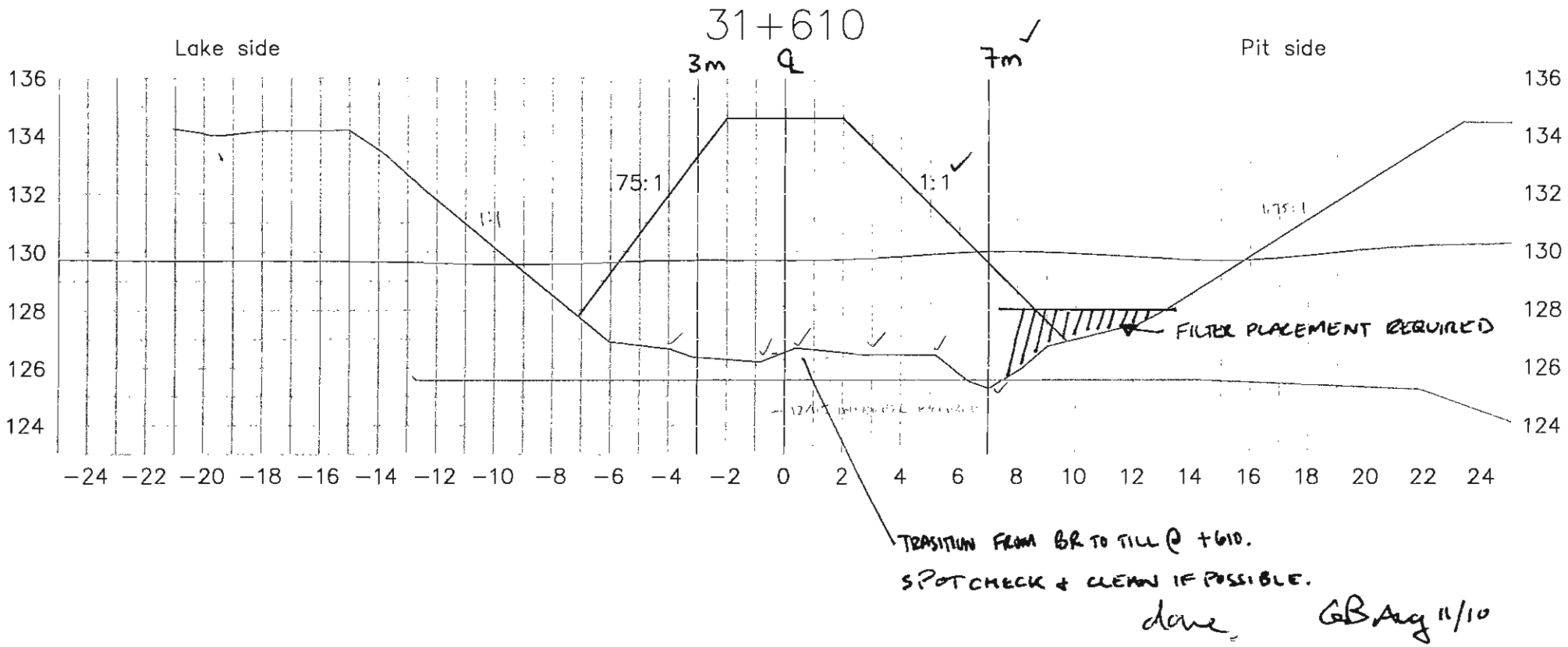
Manual probing

Date: 110810

Page: 4/16

Par: Alex Lalancette et Pascale Martel

4/16



Lake bed soil

Dike

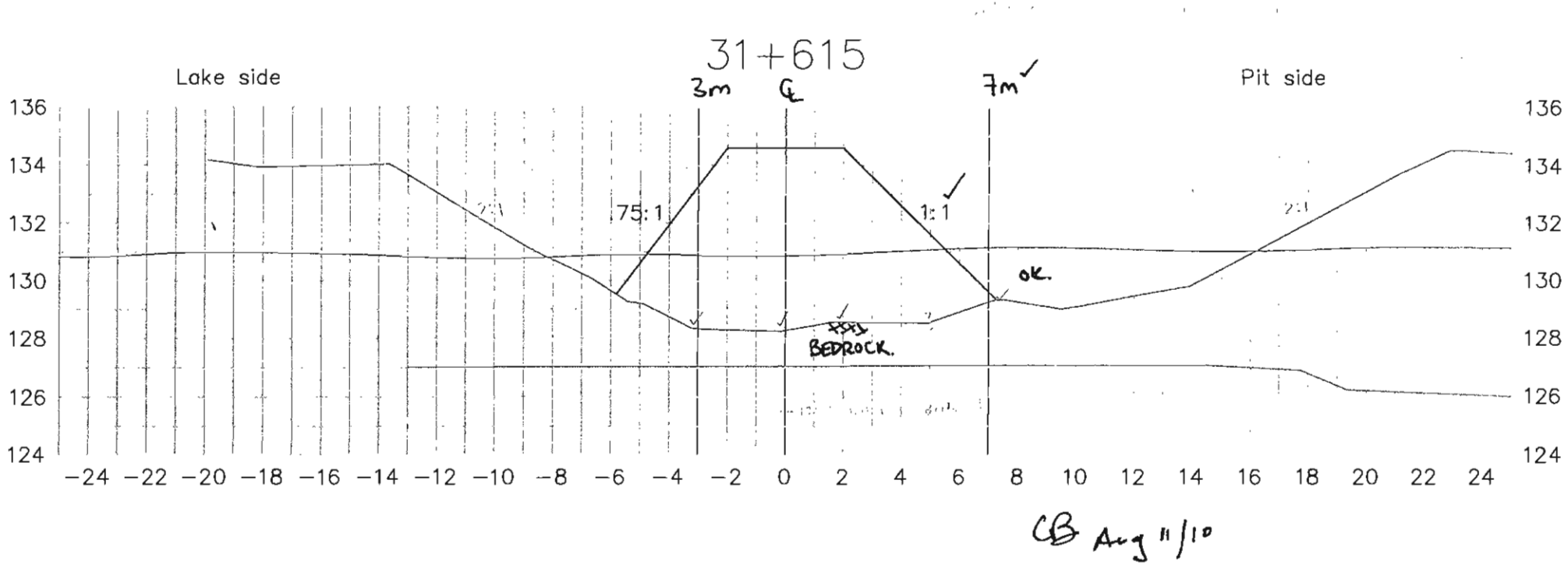
Target surface

Manual probing

Date: 110810

Page: 5/16

Par: Alex Lalancette et Pascale Martel



Lake bed soil

Dike

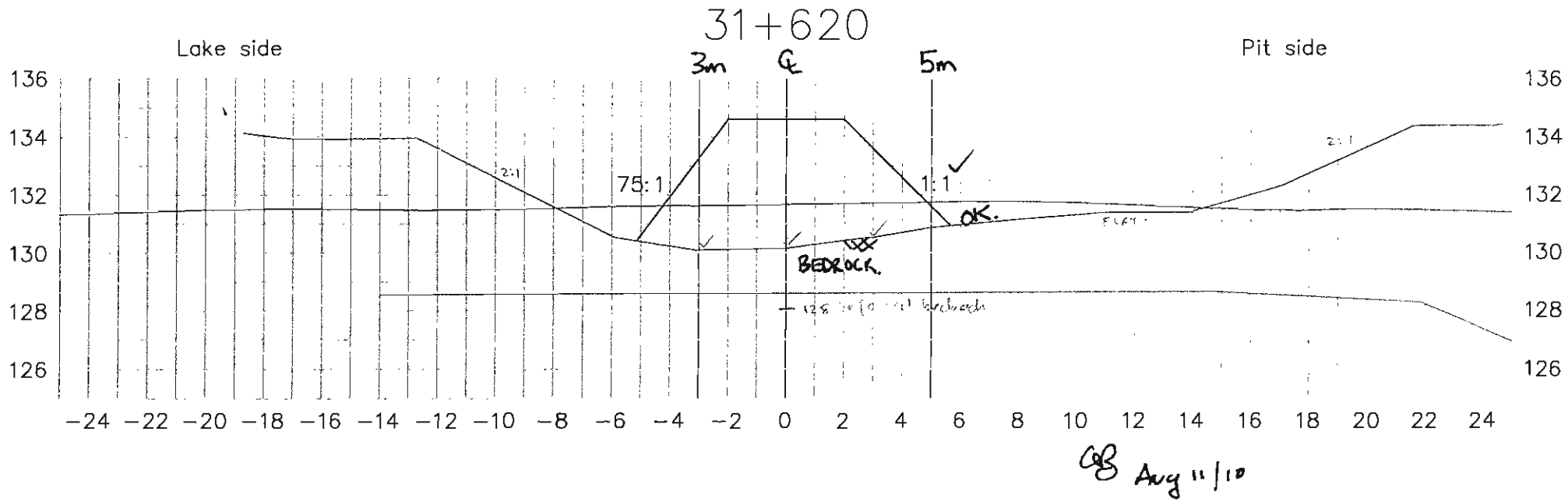
Target surface

Manual probing

Date: 110810

Page: 6/16

Par: Alex Lalancette et Pascale Martel



CB Aug 11/10

Lake bed soil

Dike

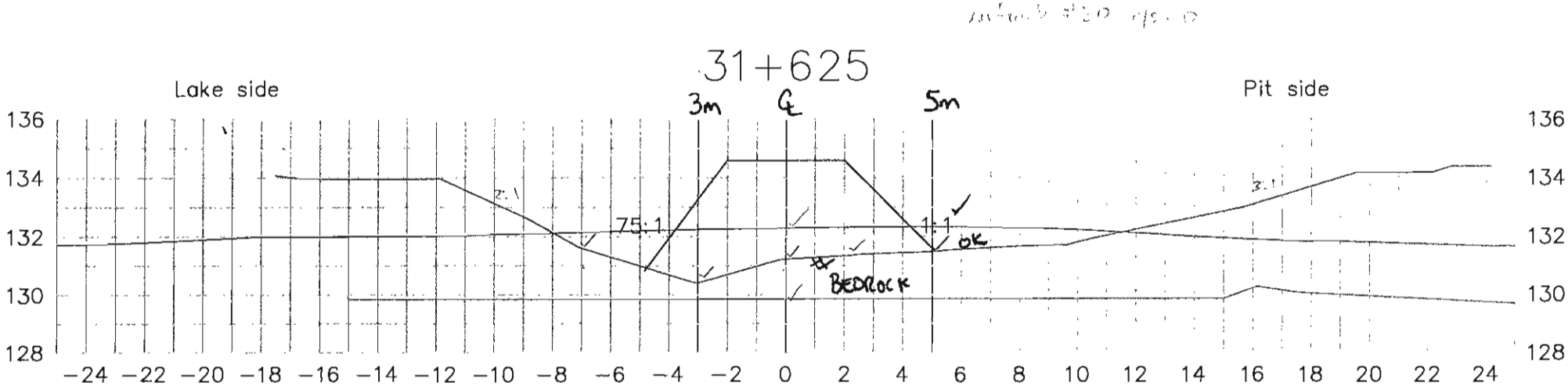
Target surface

Manual probing

Date: 100810

Page: 7/16

Par: Alex Lalancette et Pascale Martel



CB Aug 11/10

Lake bed soil

Dike

Target surface

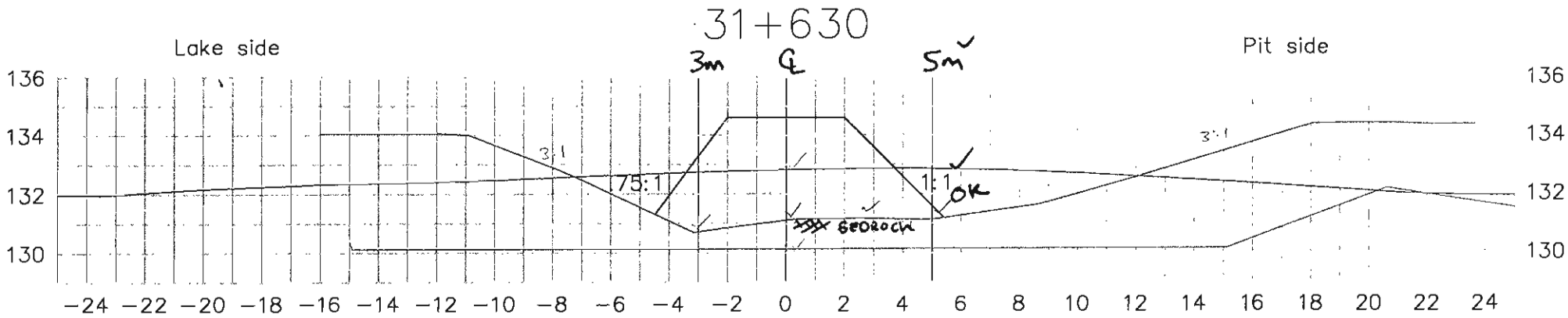
Manual probing

Date: 110810

Page: 8/16

Par: Alex Lalancette et Pascale Martel

11/8



GB Aug 11/10

Lake bed soil

Dike

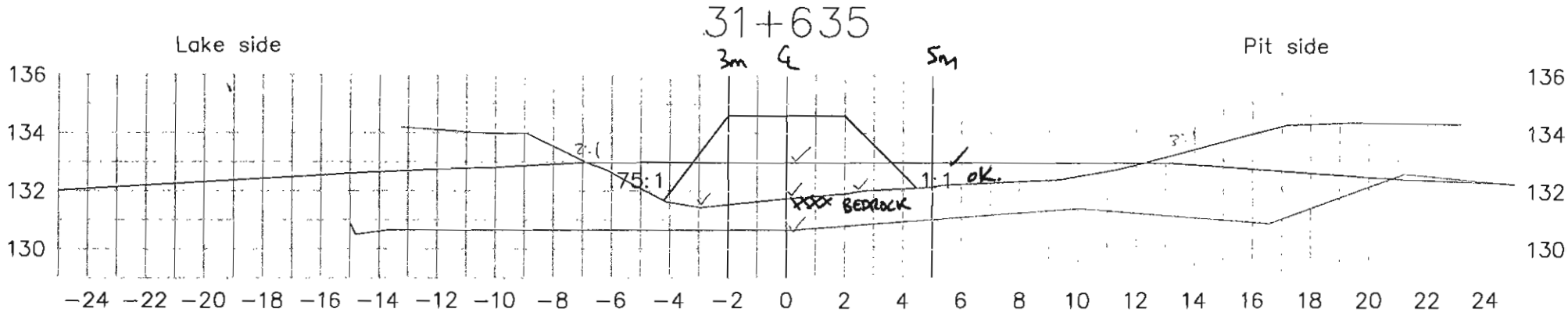
Target surface / inferred bedrock surface (?)

Manual probing

Date: 110810

Page: 9/16

Par: Alex Lalancette et Pascale Martel



GB Aug 11/10

Lake bed soil

Dike

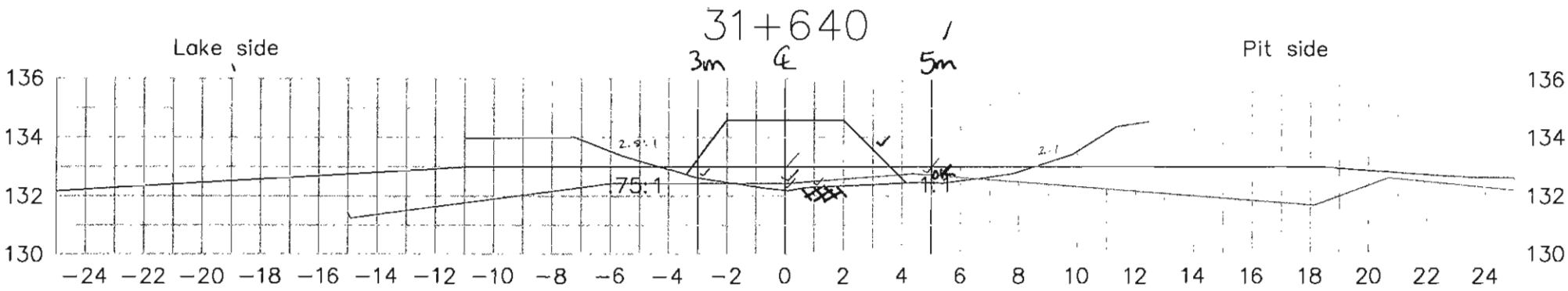
Target surface

Manual probing

Date: 110810

Page: 10/16

Par: Alex Lalancette et Pascale Martel



CB Aug 11/10

Lake bed soil

Dike

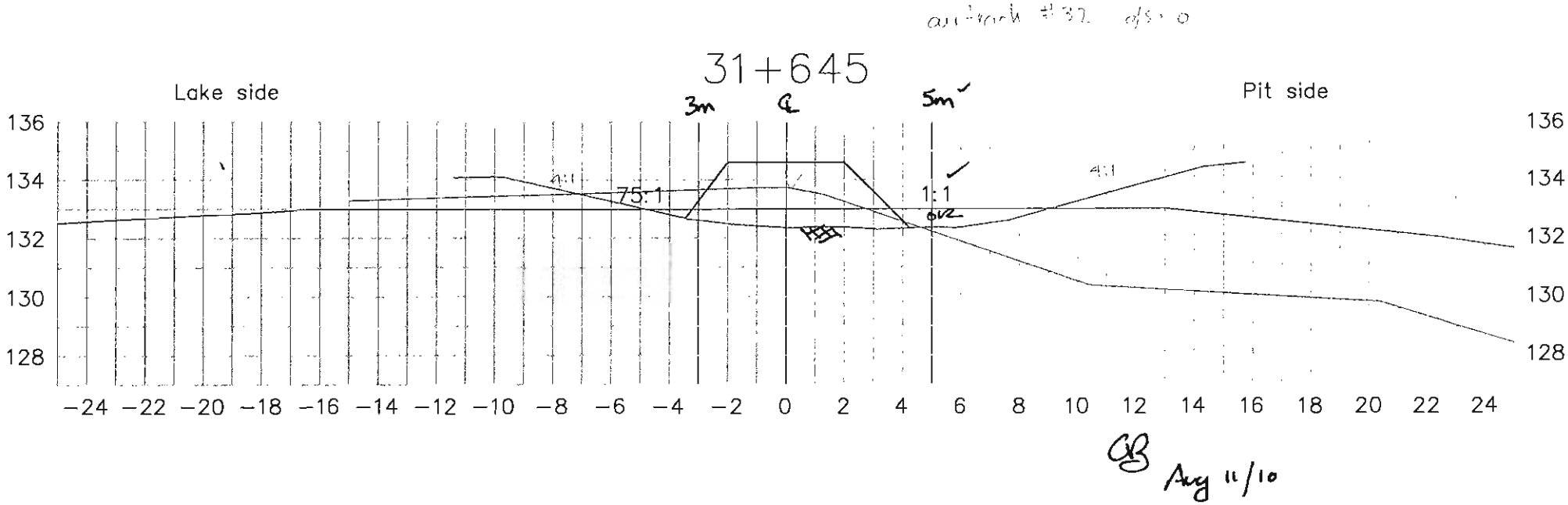
Target surface

Manual probing

Date: 110810

Page: 11/16

Par: Alex Lalancette et Pascale Martel



CB Aug 11/10

Lake bed soil

Dike

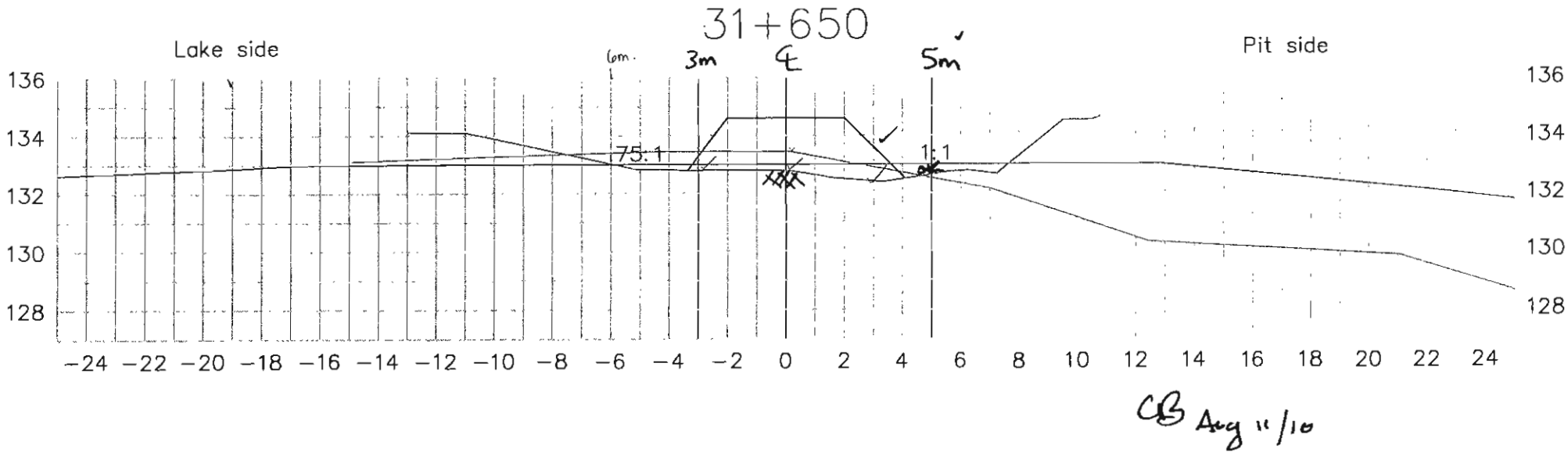
Target surface

Manual probing

Date: 110810

Page: 12/16

Par: Alex Lalancette et Pascale Martel



CB Aug 11/10

Lake bed soil

Dike

TARGET SURFACE/bedrock @ ℄

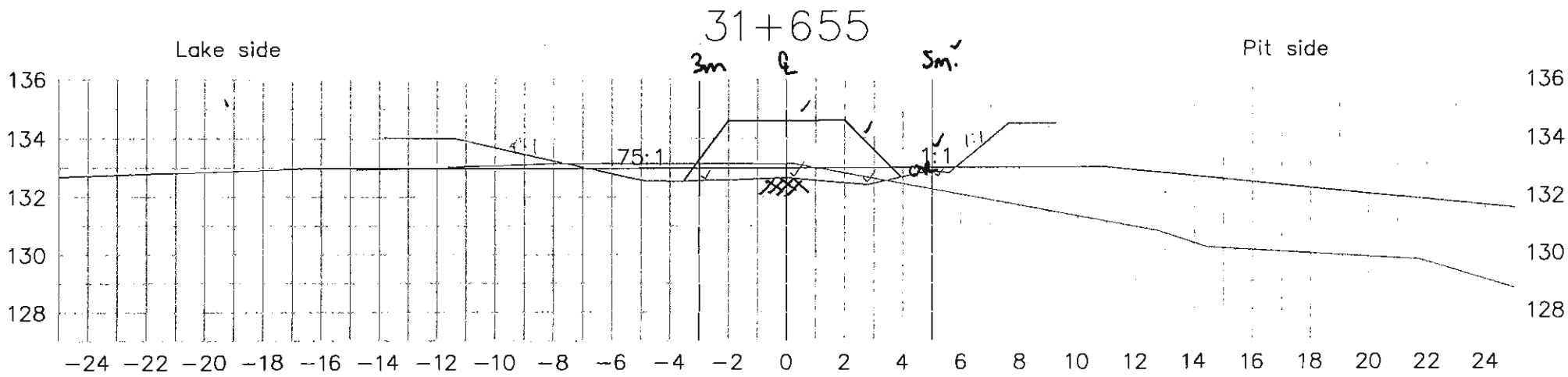
Manual probing

Date: 110810

Page: 13/16

Par: Alex Lalancette et Pascale Martel

13/16



GB Aug 11/10

Lake bed soil

Dike

Target surface / bedrock surface
℄ ℄

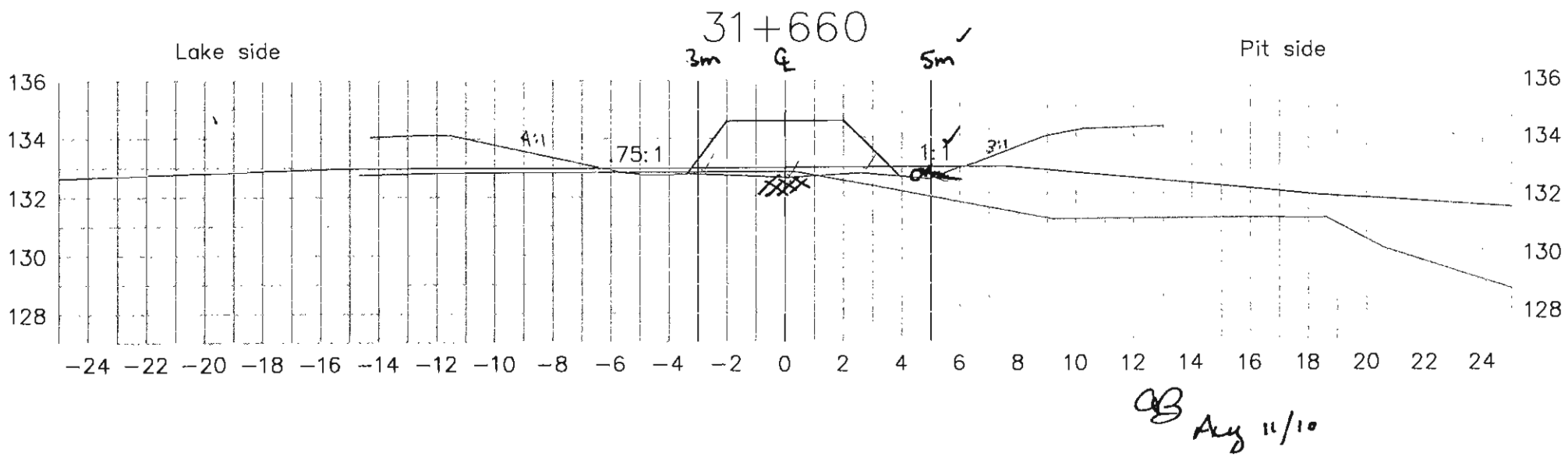
Manual probing

Date: 110810

Page: 14/16

Par: Alex Lalancette et Pascale Martel

14/16



AB Aug 11/10

Lake bed soil

Dike

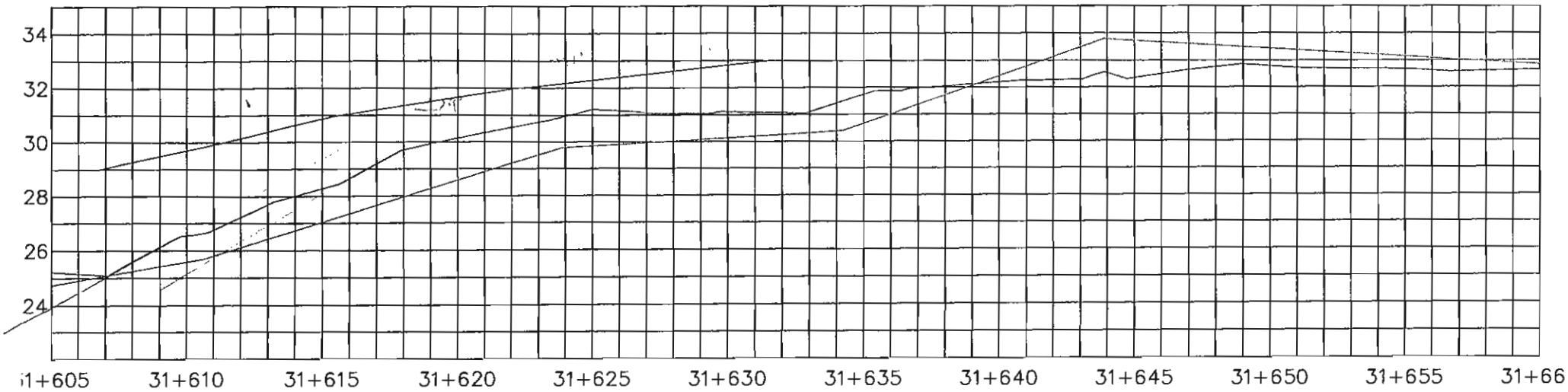
Target surface / bedrock surface @ ℄

Manual probing

Date: 110810

Page: 15/16

Par: Alex Lalancette et Pascale Martel



CB Aug 11/10

Lake bed soil

Dike

Target surface

Manual probing

Date: 110810

Page: 16/16

Par: Alex Lalancette et Pascale Martel

11/11

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta: 31+660 Offset:	SHIFT: NIGHT ☐ DAY ☒	DATE: 4 Aout 2010	SHEET 1 OF 11
To Sta: 31+695 Offset:	LOCATION: BAY Goose Dike - SOUTH PORTION		
EQUIPMENT:			
DESCRIPTION:			

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the excavation conforms with the Drawings	GM	
2.	Storage areas planned for disposal of removed materials	GM	
3.	Occurrence of snow and ice removal method in place	GM	
4.	Occurrence of boulders and removal method in place	GM	
5.	Occurrence of hummocks and scalping method in place	GM	
6.	Occurrence of surface and ground water and its impact mitigation in place	GM	
7.	Presence of other unsuitable materials and removal method in place	GM	
8	Soil frozen or thawed and measures taken	GM	
9.	Blasting requirement to remove unsuitable material and safety measure checked	N/a GM	
10.	Adjustment made to suit design in field	GM	
11.	Final walkover inspection before re-sloping or fill placement	GM	
12.	"As-excavated" survey conducted	GM	
13.	Final sounding conducted of lake bottom surface	GM.	

REMARKS :

DEVIATIONS : (Attach list if necessary)

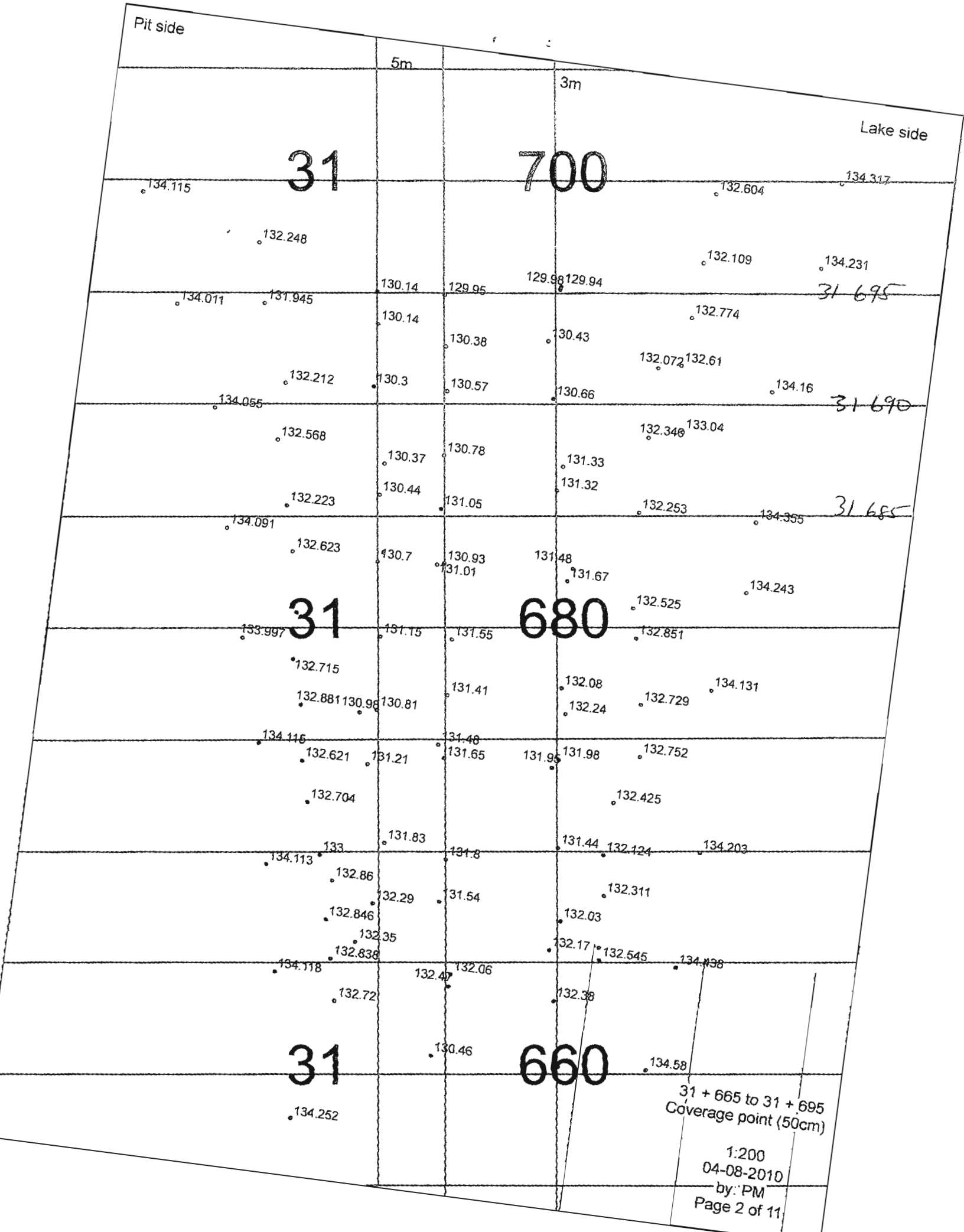
DATE OF RI

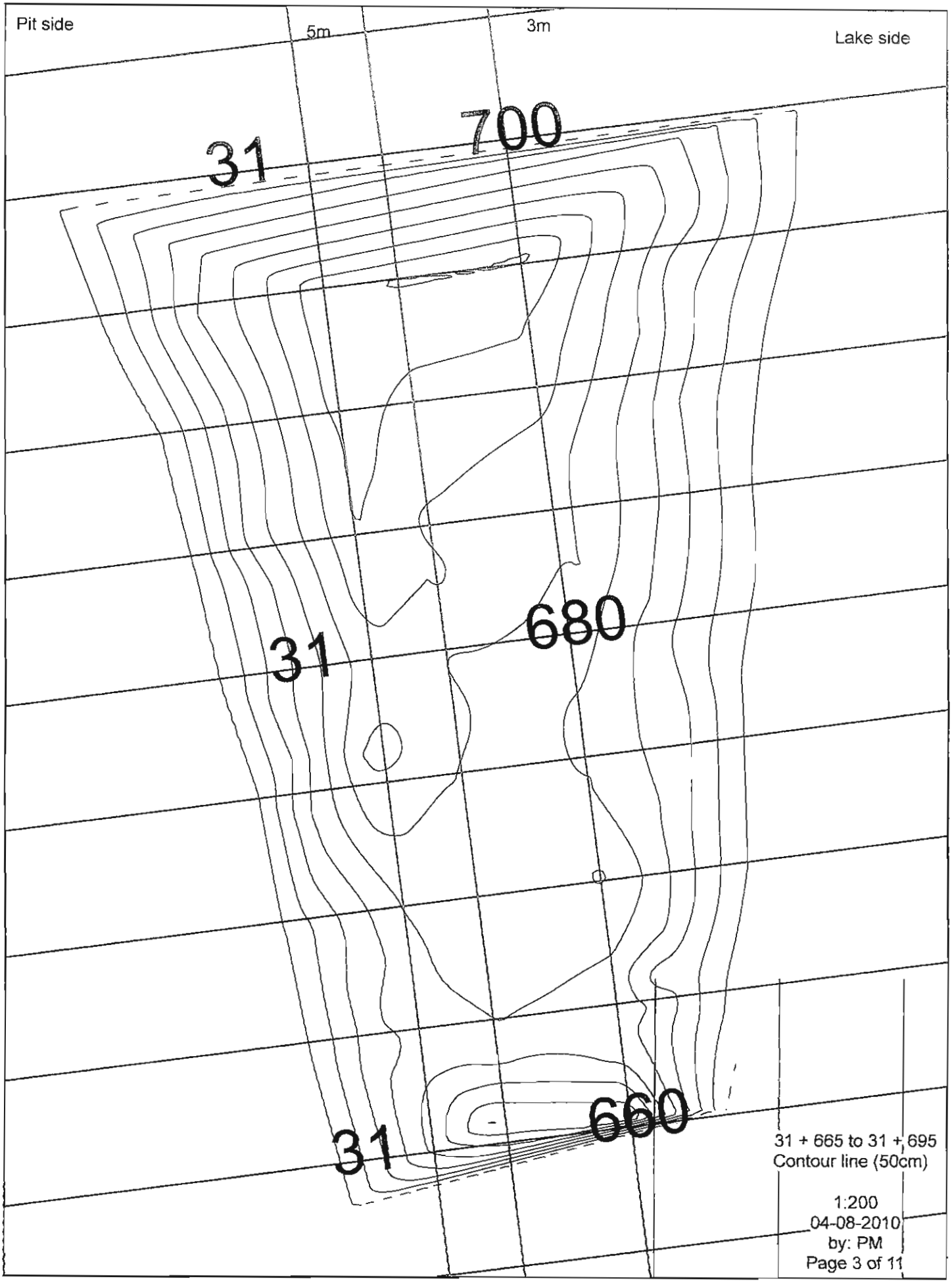
SURVEY VERIFICATION	ACCEPTED BY QA Manager :	ACCE
NAME: GUY MORISSETTE	NAME: _____	NAME
SIGNATURE : GM Morissette	SIGNATURE : _____	SIGNA
DATE 4 Aout 2010	DATE _____	DATE

10:43 AM

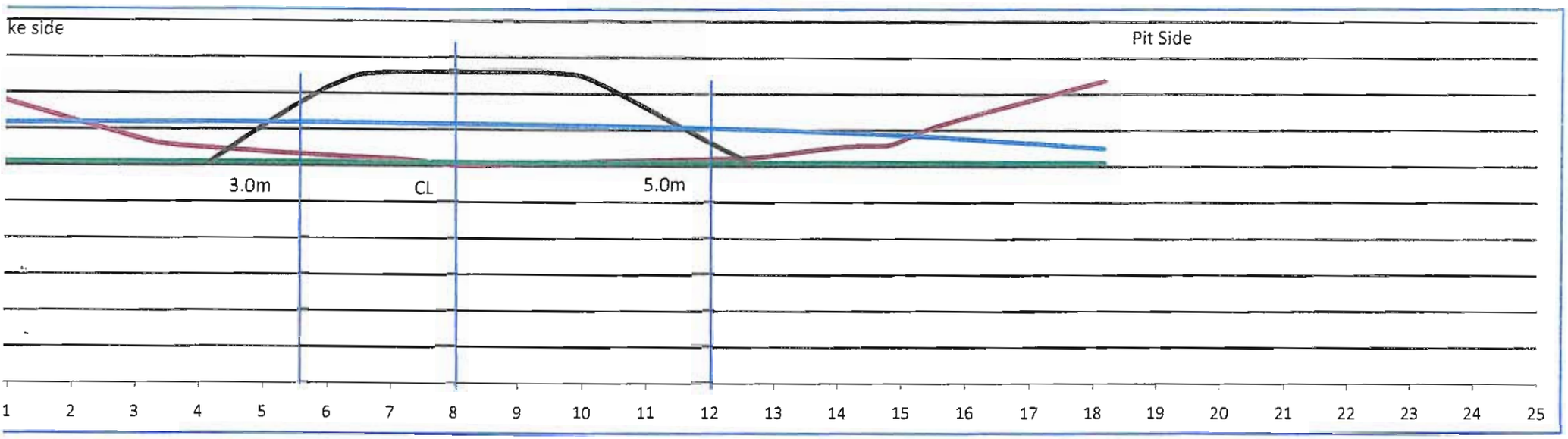
Before approving, we need the data from the soft material sounding at each 5m.

VB
Aug 4
Proceeded with Approval!


Pit side
5m
3m
Lake side
31 700
31 680
31 660
134.115
132.248
134.317
132.604
132.109
134.231
31 695
130.14
129.95
129.98
129.94
134.011
131.945
132.774
130.38
130.43
132.072
132.61
132.212
130.3
130.57
130.66
134.16
31 690
134.055
132.568
132.348
133.04
130.37
130.78
131.33
131.32
130.44
131.05
132.253
134.355
31 685
134.091
132.623
130.7
130.93
131.01
131.48
131.67
134.243
132.525
133.997
131.15
131.55
132.851
132.715
132.881
130.98
130.81
131.41
132.08
134.131
132.729
132.24
134.115
131.48
132.621
131.21
131.65
131.95
131.98
132.752
132.704
132.425
131.83
133
131.44
132.124
134.203
134.113
131.8
132.86
132.311
132.29
131.54
132.846
132.03
132.35
132.17
132.545
132.838
134.118
132.47
132.06
132.72
132.38
130.46
134.58
134.252
31 + 665 to 31 + 695
Coverage point (50cm)
1:200
04-08-2010
by: PM
Page 2 of 11

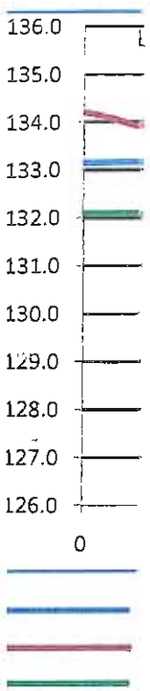

Pit side
5m
3m
Lake side
31
700
31
680
31
660
31 + 665 to 31 + 695
Contour line (50cm)
1:200
04-08-2010
by: PM
Page 3 of 11

Cut view 31+665

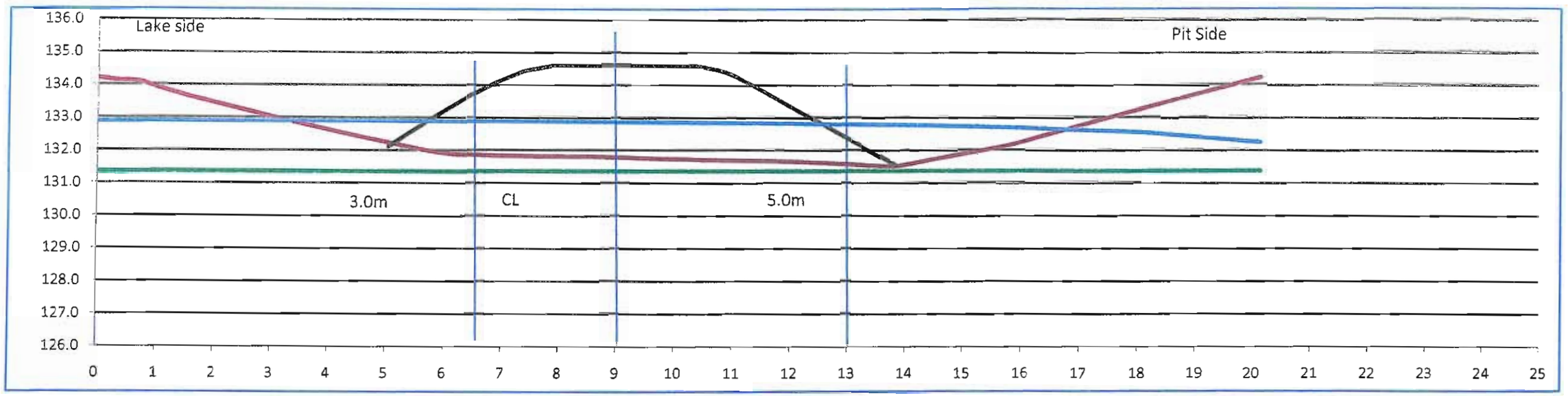


Lake bed soil
bathymetrie survey
Infered bed rock

Date 2010-08-04
By: PM


136.0
135.0
134.0
133.0
132.0
131.0
130.0
129.0
128.0
127.0
126.0
0

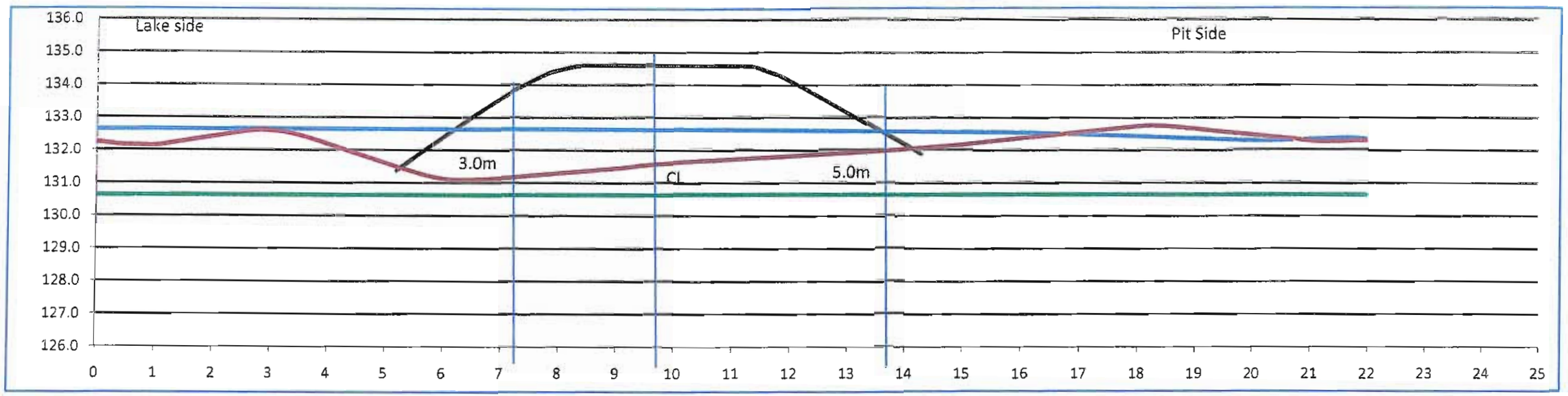
Cut view 31+670



Lake bed soil
bathymetrie survey
Infered bed rock

Date 2010-08-04
By: PM

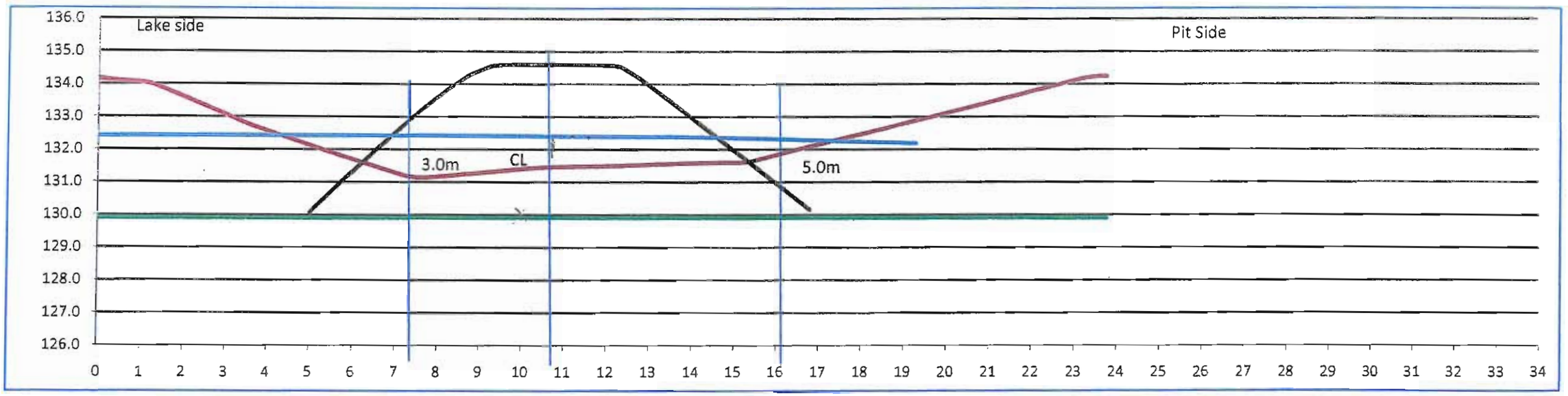
Cut view 31+675



Lake bed soil
bathymetrie survey
Infered bed rock

Date 2010-08-04
By: PM

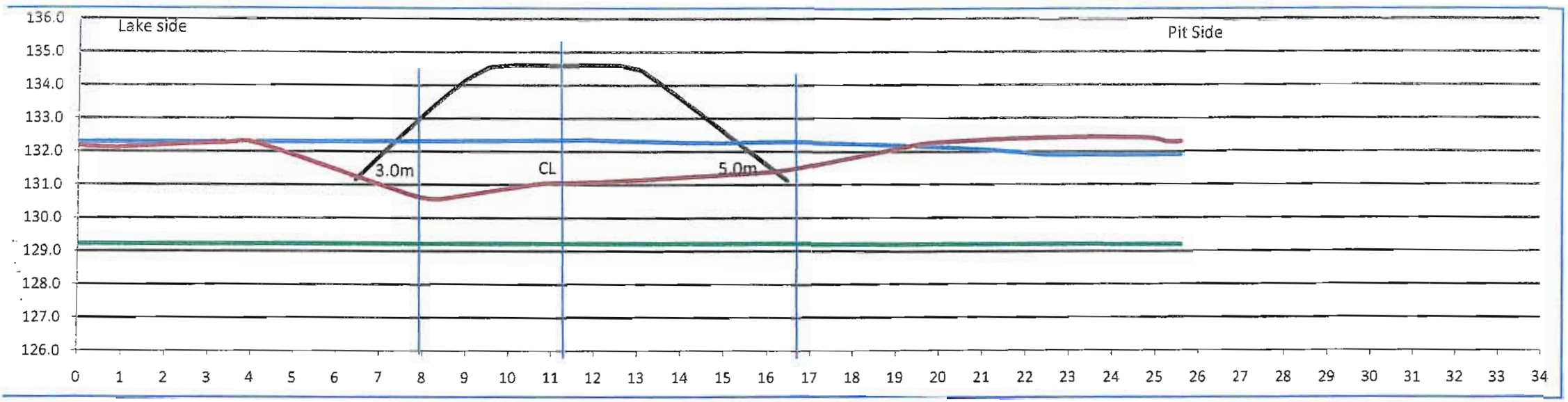
Cut view 31+680



Lake bed soil
bathymetrie survey
Infered bed rock

Date 2010-08-04
By: PM

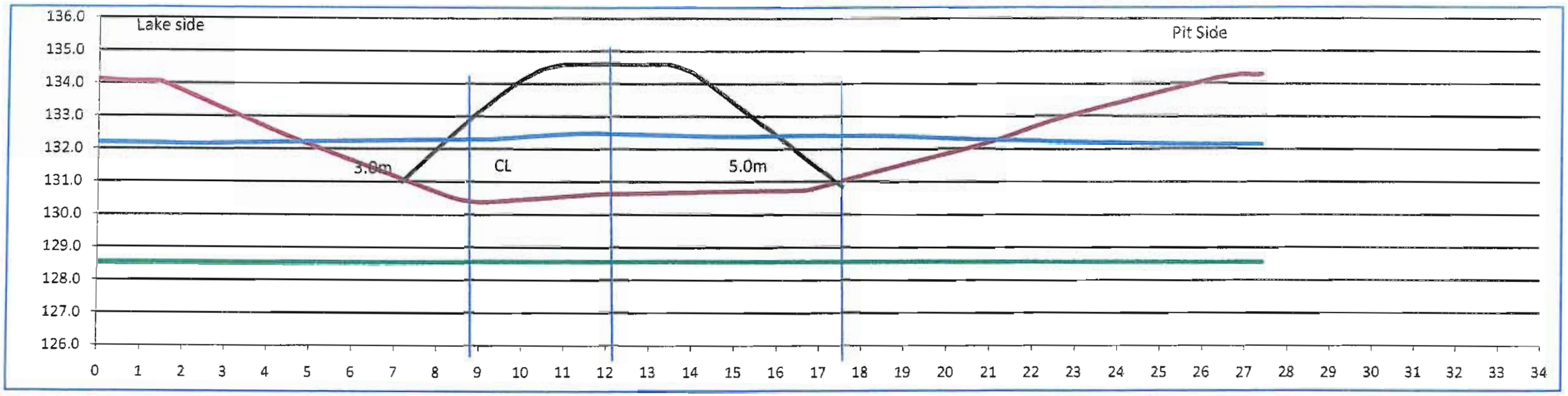
Cut view 31+685



Lake bed soil
bathymetrie survey
Infered bed rock

Date 2010-08-04
By: PM

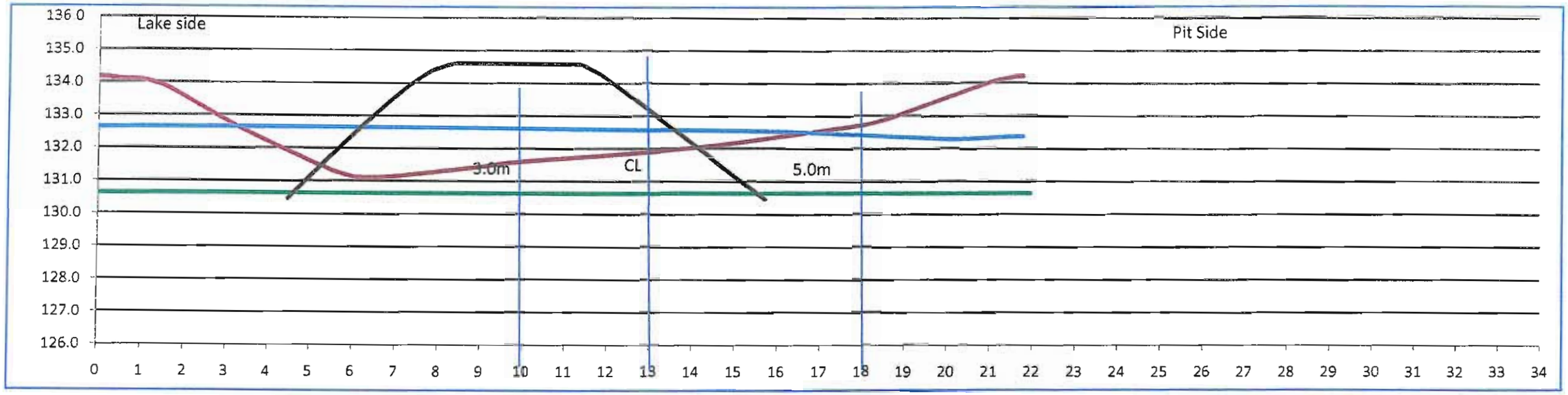
Cut view 31+690



Lake bed soil
bathymetrie survey
Infered bed rock

Date 2010-08-04
By: PM

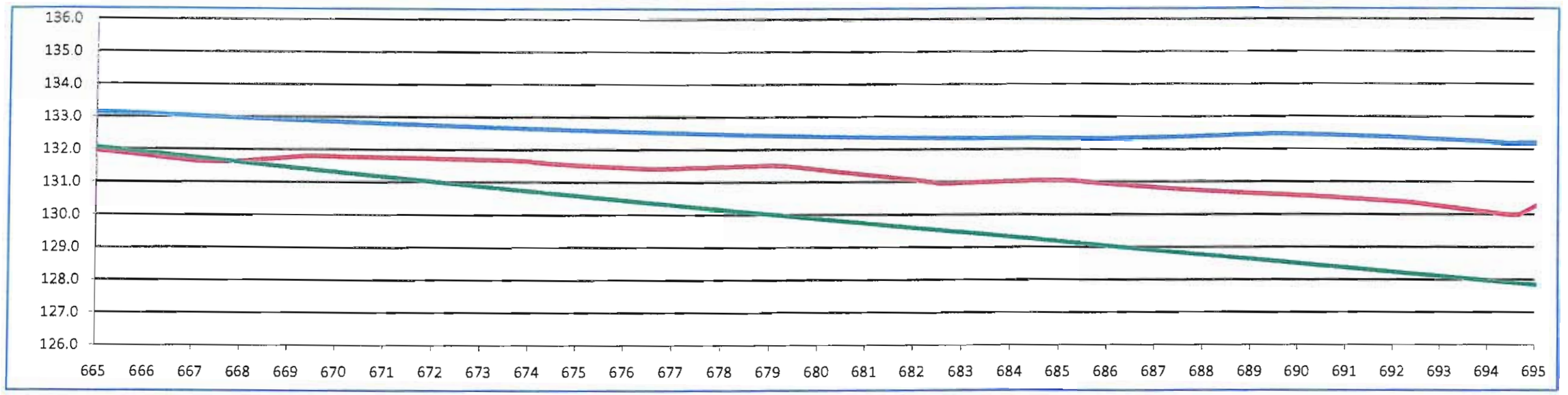
Cut view 31+695



Lake bed soil
bathymetrie survey
Infered bed rock

Date 2010-08-04
By: PM

CL (manuel probing) 31 +665 to 31 + 695



Lake bed soil
Manuel probing
infered bed rock

Date 2010-08-04
By: PM

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 31+700 Offset	SHIFT: NIGHT :☐ DAY :☒	DATE : 5 AOUT 10	SHEET 1 OF 16
To Sta. 31+~~780~~ 725 Offset	LOCATION: : BAY GOOSE DIKE, SOUTH PORTION		
EQUIPMENT: 725			

DESCRIPTION

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	GM	GB.
2.	Storage areas planned for disposal of removed materials	GM	GB.
3.	Occurrence of snow and ice removal method in place	GM	GB.
4.	Occurrence of boulders and removal method in place	GM	GB.
5.	Occurrence of hummocks and scalping method in place	GM	GB.
6.	Occurrence of surface and ground water and its impact mitigation in place	GM	GB.
7.	Presence of other unsuitable materials and removal method in place	GM	GB.
8.	Soil frozen or thawed and measures taken	GM	GB.
9.	Blasting requirement to remove unsuitable material and safety measure checked	N/A GM	N/A GB.
10.	Adjustment made to suit design in field	GM	GB.
11.	Final walkover inspection before re-sloping or fill placement	GM	GB
12.	"As-excavated" survey conducted	GM	GB
13.	Final sounding conducted of lake bottom surface	GM	GB

REMARKS : BACKFILL PLACEMENT APPROVED TO 31+725. PRIOR TO PLACEMENT CHECK FOR SILT ACCUMULATION EVERY 5M. CLEAN UP REQUIRED SEE DRAWINGS

DEVIATIONS : (Attach list if necessary)

- CREST WIDTH WAS NOT CORRECT @ SOME CROSS-SECTIONS. ALSO PIT-SIDE SLOPE IS 2i.25H:1V (1H:1V REQUIRED)
- FILTER PLACEMENT REQUIRED. ALONG PIT SIDE (SEE DRAWINGS FOR ELEV & LENGTH OF PLACEMENT)

DATE OF RECTIFICATION :

SURVEY VERIFICATION	ACCEPTED BY QA Manager :	ACCEPTED BY OWNER :
NAME: GUY MORISSETTE	NAME: GRANT BURNS.	NAME:
SIGNATURE :	SIGNATURE : GB	SIGNATURE :
DATE 5 Aout 2010	DATE Aug 5, 2010	DATE

17:30 hrs.

21:00 hrs

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 31+725 Offset	SHIFT: NIGHT: ☐ DAY: ☒	DATE: 6 AUG 10	SHEET OF
To Sta. 31+750 Offset	LOCATION: BAY GOOSE DIKE, SOUTH PORTION		
EQUIPMENT:			
DESCRIPTION			

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	GM	GB.
2.	Storage areas planned for disposal of removed materials	GM	GB.
3.	Occurrence of snow and ice removal method in place	GM	GB.
4.	Occurrence of boulders and removal method in place	GM	GB.
5.	Occurrence of hummocks and scalping method in place	GM	GB.
6.	Occurrence of surface and ground water and its impact mitigation in place	GM	GB.
7.	Presence of other unsuitable materials and removal method in place	GM	GB.
8.	Soil frozen or thawed and measures taken	GM	GB.
9.	Blasting requirement to remove unsuitable material and safety measure checked	N/A GM	N/A GB.
10.	Adjustment made to suit design in field	GM	GB.
11.	Final walkover inspection before re-sloping or fill placement	GM	GB
12.	"As-excavated" survey conducted	GM	GB.
13.	Final sounding conducted of lake bottom surface	GM	GB.

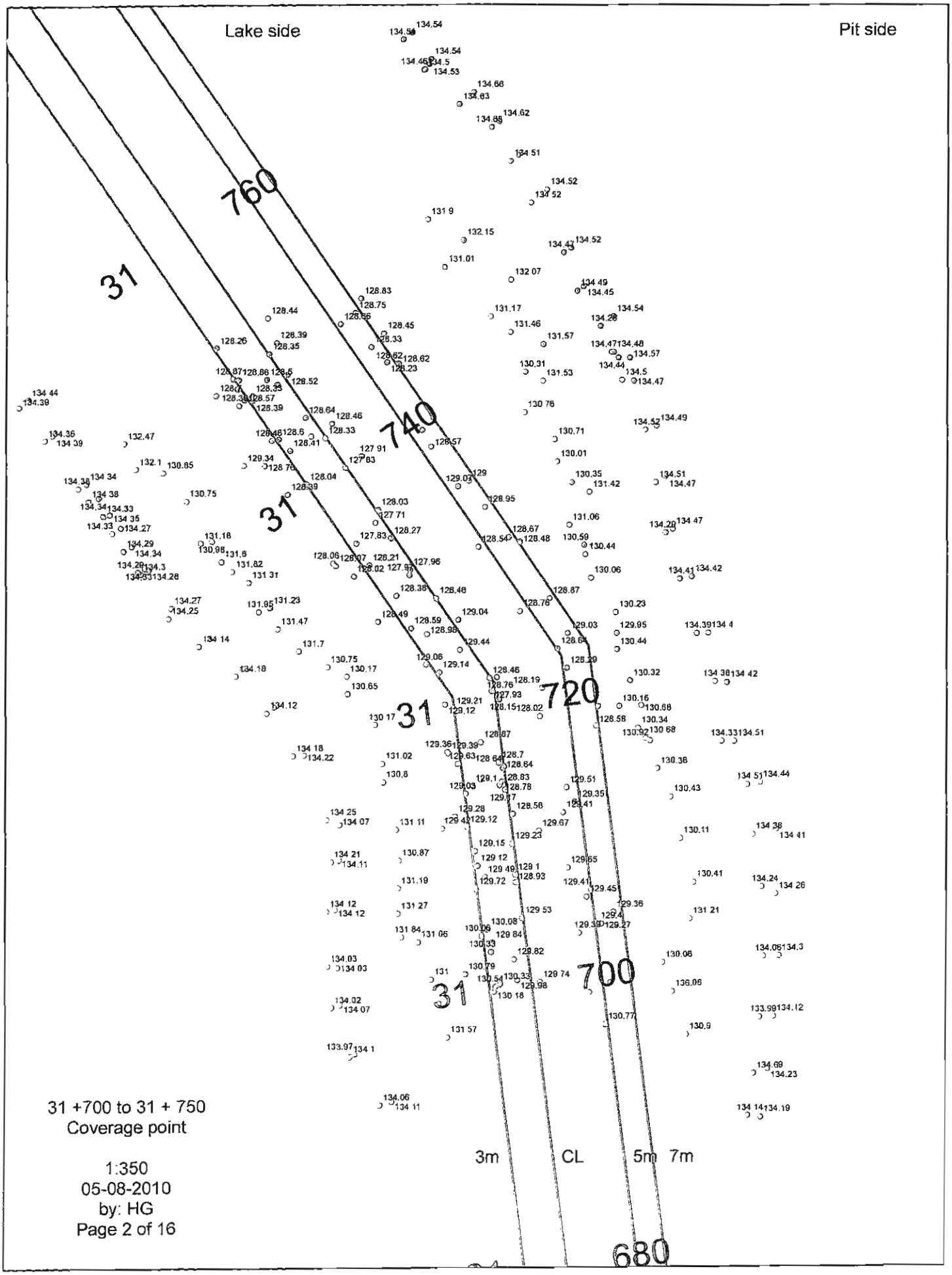
REMARKS: CHECK FOR SILT ACCUMULATION EVERY 5M PRIOR TO PLACEMENT OF FILTER/CORE BACKFILL

DEVIATIONS: (Attach list if necessary)
- FILTER PLACEMENT REQUIRED (SEE DRAWINGS)

DATE OF RECTIFICATION:

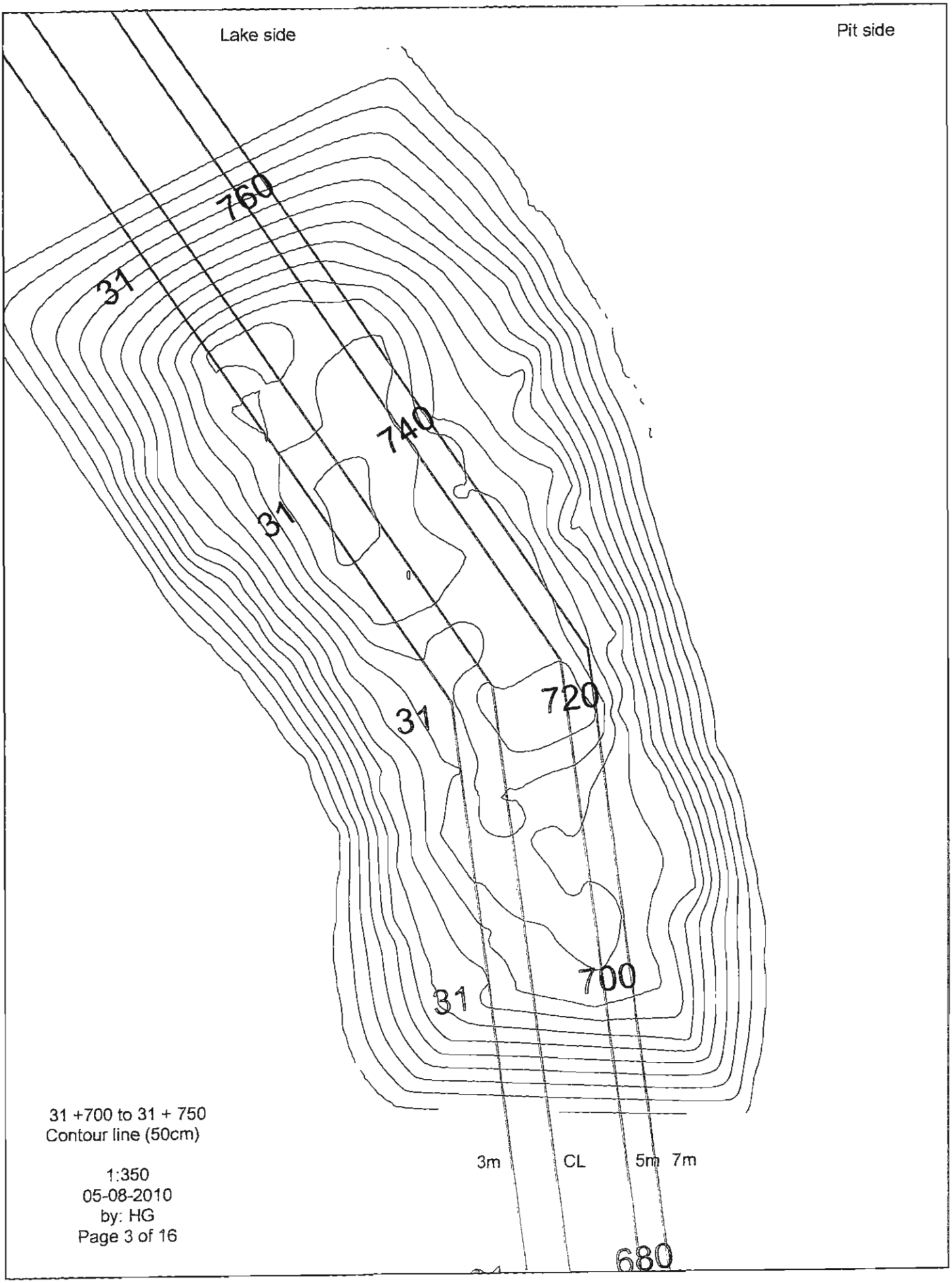
SURVEY VERIFICATION	ACCEPTED BY QA Manager:	ACCEPTED BY OWNER:
NAME: GUY MORISSETTE	NAME: GRANT BURNS	NAME:
SIGNATURE: Guy Morissette	SIGNATURE:	SIGNATURE:
DATE AUG. 6, 2010	DATE AUG 6, 2010	DATE

7:50AM



31 +700 to 31 + 750
Coverage point

1:350
05-08-2010
by: HG

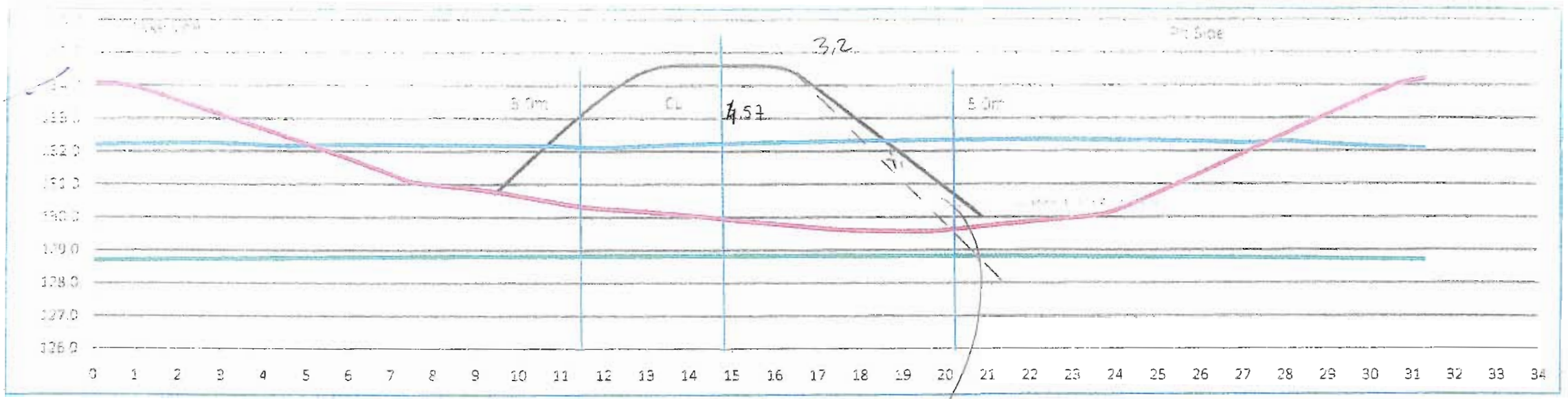


31 +700 to 31 + 750
Contour line (50cm)

1:350
05-08-2010
by: HG

Cut view 33+780

0,7



Lake bed soil

~~bathymetrie survey~~ manual probing

Infered bed rock

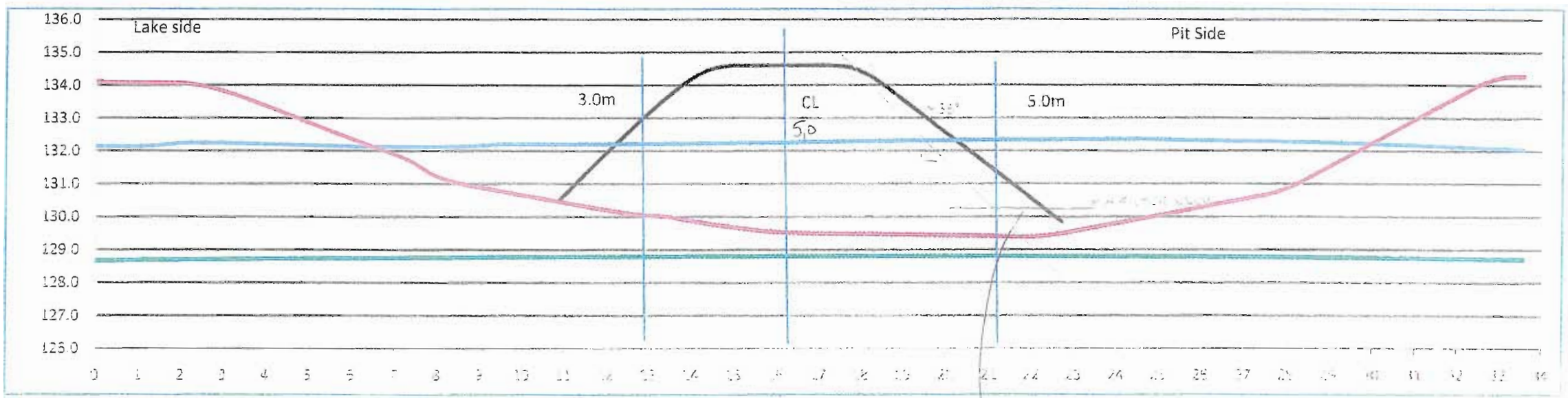
Date 2010-08-05

By. HG

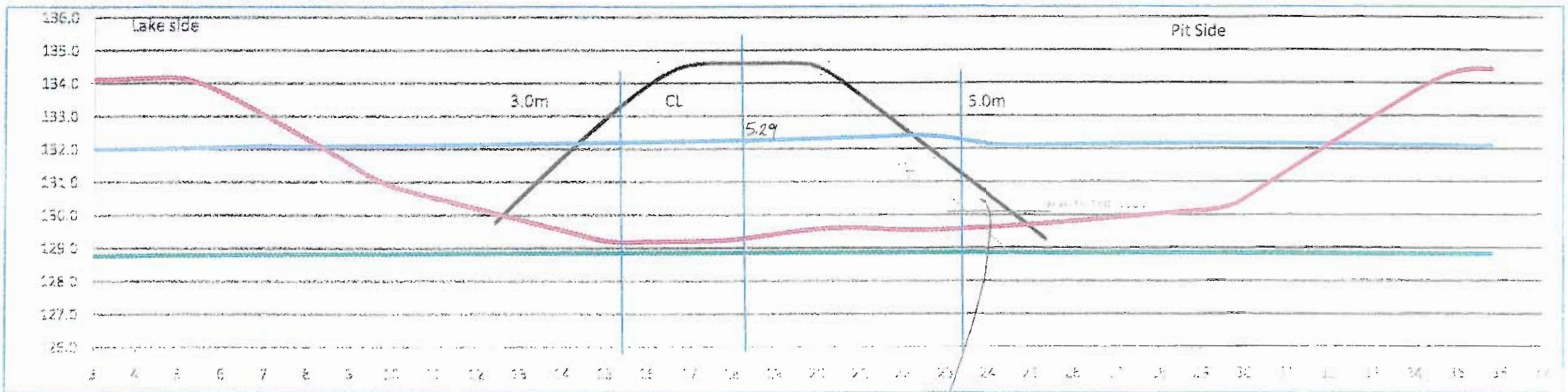
FILTER REQUIRED WITHIN 2M OF LAKE BED SOIL.

CB Aug 5/10

Cut view 31+705



Cut view 31+710 3.7

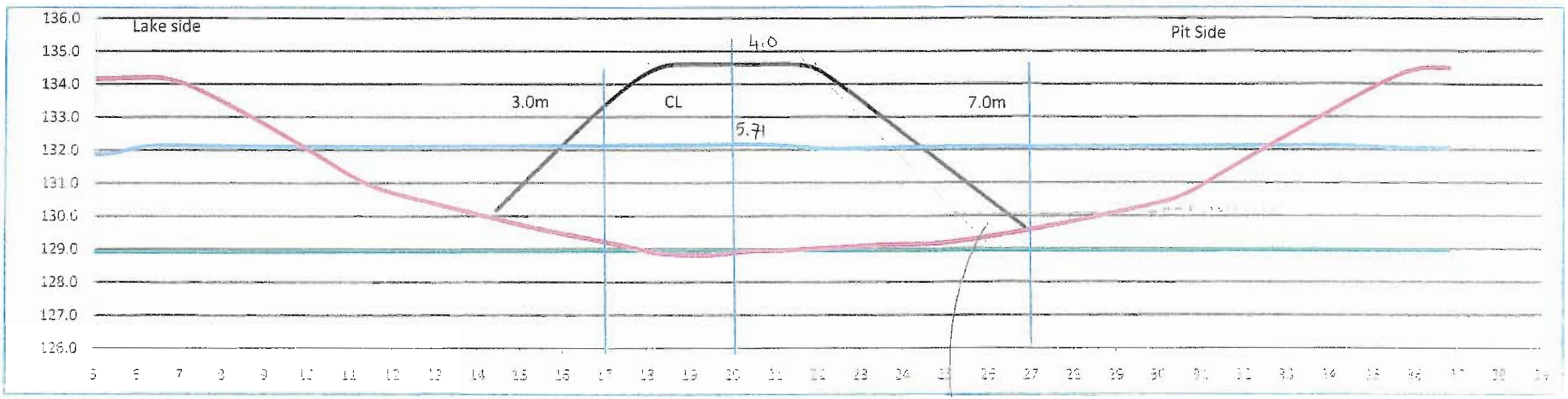


Lake bed SC

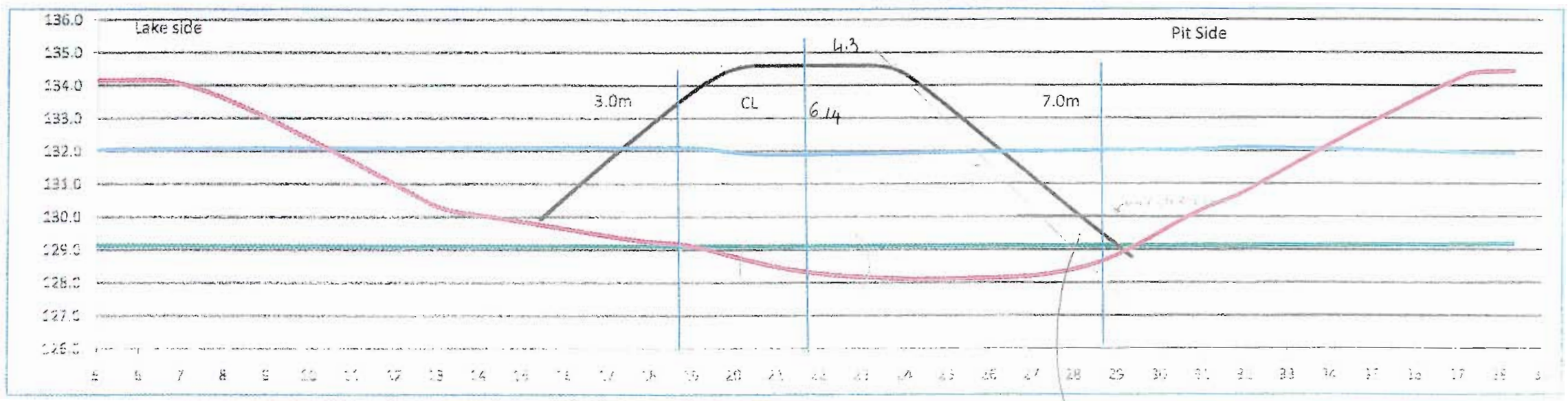
Inferred bed rock

CB

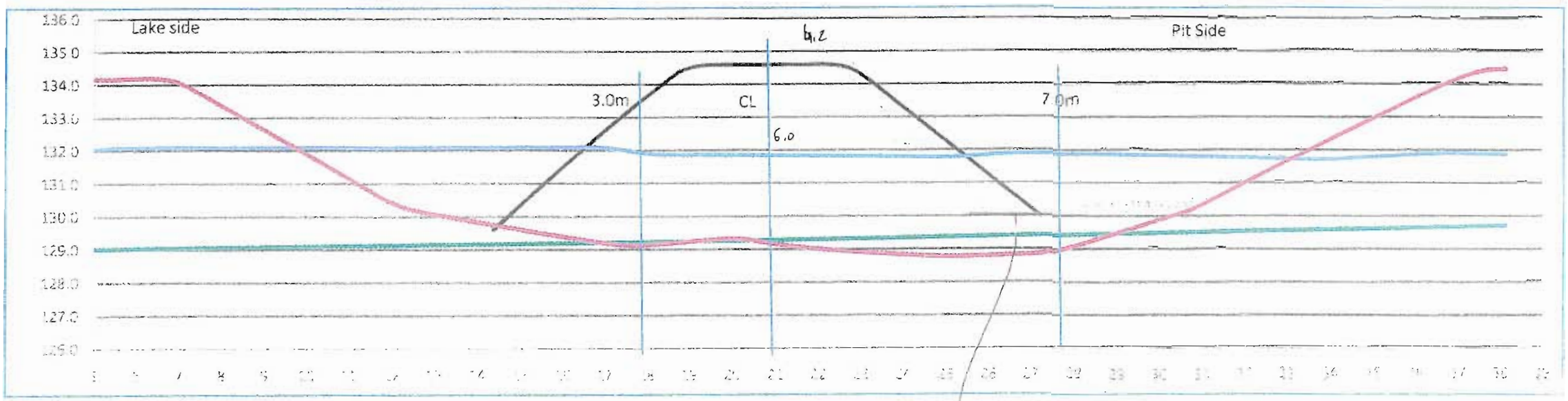
Cut view 31+715



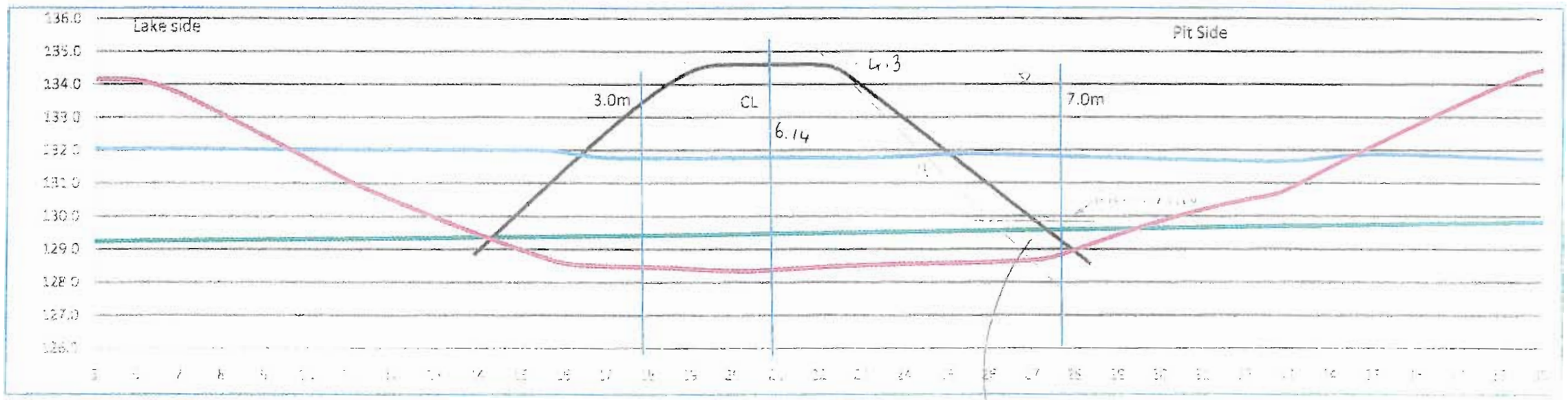
Cut view 31+720



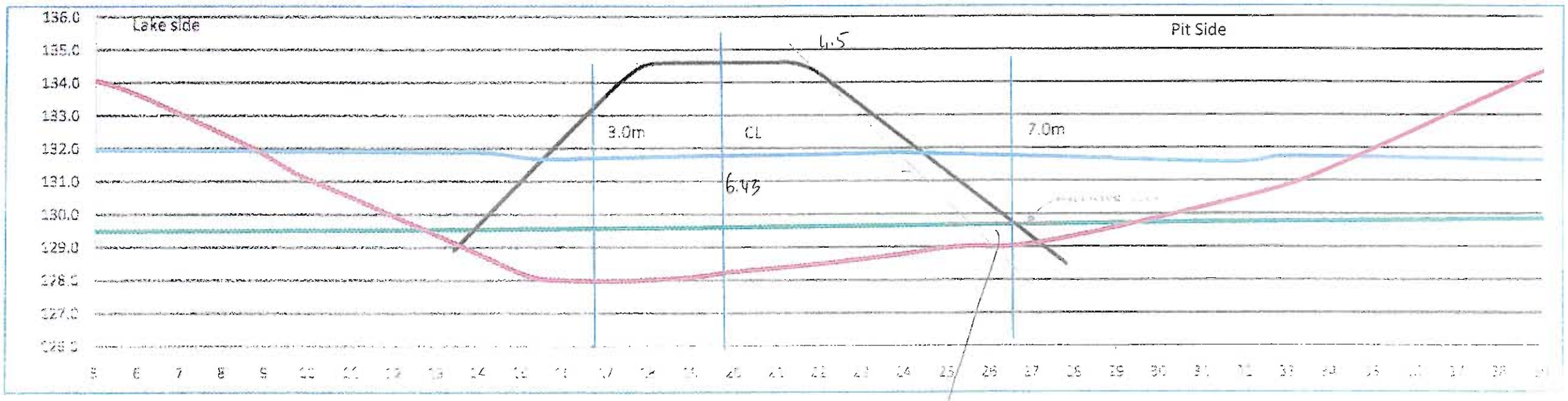
Cut view 31+725



Cut view 31+730



Cut view 31+735

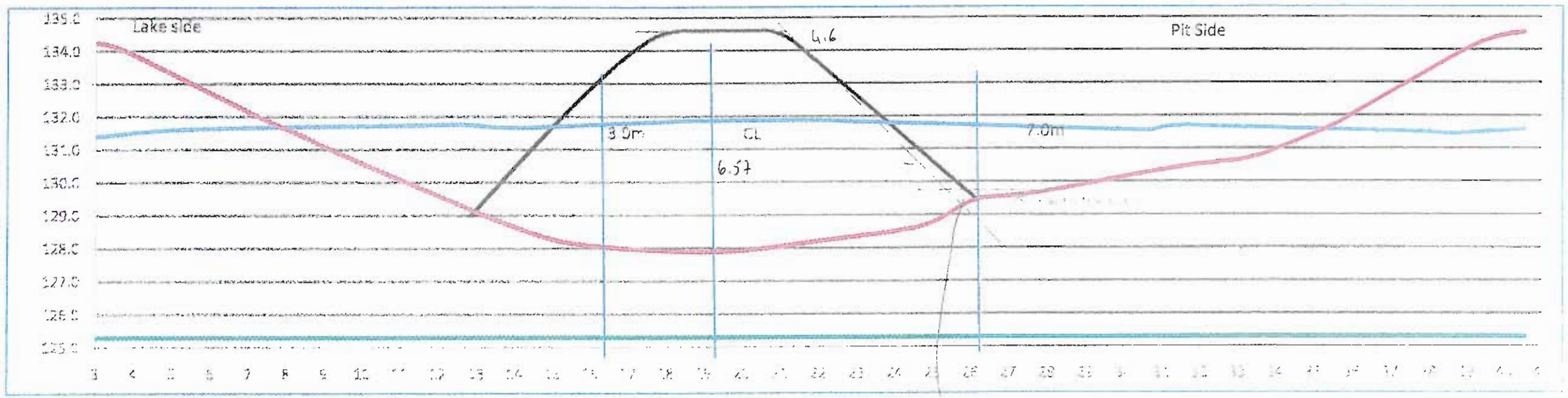


Lake bed soil

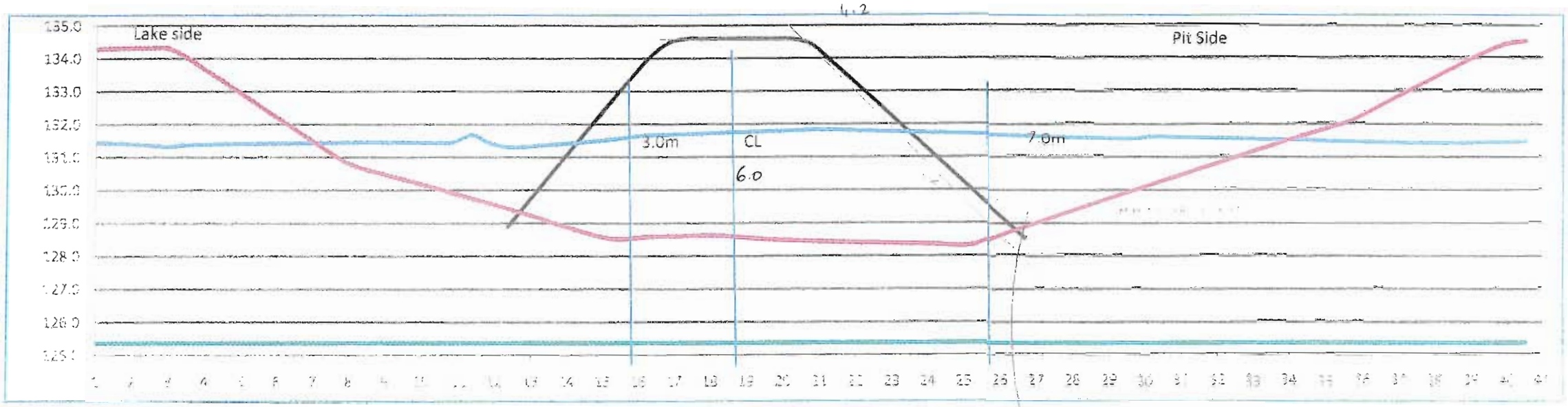
Date 2021-08-23

Page 11 of 16

Cut view 31+740 (infered modified)



Cut view 31+745 (infered modified)



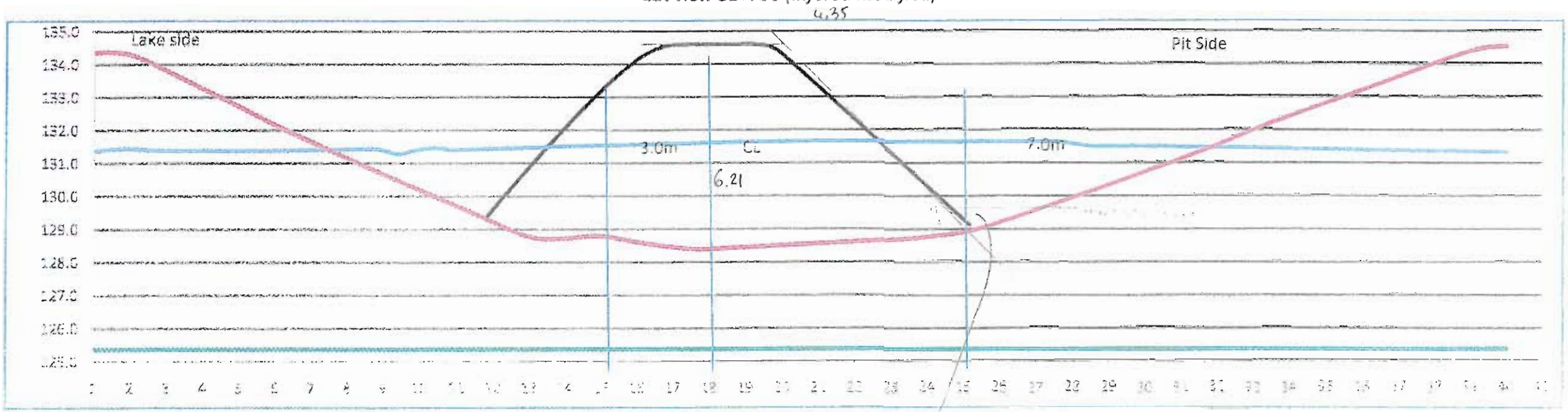
Lake bed sc
Bathymetric survey
Pit bed survey

Date
By
mG

Page 13 of 19

GB
Aug 6/21

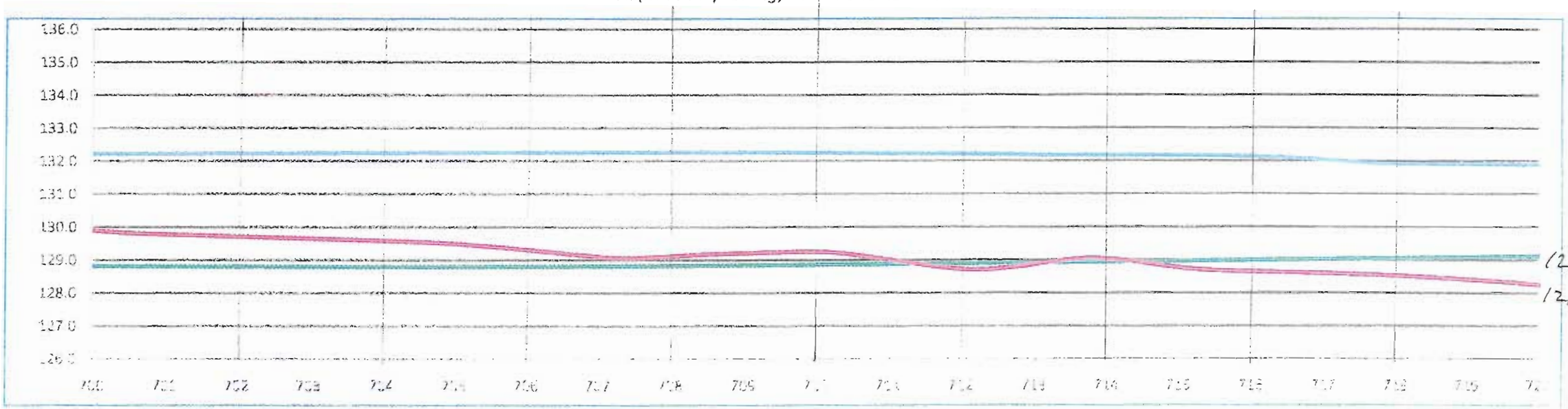
Cut view 31+750 (infered modified)



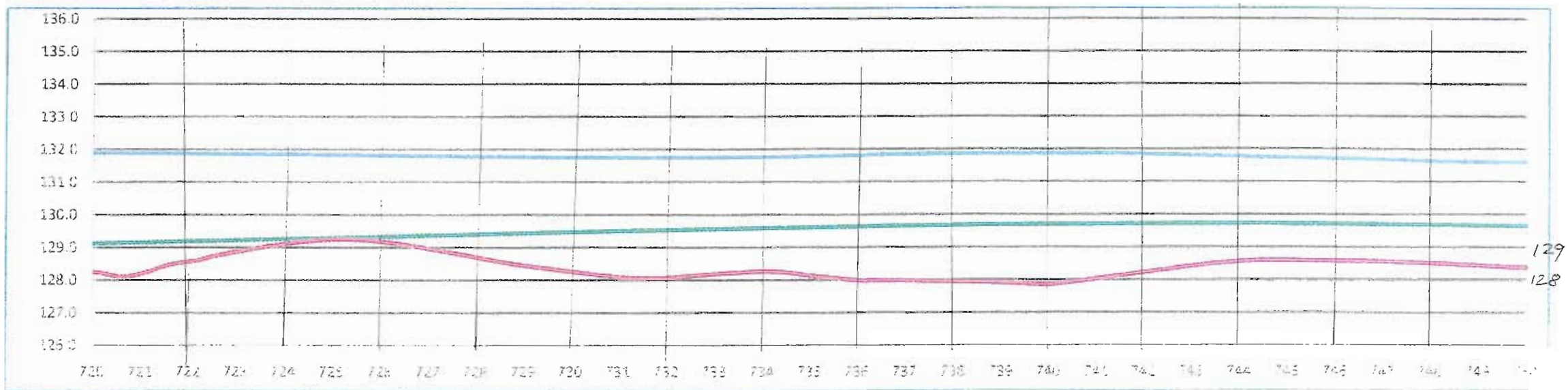
Date 2020-08-05

By MC

CL (manuel probing) 31 +700 to 31 + 720



CL (manuel probing) 31 +720 to 31 + 750



129
128

Date
By

Meadowbank Gold Project

Requirements

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta 31+750 Offset	SHIFT NIGHT: ☐ DAY ☒	DATE 8 AOUT 2010	SHEET 1 OF
To Sta 31+770 Offset	LOCATION: BAY GOOSE DIKE, SOUTH PORTION		
EQUIPMENT:			
DESCRIPTION:			

No.	ITEM	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1	Survey limits and excavation lines marked as per Drawings	GM	GB
2	Storage areas planned for disposal of removed materials	GM	GB
3	Occurrence of snow and ice removal method in place	GM	GB
4	Occurrence of boulders and removal method in place	GM	GB
5	Occurrence of hummocks and scalping method in place	GM	GB
6	Occurrence of surface and ground water and its impact mitigation in place	GM	GB
7	Presence of other unsuitable materials and removal method in place	GM	GB
8	Soil frozen or thawed and measures taken	GM	GB
9	Blasting requirement to remove unsuitable material and safety measure checked	N/A GM	N/A GB
10.	Adjustment made to suit design in field	GM	GB
11	Final walkover inspection before re-sloping or fill placement	GM	GB
12	"As-excavated" survey conducted	GM	GB
13.	Final sounding conducted of lake bottom surface	GM	GB

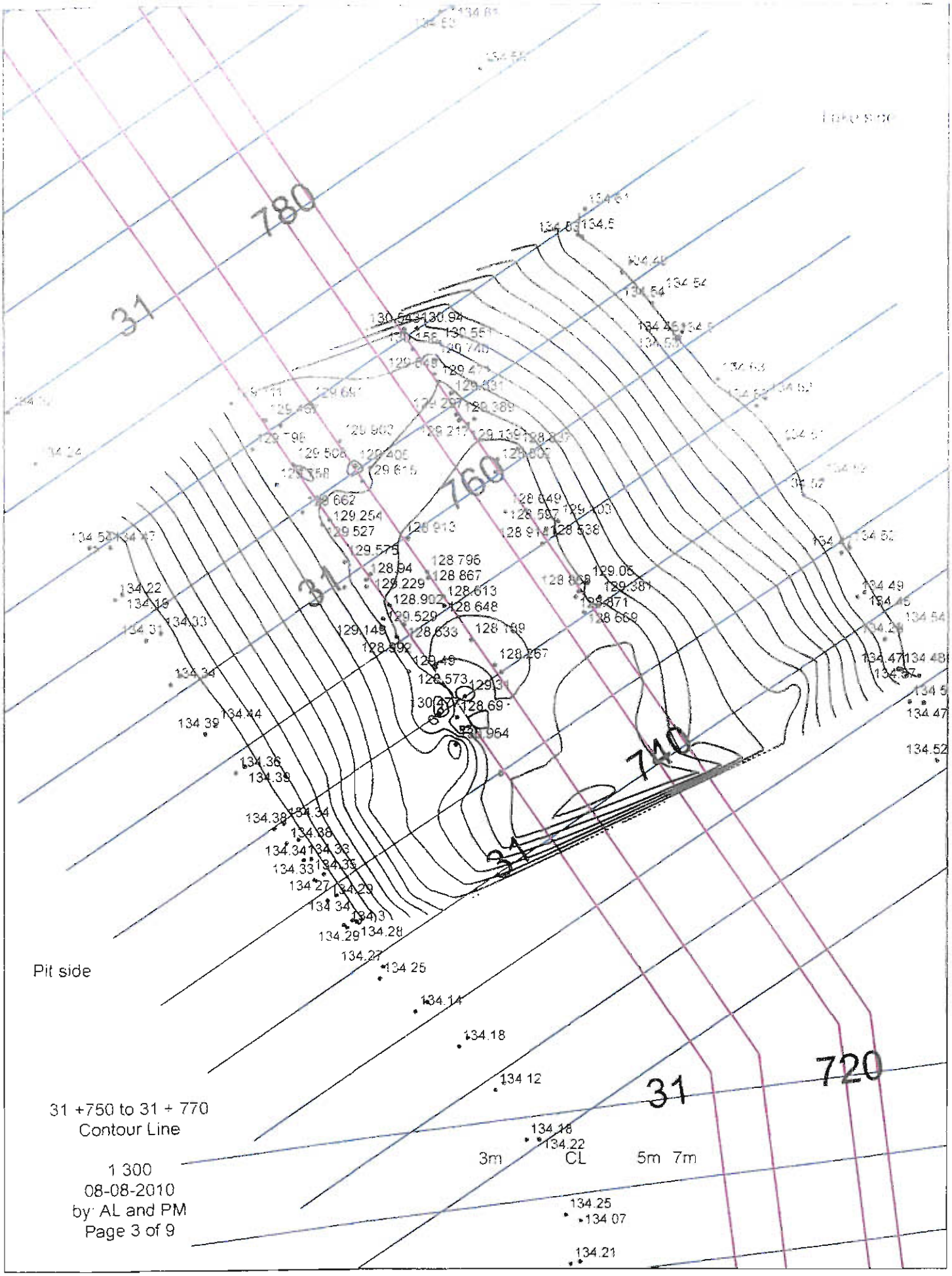
REMARKS: (1) SOUNDINGS FOR SILT ACCUMULATION. DATA REQUIRE BEFORE BACKFILL
(2) CLEAN SILT (FOCUS CLEANING @ +769m)
(3) CHECK FOR HIGH PT +760 to +764

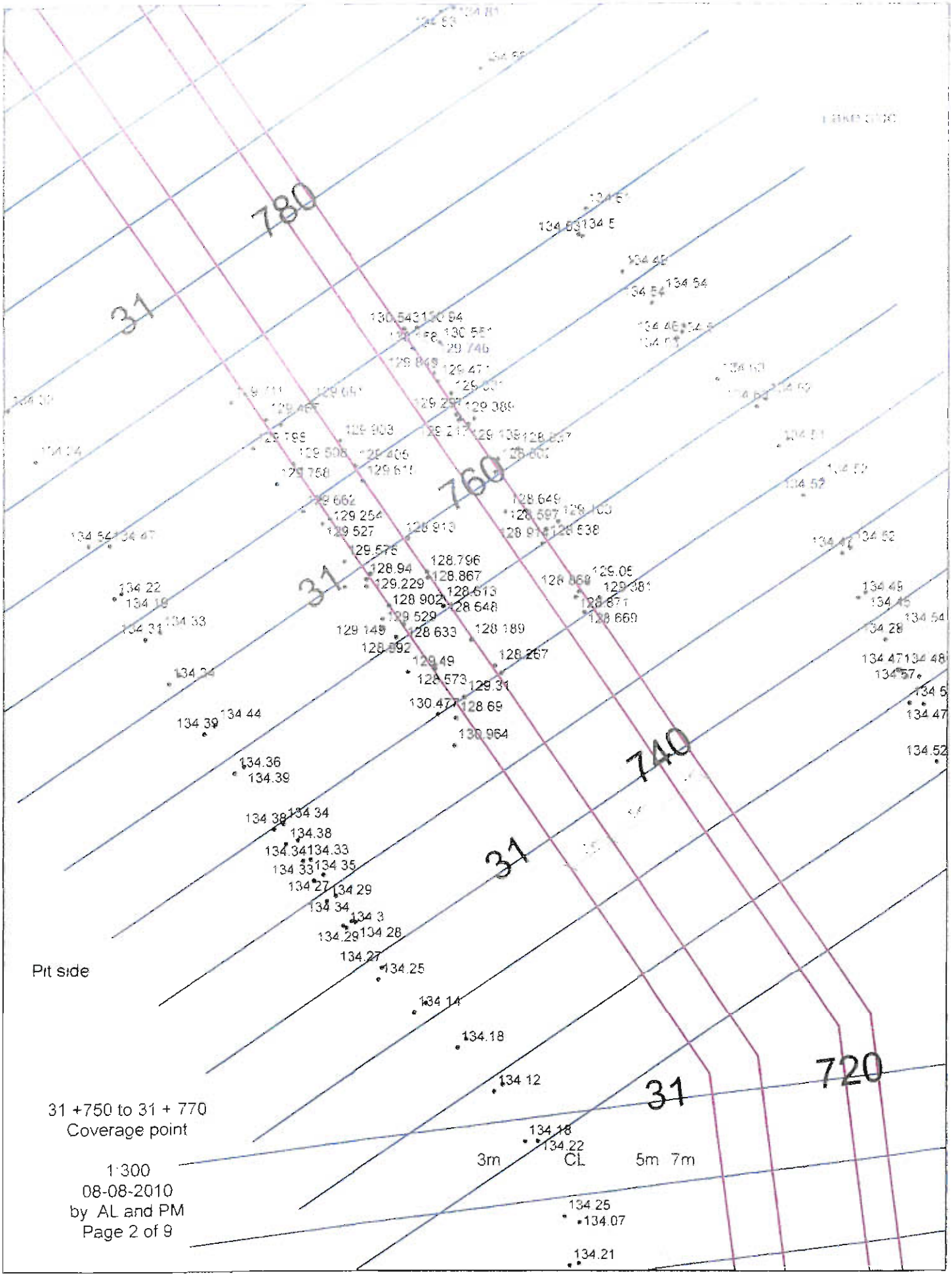
~~DEVIATIONS~~: (Attach list if necessary)
(4) AFTER ABOVE CAN BACKFILL TO TOE OF 31+770m (CREST OF 31+766m)

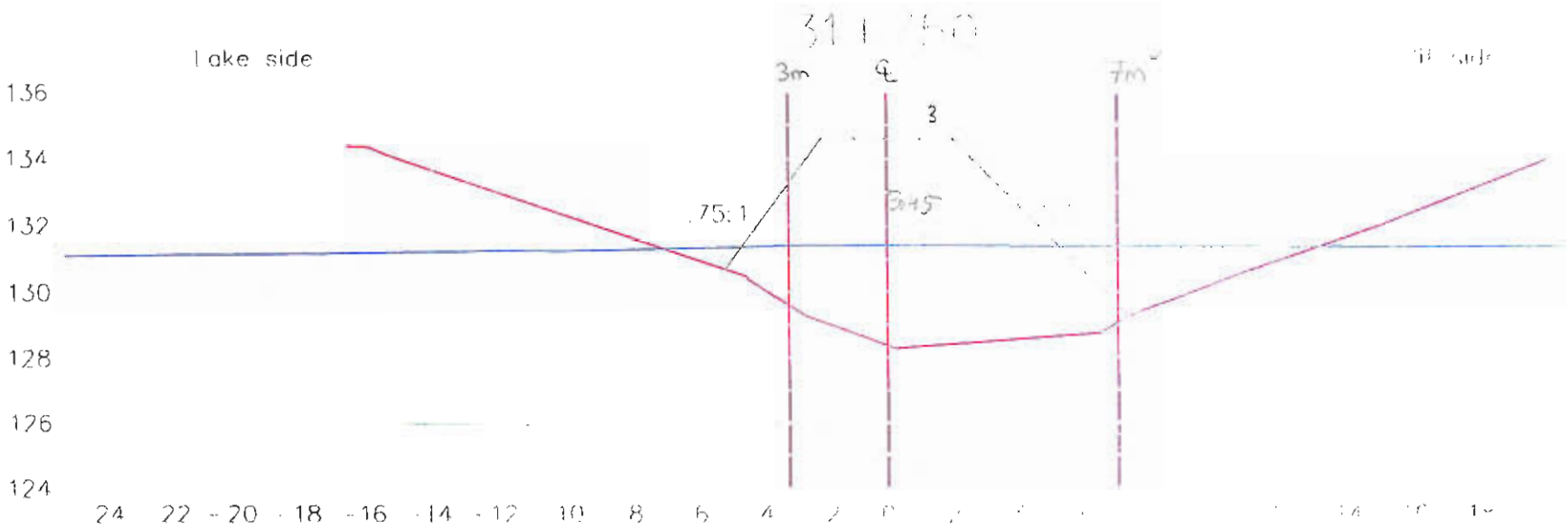
DATE OF RECTIFICATION:

SURVEY VERIFICATION	ACCEPTED BY QA Manager:	ACCEPTED BY OWNER:
NAME: GUY MORISSETTE	NAME: GRANT BUCHAN	NAME:
SIGNATURE: GM	SIGNATURE: GB	SIGNATURE:
DATE 8 AOUT 2010	DATE Aug 8, 2010	DATE

8 hrs AM


780
760
740
720
31
Pit side
31 +750 to 31 + 770
Contour Line
1 300
08-08-2010
by: AL and PM
Page 3 of 9
3m
CL
5m
7m


780
760
740
720
31
31
31
31
Pit side
31 +750 to 31 + 770
Coverage point
1:300
08-08-2010
by AL and PM
Page 2 of 9
3m
CL
5m 7m



Lake bed soil

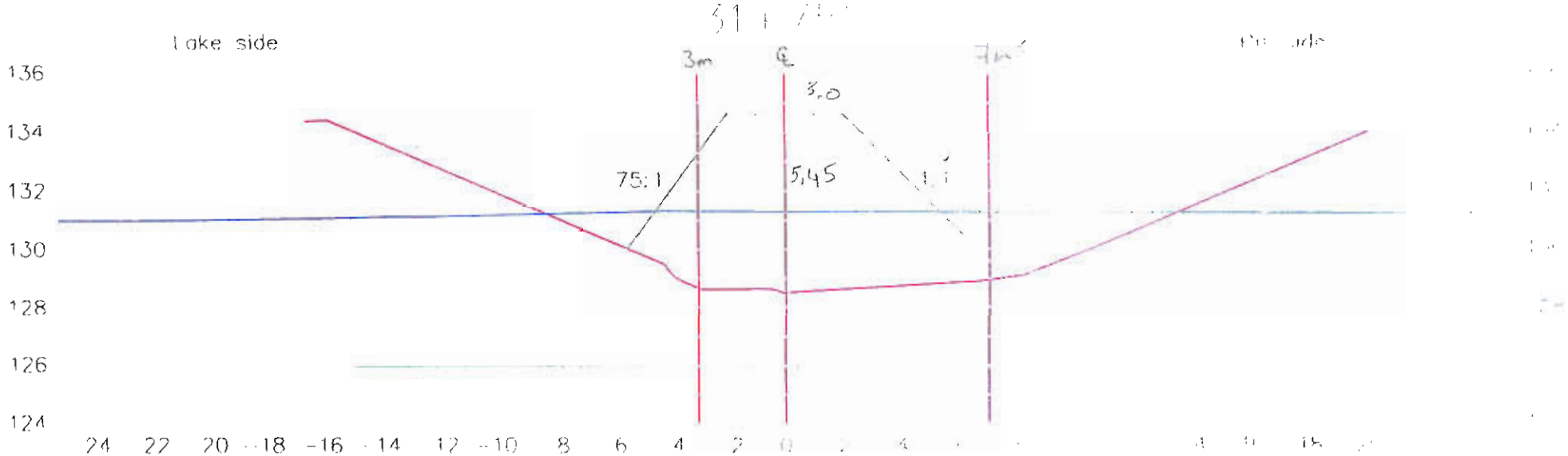
Dike

Inferred bed rock

Manual probing

Date: 080810

Par: Alex Lalancette et Pascale Martel



Lake bed soil

Dike

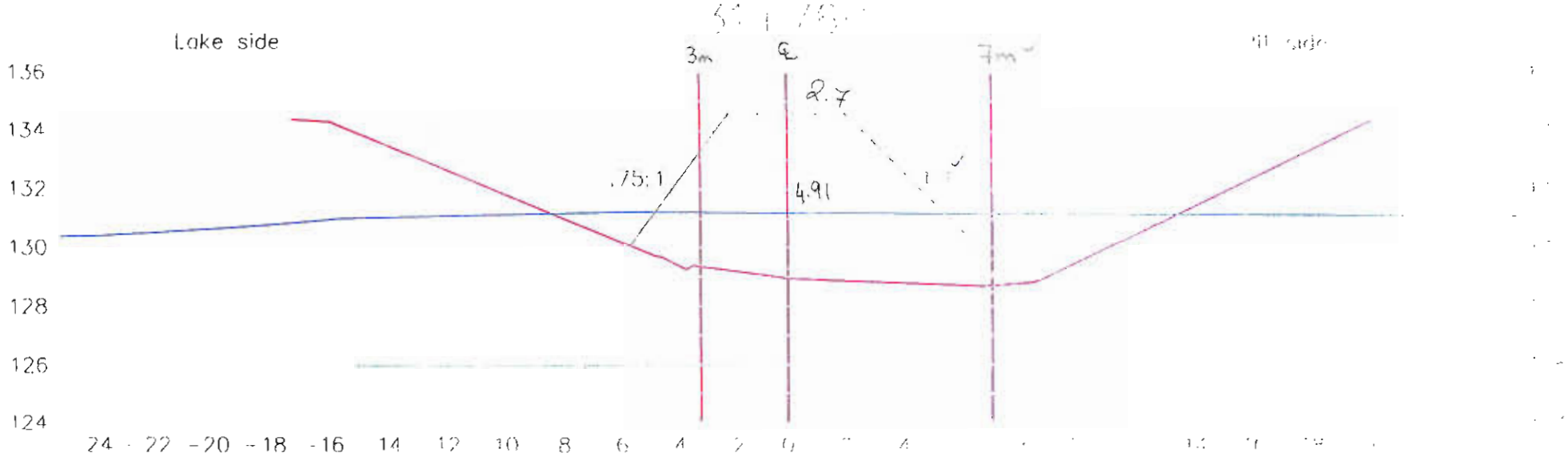
Inferred bed rock

Manual probing

Date: 080810

Page: 5/9

Par: Alex Lalancette et Pascale Martel



Lake bed soil

Dike

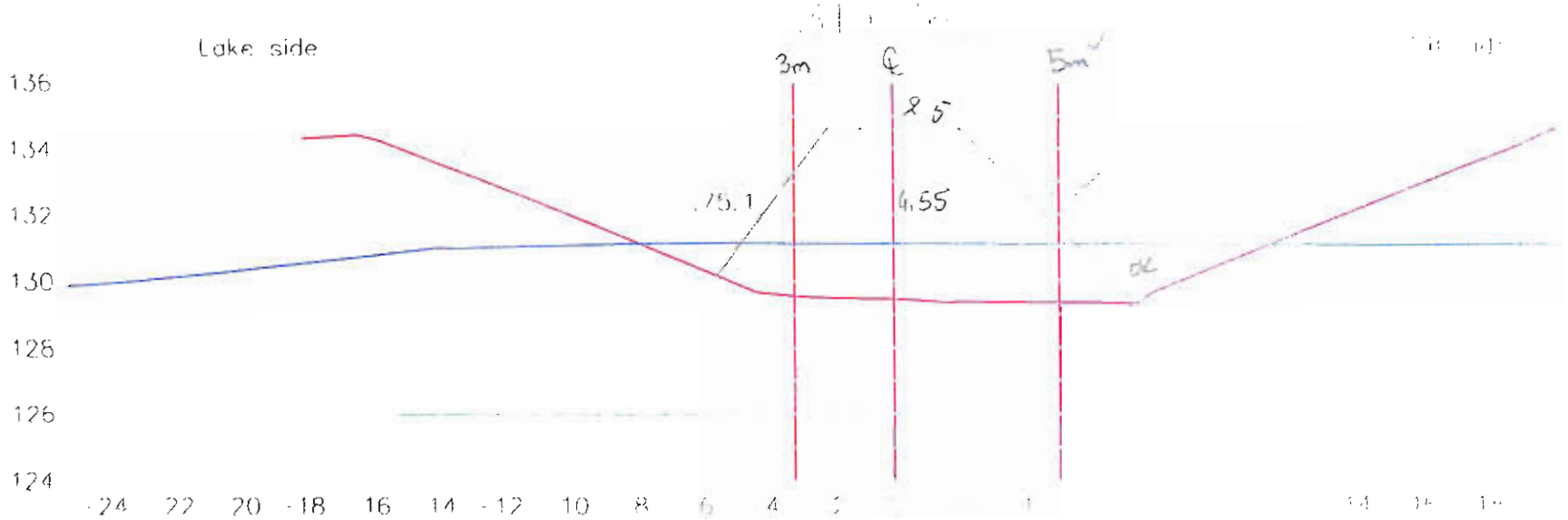
Inferred bed rock

Manual probing

Date: 080810

Page: 6/9

Par: Alex Lalancette et Pascale Mariel



Lake bed soil

Dike

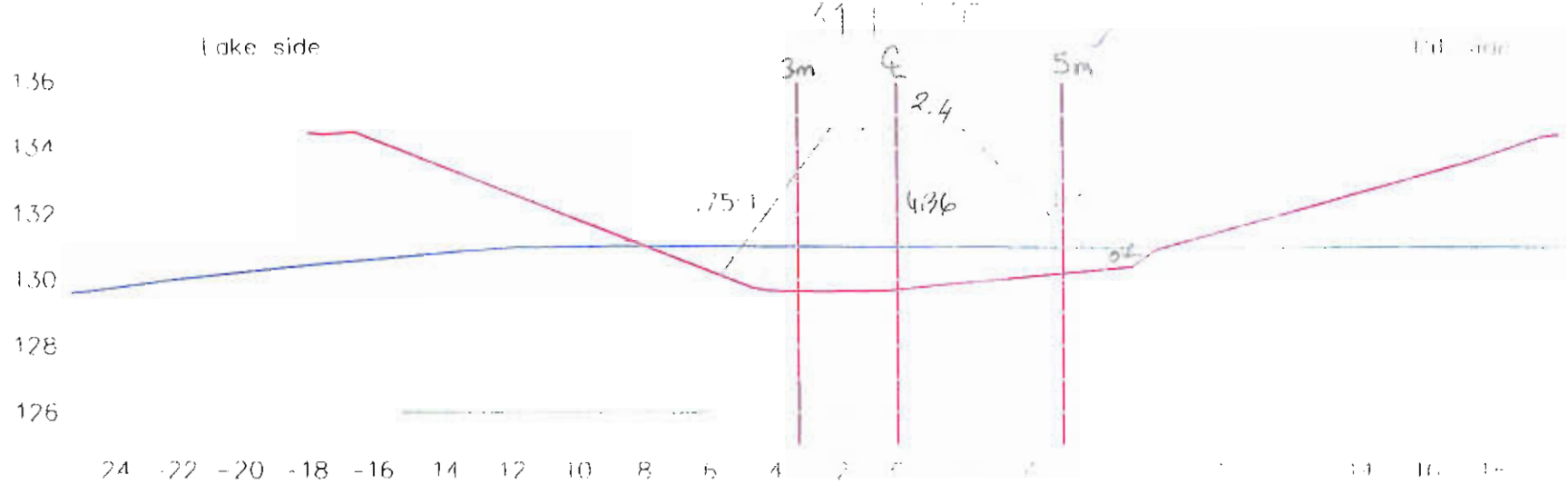
Inferred bed rock

Manual probing

Date: 080810

Page: 7/9

Par: Alex Lalancette et Pascale Martel



Lake bed soil

Dike

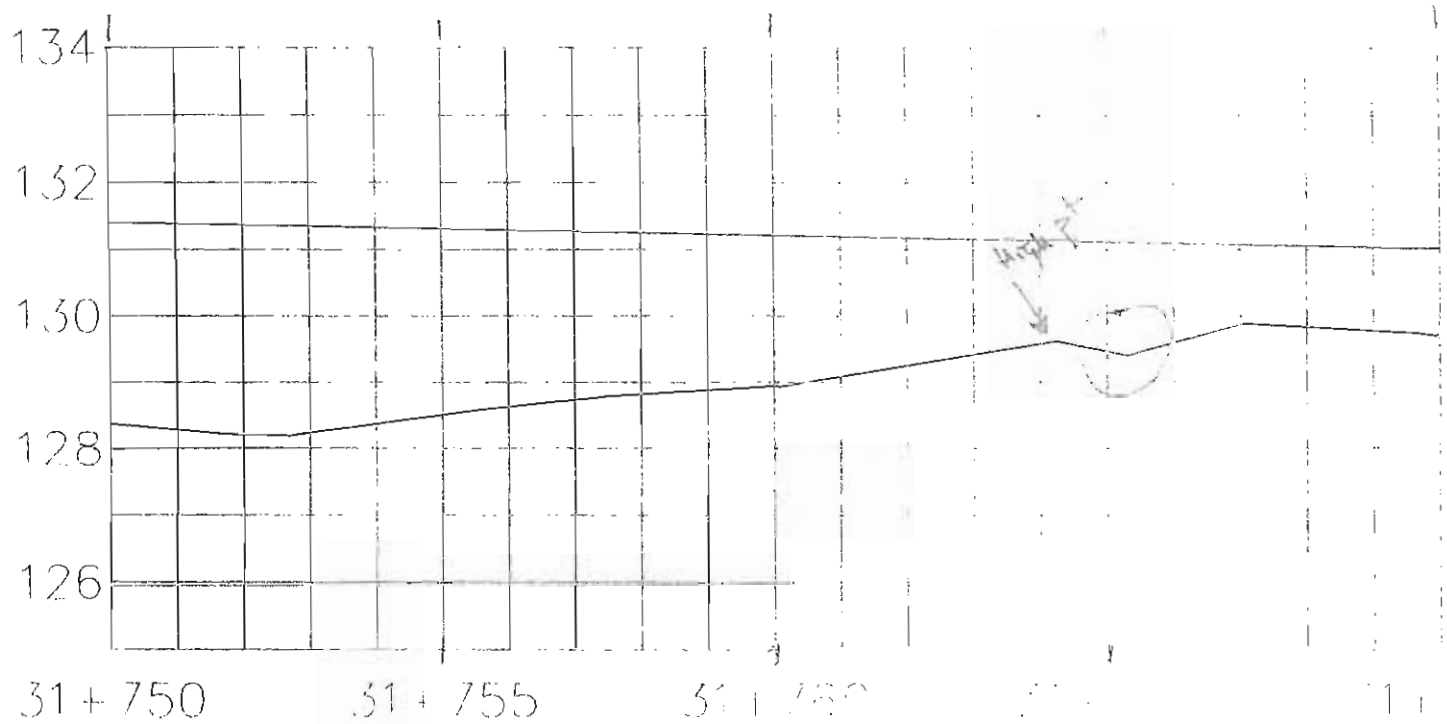
Inferred bed rock

Manual probing

Date: 080810

Page: 8/9

Par: Alex Lalancette et Pascale Martel



Lake bed soil

Dike

Inferred bed rock

Manual probing

Date: 080810

Page: 9/9

Par: Alex Lalancette et Pascale Martel

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 31+~~875~~ 775 Offset	SHIFT: NIGHT: ☐ DAY: ☒	DATE: 9 AOUT 2010	SHEET 1 OF
To Sta. 31+800 Offset	LOCATION: BAY GOOSE DIKE, SOUTH PORTION		
EQUIPMENT:			
DESCRIPTION			

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	GM	CB.
2.	Storage areas planned for disposal of removed materials	GM.	CB.
3.	Occurrence of snow and ice removal method in place	GM	CB.
4.	Occurrence of boulders and removal method in place	GM	CB.
5.	Occurrence of hummocks and scalping method in place	GM	CB.
6.	Occurrence of surface and ground water and its impact mitigation in place	GM	CB.
7.	Presence of other unsuitable materials and removal method in place	GM	CB.
8.	Soil frozen or thawed and measures taken	GM	CB.
9.	Blasting requirement to remove unsuitable material and safety measure checked	N/A GM	N/A CB.
10.	Adjustment made to suit design in field	GM	CB.
11.	Final walkover inspection before re-sloping or fill placement	GM	CB.
12.	"As-excavated" survey conducted	GM	CB.
13.	Final sounding conducted of lake bottom surface	GM	CB.

REMARKS:
① CLEAN / SILT ACCUMULATION. FOCUS ON DEPRESSIONS @ +783 to +784
② APPROVED FOR BACKFILL TO 31+800 (toe) 31+775 (crest) & +795 to +797

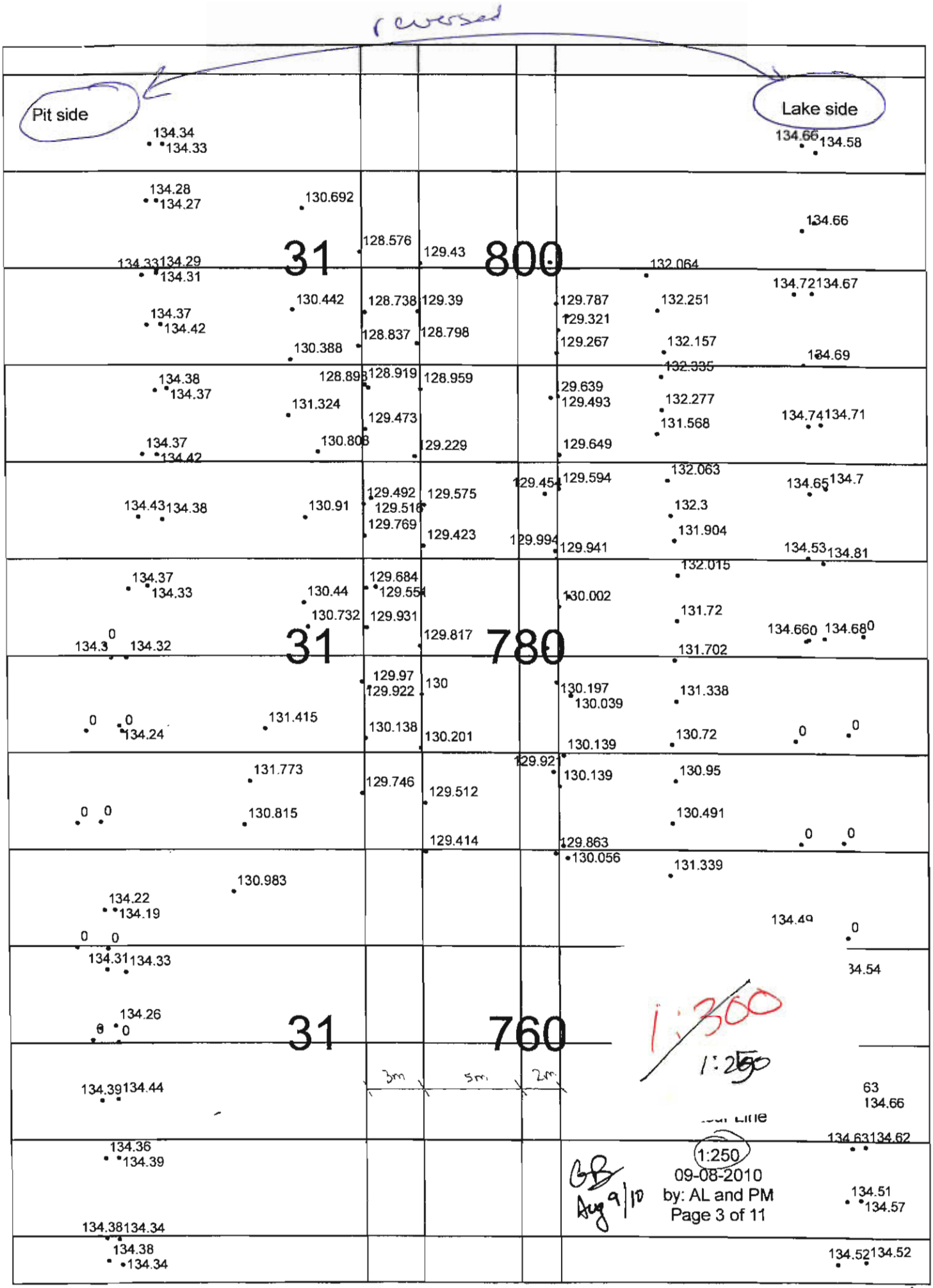
DEVIATIONS: (Attach list if necessary)

DATE OF RECTIFICATION:

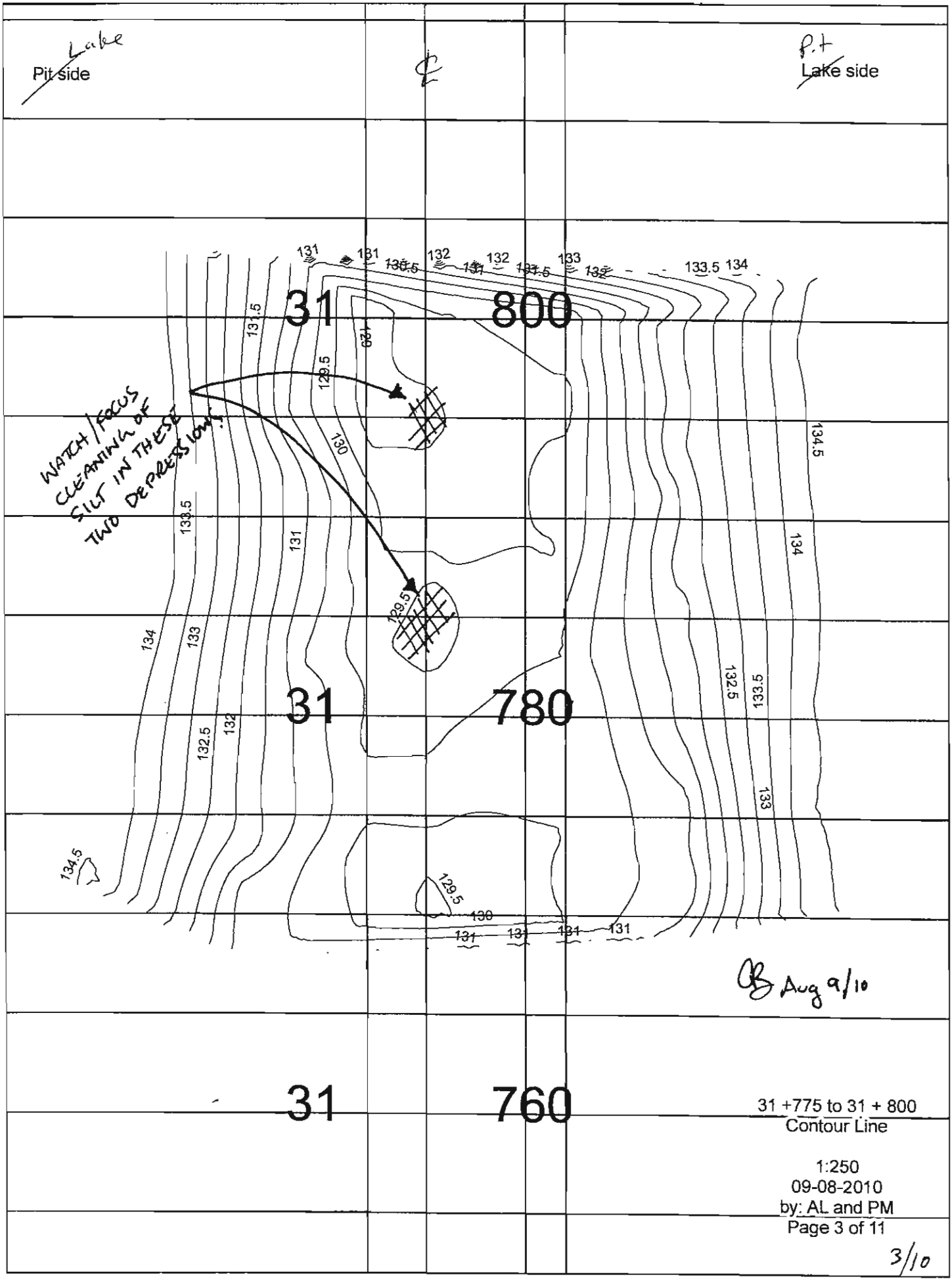
SURVEY VERIFICATION	ACCEPTED BY QA Manager:	ACCEPTED BY OWNER:
NAME: GUY MORISSETTE	NAME: GRANT BURNS	NAME:
SIGNATURE: GM	SIGNATURE: CB	SIGNATURE:
DATE 9 AOUT 2010	DATE Aug 9, 2010	DATE

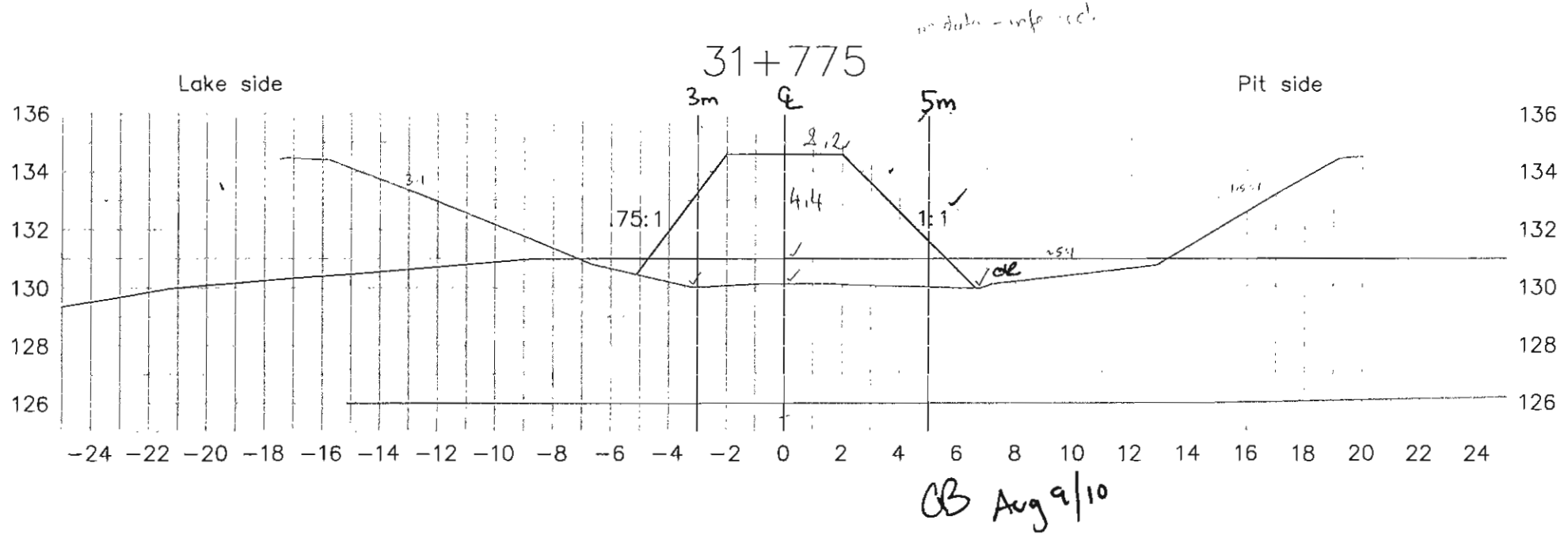
6:15 hrs AM

COPY OF ORIGINAL 1/10


reversed
Pit side
Lake side
31 800
31 780
31 760
3m
5m
2m
1:300
1:250
1:250
09-08-2010
by: AL and PM
Page 3 of 11
Aug 9/10

2/16


Lake
Pit side
Lake side
31 800
31 780
31 760
131
131
132
132
133
133.5 134
131.5
129
129.5
130
134.5
133.5
131
134
133
132.5
132
WATCH / FOCUS CLEANING OF SILT IN THESE TWO DEPRESSIONS
129.5
134
133
132.5
132
133.5
133
134.5
129.5
130
131
131
131
131
Aug 9/10
31 +775 to 31 + 800
Contour Line
1:250
09-08-2010
by: AL and PM
Page 3 of 11
3/10



CB Aug 9/10

Lake bed soil

Dike

Inferred bed rock

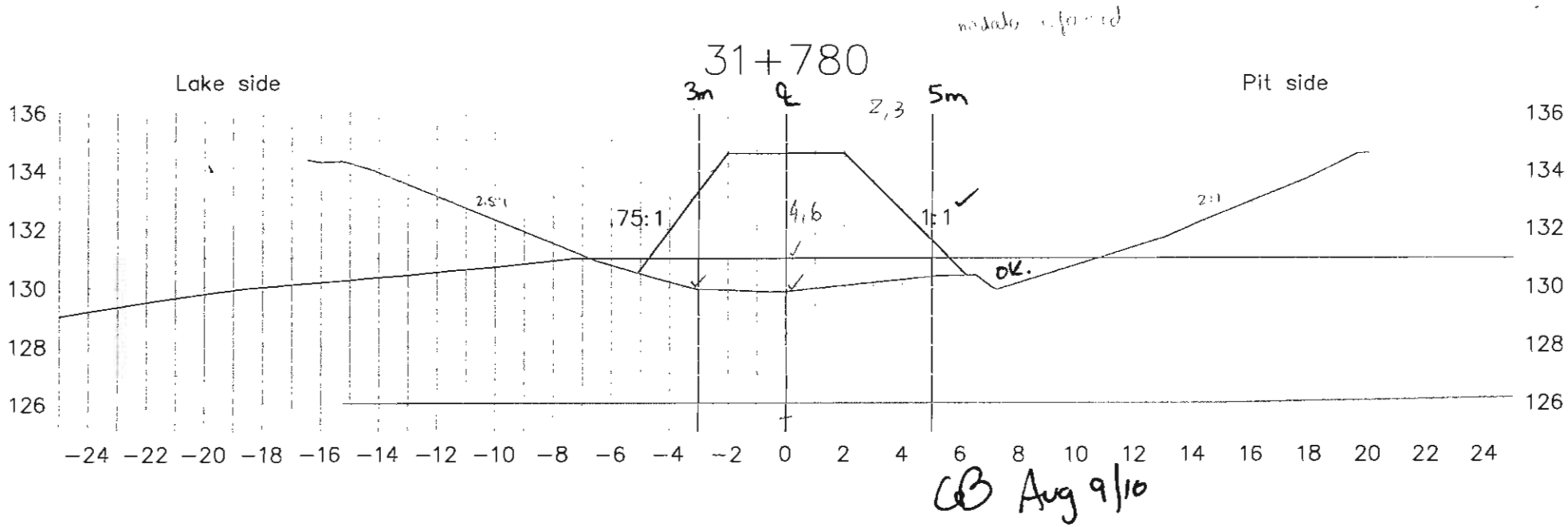
Manual probing

Date: 090810

Page: 4/10

Par: Alex Lalancette et Pascale Martel

4/10



CB Aug 9/10

Lake bed soil

Dike

Inferred bed rock

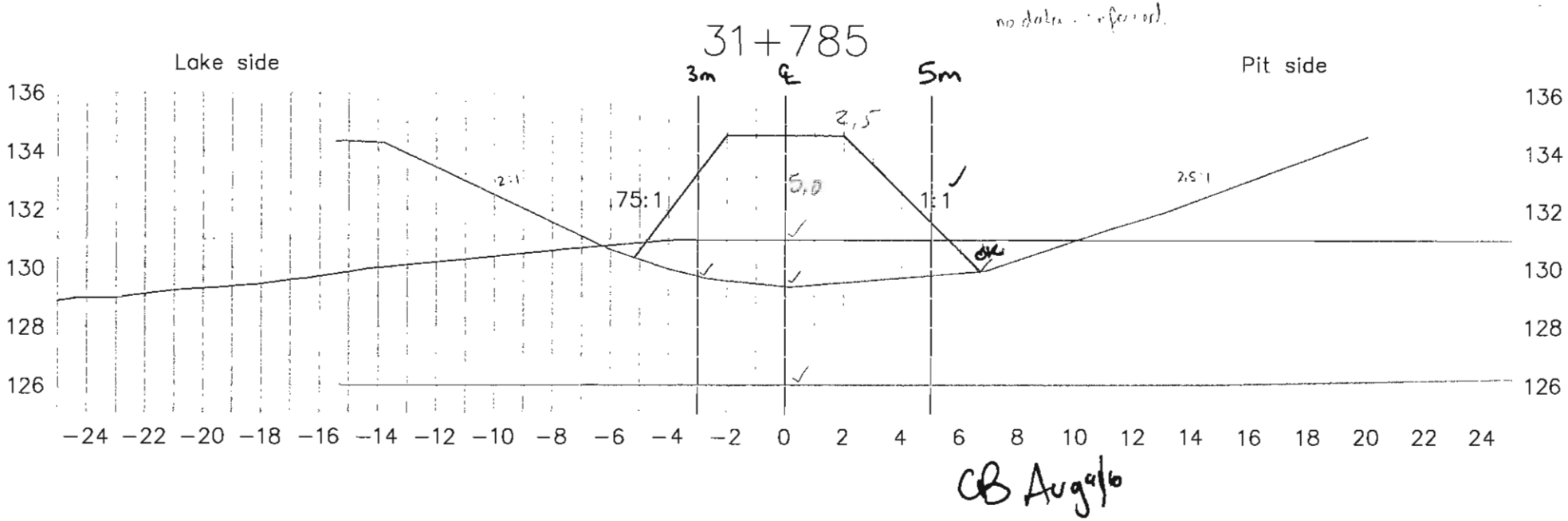
Manual probing

Date: 090810

Page: 5/10

Par: Alex Lalancette et Pascale Martel

a1/5



CB Aug 9/10

Lake bed soil

Dike

Inferred bed rock

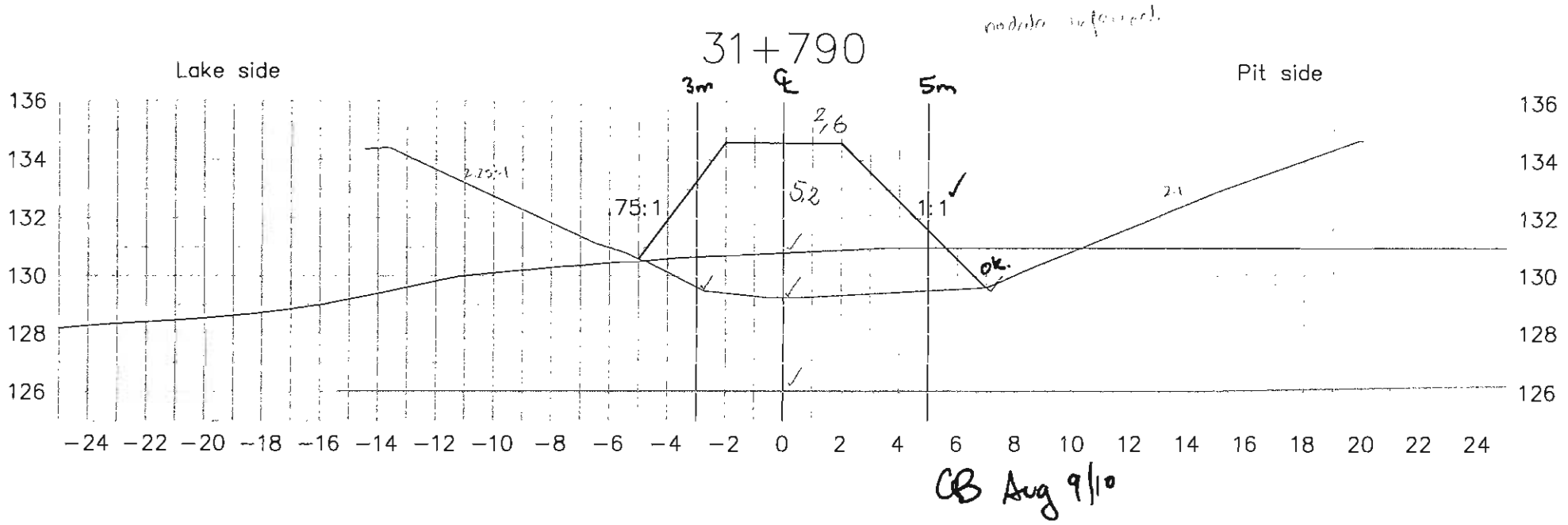
Manual probing

Date: 090810

Page: 6/10

Par: Alex Lalancette et Pascale Martel

9/9



Lake bed soil

Dike

Inferred bed rock

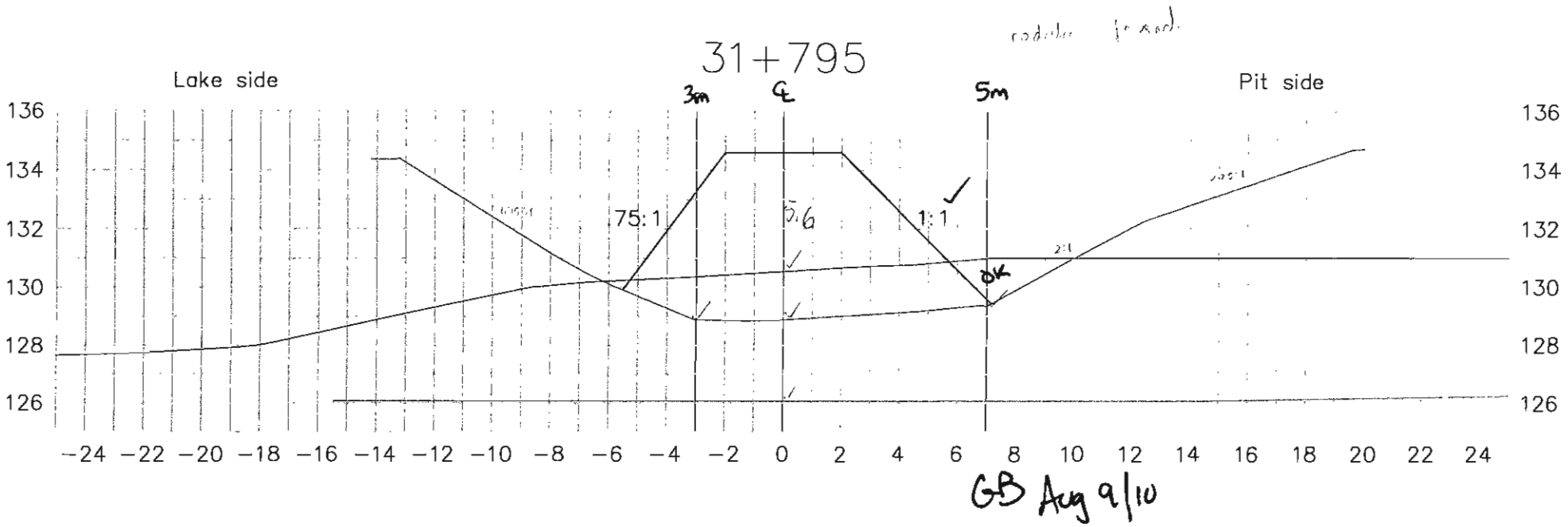
Manual probing

Date: 090810

Page: 7/10

Par: Alex Lalancette et Pascale Martel

01/t



Lake bed soil

Dike

Inferred bed rock

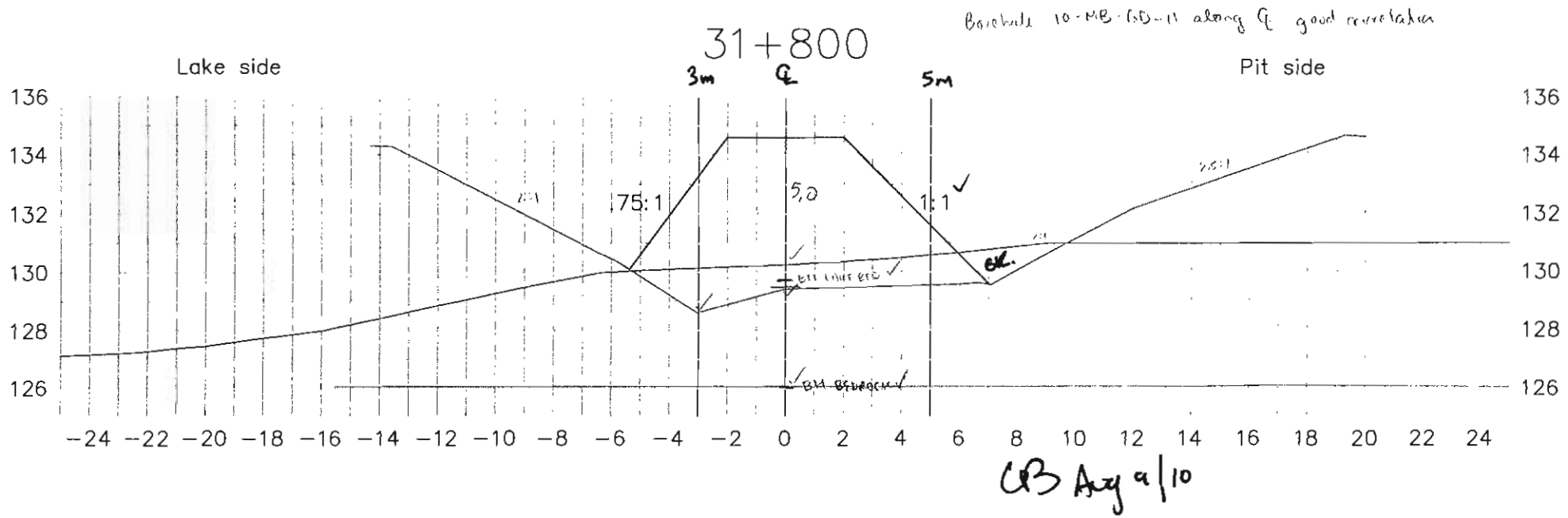
Manual probing

Date: 090810

Page: 8/10

Par: Alex Lalancette et Pascale Martel

01/8



Boreholes 10-MB-05-11 along ℄ good correlation

CB Aug 9/10

Lake bed soil

Dike

Inferred bed rock

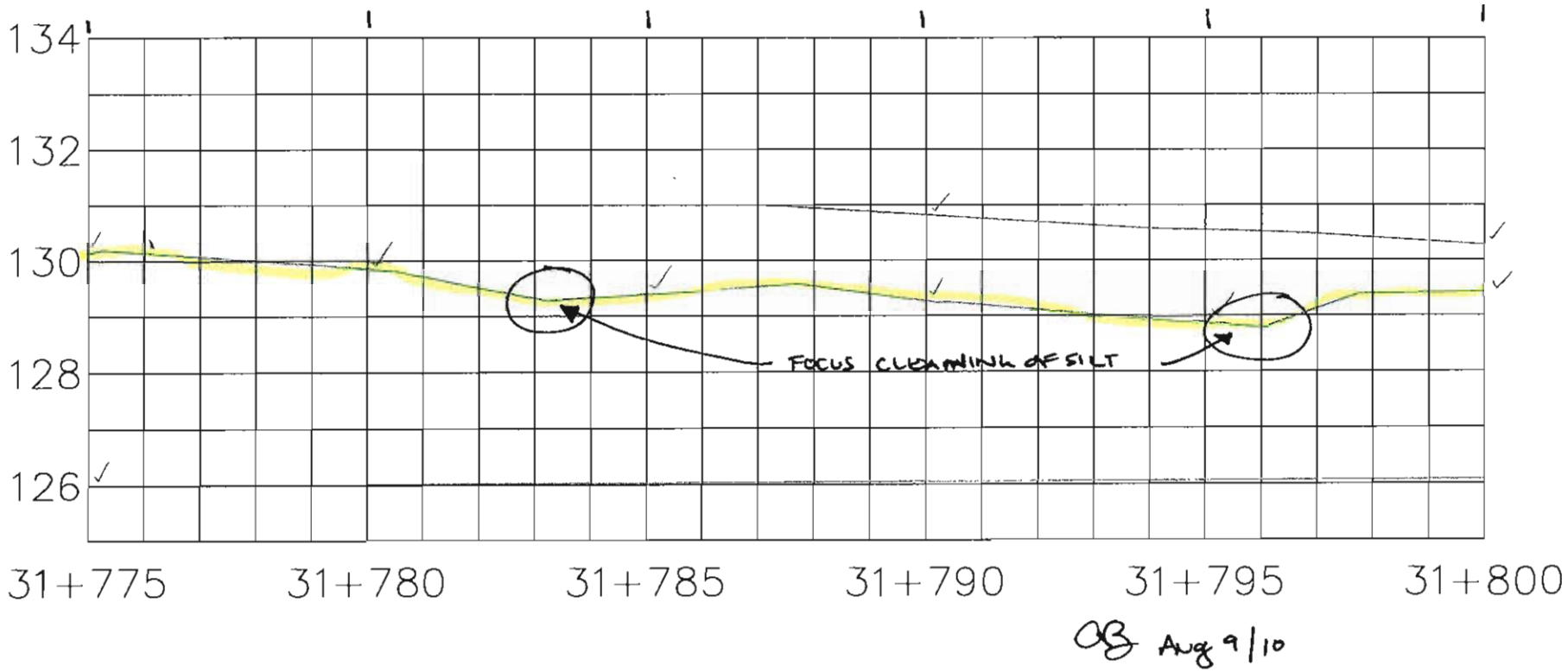
Manual probing

Date: 090810

Page: 9/10

Par: Alex Lalancette et Pascale Martel

9/10



Lake bed soil

Dike

Inferred bed rock

Manual probing

Date: 090810

Page: 10/10

Par: Alex Lalancette et Pascale Martel

10/10

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta 31+805 Offset	SHIFT: NIGHT: ☐ DAY: ☒	DATE 10 Aug 2010	SHEET 1 OF 8
To Sta. 31+820 Offset	LOCATION: BAY Goose Dike - South Portion		
EQUIPMENT:			
DESCRIPTION:			

	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
	Survey lines and grades checked to ensure the locations conform with the Drawings	AM	GB.
	Storage areas planned for disposal of removed materials	AM	GB.
	Occurrence of snow and ice removal method in place	AM	GB.
	Occurrence of boulders and removal method in place	AM	GB.
	Occurrence of hummocks and scalping method in place	AM	GB.
	Treatment of surface and ground water and its impact mitigation in place	AM	GB.
	Presence of other unsuitable materials and removal method in place	AM	GB.
			GB.
		N/A	GB
			GB.
			GB
			GB.
			GB.

- alignment change: 0.5m upstream start at 31+812m. Will blend back into original alignment when appropriate

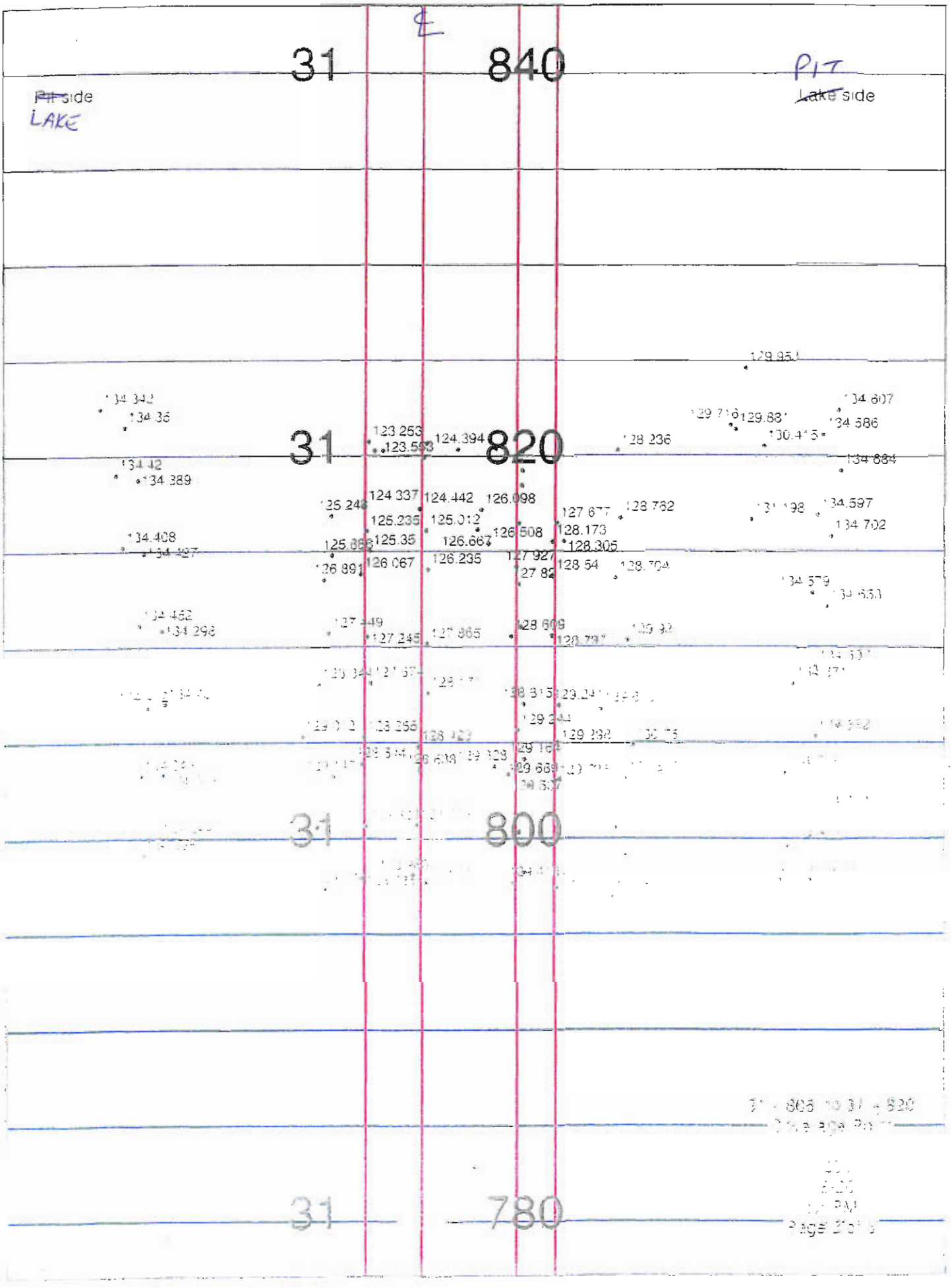
GRANT BURNS
Aug 11, 2010.
15:30 hrs

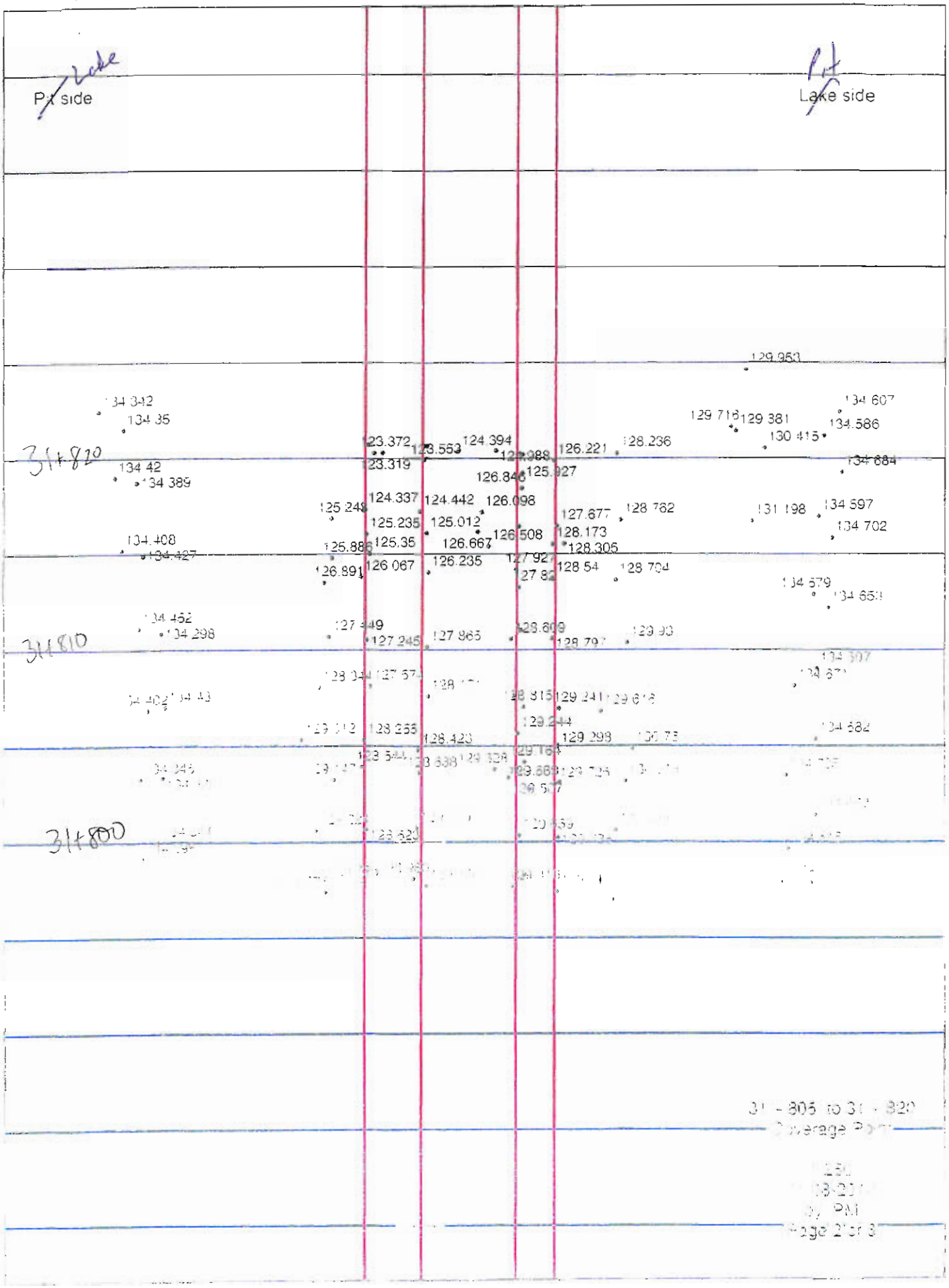
Golder Associates

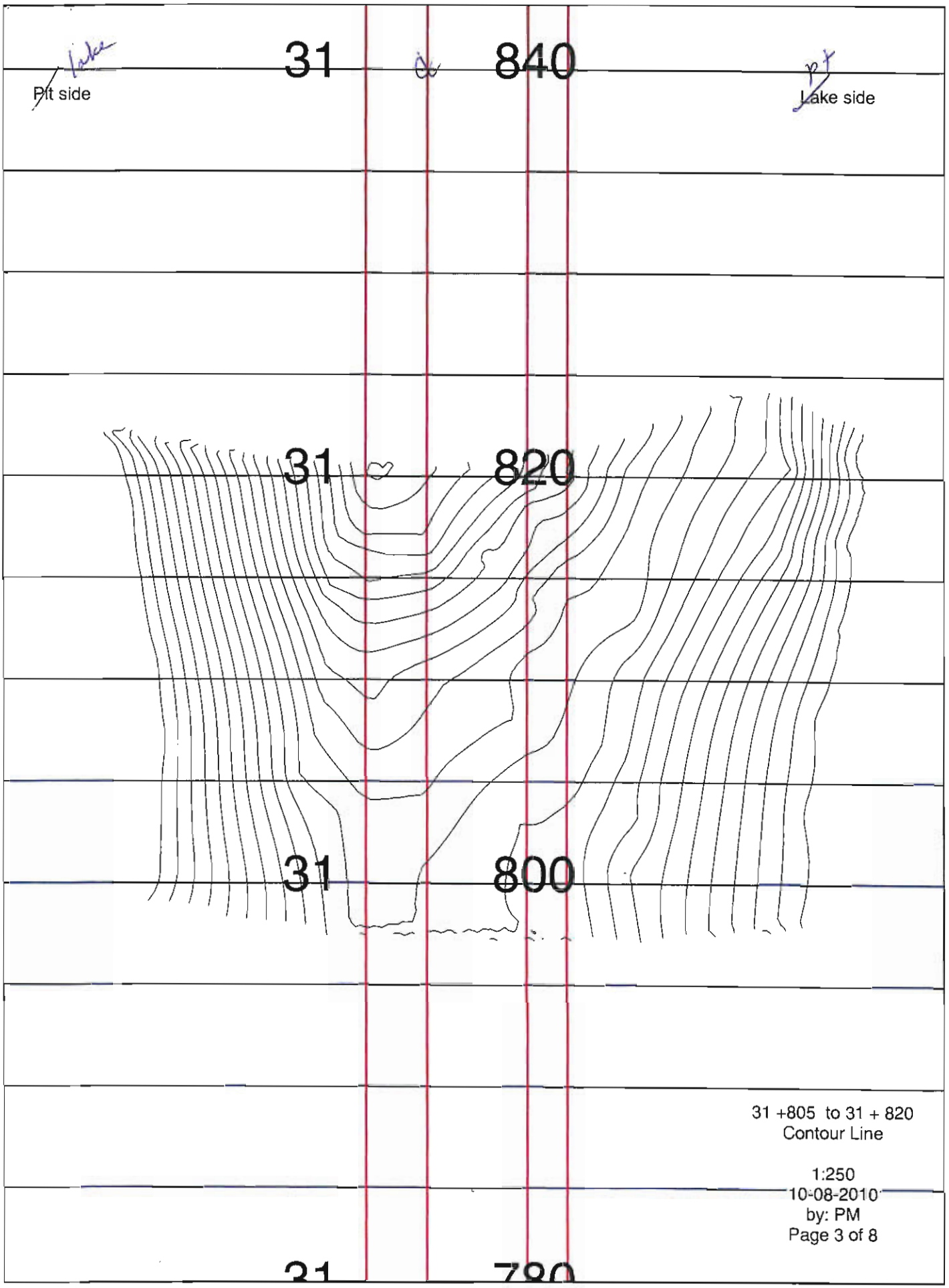
SUBJECT BAY-GOOSE DIKE		
Job No. 09-1428-5007	Made by GB	Date Aug 11, 2010
	Reviewed —	Sheet 1 of 1

APPROVAL PACKAGE 31+805 to 31+820m

- AFTER RECEIVING ORIGINAL FOUNDATION APPROVAL PACKAGE I REQUESTED ADDITIONAL SURVEY (MANUAL SOUNDINGS) BETWEEN ℄ + 5m DOWNSTREAM
- ADDITIONAL POINTS WERE TAKEN, BUT ALONG 5m ALIGNMENT FROM ℄ ON DOWNSTREAM (D/S) SIDE. THIS IS NOT WHAT WAS REQUESTED
- RECEIVED NEXT PACKAGE @ ~8:30 PM.
- REVIEWED FIELD INSPECTOR NOTES (AGAIN)
- REQUESTED ADDITIONAL POINTS ALONG 31+820m WHICH WERE PROVIDED.
- 31+815 INDICATES SHARP CHANGE IN BEDROCK PROFILE TO PIT SIDE IMMEDIATELY ADJACENT TO ℄
- TARMAC UNABLE TO REACH THIS DEPTH TO CARRY OUT CHIPPING.
- TO FACILITATE WORK CHANGED ℄ ALIGNMENT BY 0.5m U/S. CONTACT WITH GASTON BLANCHETTE WAS ATEMPED PRIOR TO CHANGE.
- TO BLEND CHANGE OF ℄ START CHANGE @ 31+812m
- WILL BLEND BACK TO ORIGINAL ALIGNMENT WHEN APPROPRIATE.
- BEDROCK WAS CLEANED PRIOR TO PUSH OF BACKFILL PUSH.

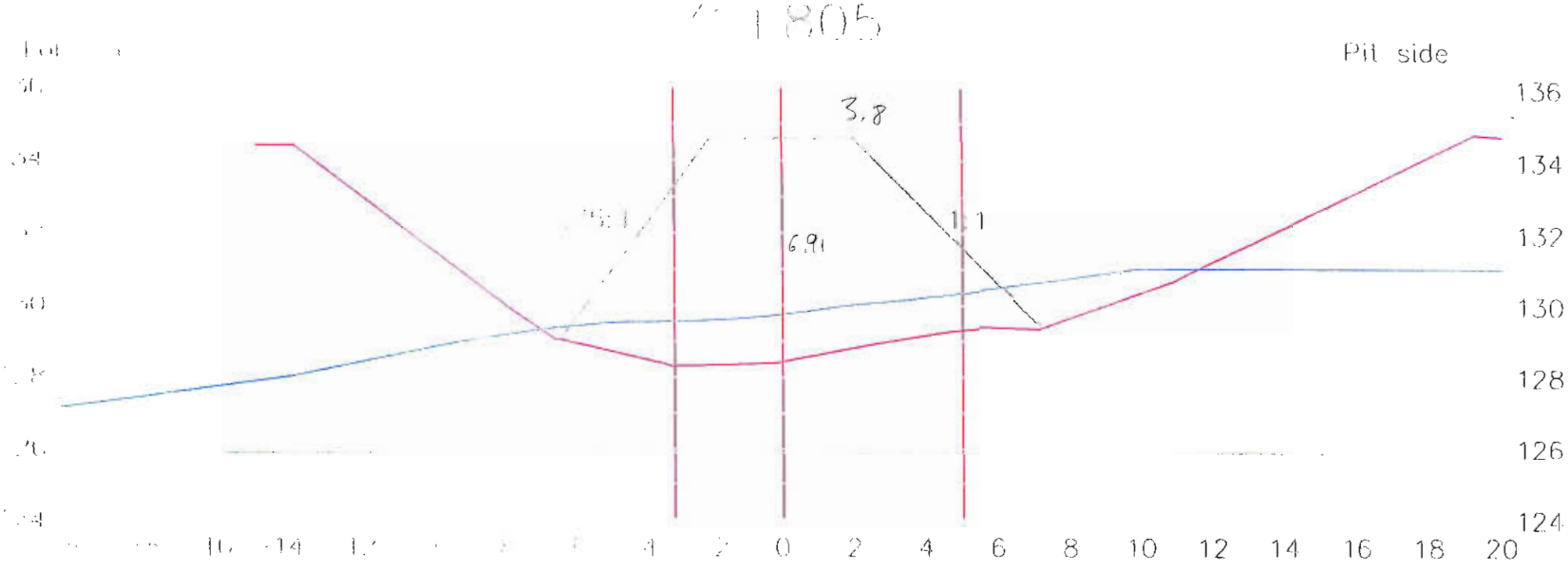

31 840
℄
~~Pit~~ side
LAKE
PIT
~~Lake~~ side
31 820
123.253
123.593
124.394
128.236
129.88
130.415
134.607
134.586
134.884
134.342
134.35
134.42
134.389
124.337
124.442
126.098
125.246
125.235
125.012
126.508
127.677
128.782
128.173
128.305
125.35
126.667
126.067
126.235
127.927
128.54
128.704
134.597
134.702
134.408
134.427
134.579
134.462
134.298
127.449
127.245
127.865
128.609
31 800
129.244
129.292
129.689
31 780


Pt side
Lake side
31+820
31+810
31+800
129.950
134.342
134.35
134.42
134.389
134.408
134.427
134.452
134.298
134.607
129.716
129.381
134.586
130.415
134.684
131.198
134.597
134.702
134.579
134.659
123.372
123.319
123.563
124.394
126.221
128.236
126.846
125.927
124.337
124.442
126.098
125.249
125.235
125.012
126.508
127.677
128.782
128.173
128.305
125.886
125.35
126.667
126.891
126.067
126.235
127.92
128.54
128.704
127.449
127.245
127.865
128.809
129.93
129.241
129.244
129.298
128.255
128.423
128.620
31 - 805 to 31 - 820
Average



31 +805 to 31 + 820
Contour Line

1:250
10-08-2010
by: PM
Page 3 of 8



Lake bed soil

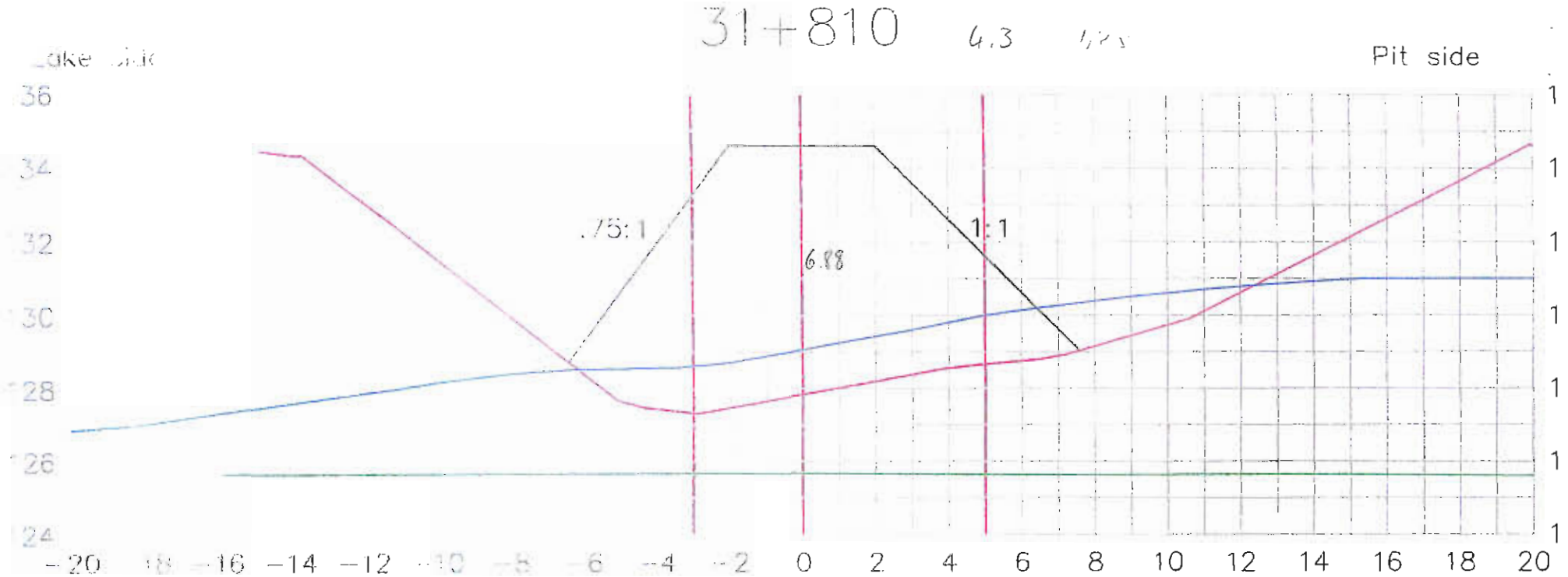
Dike

Target surface

Manual probing

Date: 090810

Par: Alex Lalancette et Pascale Martel



Lake bed soil

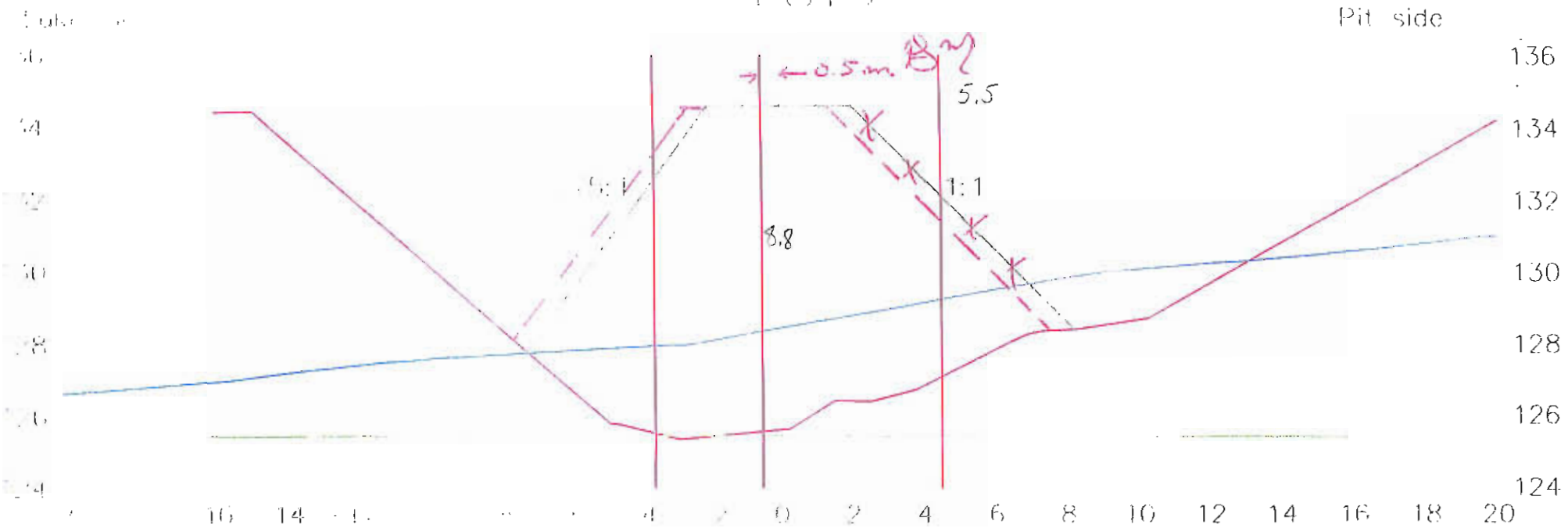
Dike

Target surface

Manual probing

Date: 090810

Par: Alex Lalancette et Pascale Martel



Lake bed soil

Dike

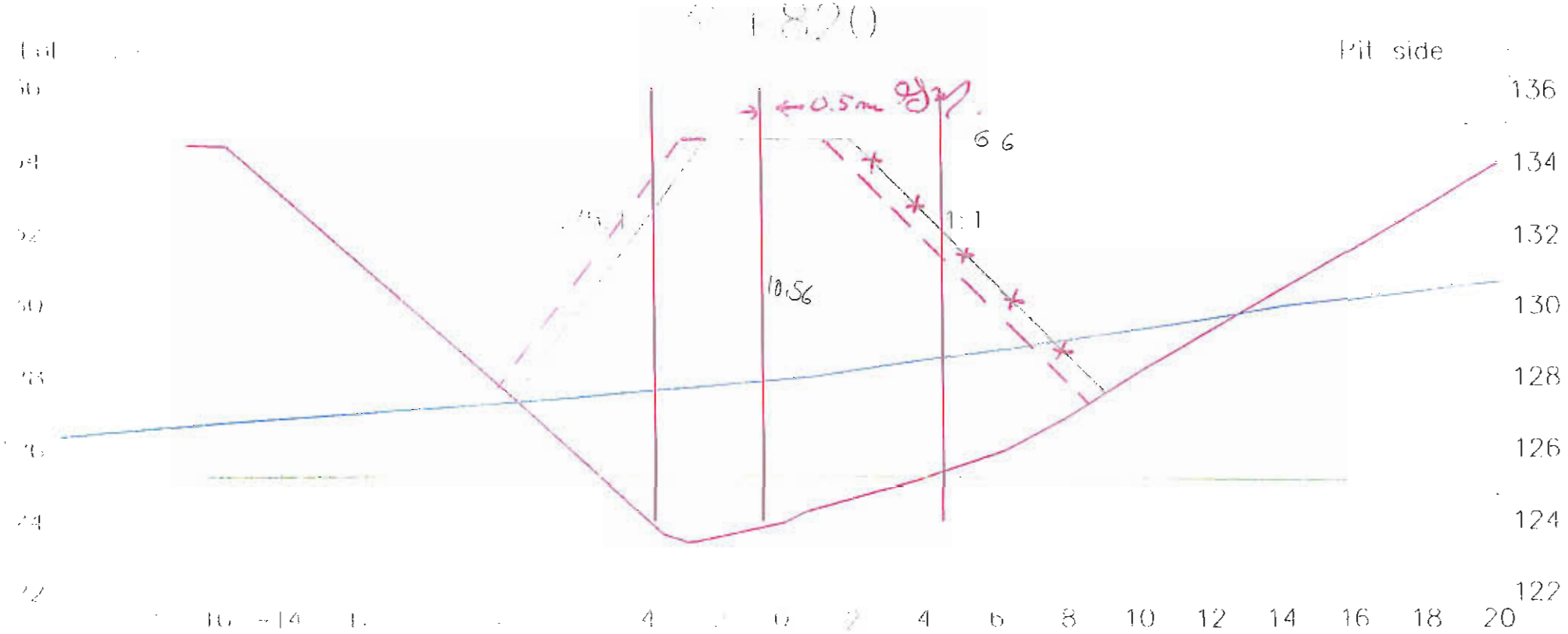
Target surface

Manual probing

Date: 090810

Page: 6/8

Par: Alex Lalancette et Pascale Martel



Lake bed soil

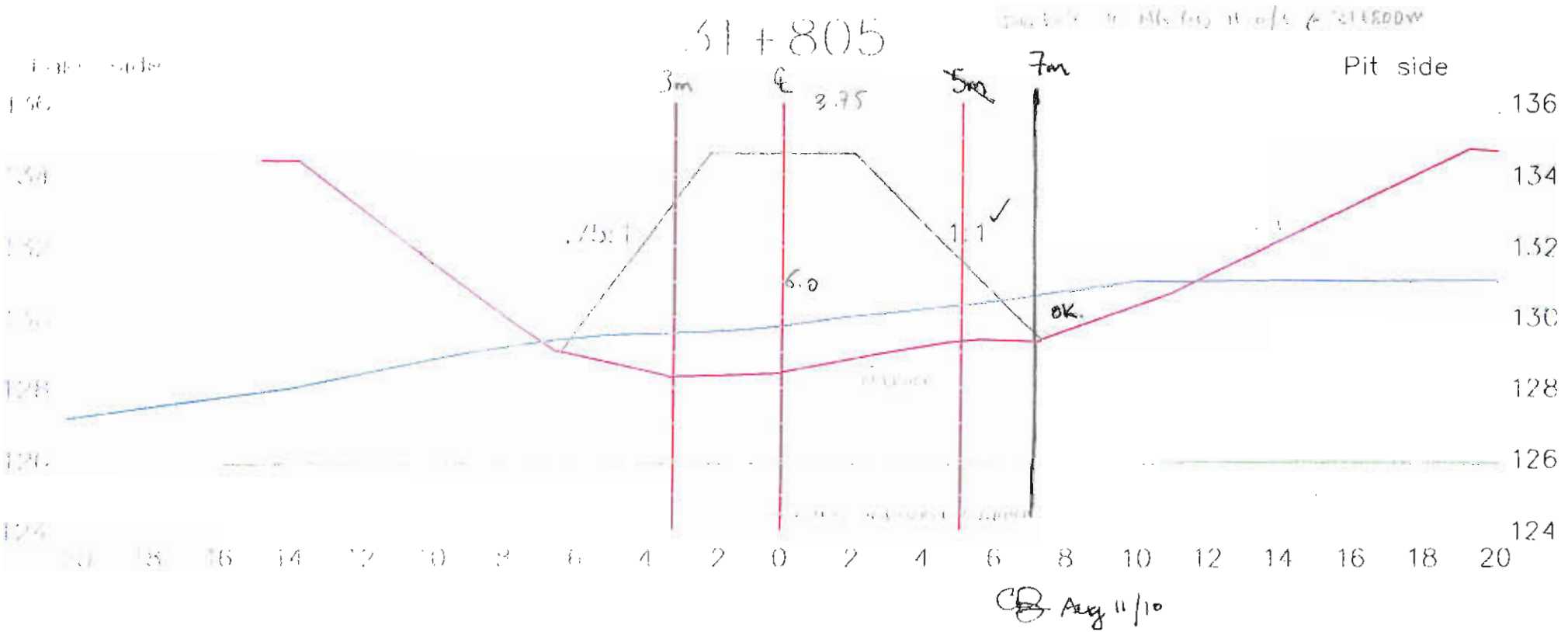
Dike

Target surface

Manual probing

Date: 090810

Par: Alex Lalancette et Pascale Martel



Aug 11/10

Lake bed soil

Dike

Target surface

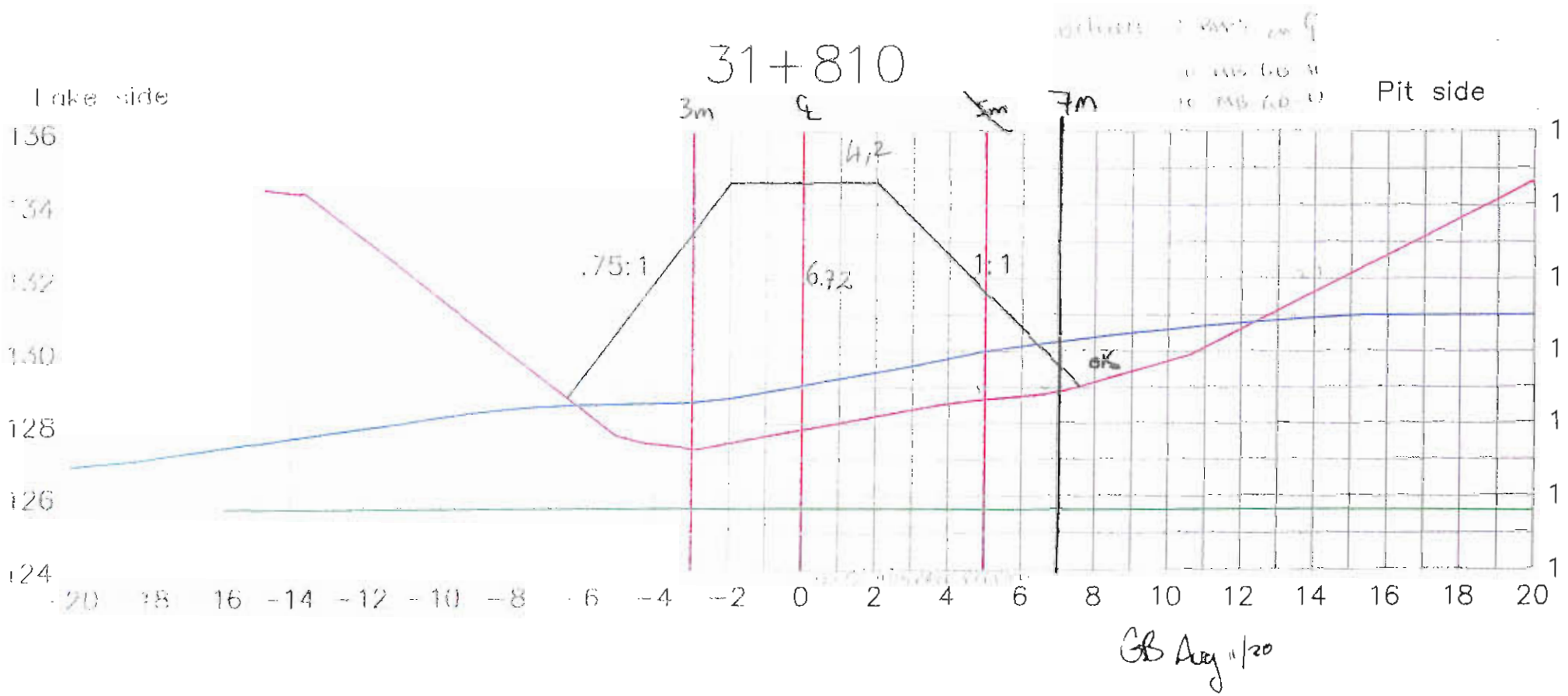
Manual probing

Date: 090810

Page: 4/8

Par: Alex Lalancette et Pascale Martel

START OF 2ND PACKAGE



Lake bed soil

Dike

Target surface

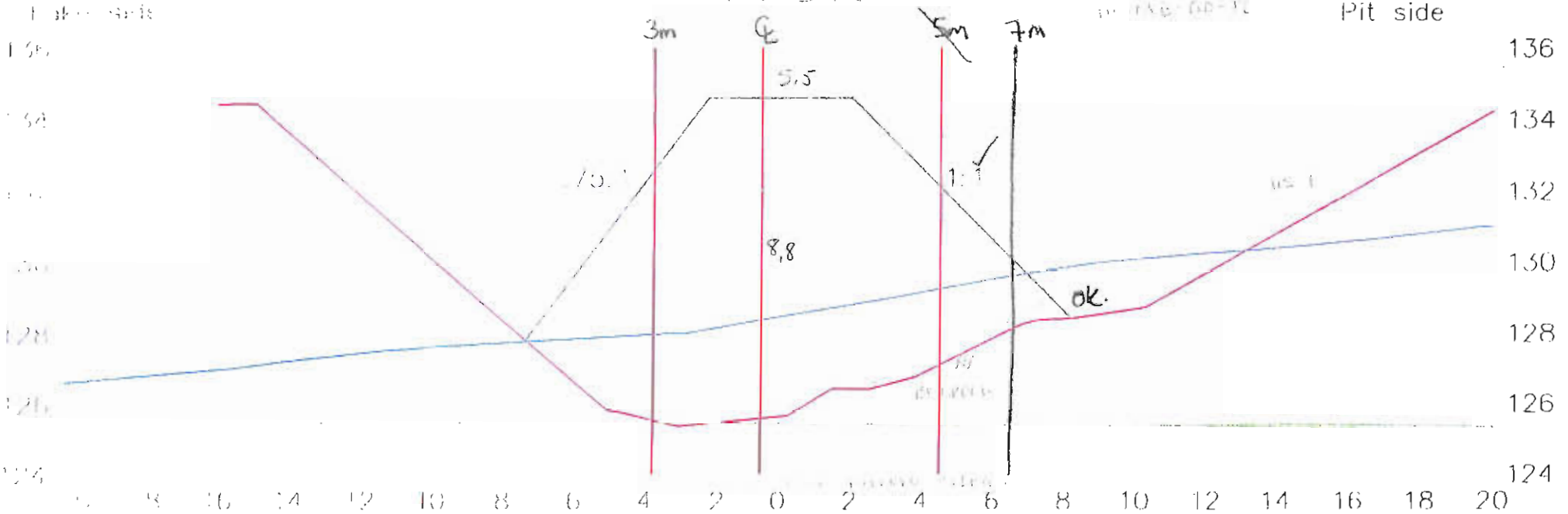
Manual probing

Date: 090810

Page: 5/8

Par: Alex Lalancette et Pascale Martel

31+815



GB Aug 11/20

TRAMACK UNABLE TO REACH @ THIS DEPTH. SHIFTED ℄ 0.5m U/S TO FACILITATE CUTOFF WALL CONSTRUCTION. ~START OF REALIGNMENT @ 31+812m

Lake bed soil

Dike

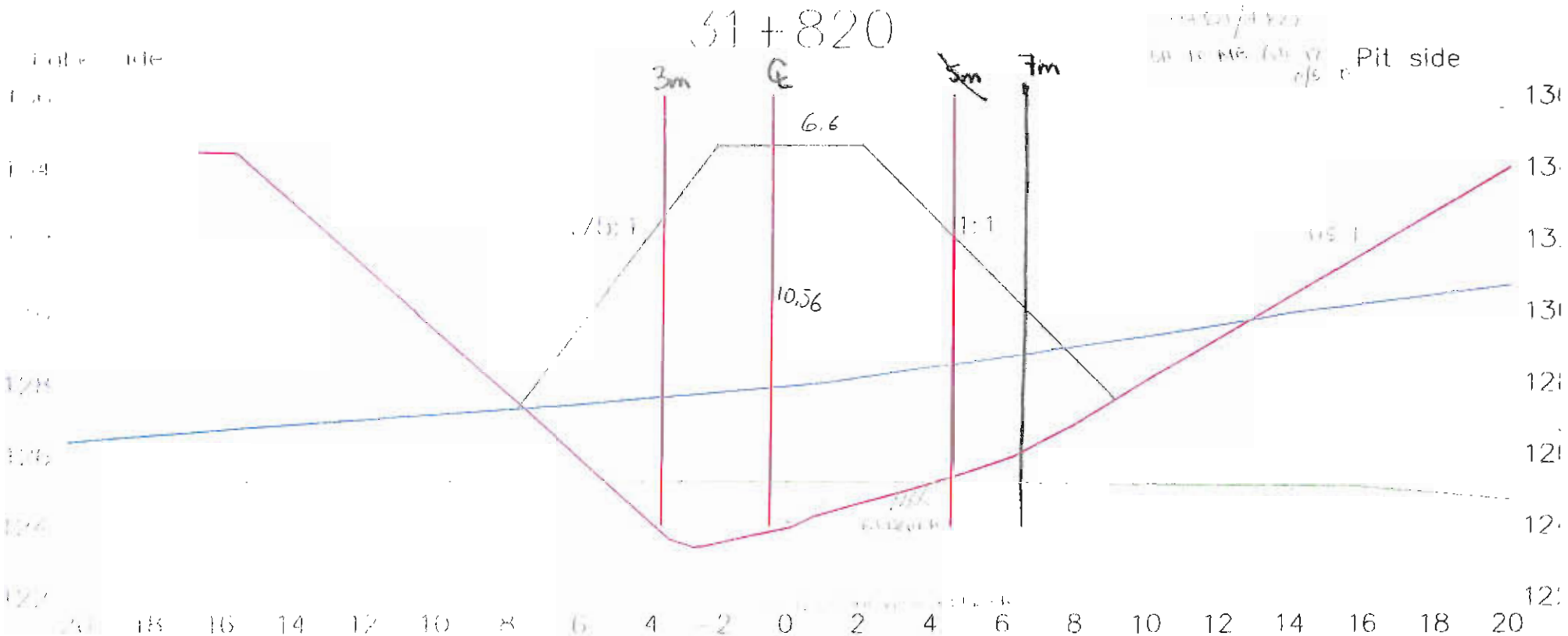
Target surface

Manual probing

Date: 090810

Page: 6/8

Par: Alex Lalancette et Pascale Martel



CONTINUATION OF Aug 11/10
0.5m u/s REALIGNMENT
WILL 'BLEND' BACK TO ORIGINAL (IF REQUIRED)
AFTER NEXT PACKAGE RECEIVED

Lake bed soil

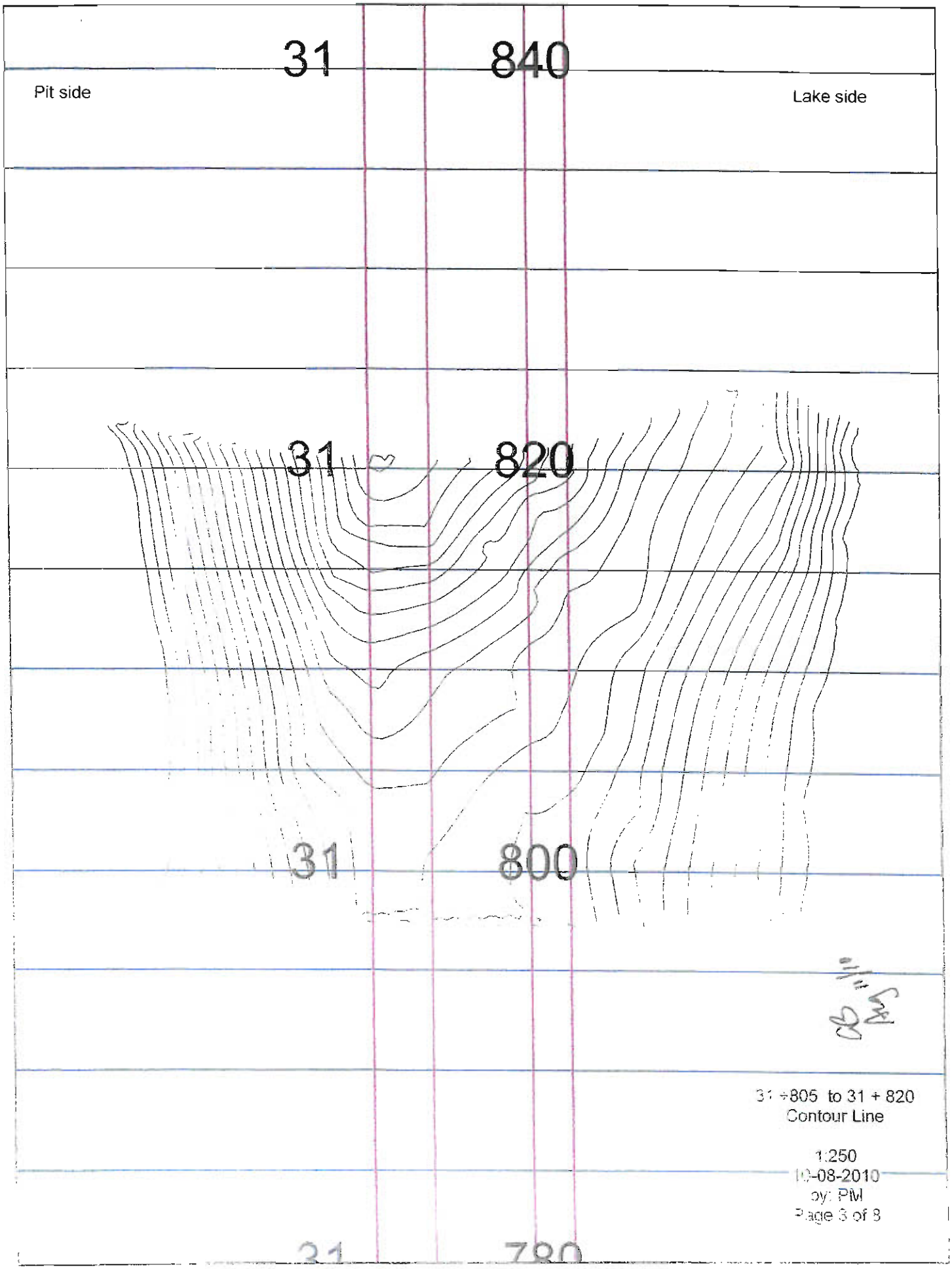
Dike

Target surface

Manual probing

Date: 090810

Par: Alex Lalancette et Pascale Martel



31 +805 to 31 + 820
Contour Line

1:250
10-08-2010
by: PM
Page 3 of 8

31 840

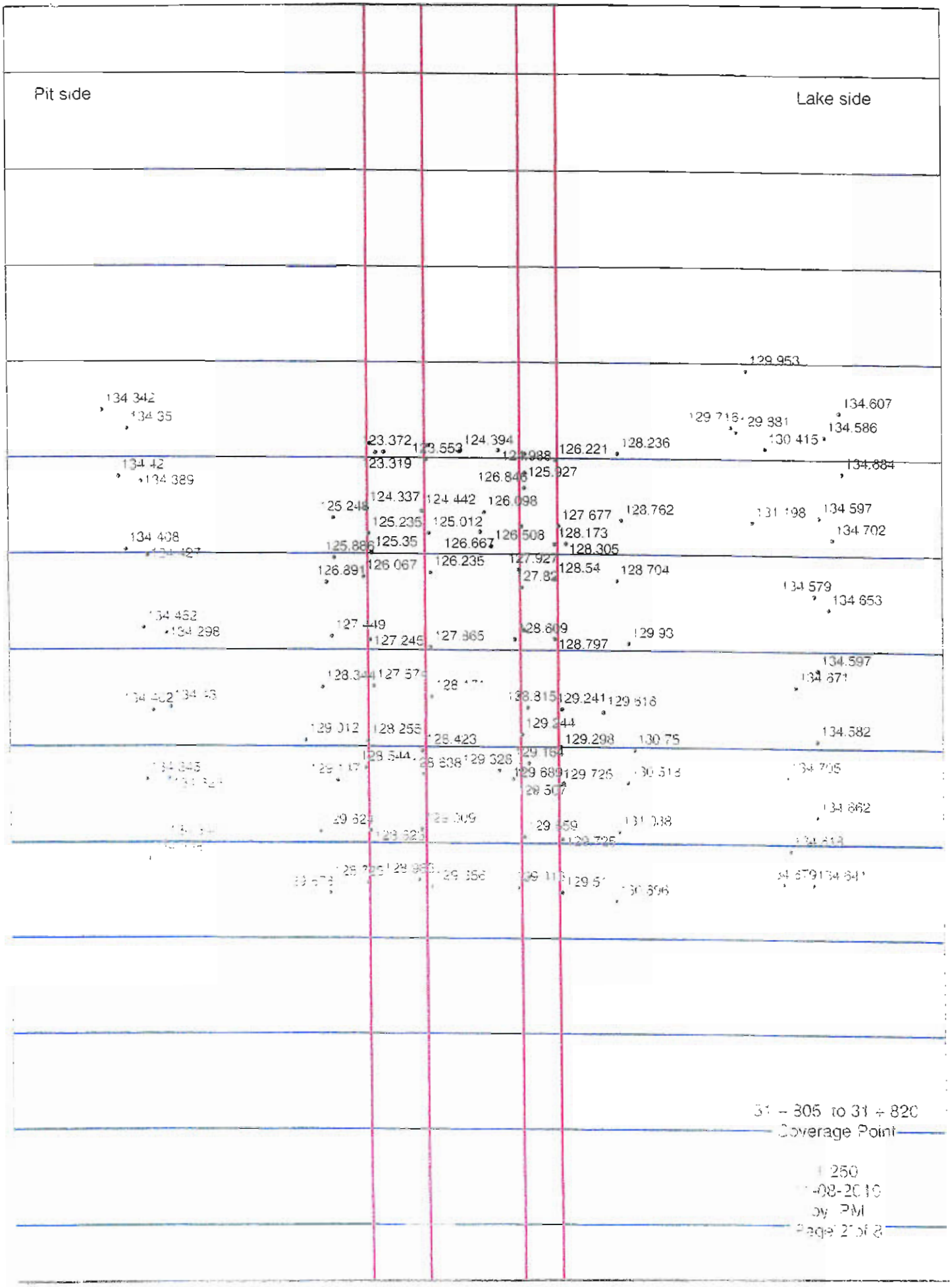
Pit side

Lake side

+ 3 points FROM YESTERDAY & CENTER LINE (50cm LAKE SIDE)

CORRECTIONS

134 342
134 35
134 42
134 389
134 408
134 452
134 298
128.236
129 953
129 716
129 881
134.607
134.586
130 415
134.684
128.762
131 198
134.597
134 702
128 704
134 579
134.653
127.245
127 365
128 609
128.797
129 93
128.34
127 57
129 241
129 816
134 597
134 671
129 012
128 255
128 423
129 244
129 298
130 75
134 582
129 328
129.164
129 689
129 725
129 147
128 838
128 623
129 309
134 862
31 800
31 780
31 + 805 to 31 + 820
Coverage Point
250
08-20
PM
Page 2 of 8


Pit side
Lake side
129.953
134.342
134.35
129.718
129.381
134.607
134.586
130.415
123.372
123.553
124.394
126.221
128.236
134.42
134.389
23.319
126.846
125.927
134.884
124.337
124.442
126.098
125.248
125.235
125.012
127.677
128.762
131.198
134.597
134.408
125.886
125.35
126.667
126.508
128.173
134.702
128.305
126.891
126.067
126.235
127.927
127.82
128.54
128.704
134.579
134.653
134.462
134.298
127.449
127.245
127.865
128.609
128.797
129.93
134.597
134.671
128.344
127.574
128.815
129.241
129.516
129.012
128.255
128.423
129.244
129.298
130.75
134.582
128.544
129.326
129.164
129.689
129.726
130.514
134.705
129.507
129.624
129.309
129.859
131.038
134.862
129.725
134.613
129.356
129.51
130.596
134.879
134.841
31 – 305 to 31 + 820
Coverage Point
1:250
-08-2010
by PM
Page 27 of 3

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 31+825 Offset	SHIFT: NIGHT ☐ DAY ☒	DATE: 12 Aout 2010	SHEET 1 OF 6
To Sta. 31+830 Offset	LOCATION: Bay Goose Dike, South Portion		
EQUIPMENT:			
DESCRIPTION			

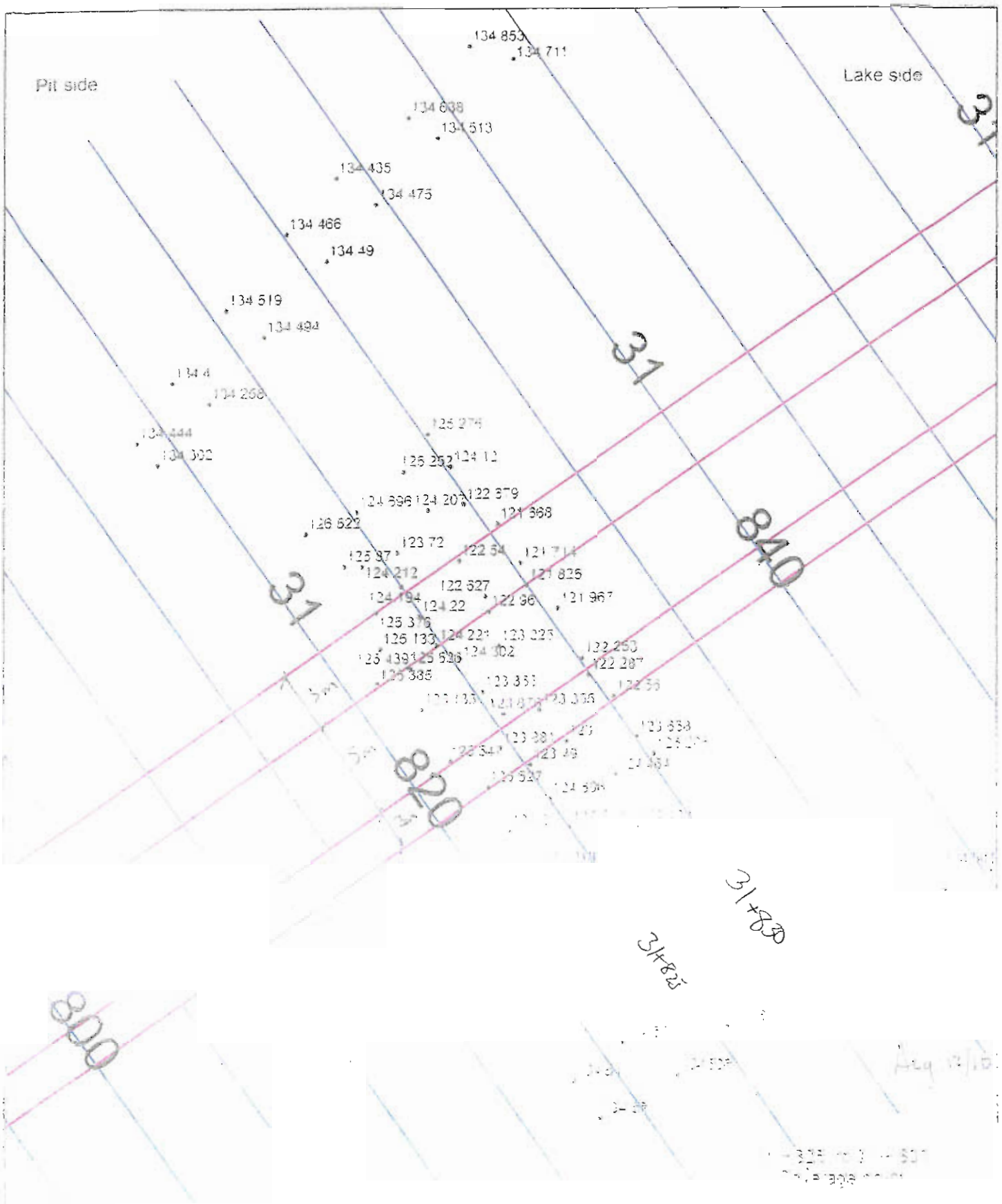
NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	✓	✓
2.	Storage areas planned for disposal of removed materials	✓	✓
3.	Occurrence of snow and ice removal method in place	✓	✓
4.	Occurrence of boulders and removal method in place	✓	✓
5.	Occurrence of hummocks and scaling method in place	✓	✓
6.	Occurrence of surface and ground water and its impact mitigation in place	✓	✓
7.	Presence of other unsuitable materials and removal method in place	✓	✓
8.	Surface cleaned and cleanup plan	✓	✓
9.	Shaping equipment in the dike. Roadside material not taken. Slopes checked	N/A ✓	N/A ✓
10.	Adjustments made to suit design in field	✓	✓
11.	Final visual inspection before placing [illegible]	✓	✓
12.	[illegible]	✓	✓

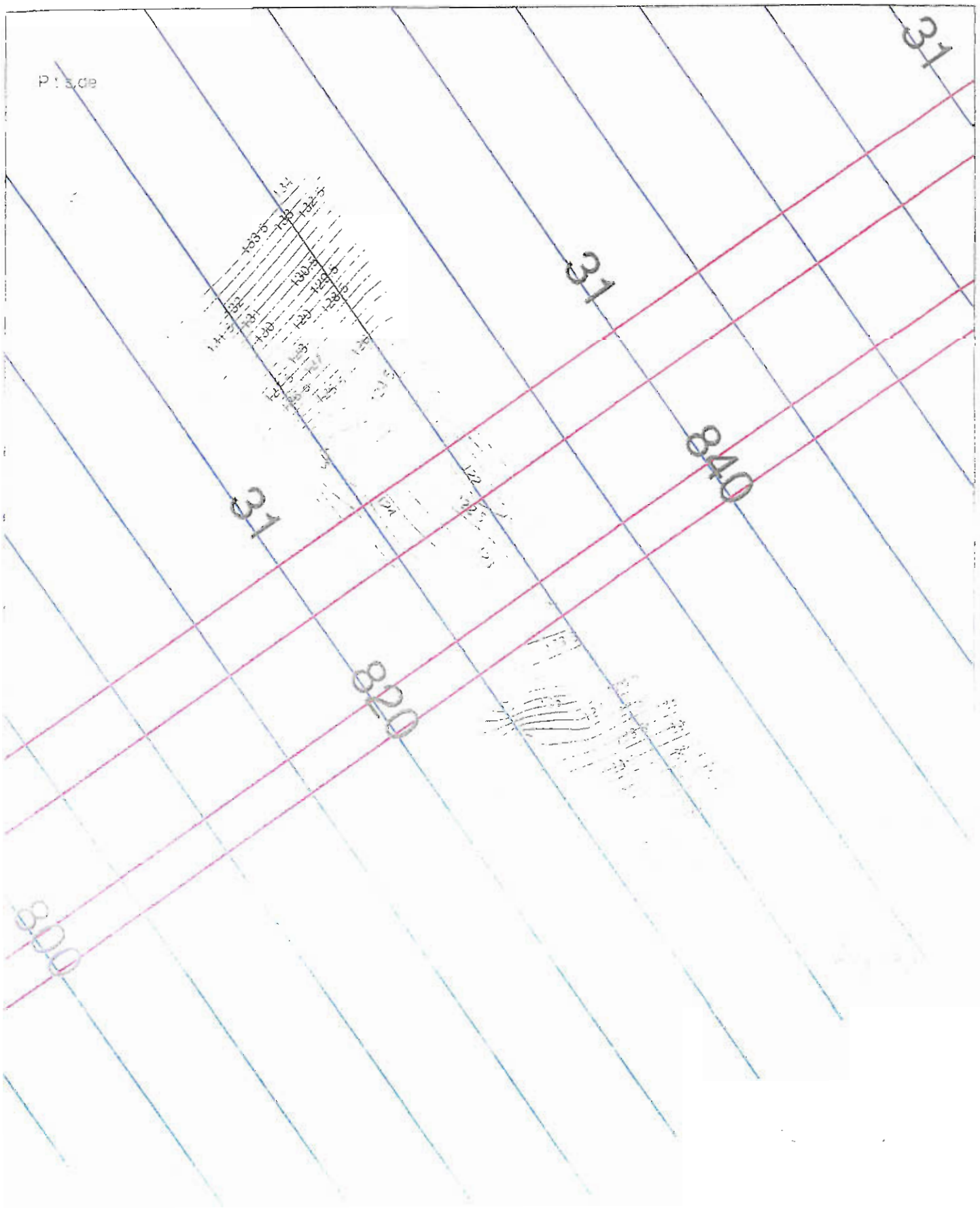
SURVEY VERIFICATION
NAME Guy Marcotte
SIGNATURE Guy Marcotte
DATE 12 Août 2010

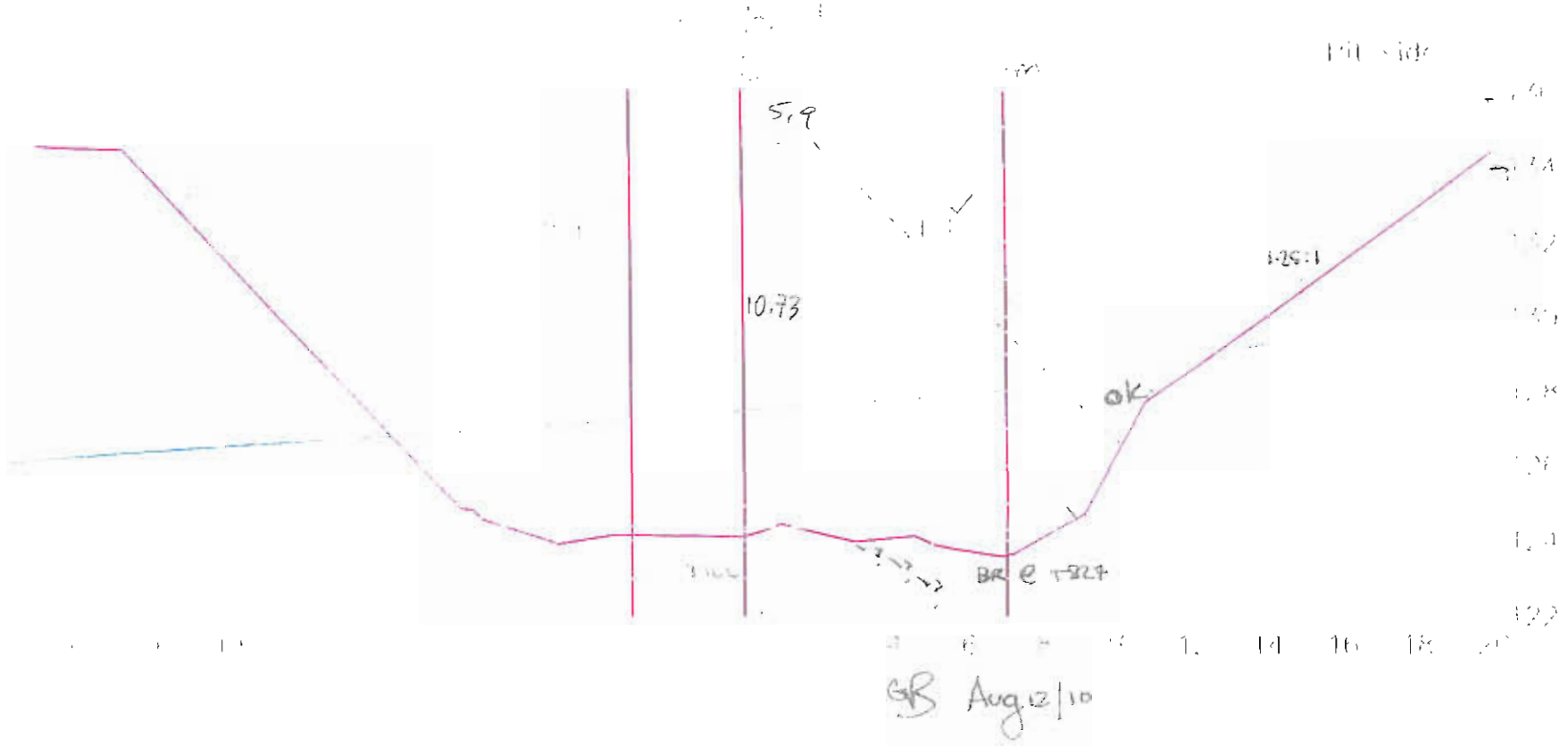
ACCEPTED BY QA Manager
NAME GRANT BURNS
SIGNATURE
DATE Aug 12, 2010

ACCEPTED BY OWNER
NAME
SIGNATURE
DATE

COPY OF ORIGINAL 1/6


Pit side
Lake side
134 853
134 711
134 608
134 513
134 435
134 475
134 466
134 49
134 519
134 494
134 4
134 268
134 444
134 302
126 274
126 252
124 12
124 896
124 207
122 879
121 368
126 622
123 72
125 87
122 54
121 714
124 212
121 825
122 627
124 194
124 22
122 96
121 967
125 376
125 133
124 224
123 323
125 438
125 526
124 302
122 250
122 287
125 385
123 353
123 658
123 381
123 49
125 527
31
840
820
800
31+88
31+85

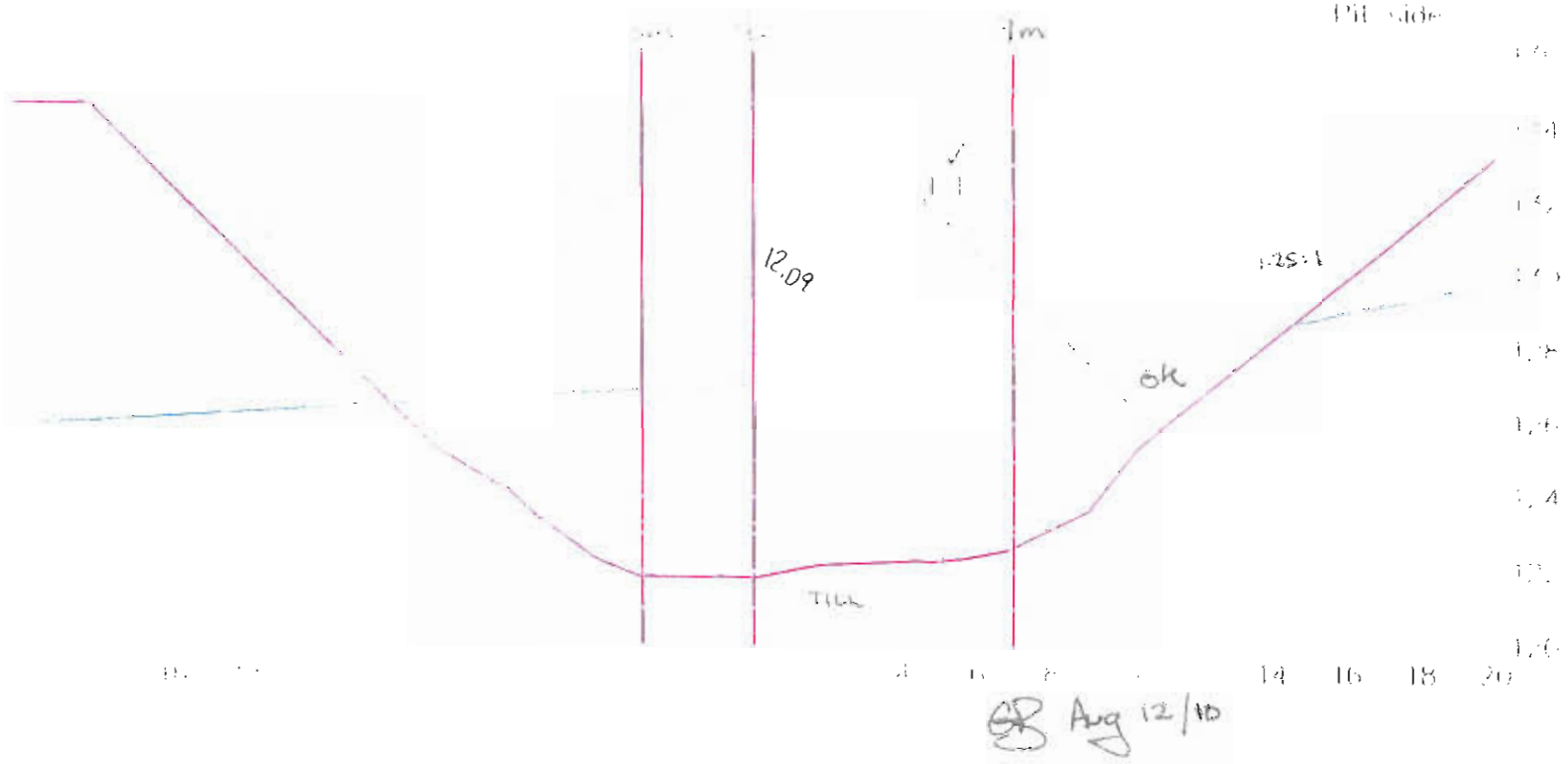

P : 5,de
31
31
31
840
820
800



Date: 120810

Par: Alex Lalancette et Pascale Martel

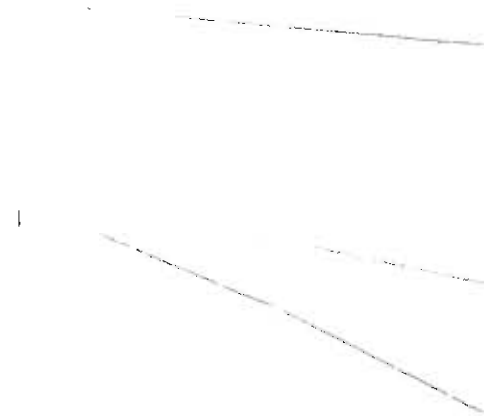
4/6



SB Aug 12/10

Date: 120810

Par: Alex Lalancette et Pascale Martel



Aug 12/11

31+830

Lake bed soil

Date: 120810

Dike

Page: 6/6

Target surface

Par: Alex Lalancette et Pascale Martel

Manual probing

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 31+830 Offset	SHIFT: NIGHT :☐ DAY : ☑	DATE : May 14th	SHEET 1 OF 6
To Sta. 31+840 Offset	LOCATION: :		
EQUIPMENT:			

DESCRIPTION

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	MJ	GB
2.	Storage areas planned for disposal of removed materials	MJ	GB
3.	Occurrence of snow and ice removal method in place	MJ	GB
4.	Occurrence of boulders and removal method in place	MJ	GB
5.	Occurrence of hummocks and scalping method in place	MJ	GB
6.	Occurrence of surface and ground water and its impact mitigation in place	MJ	GB
7.	Presence of other unsuitable materials and removal method in place	MJ	GB
8.	Soil frozen or thawed and measures taken	MJ	GB
9.	Blasting requirement to remove unsuitable material and safety measure checked	N/A MJ	N/A GB
10.	Adjustment made to suit design in field	MJ	GB
11.	Final walkover inspection before re-sloping or fill placement	MJ	GB
12.	"As-excavated" survey conducted	MJ	GB
13.	Final sounding conducted of lake bottom surface	MJ	GB

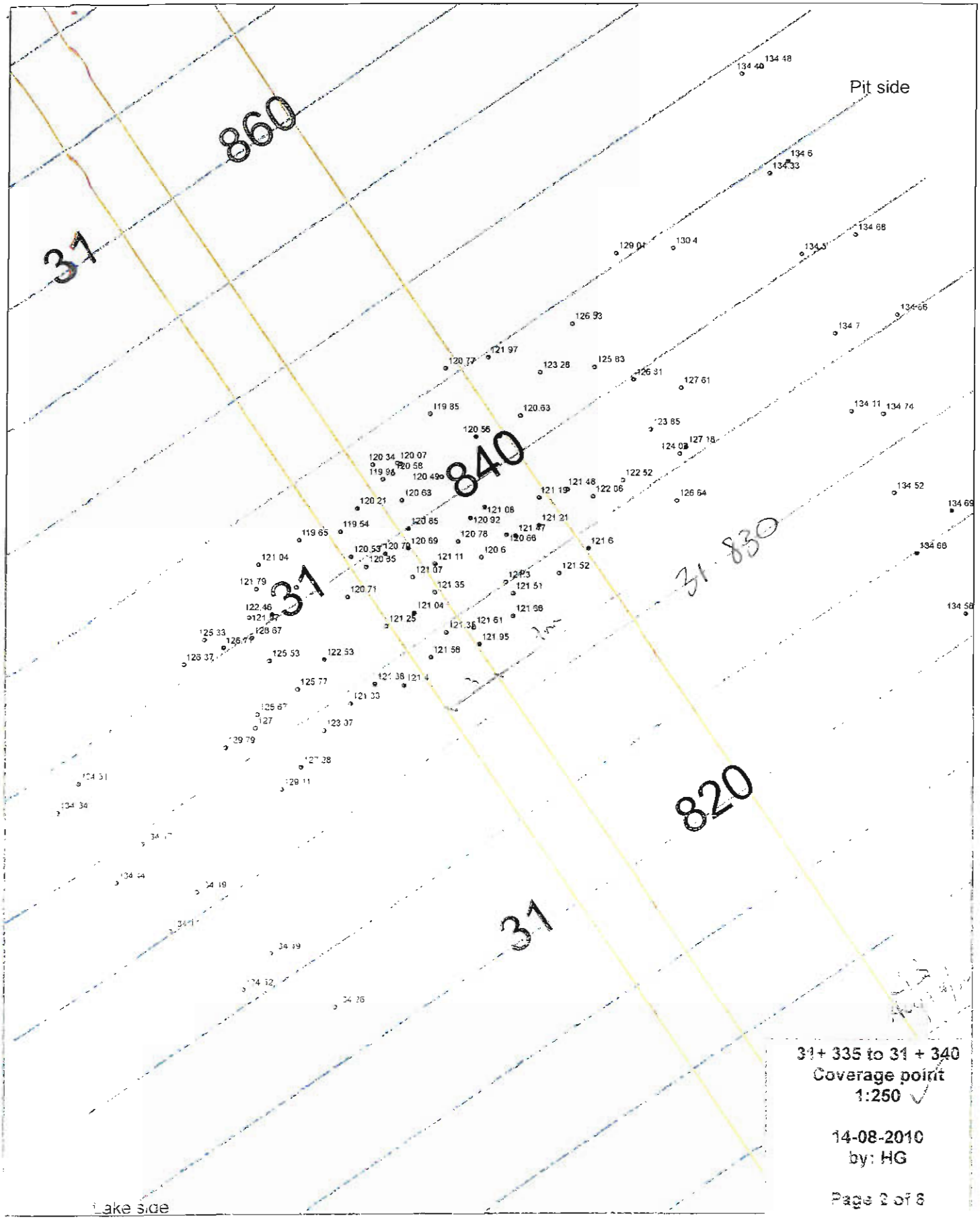
REMARKS : (1) [illegible] (3) [illegible]

DEVIATIONS : (Attach list if necessary)

QA VERIFIED SURVEY VERIFIED DATE OF RECTIFICATION :

SURVEY VERIFICATION	~~ACCEPTED BY QA Manager~~ :	ACCEPTED BY OWNER :
NAME: [illegible]	NAME: MAXIME GILBERT	NAME:
SIGNATURE :	SIGNATURE :	SIGNATURE :
DATE May 14, 2010	DATE 17-08-2010	DATE

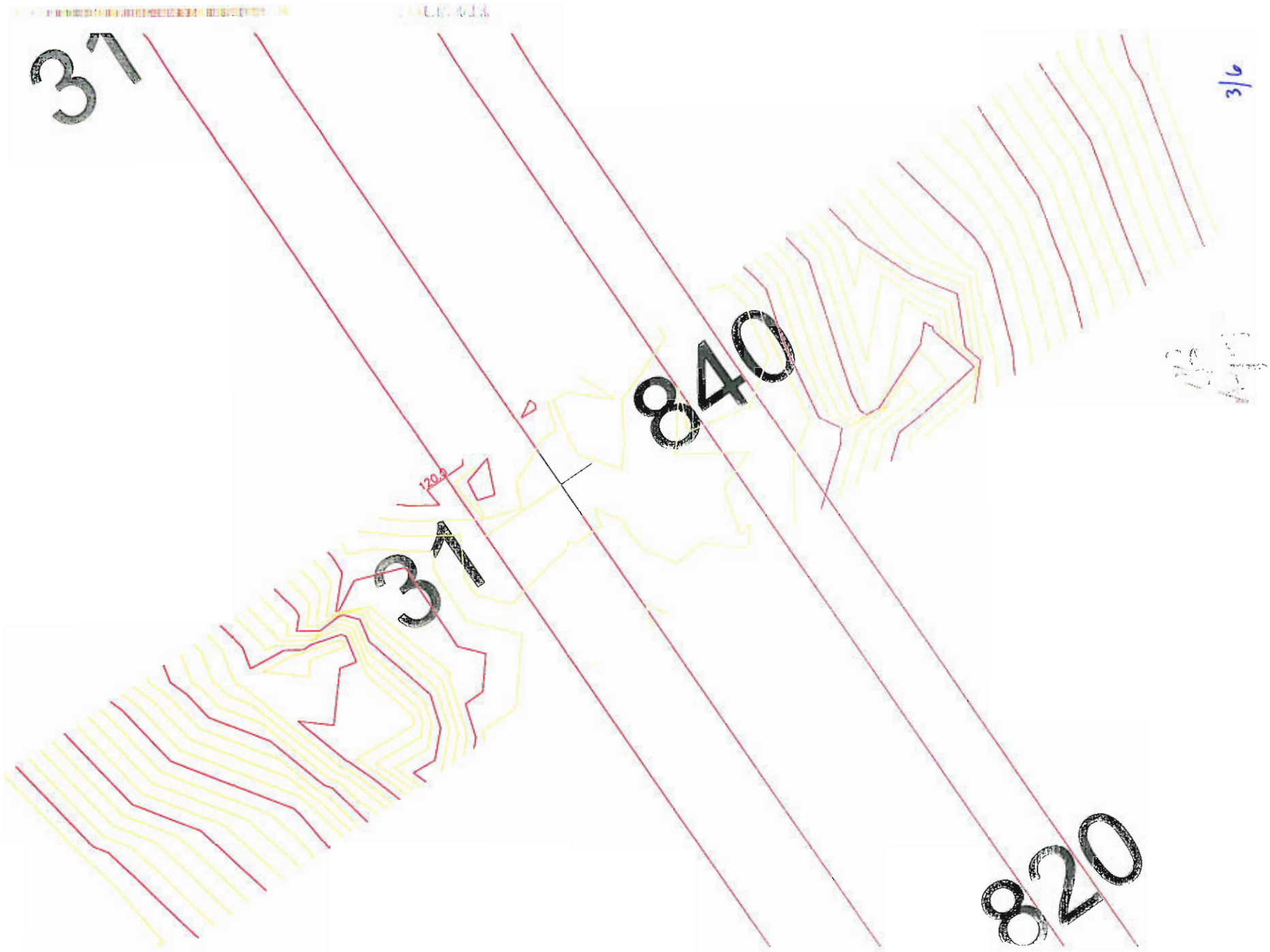
COPY OF ORIGINAL



31+ 335 to 31 + 340
Coverage point
1:250

14-08-2010
by: HG

2/6



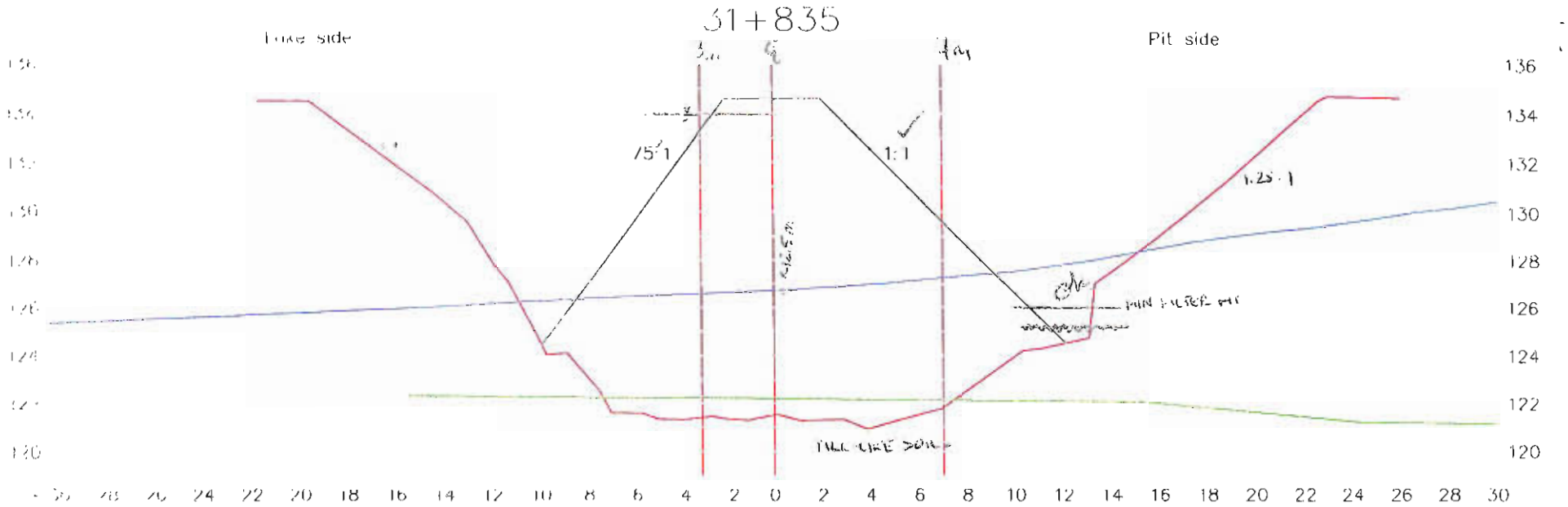
Minor Lines

Major Lines

Date: 140810

Page: 3/6

Par: Alex Lalancette at Hugue Cam



Aug 14/16

Lake bed soil

Dike

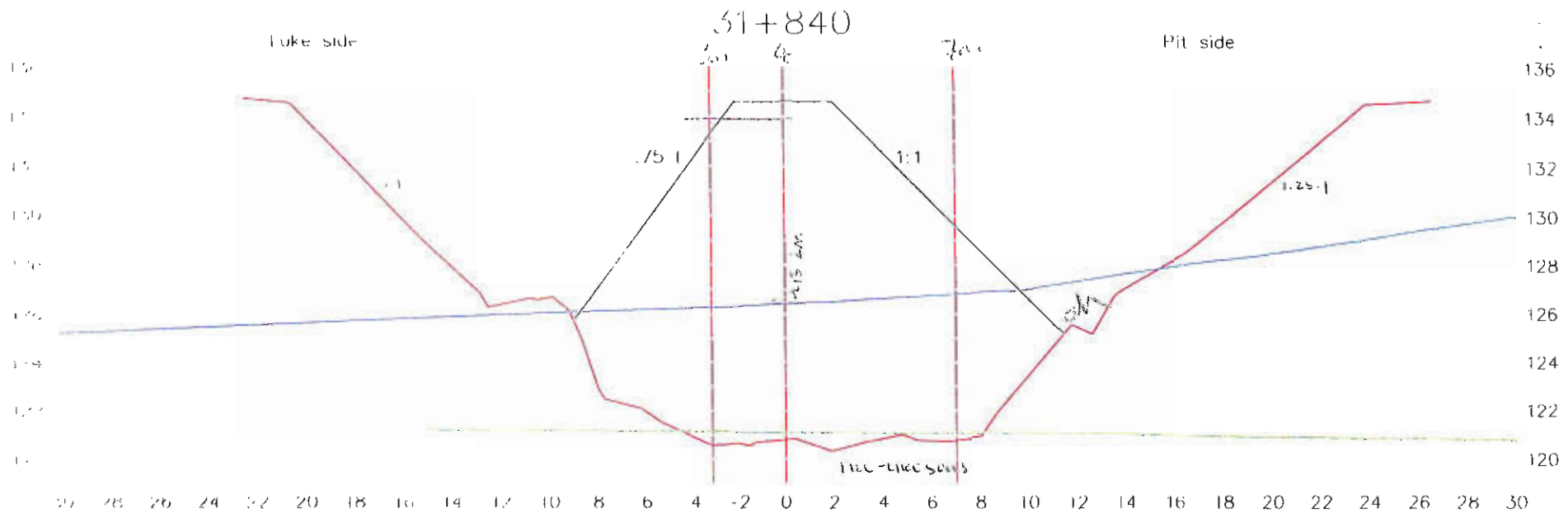
Target surface

Manual probing

Date: 140810

Page: 4/6

Par: Alex Lalancette et Hugue Gagnon



GB Aug 14/10

Lake bed soil

Dike

Target surface

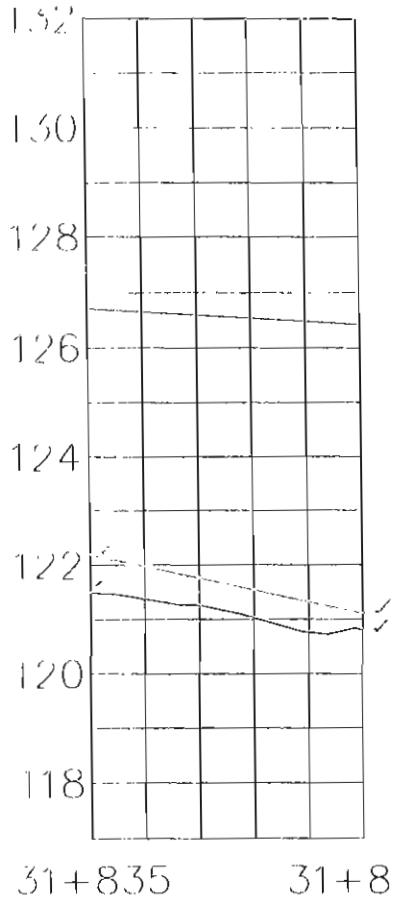
Manual probing

Date: 140810

Page:5/6

Par: Alex Lalancette et Hugue Gagnon

5/5



Aug 14/10

Lake bed soil

Dike

Target surface

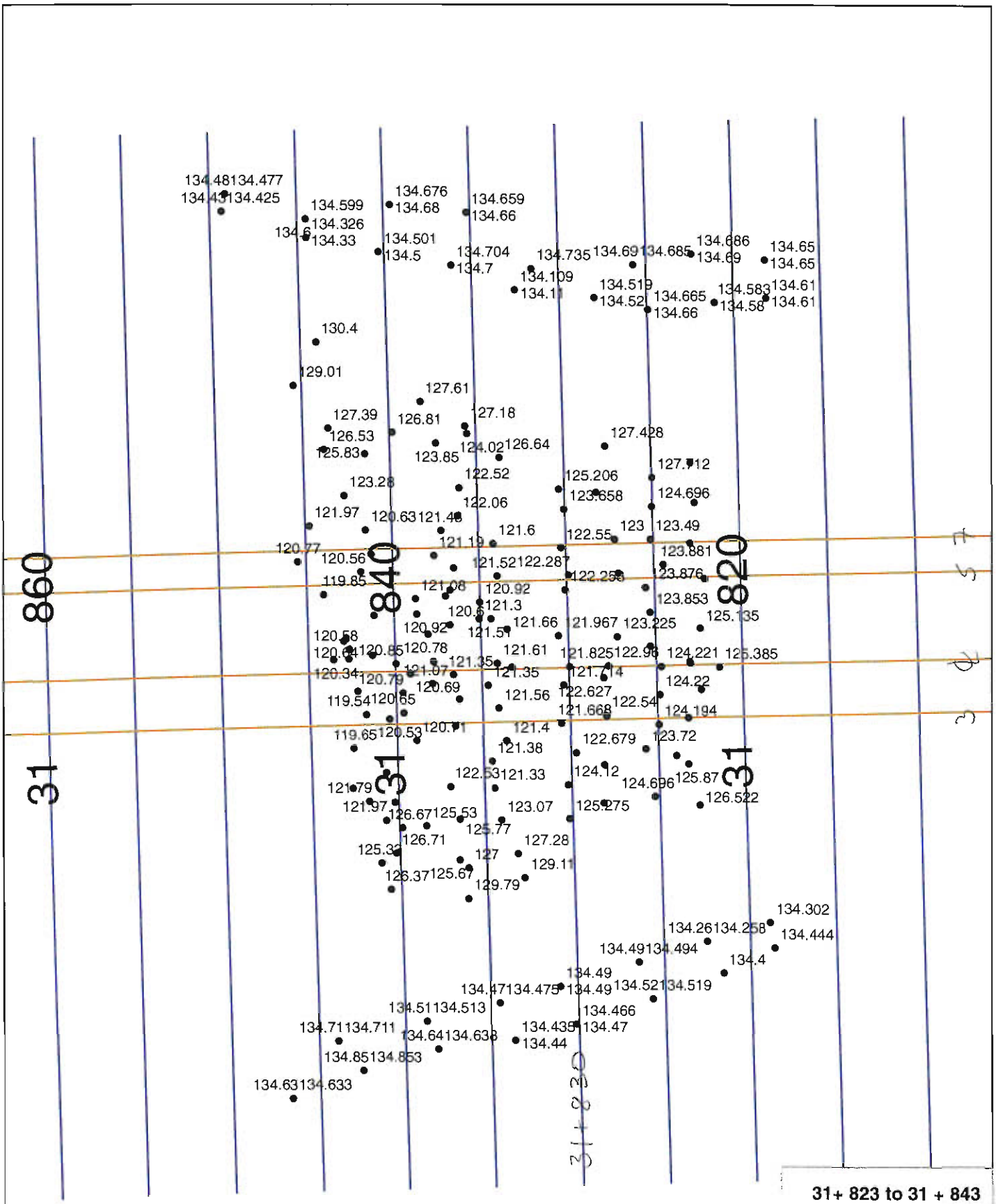
Manual probing

Date: 140810

Page: 6/6

Par: Alex Lalancette et Hugue Gagnon

6/6


860
840
820
31
31
31
134.48 134.477
134.43 134.425
134.599
134.326
134.6
134.33
134.676
134.68
134.659
134.66
134.501
134.5
134.704
134.7
134.735
134.69
134.685
134.686
134.69
134.65
134.65
134.109
134.11
134.519
134.52
134.665
134.66
134.583
134.58
134.61
134.61
130.4
129.01
127.61
127.39
126.81
127.18
126.53
125.83
123.85
124.02
126.64
127.428
127.712
123.28
122.52
125.206
123.658
124.696
122.06
121.97
120.63
121.48
121.6
121.19
122.55
123
123.49
120.77
120.56
121.52
122.287
123.881
119.85
121.08
120.92
122.256
123.876
123.853
120.6
121.3
120.92
121.51
121.66
121.967
123.225
125.135
120.58
120.64
120.85
120.78
121.35
121.61
121.825
122.96
124.221
125.385
120.34
120.79
121.07
120.69
121.35
121.414
124.22
119.54
120.65
121.56
122.627
122.54
121.668
124.194
119.65
120.53
120.71
121.4
121.38
122.679
123.72
122.53
121.33
124.12
124.696
125.87
126.522
121.79
121.97
126.67
125.53
123.07
125.275
125.77
126.71
125.32
127.28
127
129.11
126.37
125.67
129.79
134.302
134.26
134.258
134.444
134.49
134.494
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134.49
134.47
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134.49
134.52
134.519
134.51
134.513
134.466
134.71
134.711
134.64
134.638
134.435
134.47
134.44
134.85
134.853
134.63
134.633
31 + 20
31+ 823 to 31 + 843
Coverage point
27-08-2010
by: PM
Page 2 of 6

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 31+840 Offset	SHIFT: NIGHT: ☐ DAY: ☒	DATE: Aug 14/10	SHEET 1 OF 6
To Sta. 31+885 Offset	LOCATION: Bay Goose Dike South Portion		
EQUIPMENT:			
DESCRIPTION			

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	MS	GB.
2.	Storage areas planned for disposal of removed materials	MS	GB.
3.	Occurrence of snow and ice removal method in place	MS	GB.
4.	Occurrence of boulders and removal method in place	MS	GB.
5.	Occurrence of hummocks and scalping method in place	MS	GB.
6.	Occurrence of surface and ground water and its impact mitigation in place	MS	GB.
7.	Presence of other unsuitable materials and removal method in place	MS	GB
8.	Soil frozen or thawed and measures taken	MS	GB
9.	Blasting requirement to remove unsuitable material and safety measure checked	N/A MS	N/A GB.
10.	Adjustment made to suit design in field	MS	GB
11.	Final walkover inspection before re-sloping or fill placement	MS	GB
12.	"As-excavated" survey conducted	MS	GB
13.	Final sounding conducted of lake bottom surface	MS	GB

REMARKS [illegible]

DEVIATIONS (Attach list if necessary)

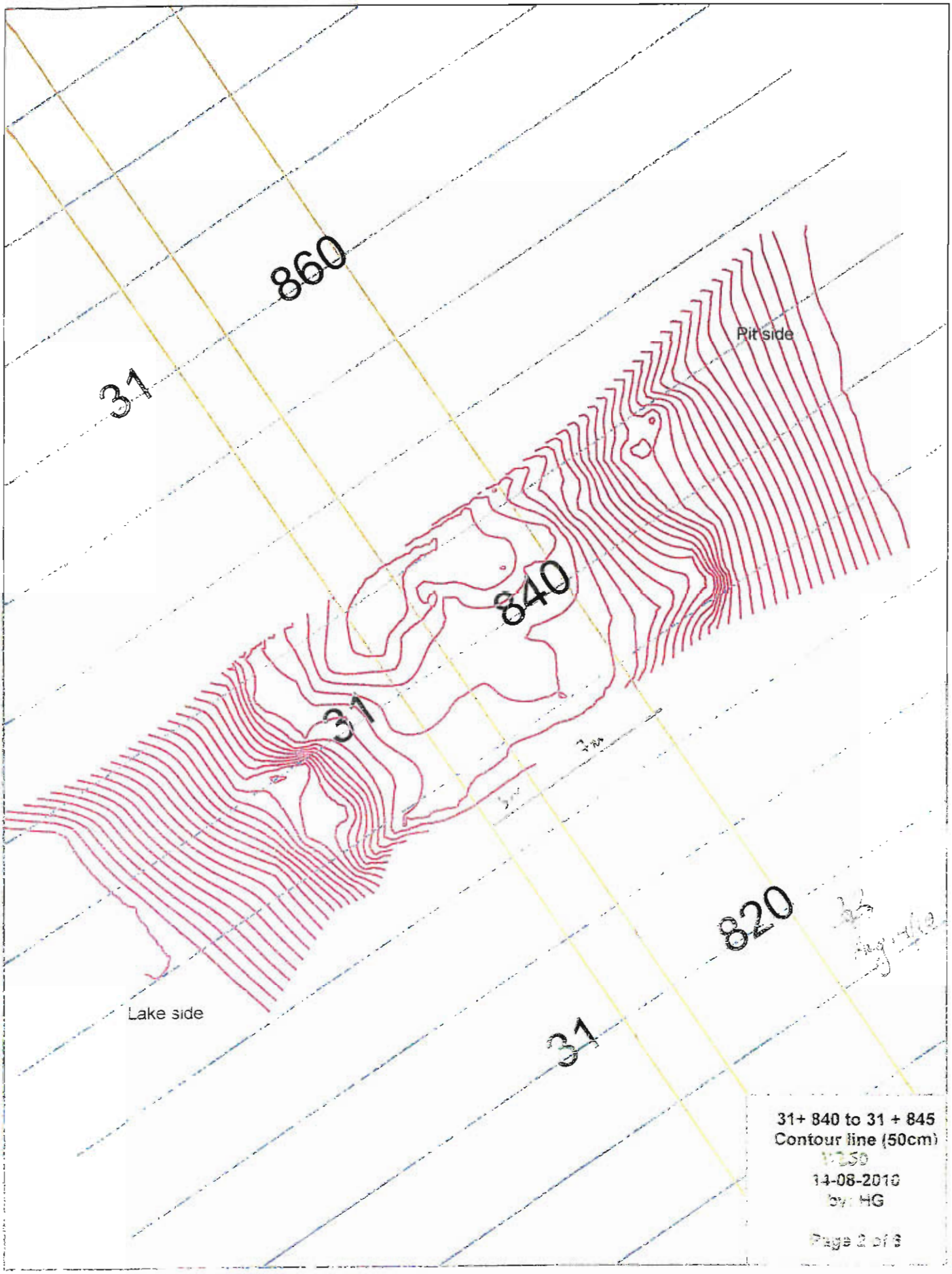
DATE OF RECTIFICATION

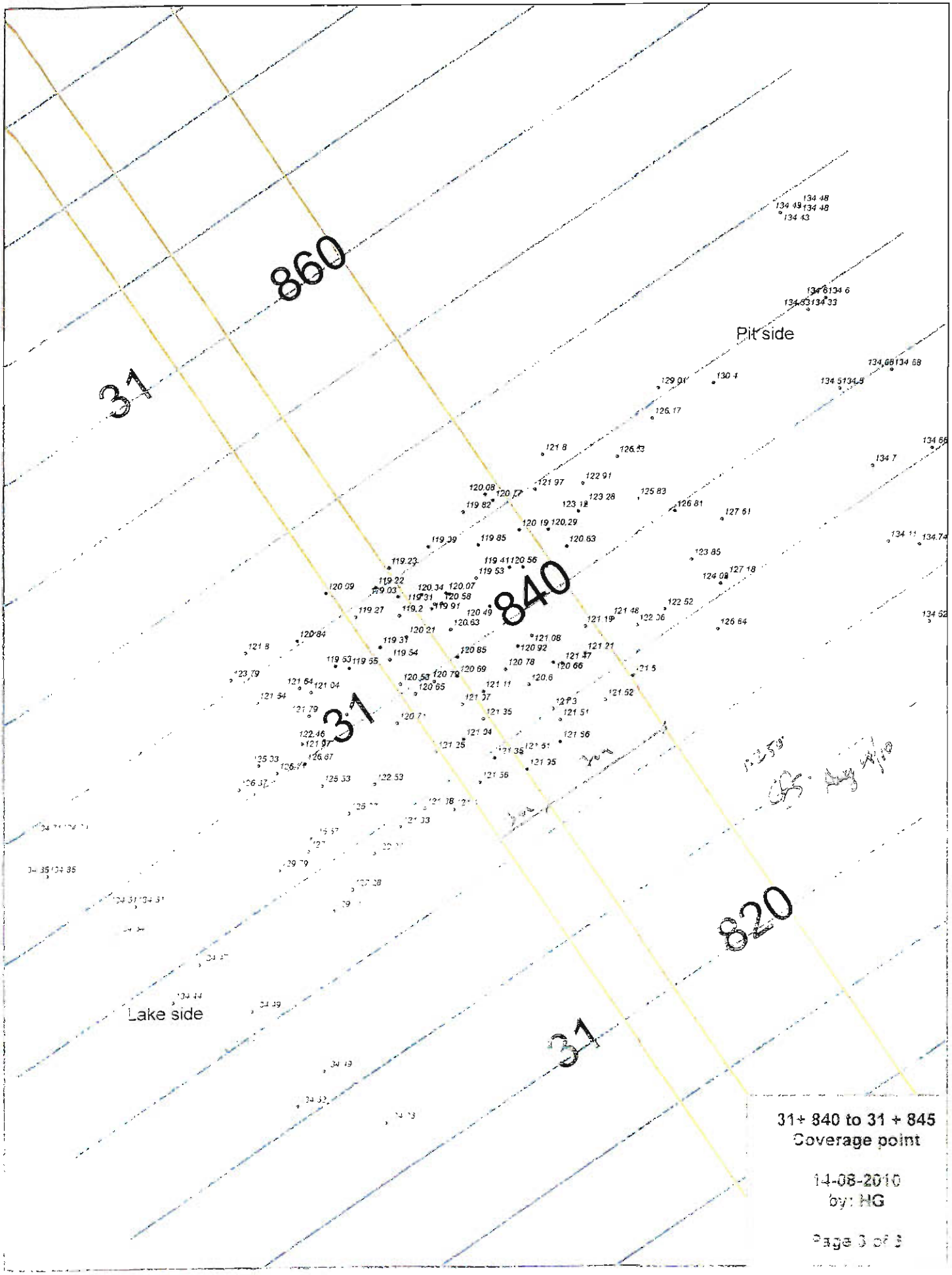
SURVEY VERIFICATION	ACCEPTED BY QA Manager	ACCEPTED BY OWNER
NAME: MARIE GILBERT	NAME: [illegible]	NAME:
SIGNATURE: [signature]	SIGNATURE: [signature]	SIGNATURE:
DATE 14-08-2010	DATE Aug 14 2010	DATE

[illegible]

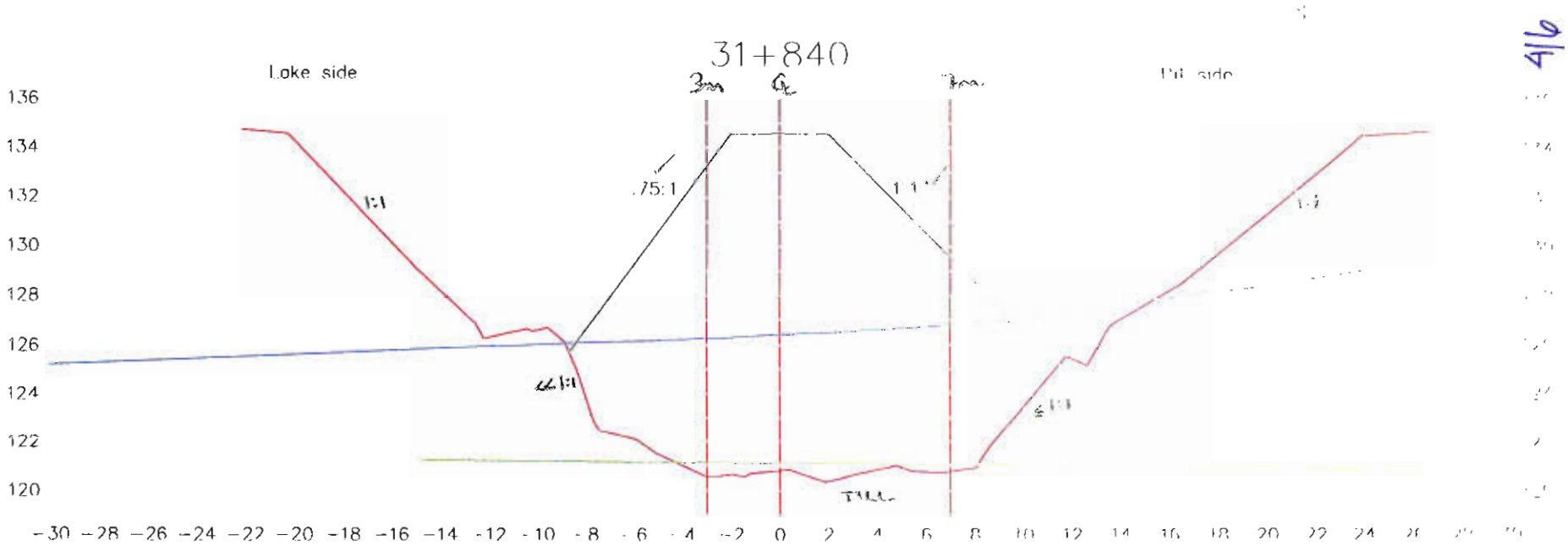
Golder Associates

COPY OF ORIGINAL 1/6


860
31
840
31
820
31
Pit side
Lake side
31+ 840 to 31 + 845
Contour line (50cm)
14-08-2010
by: HG
Page 2 of 6


860
840
820
31
31
31
Pit side
Lake side
31÷ 840 to 31 ÷ 845
Coverage point
14-08-2010
by: HG
Page 3 of 3

3/6



Lake bed soil

Dike

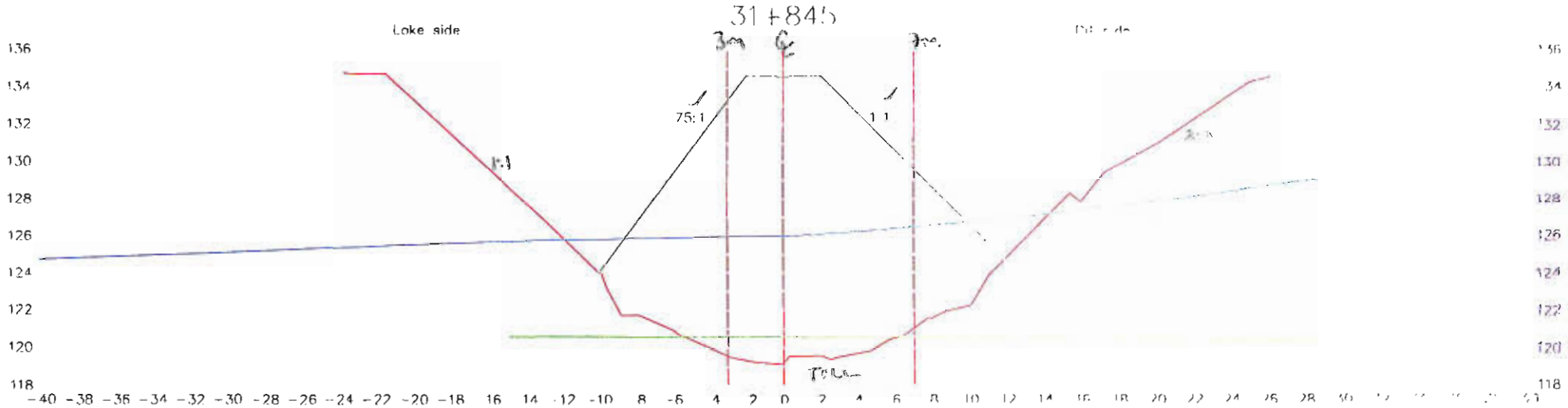
Target surface

Manual probing

Date: 140810

Page: 4/6

Par: Alex Lalancette et Hugue Gagnon



Lake bed soil

Dike

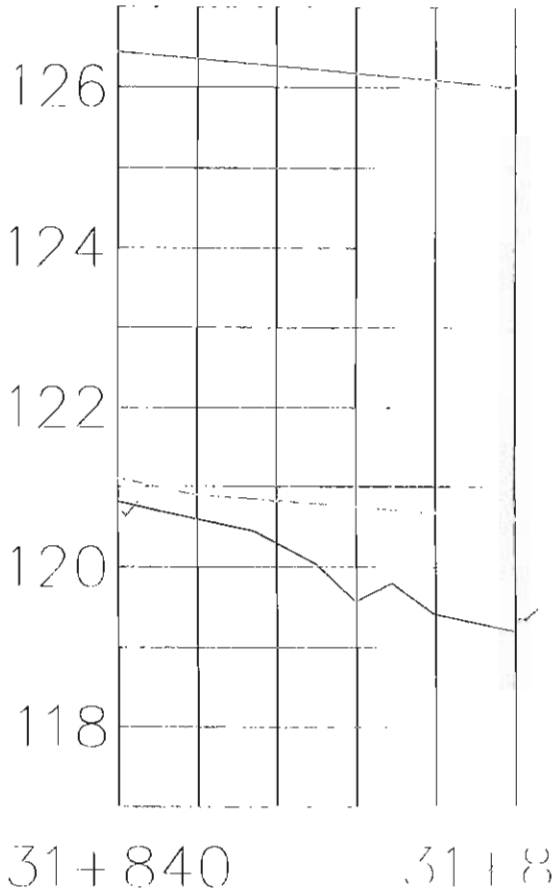
Target surface

Manual probing

Date: 140810

Page:5/6

Par: Alex Lalancette et Hugues Gagnon



Lake bed soil

Dike

Target surface

Manual probing

Date: 140810

Page: 6/6

Par: Alex Lalancette et Hugue Gagnon

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 31+845 Offset	SHIFT: NIGHT: ☐ DAY: ☒	DATE: Aug 14/10	SHEET 1 OF 7
To Sta. 31+855 Offset	LOCATION: Bay Goose - South Portion		
EQUIPMENT:			

DESCRIPTION

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1	Survey lines and layout checked to ensure the locations conform with the Drawings	MB	CB.
2.	Storage areas planned for disposal of removed materials	MB	CB.
3.	Occurrence of snow and ice removal method in place	MB	CB.
4	Occurrence of boulders and removal method in place	MB	CB.
5.	Occurrence of hummocks and scalping method in place	MB	CB.
6.	Occurrence of surface and ground water and its impact mitigation in place	MB	CB.
7	Presence of other unsuitable materials and removal method in place	MB	CB.
8.	Soil frozen or thawed and measures taken	MB	CB.
9.	Blasting requirement to remove unsuitable material and safety measure checked	N/A MB	N/A CB.
10.	Adjustment made to suit design in field	MB	CB.
11	Final walkover inspection before re-sloping or fill placement	MB	CB.
12.	"As-excavated" survey conducted	MB	CB.
13	Final sounding conducted of lake bottom surface	MB	CB.

REMARKS: 1) TALUS SLOPING, MIDDLE & END SLOPING APPROVED
2) APPROVAL TO BACKFILL TO TOE OF 31+855.

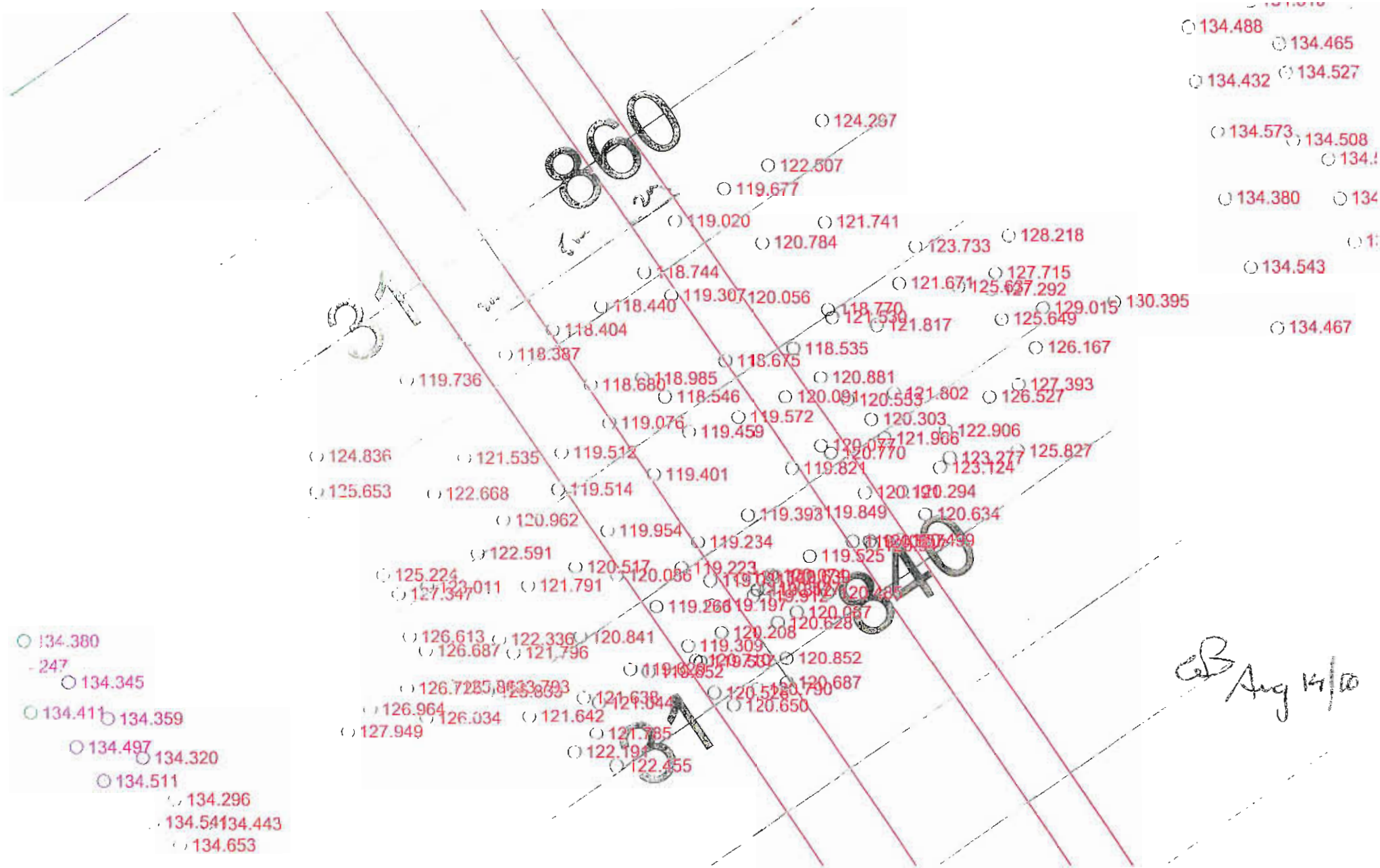
DEVIATIONS (Attach list if necessary)

NONE.

DATE OF RECTIFICATION

SURVEY VERIFICATION	ACCEPTED BY QA Manager	ACCEPTED BY OWNER
NAME: MAXIME GAGNÉ	NAME: Grant Burns	NAME:
SIGNATURE: Maxime Gagné	SIGNATURE:	SIGNATURE
DATE: AUG 14, 2010	DATE: Aug 14 2010	DATE

Copy of ORIGINAL 1/7



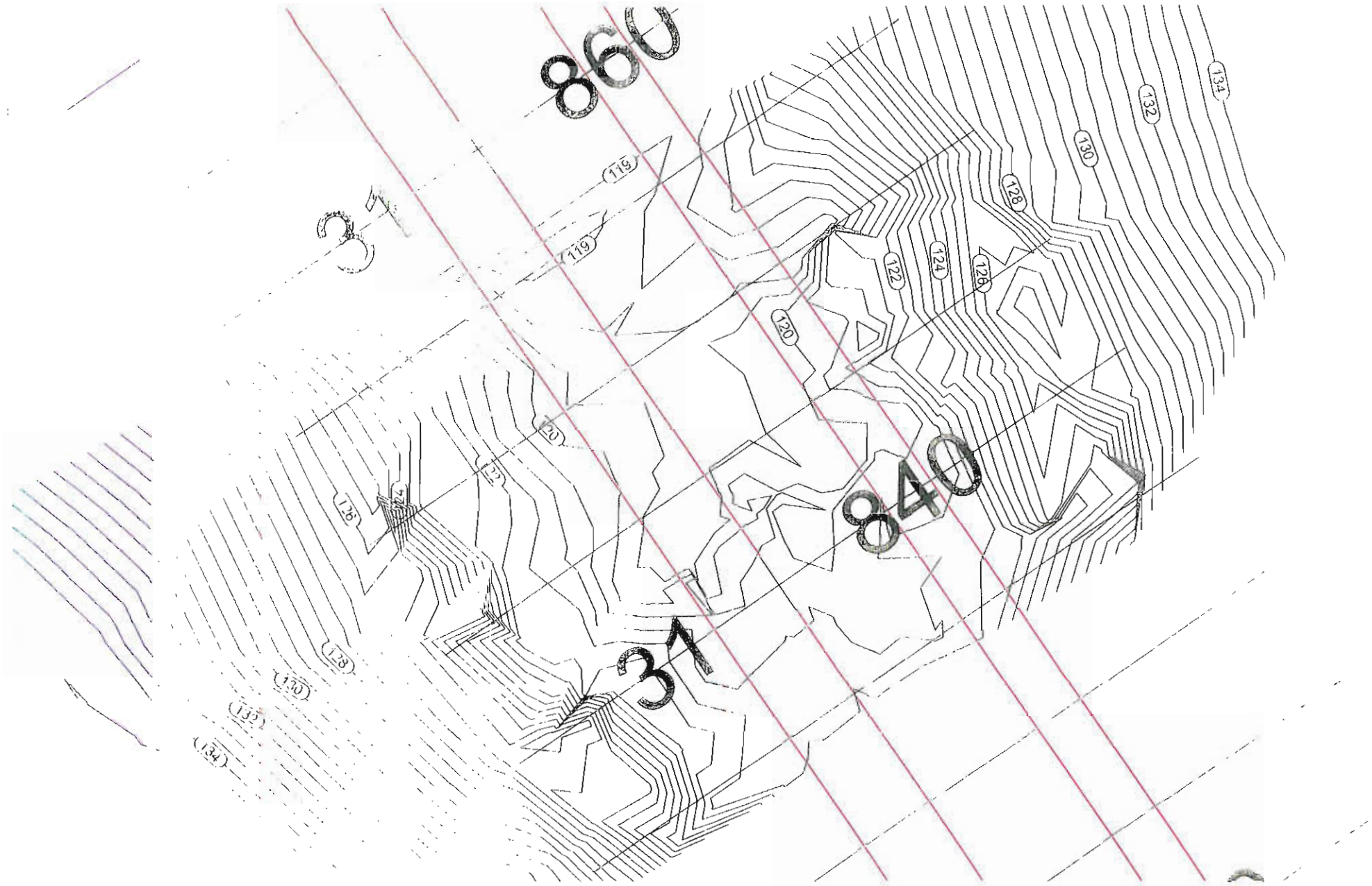
Station: 31+845 @ 31+855

Scale: 1:200

Date: 150810

Page: 2/7

Par: Alex Lalancette et Hugue Gagnon



Station: 31+845 @ 31+855

Scale: 1:200

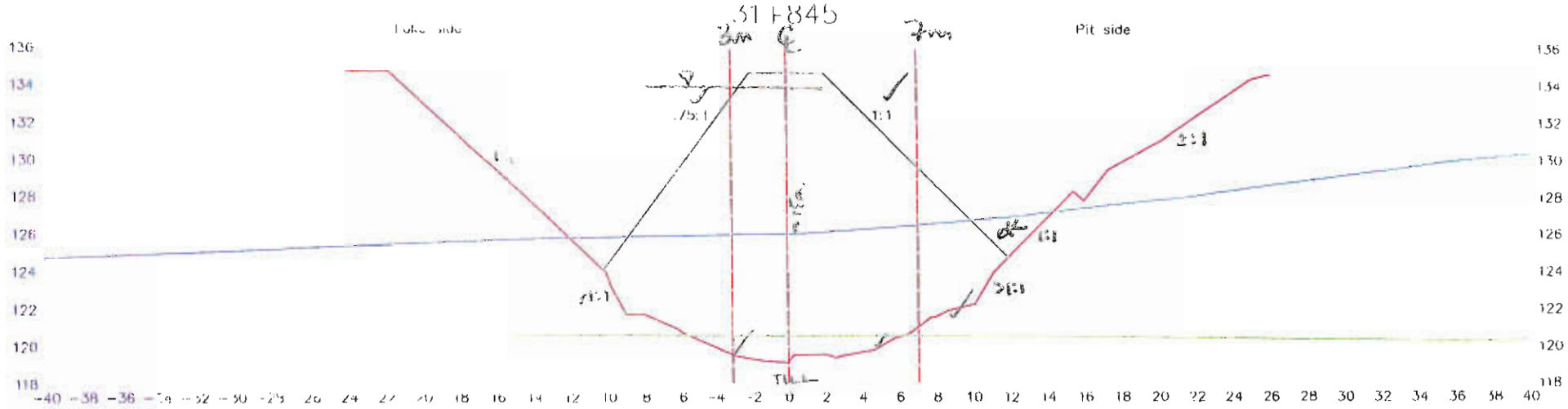
GB Aug 14/10

Date: 150810

Page: 3/7

Par: Alex Lalancette et Hugue Gagnon

3/7



GB Aug 14/10

Lake bed soil

Dike

Target surface

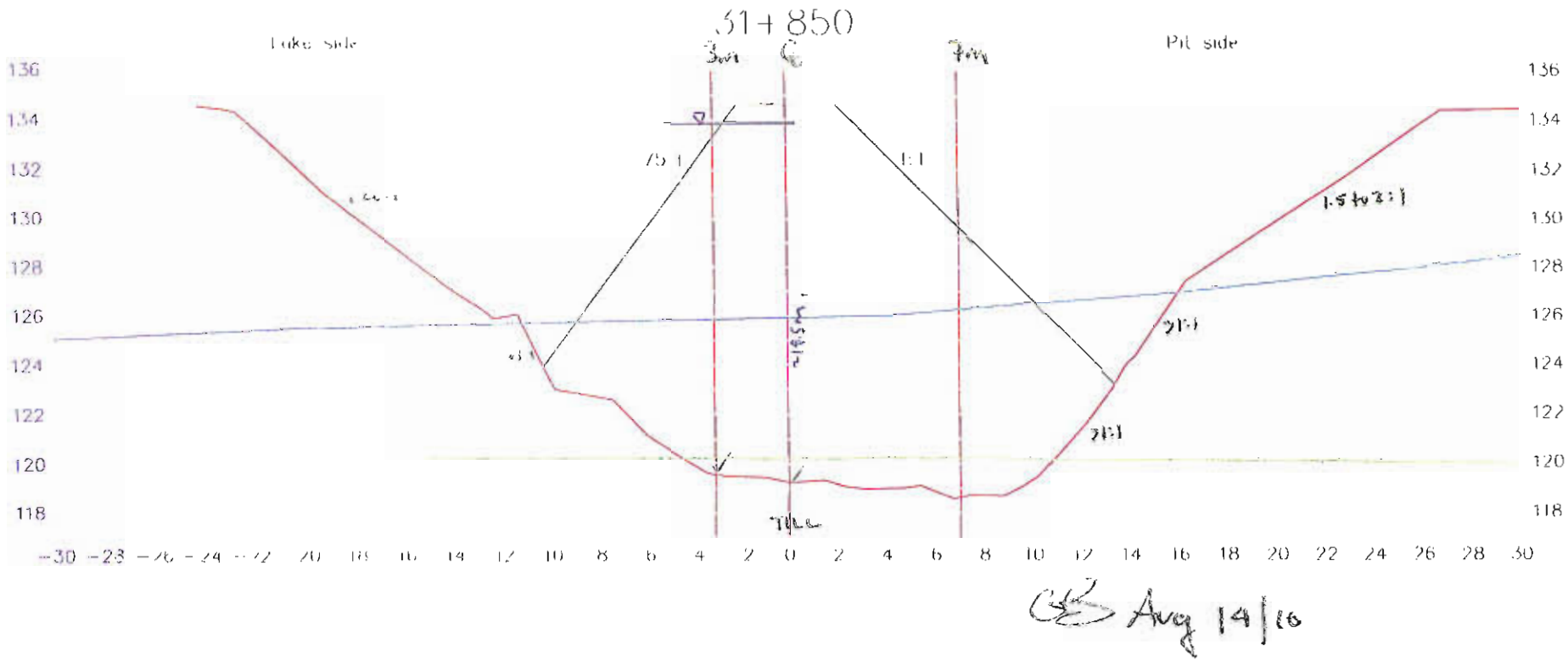
Manual probing

Date: 150810

Page: 4/7

Par: Alex Lalancette et Hugue Gagnon

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Lake bed soil

Pike

Target surface

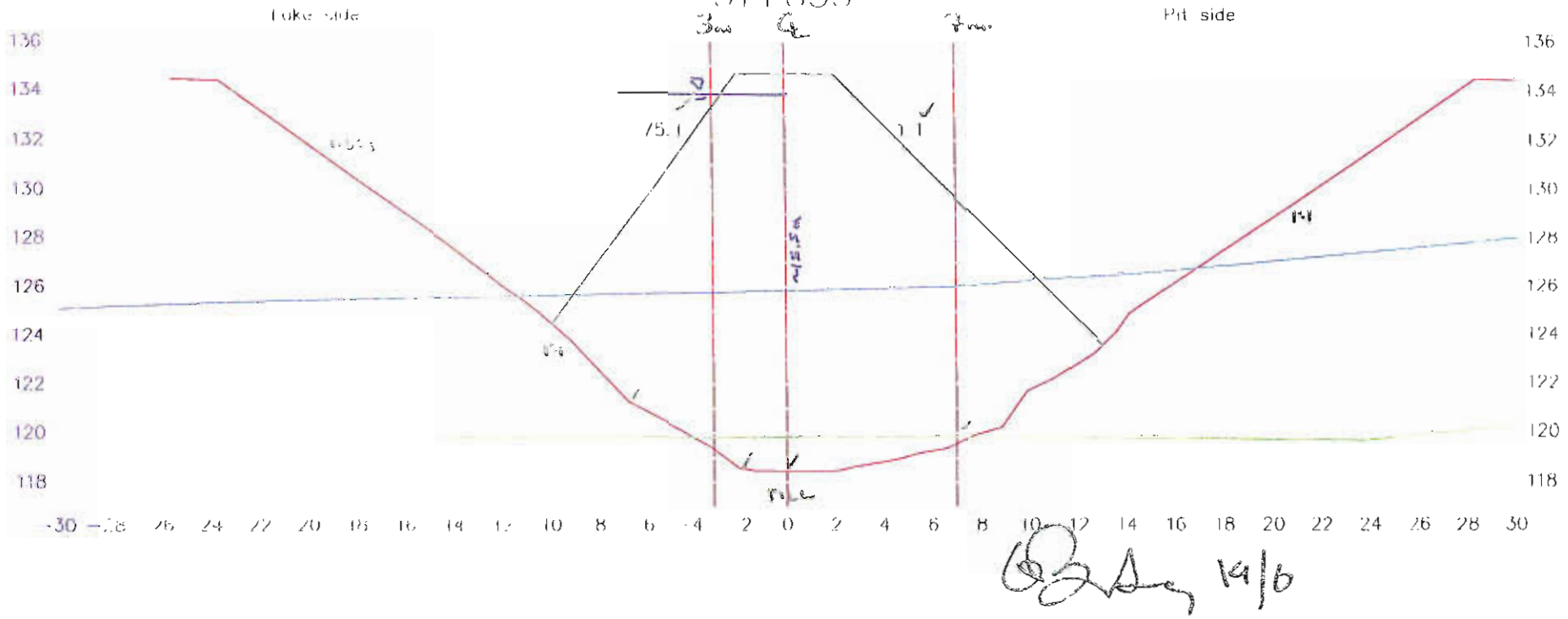
Manual probing

Date: 150810

Page:5/7

Par: Alex Lalancette et Hugue Gagnon

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Lake bed soil

Dike

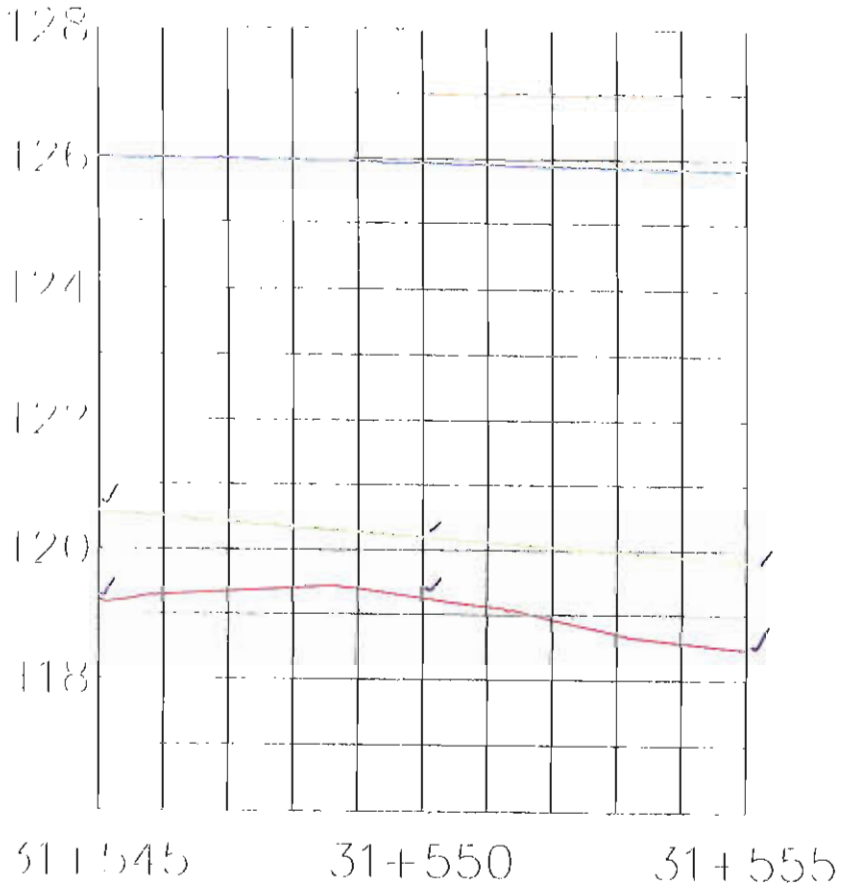
Target surface

Manual probing

Date: 150810

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Par: Alex Lalancette et Hugue Gagnon



GB Aug 15/10

Lake bed soil

Dike

Target surface

Manual probing

Date: 150810

Page: 7/7

Par: Alex Lalancette et Hugue Gagnon

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Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 31+~~835~~ 850 Offset Revised	SHIFT: NIGHT :☐ DAY :☒	DATE : Aug 16	SHEET 1 OF 9
To Sta. 31+865 Offset	LOCATION: : Bay Goose Dike South Portion		
EQUIPMENT:			
DESCRIPTION			

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	MS	GB
2.	Storage areas planned for disposal of removed materials	MS	GB
3.	Occurrence of snow and ice removal method in place	MS	GB
4.	Occurrence of boulders and removal method in place	MS	GB
5.	Occurrence of hummocks and scalping method in place	MS	GB
6.	Occurrence of surface and ground water and its impact mitigation in place	MS	GB
7.	Presence of other unsuitable materials and removal method in place	MS	GB
8.	Soil frozen or thawed and measures taken	MS	GB
9.	Blasting requirement to remove unsuitable material and safety measure checked	N/A MS	MA-GB
10.	Adjustment made to suit design in field	MS	GB
11.	Final walkover inspection before re-sloping or fill placement	MS	GB
12.	"As-excavated" survey conducted	MS	GB
13.	Final sounding conducted of lake bottom surface	MS	GB

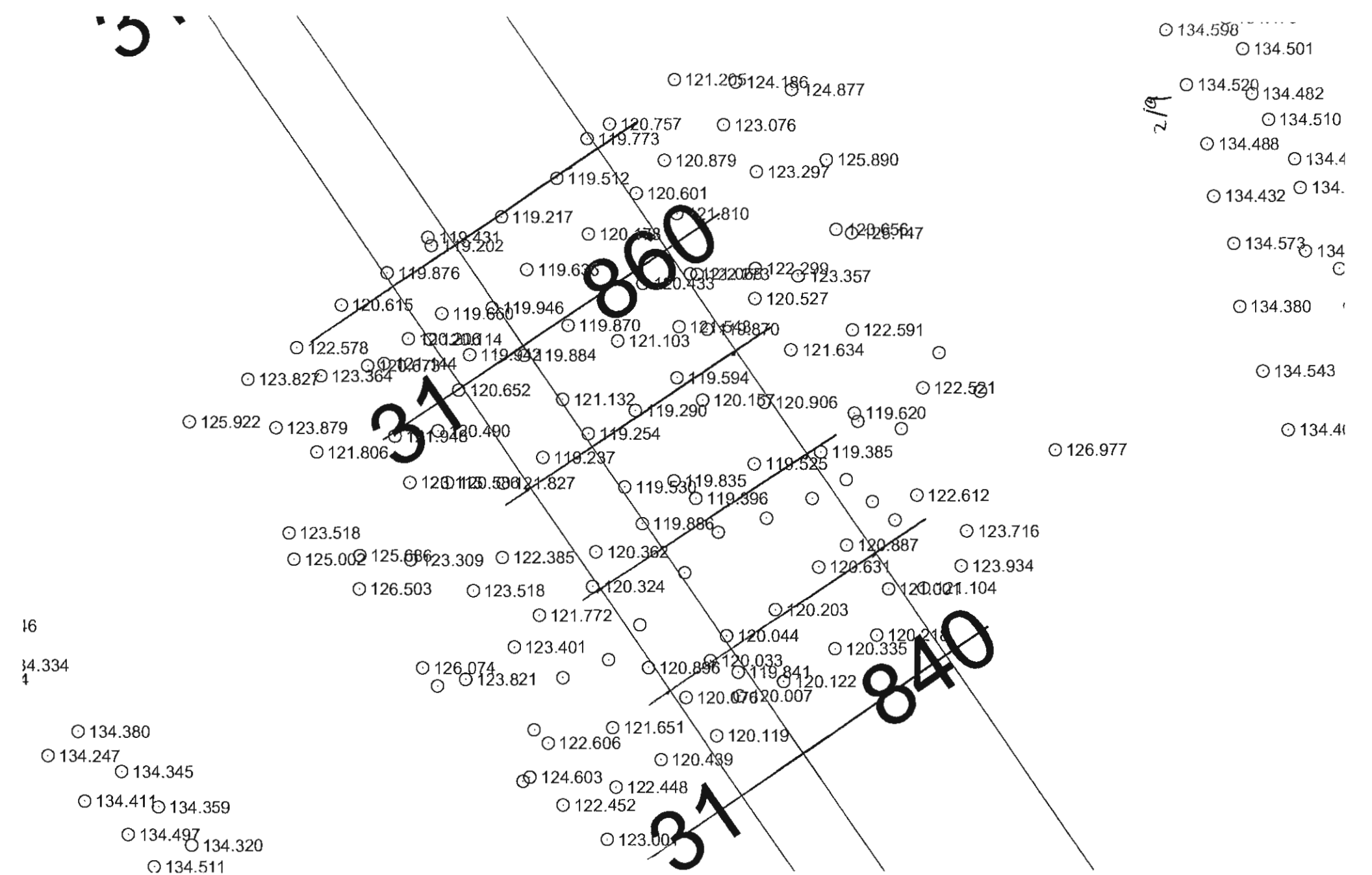
REMARKS : (1) TAKE SOUNDINGS FOR SILT THICKNESS. ok.
(2) APPROVED TO BACKFILL TO TOE 31+865

DEVIATIONS : (Attach list if necessary)
Revised 31+847 to 31+855 to reflect that measuring pole is 0.85m shorter than measured

DATE OF RECTIFICATION :

SURVEY VERIFICATION	ACCEPTED BY QA Manager :	ACCEPTED BY OWNER :
NAME: MAXIME GILBERT	NAME: GRANT BURNS	NAME:
SIGNATURE :	SIGNATURE :	SIGNATURE :
DATE Aug 16, 2010	DATE Aug 16, 2010	DATE

COPY OF ORIGINAL 1/9



Station: 31+840 @ 31+865

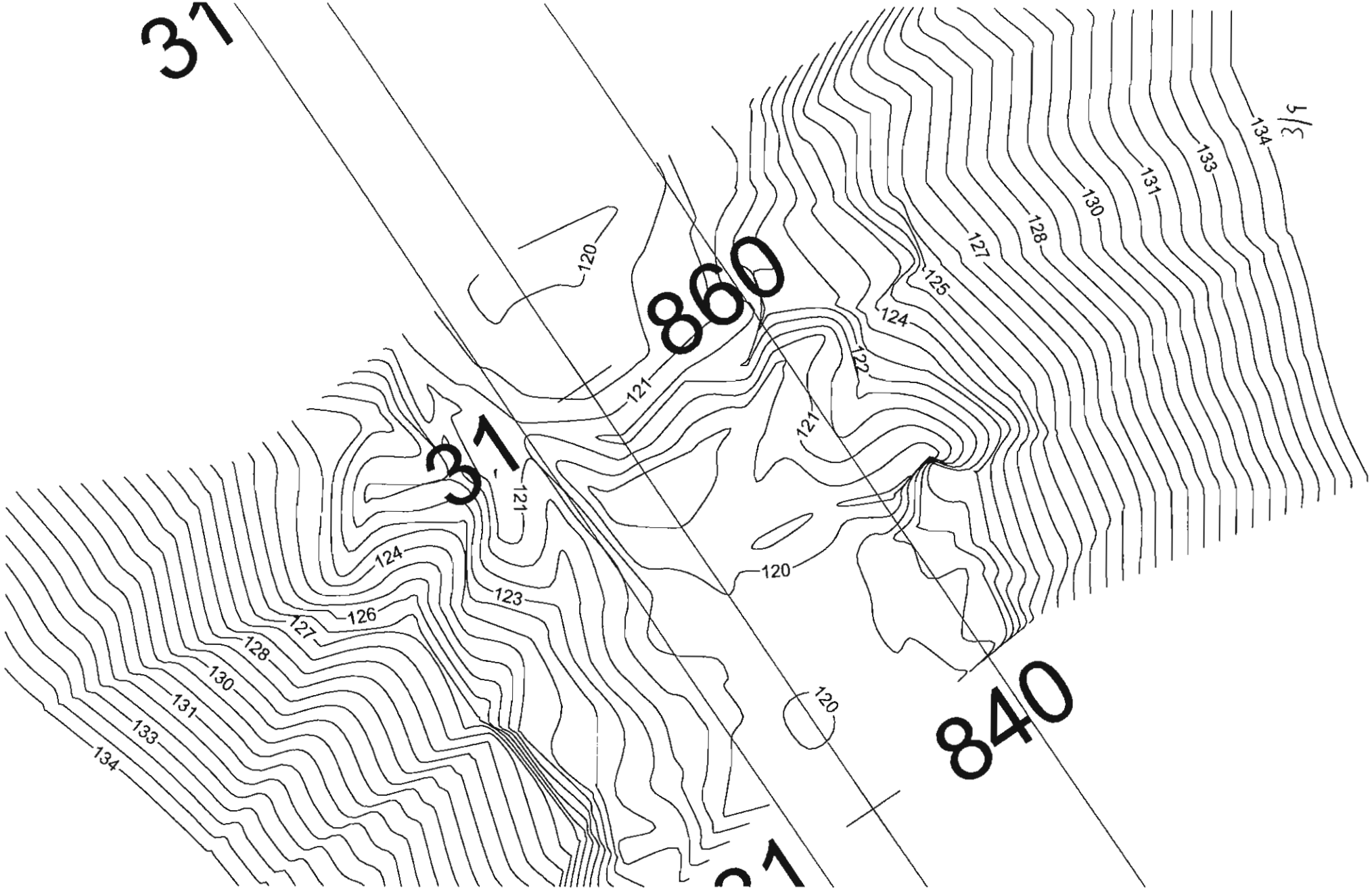
Scale: 1:200

Date: 160810

Page: 2/9

Par: Alex Lalancette et Hugue Gagnon

Aug 16/16



Station: 31+840 @ 31+865

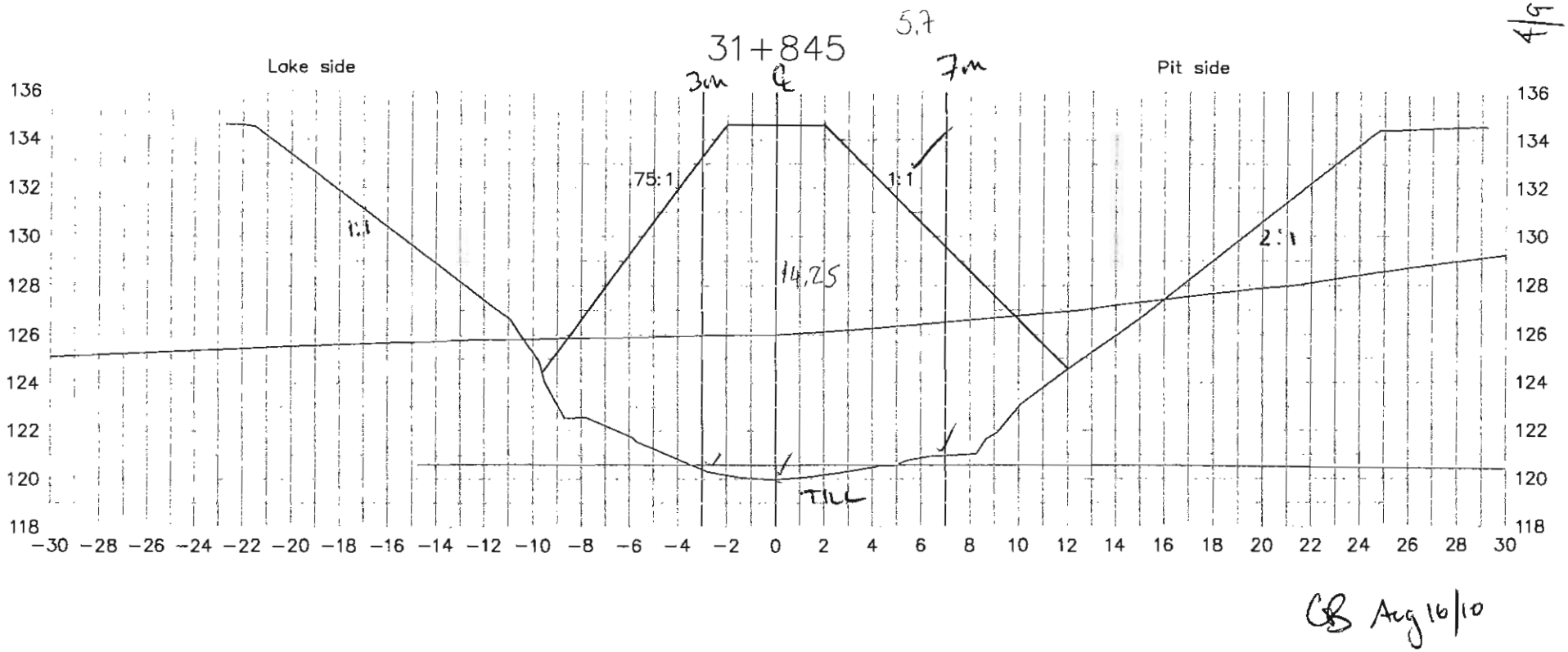
Scale: 1:200

Date: 160810

Page: 3/9

Par: Alex Lalancette et Hugue Gagnon

GB Aug 16/10



Lake bed soil

Dike

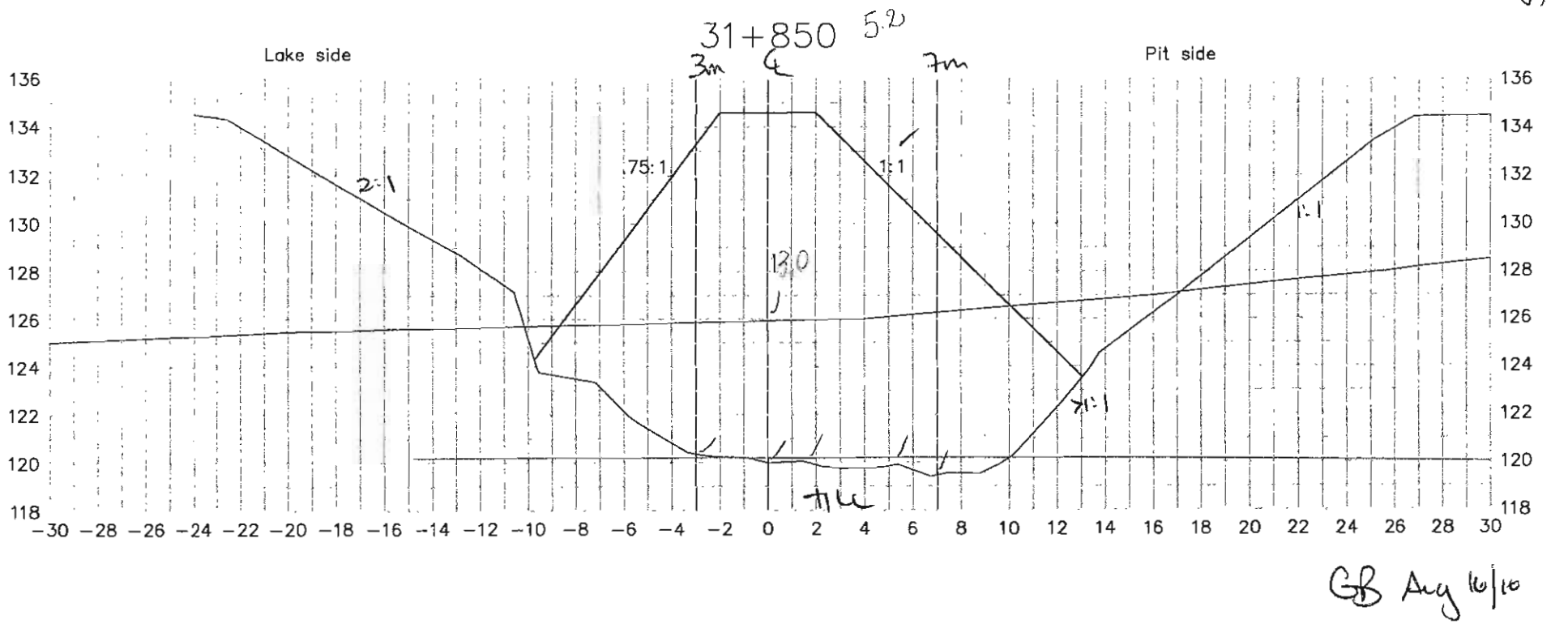
Target surface

Manual probing

Date: 160810

Page: 4/9

Par: Alex Lalancette



GB Aug 16/10

Lake bed soil

Dike

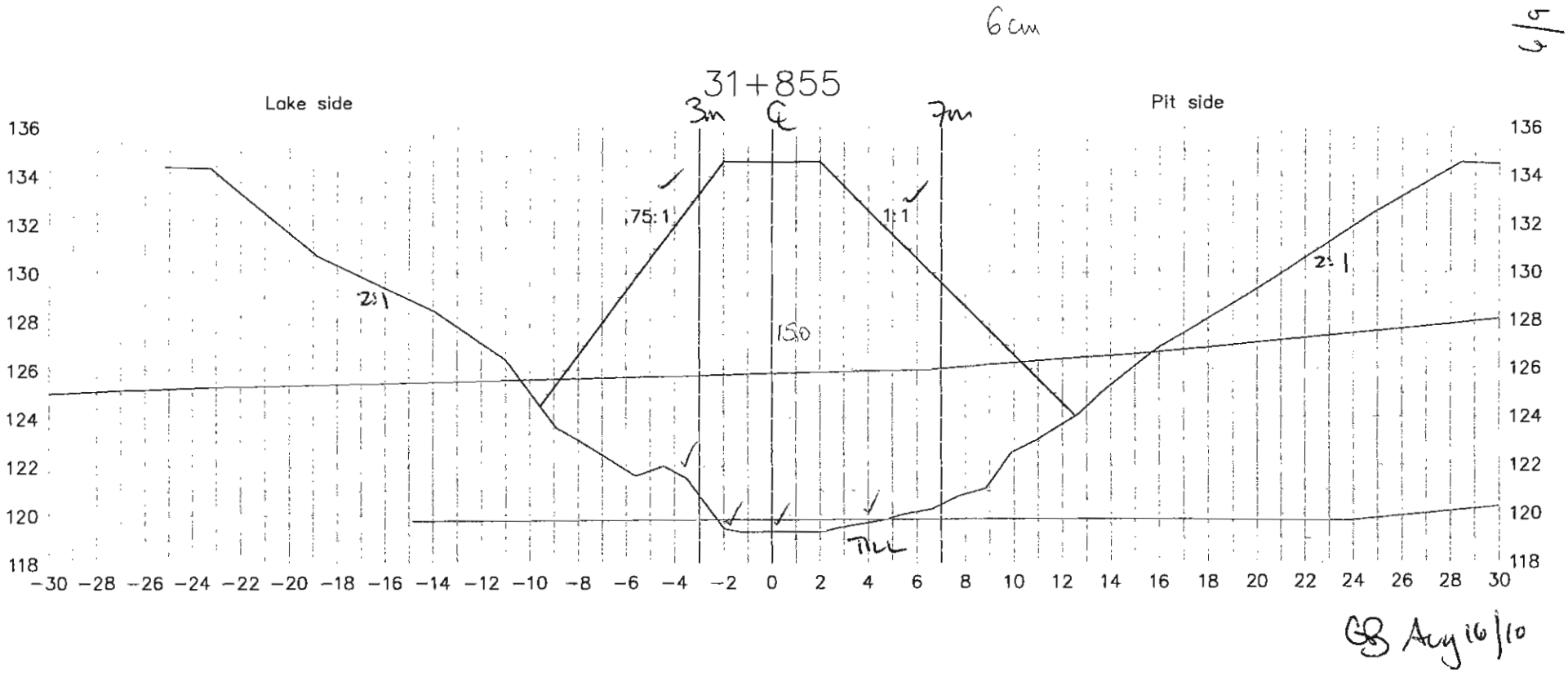
Target surface

Manual probing

Date: 160810

Page:5/9

Par: Alex Lalancette



Lake bed soil

Dike

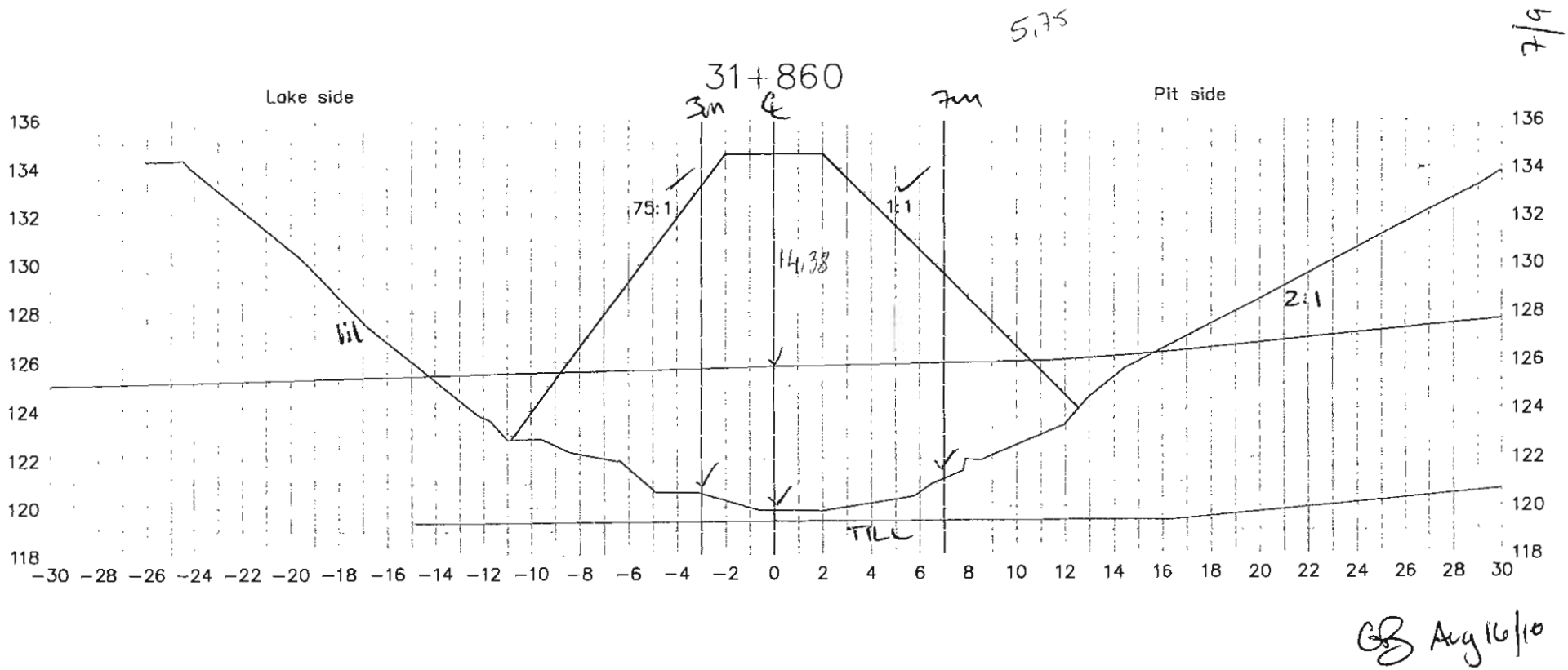
Target surface

Manual probing

Date: 160810

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Par: Alex Lalancette



Lake bed soil

Dike

Target surface

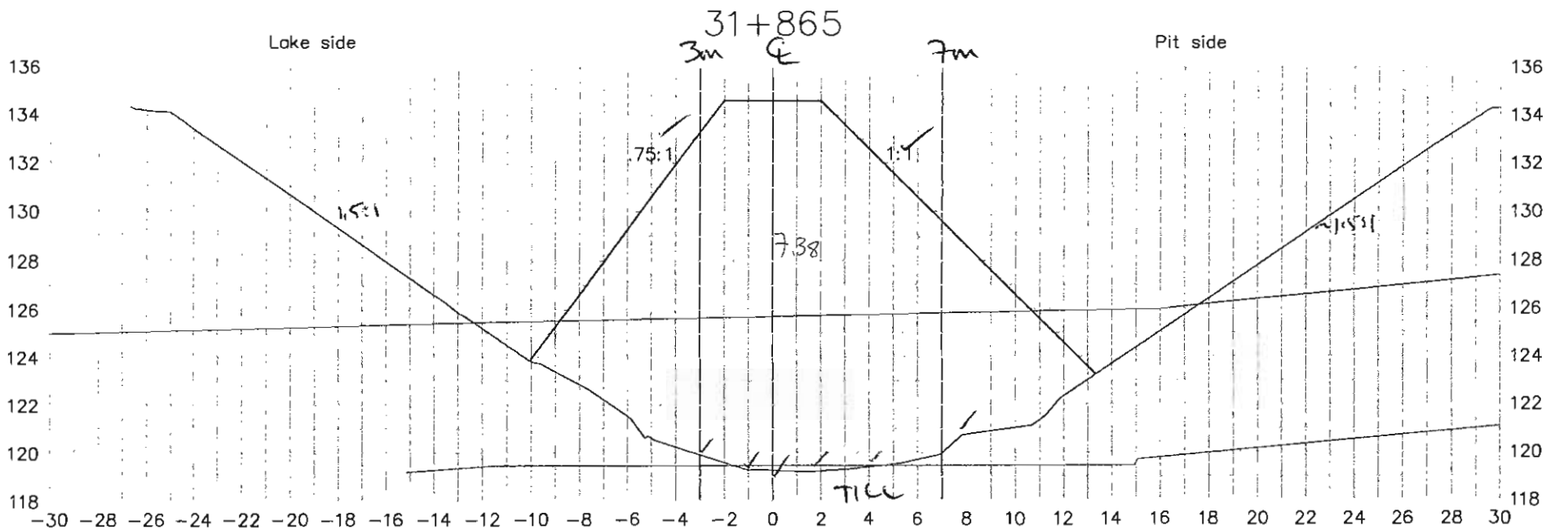
Manual probing

Date: 150810

Page:7/9

Par: Alex Lalancette

5.9



GB Aug 16/10

Lake bed soil

Dike

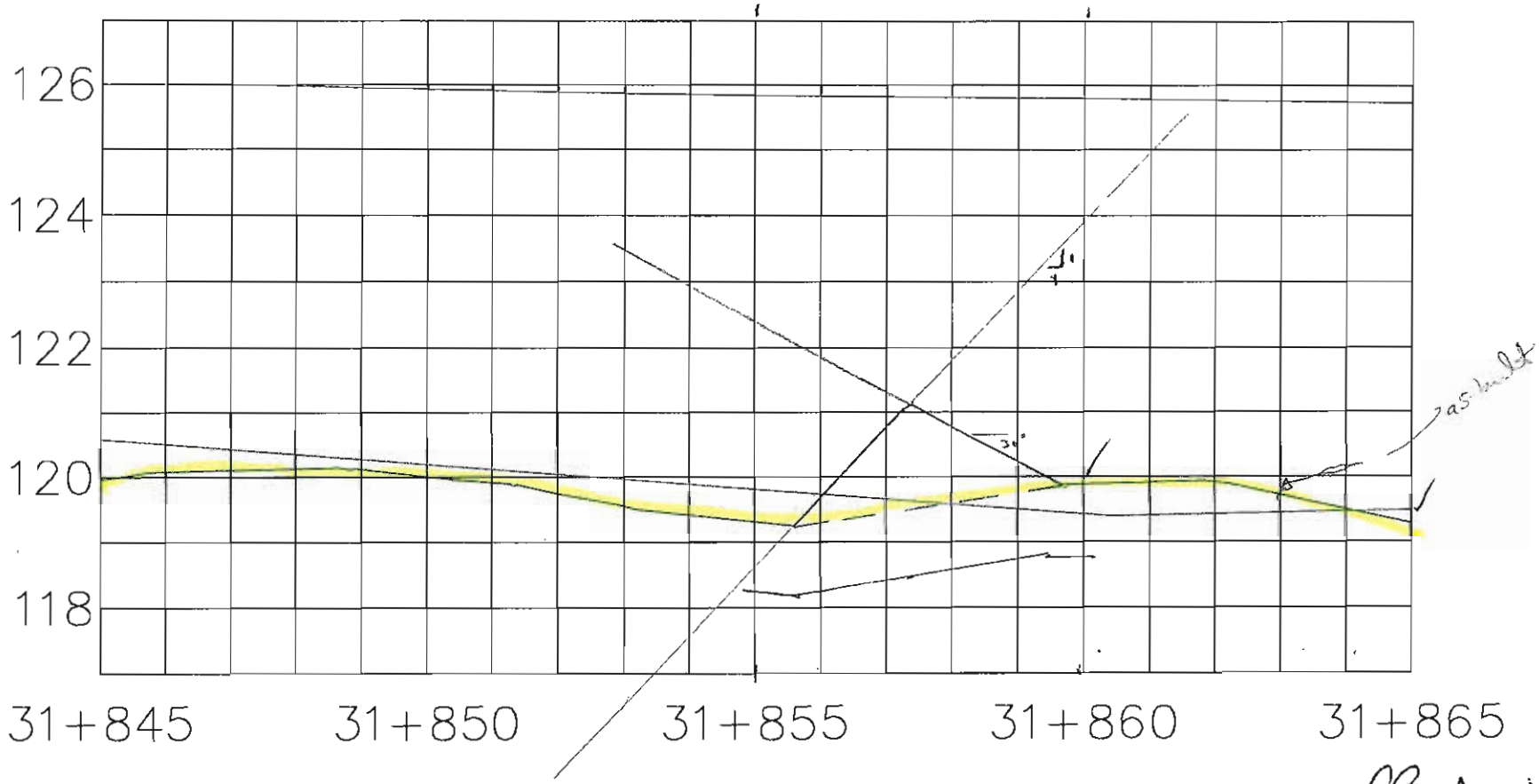
Target surface

Manual probing

Date: 160810

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Par: Alex Lalancette



GB Aug 16/10

Lake bed soil

Dike

Target surface

Manual probing

Date: 160810

Page: 9/9

Par: Alex Lalancette

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 31+865 Offset	SHIFT: NIGHT :☐ DAY :☒	DATE : AUG 17/10	SHEET 1 OF 4
To Sta. 31+870 Offset	LOCATION: : BAY GOOSE DIKE - SOUTH PORTION		
EQUIPMENT:			
DESCRIPTION			

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	MG	GB
2.	Storage areas planned for disposal of removed materials	MG	GB
3.	Occurrence of snow and ice removal method in place	MG	GB
4.	Occurrence of boulders and removal method in place	MG	GB
5.	Occurrence of hummocks and scalping method in place	MG	GB
6.	Occurrence of surface and ground water and its impact mitigation in place	MG	GB
7.	Presence of other unsuitable materials and removal method in place	MG	GB
8.	Soil frozen or thawed and measures taken	N/A MG	N/A GB
9.	Blasting requirement to remove unsuitable material and safety measure checked	MG	GB
10.	Adjustment made to suit design in field	MG	GB
11.	Final walkover inspection before re-sloping or fill placement	MG	GB
12.	"As-excavated" survey conducted	MG	GB
13.	Final sounding conducted of lake bottom surface	MG	GB

REMARKS : ① TAKE SOUNDINGS FOR SILT ACCUMULATION.
② APPROVED TO TOE 31+870.

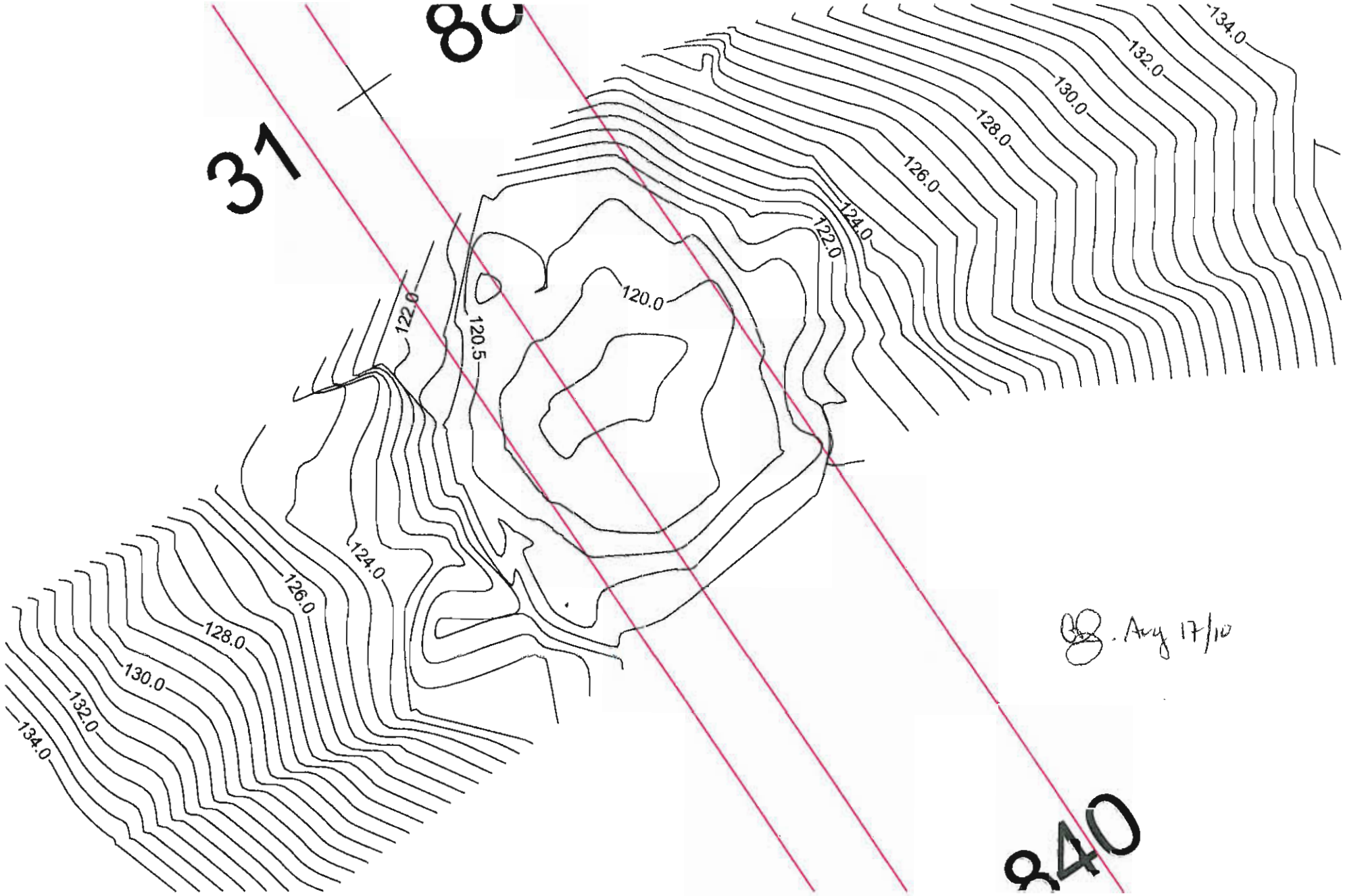
DEVIATIONS : (Attach list if necessary)

DATE OF RECTIFICATION :

SURVEY VERIFICATION	ACCEPTED BY QA Manager :	ACCEPTED BY OWNER :
NAME: MAXIME GILBERT	NAME: GRANT BURNS	NAME:
SIGNATURE :	SIGNATURE :	SIGNATURE :
DATE AUG 17, 2010	DATE AUG 17, 2010	DATE

10WID RECEIVED
11W45 Returned

copy of original 1/6



2/6

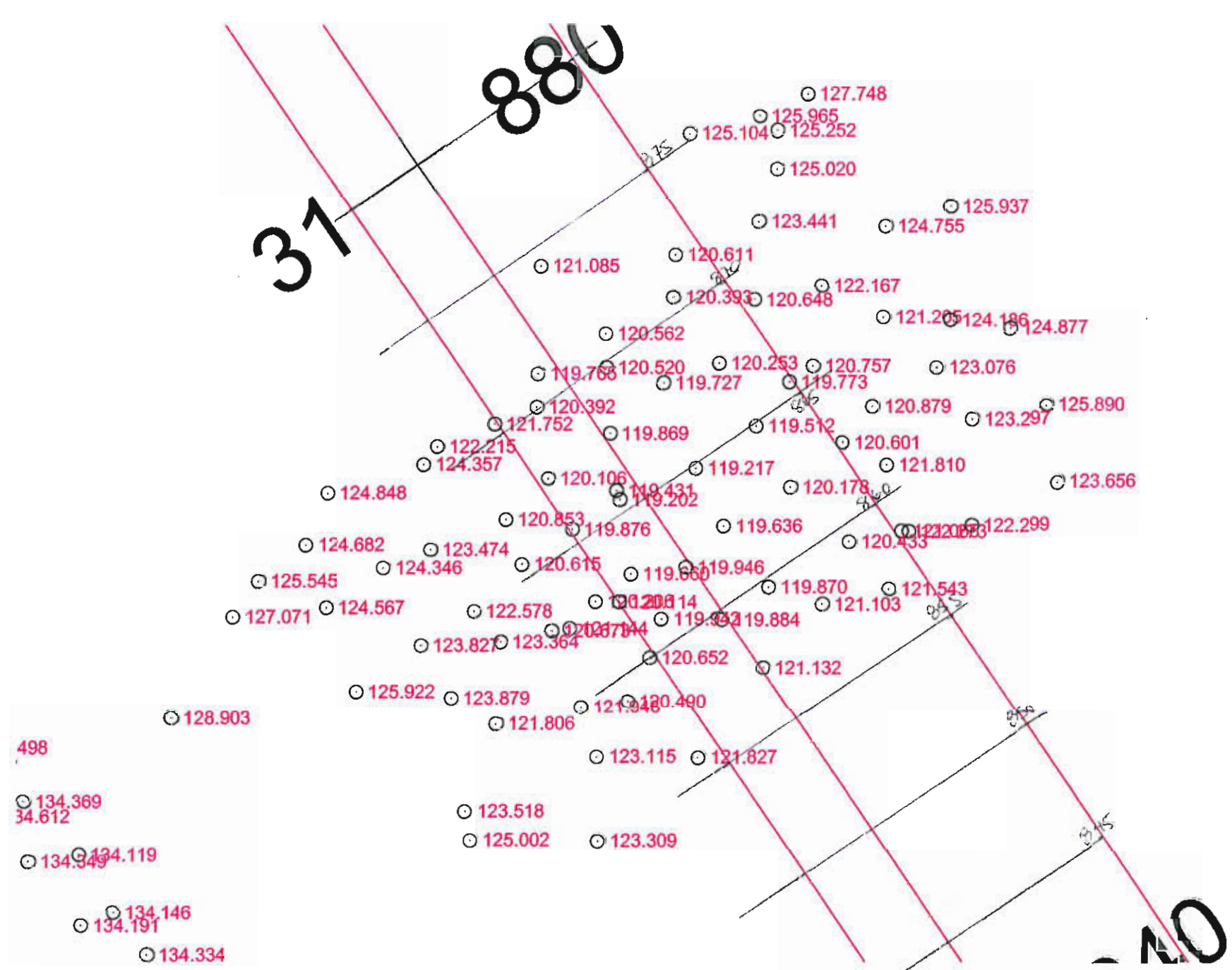
Station: 31+865 @ 31+870

Scale: 1:200

Date: 170810

Page: 3/6

Par: Alex Lalancette



Station: 31+865 @ 31+870

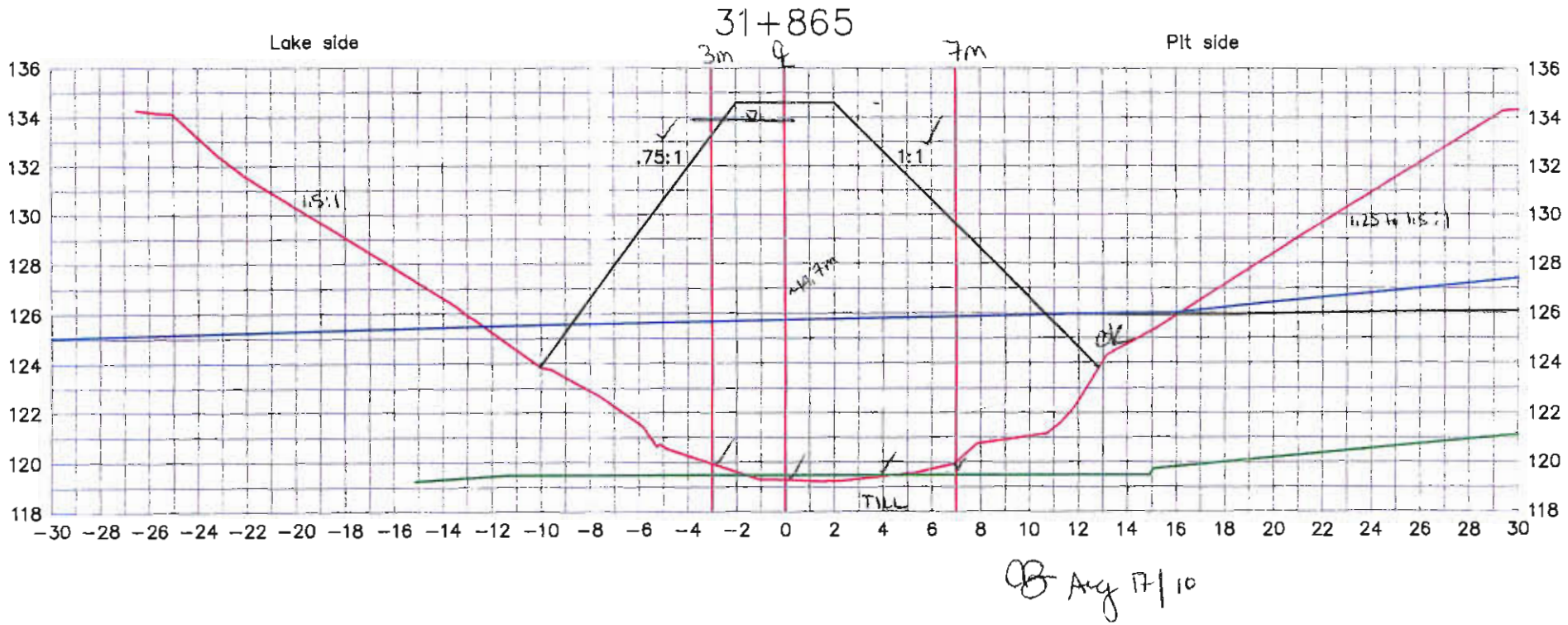
Scale: 1:200

Aug 17, 2010

Date: 170810

Page: 2/9

Par: Alex Lalancette



Aug 17/10

Lake bed soil

Dike

Target surface

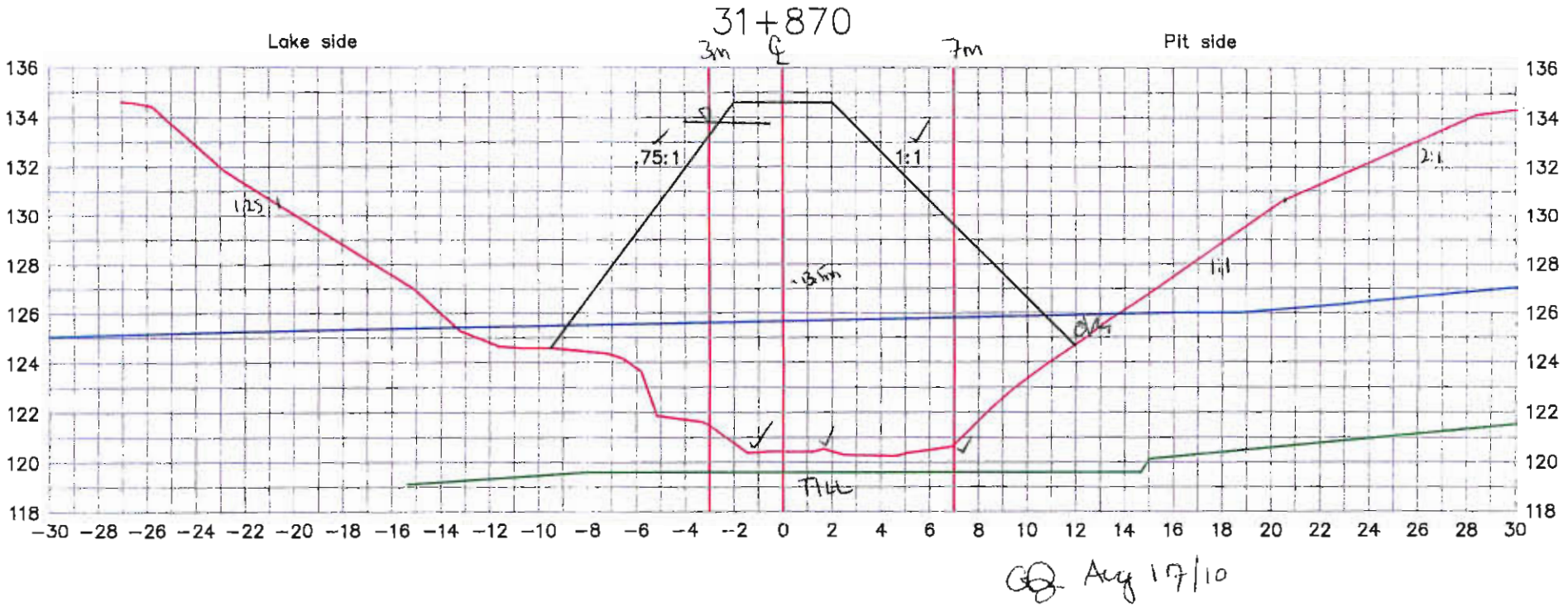
Manual probing

Date: 170810

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Par: Alex Lalancette

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Aug 17/10

Lake bed soil

Dike

Target surface

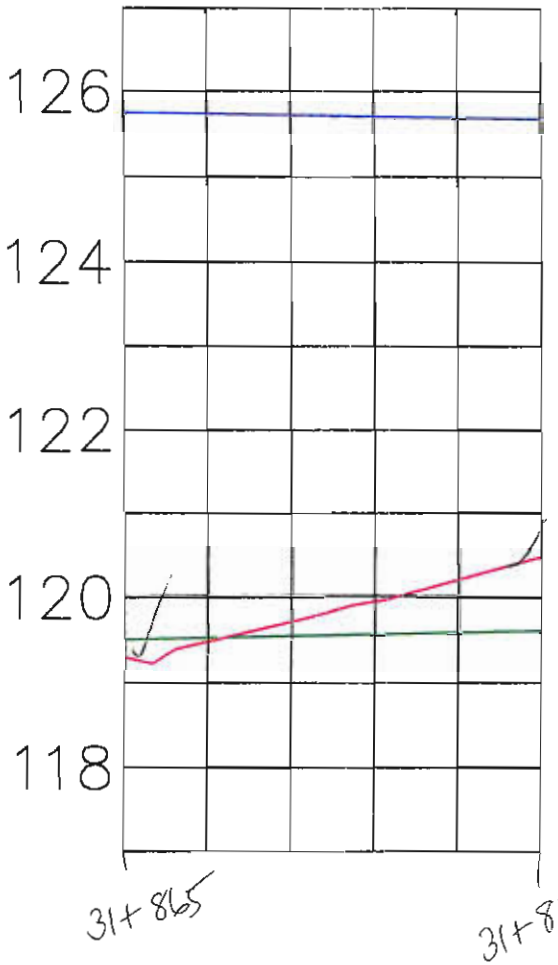
Manual probing

Date: 170810

Page:5/6

Par: Alex Lalancette

9/5



GB Aug 17, 2010

Lake bed soil

Dike

Target surface

Manual probing

Date: 170810

Page: 6/6

Par: Alex Lalancette

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Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 31+570 Offset	SHIFT: NIGHT :☐ DAY : ☒	DATE : 17-08-2010	SHEET OF
To Sta. 31+875 Offset	LOCATION: : Bay Goose Dike South Portion		
EQUIPMENT:			
DESCRIPTION			

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	MS	GB.
2.	Storage areas planned for disposal of removed materials	MS	GB.
3.	Occurrence of snow and ice removal method in place	MS	GB.
4.	Occurrence of boulders and removal method in place	MS	GB.
5.	Occurrence of hummocks and scalping method in place	MS	GB
6.	Occurrence of surface and ground water and its impact mitigation in place	MS	GB.
7.	Presence of other unsuitable materials and removal method in place	MS.	GB
8.	Soil frozen or thawed and measures taken	N/A MS	N/A GB
9.	Blasting requirement to remove unsuitable material and safety measure checked	N/A MS	N/A GB.
10.	Adjustment made to suit design in field	MS	GB
11.	Final walkover inspection before re-sloping or fill placement	MS	GB.
12.	"As-excavated" survey conducted	MS	GB.
13.	Final sounding conducted of lake bottom surface	MS	GB.

REMARKS : (1) APPROVED TO BACKFILL TO TOE OF 31+875 (~ 31+846m CREST).

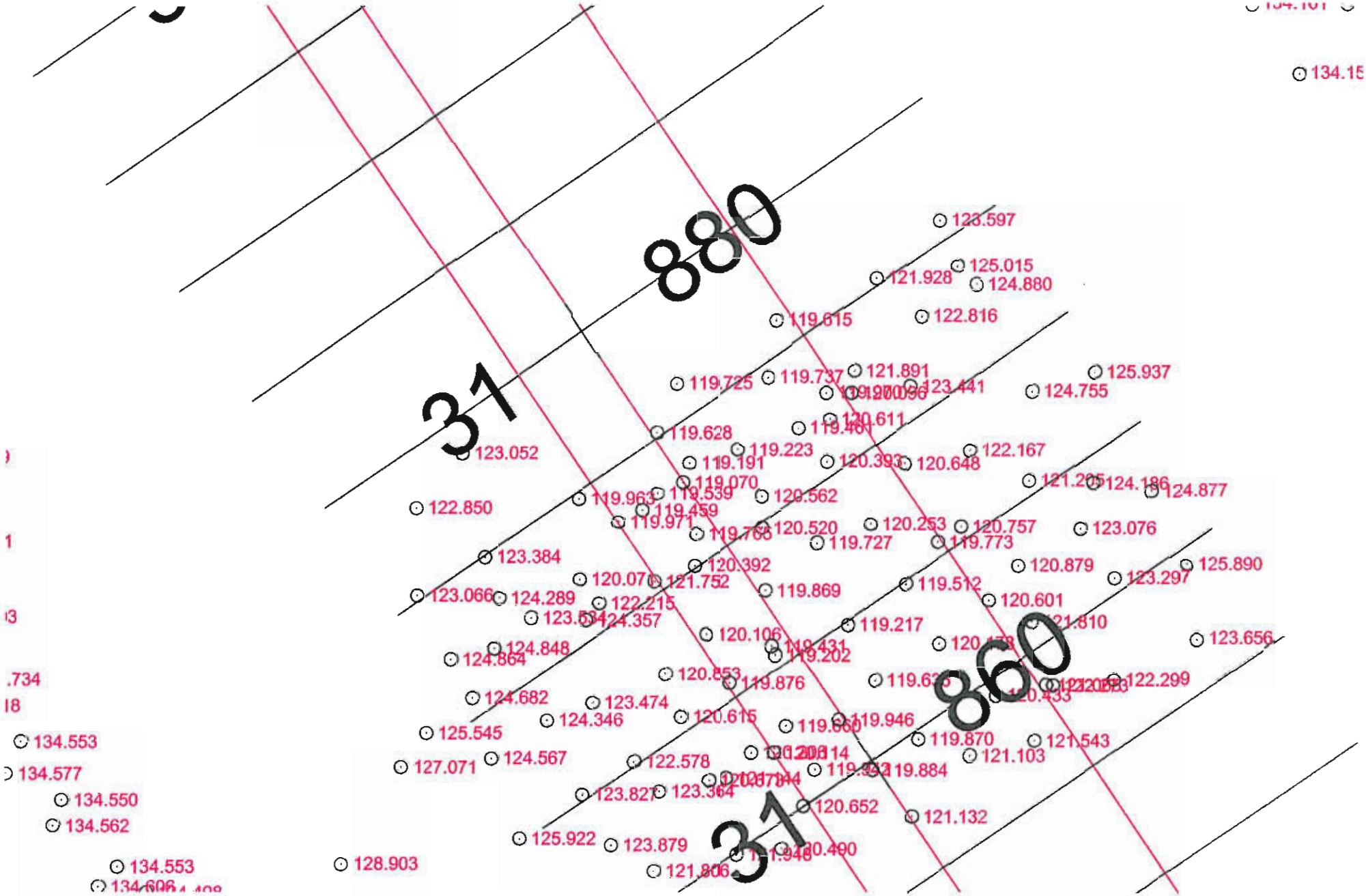
DEVIATIONS : (Attach list if necessary)

DATE OF RECTIFICATION :

SURVEY VERIFICATION	ACCEPTED BY QA Manager :	ACCEPTED BY OWNER :
NAME: MAXIME GILBERT	NAME: GRANT BURNS	NAME:
SIGNATURE : Maxime Gilbert	SIGNATURE : GB	SIGNATURE :
DATE 17-08-2010	DATE Aug. 17, 2010	DATE

16h00 16h35

COPY OF ORIGINAL 1/7



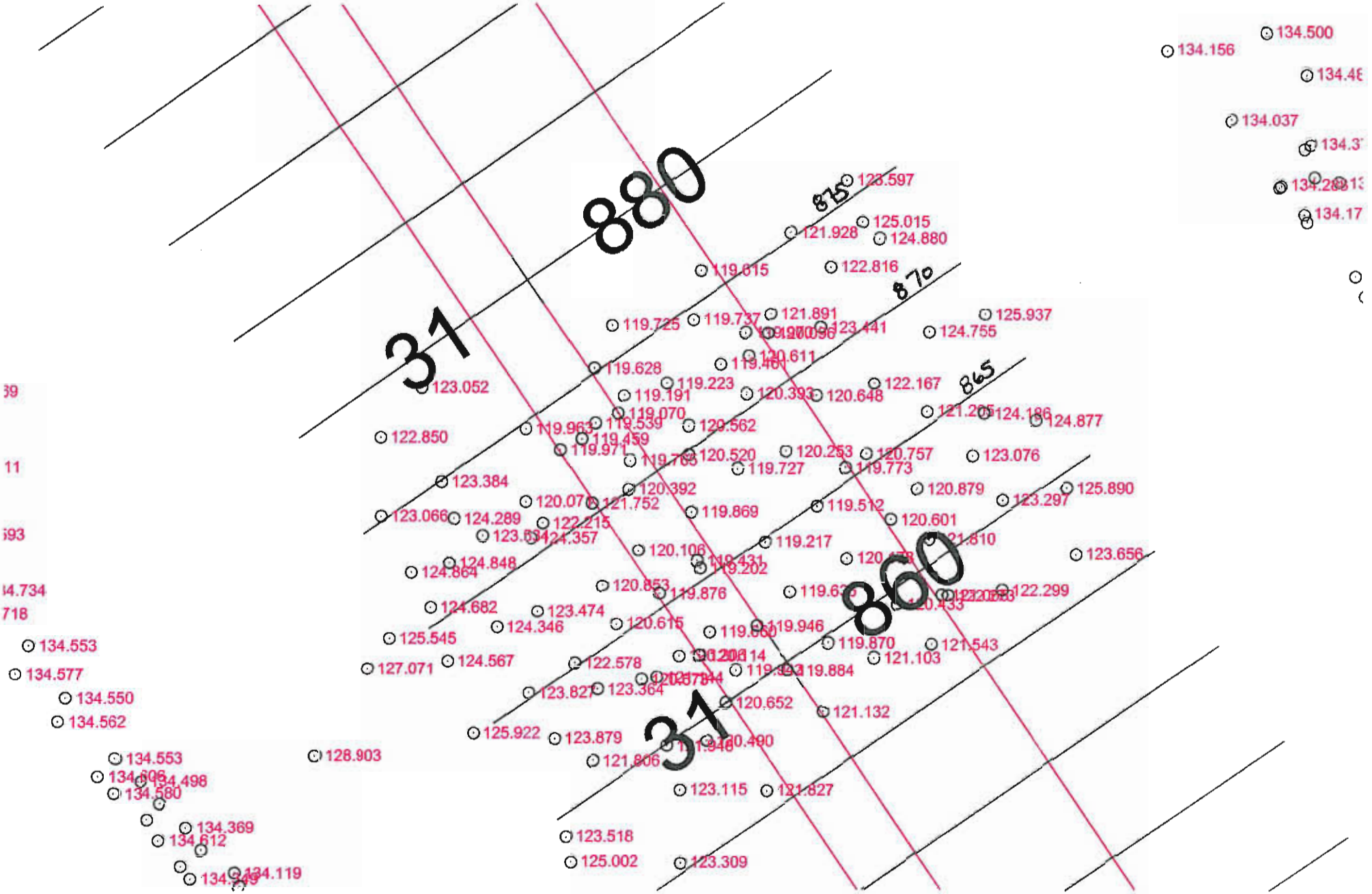
Station: 31+870 @ 31+875

Scale: 1:200

Date: 170810

Page: 2/9

Par: Alex Lalancette



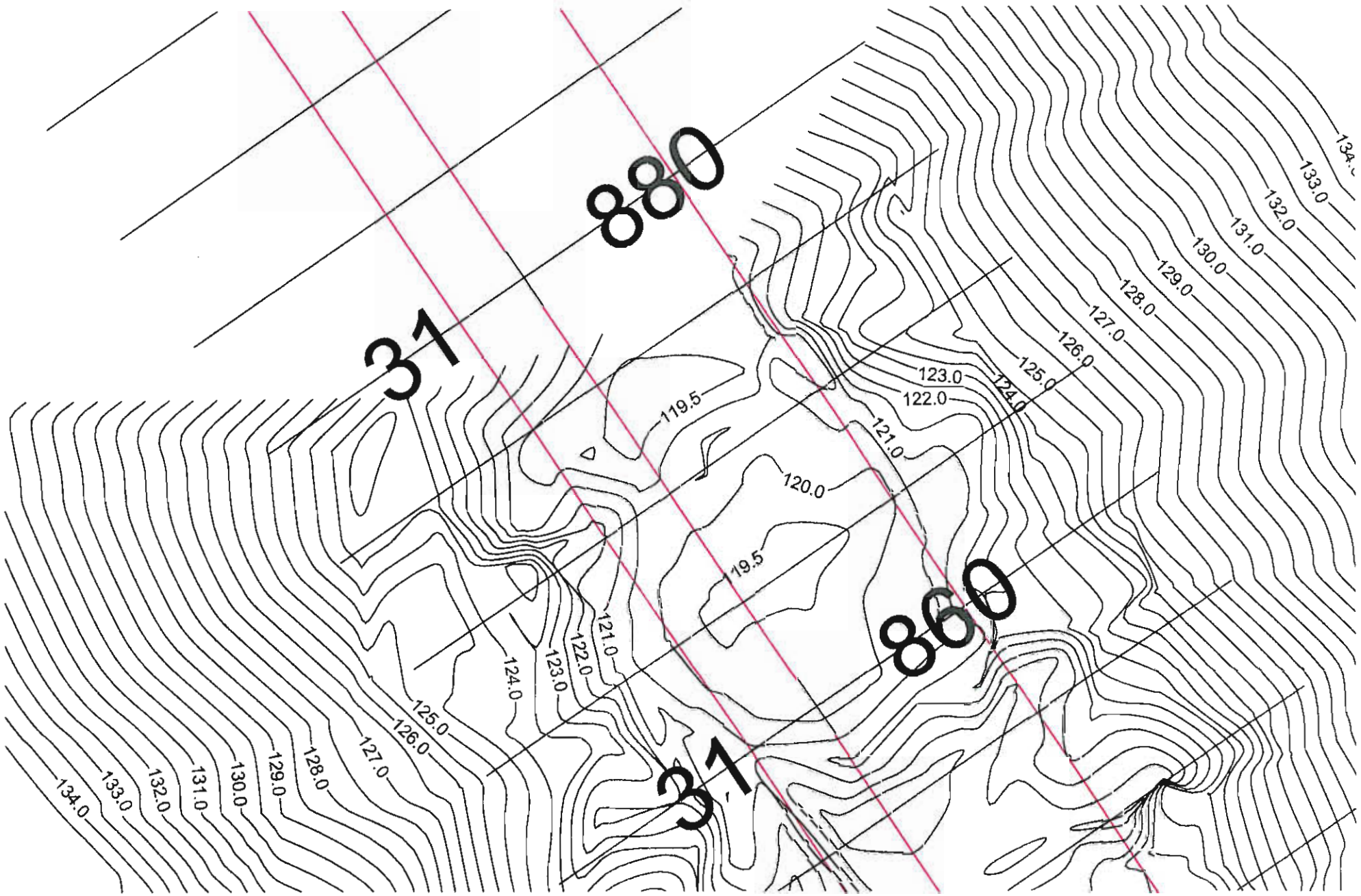
Station: 31+870 @ 31+875

Scale: 1:200

Date: 170810

Page: 2/9

Par: Alex Lalancette



Station: 31+870 @ 31+875

Scale: 1:200

Aug 17/10

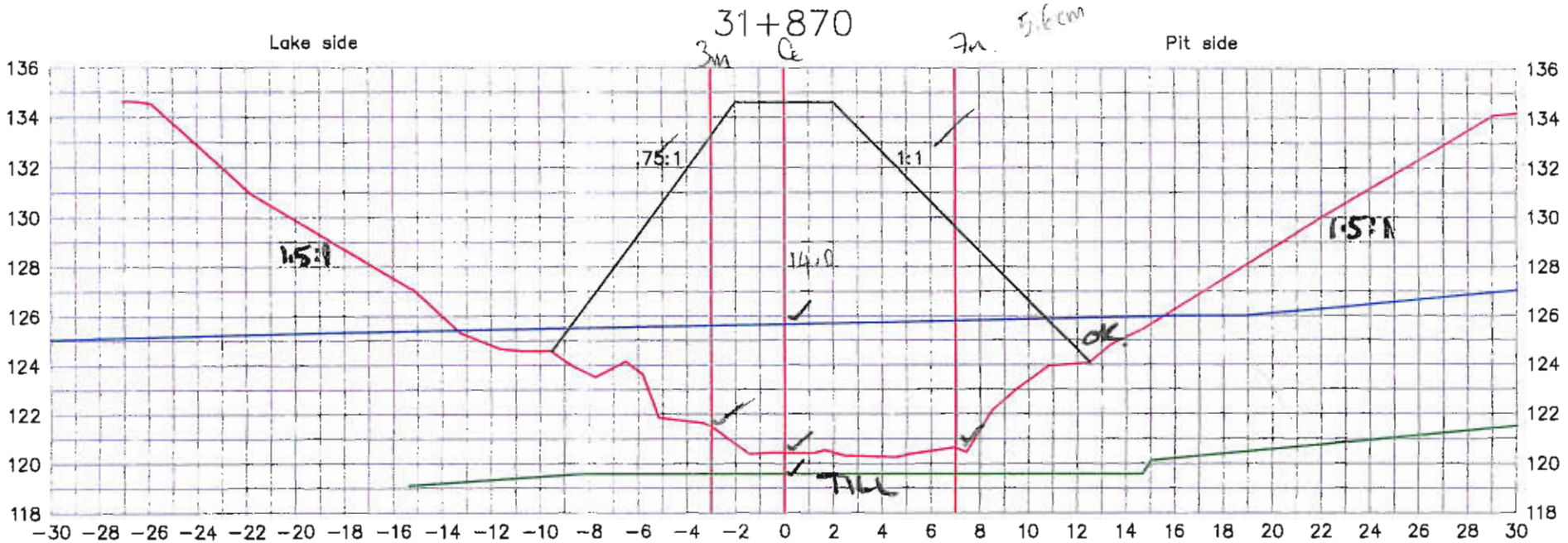
Date: 170810

Page: 3/6

Par: Alex Lalancette

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BOREHOLE:
10-MB-GD-32 o/s = 9.5m



CB Aug 17/10

Lake bed soil

Dike

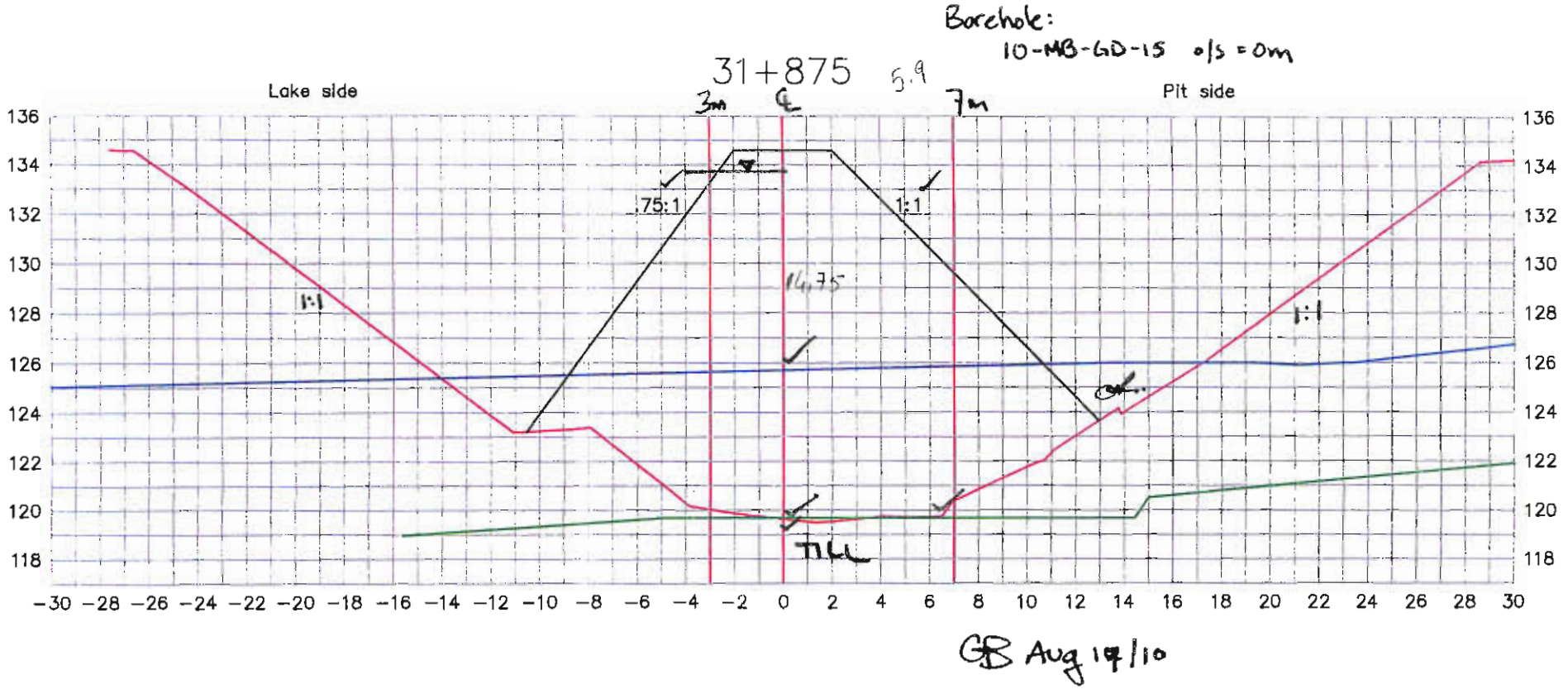
Target surface

Manual probing

Date: 170810

Par: Alex Lalancette

7/s



Lake bed soil

Dike

Target surface

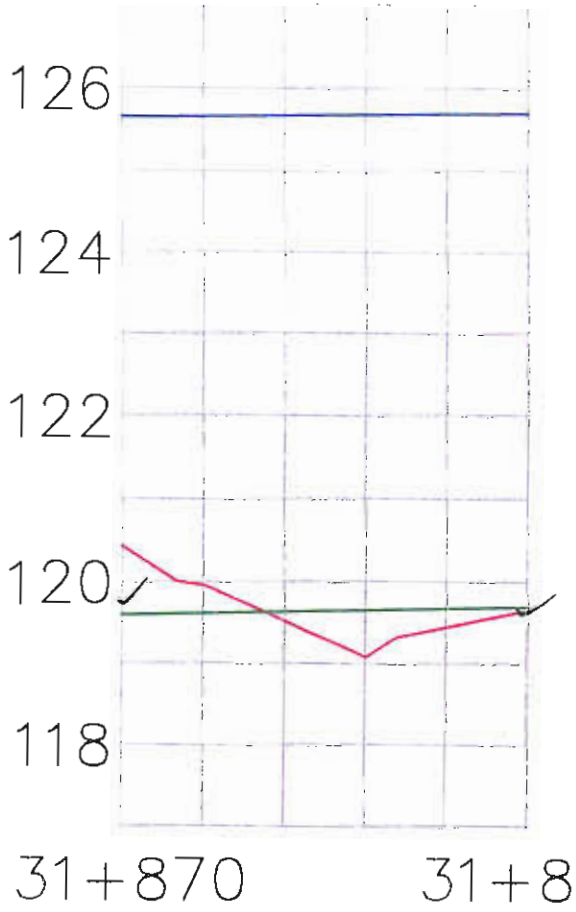
Manual probing

Date: 170810

Page:5/6

Par: Alex Lalancette

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Aug 17 | 10

Lake bed soil

Dike

Target surface

Manual probing

Date: 170810

Page: 6/6

Par: Alex Lalancette

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Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 31+875 Offset	SHIFT: NIGHT :☐ DAY : ☒	DATE : 18-08-2010	SHEET 1 OF 5
To Sta. 31+880 Offset	LOCATION: : Bay Goose Dike South Section		
EQUIPMENT:			
DESCRIPTION			

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	MG	GB.
2.	Storage areas planned for disposal of removed materials	MG	GB.
3.	Occurrence of snow and ice removal method in place	MG	GB.
4.	Occurrence of boulders and removal method in place	MG	GB
5.	Occurrence of hummocks and scalping method in place	MG	GB
6.	Occurrence of surface and ground water and its impact mitigation in place	MG	GB.
7.	Presence of other unsuitable materials and removal method in place	MG	GB
8.	Soil frozen or thawed and measures taken	N/A MG	N/A GB
9.	Blasting requirement to remove unsuitable material and safety measure checked	N/A MG	N/A GB.
10.	Adjustment made to suit design in field	MG	GB.
11.	Final walkover inspection before re-sloping or fill placement	MG	GB.
12.	"As-excavated" survey conducted	MG	GB.
13.	Final sounding conducted of lake bottom surface CREST	MG	SEE PT ① GB.

REMARKS : ① SILT SOUNDINGS BETWEEN BACKFILL TOE (~31+870m) to 31+880m
② IF ABLE TO CLEAN WITH EXCAVATOR BUCKET THEN CLEAN TRENCH BASE TO CLEAN

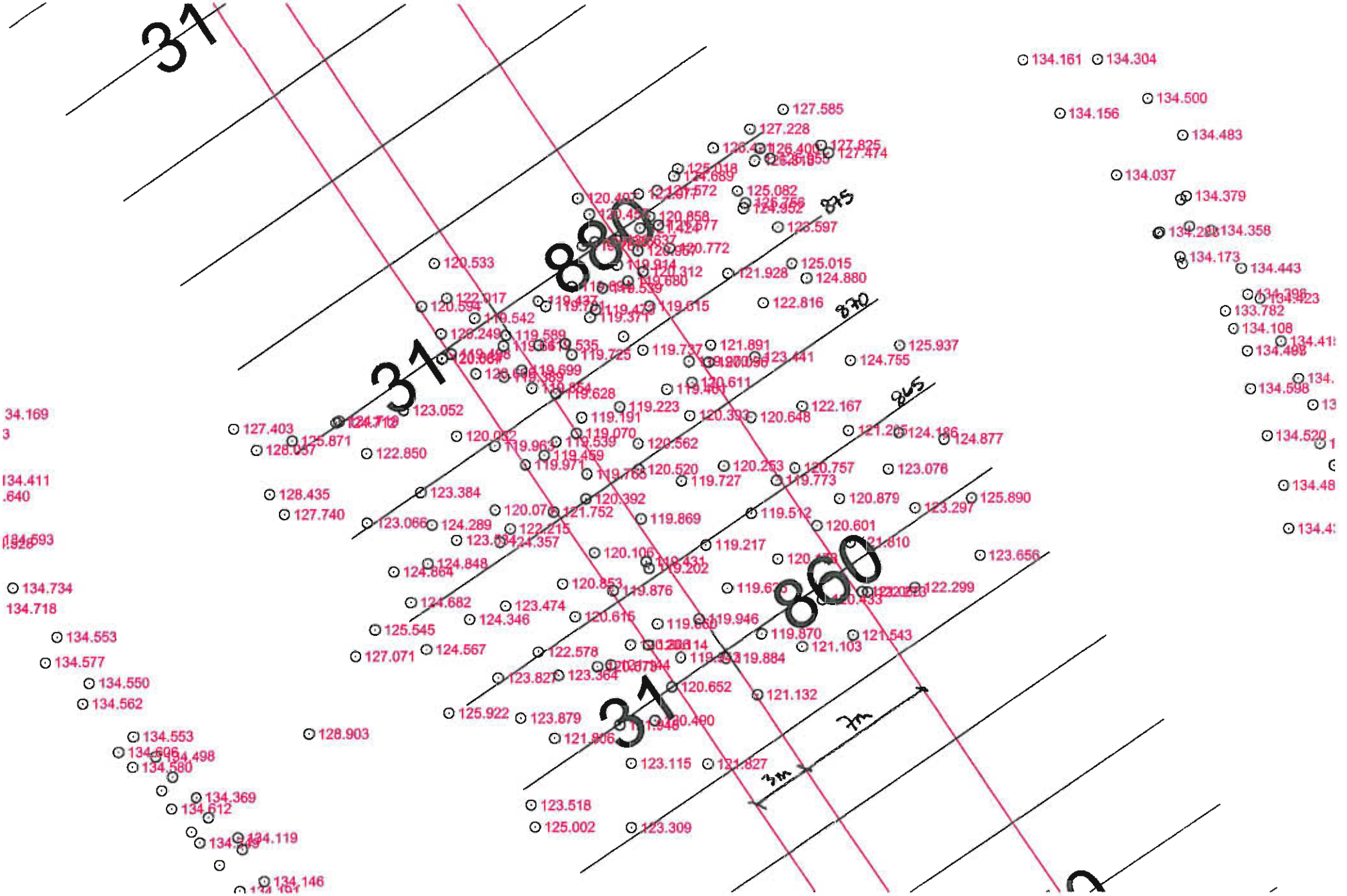
DEVIATIONS : (Attach list if necessary) ③ IF TOO DEEP THEN PROCEED WITH BACKFILL TO TOE 31+880m (~31+853m CREST).

DATE OF RECTIFICATION :

SURVEY VERIFICATION	ACCEPTED BY QA Manager :	ACCEPTED BY OWNER :
NAME: MAXIME GILBERT	NAME: GRANT BURNS	NAME:
SIGNATURE : Maxime Gilbert	SIGNATURE: GB	SIGNATURE :
DATE	DATE Aug 18, 2010.	DATE

8hr15 9hr45

COPY OF ORIGINAL



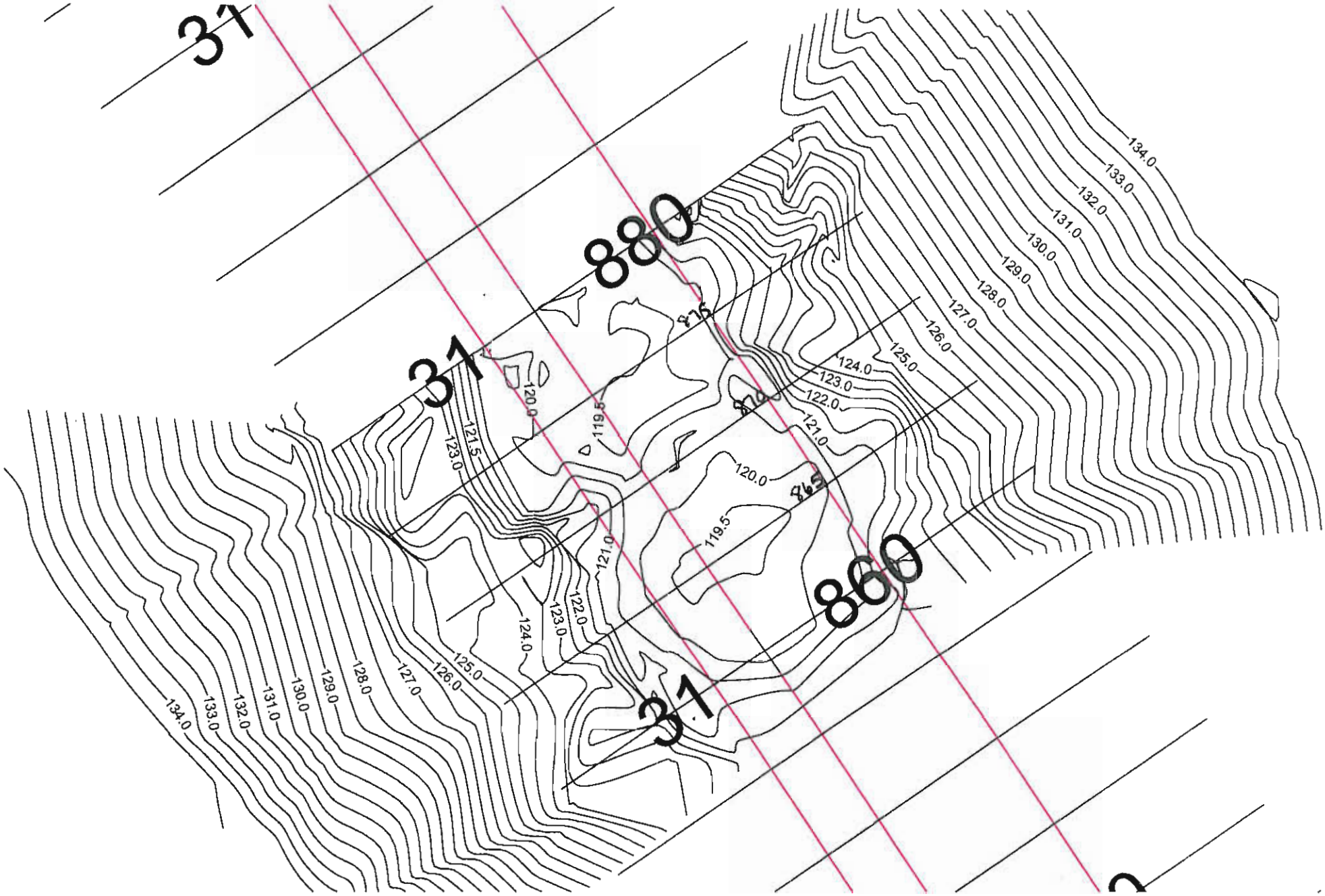
Station: 31+875 @ 31+880

Scale: 1:250

Date: 180810

Page: 2/6

Par: Alex Lalancette



Station: 31+875 @ 31+880

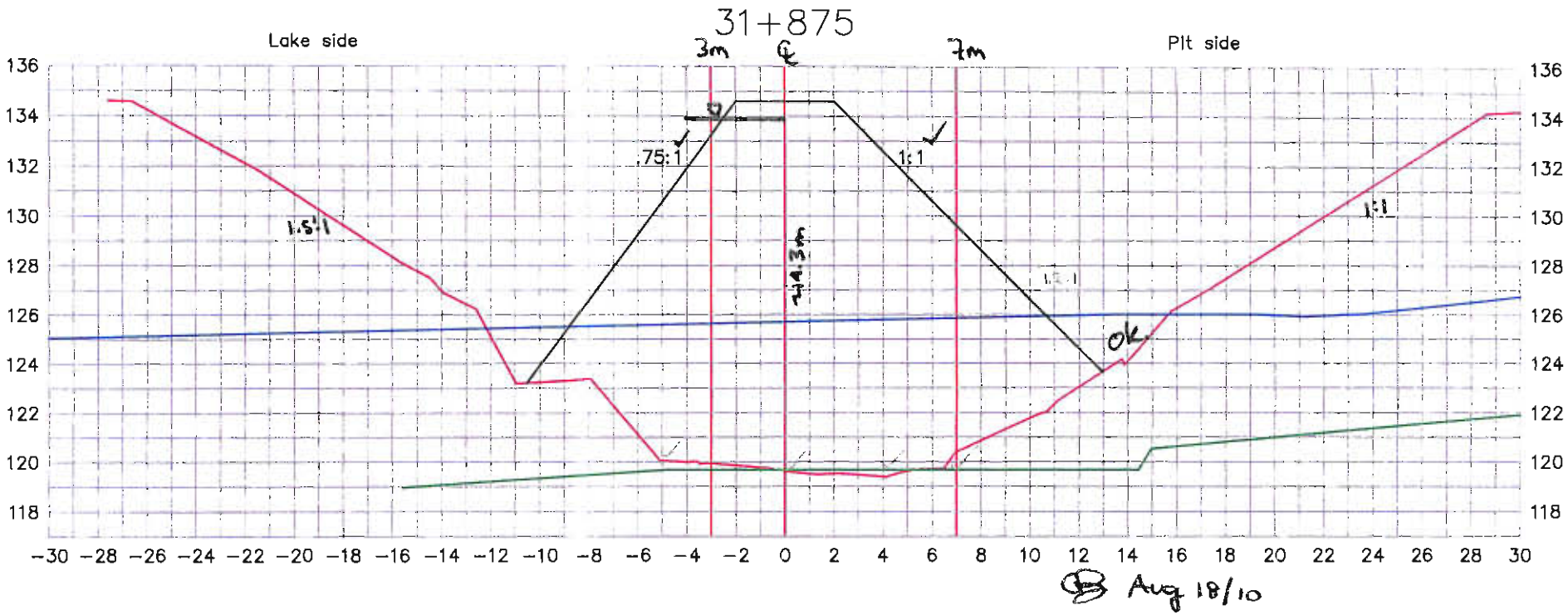
Scale: 1:250

Aug 18/10

Date: 180810

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Par: Alex Lalancette



Lake bed soil

Dike

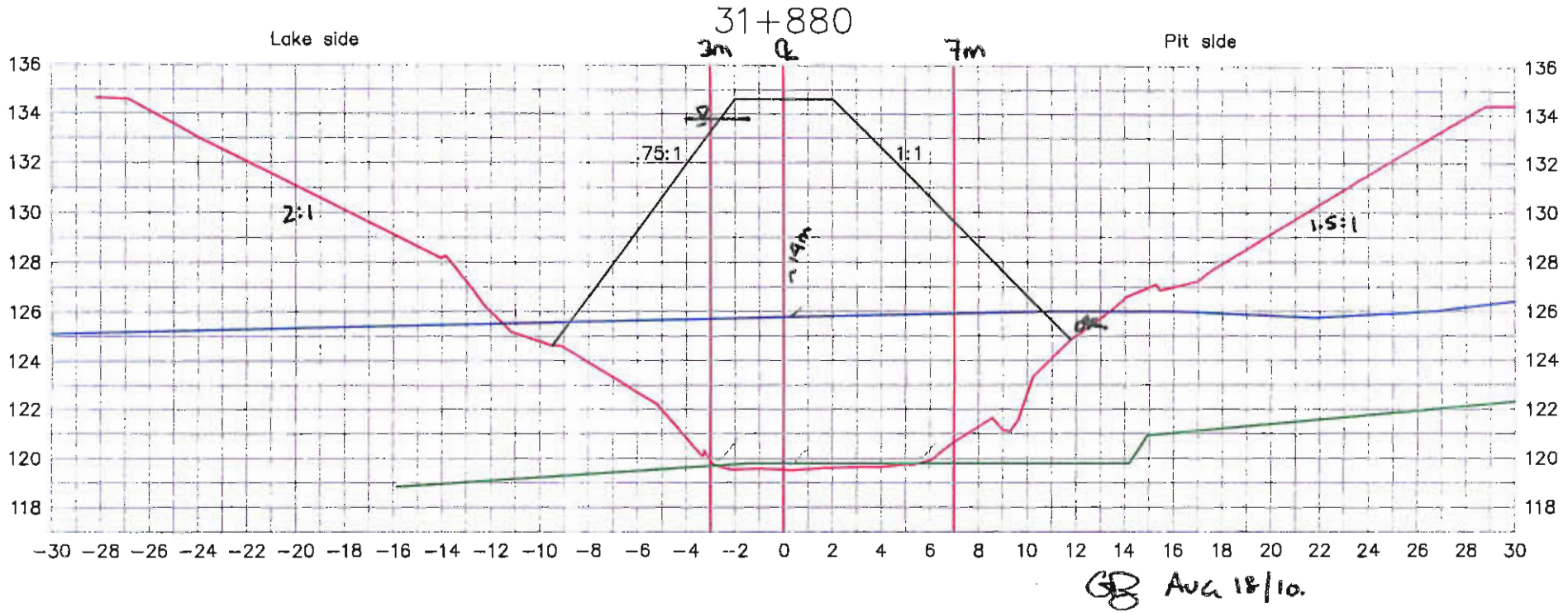
Target surface

Manual probing

Date: 180810

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Par: Alex Lalancette



Lake bed soil

Dike

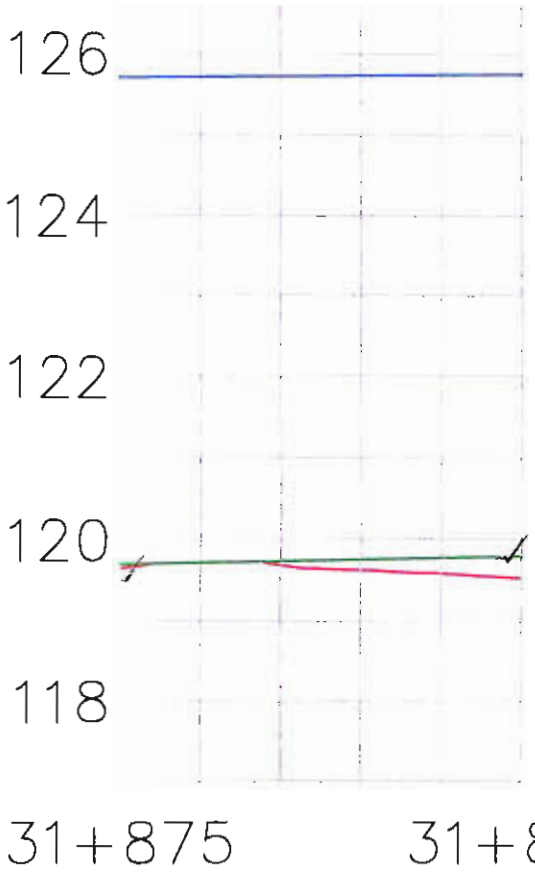
Target surface

Manual probing

Date: 180810

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Par: Alex Lalancette



GB. Aug 18/10

Lake bed soil

Dike

Target surface ✓

Manual probing

Date: 180810

Page: 6/6

Par: Alex Lalancette

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 31+880 Offset	SHIFT: NIGHT :☐ DAY :☒	DATE : 19-08-2010	SHEET 1 OF 2
To Sta. 31+895 Offset	LOCATION: :		
EQUIPMENT:	Bay Goose Dike South Section		
DESCRIPTION			

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	MS	TE
2.	Storage areas planned for disposal of removed materials	MS	TE
3.	Occurrence of snow and ice removal method in place	MS	NA TE
4.	Occurrence of boulders and removal method in place	MS	TE
5.	Occurrence of hummocks and scalping method in place	MS	TE
6.	Occurrence of surface and ground water and its impact mitigation in place	MS	TE
7.	Presence of other unsuitable materials and removal method in place	MS	TE
8.	Soil frozen or thawed and measures taken	NIA MS	NA TE
9.	Blasting requirement to remove unsuitable material and safety measure checked	NIA MS	NA TE
10.	Adjustment made to suit design in field	MS	TE
11.	Final walkover inspection before re-sloping or fill placement	MS	TE
12.	"As-excavated" survey conducted	MS	TE
13.	Final sounding conducted of lake bottom surface	MS	TE

REMARKS : ① CURRENT SILT SOUNDINGS BETWEEN 31+880 → 31+895 – OK COMPLETED AT 13'C
② SINCE SILT BEYOND EXCAVATOR REACH, OK TO PROCEED WITH BACKFILL
CREST OF BACKFILL @ ~ 31+877m AND TOE 31+895

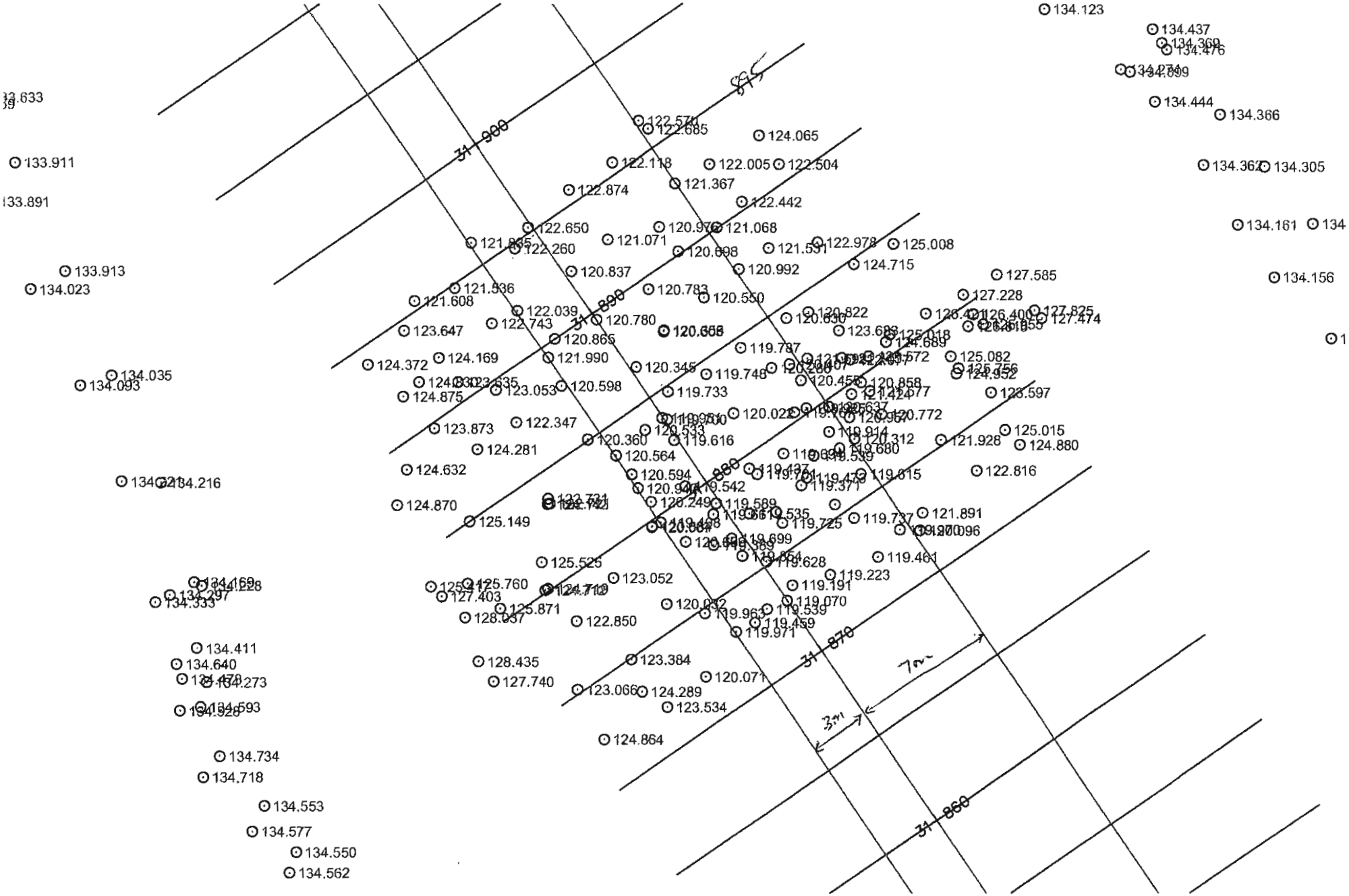
DEVIATIONS : (Attach list if necessary)

DATE OF RECTIFICATION :

SURVEY VERIFICATION	ACCEPTED BY QA Manager :	ACCEPTED BY OWNER :
NAME: MAXIME GILBERT	NAME: FIONA ESFORD	NAME:
SIGNATURE :	SIGNATURE :	SIGNATURE :
DATE 19-08-2010	DATE Aug 19/10	DATE

Recieved prior to lunch 15:22

COPY OF ORIGINAL



Station: 31+880 @ 31+895

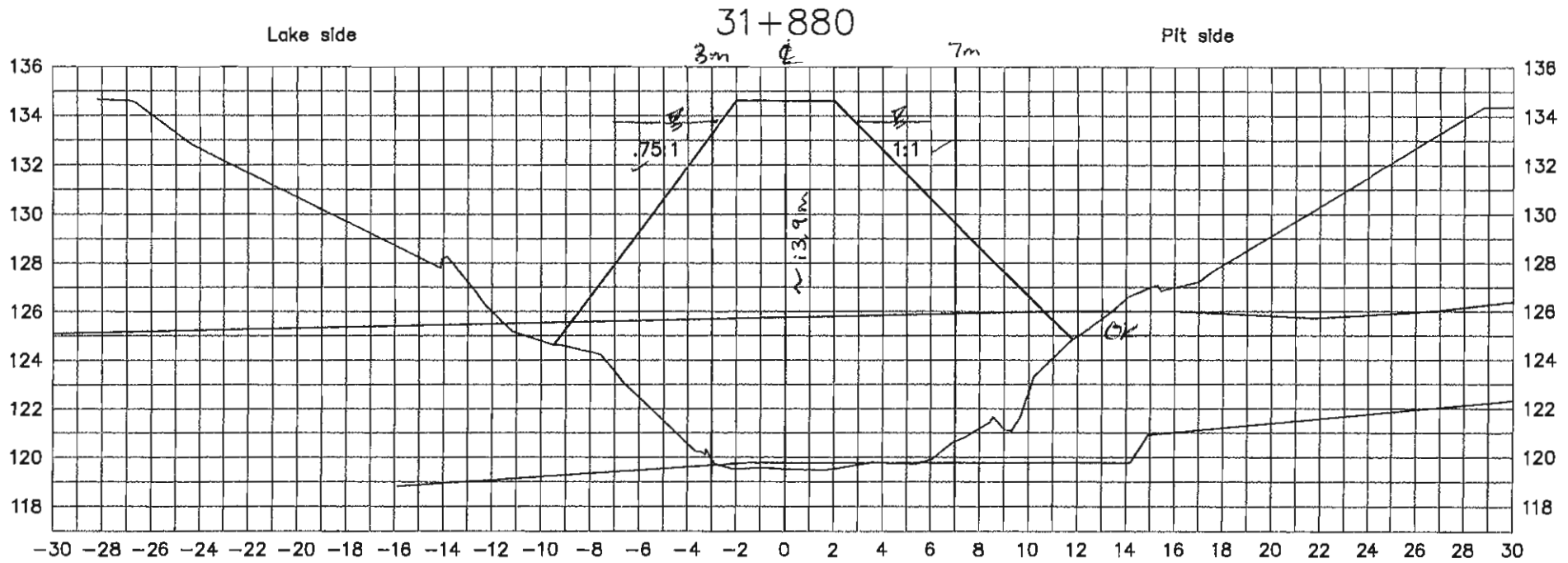
Scale: 1:250

Date: 190810

Page: 2/8

Par: Alex Lalancette

Aug 19/10



7E Aug 19/10

Lake bed soil

Dike

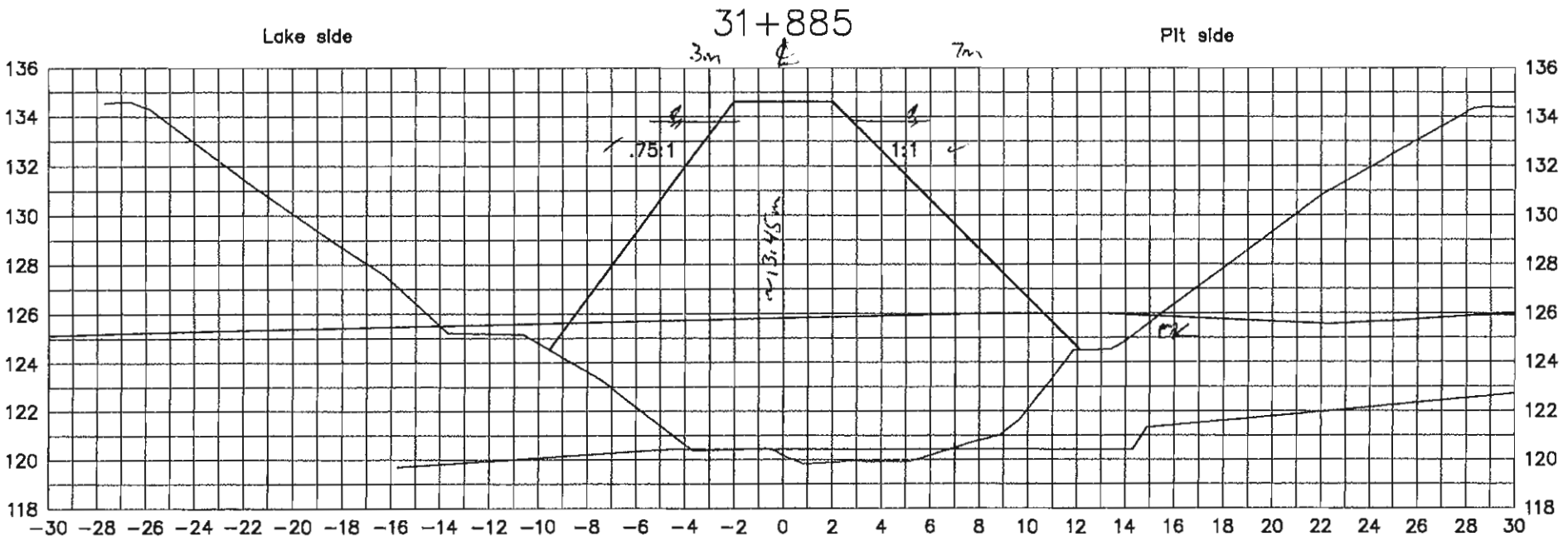
Target surface

Manual probing

Date: 190810

Page: 4/8

Par: Alex Lalancette



Aug 19/10

Lake bed soil

Dike

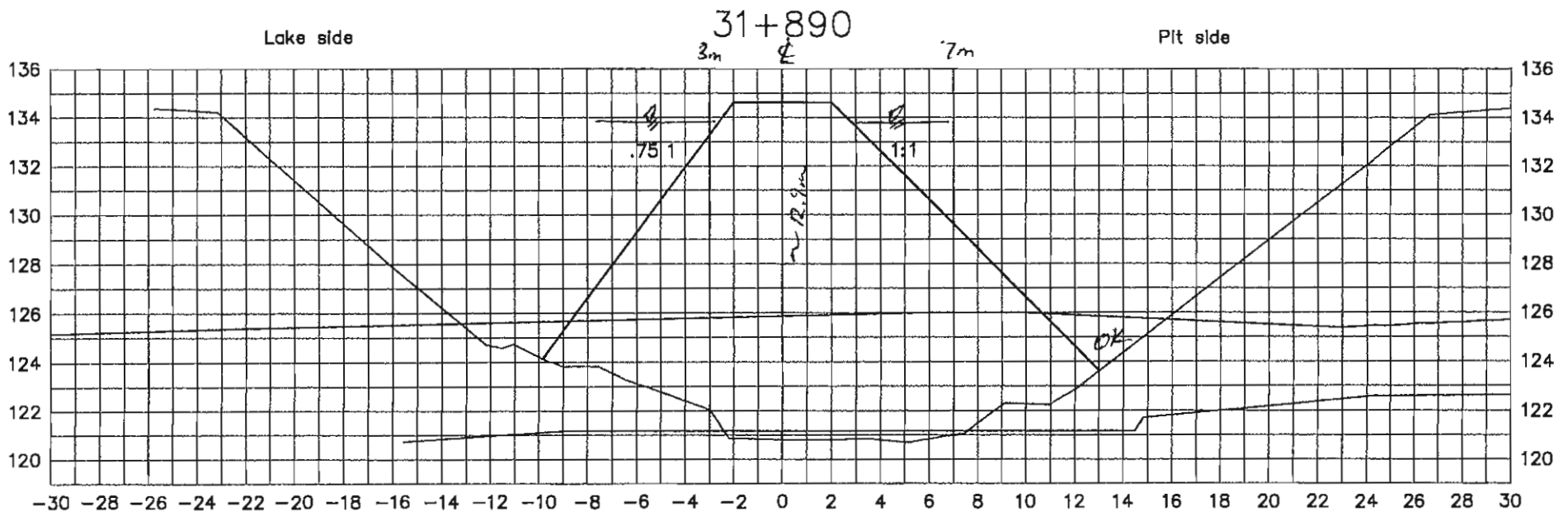
Target surface

Manual probing

Date: 190810

Page:5/8

Par: Alex Lalancette



FE Aug 19/19

Lake bed soil

Dike

Target surface

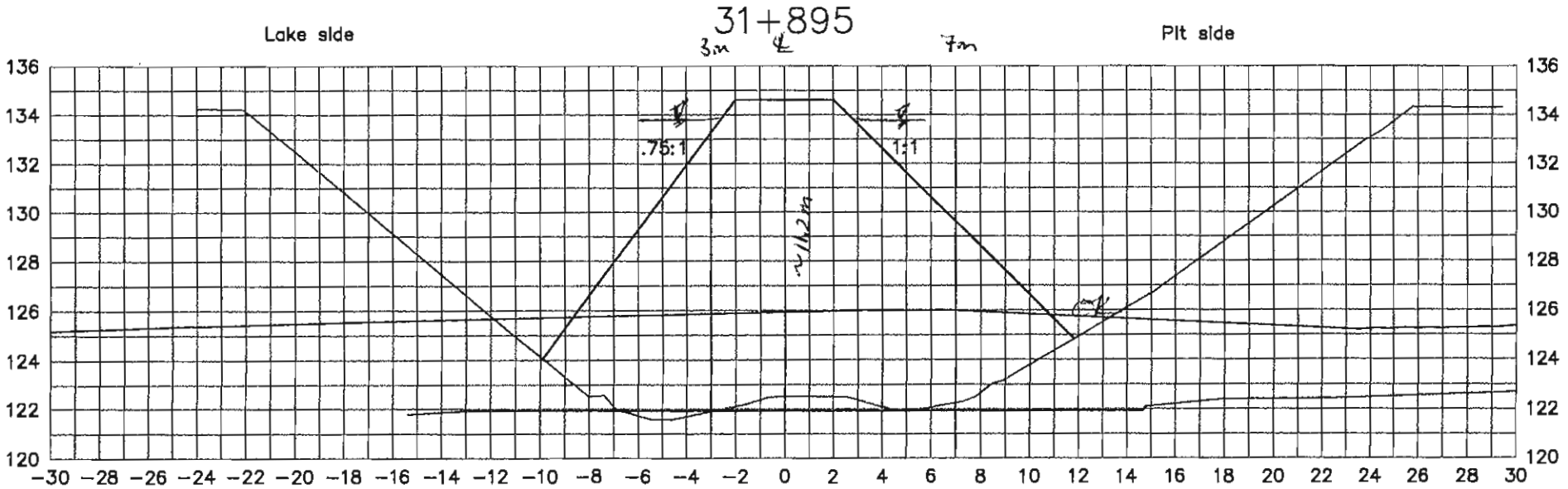
Manual probing

Date: 190810

6 FE

Page: 5/8

Par: Alex Lalancette



FE Aug 19/10

Lake bed soil

Dike

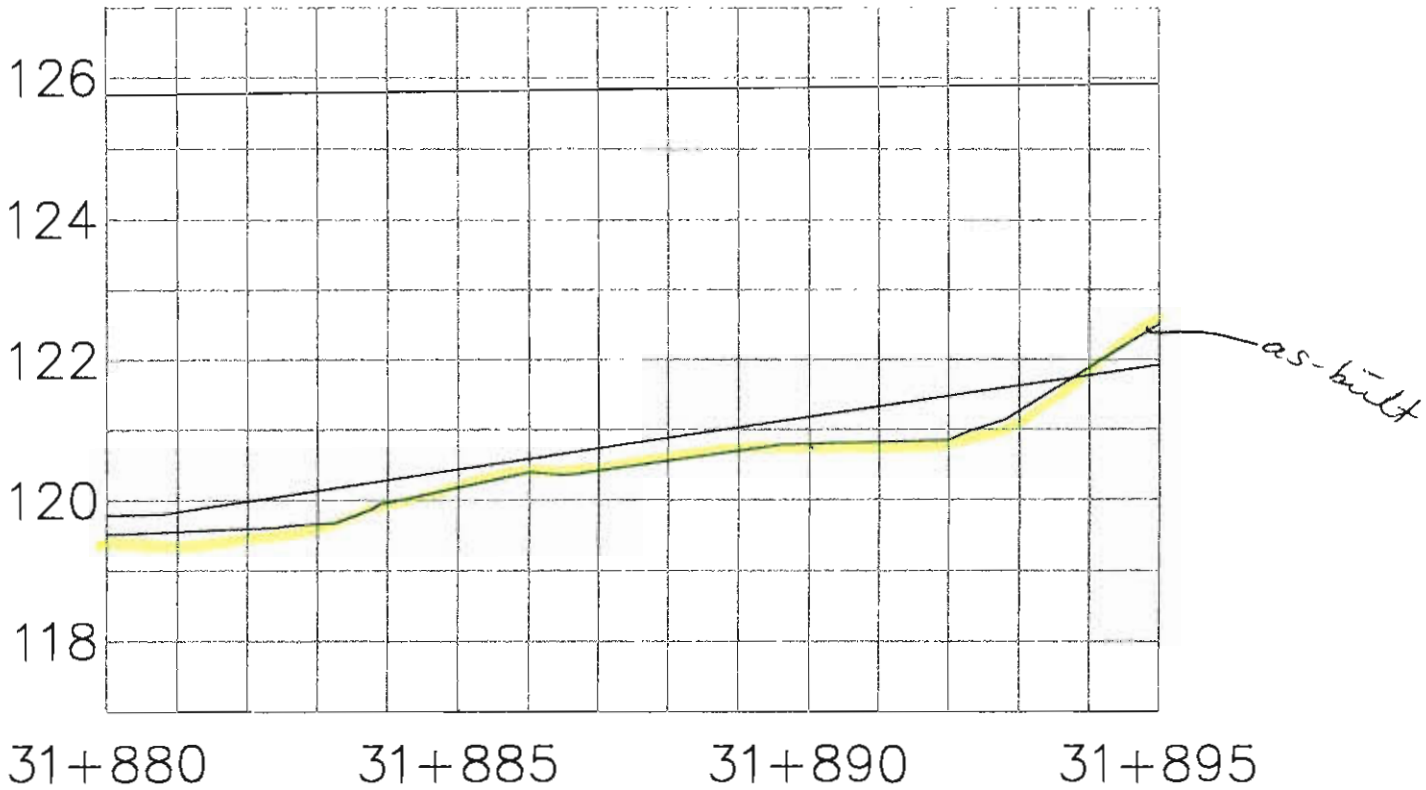
Target surface

Manual probing

Date: 190810

Page: 5/8 7 FE

Par: Alex Lalancette



FC Aug 19/10

Lake bed soil

Dike

Target surface

Manual probing

Date: 190810

Page: 8/8

Par: Alex Lalancette

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 31+895 Offset | SHIFT: NIGHT :☐ DAY :☒ | DATE: 20-08-2010 | SHEET 1 OF 7

To Sta. 31+905 Offset | LOCATION: : Bay Goose Dike South Portion

EQUIPMENT:

DESCRIPTION

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	MS	TE
2.	Storage areas planned for disposal of removed materials	MS	TE
3.	Occurrence of snow and ice removal method in place	MS	NA TE
4.	Occurrence of boulders and removal method in place	MS	TE
5.	Occurrence of hummocks and scalping method in place	MS	TE
6.	Occurrence of surface and ground water and its impact mitigation in place	MS	TE
7.	Presence of other unsuitable materials and removal method in place	MS	TE
8.	Soil frozen or thawed and measures taken	N/A MS	NA TE
9.	Blasting requirement to remove unsuitable material and safety measure checked	N/A MS	NA TE
10.	Adjustment made to suit design in field	MS	TE
11.	Final walkover inspection before re-sloping or fill placement	MS	TE
12.	"As-excavated" survey conducted	MS	TE
13.	Final sounding conducted of lake bottom surface	MS	

REMARKS : (1) Need to take current silt readings between 31+895 - 31+905 before backfilling → completed Aug 20/10 @ 18:00
(2) Need to reconfirm base of excavation at 31+905 → completed Aug 20/10 @ 18:00

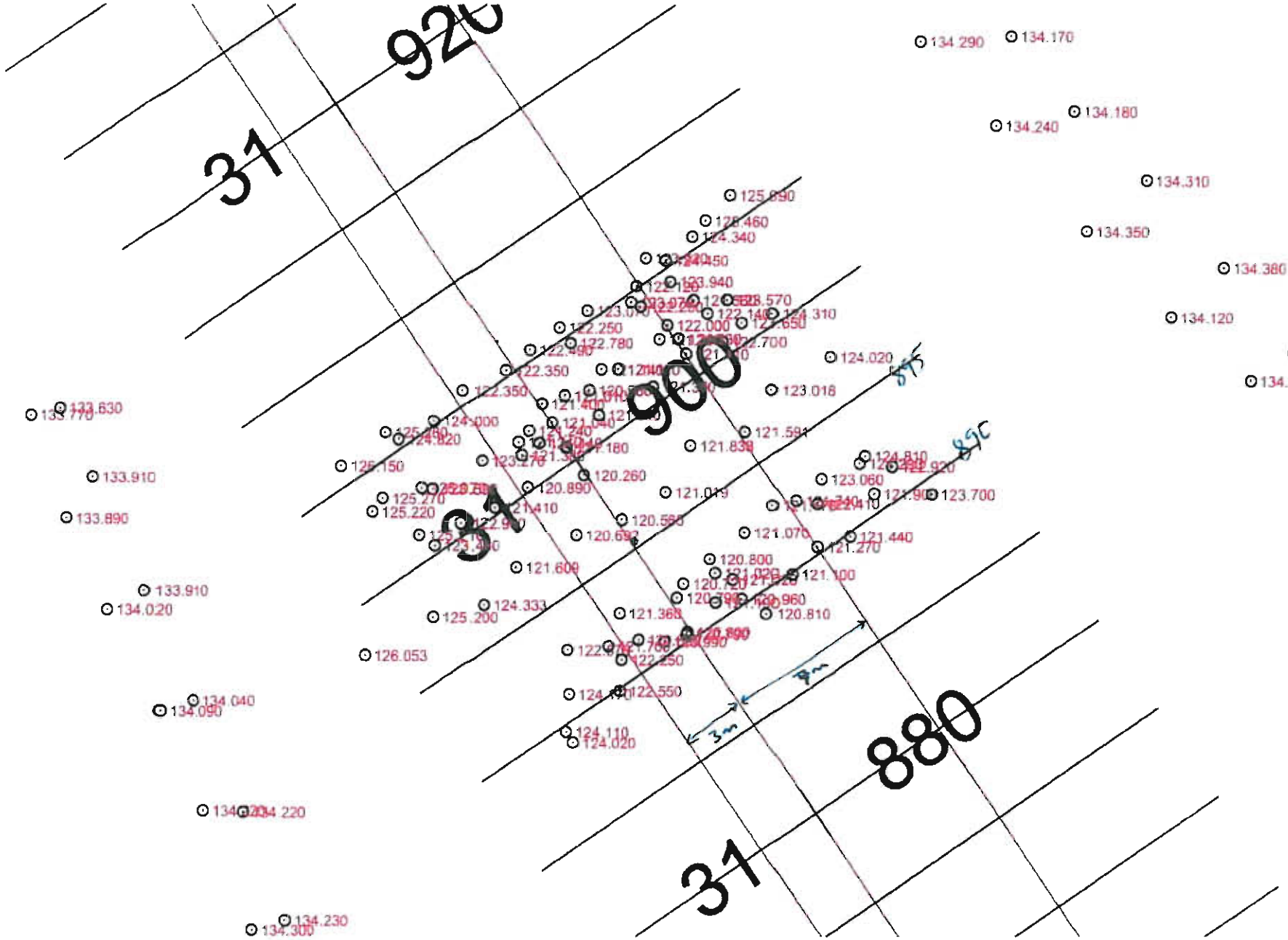
DEVIATIONS : (Attach list if necessary)

(3) Approved 31+905, W/est of CB to 31+885

DATE OF RECTIFICATION :

SURVEY VERIFICATION	ACCEPTED BY QA Manager :	ACCEPTED BY OWNER :
NAME: MAXIME GILBERT	NAME: FONA ESFORD	NAME:
SIGNATURE :	SIGNATURE :	SIGNATURE :
DATE 20-08-2010	DATE Aug 21/10	DATE

Copy of original



Station: 31+895 @ 31+905

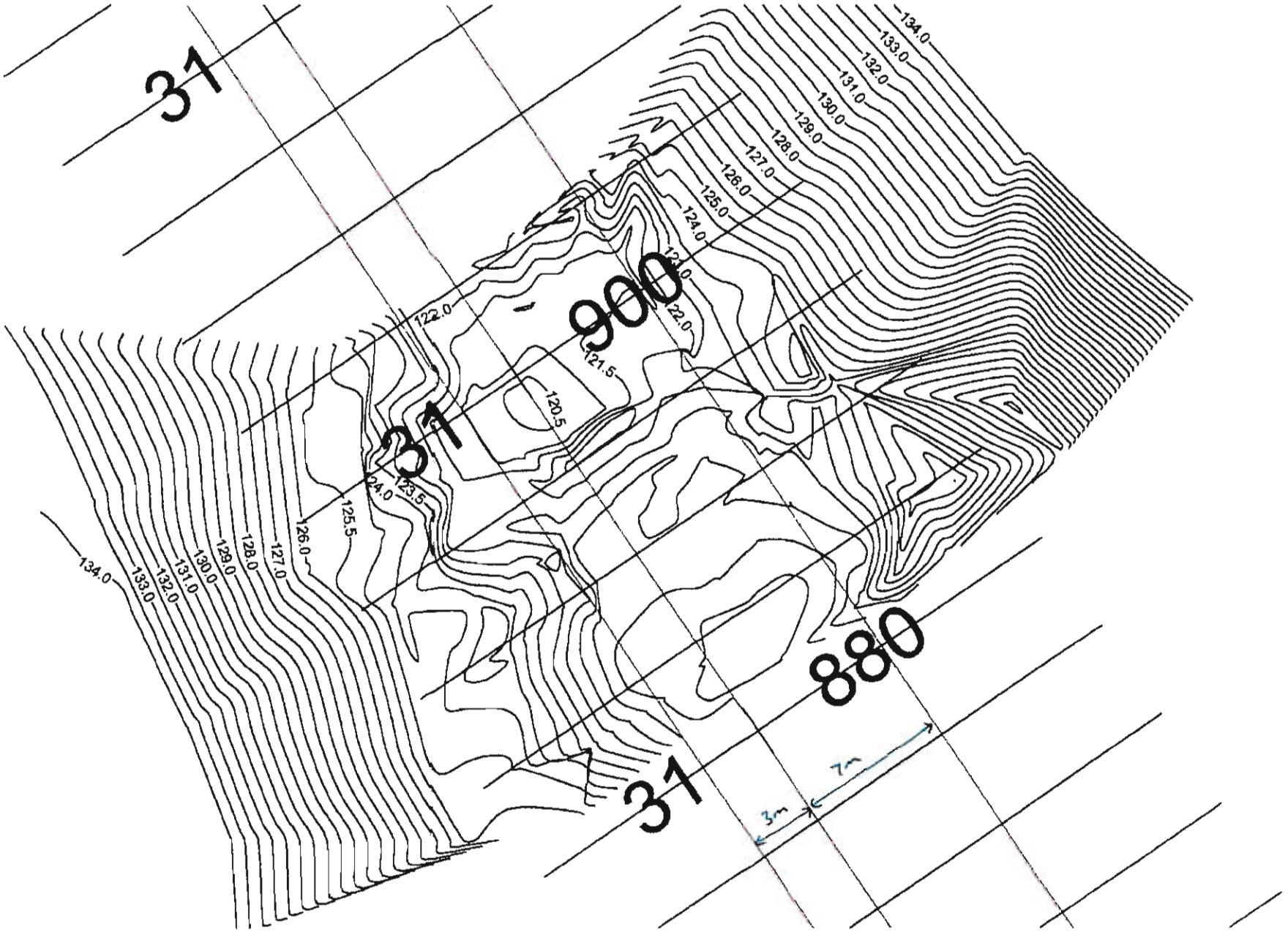
Scale: 1:250

OK TE Aug 10/10

Date: 200810

Page: 2/7

Par: Alex Lalancette



Prior to re-Survey around 31+905 C 18:00

Station: 31+895 @ 31+905

Scale: 1:250 OK FE

Date: 200810

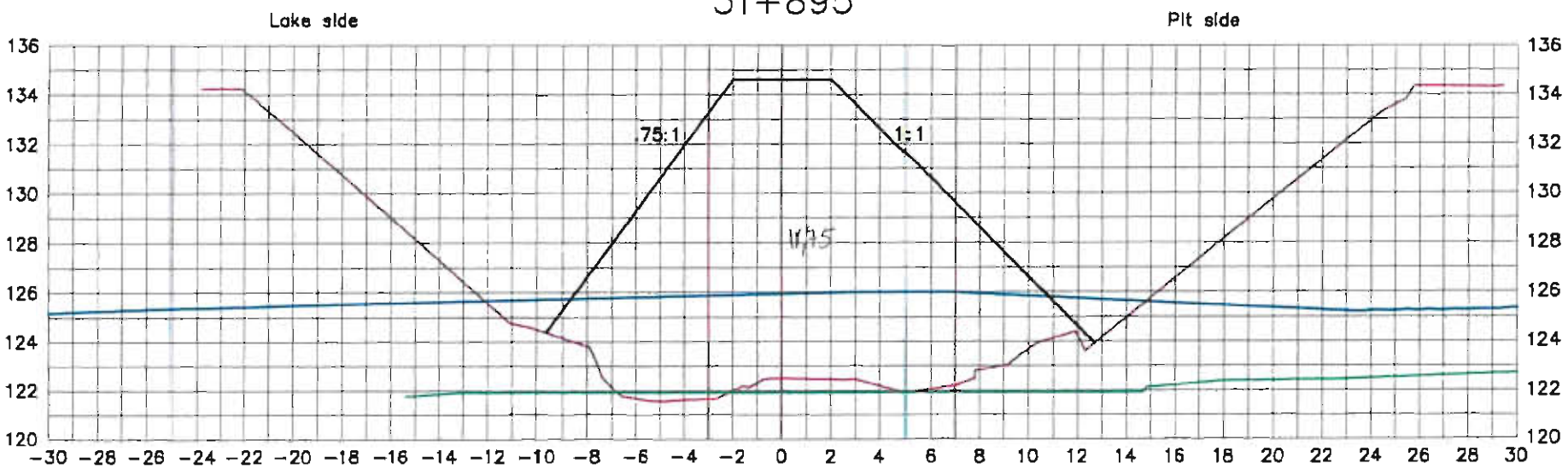
Page: 3/7

Par: Alex Lalancette

4,7cm

$\lambda = 0,8$
$x = 1,17$

31+895



- this no longer matches survey - generate new profile. I think it was dug a little deeper (re-print)

Lake bed soil

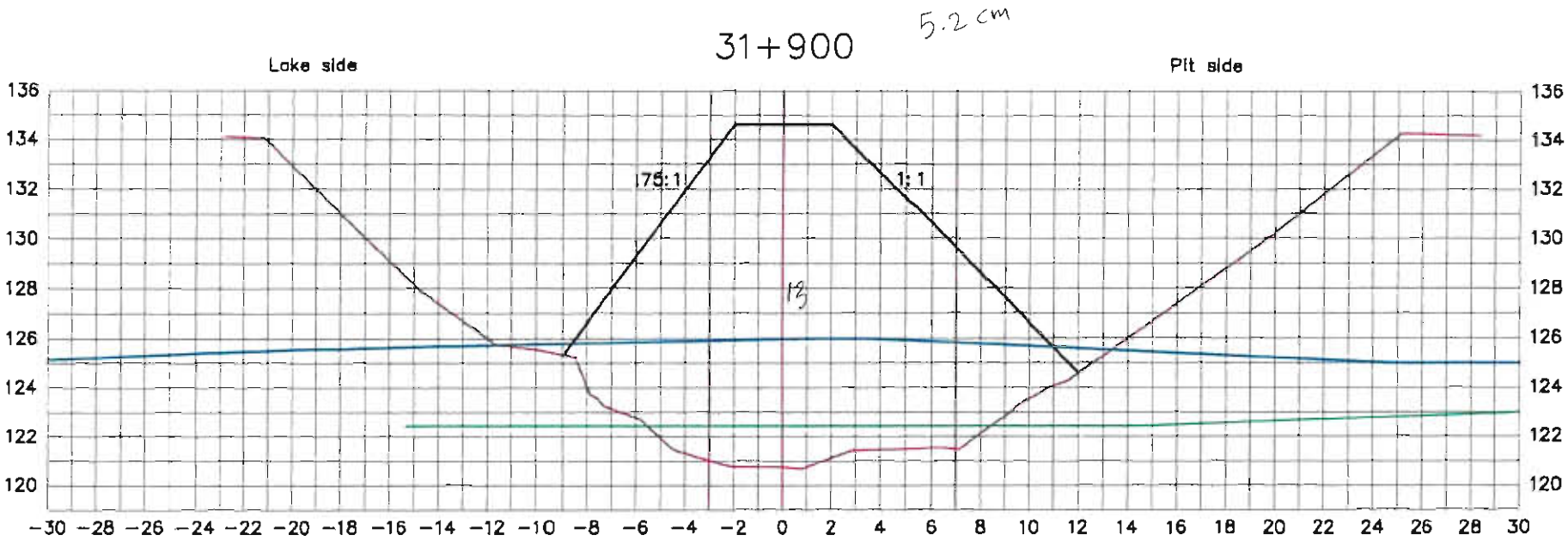
Dike

Target surface

Manual probing

Date: 200810

Par: Alex Lalancette



Lake bed soil

Dike

Target surface

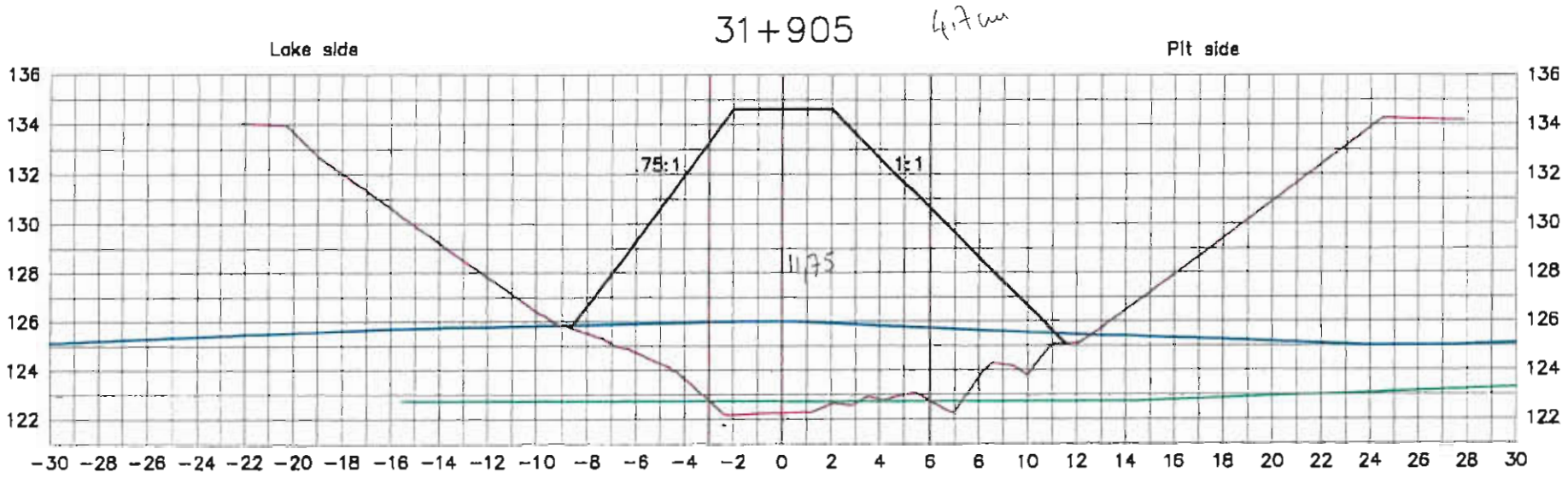
Manual probing

Date: 200810

Page:5/7

TE
Aug 20/10

Par: Alex Lalancette



Need to reconfirm depth / profile

Re-survey at centerline

Lake bed soil

Dike

Target surface

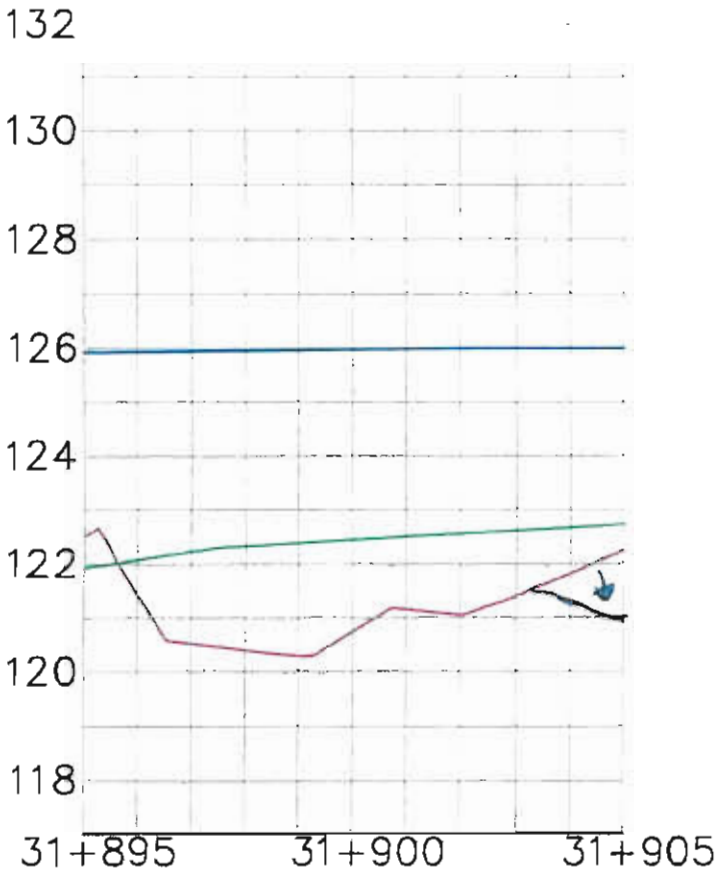
Manual probing

Date: 200810

Page:6/7

Par: Alex Lalancette

Replaced by new survey taken Aug 20/10 @ 18:00



FE
Aug 2011

Lake bed soil

Dike

Target surface

Manual probing

Date: 200810

Page: 7/7

Par: Alex Lalancette

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 31+905 Offset	SHIFT: NIGHT :☐ DAY :☒	DATE : 21 AOUT 10	SHEET 1 OF 8
To Sta. 31+920 Offset	LOCATION: : BAY GOOSE DIKE SOUTH PORTION		
EQUIPMENT:			
DESCRIPTION			

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	GM	TE
2.	Storage areas planned for disposal of removed materials	GM	TE
3.	Occurrence of snow and ice removal method in place	GM	NA TE
4.	Occurrence of boulders and removal method in place	GM	TE
5.	Occurrence of hummocks and scalping method in place	GM	TE
6.	Occurrence of surface and ground water and its impact mitigation in place	GM	TE
7.	Presence of other unsuitable materials and removal method in place	GM	TE
8.	Soil frozen or thawed and measures taken	GM	NA TE
9.	Blasting requirement to remove unsuitable material and safety measure checked	N/A GM	NA TE
10.	Adjustment made to suit design in field	GM	TE
11.	Final walkover inspection before re-sloping or fill placement	GM	TE
12.	"As-excavated" survey conducted	GM	TE
13.	Final sounding conducted of lake bottom surface	GM	TE

REMARKS : (1) Significant silt accumulation ~1.5-2 m, however beyond the excavator's reach - unable to clean - recorded @ 10:00 Aug 21/10
(2) Approved for backfill to 31+920, crest to 31+900

DEVIATIONS : (Attach list if necessary)
re-print page 3 please differentiate survey pts. collected during night shift and re-surveyed during day shift (ie. use different colours)

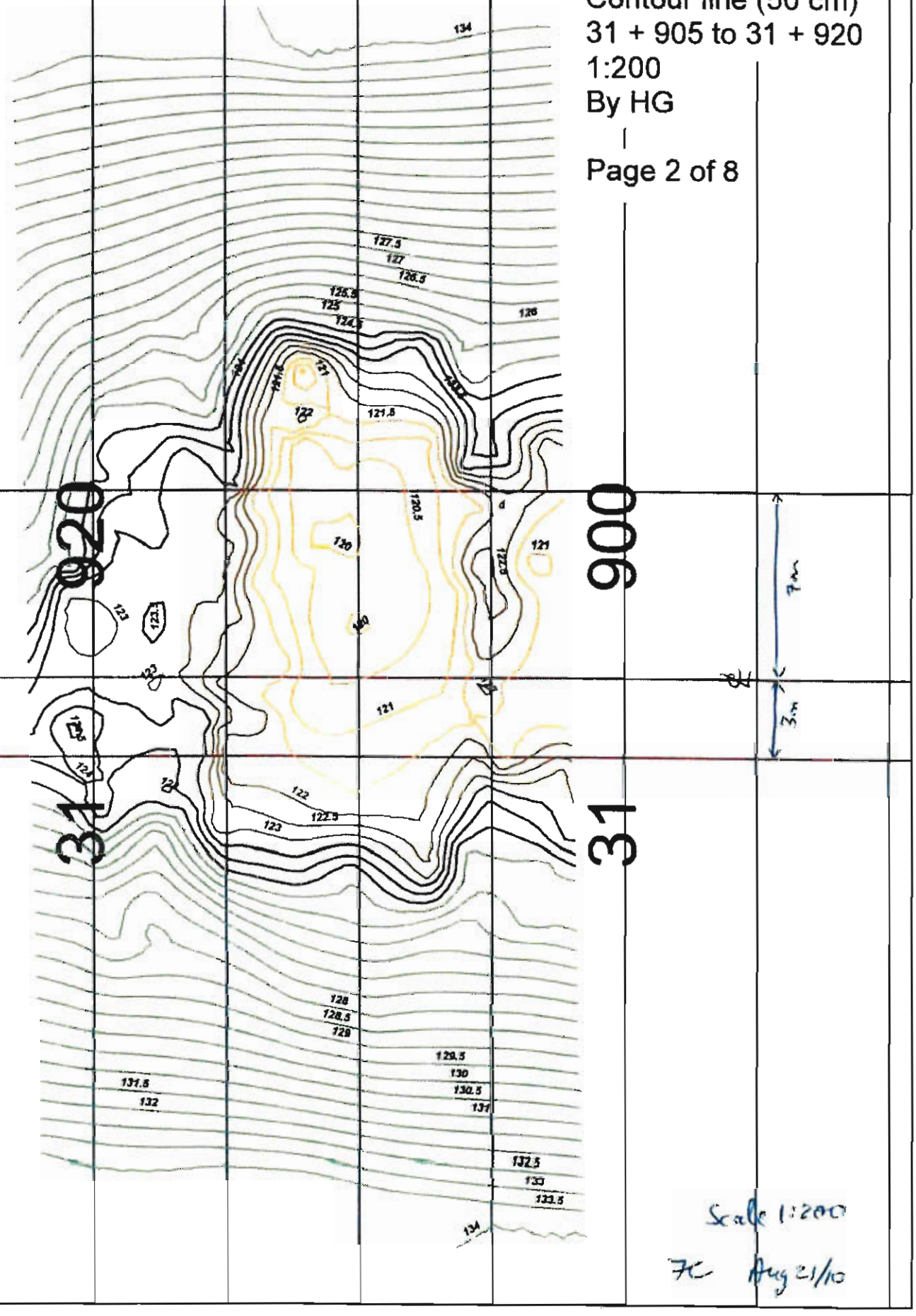
DATE OF RECTIFICATION :

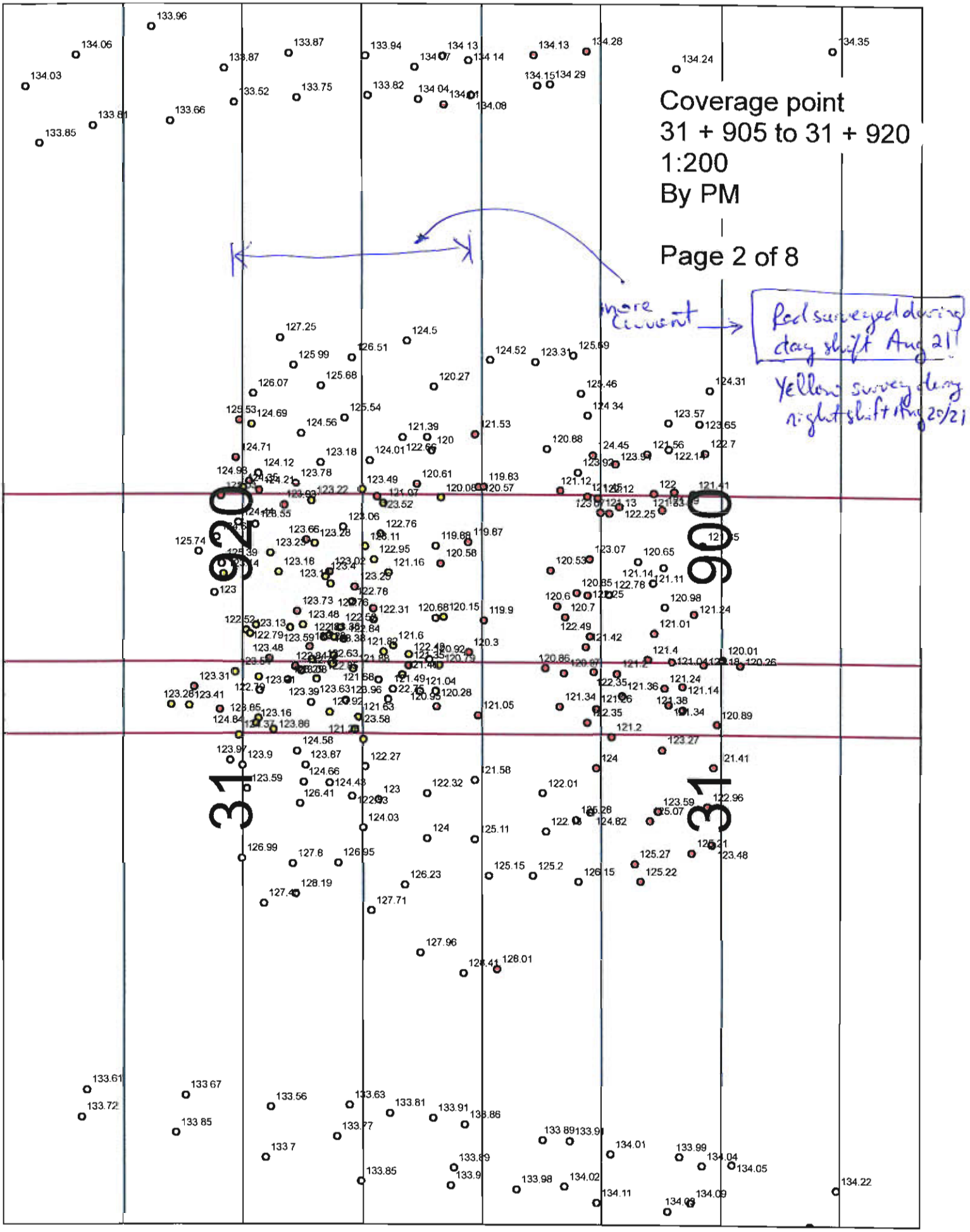
SURVEY VERIFICATION	ACCEPTED BY QA Manager :	ACCEPTED BY OWNER :
NAME: GUY MORISSETTE	NAME: FIONA ESFORD	NAME:
SIGNATURE : Guy Morissette	SIGNATURE : Fiona Esford	SIGNATURE :
DATE 21 Aout 2010	DATE Aug 21/10	DATE

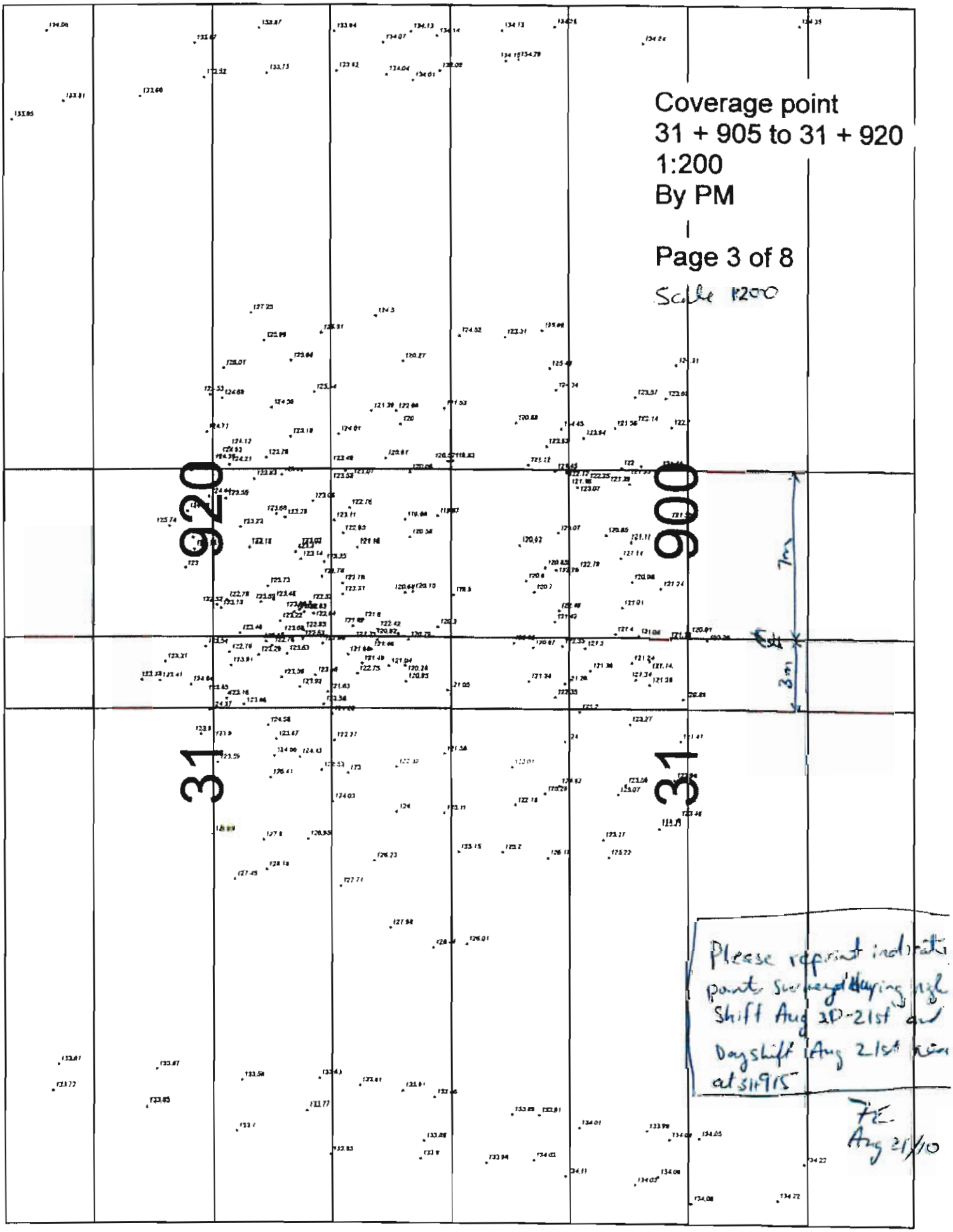
~~6:30 pm AM~~
18:50 PM

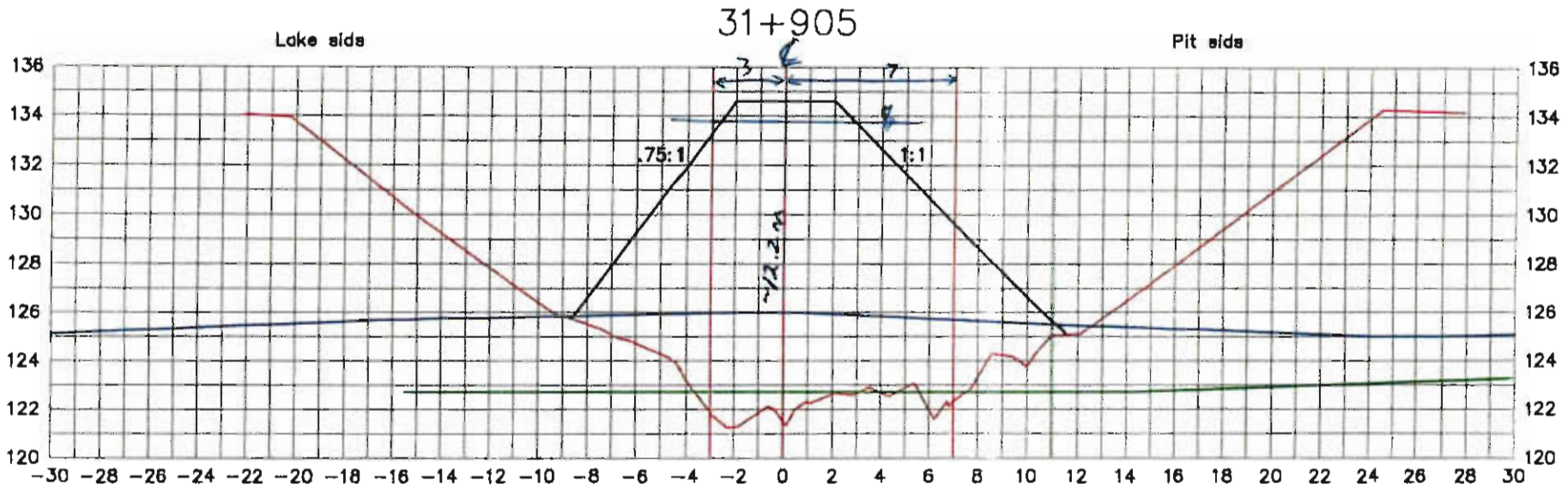
19:45

Contour line (50 cm)
31 + 905 to 31 + 920
1:200
By HG




Coverage point
31 + 905 to 31 + 920
1:200
By PM
Page 2 of 8
more recent
Red surveyed during day shift Aug 21
Yellow survey during night shift Aug 20/21
920
900
31
31


Coverage point
31 + 905 to 31 + 920
1:200
By PM
Page 3 of 8
Scale 1:200
920
900
31
31
7m
3.5m
Please reprint indicating
point surveyed during night
Shift Aug 20-21st and
Dayshift Aug 21st from
at 31+915
FE
Aug 21/10



Lake bed soil

Dike

Target surface

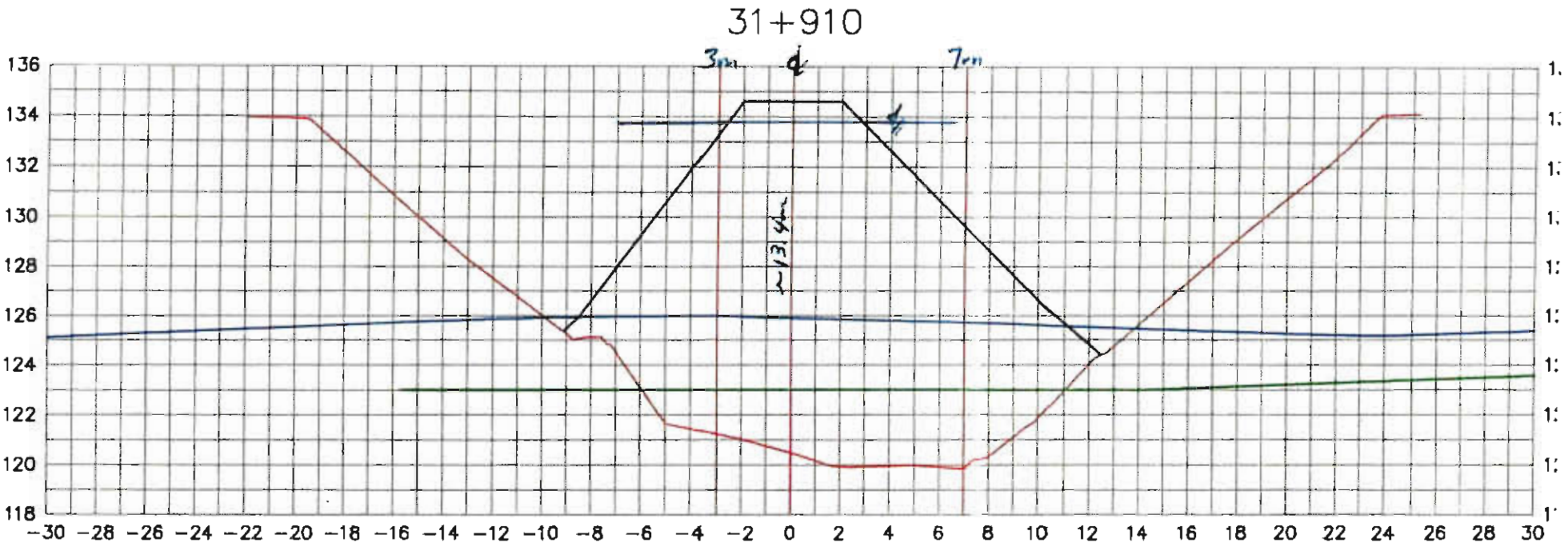
Manual probing

Date: 2010\08\21

FE
Aug 21/10

Page:4 of 8

Par: Hugues Gagnon



Lake bed soil

Dike

Target surface

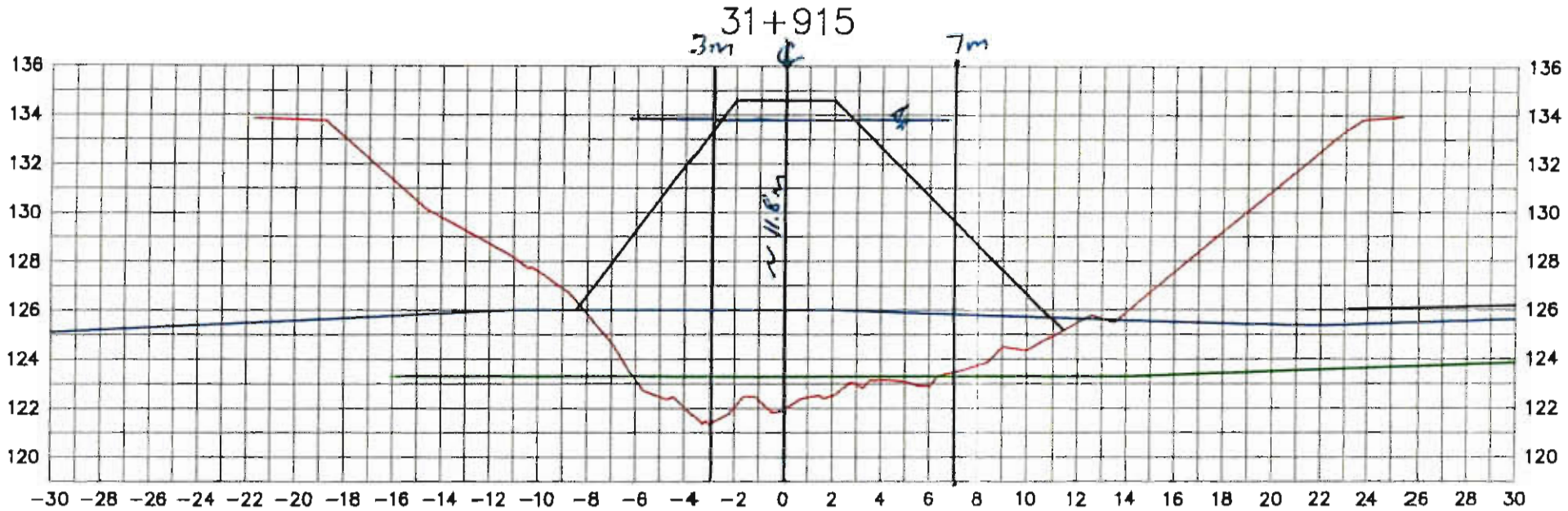
Manual probing

Date: 2010-08-21

Page:5 of 8

Par: Hugues Gagnon

FE
Aug 21/10



FE
Aug 21/10

Lake bed soil

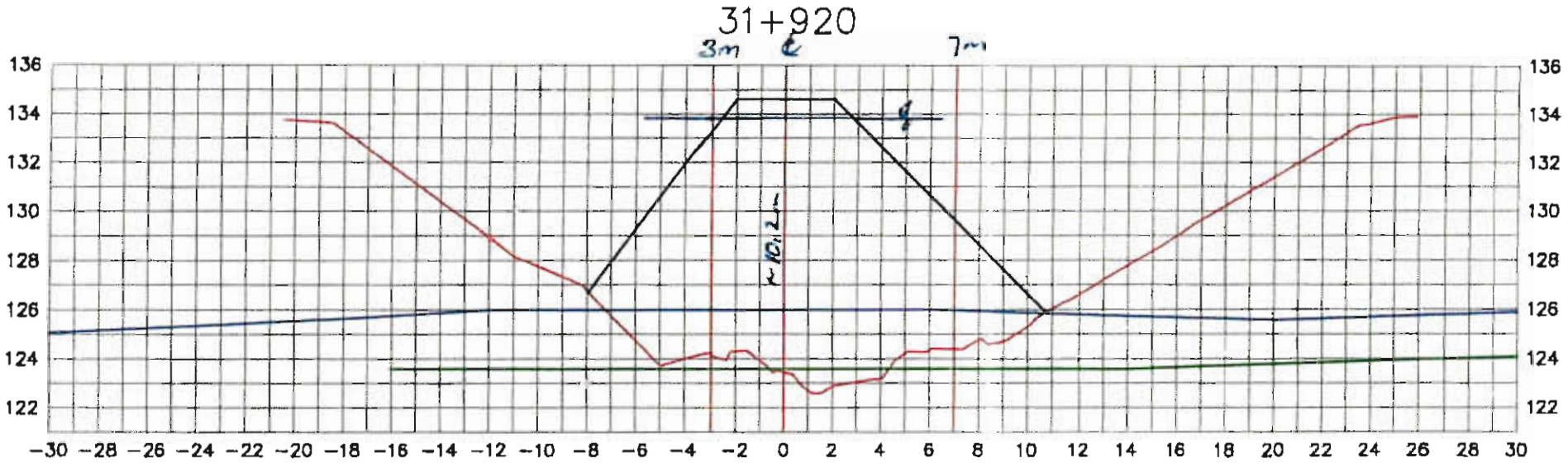
Dike

Target surface

Manual probing

Date: 2010\08\21

Par: Hugues Gagnon



7E
Aug 21/10

Lake bed soil

Dike

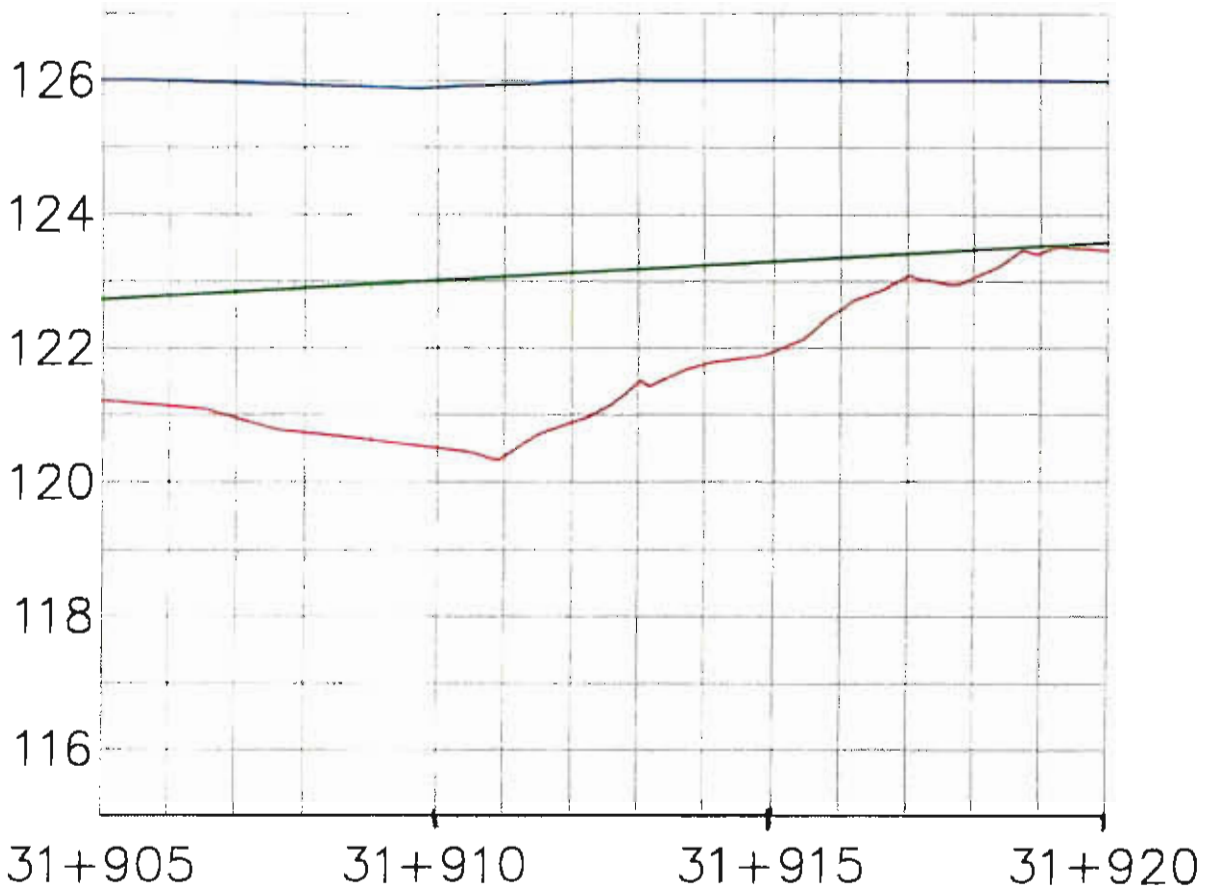
Target surface

Manual probing

Date: 2010\08\21

Page:7\8

Par: Hugues Gagnon



Lake bed soil

Dike

Target surface

Manual probing

Date: 2010\08\21

Page: 8\8

HE
Aug 21/10

Par: Hugues Gagnon

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 31+920 Offset	SHIFT: NIGHT :☐ DAY : ☒	DATE : 22 AOUT 2010	SHEET 1 OF 8
To Sta. 31+935 Offset	LOCATION: :		
EQUIPMENT;	Bay Goose Dike, South Portion		
DESCRIPTION			

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	M	TE
2.	Storage areas planned for disposal of removed materials	M	TE
3.	Occurrence of snow and ice removal method in place	M	TE
4.	Occurrence of boulders and removal method in place	M	TE
5.	Occurrence of hummocks and scalping method in place	M	TE
6.	Occurrence of surface and ground water and its impact mitigation in place	M	TE
7.	Presence of other unsuitable materials and removal method in place	M	TE
8.	Soil frozen or thawed and measures taken	N/A M	TE N/A
9.	Blasting requirement to remove unsuitable material and safety measure checked	N/A	TE N/A
10.	Adjustment made to suit design in field	M	TE
11.	Final walkover inspection before re-sloping or fill placement	M	TE
12.	"As-excavated" survey conducted	M	TE
13.	Final sounding conducted of lake bottom surface	M	TE

REMARKS : (1) Significant silt accumulation between 31+910 → 31+920, >1m/s 10:00 am Aug 22 unable to clean, beyond excavator's reach - recorded thickness

(2) Approved for backfill to 31+935, crest to 31+914

DEVIATIONS : (Attach list if necessary)

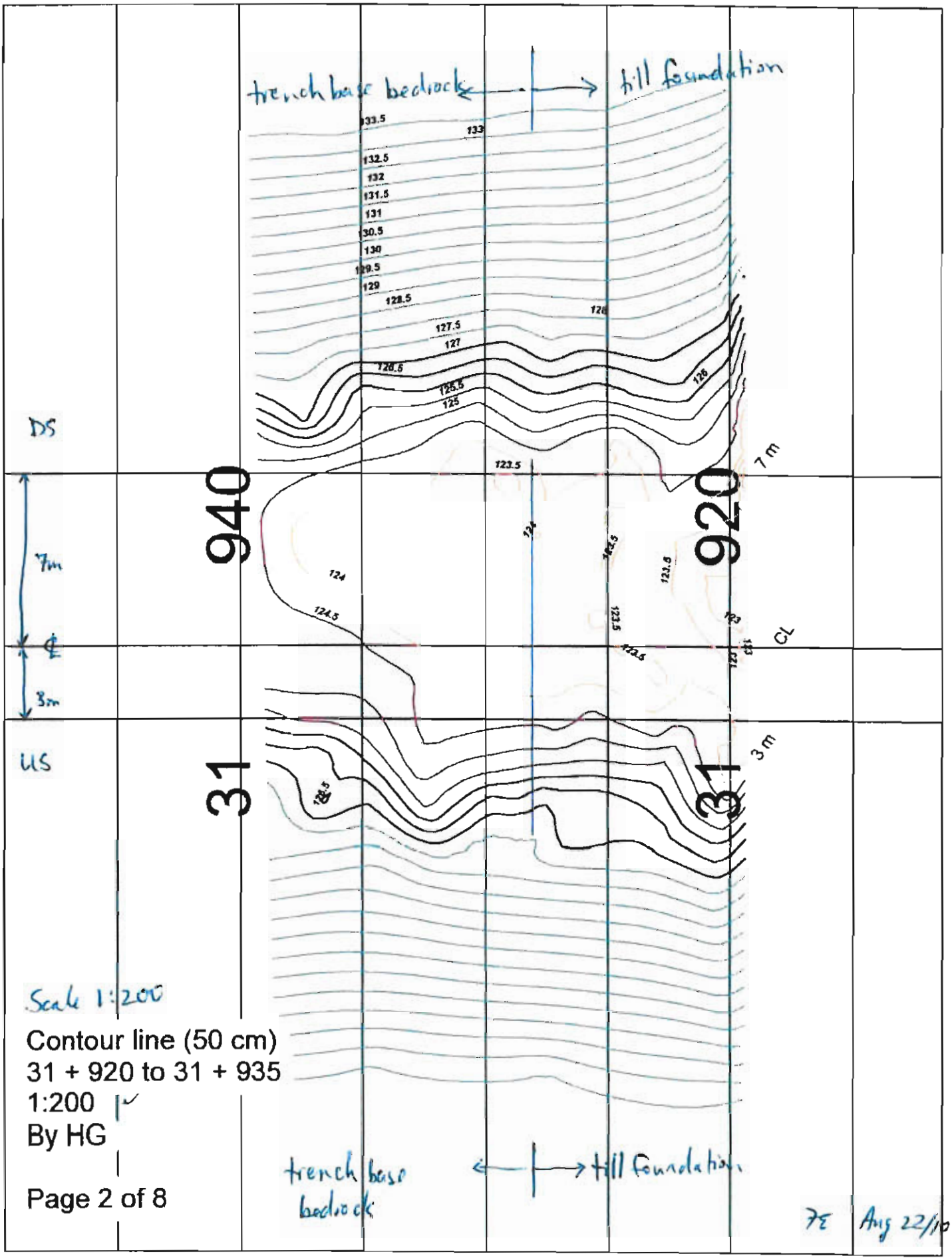
DATE OF RECTIFICATION :

SURVEY VERIFICATION	ACCEPTED BY QA Manager :	ACCEPTED BY OWNER :
NAME: Guy Morissette	NAME: FIONA EGBO	NAME:
SIGNATURE :	SIGNATURE :	SIGNATURE :
DATE 22 Aout 2010	DATE Aug 22/10	DATE

6 hrs 30

8:15 AM

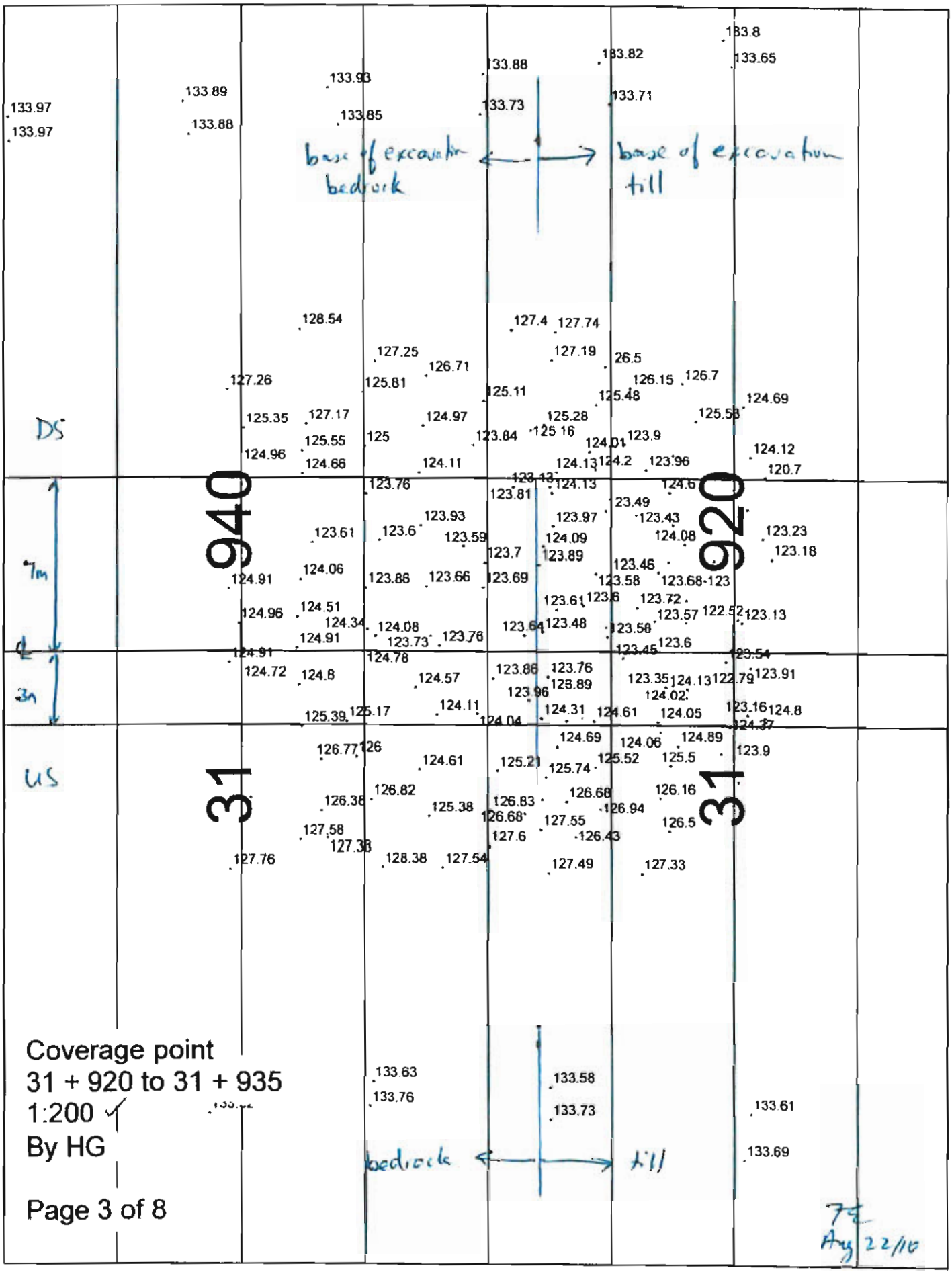
Copy of original



Scale 1:200

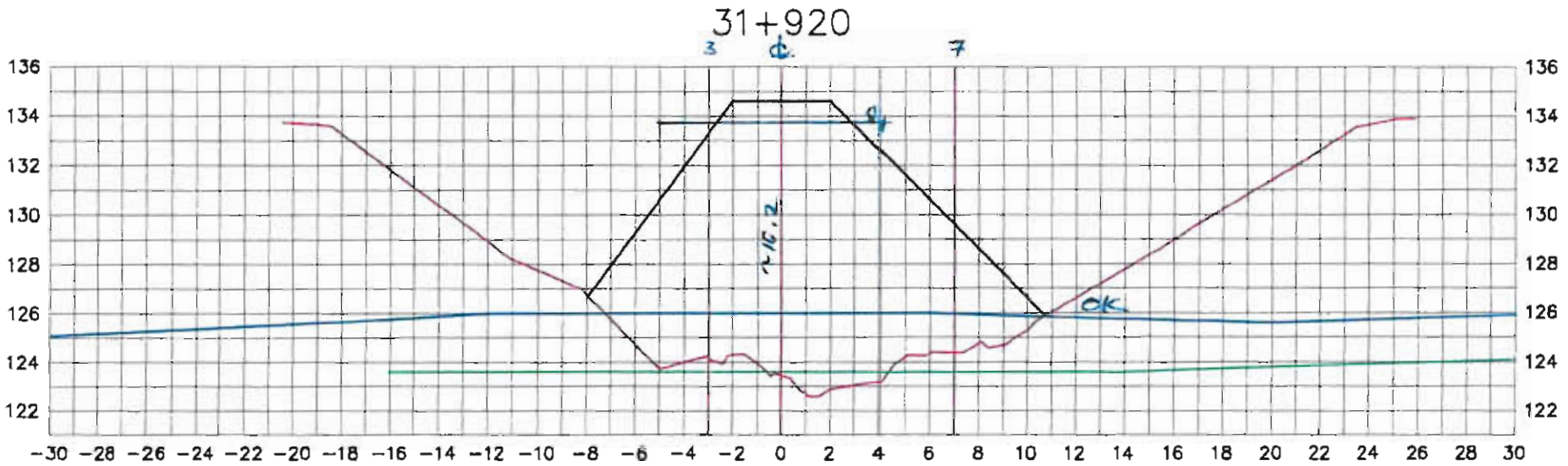
Contour line (50 cm)
31 + 920 to 31 + 935
1:200
By HG

JE Aug 22/10



Coverage point
31 + 920 to 31 + 935
1:200
By HG

Aug 22/10



Lake bed soil

Dike

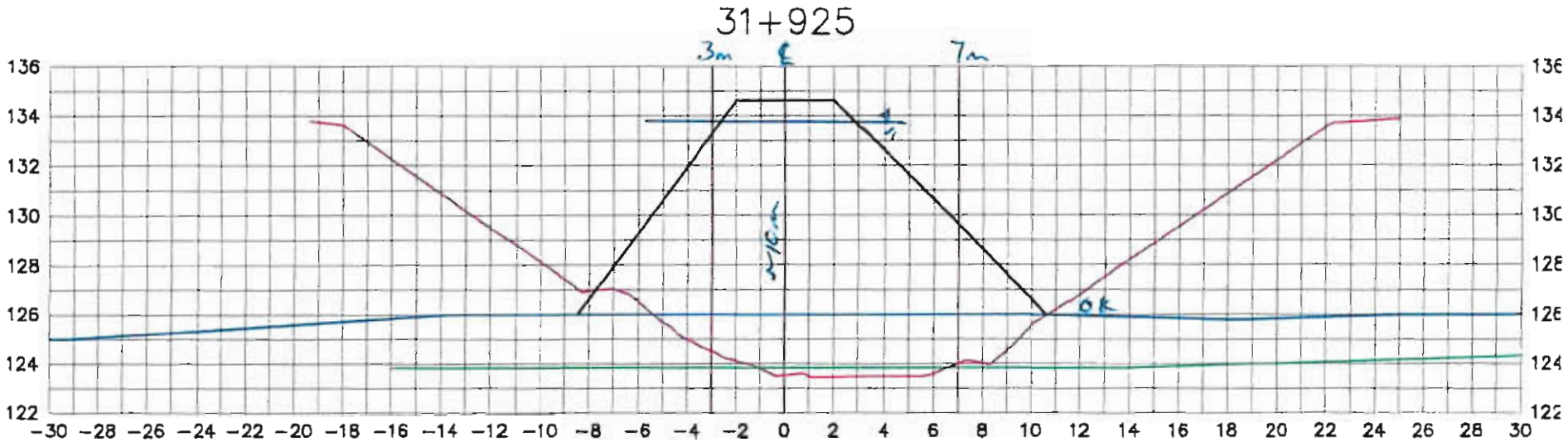
Target surface

Manual probing

Date: 2010\08\22

Page:4\8

Par: Hugues Gagnon



Lake bed soil

Dike

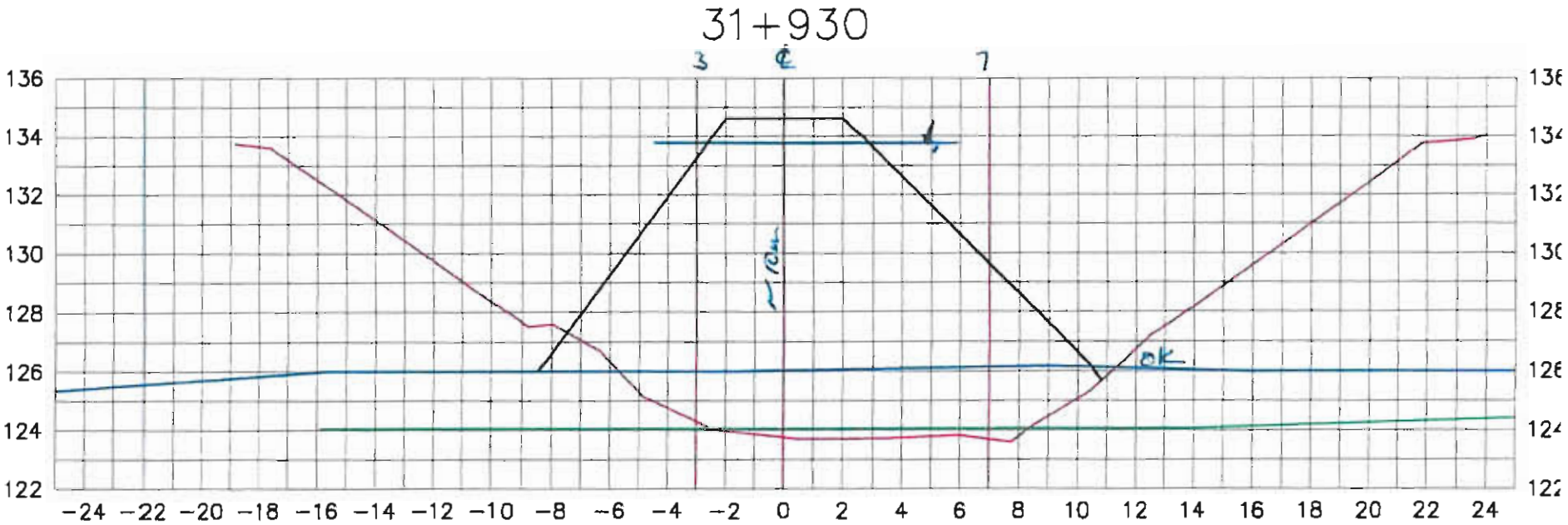
Target surface

Manual probing

Date: 2010\08\22

Page:5\8

Par: Hugues Gagnon



Lake bed soil

Dike

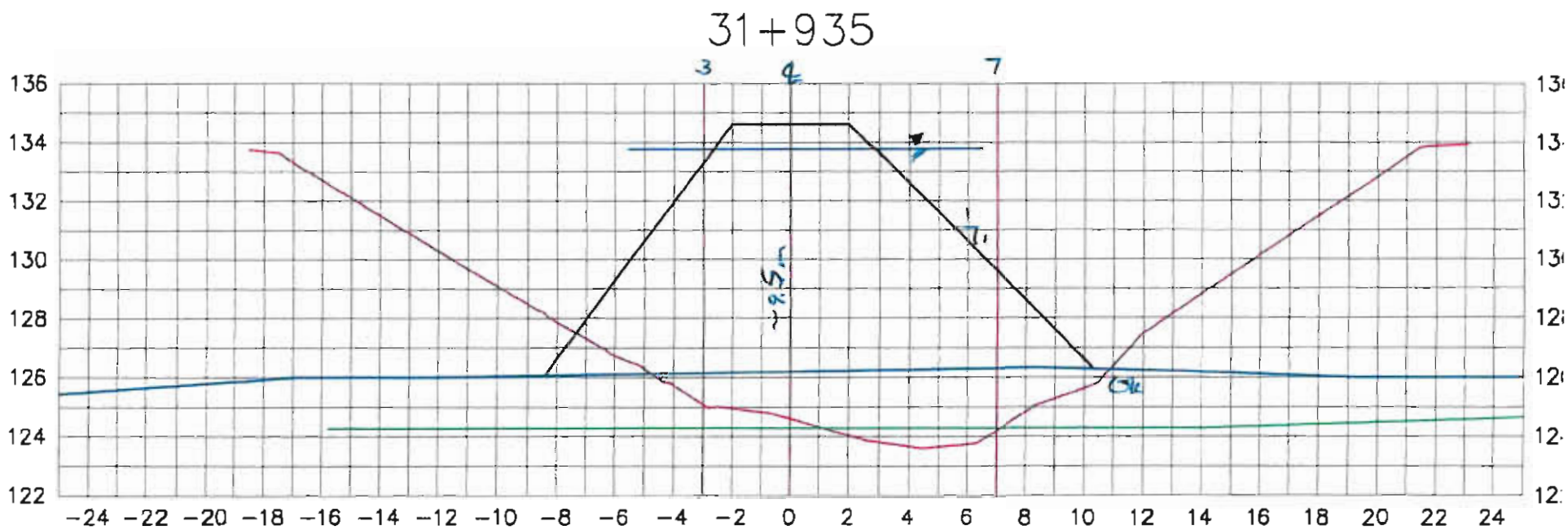
Target surface

Manual probing

Date: 2010\08\22

Page:6\8

Par: Hugues Gagnon



Lake bed soil

Dike

Target surface

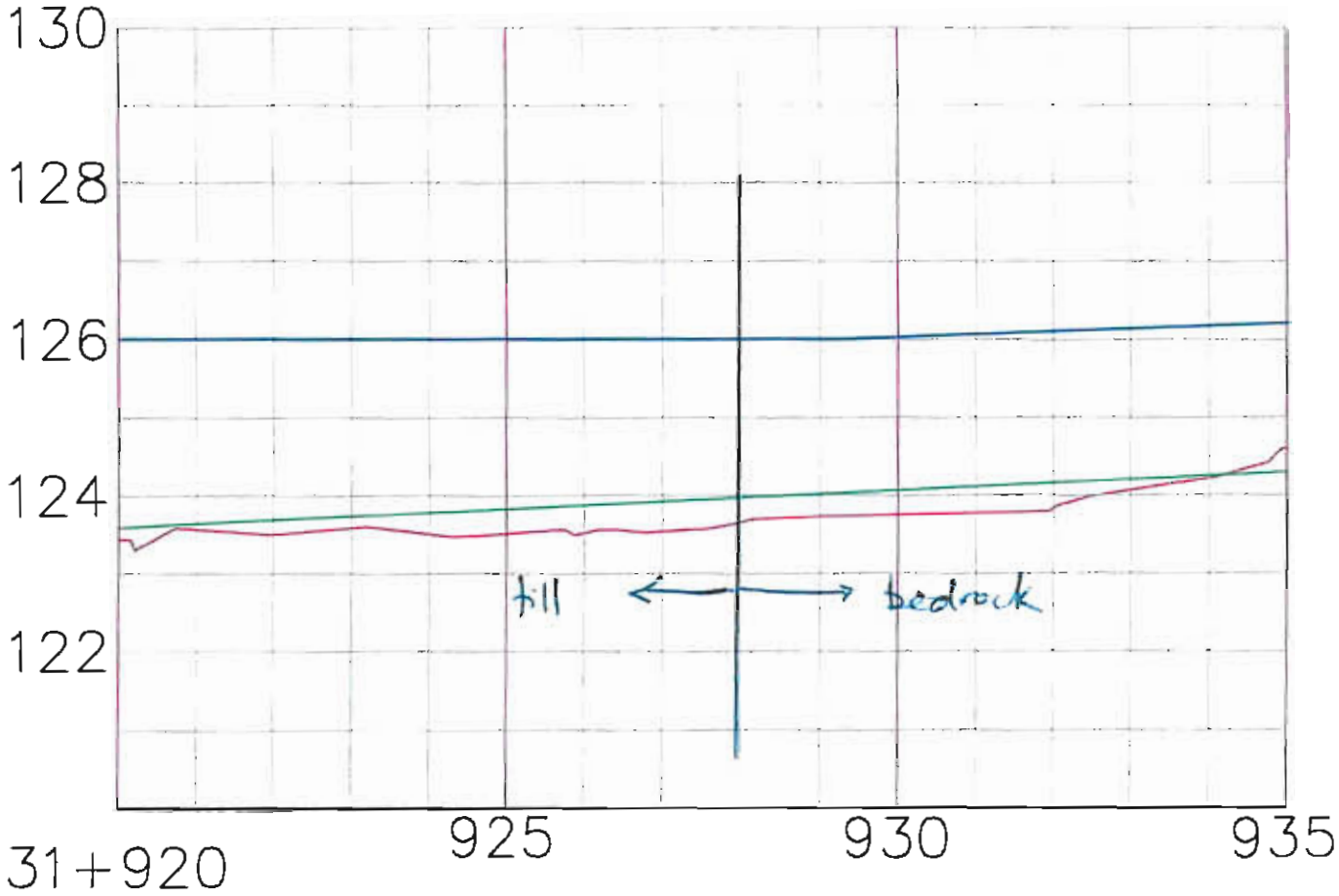
Manual probing

Date: 2010\08\22

Page:7\8

HG Aug 22/10

Par: Hugues Gagnon



Lake bed soil

Dike

Target surface

Manual probing

Date: 2010\08\22

Page:8\8

Par: Hugues Gagnon

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 31+940 Offset	SHIFT: NIGHT: ☐ DAY: ☒	DATE: 22 Aout 2010	SHEET 1 OF 6
To Sta. 31+945 Offset	LOCATION: Bay Goose Dike, South Portion		
EQUIPMENT:			
DESCRIPTION			

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings		FE
2.	Storage areas planned for disposal of removed materials		FE
3.	Occurrence of snow and ice removal method in place		FE NA
4.	Occurrence of boulders and removal method in place		FE
5.	Occurrence of hummocks and scalping method in place		FE
6.	Occurrence of surface and ground water and its impact mitigation in place		FE
7.	Presence of other unsuitable materials and removal method in place		FE
8.	Soil frozen or thawed and measures taken	N/A	FE NA
9.	Blasting requirement to remove unsuitable material and safety measure checked	N/A	FE NA
10.	Adjustment made to suit design in field		FE
11.	Final walkover inspection before re-sloping or fill placement		FE
12.	"As-excavated" survey conducted		FE
13.	Final sounding conducted of lake bottom surface		FE

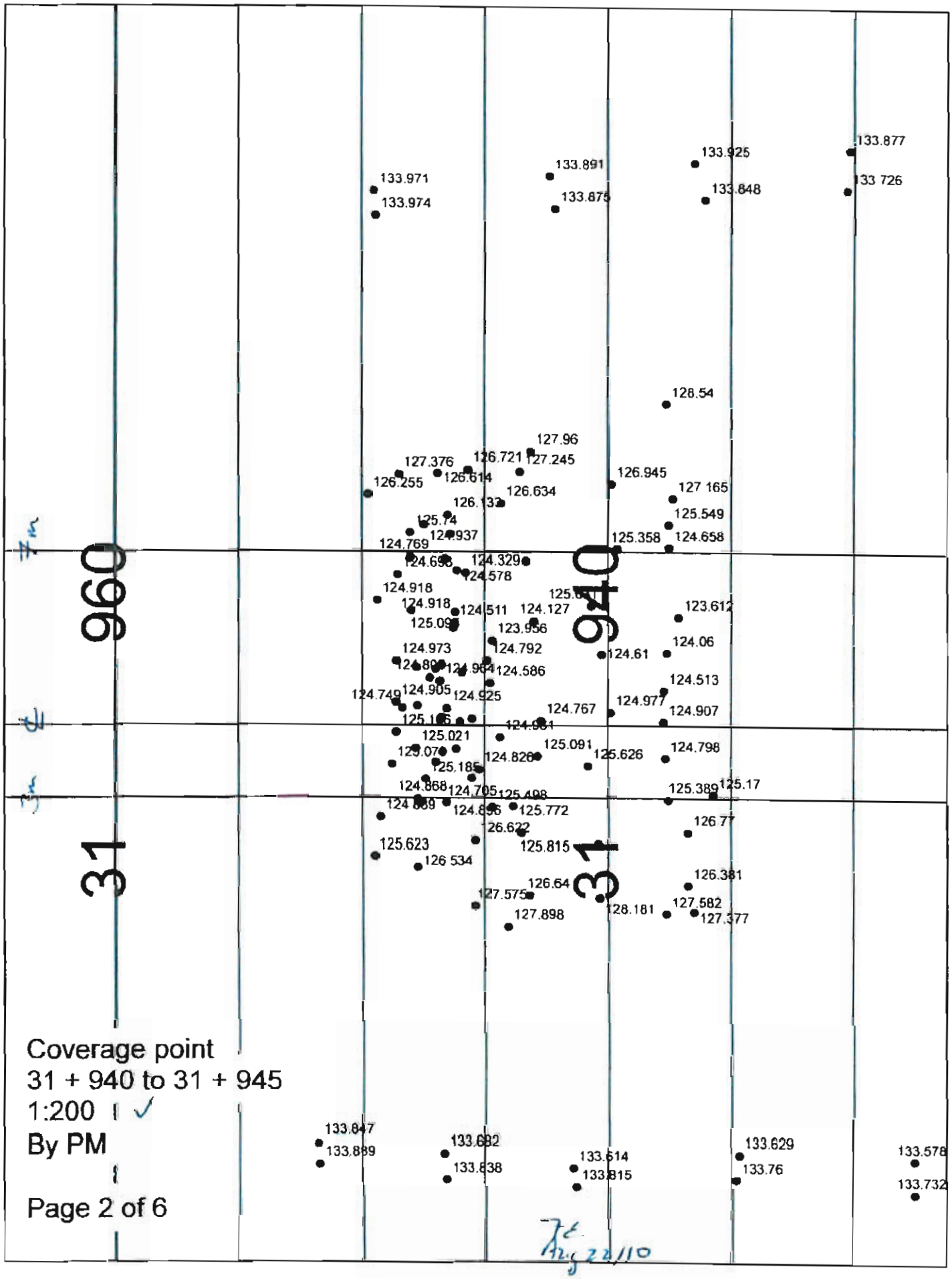
REMARKS: (1) Continue to monitor silt accumulation between toe of backfill and open trench area. Initiate cleaning if within reach. Attempt.
(2) Approved for backfill to 31+945, crest to 31+925

DEVIATIONS: (Attach list if necessary)

DATE OF RECTIFICATION:

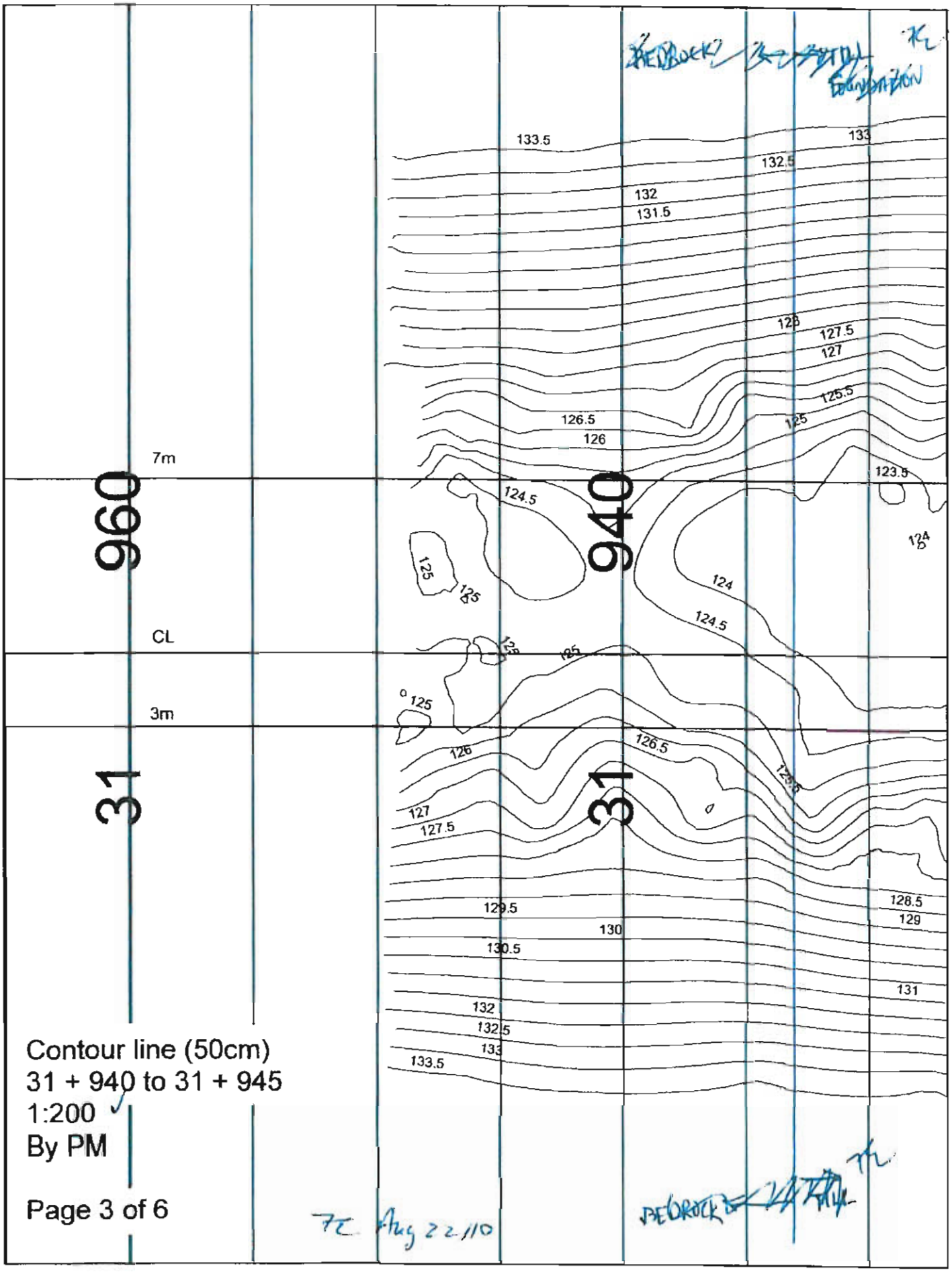
SURVEY VERIFICATION	ACCEPTED BY QA Manager:	ACCEPTED BY OWNER:
NAME: GUY MORISSETTE	NAME: FIONA ESFORD	NAME:
SIGNATURE:	SIGNATURE:	SIGNATURE:
DATE 22 Aout 2010	DATE Aug 22/10	DATE

18 hrs 15 — 21:00

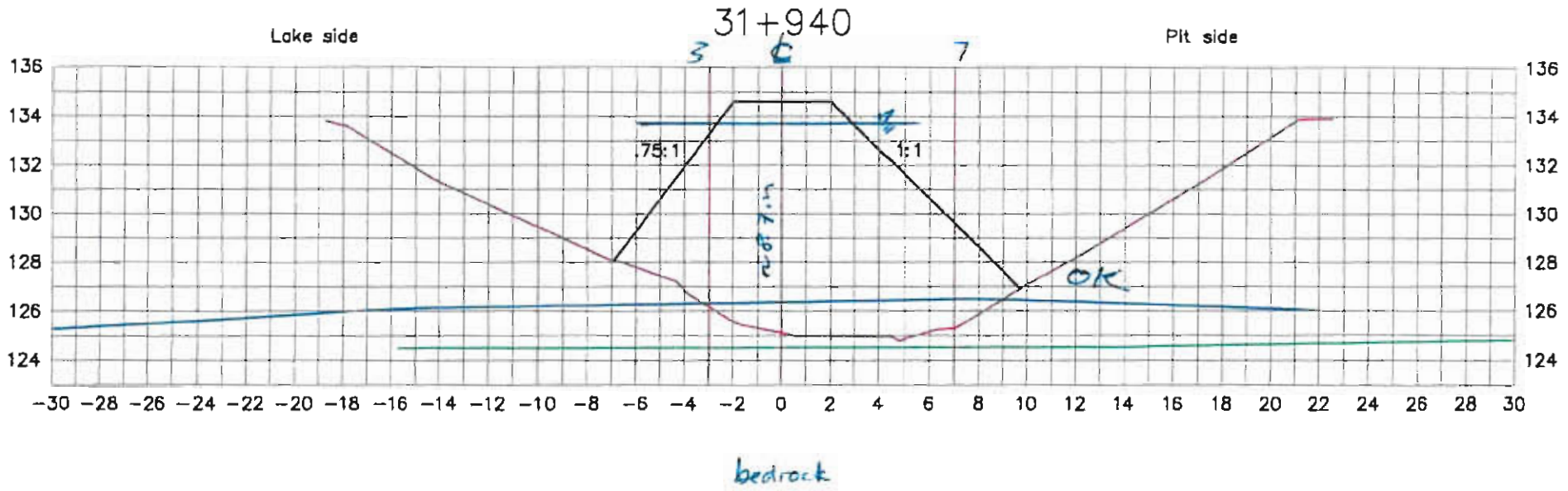


Coverage point
31 + 940 to 31 + 945
1:200 ✓
By PM

Aug 22/10



Contour line (50cm)
31 + 940 to 31 + 945
1:200
By PM



Lake bed soil

Dike

Target surface

Manual probing

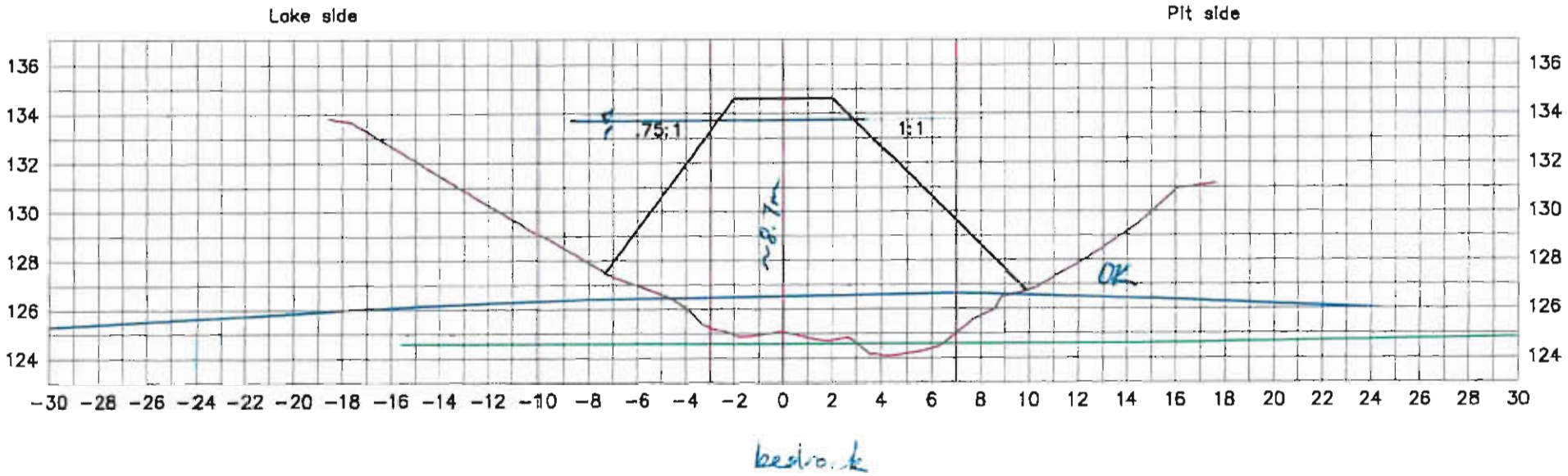
Date: 220810

Page: 4/6

Par: Pascale Martel

PC
Aug 22/10

31+945



Lake bed soil

Dike

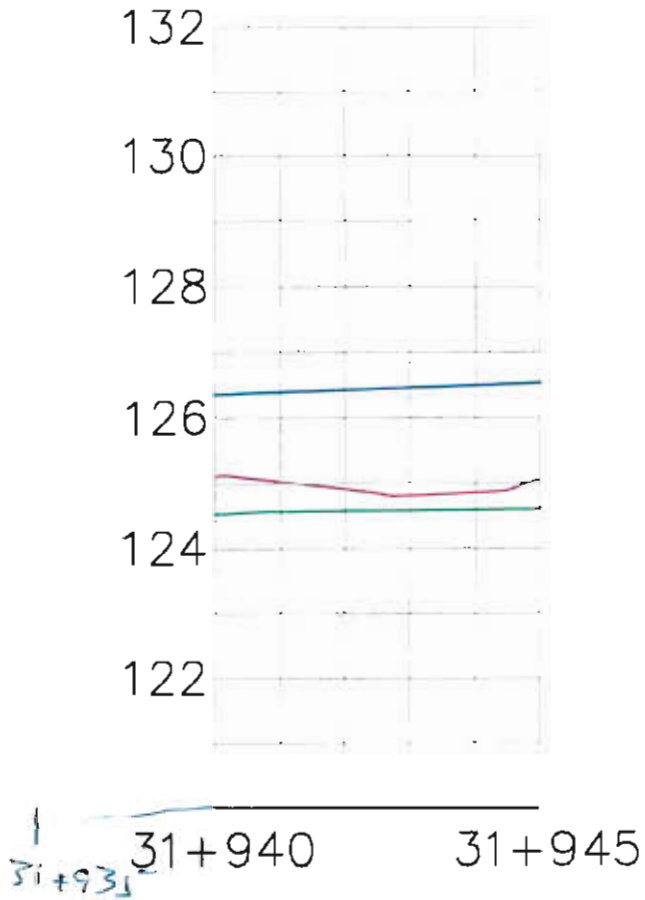
Target surface

Manual probing

Date: 220810

Page:5/6

Par: Pascale Martel



Can you reprint showing
31+935 → 31+945

Lake bed soil

Dike

Target surface

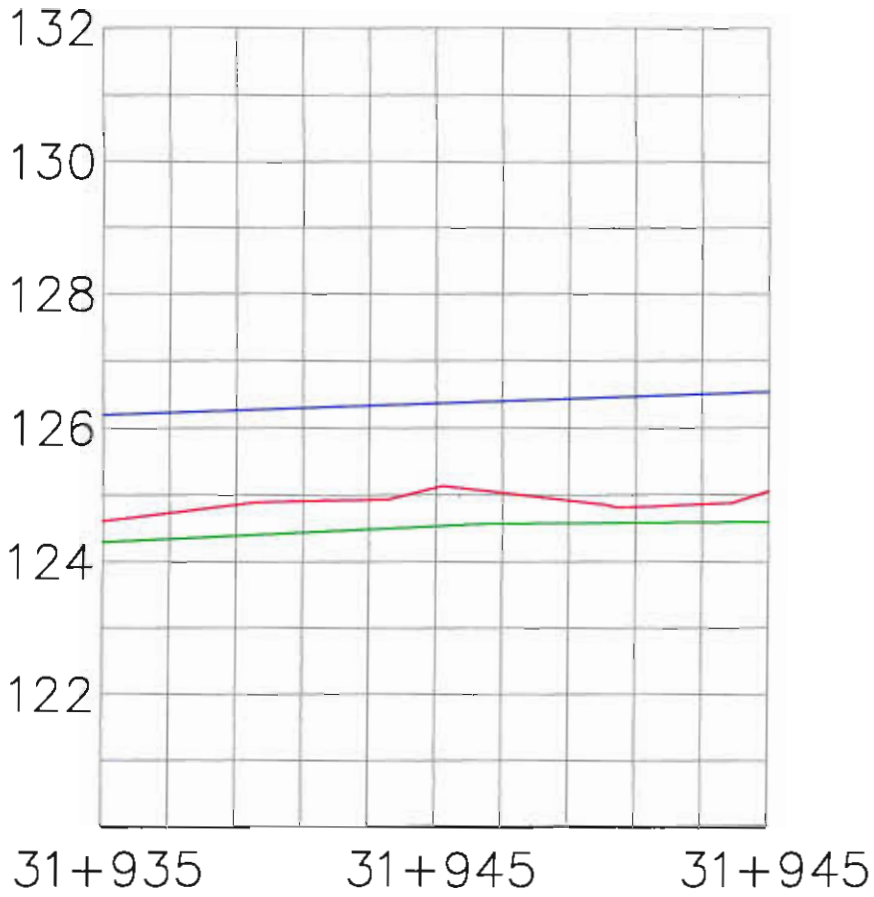
Manual probing

Date: 220810

Page: 6/6

Par: Pascale Martel

PE
Aug 22/10



Lake bed soil

Dike

Target surface

Manual probing

Date: 220810

Page: 6/6

Par: Pascale Martel

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 31+945 Offset | SHIFT: NIGHT :☐ DAY :☑ | DATE : 23 Aout 2010 | SHEET 1 OF 8

To Sta. 31+960 Offset | LOCATION: : Bay Goose Dike - South Portion

EQUIPMENT:

DESCRIPTION

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	M	FE
2.	Storage areas planned for disposal of removed materials	M	FE
3.	Occurrence of snow and ice removal method in place	M	FE NA
4.	Occurrence of boulders and removal method in place	M	FE
5.	Occurrence of hummocks and scalping method in place	M	FE
6.	Occurrence of surface and ground water and its impact mitigation in place	M	FE
7.	Presence of other unsuitable materials and removal method in place	M	FE
8.	Soil frozen or thawed and measures taken	N/A M	FE NA
9.	Blasting requirement to remove unsuitable material and safety measure checked	N/A M	FE NA
10.	Adjustment made to suit design in field	M	FE
11.	Final walkover inspection before re-sloping or fill placement	M	FE
12.	"As-excavated" survey conducted	M	FE
13.	Final sounding conducted of lake bottom surface	M	FE

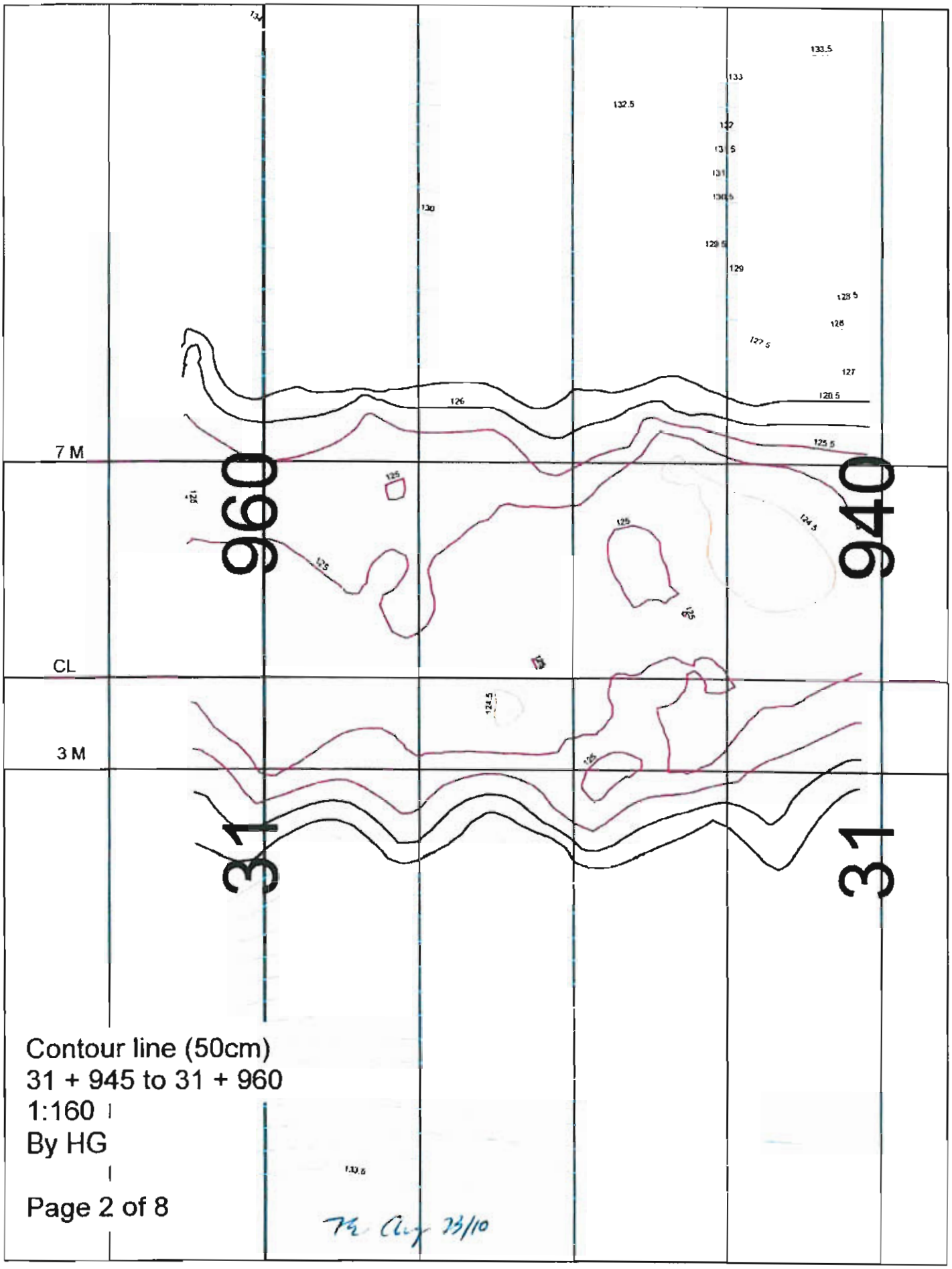
REMARKS : (1) Monitor silt deposition thickness
(2) Attempt to remove accumulated silt, if possible to remove some re-check silt depths
(3) Approved for backfill to 31+960, crest to 31+942

DEVIATIONS : (Attach list if necessary)

DATE OF RECTIFICATION :

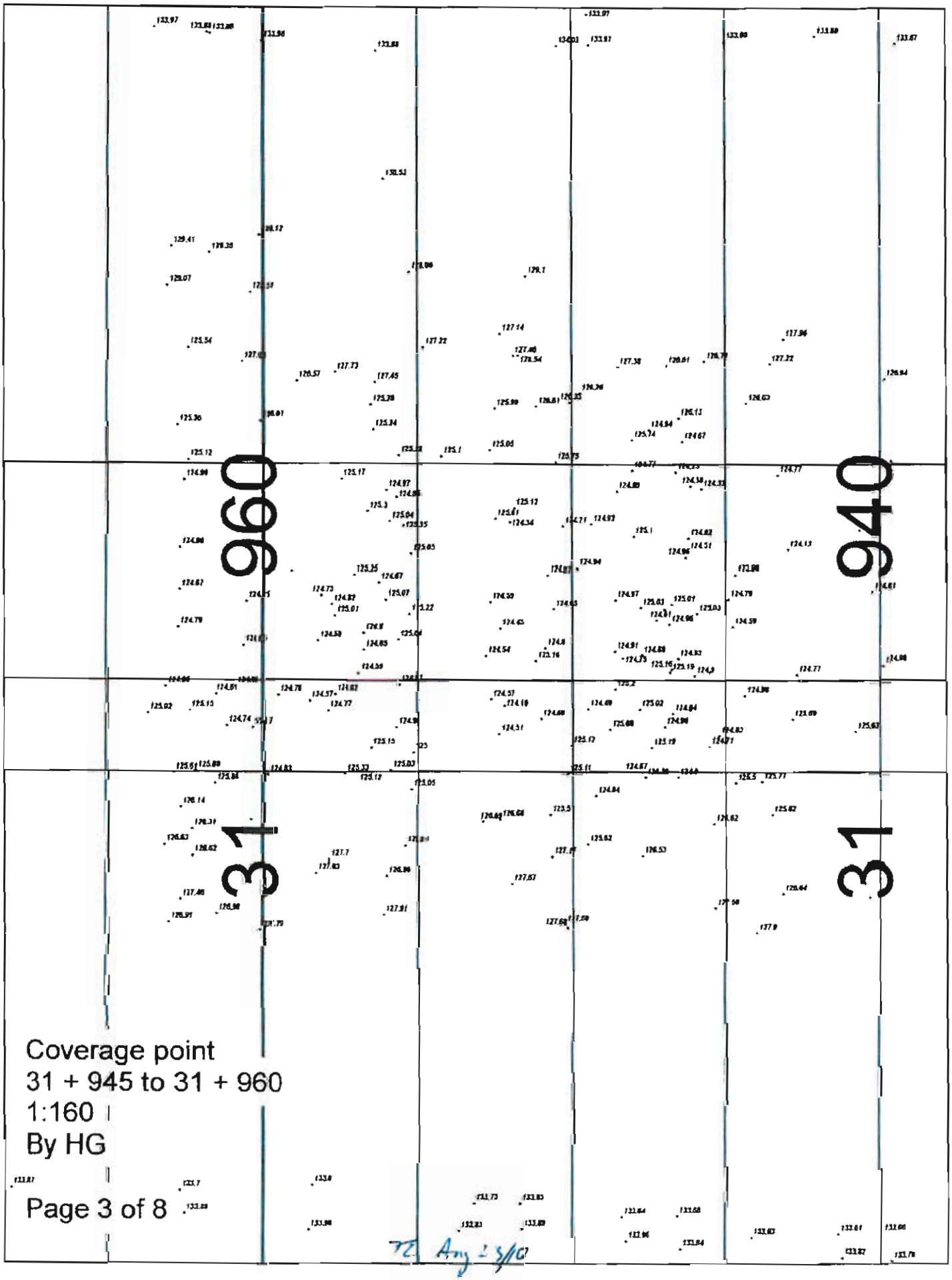
SURVEY VERIFICATION	ACCEPTED BY QA Manager :	ACCEPTED BY OWNER :
NAME: GUY MORISSETTE	NAME: FIONA EFFORD	NAME:
SIGNATURE :	SIGNATURE :	SIGNATURE :
DATE 23 Aout 2010	DATE Aug 23/10	DATE
6 h 15 AM	11:20 AM	

Copy of original



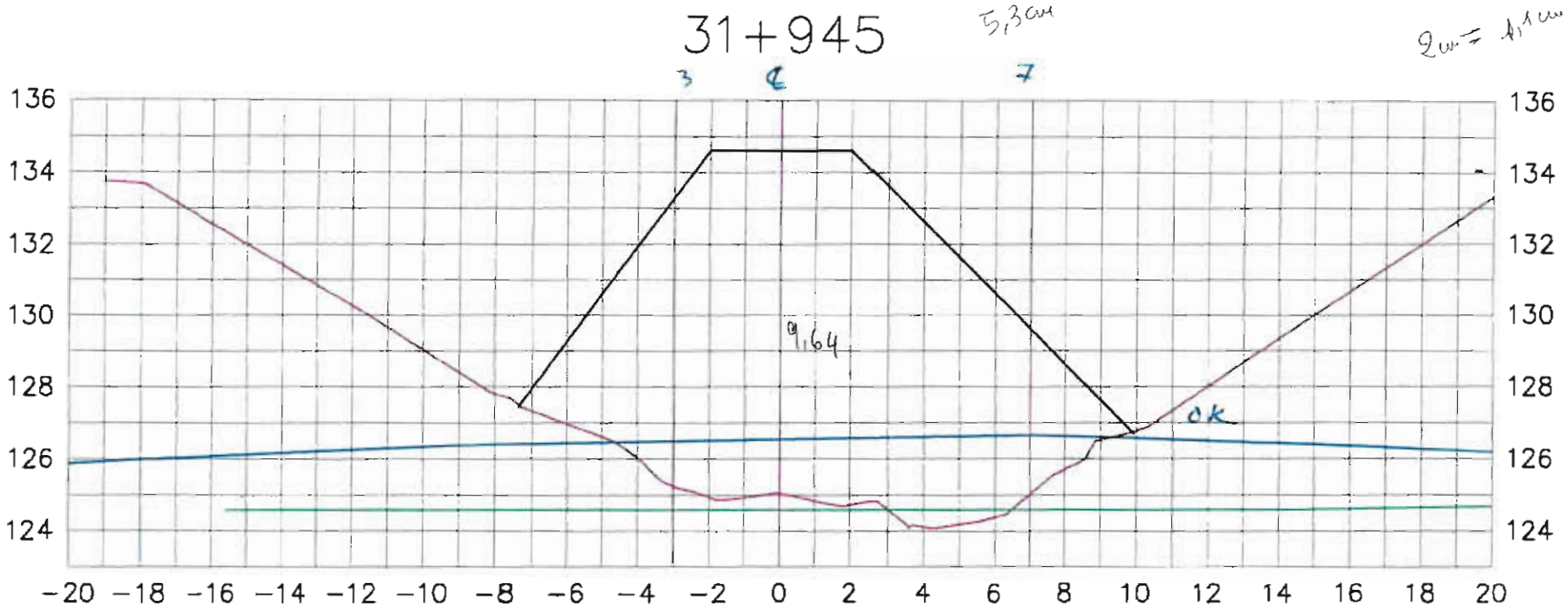
Contour line (50cm)
31 + 945 to 31 + 960
1:160
By HG

TE Aug 23/10



Coverage point
31 + 945 to 31 + 960
1:160
By HG

TC Aug 23/07



Lake bed soil

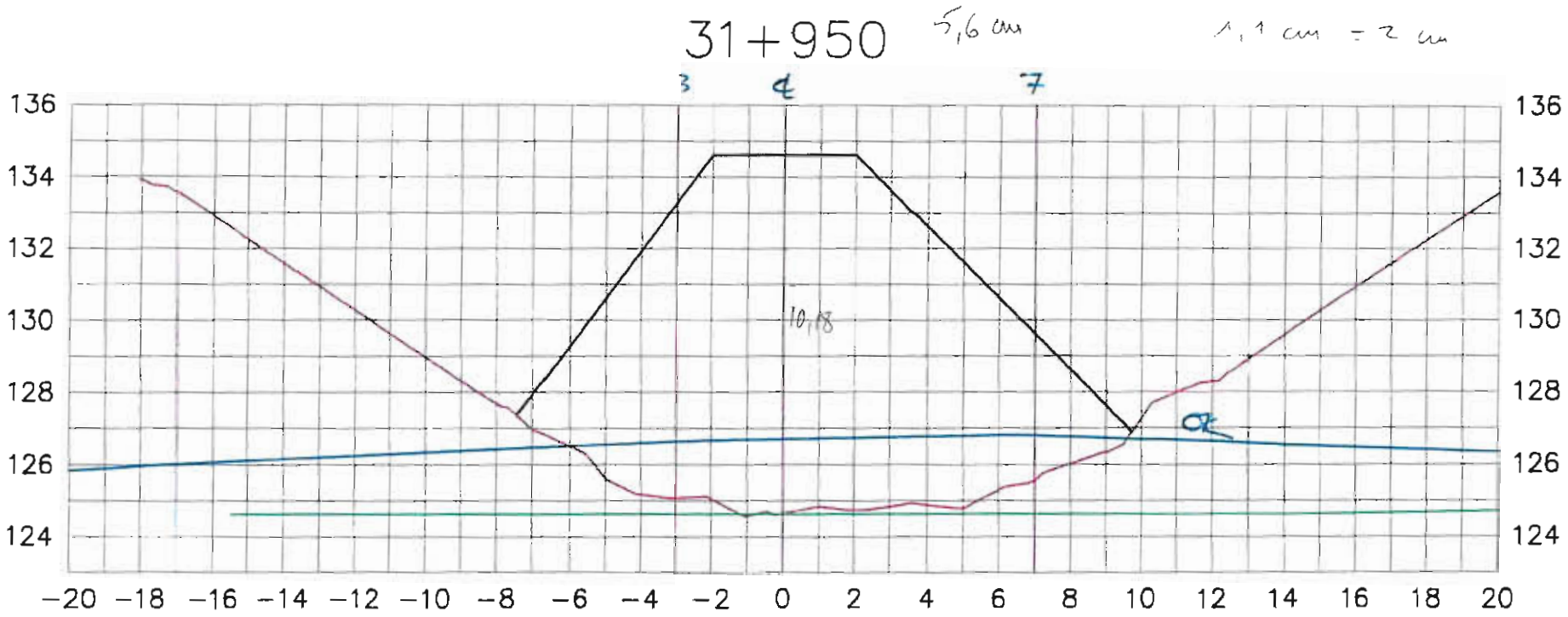
Dike

Target surface

Manual probing

Date: 2010-08-22

Par: Hugues Gagnon



Lake bed soil

Dike

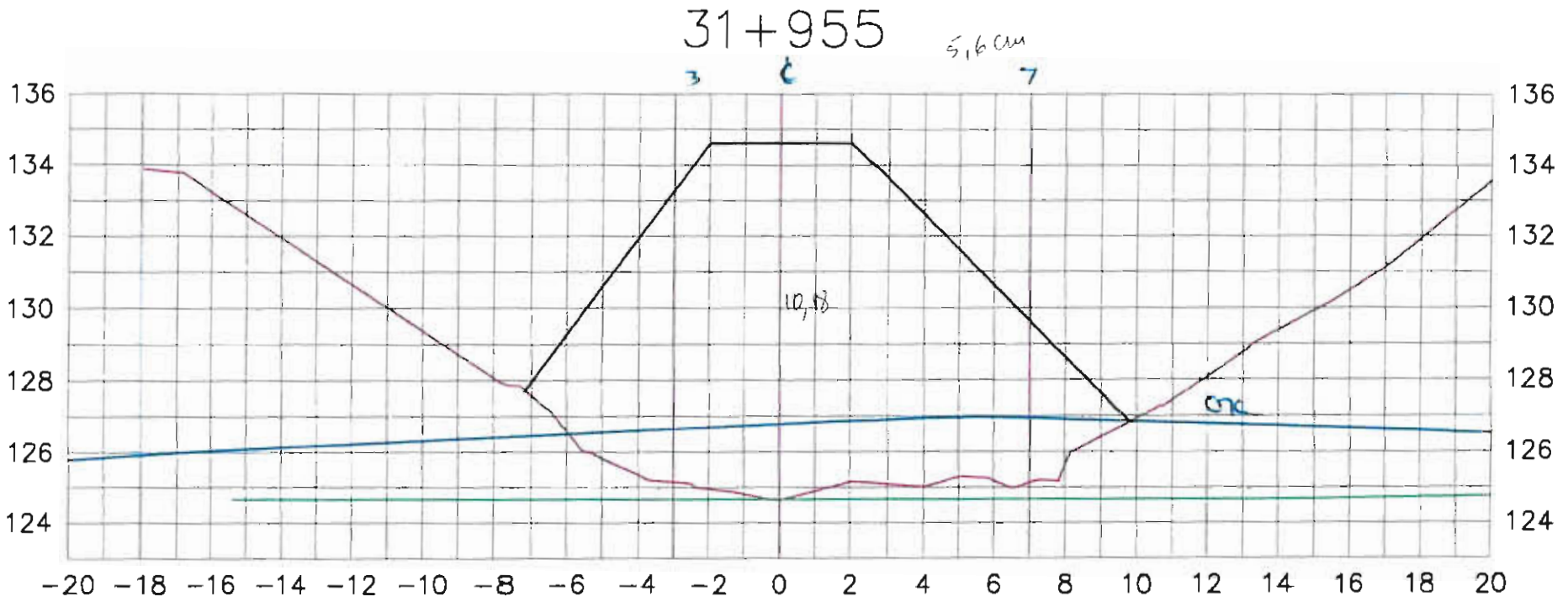
Target surface

Manual probing

Date: 2010-08-22

7E
aug 2 3/10

Par: Hugues Gagnon



Lake bed soil

Dike

Target surface

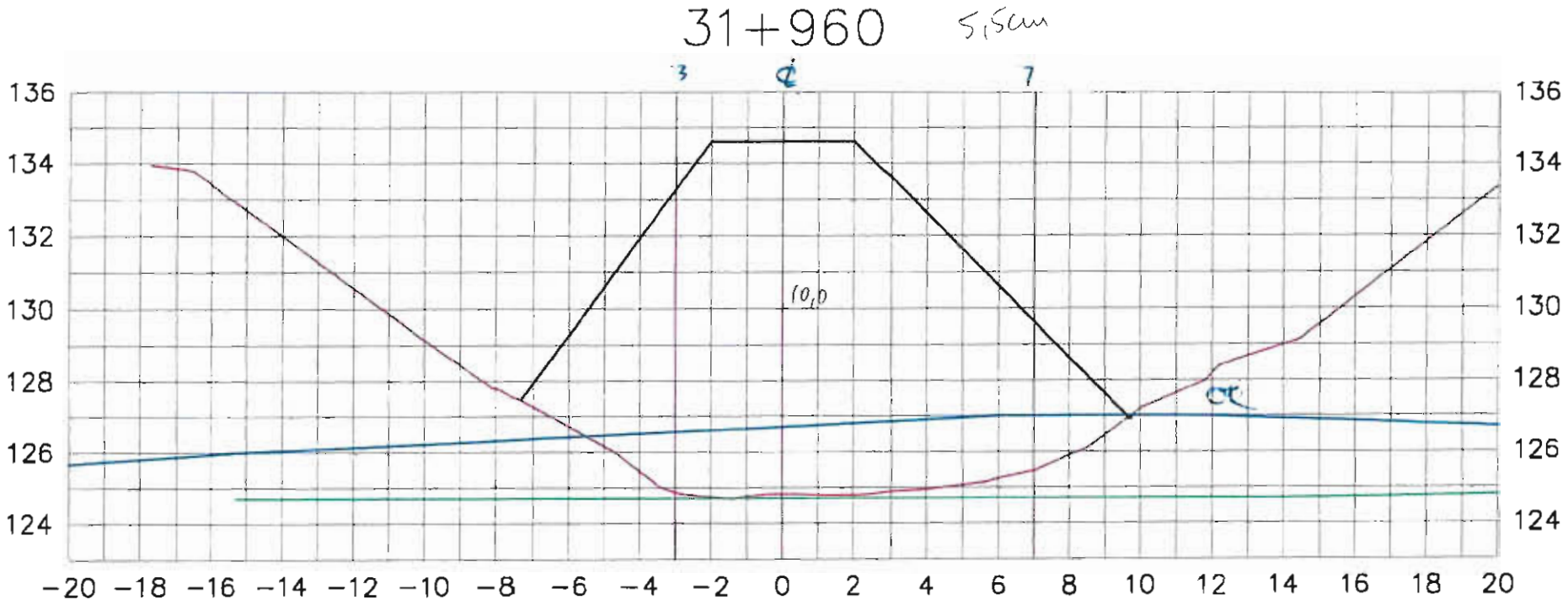
Manual probing

Date: 2010-08-22

Page: 6\8

FC Aug 23/10

Par: Hugues Gagnon



Lake bed soil

Dike

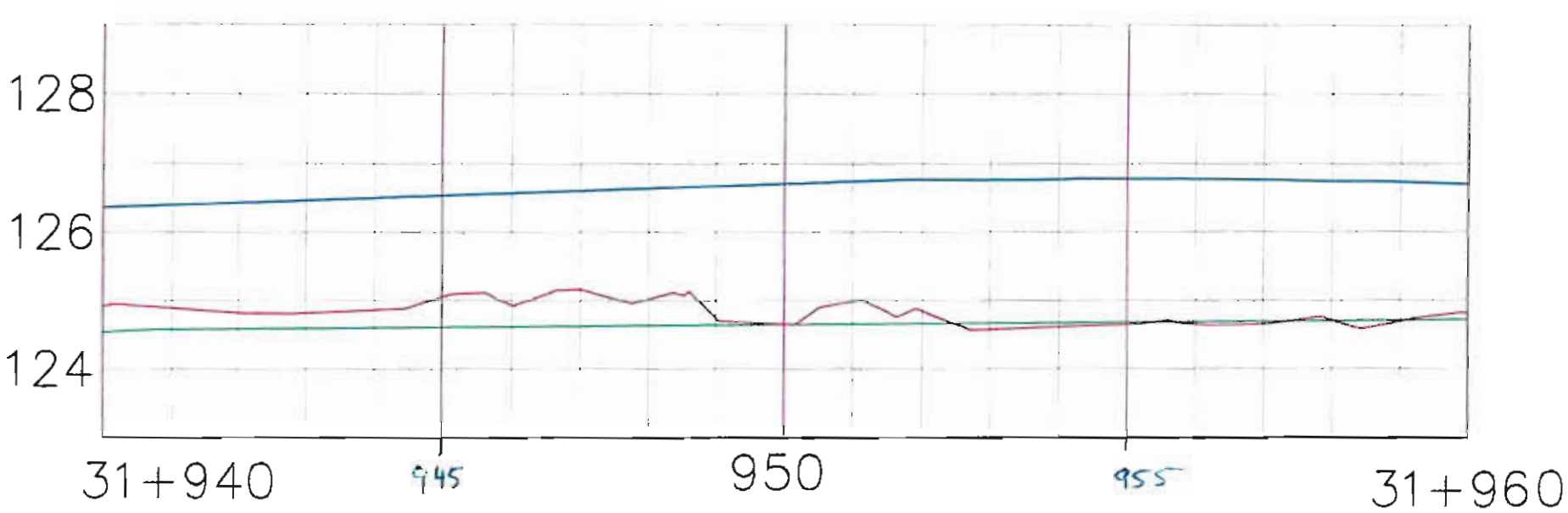
Target surface

Manual probing

Date: 2010-08-22

Page: 7\8

Par: Hugues Gagnon



Lake bed soil

Dike

Target surface

Manual probing

Date: 2010\08\22

Page:8\8

Par: Hugues Gagnon

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 31+960 Offset	SHIFT: NIGHT :☐ DAY :☐	DATE : 24-08-2010	SHEET 1 OF
To Sta. 31+970 Offset	LOCATION: : Bay Goose Dike South Portion		
EQUIPMENT:			
DESCRIPTION			

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	MS	TE
2.	Storage areas planned for disposal of removed materials	MS	TE
3.	Occurrence of snow and ice removal method in place	MS	NA TE
4.	Occurrence of boulders and removal method in place	MS	TE
5.	Occurrence of hummocks and scalping method in place	MS	TE
6.	Occurrence of surface and ground water and its impact mitigation in place	MS	TE
7.	Presence of other unsuitable materials and removal method in place	MS	TE
8.	Soil frozen or thawed and measures taken	N/A	NA
9.	Blasting requirement to remove unsuitable material and safety measure checked	N/A	NA
10.	Adjustment made to suit design in field	MS	TE
11.	Final walkover inspection before re-sloping or fill placement	MS	TE
12.	"As-excavated" survey conducted	MS	TE
13.	Final sounding conducted of lake bottom surface	MS	TE

REMARKS : ① If possible, clean silt - otherwise measure thickness and proceed with backfill

② Backfill approved to 31+970, crest of backfill 31+952

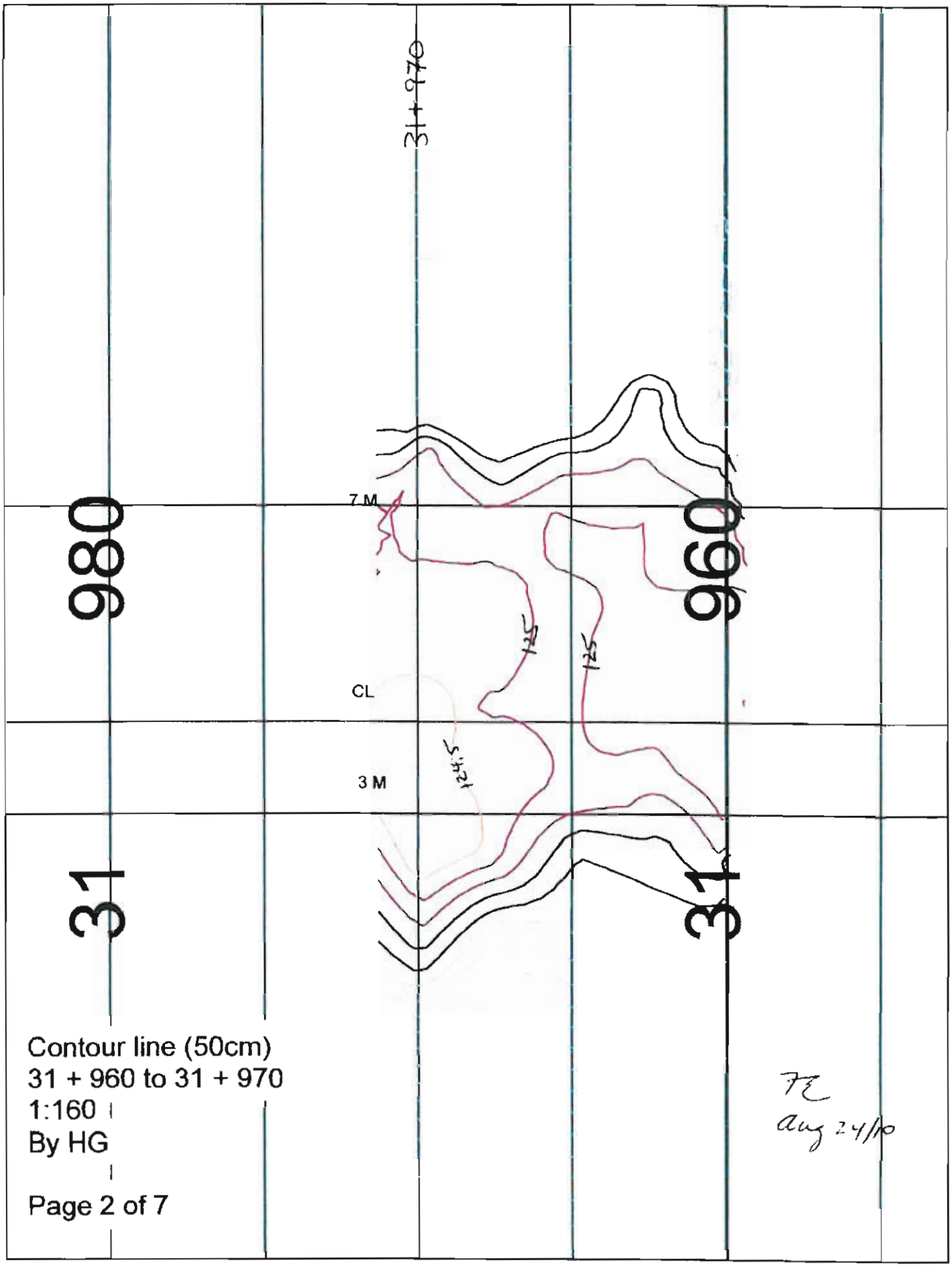
DEVIATIONS : (Attach list if necessary)

DATE OF RECTIFICATION :

SURVEY VERIFICATION	ACCEPTED BY QA Manager :	ACCEPTED BY OWNER :
NAME: MAXIME GAGNÉ	NAME: FIONA ESTOP	NAME:
SIGNATURE :	SIGNATURE :	SIGNATURE :
DATE 24-08-2010	DATE Aug 24/10	DATE

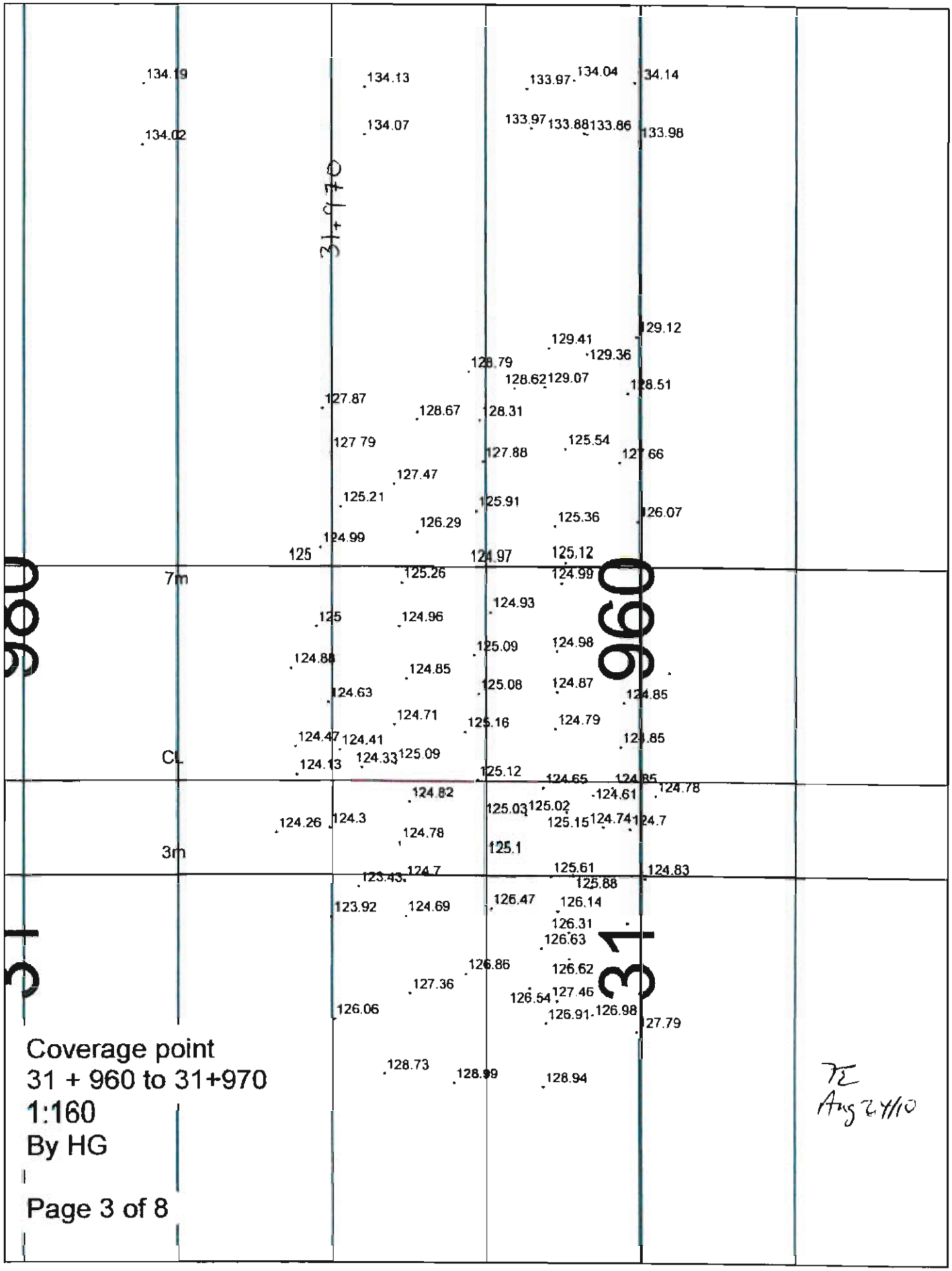
06:32 AM 08:20

COPY OF ORIGINAL



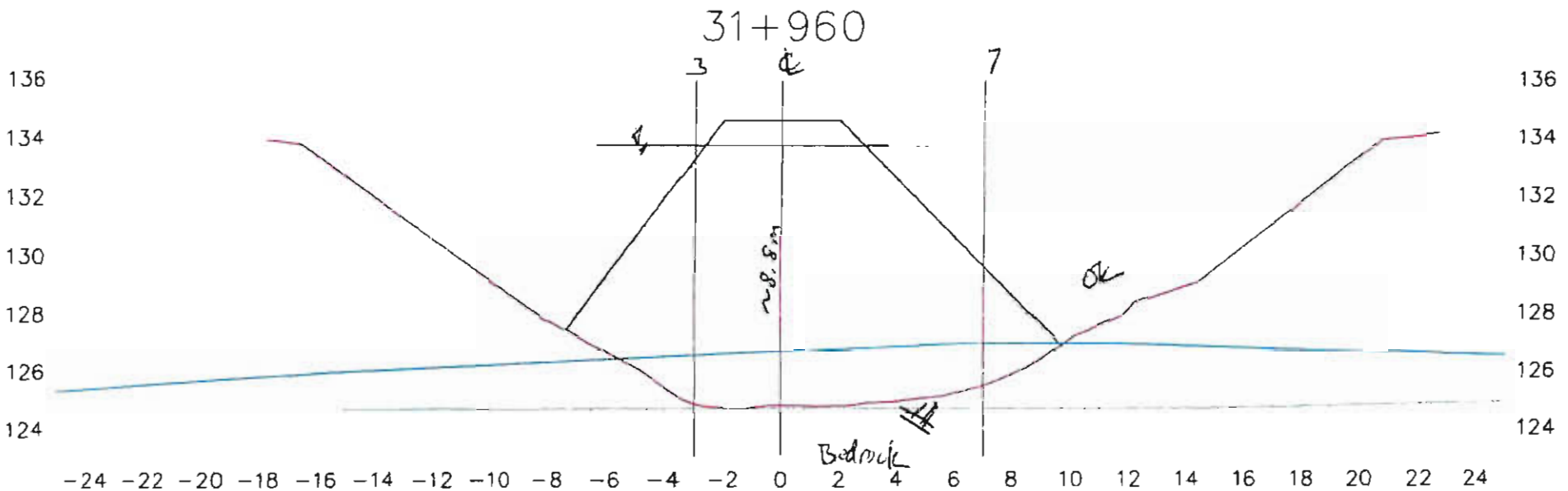
Contour line (50cm)
31 + 960 to 31 + 970
1:160
By HG

FE
Aug 24/10



Coverage point
31 + 960 to 31+970
1:160
By HG

TE
Aug 24/10



Lake bed soil

Dike

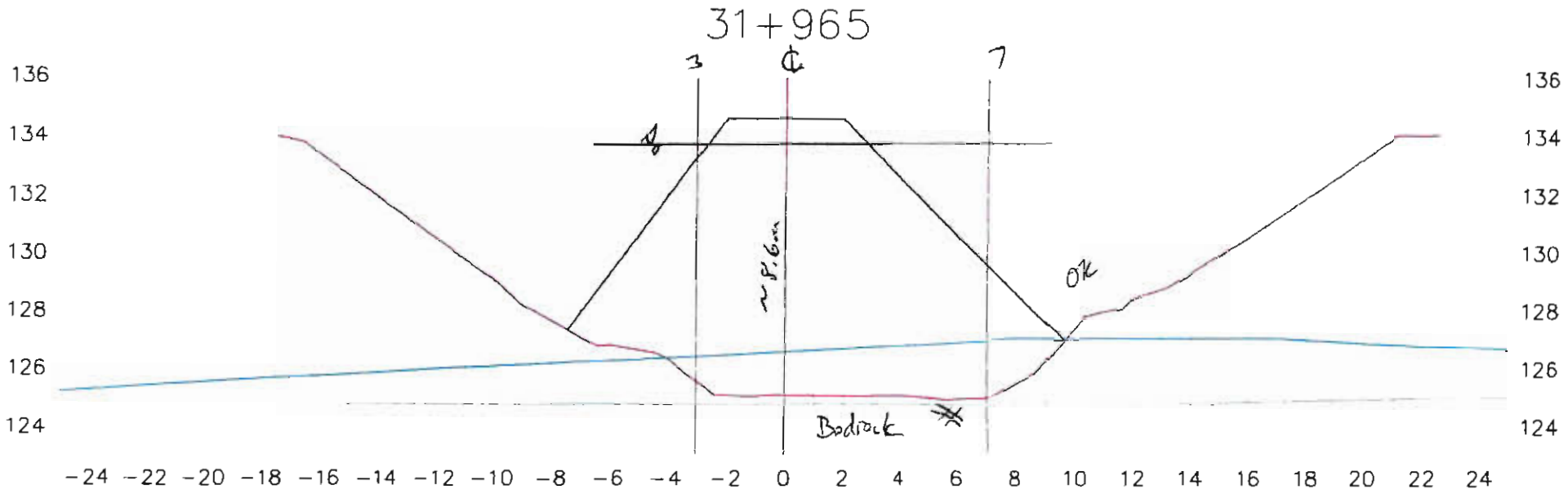
Target surface

Manual probing

Date: 2010-08-24

Page: 4\7

Par: Hugues Gagnon



Lake bed soil

Dike

Target surface

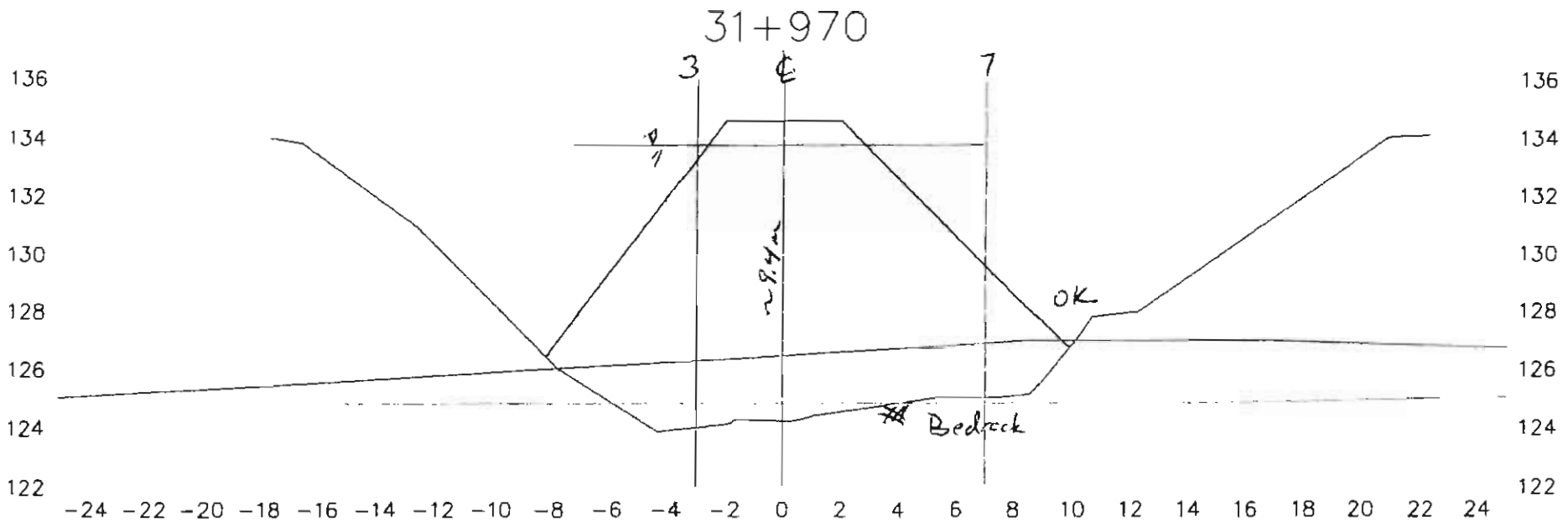
Manual probing

Date: 2010-08-24

Page: 5\7

Par: Hugues Gagnon

Aug 24/10



Lake bed soil

Dike

Target surface

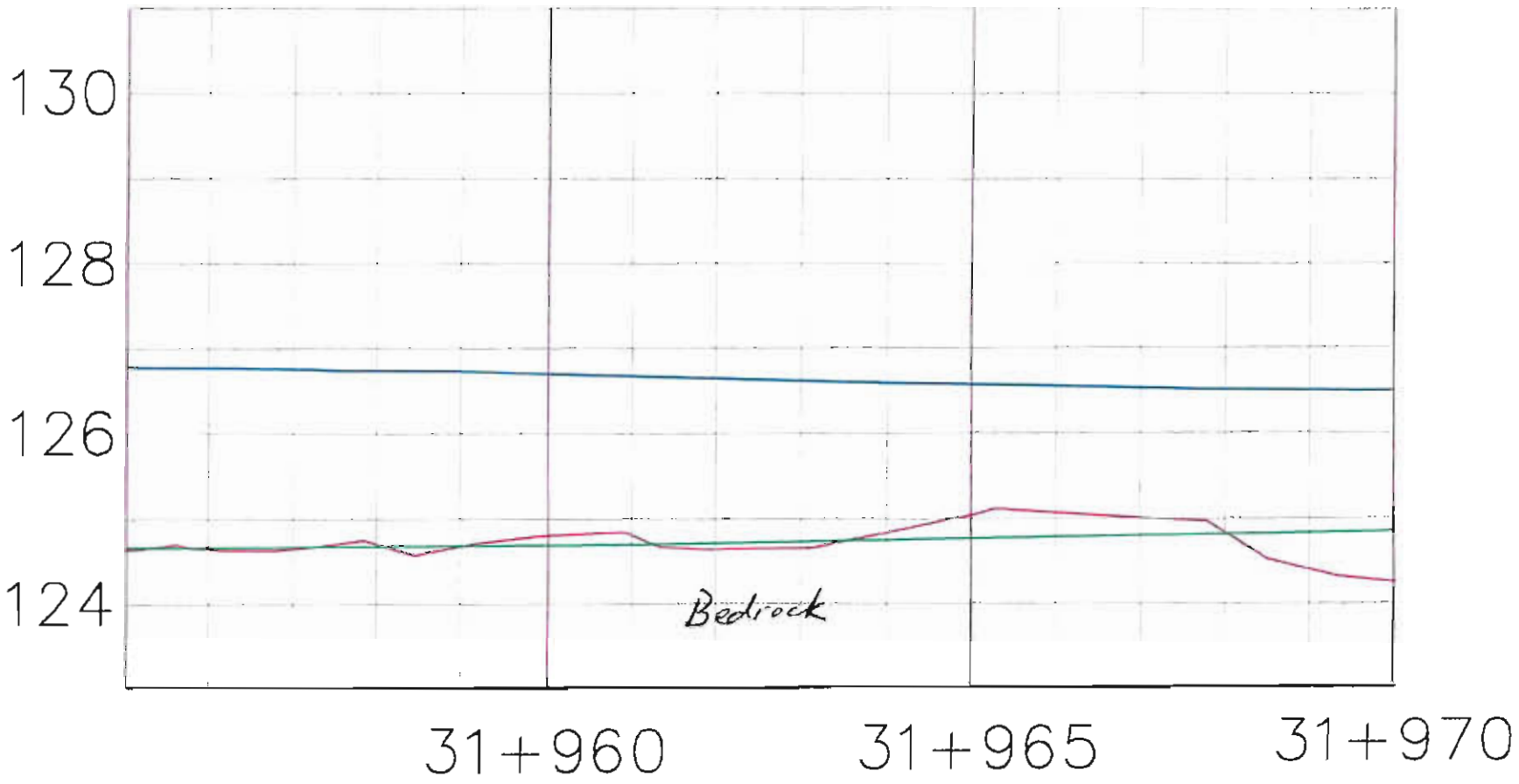
Manual probing

Date: 2010-08-24

Page: 6\7

Par: Hugues Gagnon

Aug 24/10



Lake bed soil

Dike

Target surface

Manual probing

Date: 2010\08\24

Par: Hugues Gagnon

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 31+970 Offset	SHIFT: NIGHT: ☐ DAY: ☒	DATE:	SHEET 1 OF 6
To Sta. 31+980 Offset	LOCATION: BAY GOOSE DIKE, SOUTH PORTION		
EQUIPMENT:			
DESCRIPTION			

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	[illegible]	FE
2.	Storage areas planned for disposal of removed materials	[illegible]	FE
3.	Occurrence of snow and ice removal method in place	[illegible]	FE N/A
4.	Occurrence of boulders and removal method in place	[illegible]	FE
5.	Occurrence of hummocks and scalping method in place	[illegible]	FE
6.	Occurrence of surface and ground water and its impact mitigation in place	[illegible]	FE
7.	Presence of other unsuitable materials and removal method in place	[illegible]	FE
8.	Soil frozen or thawed and measures taken	N/A [illegible]	N/A
9.	Blasting requirement to remove unsuitable material and safety measure checked	N/A [illegible]	N/A
10.	Adjustment made to suit design in field	[illegible]	FE
11.	Final walkover inspection before re-sloping or fill placement	[illegible]	FE
12.	"As-excavated" survey conducted	[illegible]	FE
13.	Final sounding conducted of lake bottom surface	[illegible]	FE

REMARKS: (1) Pending silt readings, depth of rod data - delivered at 20:10
(2) Unable to reach silt with current equipment, therefore approved for backfill once (1) ok by F Eshrad, Backfill crest to 31+962.

DEVIATIONS: (Attach list if necessary)

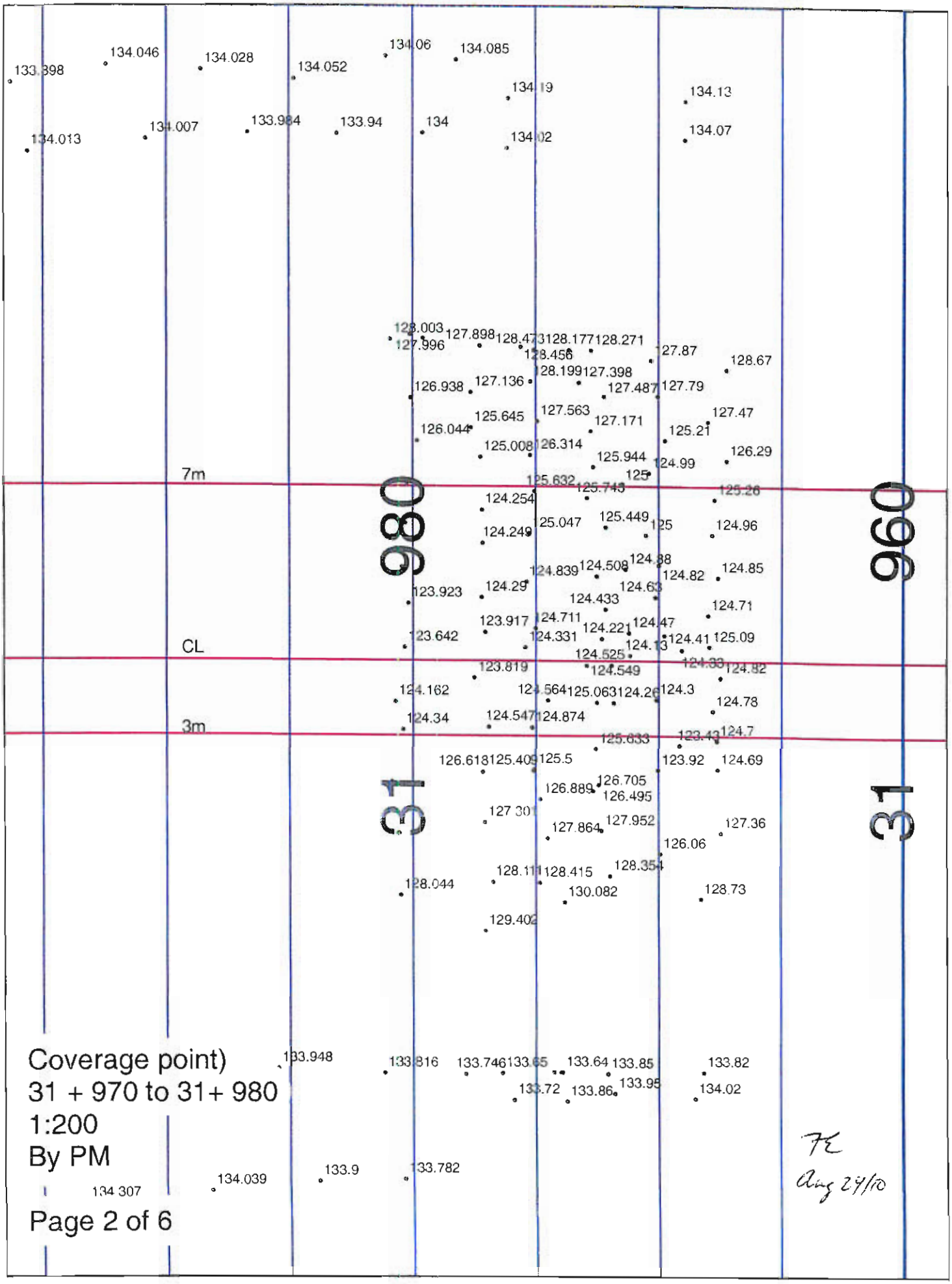
DATE OF RECTIFICATION:

SURVEY VERIFICATION	ACCEPTED BY QA Manager:	ACCEPTED BY OWNER:
NAME: GUY MORISSETTE	NAME: Fiona Eshrad	NAME:
SIGNATURE: [illegible]	SIGNATURE: Fiona Eshrad	SIGNATURE:
DATE 23 Aout 2010	DATE Aug 23/10 (Aug 24/10)	DATE

11:45 AM 2015

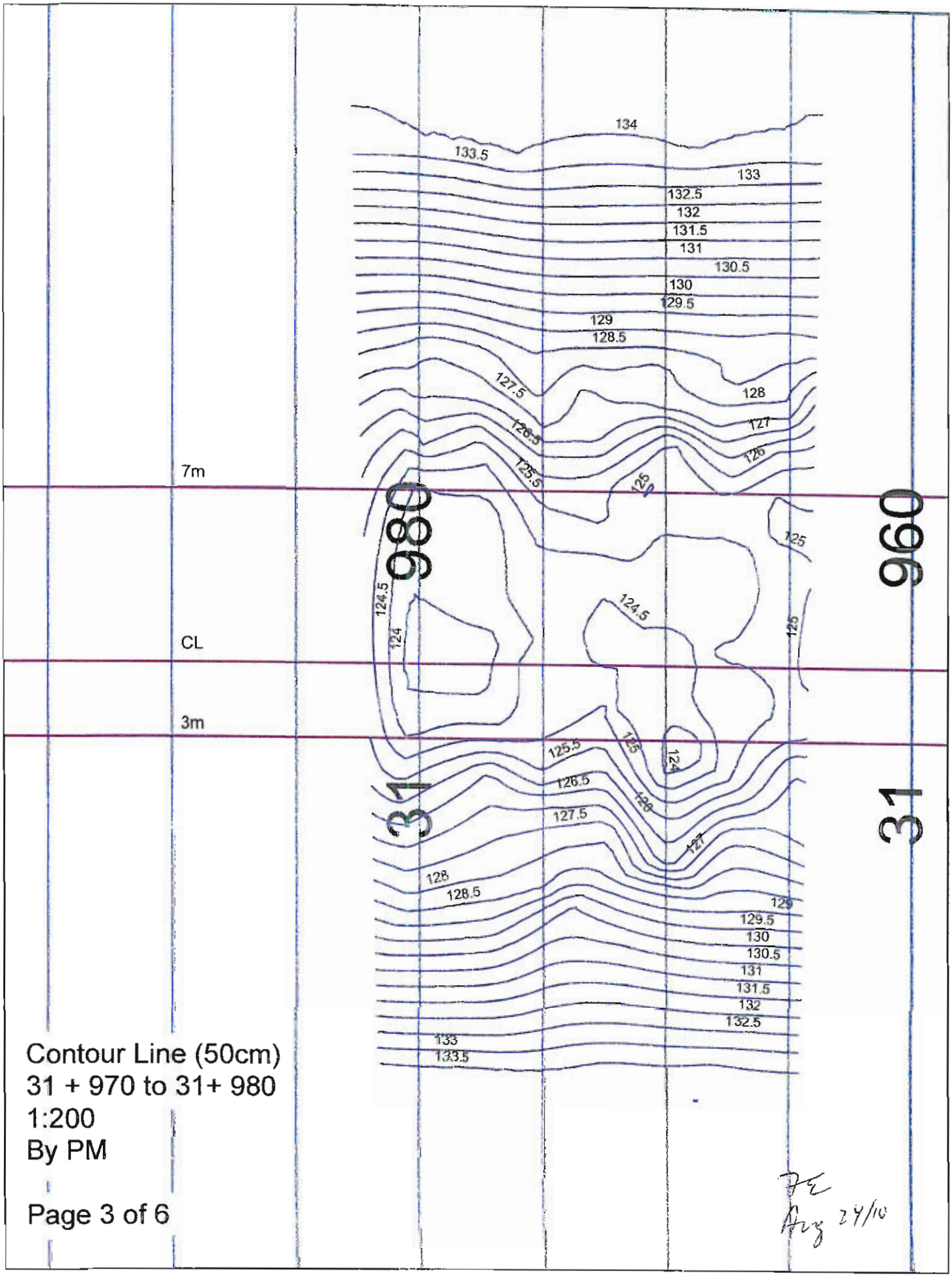
24 Aout

COPY OF ORIGINAL

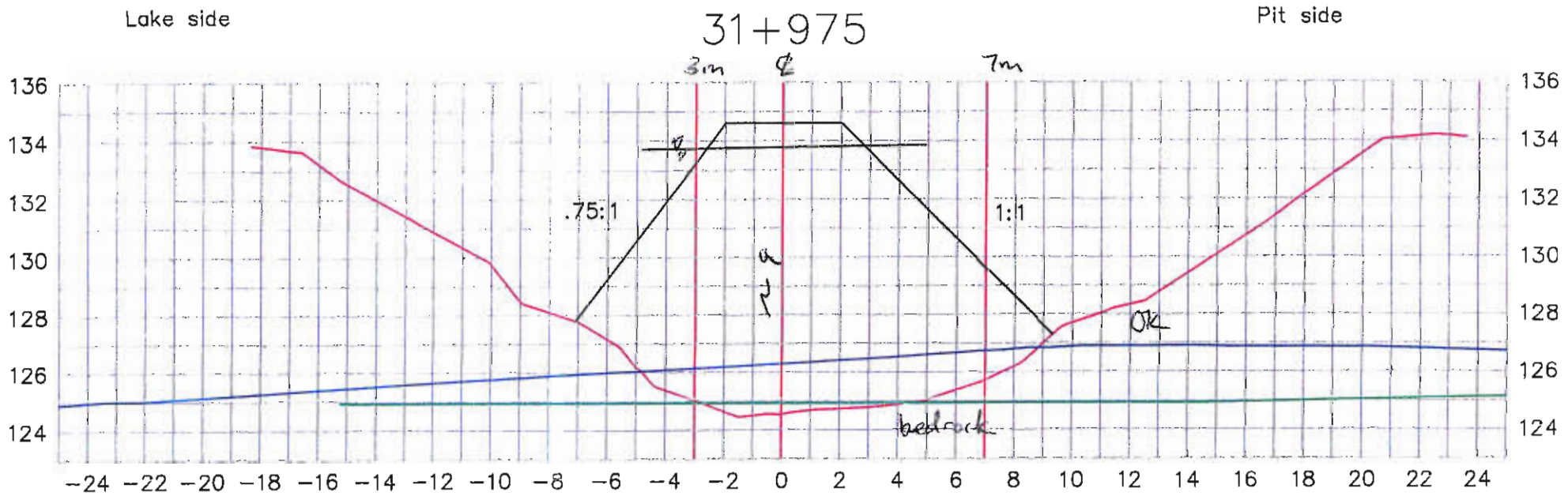


Coverage point)
31 + 970 to 31+ 980
1:200
By PM

FE
Aug 24/10


134
133.5
133
132.5
132
131.5
131
130.5
130
129.5
129
128.5
128
127.5
127
126
125.5
125
124.5
124
7m
CL
3m
980
990
31
Contour Line (50cm)
31 + 970 to 31+ 980
1:200
By PM

Page 3 of 6



Lake bed soil

Dike

Target surface

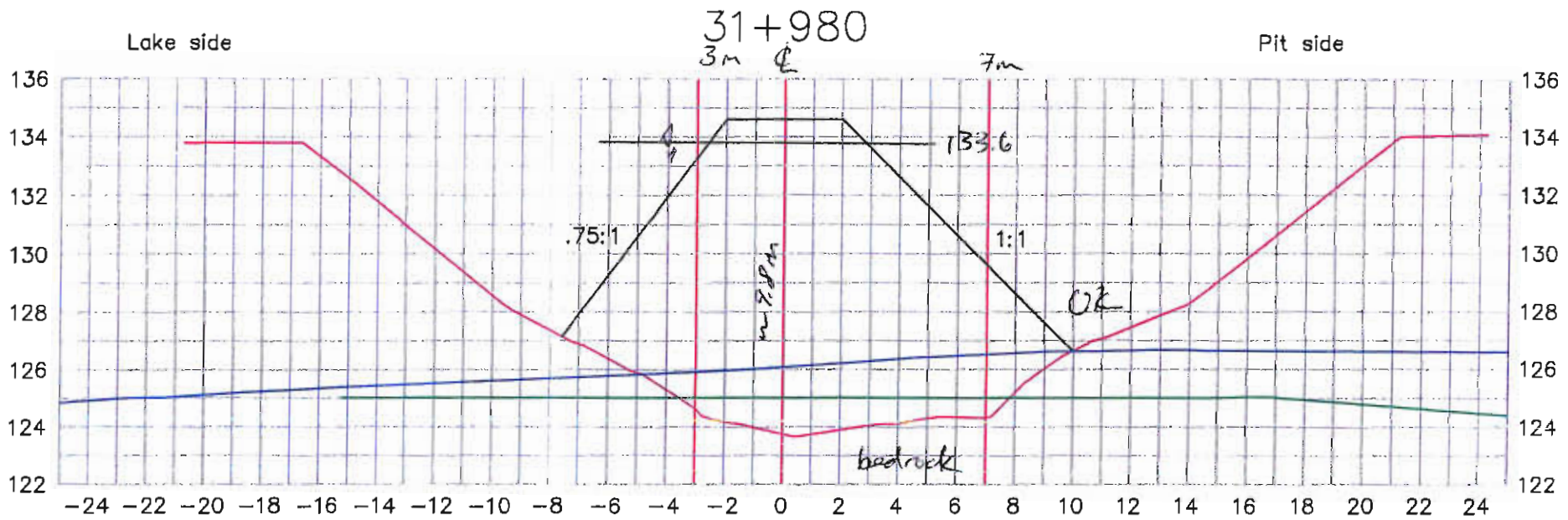
Manual probing

Date: 2010-08-24

Page: 4\6

Par: Pascale Martel

FE
Aug 24/10



Lake bed soil

Dike

Target surface

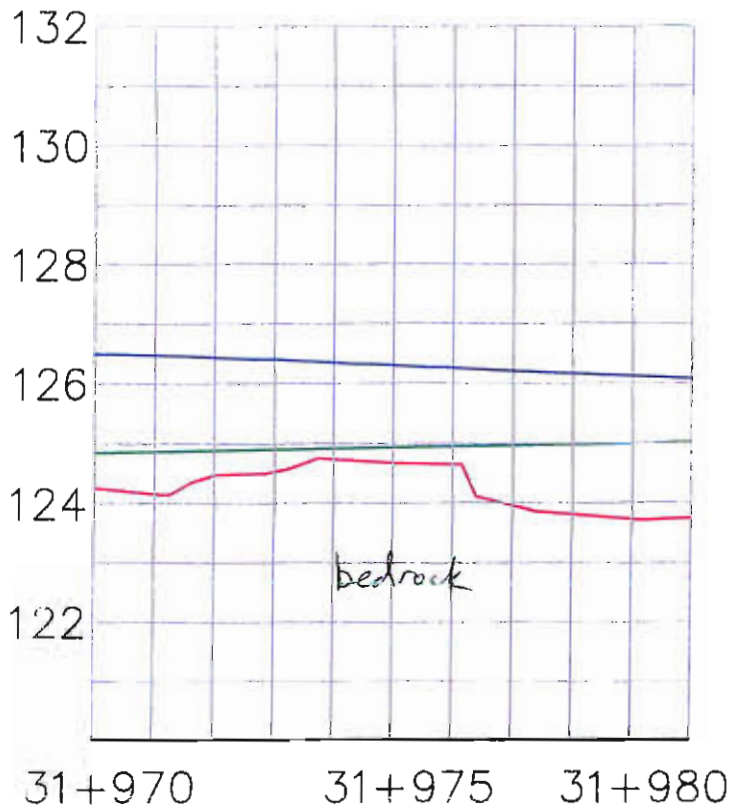
Manual probing

Date: 2010-08-24

PL
Aug 24/10

Page: 5\6

Par: Pascale Marte



Lake bed soil

Dike

Target surface

Manual probing

Date: 2010\08\24

Page:6\6

Par: Pascale Martel

PE
Aug 2-4/10

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. PM 30+980 Offset	SHIFT: NIGHT: ☐ DAY: ☑	DATE: 25 Aout 2010	SHEET 1 OF 7
To Sta. 30+990 Offset	LOCATION: BAY Goose Dike, South Portion		
EQUIPMENT:			
DESCRIPTION			

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	GM	FE
2.	Storage areas planned for disposal of removed materials	GM	FE
3.	Occurrence of snow and ice removal method in place	N/A GM	NA FE
4.	Occurrence of boulders and removal method in place	GM	FE
5.	Occurrence of hummocks and scalping method in place	GM	FE
6.	Occurrence of surface and ground water and its impact mitigation in place	GM	FE
7.	Presence of other unsuitable materials and removal method in place	GM	FE
8.	Soil frozen or thawed and measures taken	N/A	NA FE
9.	Blasting requirement to remove unsuitable material and safety measure checked	N/A	NA FE
10.	Adjustment made to suit design in field	GM	FE
11.	Final walkover inspection before re-sloping or fill placement	GM	FE
12.	"As-excavated" survey conducted	GM	FE
13.	Final sounding conducted of lake bottom surface	GM	FE

REMARKS: ① Sediment measurements taken at w/1:00 am. Continue to measure as backfilling progresses, since unable to clean
② Approved to backfill to 31+990, crest to 31+972

DEVIATIONS: (Attach list if necessary)

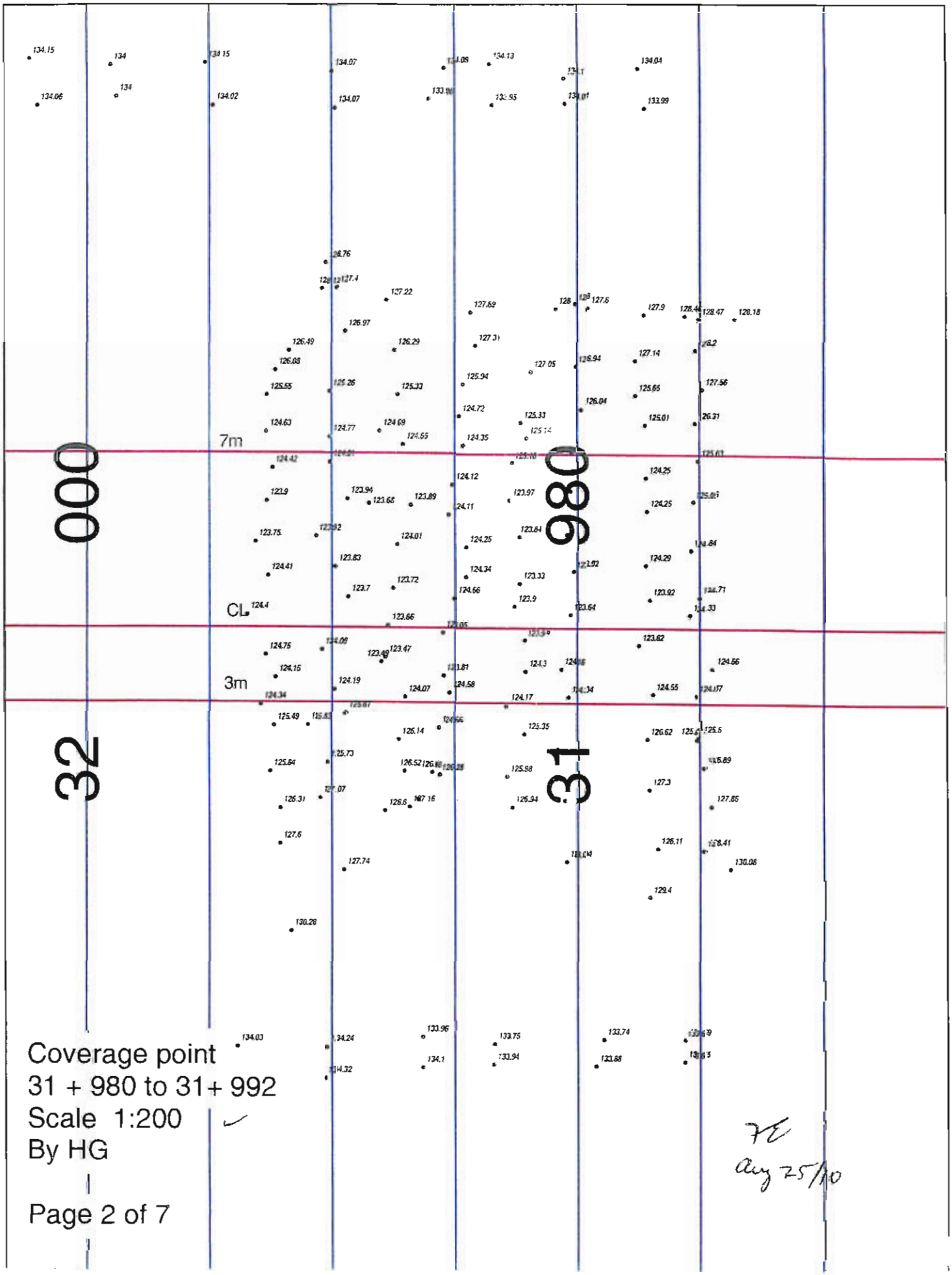
DATE OF RECTIFICATION:

SURVEY VERIFICATION	ACCEPTED BY QA Manager:	ACCEPTED BY OWNER:
NAME: Guy Morissette	NAME: FIONA ESFORD	NAME:
SIGNATURE: Guy Morissette	SIGNATURE: Fiona Esford	SIGNATURE:
DATE 25 Aout 2010	DATE Aug 25/10	DATE

6:45 hrs AM

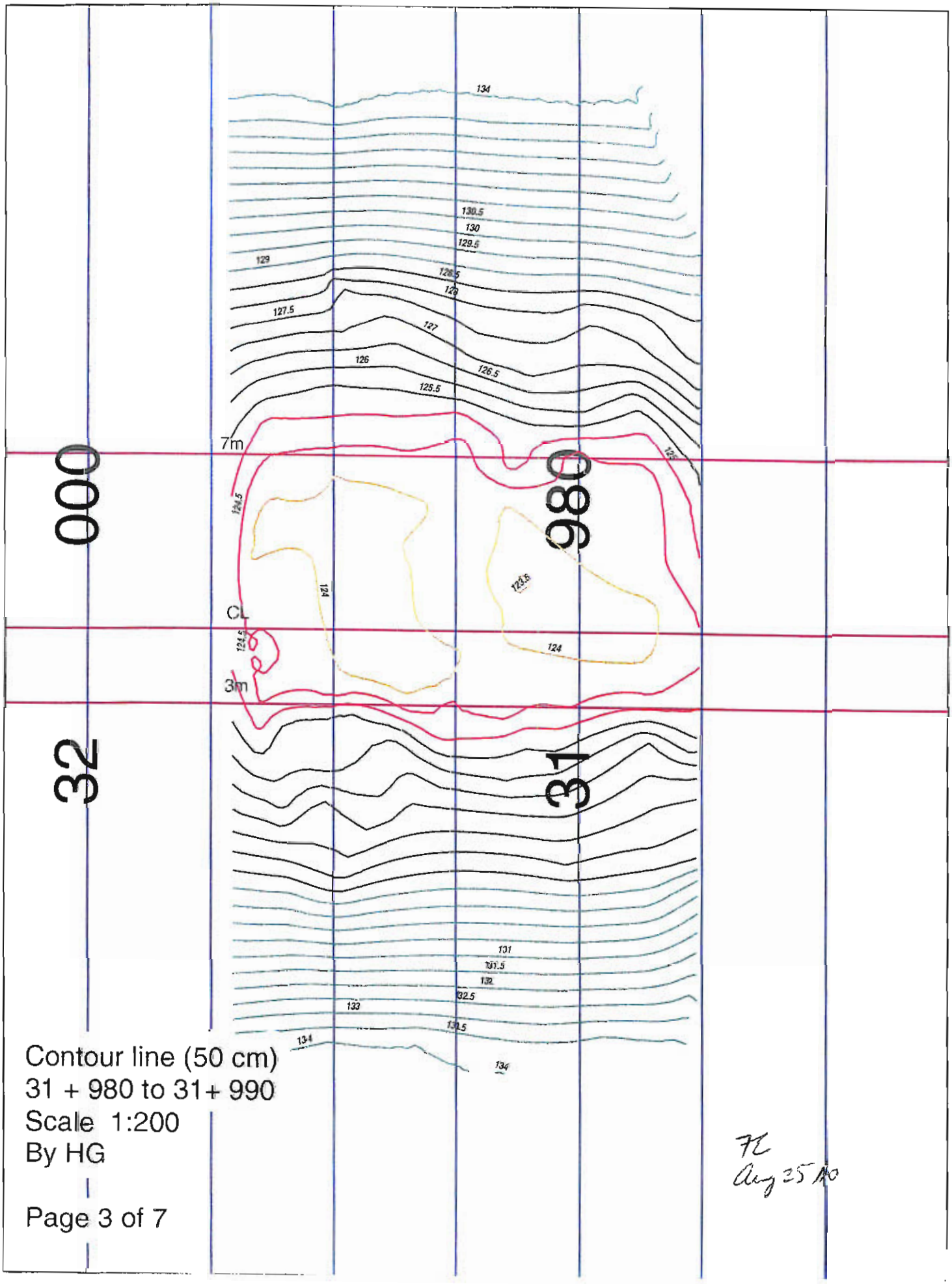
8:15 am

COPY of ORIGINAL



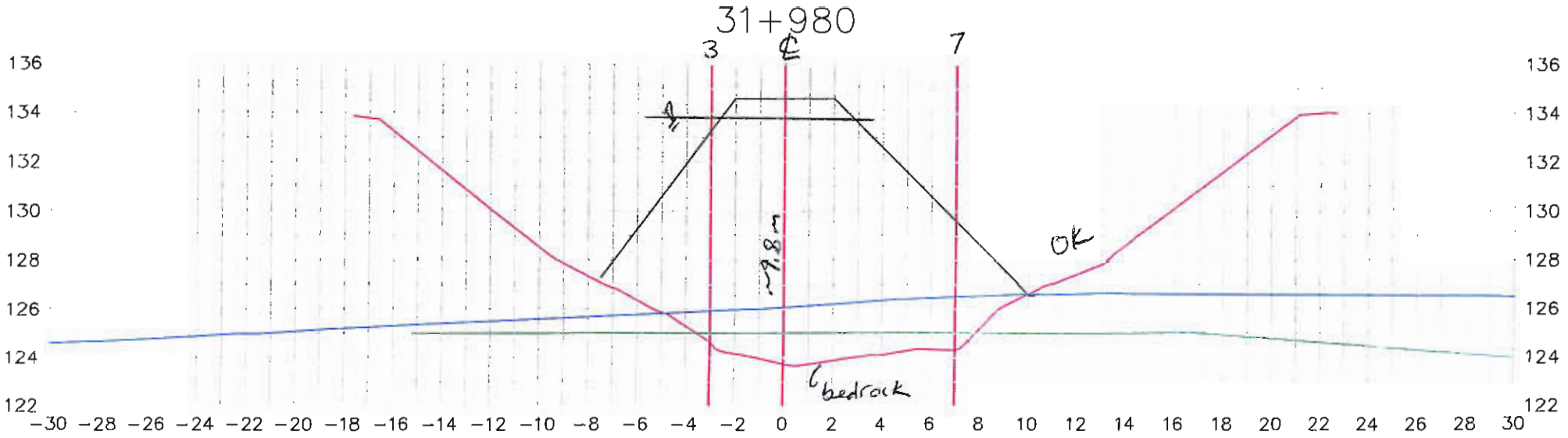
Coverage point
31 + 980 to 31+ 992
Scale 1:200
By HG

FE
Aug 25/10



Contour line (50 cm)
31 + 980 to 31+ 990
Scale 1:200
By HG

FL
Aug 25 10



Lake bed soil

Dike

Target surface

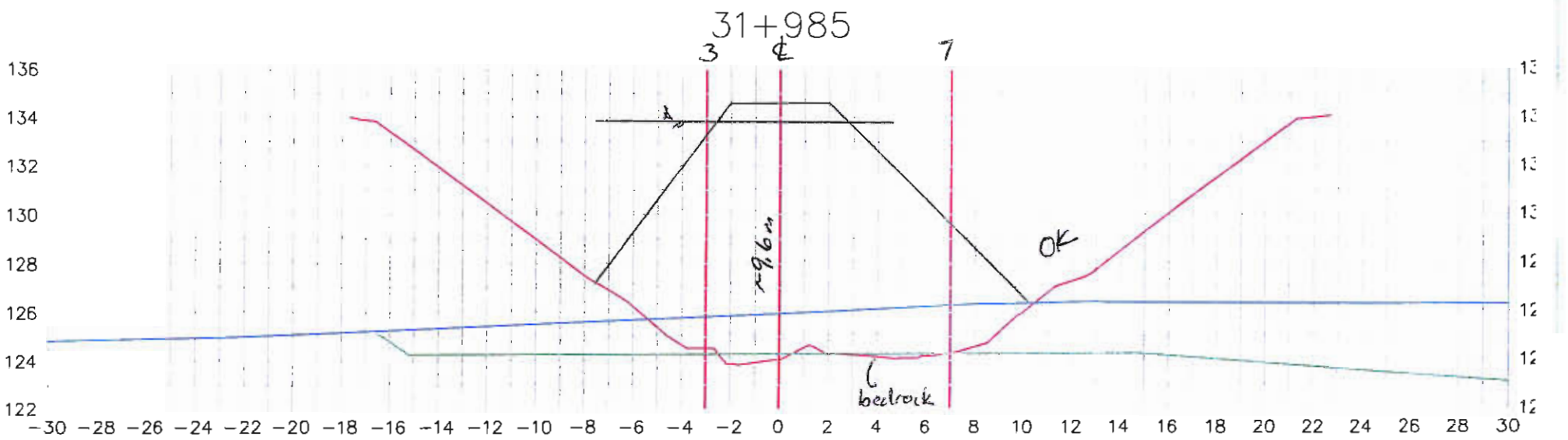
Manual probing

Date: 2010-08-25

Page: 4\7

Par: Hugues Gagnon

HG
Aug 25/10



Lake bed soil

Dike

Target surface

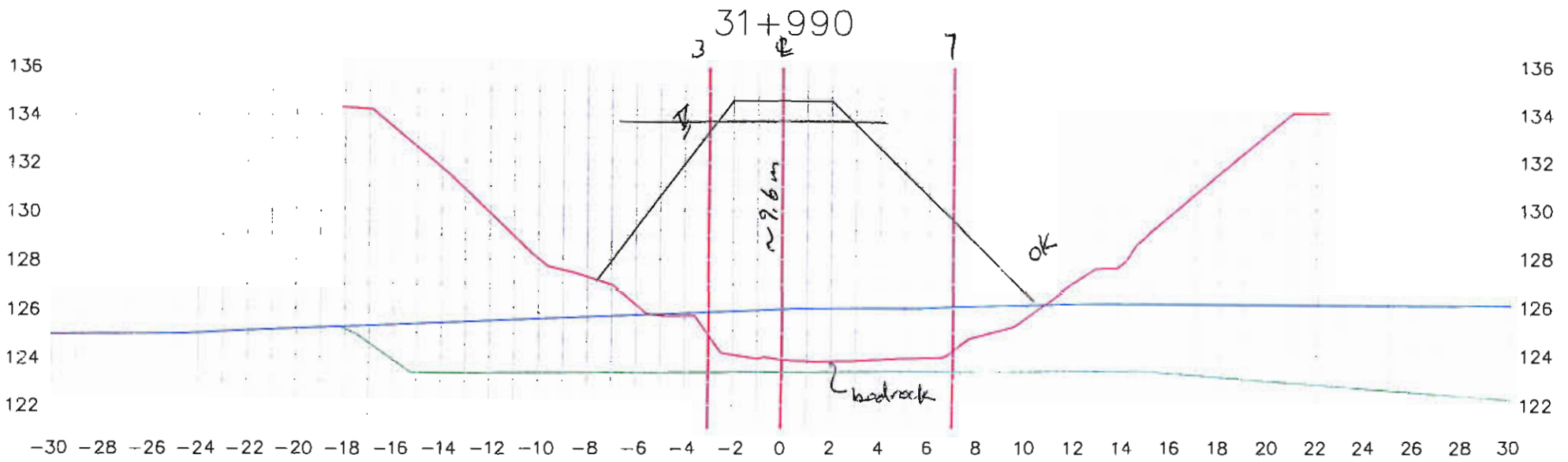
Manual probing

Date: 2010-08-25

Page: 5\7

Par: Hugues Gagnon

FE
Aug 25/10



Lake bed soil

Dike

Target surface

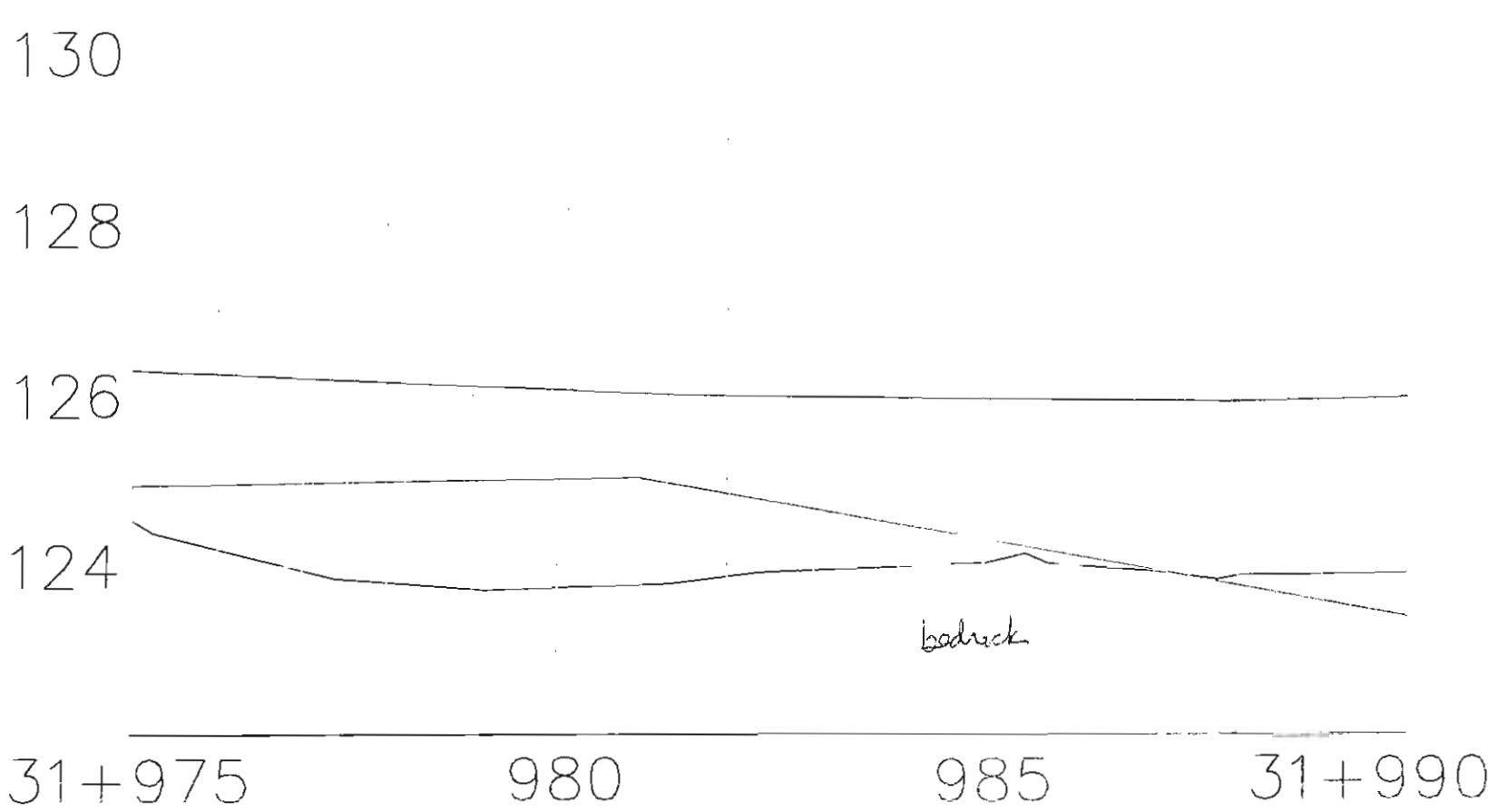
Manual probing

Date: 2010-08-25

Page: 6\7

Par: Hugues Gagnon

FE
Aug 25/10



Lake bed soil

Dike

Target surface

Manual probing

Date: 2010\08\22

Page:7\7

FE
Aug 25/10

Par: Hugues Gagnon

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 31+990 Offset	SHIFT: NIGHT: ☐ DAY: ☒	DATE: 25 Aout 2010	SHEET 1 OF
To Sta. 32+000 Offset	LOCATION: : BAY GOOSE DIKE, SOUTH PORTION		
EQUIPMENT:			
DESCRIPTION			

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	GM	FE
2.	Storage areas planned for disposal of removed materials	GM	FE
3.	Occurrence of snow and ice removal method in place	N/A	NA
4.	Occurrence of boulders and removal method in place	GM	FE
5.	Occurrence of hummocks and scalping method in place	GM	FE
6.	Occurrence of surface and ground water and its impact mitigation in place	GM	FE
7.	Presence of other unsuitable materials and removal method in place	GM	FE
8.	Soil frozen or thawed and measures taken	N/A	NA
9.	Blasting requirement to remove unsuitable material and safety measure checked	N/A	NA
10.	Adjustment made to suit design in field	GM	FE
11.	Final walkover inspection before re-sloping or fill placement	GM	FE
12.	"As-excavated" survey conducted	GM	FE
13.	Final sounding conducted of lake bottom surface	GM	FE

REMARKS: ① Sediment soundings performed between 31+995 → 32+000 @ ~ 13:30
② Since unable to reach to clean sediments, approved for backfill to 32+000, crest to 31+982

DEVIATIONS : (Attach list if necessary)

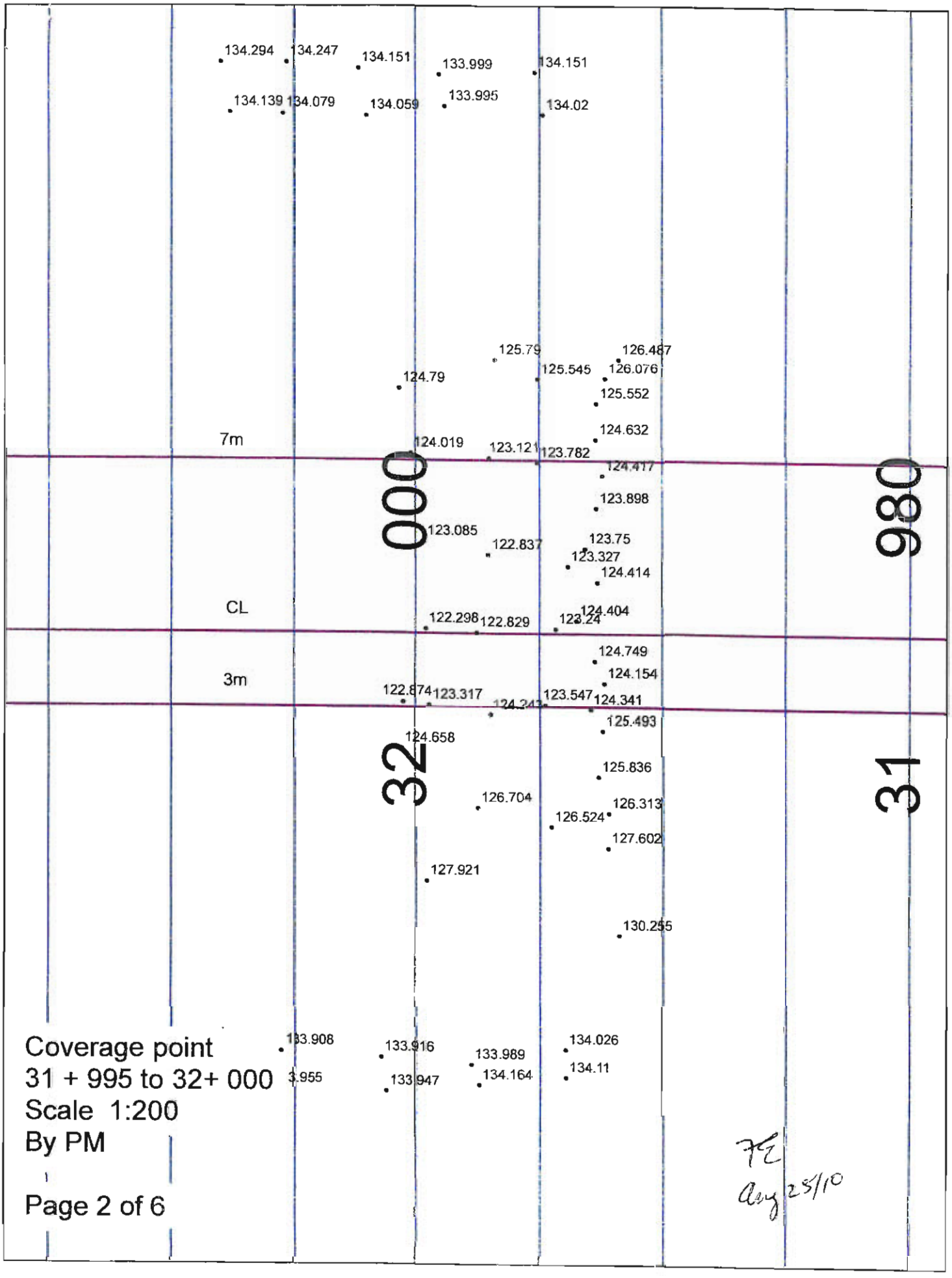
DATE OF RECTIFICATION :

SURVEY VERIFICATION	ACCEPTED BY QA Manager :	ACCEPTED BY OWNER :
NAME: Guy Morissette	NAME: Fiona Esford	NAME:
SIGNATURE: Guy Morissette	SIGNATURE: Fiona Esford	SIGNATURE :
DATE 25 Aout 10	DATE Aug 25/10	DATE

16 hrs

16:30 hrs received by Golder FE

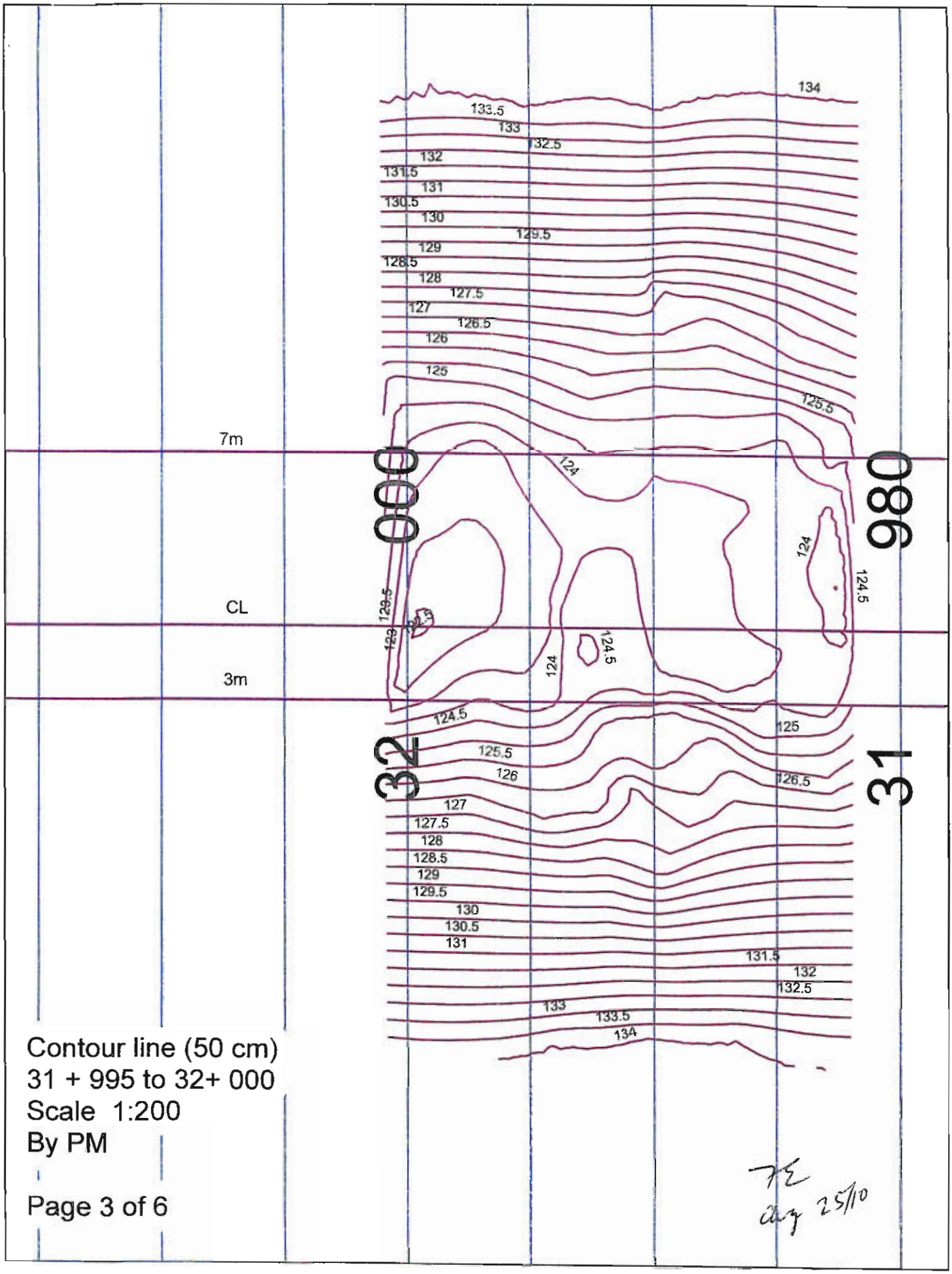
COPY OF ORIGINAL



Coverage point
31 + 995 to 32+ 000
Scale 1:200
By PM

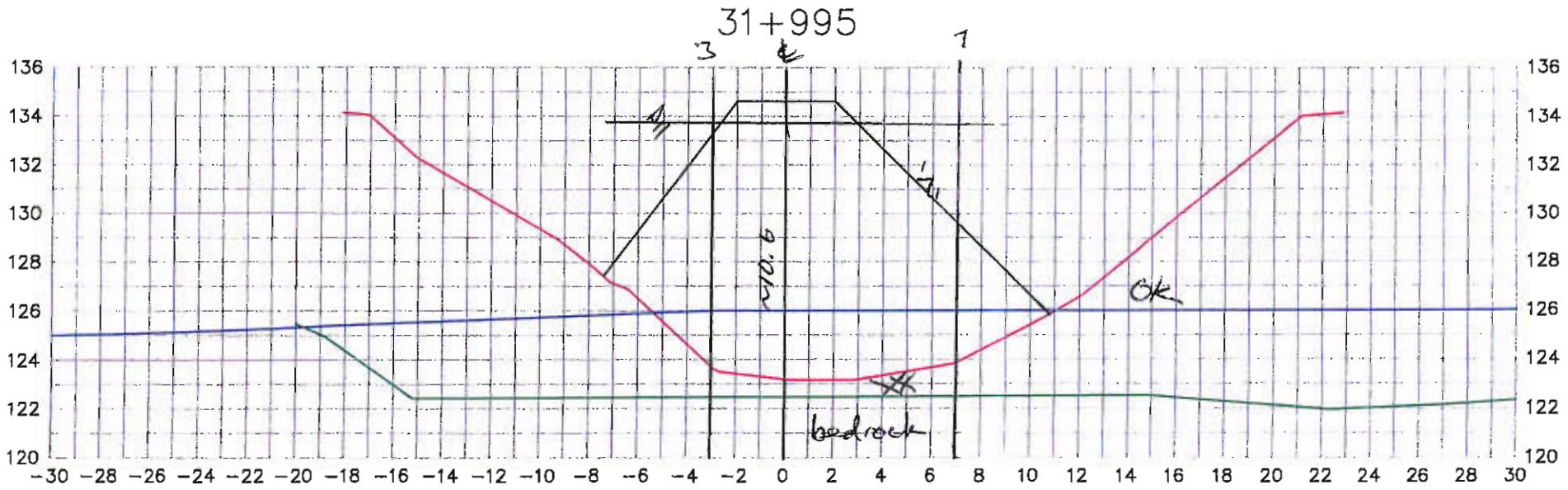
Page 2 of 6

FE
Aug 25/10



Contour line (50 cm)
31 + 995 to 32+ 000
Scale 1:200
By PM

FE
aug 25/10



Lake bed soil

Dike

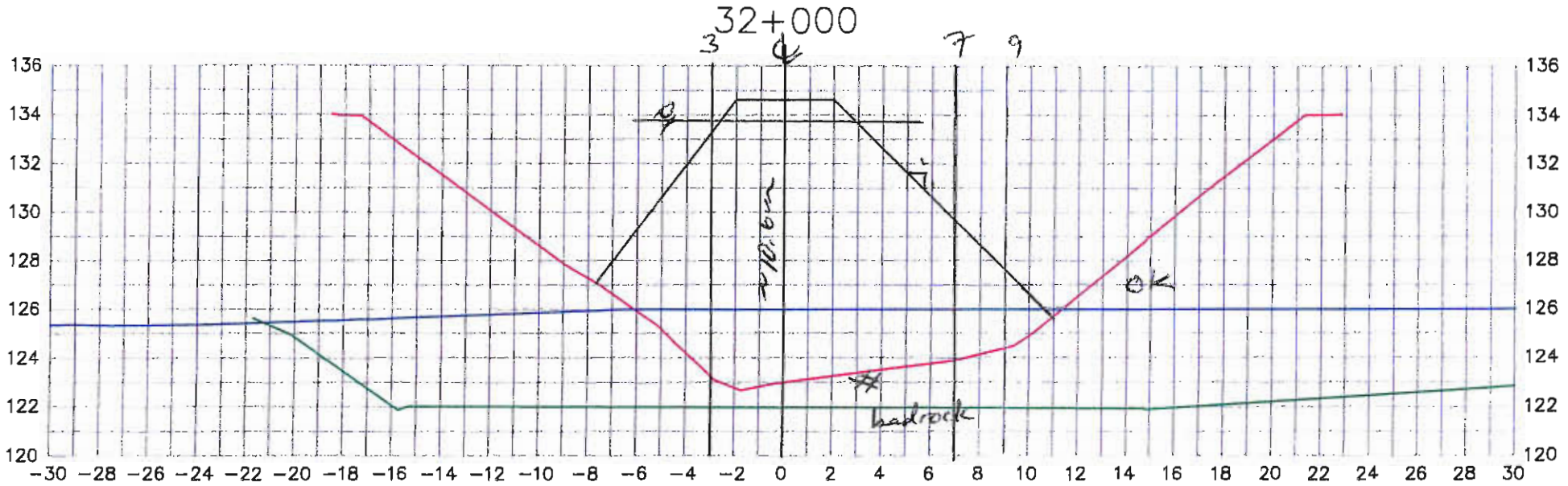
Target surface

Manual probing

Date: 2010-08-25

FE
Aug 25/10

Par: Pascale Martel



Lake bed soil

Dike

Target surface

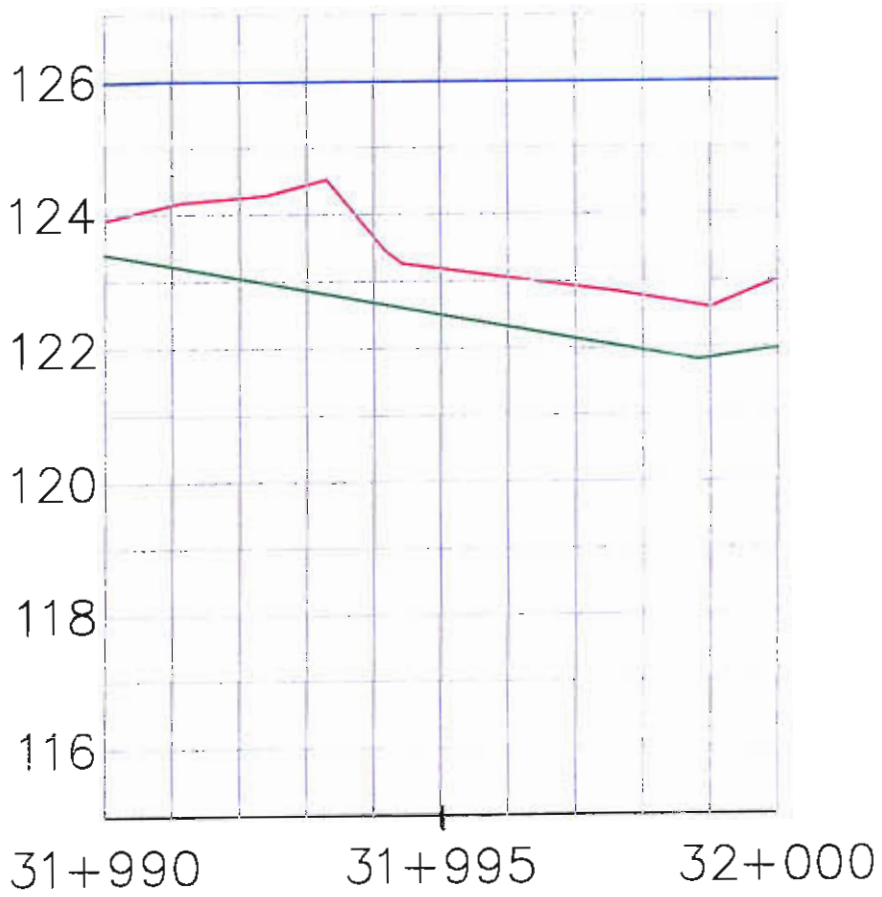
Manual probing

Date: 2010-08-25

Page: 5\6

Par: Pascale Martel

PL
aug 25/10



Lake bed soil

Dike

Target surface

Manual probing

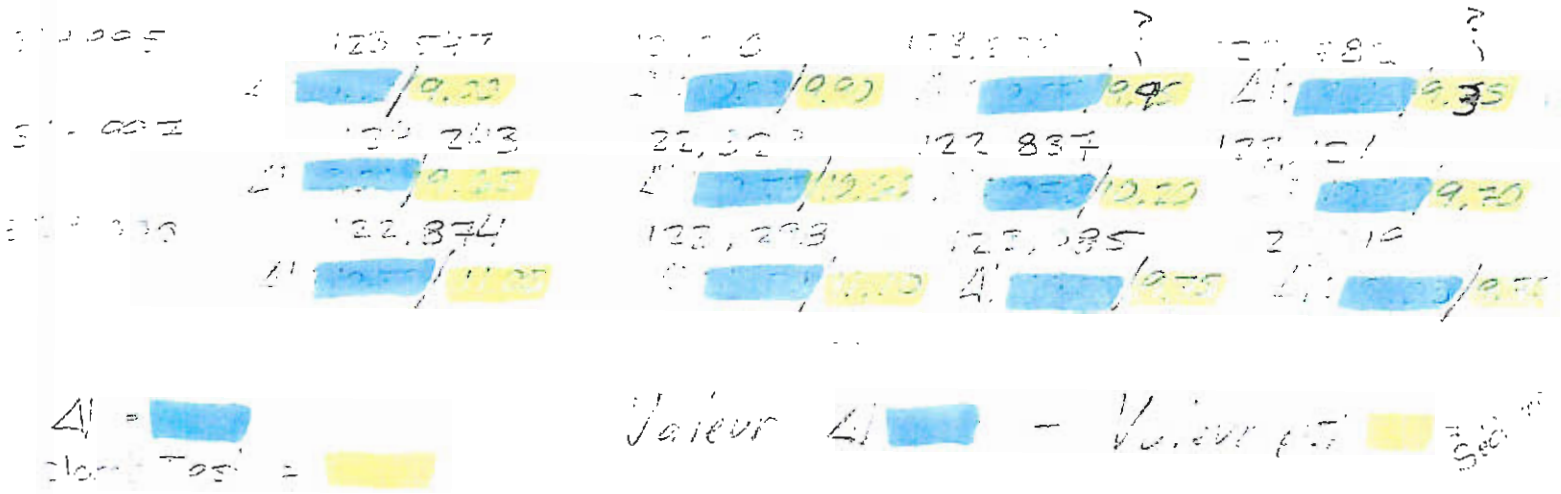
Date: 2010\08\25

Page:6\6

Par: Pascale Martel

PM
Aug 25/10

data collected Aug 25/10 ≈ 13:00-13:30



Sediment Thickness

	-3(us)	℄	3m (DS)	7m (DS)
31+995	1.05 m	0.46 m	0.32	0.47
31+997	~ none	0.17 m	0.56	0.78
32+000	~ none	~0.2 m	0.77	~ none

Please take next sediment reading at beginning of approval package interval. ine for this package 31+990 → 32+000, collect reading at 31+990 → onward

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 31+990 ~~32+000~~ Offset	SHIFT: NIGHT: ☐ DAY: ☒	DATE: 8 Sept-2010	SHEET 1 OF 6
To Sta. 32+005 Offset	LOCATION:: BAY GOOSE DIKE, SOUTH PORTION		
EQUIPMENT:			
DESCRIPTION			

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	GM	GB.
2.	Storage areas planned for disposal of removed materials	GM	GB.
3.	Occurrence of snow and ice removal method in place	N/A	–
4.	Occurrence of boulders and removal method in place	GM	GB.
5.	Occurrence of hummocks and scalping method in place	GM	GB
6.	Occurrence of surface and ground water and its impact mitigation in place	GM	GB
7.	Presence of other unsuitable materials and removal method in place	GM	GB
8.	Soil frozen or thawed and measures taken	N/A	–
9.	Blasting requirement to remove unsuitable material and safety measure checked	N/A	–
10.	Adjustment made to suit design in field	GM	GB.
11.	Final walkover inspection before re-sloping or fill placement	GM	GB.
12.	"As-excavated" survey conducted	GM	GB.
13.	Final sounding conducted of lake bottom surface	GM	GB.

REMARKS: AREA OF PACKAGE COVERS 'ZONE' OF RECENT (AUG 25TH) SUBMERGED EXCAVATOR INCIDENT. UNABLE TO CLEAN ENTIRE AREA DUE TO LIMITED REACH OF EXCAVATOR ARM & AS EXCAVATOR SET BACK FROM EXCAVATION CREST DUE TO SLOPE STABILITY CONCERNS. AS SUCH, ABLE TO 'RECLEAN' 32+003 to 32+005 AND RECORDED

~~DEVIATIONS: (Attach list if necessary)~~

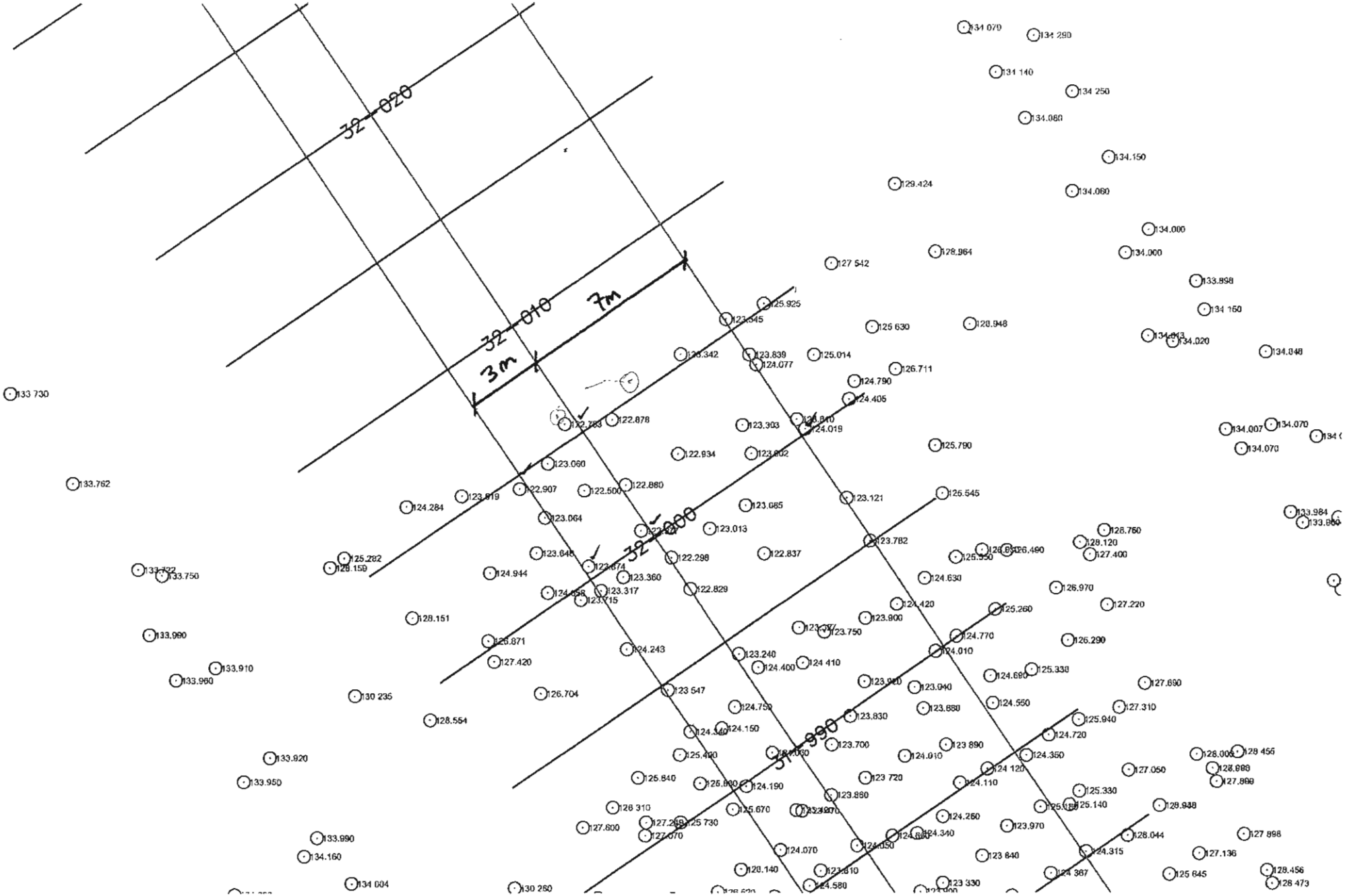
SILT THICKNESS (SEE ATTACHED BATH. SURVEY FROM FGL) FOR JET GROUTING PROGRAM. DURING CUTOFF WALL TRENCH EXCAVATION PLATFORM ROCK / SILT MAY BE ENCOUNTERED BETWEEN ~31+992 to 32+003. BACKFILL APPROVED TO

DATE OF RECTIFICATION: 32+005 (toe) OR ~31+988 (crest)

SURVEY VERIFICATION	ACCEPTED BY QA Manager:	ACCEPTED BY OWNER:
NAME: GUY MORISSETTE	NAME: GRANT BURNS	NAME:
SIGNATURE:	SIGNATURE:	SIGNATURE:
DATE 8 Sept-2010	DATE SEPT 8, 2010	DATE

8:20 AM

11:~~20~~40 AM.



Station: 32+000 @ 32+005

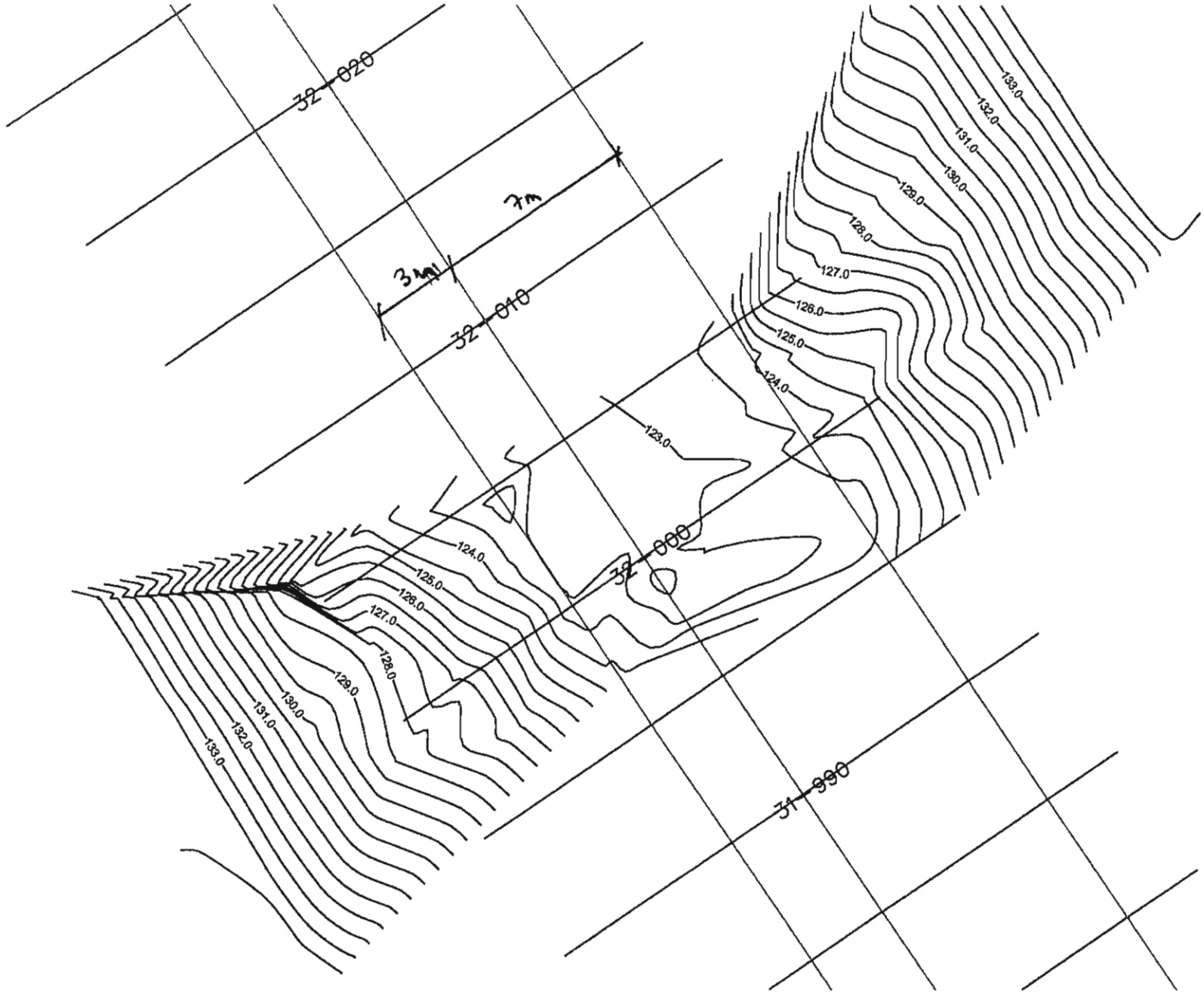
Scale: 1:200 ✓

Sept 8th/10

Date: 080910

Page: 2/6

Par: Alex Lalancette



Station: 32+000@ 32+005

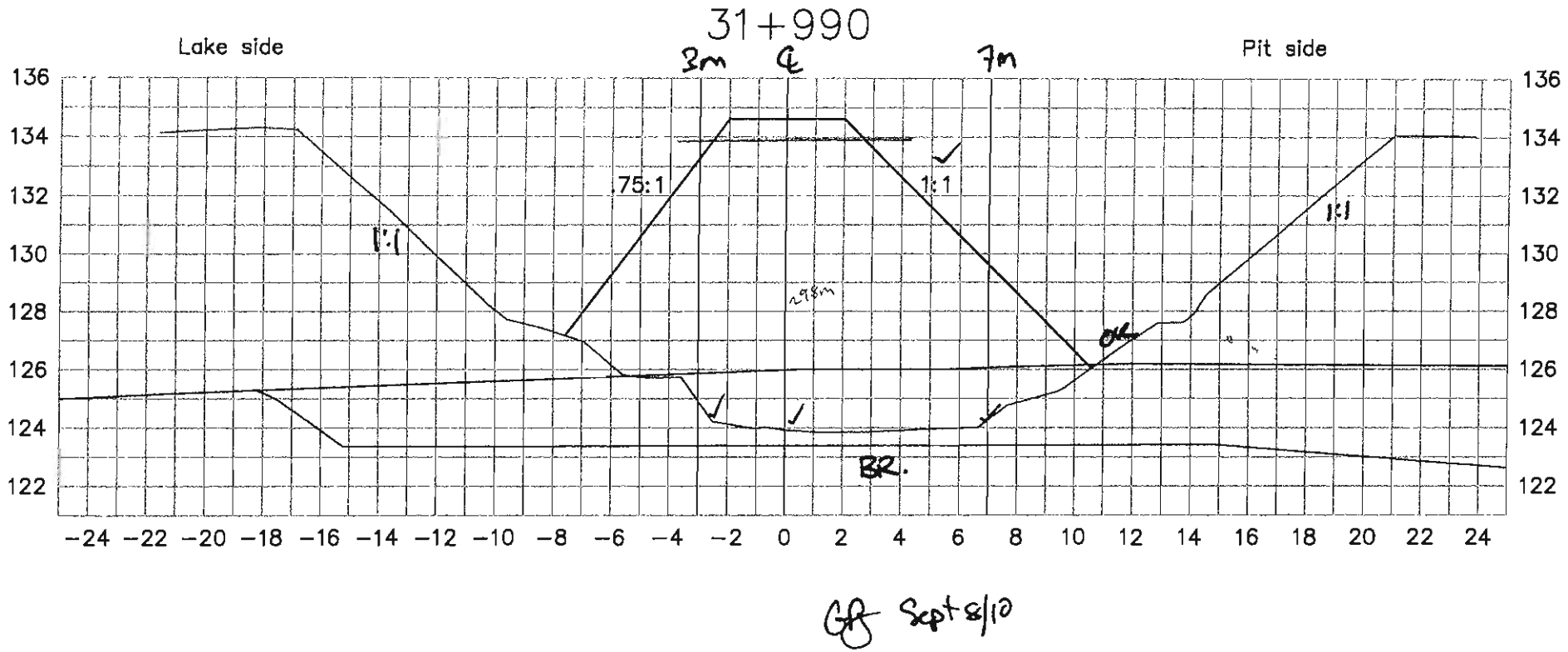
Scale: 1:200

Sept 8/10

Date: 080910

Page: 3/6

Par: Alex Lalancette



GB Sept 8/10

——— Lake bed soil

——— Dike

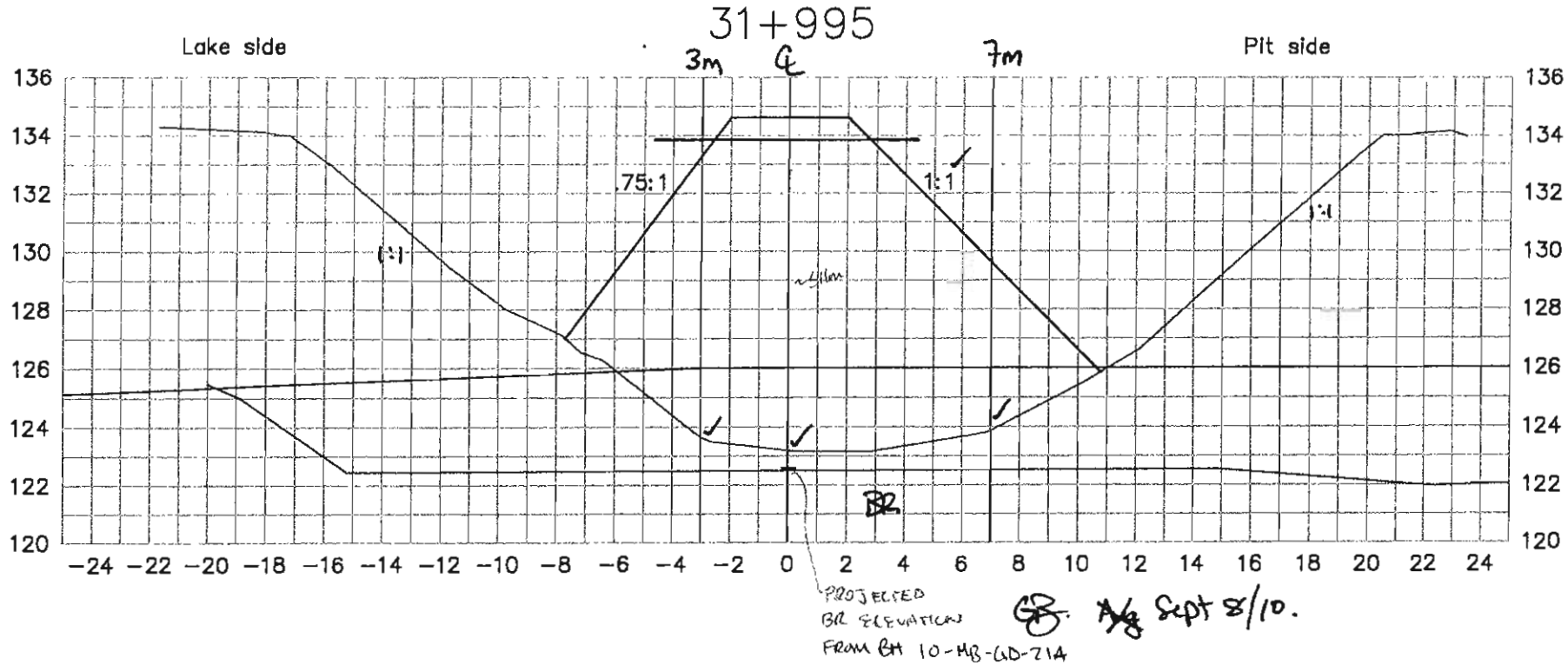
——— Target surface

——— Manual probing

Date: 080910

Page:6/8

Par: Alex Lalancette



——————— Lake bed soil

——————— Dike

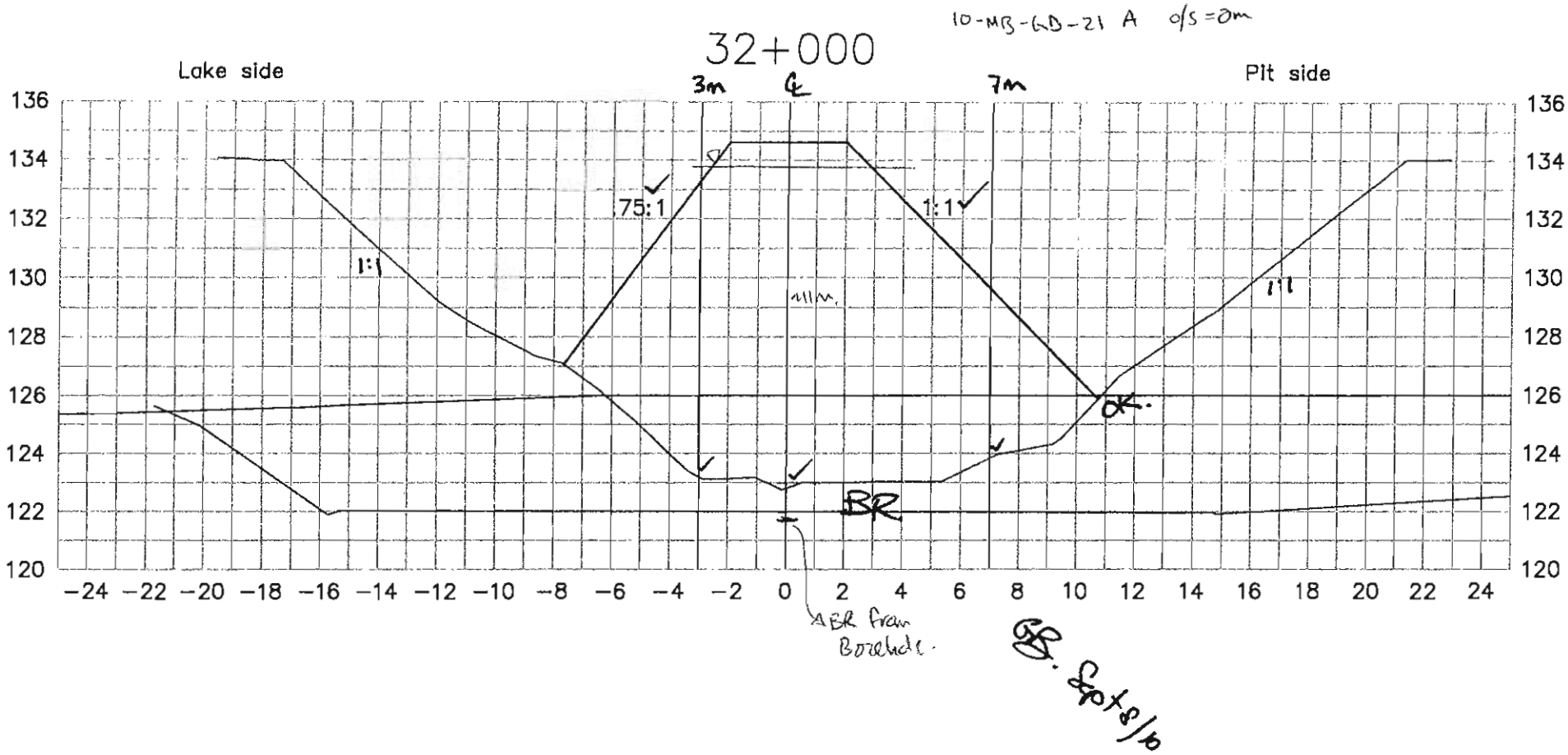
——————— Target surface

——————— Manual probing

Date: 080910

Page:7/8

Par: Alex Lalancette



Lake bed soil

Dike

Target surface

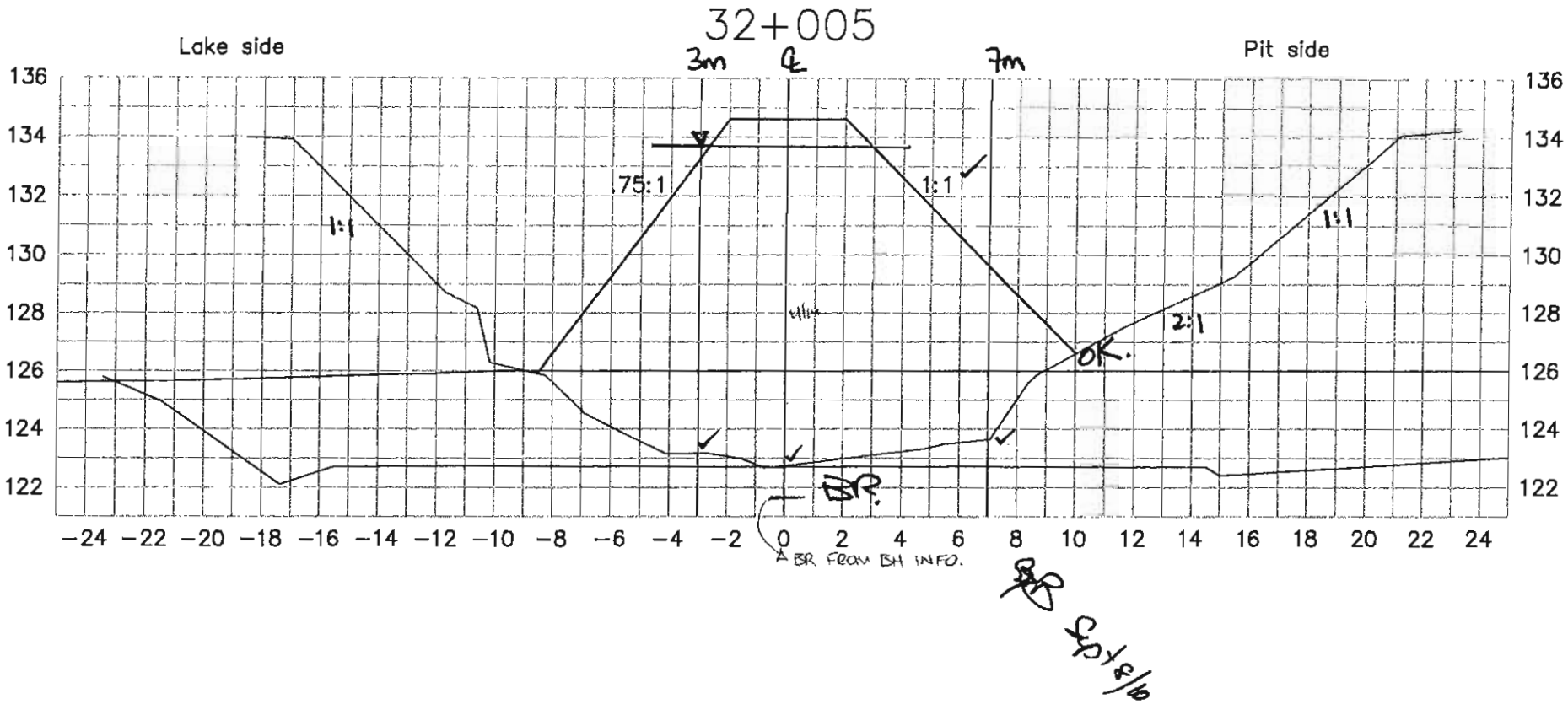
Manual probing

Date: 080910

Page:4/6

Par: Alex Lalancette

10-MB-GD-21A o/s=0m



Lake bed soil

Dike

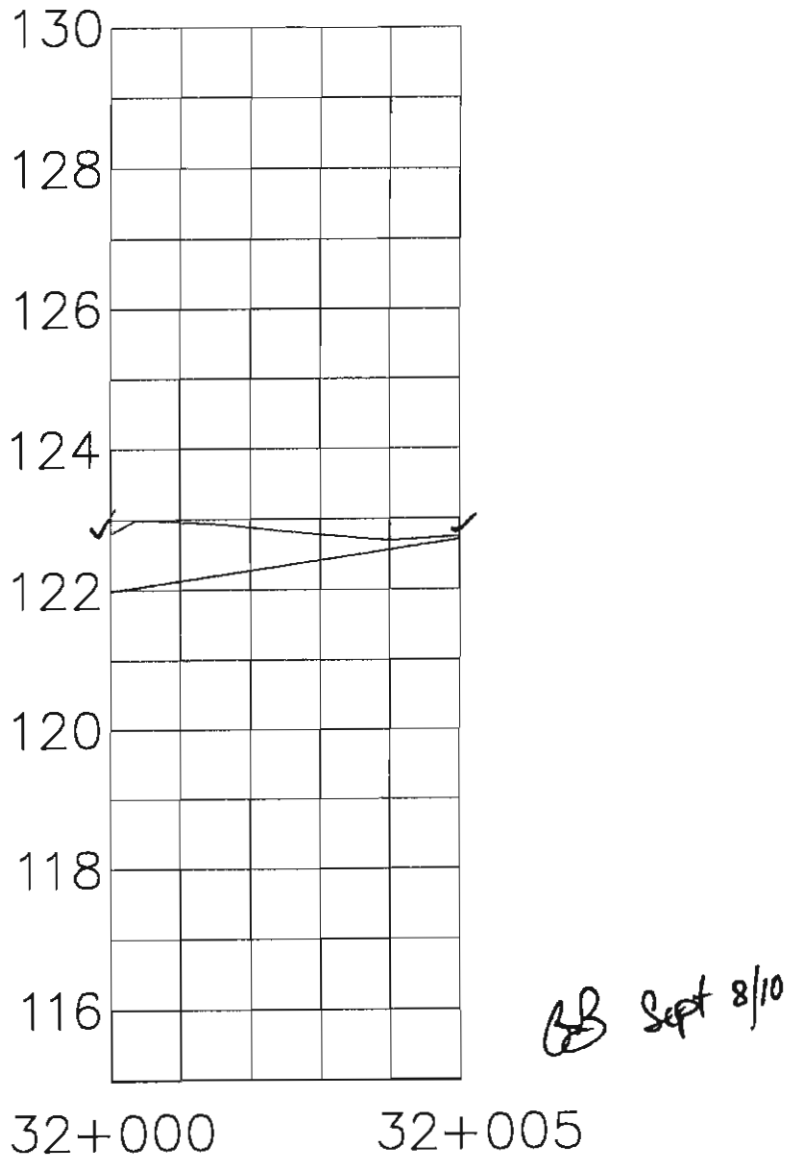
Target surface

Manual probing

Date: 080910

Page:5/6

Par: Alex Lalancette



BB Sept 8/10

Station: 32+000 @ 32+005

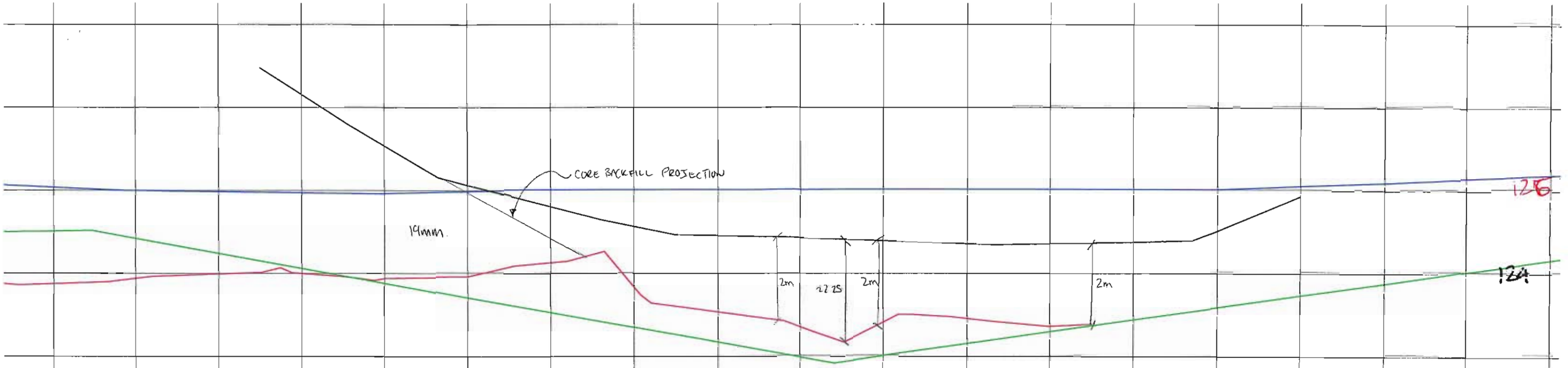
Date: 080910

Page: 6/6

Par: Alex Lalancette

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123.750	123.878	123.985	123.998	123.876	123.909	124.241	123.641	123.043	122.685	123.004	122.877	122.693

31+980 31+984 31+988 31+992 31+996 32+000 31+002 ~~32+004~~ ~~32+006~~ 32+(

Lake bed soil

Target surface

Manual probing

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 32+005 Offset	SHIFT: NIGHT: ☐ DAY: ☒	DATE: 8 Sept. 2010	SHEET 1 OF 6
To Sta. 32+010 Offset	LOCATION:: BAY GOOSE DIKE, SOUTH PORTION		
EQUIPMENT:			
DESCRIPTION			

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	[illegible]	GB.
2.	Storage areas planned for disposal of removed materials	[illegible]	GB.
3.	Occurrence of snow and ice removal method in place	N/A	~~GB.~~ N/A
4.	Occurrence of boulders and removal method in place	[illegible]	GB.
5.	Occurrence of hummocks and scalping method in place	[illegible]	GB
6.	Occurrence of surface and ground water and its impact mitigation in place	[illegible]	GB.
7.	Presence of other unsuitable materials and removal method in place	[illegible]	GB
8.	Soil frozen or thawed and measures taken	N/A	N/A
9.	Blasting requirement to remove unsuitable material and safety measure checked	N/A	N/A
10.	Adjustment made to suit design in field	[illegible]	GB.
11.	Final walkover inspection before re-sloping or fill placement	[illegible]	GB.
12.	"As-excavated" survey conducted	[illegible]	GB.
13.	Final sounding conducted of lake bottom surface	[illegible]	GB

REMARKS: BACKFILL APPROVED TO 32+010m (toe) 31+995 (crest)

DEVIATIONS : (Attach list if necessary)

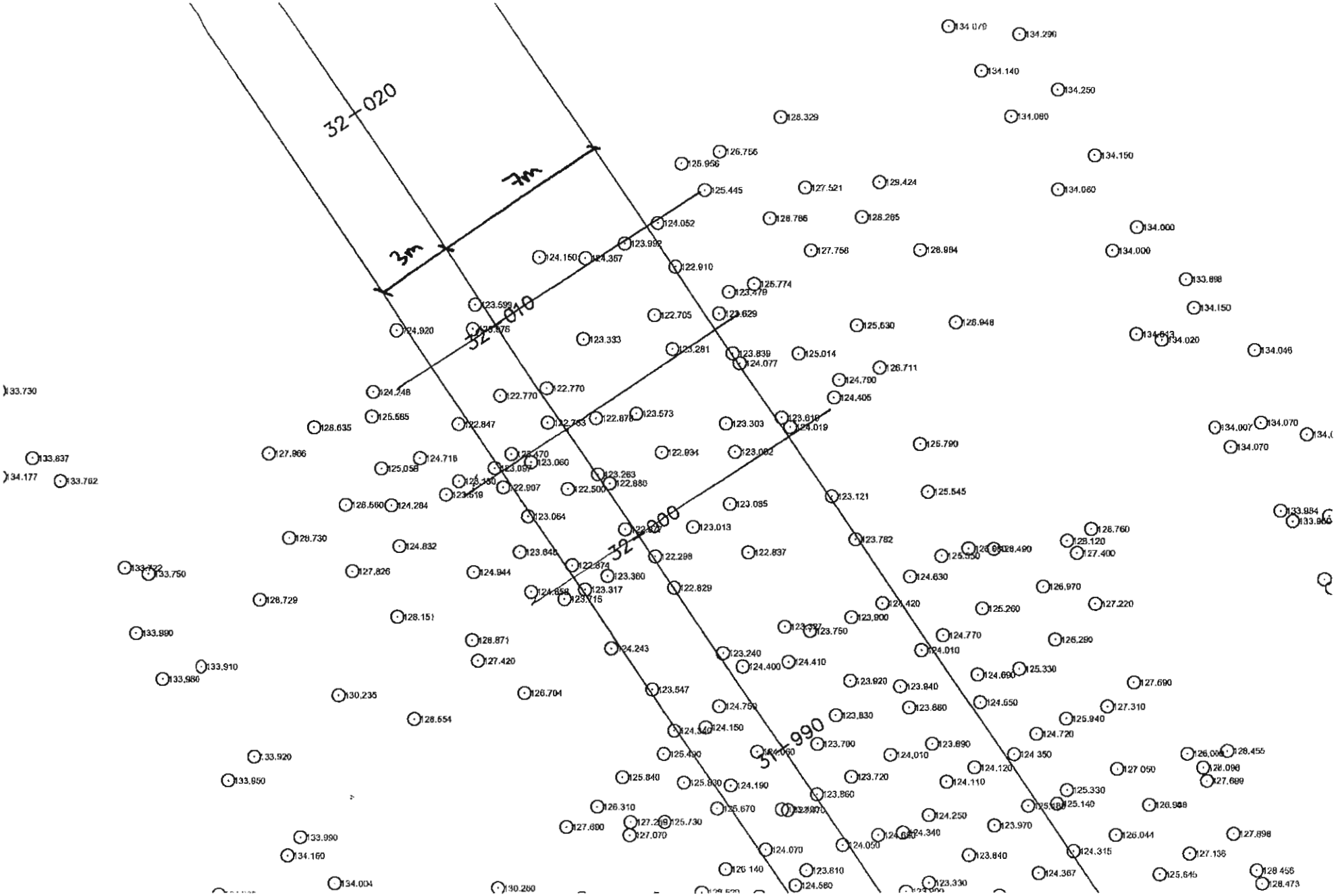
DATE OF RECTIFICATION :

SURVEY VERIFICATION	ACCEPTED BY QA Manager :	ACCEPTED BY OWNER :
NAME: [illegible]	NAME: GRANT BURNS	NAME:
SIGNATURE: [illegible]	SIGNATURE: GB	SIGNATURE:
DATE 8 sept 2010	DATE Sept 8, 2010	DATE

19 hrs

20hr15

copy of original 1/6



Station: 32+005 @ 32+010

Scale: 1:200

GB. Sept 8/10

Date: 080910

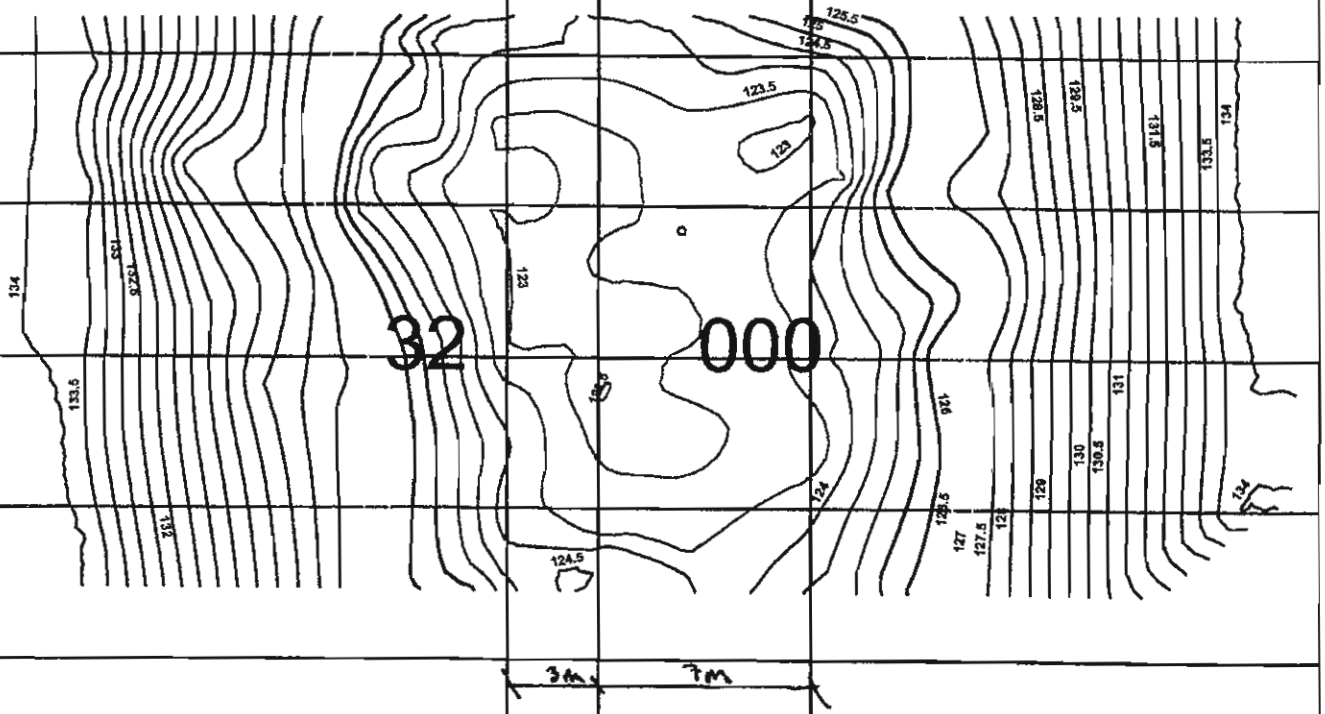
Page: 2/6

Par: Alex Lalancette

LAKE
~~Pit~~ side

PIT
~~Lake~~ side

32 020



32 000

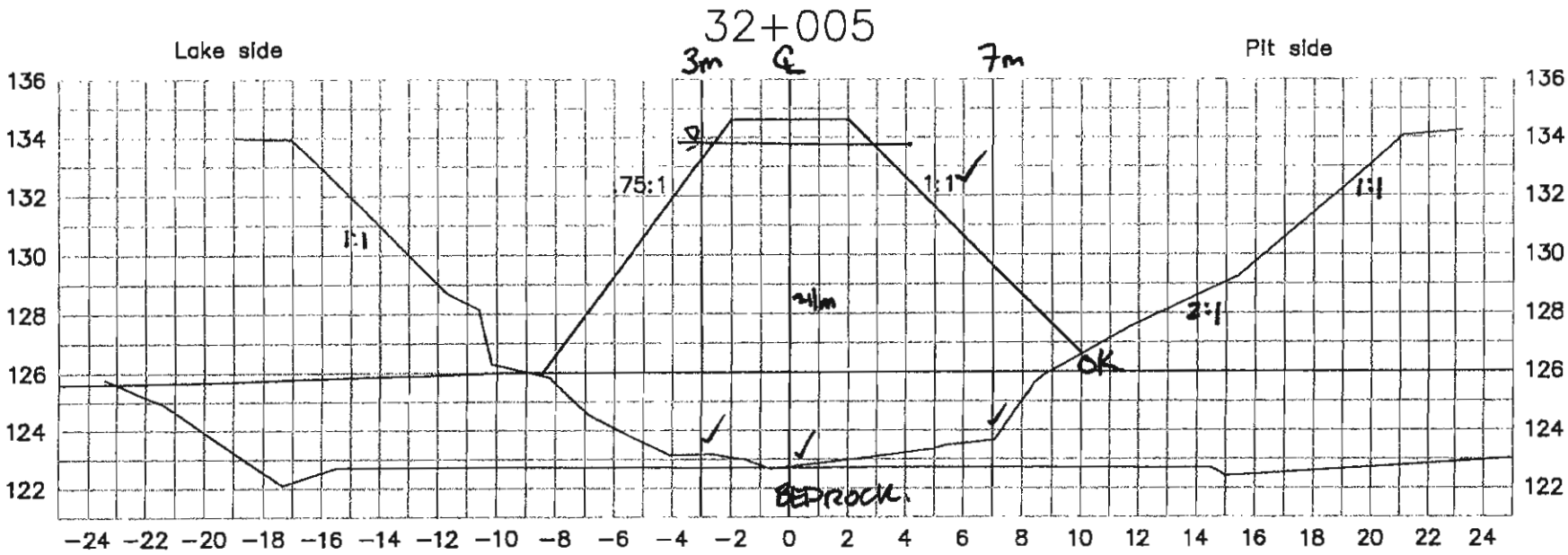
31 980

GB. Sept 8/10

32 +005 to 32 +010
Contour Line

1:250
08-09-2010
by:HG
Page 3 of 6

BOREHOLE.
10-MB-GD -214



Lake bed soil

Dike

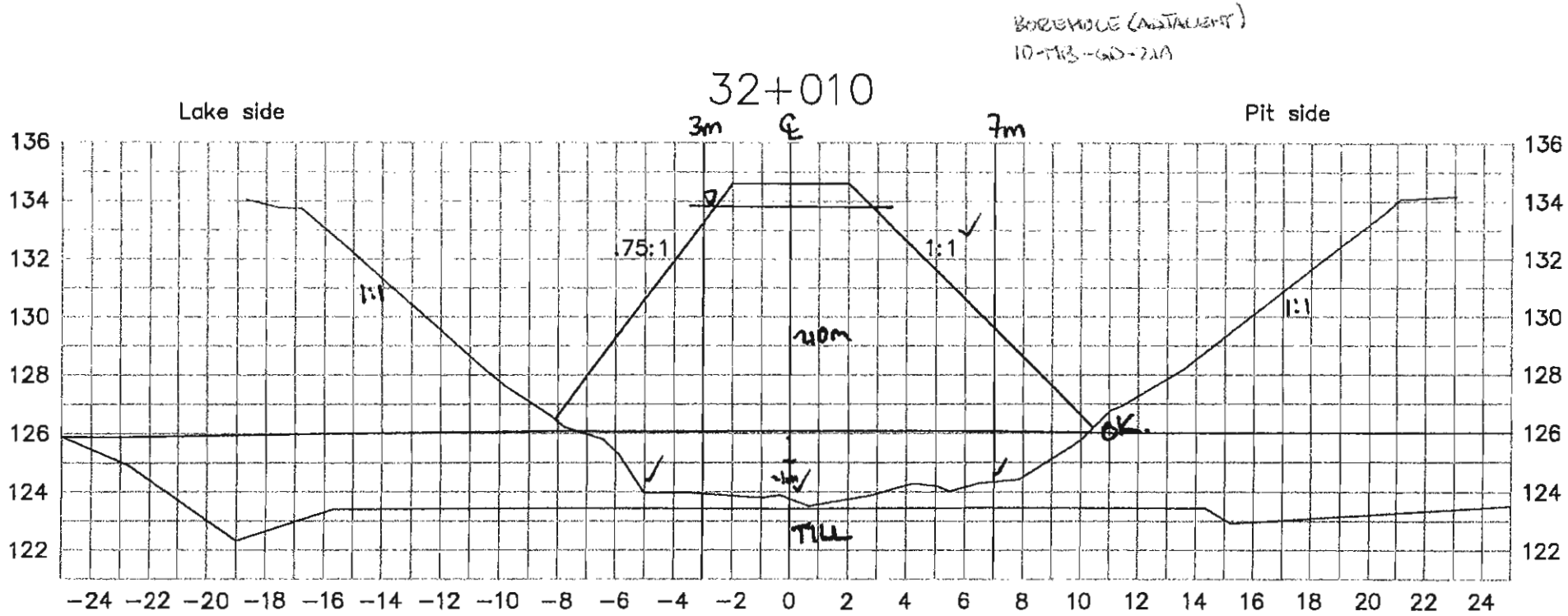
Target surface

Manual probing

Date: 080910

Page:4/6

Par: Alex Lalancette



Lake bed soil

Dike

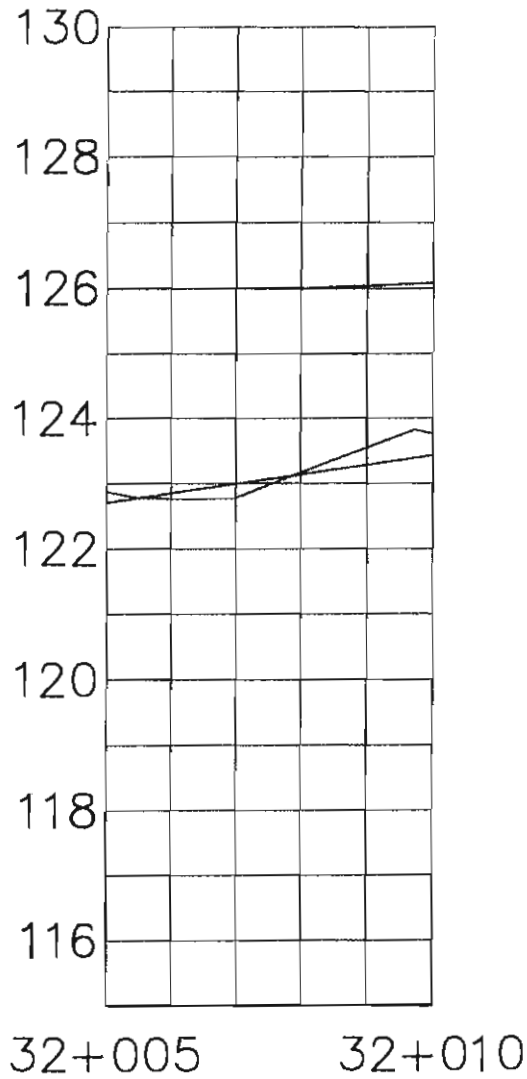
Target surface

Manual probing

Date: 080910

Page:5/6

Par: Alex Lalancette



Station: 32+000 @ 32+005

Date: 080910

Page: 6/6

Par: Alex Lalancette

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 32+010 Offset	SHIFT: NIGHT: ☐ DAY: ☒	DATE: 9 Sept 2010	SHEET 1 OF 6
To Sta. 32+015 Offset	LOCATION:: BAY GOOSE Dike, SOUTH PORTION		
EQUIPMENT:			
DESCRIPTION			

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	GM	GB.
2.	Storage areas planned for disposal of removed materials	GM	GB.
3.	Occurrence of snow and ice removal method in place	N/A	N/A
4.	Occurrence of boulders and removal method in place	GM	GB
5.	Occurrence of hummocks and scalping method in place	GM	GB.
6.	Occurrence of surface and ground water and its impact mitigation in place	GM	GB.
7.	Presence of other unsuitable materials and removal method in place	GM	GB.
8.	Soil frozen or thawed and measures taken	N/A	N/A
9.	Blasting requirement to remove unsuitable material and safety measure checked	N/A	N/A
10.	Adjustment made to suit design in field	GM	GB NOT REQUIRED
11.	Final walkover inspection before re-sloping or fill placement	GM	GB.
12.	"As-excavated" survey conducted	GM	GB.
13.	Final sounding conducted of lake bottom surface	GM.	GB.

REMARKS: BEDROCK APPEARS TO BE UNDULATING / SLOPING WITH TRANSITION BETWEEN BEDROCK AND TILL NOT WELL DEFINED ... YET.
BACKFILL APPROVED TO 32+000m (CREST) OR 32+015m (TOE)

DEVIATIONS: (Attach list if necessary)

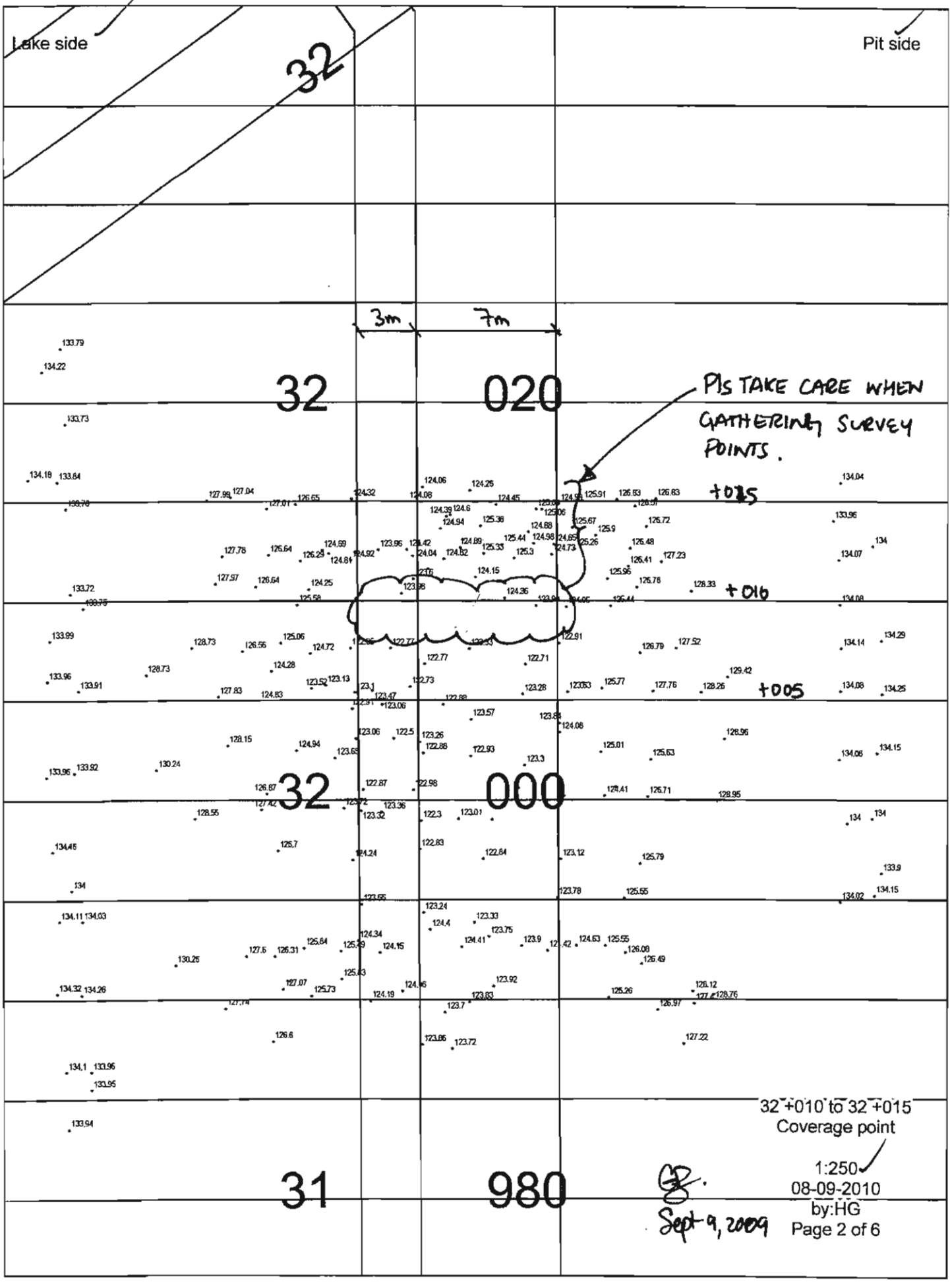
DATE OF RECTIFICATION:

SURVEY VERIFICATION	ACCEPTED BY QA Manager:	ACCEPTED BY OWNER:
NAME: GUY MORISSETTE	NAME: GRANT BURNS	NAME:
SIGNATURE: Guy Morissette	SIGNATURE: GB	SIGNATURE:
DATE 9 Sept 2010	DATE August 9, 2010	DATE

6:30 AM

11:20 AM

copy of original 1/6



32 +010 to 32 +015
Coverage point

1:250
08-09-2010
by:HG

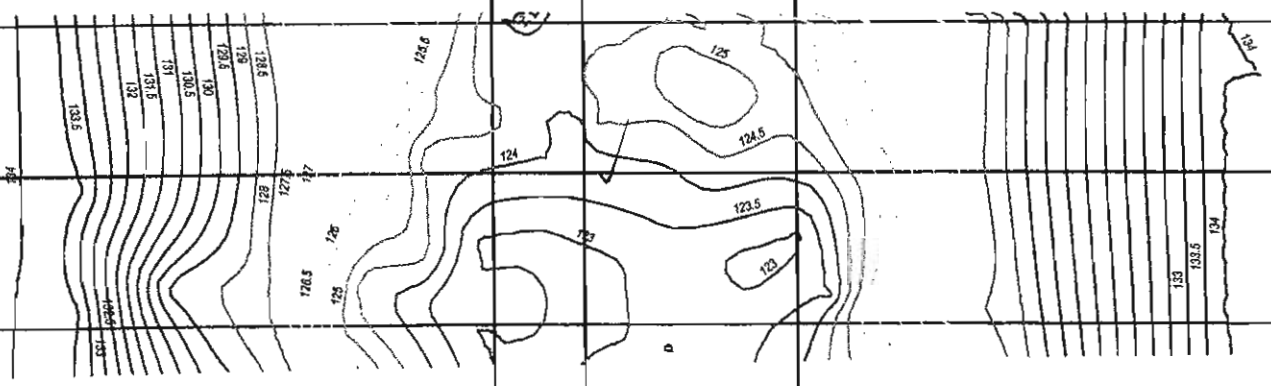
Sept-9, 2009

Lake side

32 ℄

Pit side

32 020



32 000

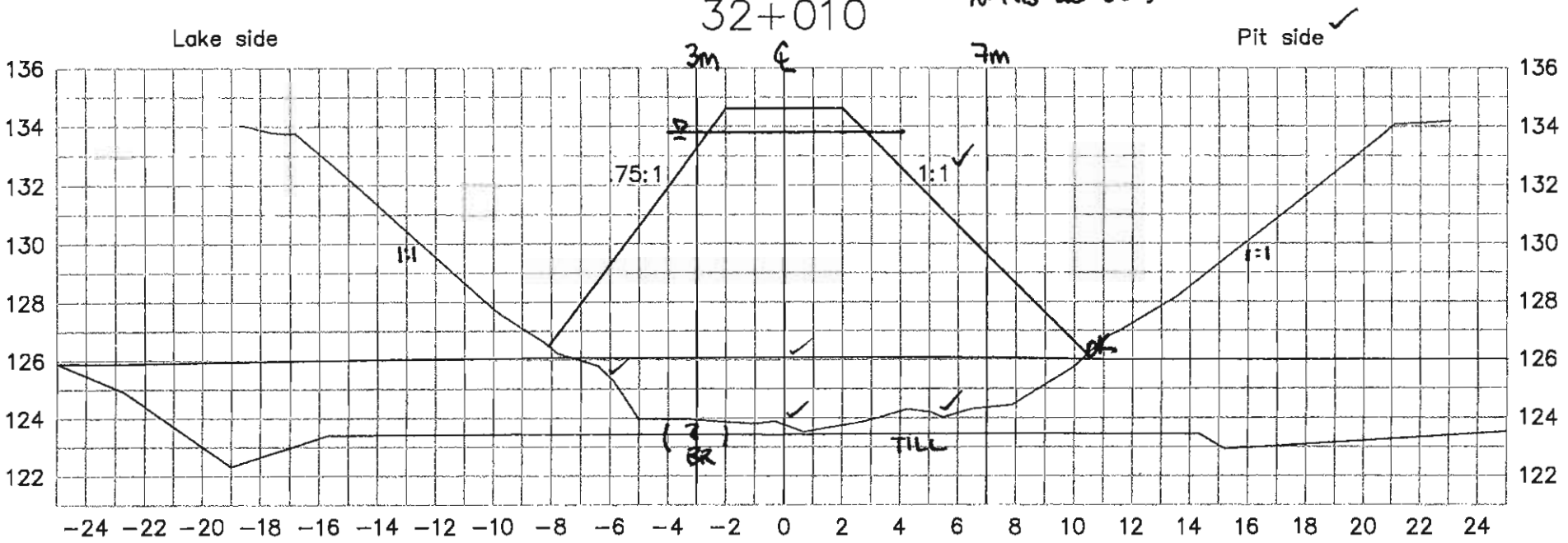
31 980

GB.
Sept 9/10

32 +010 to 32 +015
Contour Line

1:250
08-09-2010
by:HG

BETWEEN BH's
10-MB-GD-21A } BOTH o/s = 0m.
+10-MB-GD-22 }



BR Spot 9/10

Lake bed soil

Dike

Target surface

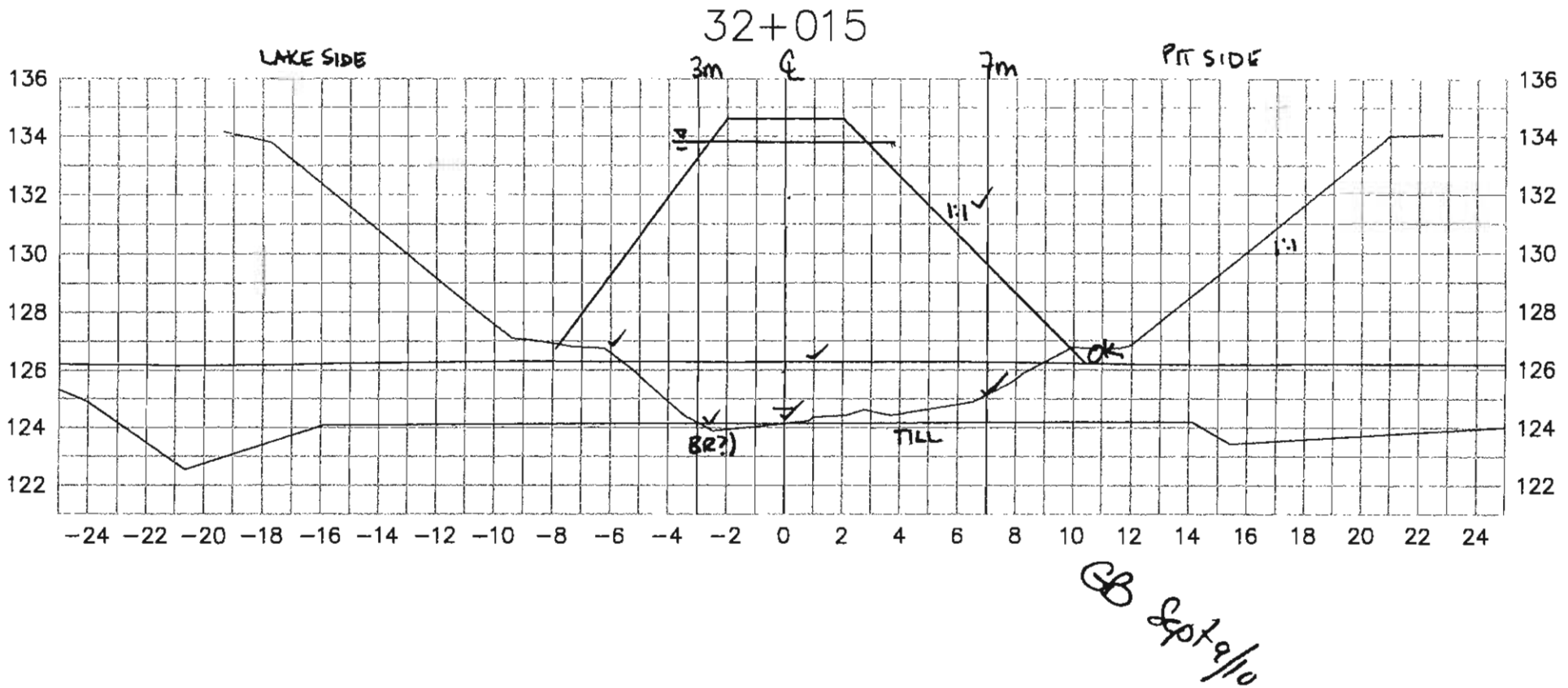
Manual probing

Date: 080910

Page:4/6

Par: Hugues Gagnon

BOREHOLE 10-NB-GD-22 o/s = 0m.



GB Gpt 9/10

——————— Lake bed soil

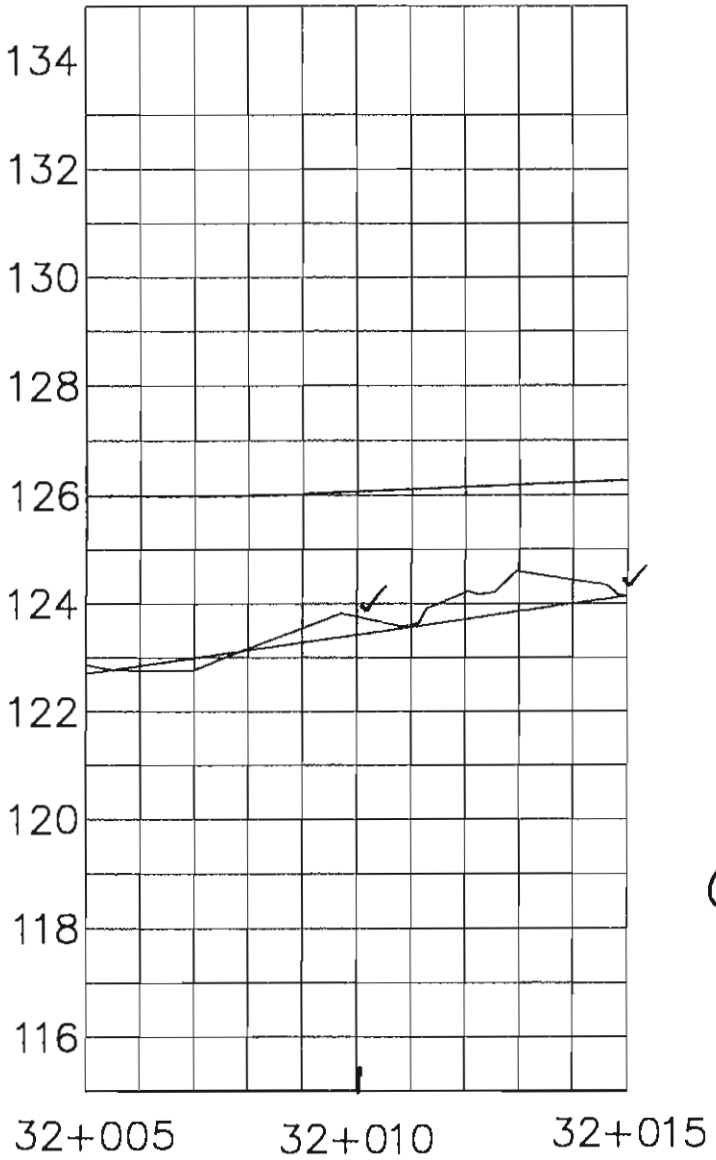
——————— Dike

——————— Target surface

——————— Manual probing

Date: 080910

Par: Hugues Gagnon



GB. Sept 9/10

Station: 32+005 @ 32+015

Date: 080910

Page: 6/6

Par: Hugues Gagnon

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 32+015 Offset	SHIFT: NIGHT: ☐ DAY: ☑	DATE: 9 sept. 2010	SHEET 1 OF 6
To Sta. 32+020 Offset	LOCATION: BAY Goose Dike - South Portion		
EQUIPMENT:			
DESCRIPTION			

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	[illegible]	GB.
2.	Storage areas planned for disposal of removed materials	[illegible]	GB
3.	Occurrence of snow and ice removal method in place	N/A	N/A
4.	Occurrence of boulders and removal method in place	[illegible]	GB.
5.	Occurrence of hummocks and scalping method in place	[illegible]	GB
6.	Occurrence of surface and ground water and its impact mitigation in place	[illegible]	GB
7.	Presence of other unsuitable materials and removal method in place	[illegible]	GB
8.	Soil frozen or thawed and measures taken	N/A	N/A
9.	Blasting requirement to remove unsuitable material and safety measure checked	N/A	N/A
10.	Adjustment made to suit design in field	[illegible]	GB NONE REQUIRED
11.	Final walkover inspection before re-sloping or fill placement	[illegible]	GB
12.	"As-excavated" survey conducted	[illegible]	GB.
13.	Final sounding conducted of lake bottom surface	[illegible]	GB.

REMARKS: SILT SOUNDINGS TAKEN

	THICKNESS
32+010	~1.5m
32+015	~0.2m
32+020	~0.6m

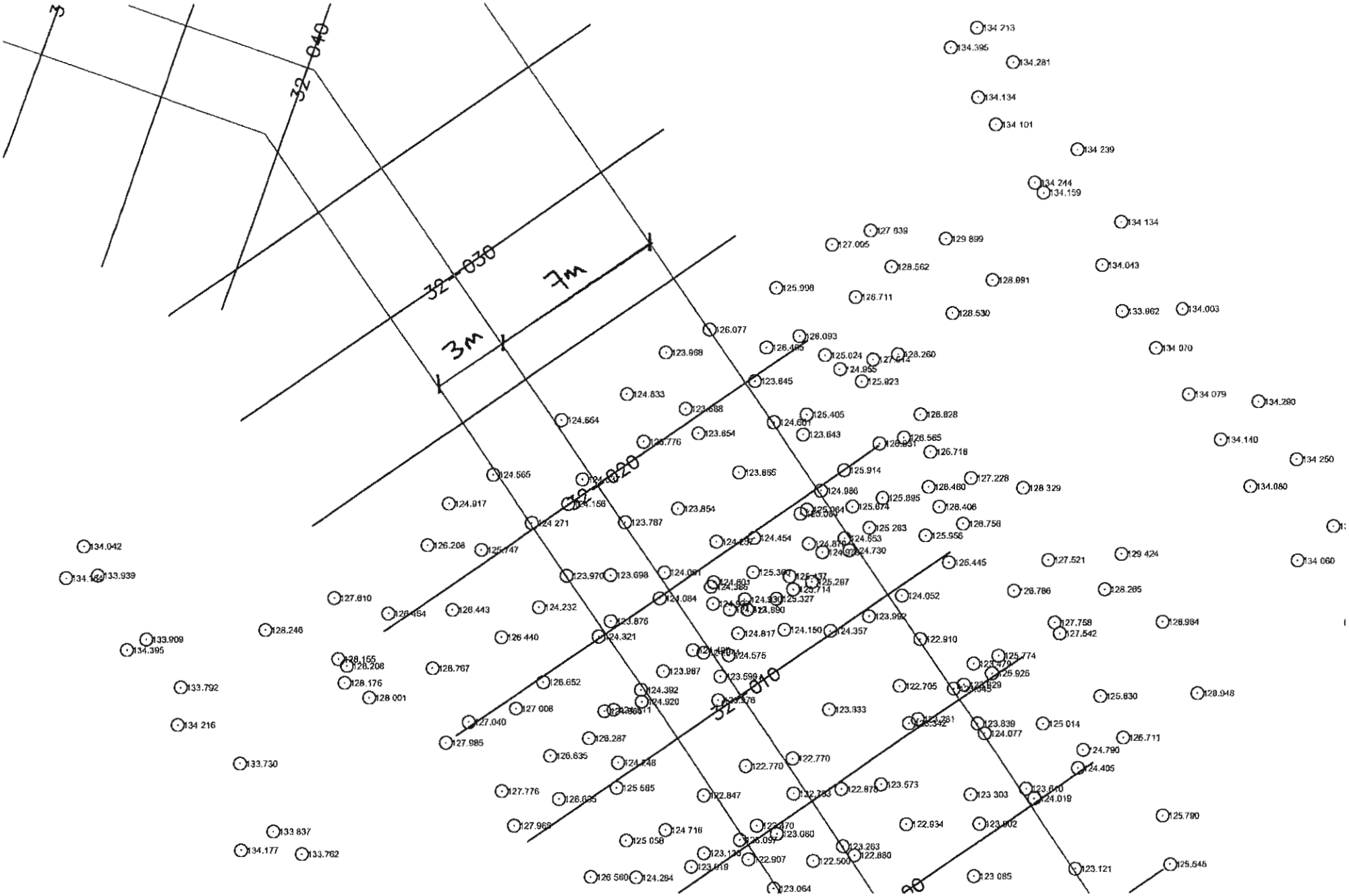
UNABLE TO CLEAN DUE TO GEOMETRY

~~DEVIATIONS: (Attach list if necessary)~~ BACKFILL APPROVED 32+005m (CREST) 32+020m (TOE)

DATE OF RECTIFICATION:

SURVEY VERIFICATION	ACCEPTED BY QA Manager:	ACCEPTED BY OWNER:
NAME: Guy Morissette	NAME: GRANT BURNS	NAME:
SIGNATURE: [signature]	SIGNATURE: [signature]	SIGNATURE:
DATE 9 sept 2010	DATE AUGUST 9, 2010	DATE

15:40 hrs 16:30 hrs



Station: 32+015 @ 32+020

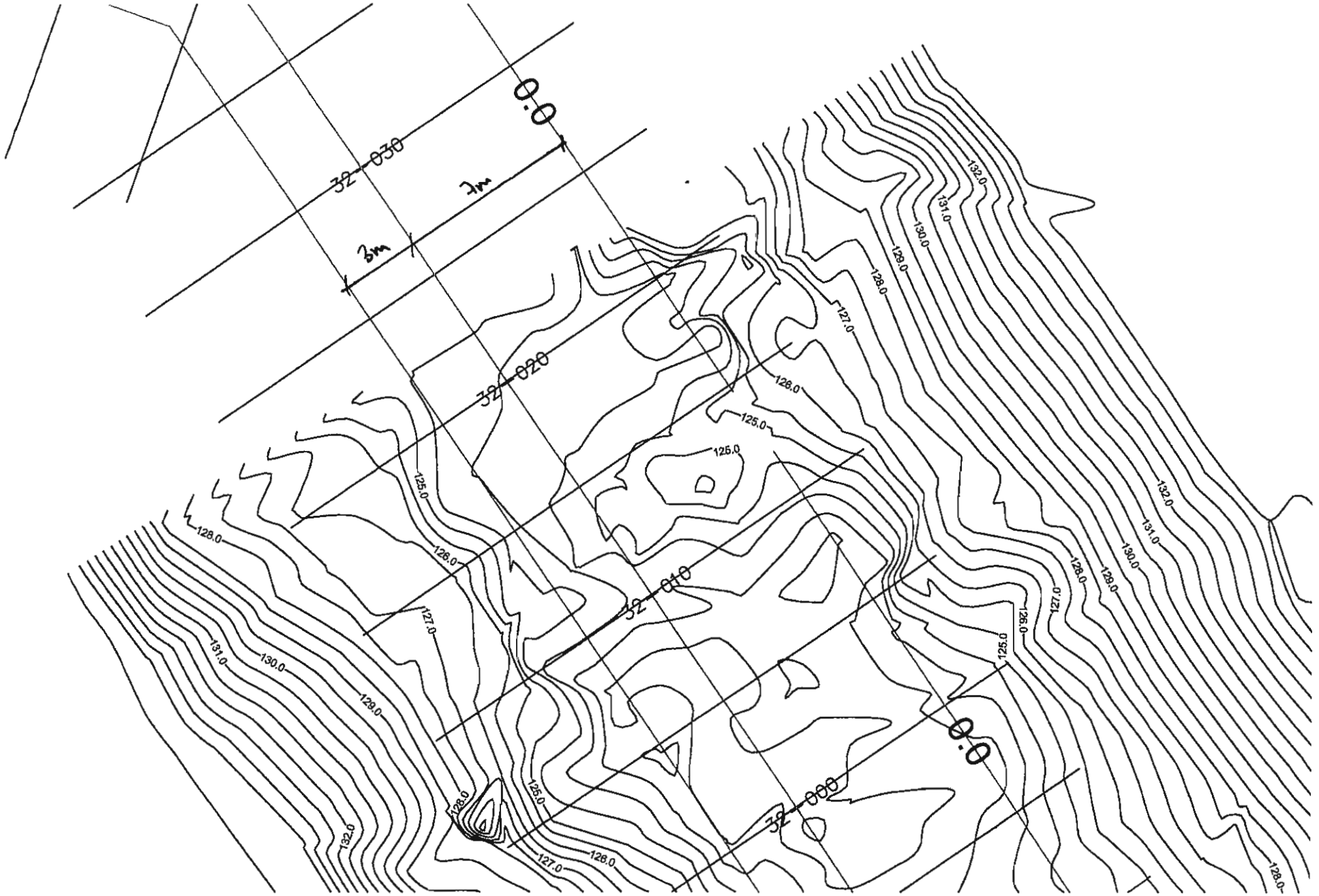
Scale: 1:200

GB. Sept 9/10

Date: 090910

Page: 2/6

Par: Alex Lalancette



Station: 32+015@ 32+020

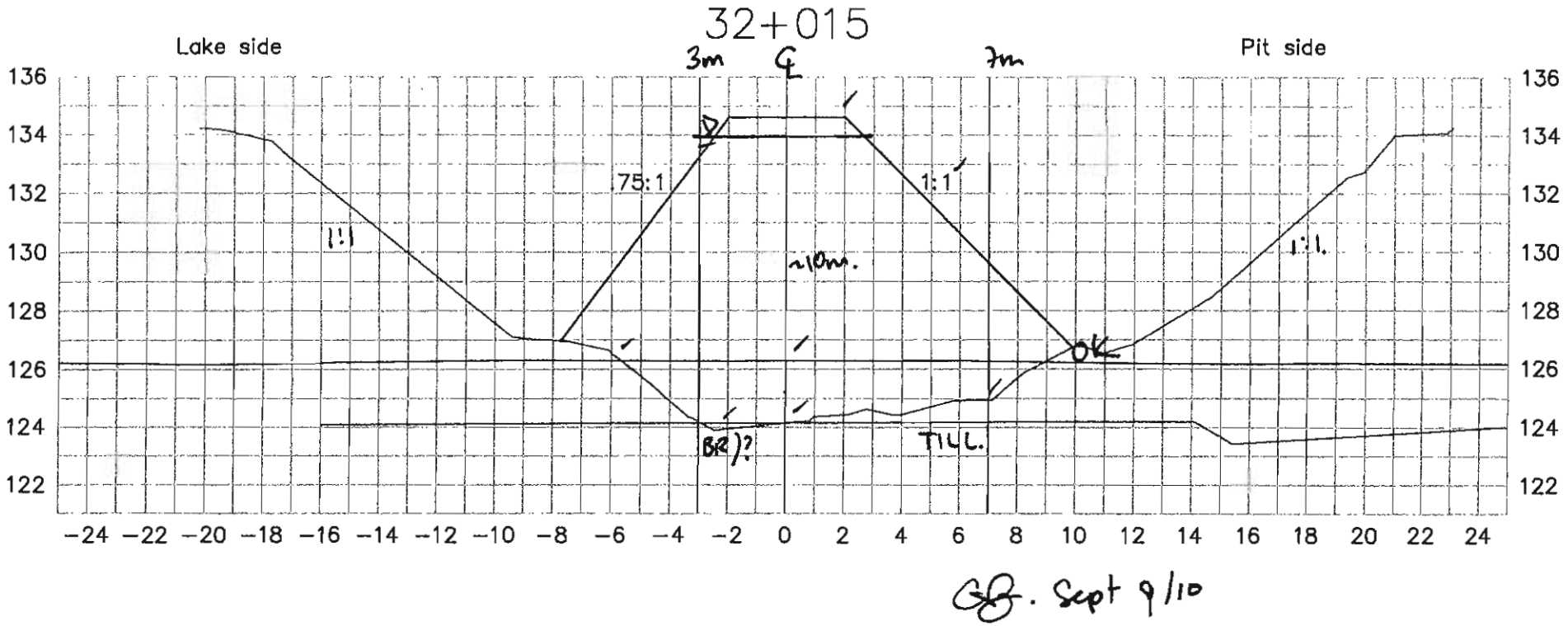
Scale: 1:200 ✓

GB.
Sept 9/10

Date: 090910

Page: 3/6

Par: Alex Lalancette



GB. Sept 9/10

Lake bed soil

Dike

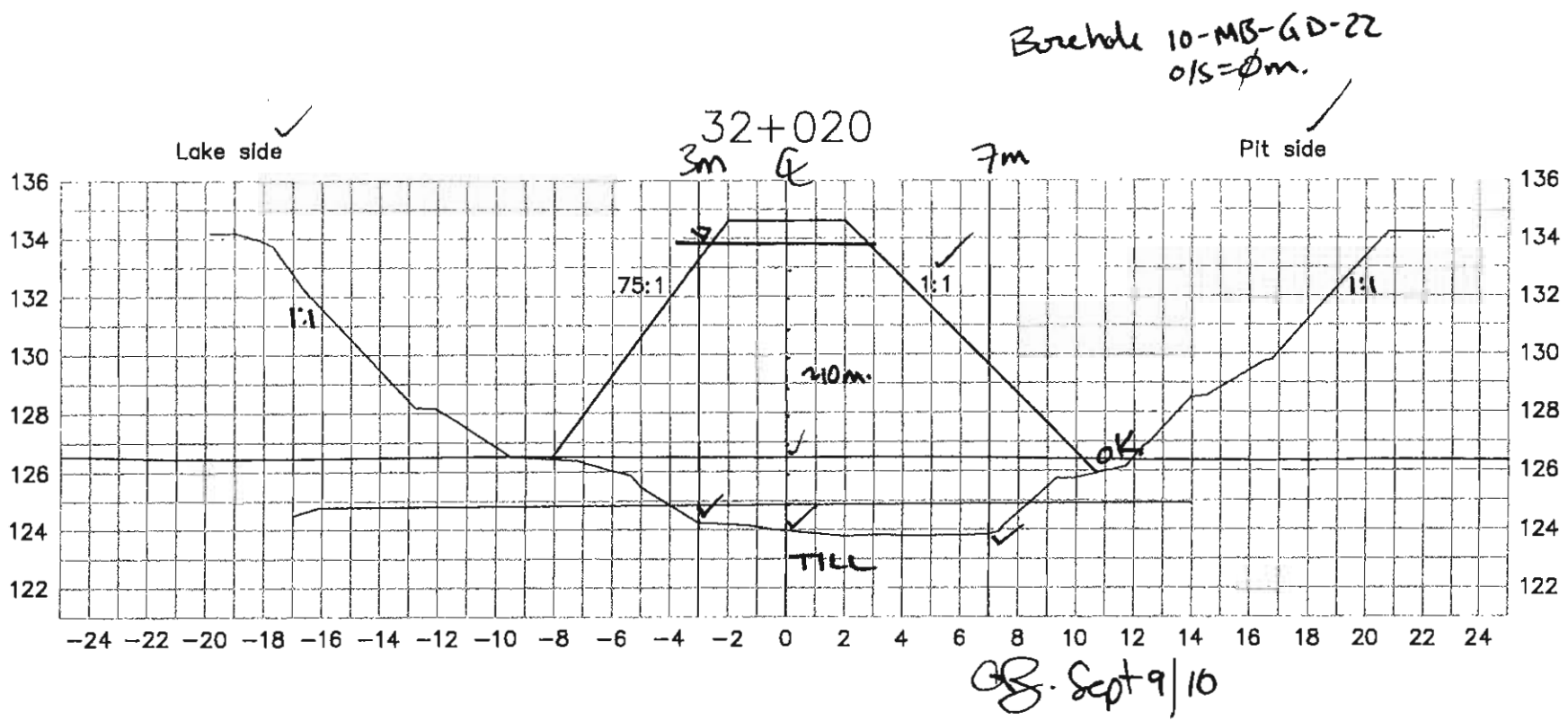
Target surface

Manual probing

Date: 090910

Page:4/6

Par: Alex Lalancette



Lake bed soil

Dike

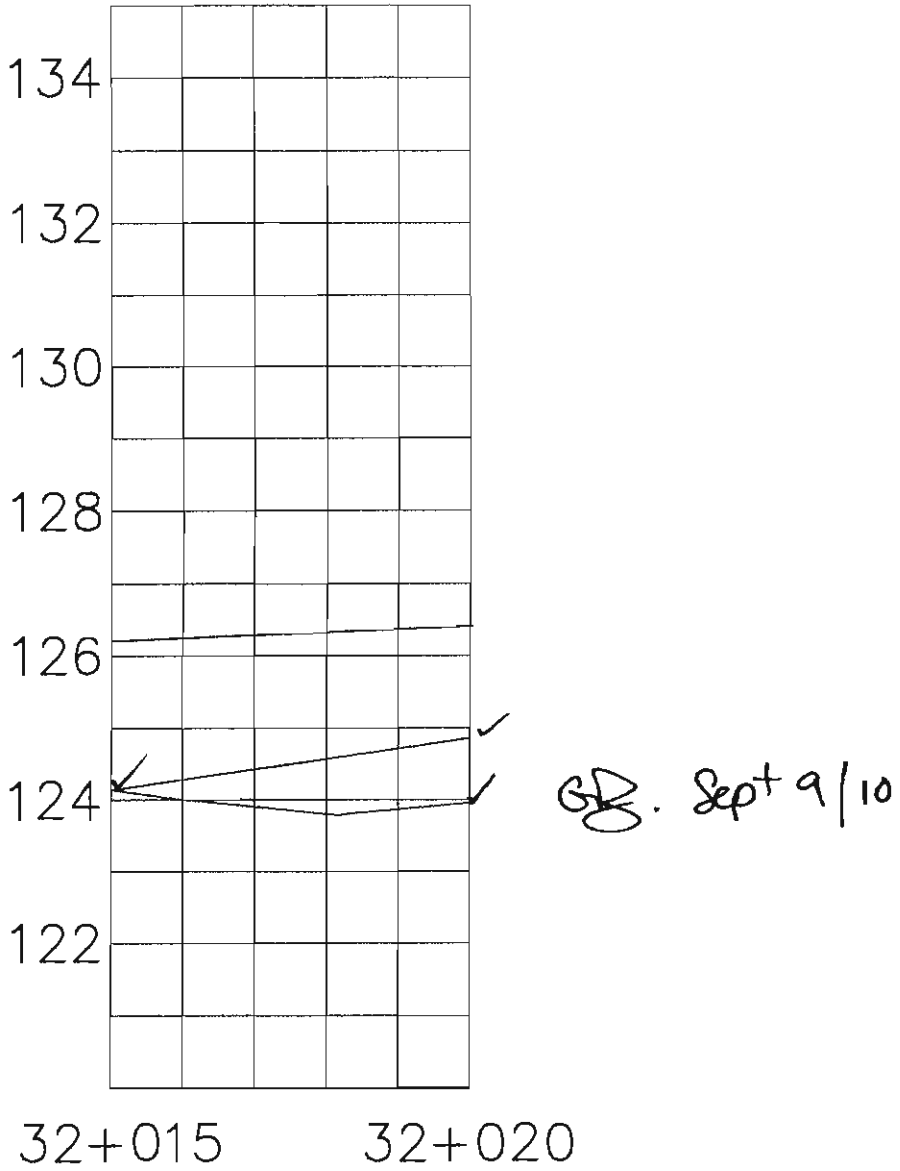
Target surface

Manual probing

Date: 090910

Page:5/6

Par: Alex Lalancette



Station: 32+015 @ 32+020

Date: 090910

Page: 6/6

Par: Alex Lalancette

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 32+020 Offset	SHIFT: NIGHT :☐ DAY :☒	DATE : 9 sept. 2010	SHEET 1 OF 6
To Sta. 32+025 Offset	LOCATION: : BAY GOOSE DIKE, SOUTH PORTION		
EQUIPMENT:			
DESCRIPTION			

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	GM.	GB.
2.	Storage areas planned for disposal of removed materials	GM	GB.
3.	Occurrence of snow and ice removal method in place	N/A	N/A
4.	Occurrence of boulders and removal method in place	GM	GB.
5.	Occurrence of hummocks and scalping method in place	GM	GB.
6.	Occurrence of surface and ground water and its impact mitigation in place	GM	GB.
7.	Presence of other unsuitable materials and removal method in place	GM	GB.
8.	Soil frozen or thawed and measures taken	N/A	N/A
9.	Blasting requirement to remove unsuitable material and safety measure checked	N/A	N/A
10.	Adjustment made to suit design in field	GM	GB.
11.	Final walkover inspection before re-sloping or fill placement	GM	GB.
12.	"As-excavated" survey conducted	GM	GB.
13.	Final sounding conducted of lake bottom surface	GM	GB.

REMARKS : (1) CHECK FOR SILT BY MANUAL SOUNDING.
(2) BACKFILL APPROVED TO STN. 32+018m (CREST) OR 32+025 (TOE)

DEVIATIONS : (Attach list if necessary)

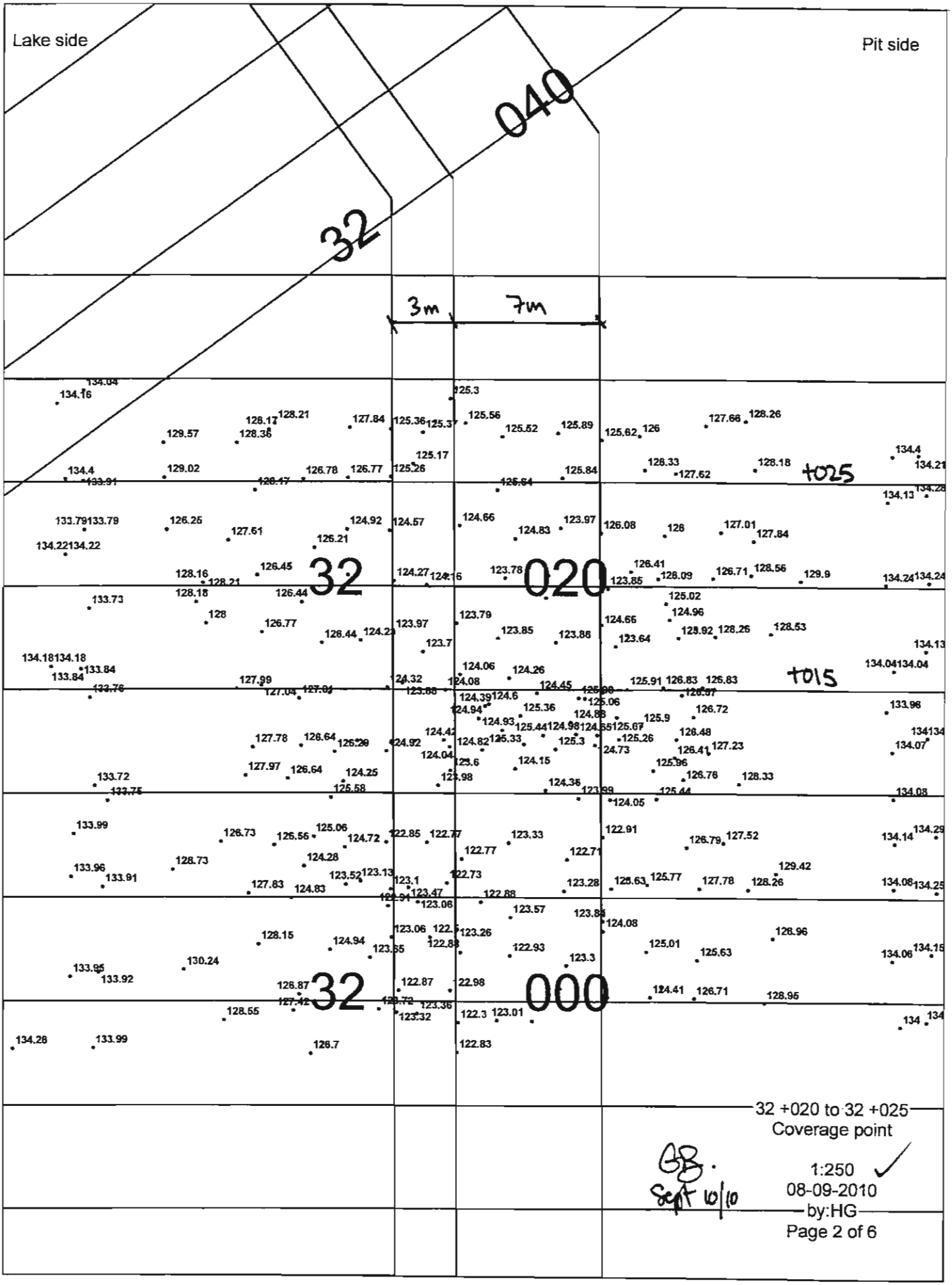
DATE OF RECTIFICATION :

SURVEY VERIFICATION	ACCEPTED BY QA Manager :	ACCEPTED BY OWNER :
NAME: GUY MORISSETTE	NAME: GRANT BURNS.	NAME:
SIGNATURE : Guy Morissette	SIGNATURE : GB	SIGNATURE :
DATE 9 sept. 2010	DATE ~~AUGUST~~ 9 SEPT 10, 2010.	DATE

20:15 hrs

7:05 hrs

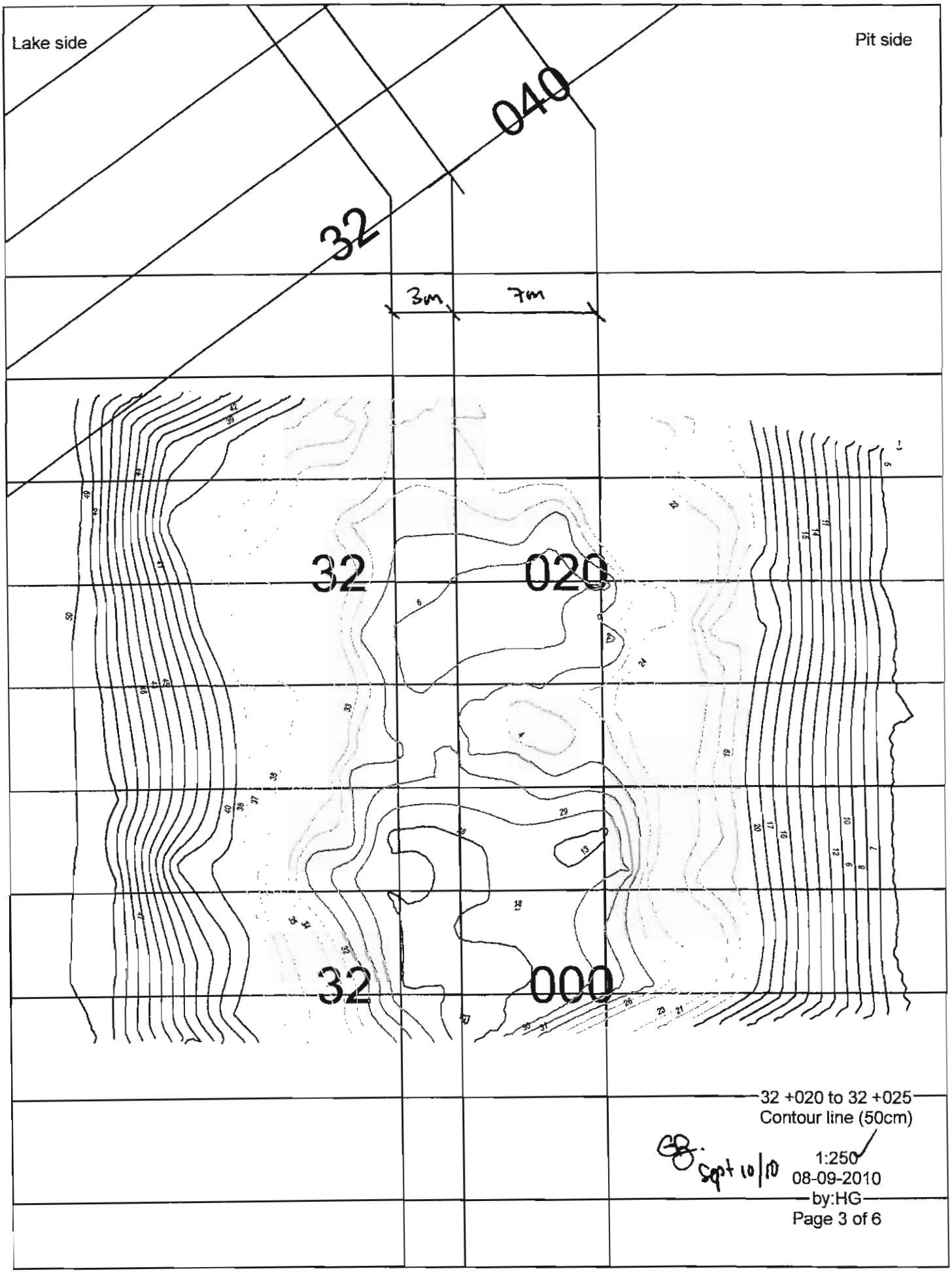
COPY OF ORIGINAL 1/6



32 +020 to 32 +025
Coverage point

GB.
Sept 10/10

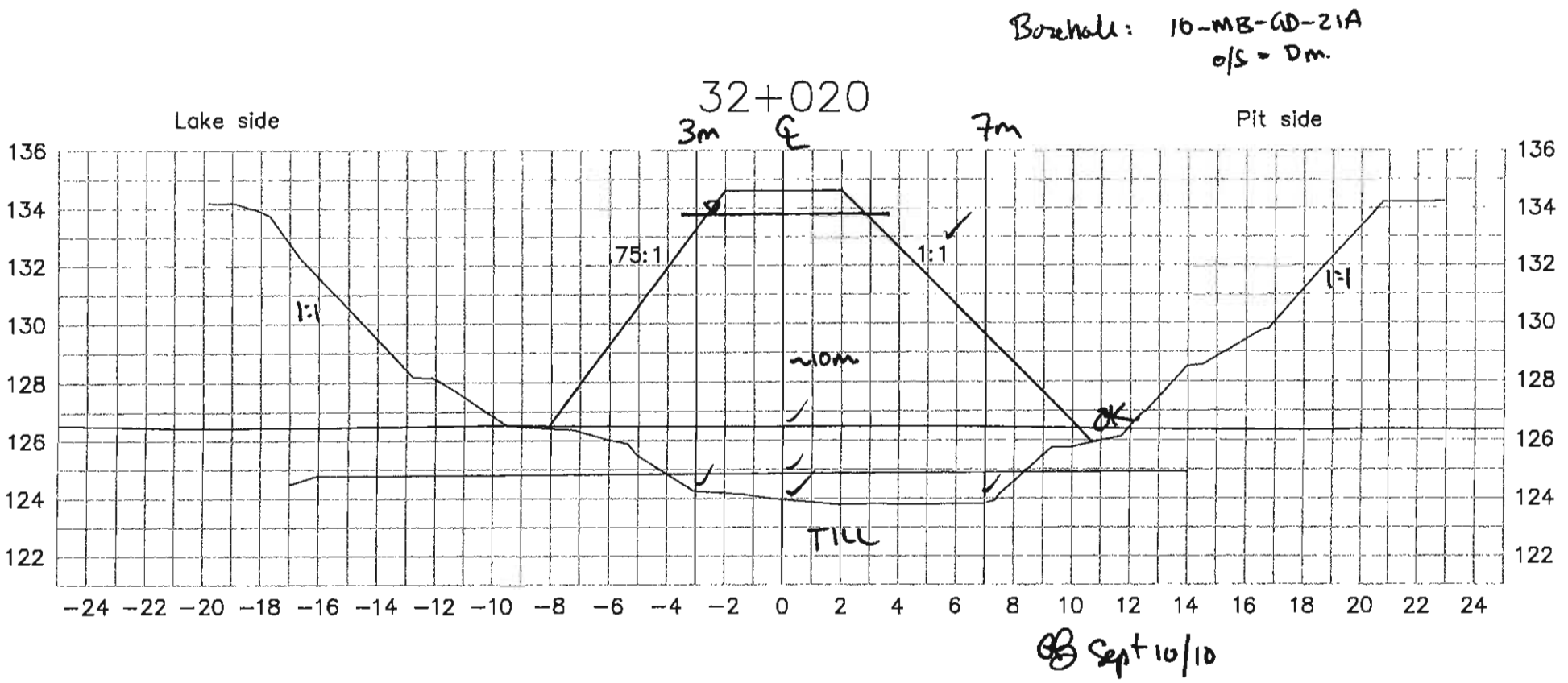
1:250
08-09-2010
by:HG



32 +020 to 32 +025
Contour line (50cm)

Sept 10/10

1:250
08-09-2010
by:HG



Lake bed soil

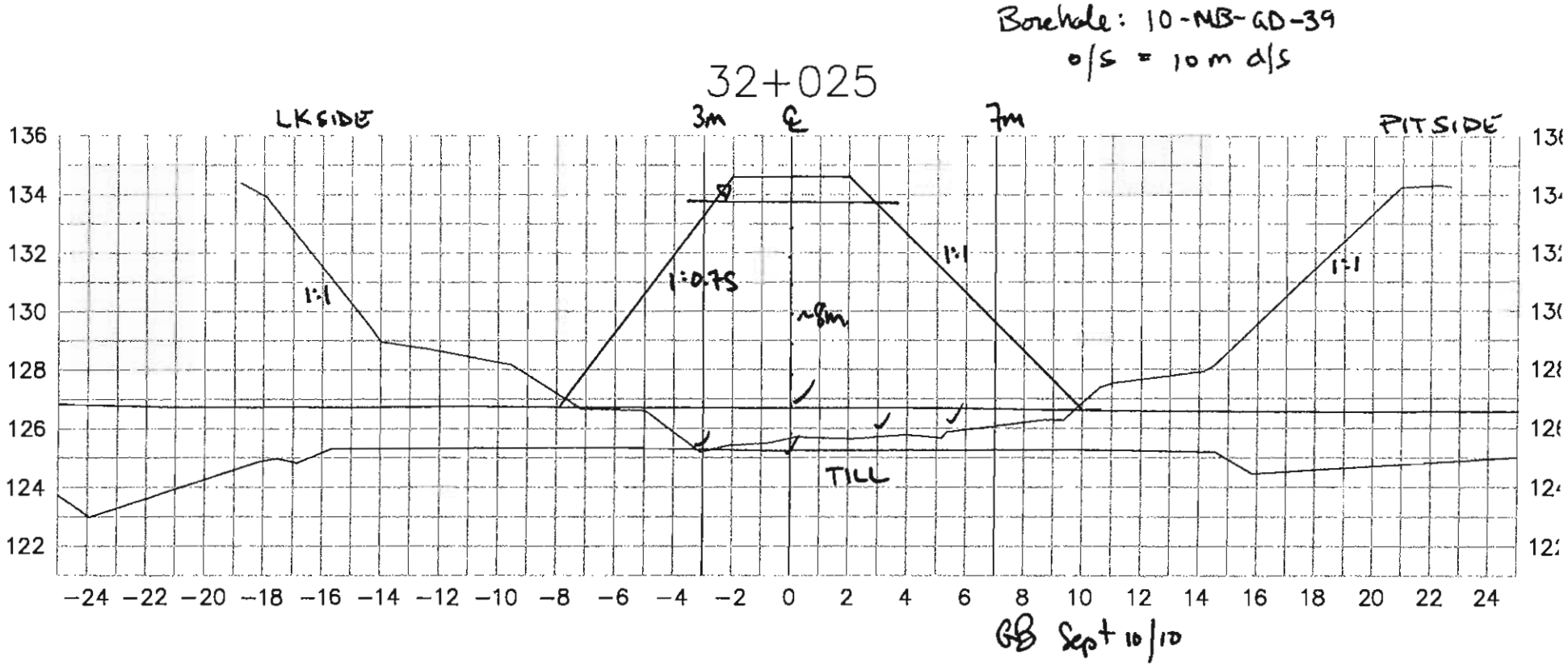
Dike

Target surface

Manual probing

Date: 090910

Par: Hugues Gagnon



——— Lake bed soil

——— Dike

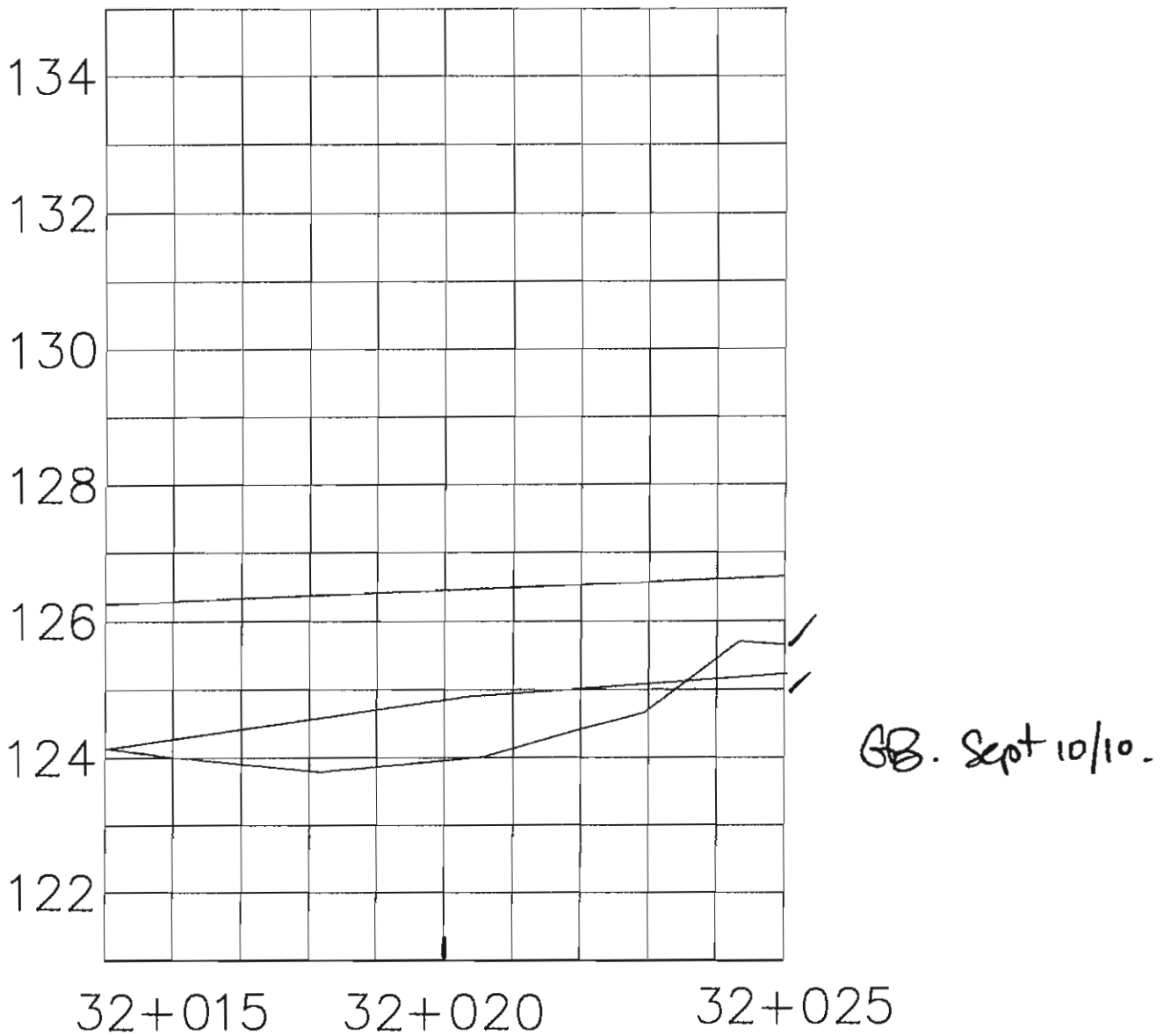
——— Target surface

——— Manual probing

Date: 090910

Page: 5 of 6

Par: Hugues Gagnon



GB. Sept 10/10.

Station: 32+015 @ 32+025

Date: 090910

Page: 6/6

Par: Hugues Gagnon

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 32+025 Offset	SHIFT: NIGHT :☐ DAY :☐	DATE : 10 SEPT 2010	SHEET 1 OF 6
To Sta. 32+030 Offset	LOCATION: : BAY GOOSE DIKE, SOUTH PORTION		
EQUIPMENT:			
DESCRIPTION			

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	GM	GB.
2.	Storage areas planned for disposal of removed materials	GM	GB.
3.	Occurrence of snow and ice removal method in place	N/A	GB.
4.	Occurrence of boulders and removal method in place	GM	GB.
5.	Occurrence of hummocks and scalping method in place	GM	GB.
6.	Occurrence of surface and ground water and its impact mitigation in place	GM	GB
7.	Presence of other unsuitable materials and removal method in place	GM	GB
8.	Soil frozen or thawed and measures taken	N/A	NA
9.	Blasting requirement to remove unsuitable material and safety measure checked	N/A	N/A
10.	Adjustment made to suit design in field	GM	GB none required
11.	Final walkover inspection before re-sloping or fill placement	GM	GB.
12.	"As-excavated" survey conducted	GM	GB.
13.	Final sounding conducted of lake bottom surface	GM	GB

REMARKS : ① CHECK FOR SILT BY MANUAL SOUNDING ② CLEAN IF NECESSARY
③ BACKFILL APPROVED TO STN 32+020 m (CREST) 32+030 (toe)

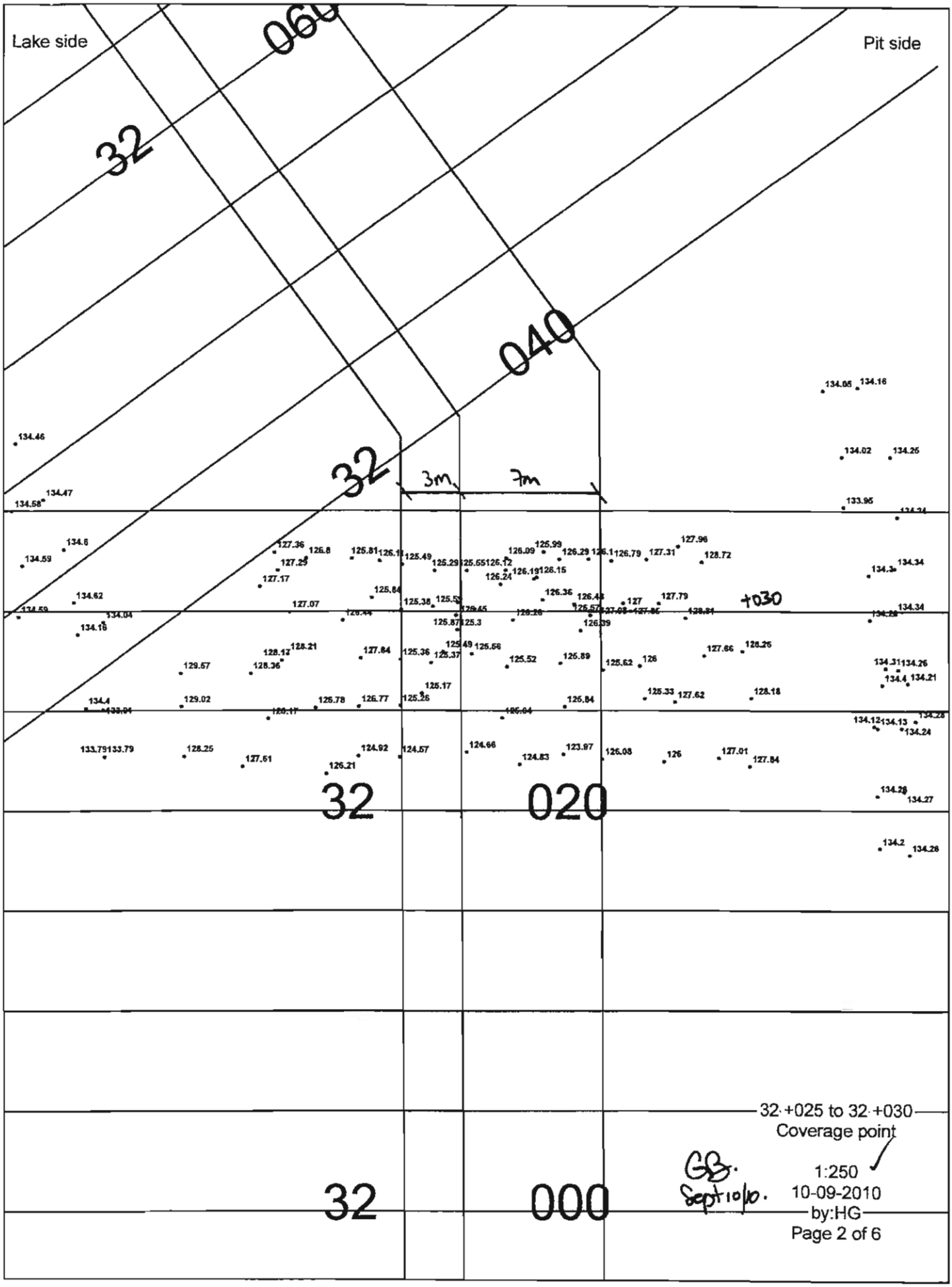
DEVIATIONS : (Attach list if necessary)

DATE OF RECTIFICATION :

SURVEY VERIFICATION	ACCEPTED BY QA Manager :	ACCEPTED BY OWNER :
NAME: Guy Morissette	NAME: GRANT BLOWS	NAME:
SIGNATURE : Guy Morissette	SIGNATURE : GB	SIGNATURE :
DATE 10 sept 2010	DATE Sept 10, 2010	DATE

6:20 AM 7:25 hrs

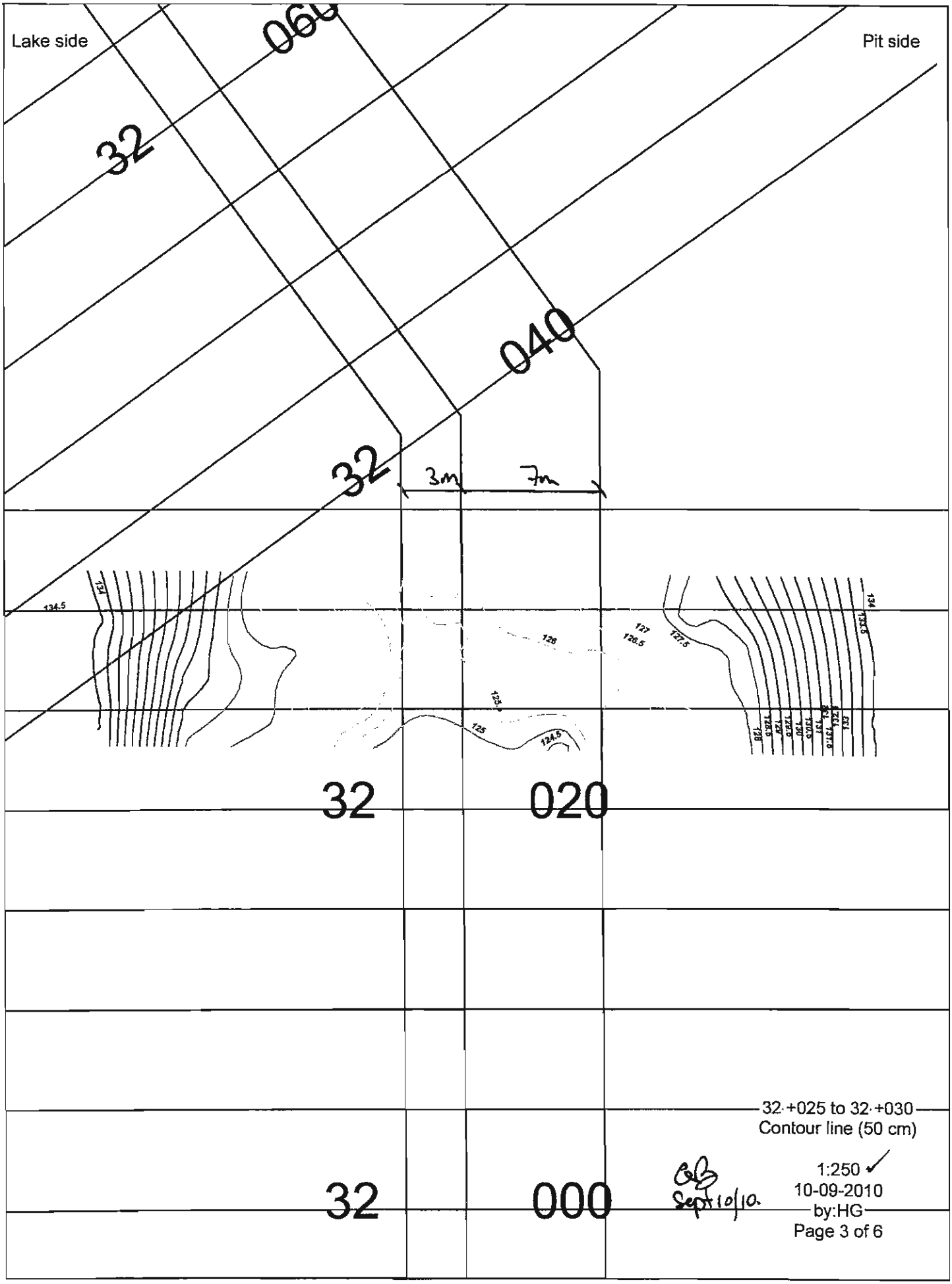
COPY OF ORIGINAL 1/6



32 +025 to 32 +030
Coverage point

GB.
Sept 10/10.

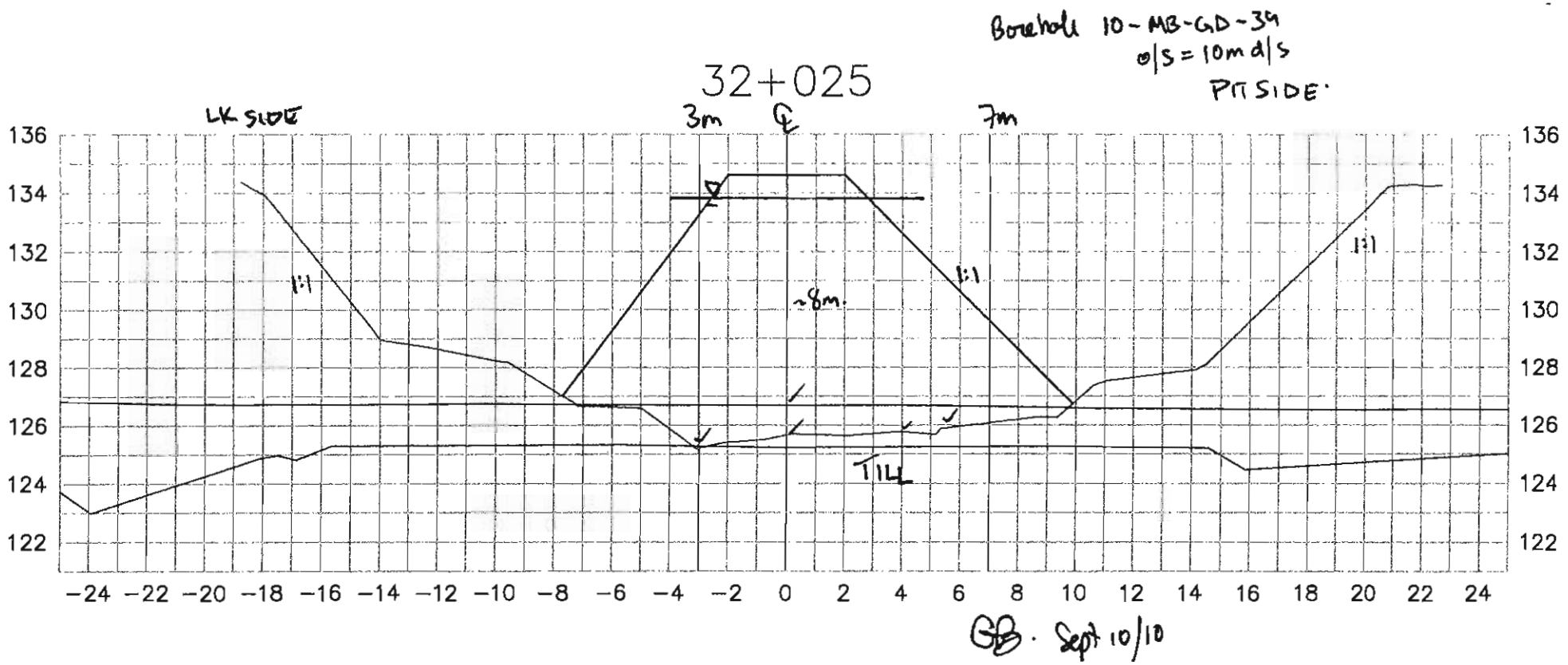
1:250
10-09-2010
by:HG



32·+025 to 32·+030
Contour line (50 cm)

1:250 ✓
10-09-2010
by:HG

Sept 10/10.



Lake bed soil

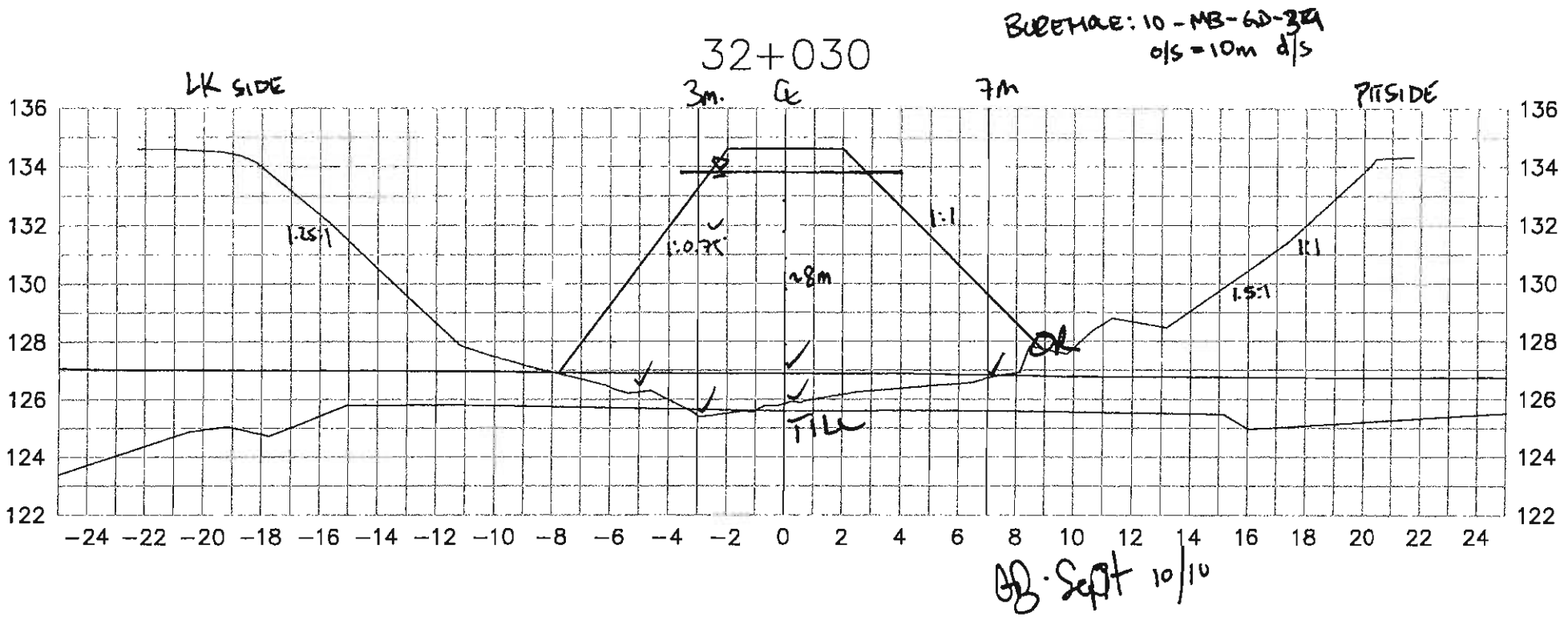
Dike

Target surface

Manual probing

Date: 10-09-10

Par: Hugues Gagnon



——— Lake bed soil

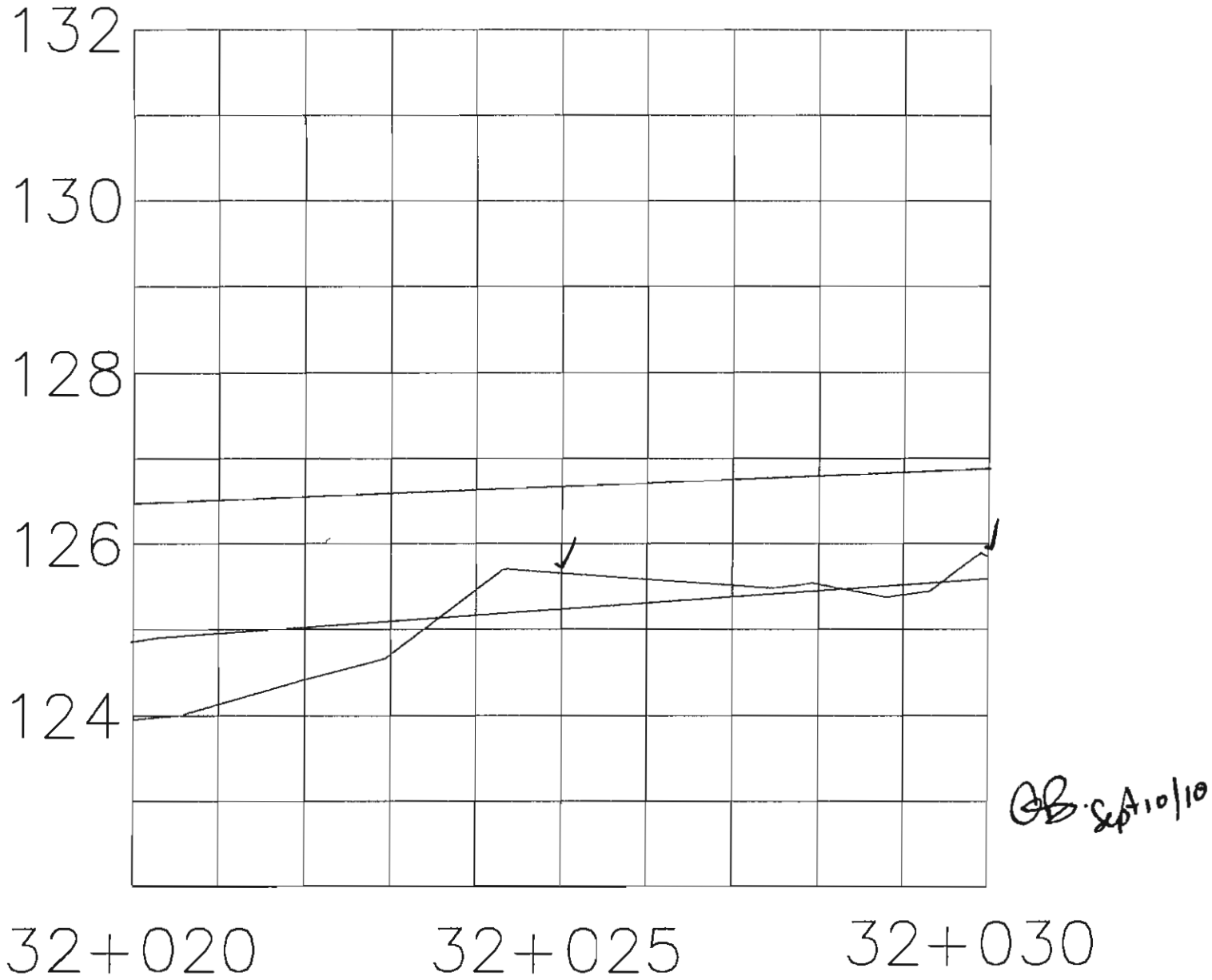
——— Dike

——— Target surface

——— Manual probing

Date: 10-09-10

Par: Hugues Gagnon



Station: 32+020 @ 32+030

Dat10-09-10

Page: 6/6

Par: Hugues Gagnon

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 32+050 Offset	SHIFT: NIGHT: ☐ DAY: ☒	DATE: 10 sept 2010	SHEET 1 OF 7
To Sta. 32+040 Offset	LOCATION: Bay Goose Dike, South Portion		
EQUIPMENT:			
DESCRIPTION			

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	GM	GB
2.	Storage areas planned for disposal of removed materials	GM	GB
3.	Occurrence of snow and ice removal method in place	N/A	N/A
4.	Occurrence of boulders and removal method in place	GM	GB
5.	Occurrence of hummocks and scalping method in place	GM	GB
6.	Occurrence of surface and ground water and its impact mitigation in place	GM	GB
7.	Presence of other unsuitable materials and removal method in place	GM	GB
8.	Soil frozen or thawed and measures taken	N/A	N/A
9.	Blasting requirement to remove unsuitable material and safety measure checked	N/A	N/A
10.	Adjustment made to suit design in field	GM	GB
11.	Final walkover inspection before re-sloping or fill placement	GM	GB
12.	"As-excavated" survey conducted	GM	GB
13.	Final sounding conducted of lake bottom surface	GM	GB

REMARKS: • SOUNDINGS FOR SILT TAKEN 0.5 to 0.8 m. BUT UNABLE TO CLEAN DUE TO GEOMETRY
• BACKFILL APPROVED TO 32+028m (CREST) 32+040 m (TOE)

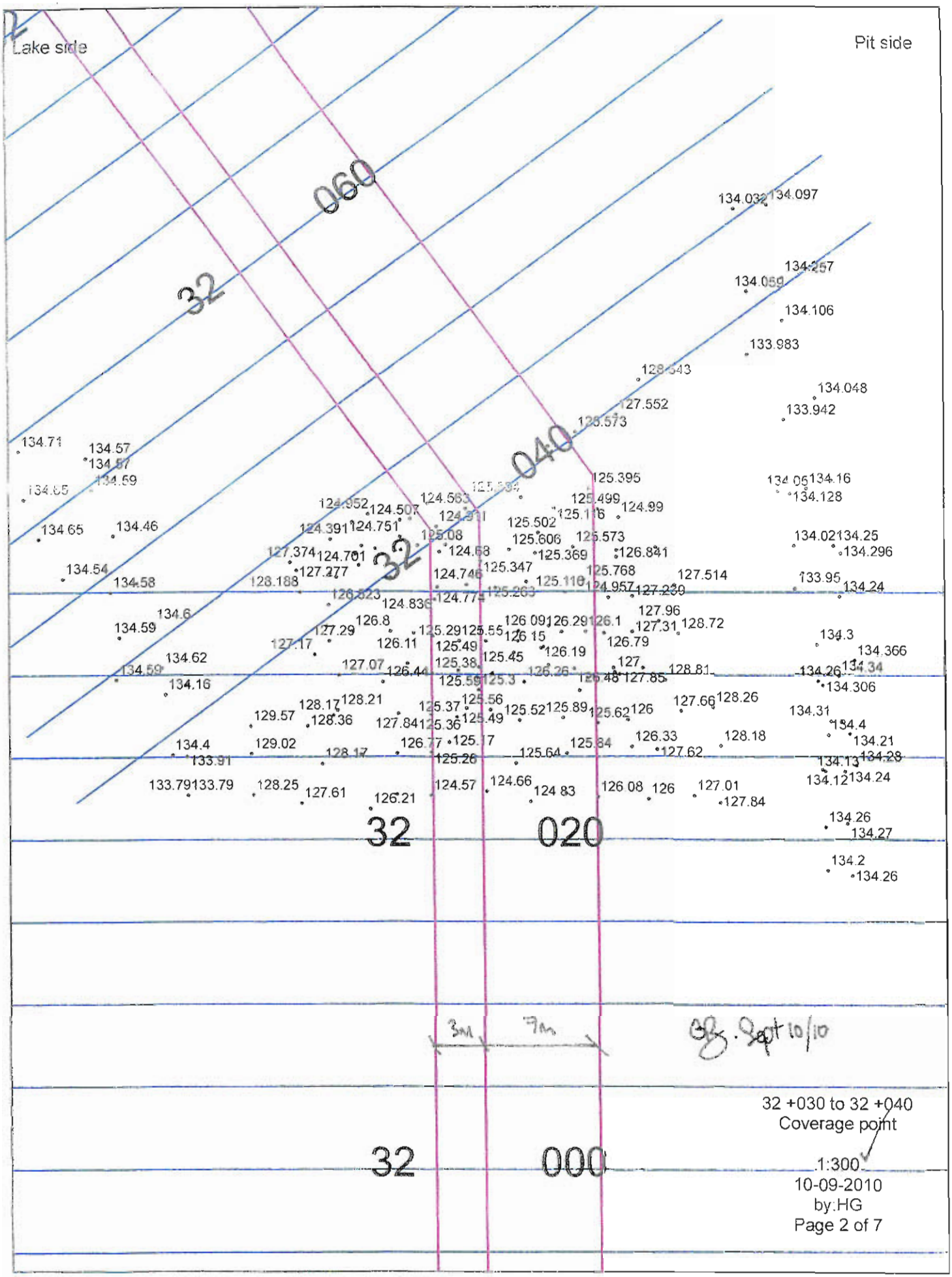
DEVIATIONS : (Attach list if necessary)

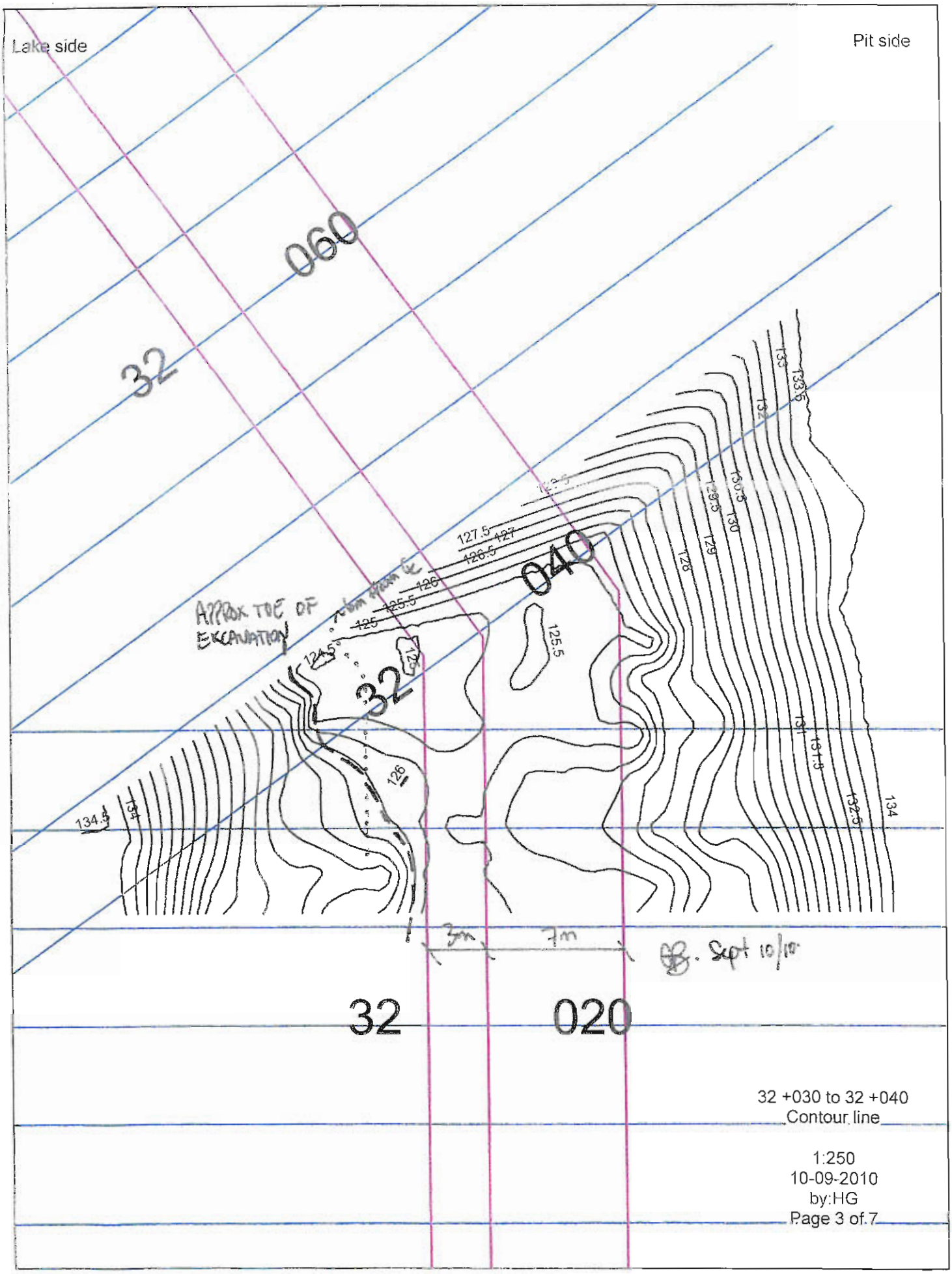
DATE OF RECTIFICATION :

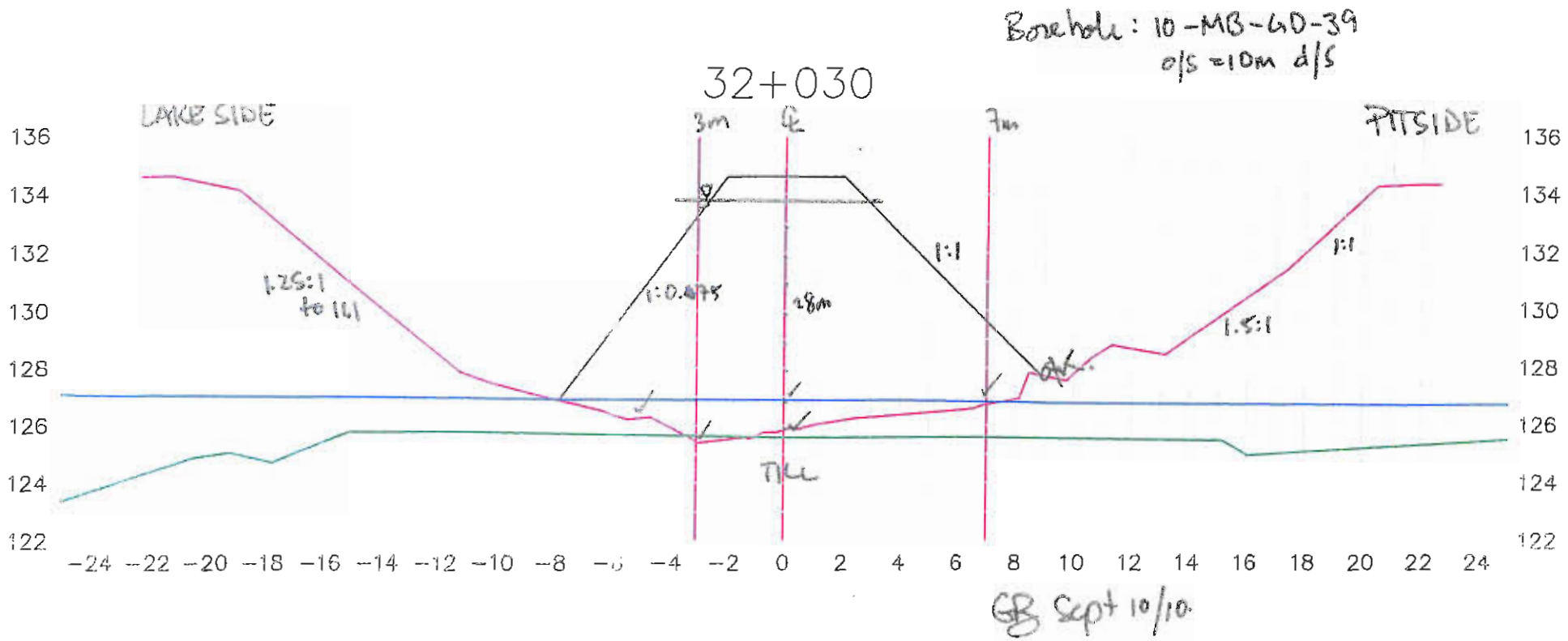
SURVEY VERIFICATION	ACCEPTED BY QA Manager :	ACCEPTED BY OWNER :
NAME: Guy Morissette	NAME: GRANT BURNS	NAME:
SIGNATURE: Guy Morissette	SIGNATURE: G Burns	SIGNATURE :
DATE 10 sept. 2010	DATE Sept 10, 2010	DATE

20:36

Copy of original 1/7


Lake side
Pit side
060
040
020
000
32
32
32
134.032
134.097
134.257
134.059
134.106
133.983
128.543
134.048
127.552
133.942
128.573
134.71
134.57
134.57
134.59
134.65
134.65
134.46
134.54
134.58
134.6
134.59
134.62
134.59
134.16
125.395
134.05
134.16
134.128
124.952
124.507
124.563
125.499
124.99
125.502
124.391
124.751
125.606
125.573
134.02
134.25
134.296
127.374
124.701
124.68
125.369
126.841
127.277
125.347
125.768
127.514
133.95
134.24
128.188
124.746
125.110
124.957
127.230
124.836
124.775
125.263
127.96
126.8
125.29
125.55
126.09
126.29
126.1
127.31
128.72
127.29
126.15
126.79
134.3
127.17
126.11
125.49
126.19
134.366
125.38
125.45
127
128.81
134.26
134.34
127.07
126.44
126.26
126.48
127.85
125.59
125.3
134.306
128.17
128.21
125.56
127.66
128.26
129.57
128.36
125.37
125.52
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125.62
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134.31
127.84
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125.49
134.4
134.4
129.02
126.77
125.17
125.84
126.33
128.18
134.21
128.17
125.64
127.62
134.28
133.91
125.26
134.13
133.79
133.79
128.25
127.61
126.21
124.57
124.66
124 83
126.08
126
127.01
127.84
134.12
134.24
134.26
134.27
134.2
134.26
3m
7m
32 +030 to 32 +040
Coverage point
1:300
10-09-2010
by:HG
Page 2 of 7


Lake side
Pit side
060
32
040
32
020
32
APPROX TOE OF EXCAVATION
127.5
127
126.5
126
125.5
125
124.5
125.5
134.5
134
133.5
133
132.5
132
131.5
131
130.5
130
129.5
129
128.5
128
3m
7m
32 +030 to 32 +040
Contour line
1:250
10-09-2010
by:HG
Page 3 of 7



Lake bed soil

Dike

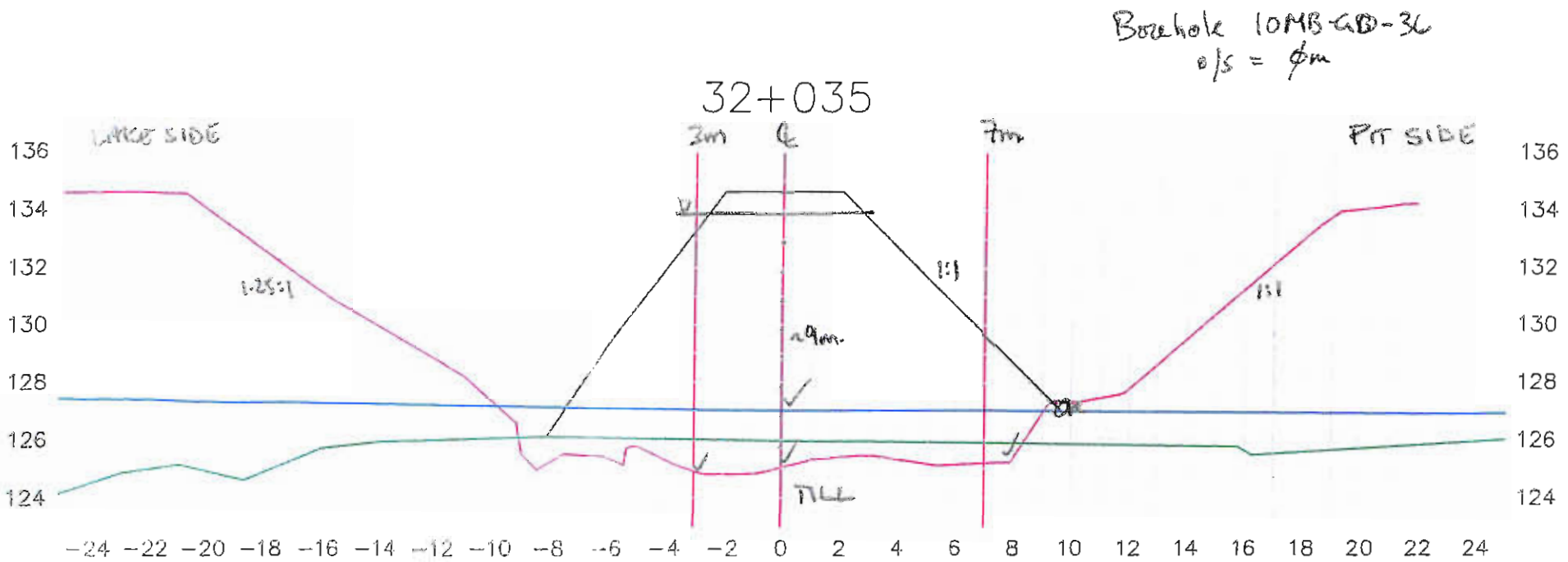
Target surface

Manual probing

Date: 10-09-10

Page: 4 of 7

Par: Hugues Gagnon



Lake bed soil

Dike

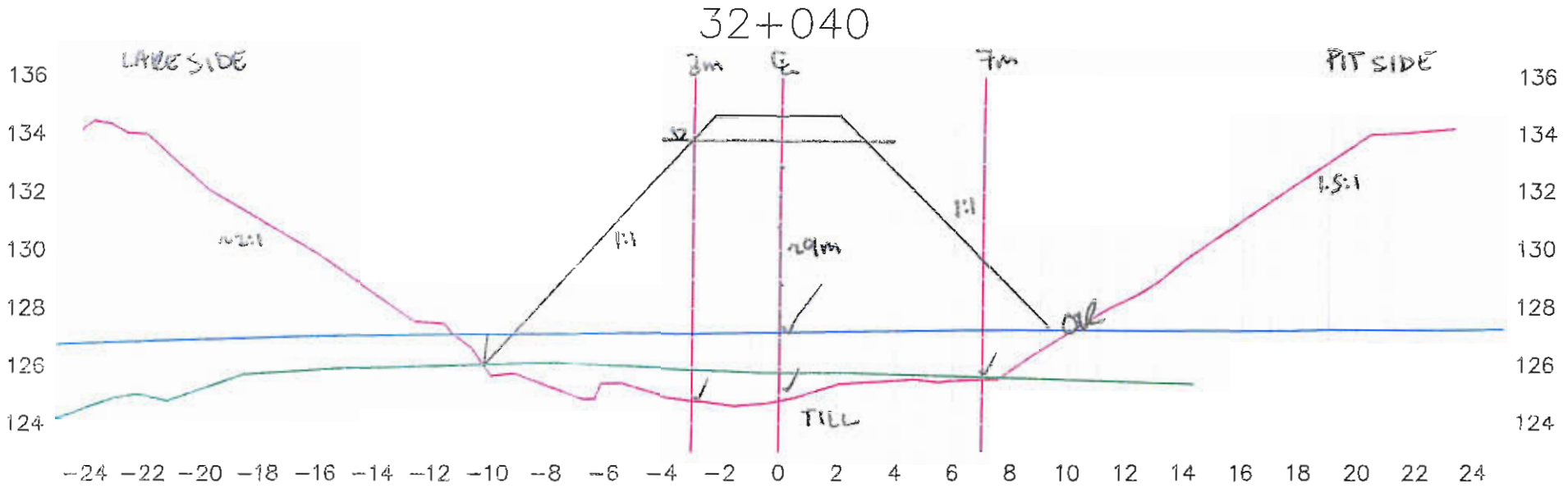
Target surface

Manual probing

Date: 10-09-10

Par: Hugues Gagnon

BOREHOLE 16-MB-GD-36
o/s +0m.



Lake bed soil

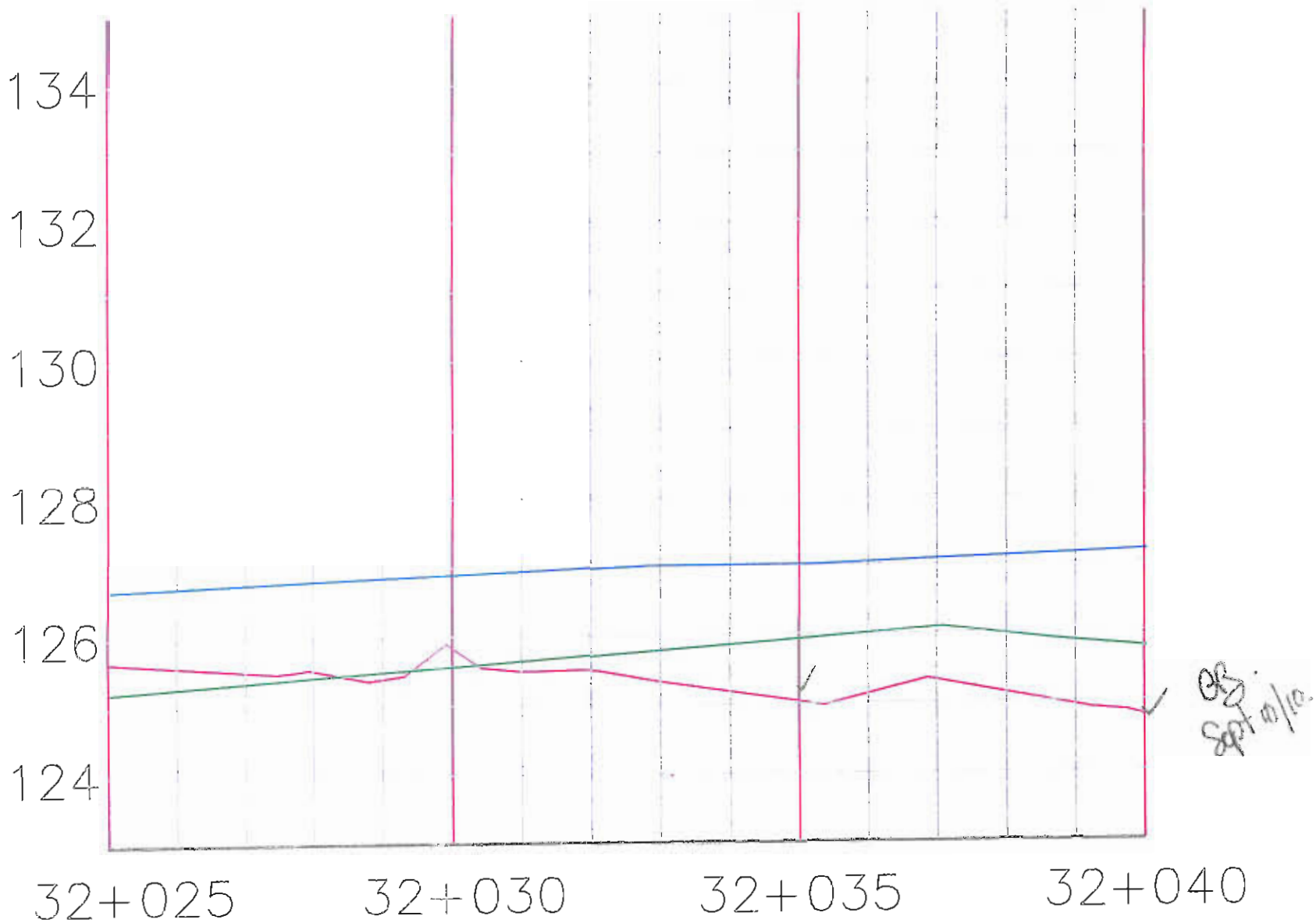
Dike

Target surface

Manual probing

Date: 10-09-10

Par: Hugues Gagnon



Station: 32+25 @ 32+040

Dat10-09-10

Page: 7-7

Par: Hugues Gagnon

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 32+040 Offset	SHIFT: NIGHT: ☐ DAY: ☒	DATE: 11-09-10	SHEET 1 OF 7
To Sta. 32+050 Offset	LOCATION: Bay Goose Dike, South portion		
EQUIPMENT:			
DESCRIPTION			

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	MG	GB
2.	Storage areas planned for disposal of removed materials	MJ	GB
3.	Occurrence of snow and ice removal method in place	MJ	N/A
4.	Occurrence of boulders and removal method in place	MJ	GB
5.	Occurrence of hummocks and scalping method in place	MJ	GB
6.	Occurrence of surface and ground water and its impact mitigation in place	MJ	GB
7.	Presence of other unsuitable materials and removal method in place	MJ	GB
8.	Soil frozen or thawed and measures taken	N/A MJ	N/A
9.	Blasting requirement to remove unsuitable material and safety measure checked	N/A / MJ	N/A
10.	Adjustment made to suit design in field	MJ	GB
11.	Final walkover inspection before re-sloping or fill placement	MJ	GB
12.	"As-excavated" survey conducted	MJ	GB
13.	Final sounding conducted of lake bottom surface	MJ	GB

REMARKS: • SILT SOUNDINGS TAKEN 32+040 to 32+050 & THICKNESS 0.4 to 0.9m NOT CLEAN AS BEYOND REACH OF EXCAVATOR BUCKET
• BACKFILL APPROVED TO 32+037 (CREST) 32+050 (TOE)

DEVIATIONS: (Attach list if necessary)

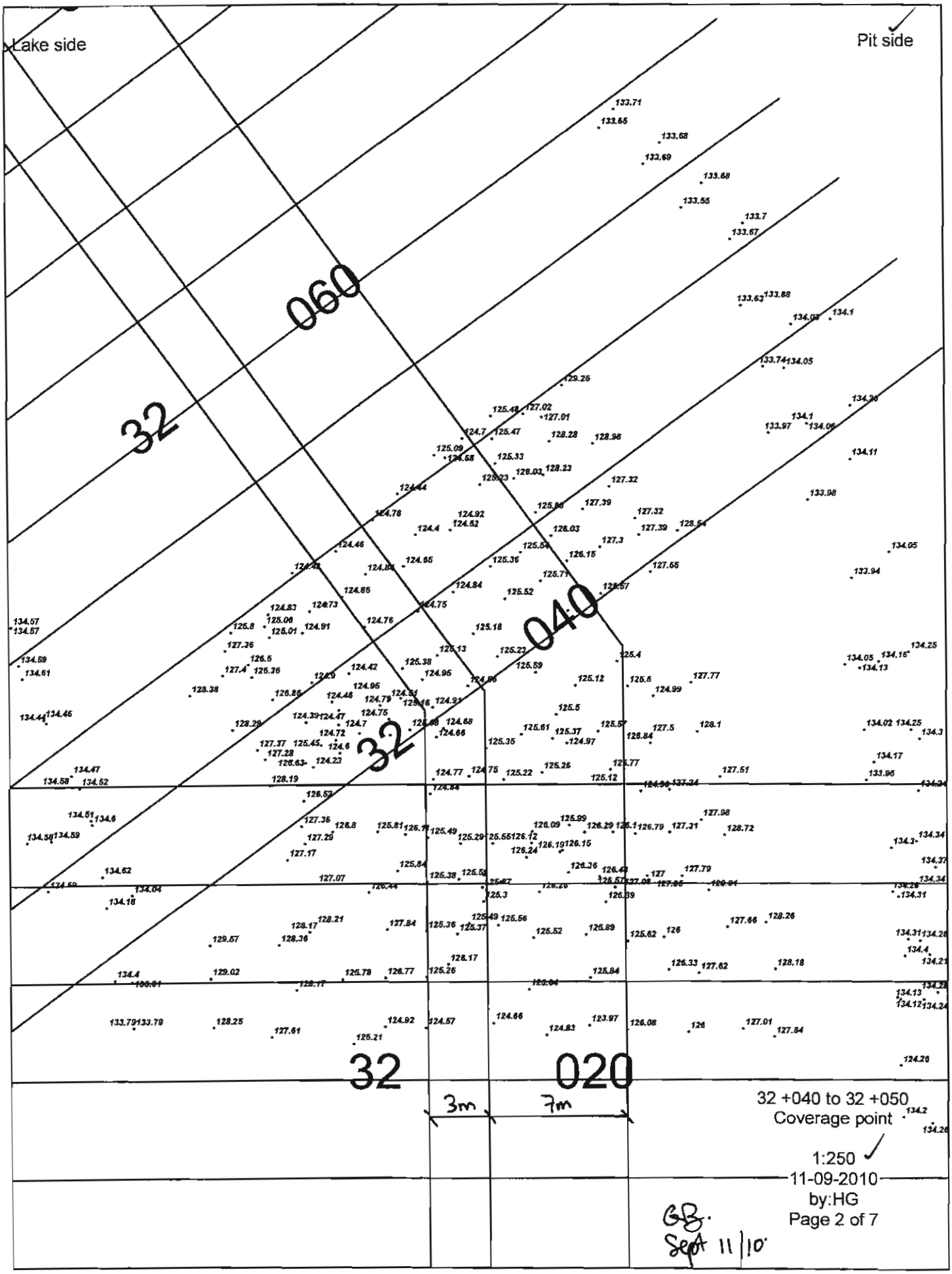
DATE OF RECTIFICATION:

SURVEY VERIFICATION	ACCEPTED BY QA Manager:	ACCEPTED BY OWNER:
NAME: MAXIME GILBERT	NAME: GRANT BUENS	NAME:
SIGNATURE:	SIGNATURE: GB	SIGNATURE:
DATE 11-09-2010	DATE SEPT 11, 2010	DATE

9:40 AM

11:15 hrs

ORIGINAL or COPY 1/7

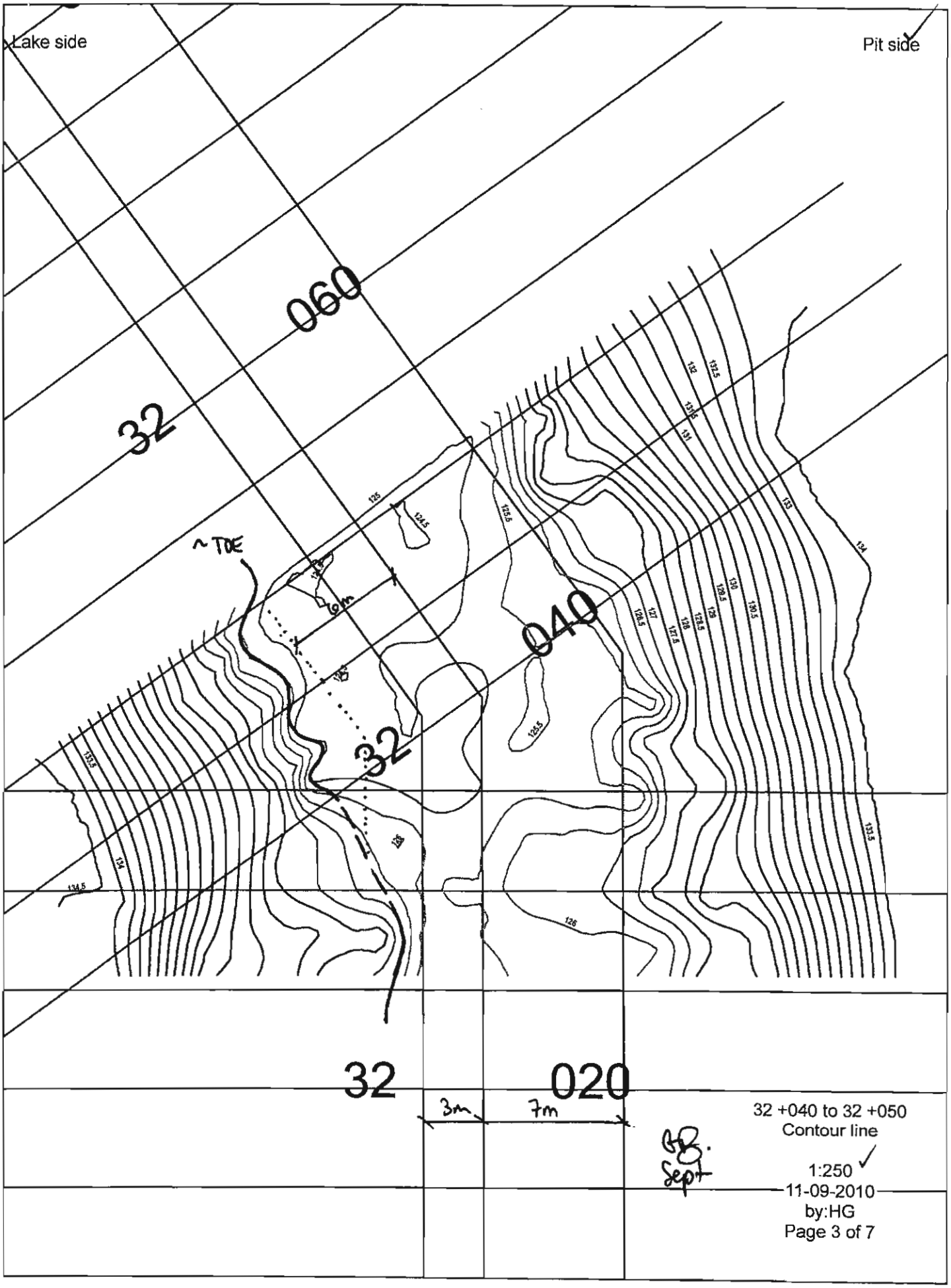


32 +040 to 32 +050
Coverage point

1:250

11-09-2010
by:HG
Page 2 of 7

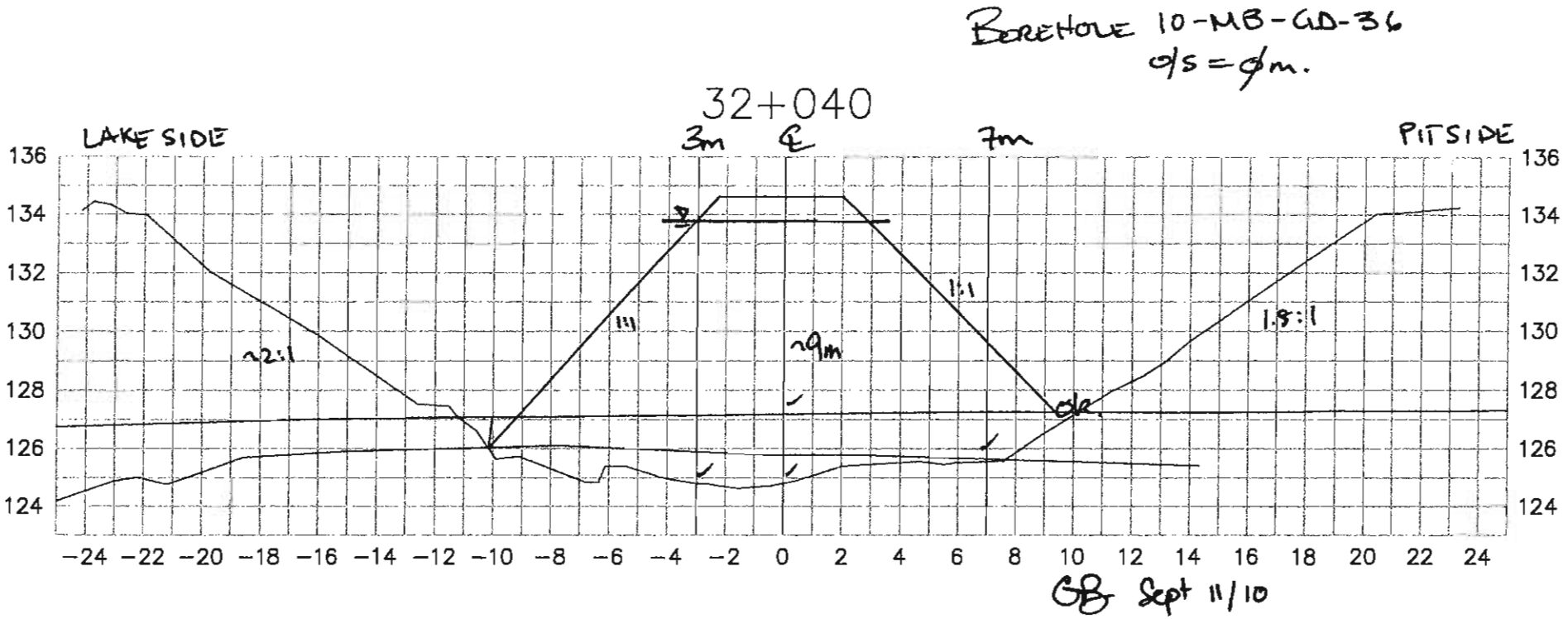
GB.
Sept 11/10



32 +040 to 32 +050
Contour line

1:250

11-09-2010
by:HG
Page 3 of 7



——— Lake bed soil

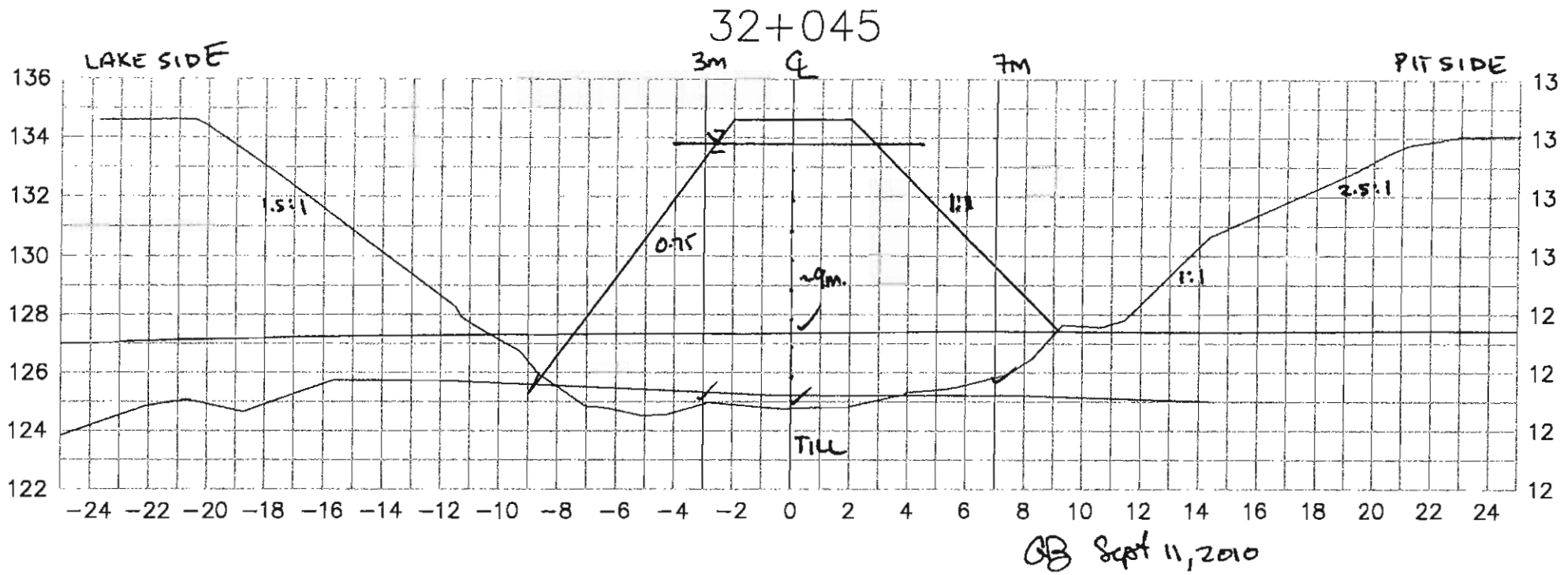
——— Dike

——— Target surface

——— Manual probing

Date: 11-09-10

Par: Hugues Gagnon



——————— Lake bed soil

——————— Dike

——————— Target surface

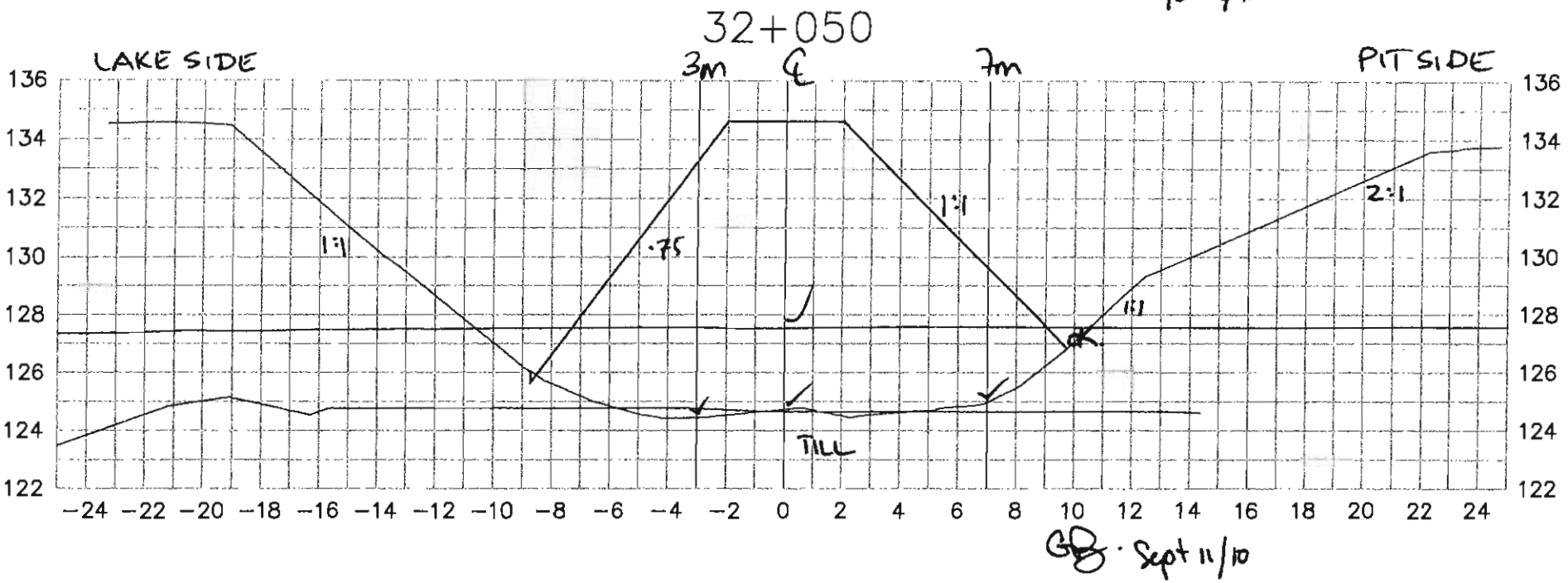
——————— Manual probing

Date: 11-09-10

Page: 5 of 7

Par: Hugues Gagnon

Borehole
10-MB-GD-24A
$\phi/s = \phi_M$



GB · Sept 11/10

——— Lake bed soil

——— Dike

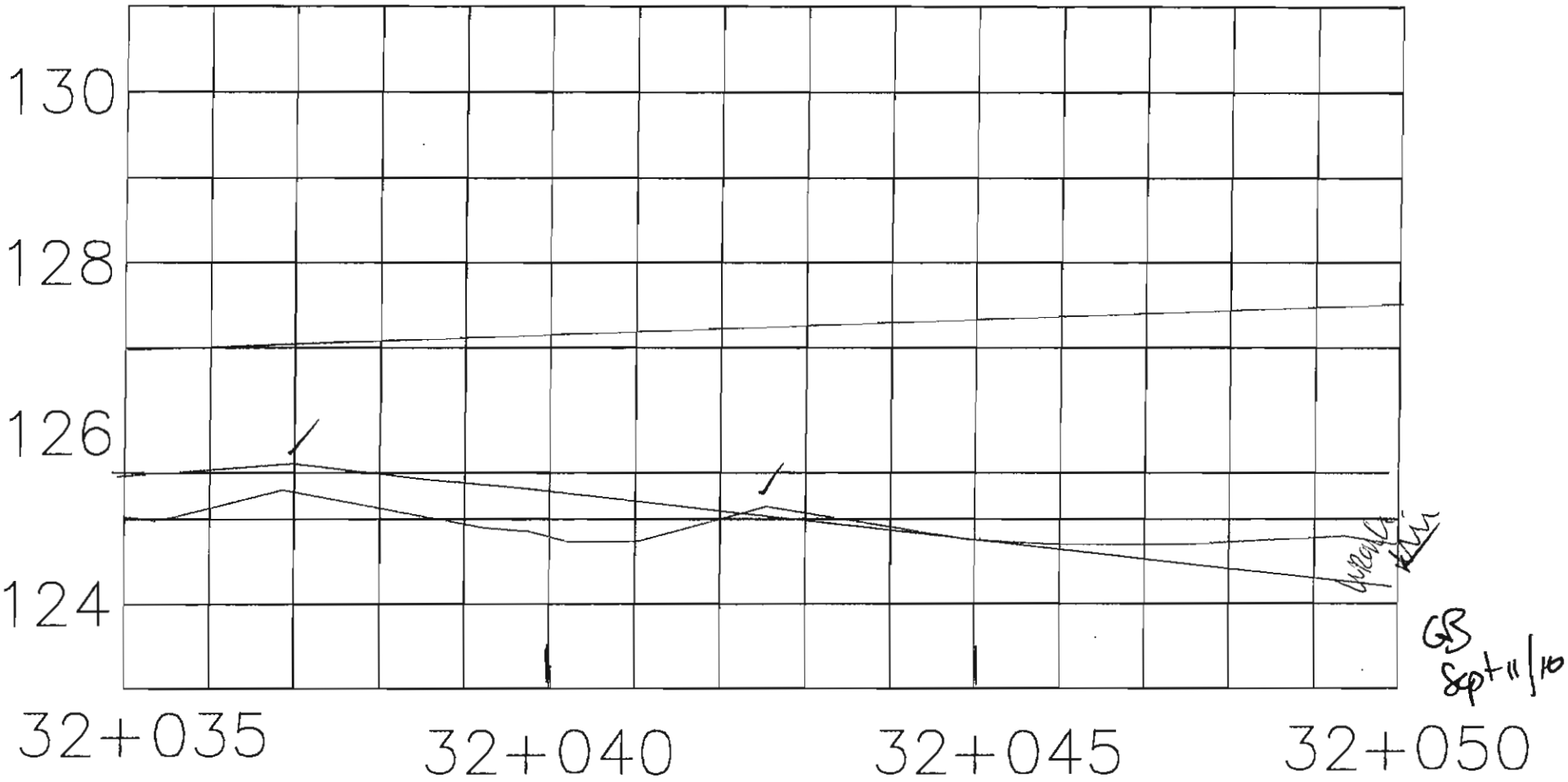
——— Target surface

——— Manual probing

Date: 11-09-10

Page:6 of 7

Par: Hugues Gagnon



Station: 32+35 @ 32+050

Dat11-09-10

Page: 7-7

Par: Hugues Gagnon

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 32+050 Offset	SHIFT: NIGHT :☐ DAY :☒	DATE : 11-09-20	SHEET 1 OF 6
To Sta. 32+055 Offset	LOCATION: : Bay Goose Dike		
EQUIPMENT:			
DESCRIPTION			

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	MS	GB
2.	Storage areas planned for disposal of removed materials	MS	GB
3.	Occurrence of snow and ice removal method in place	MS	GB N/A
4.	Occurrence of boulders and removal method in place	MS	GB
5.	Occurrence of hummocks and scalping method in place	MS	GB
6.	Occurrence of surface and ground water and its impact mitigation in place	MS	GB
7.	Presence of other unsuitable materials and removal method in place	MS	GB
8.	Soil frozen or thawed and measures taken	N/A MS	GB N/A
9.	Blasting requirement to remove unsuitable material and safety measure checked	N/A MS	GB N/A
10.	Adjustment made to suit design in field	MS	GB NONE REQUIRED
11.	Final walkover inspection before re-sloping or fill placement	MS	GB
12.	"As-excavated" survey conducted	MS	GB
13.	Final sounding conducted of lake bottom surface	MS	GB

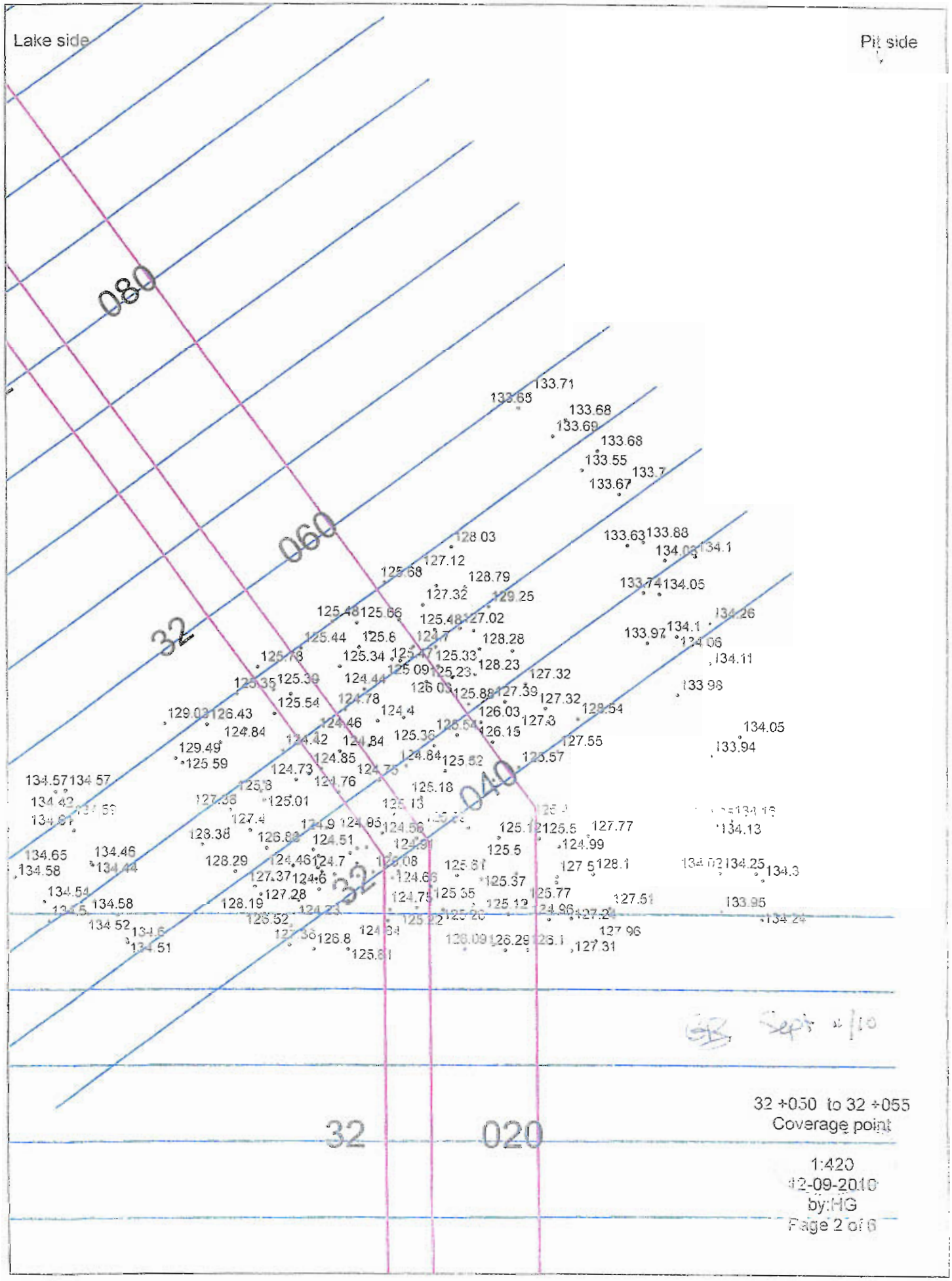
REMARKS : 1) SILT SOUNDINGS TAKEN, BUT NOT REMOVED (0.1 to 1.1m THICK)
2) BACKFILL APPROVED TO 32+095m (CREST)

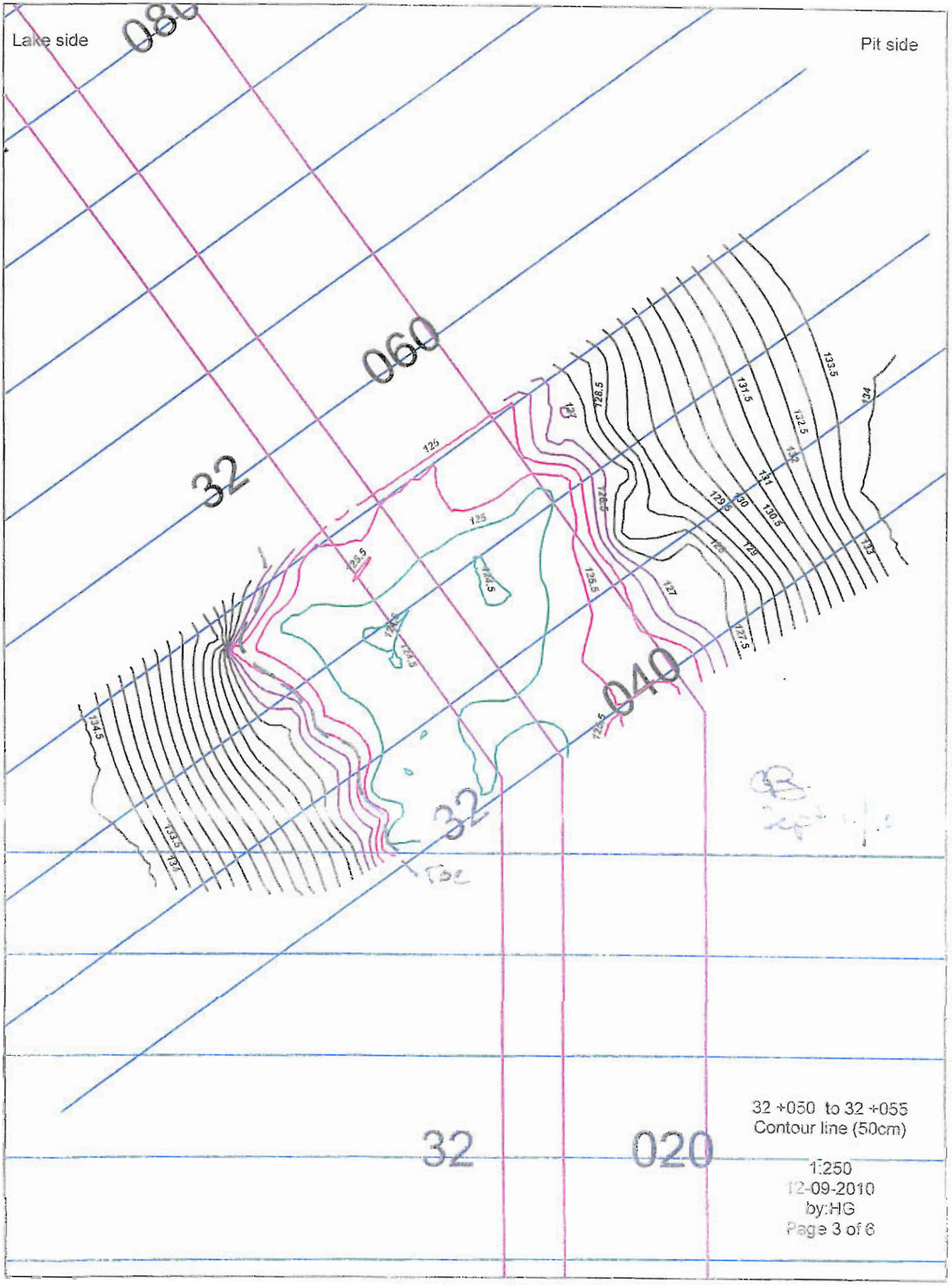
DEVIATIONS : (Attach list if necessary)

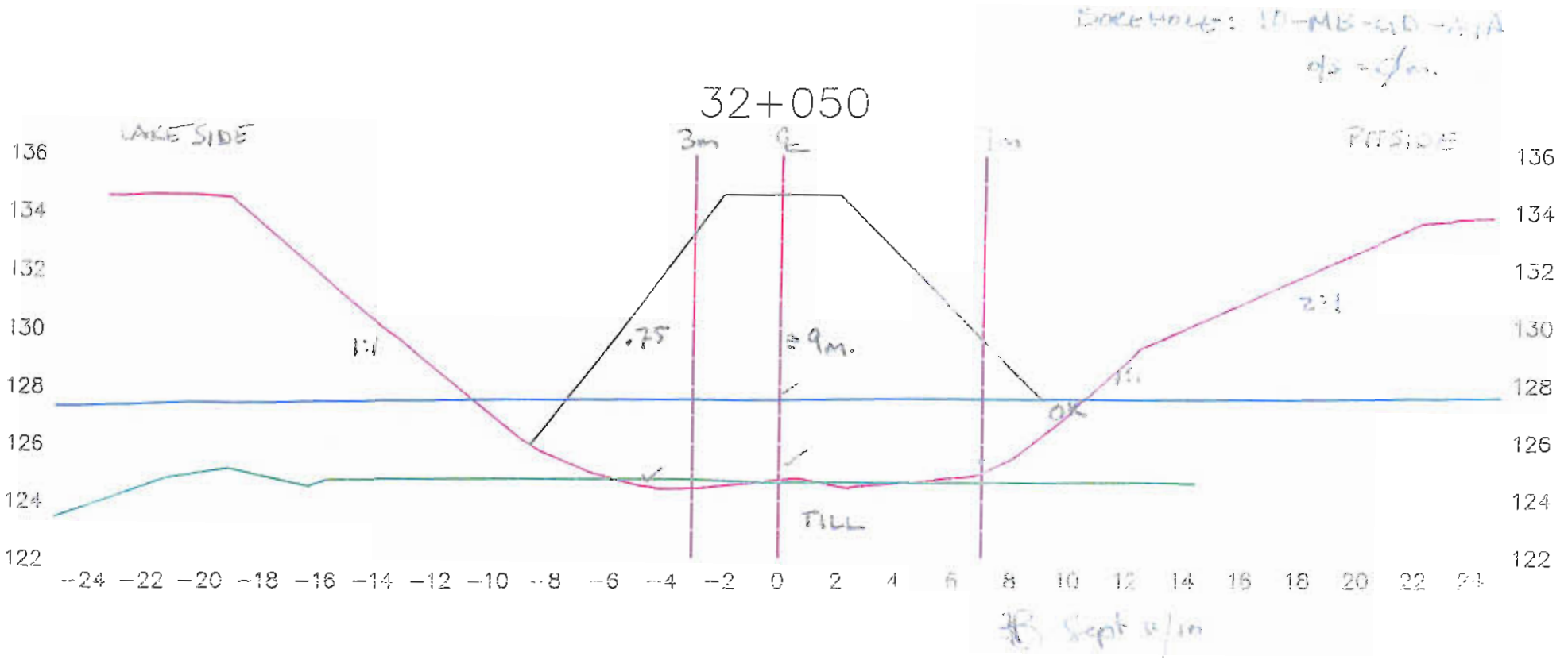
DATE OF RECTIFICATION :

SURVEY VERIFICATION	ACCEPTED BY QA Manager :	ACCEPTED BY OWNER :
NAME: MAXIME GILBERT	NAME: GRANT BLENIS	NAME:
SIGNATURE : Maxime Gilbert	SIGNATURE :	SIGNATURE :
DATE 11-09-2010	DATE SEPT 11, 2010	DATE

15:30 16h05


Lake side
Pit side
080
060
040
020
32
32
32
133.71
133.68
133.68
133.69
133.68
133.55
133.7
133.67
128.03
127.12
125.68
128.79
127.32
129.25
125.48
125.66
125.48
127.02
125.44
125.6
124.7
128.28
125.78
125.34
125.33
128.23
125.35
125.39
124.44
125.09
125.23
127.32
125.54
124.78
124.4
125.88
127.39
127.32
129.03
126.43
124.84
124.46
126.03
127.3
128.54
129.49
125.59
124.42
124.84
125.36
126.15
127.55
125.57
124.84
125.82
124.73
124.85
124.76
125.18
134.57
134.57
134.42
134.61
125.01
127.4
124.9
124.95
124.56
125.12
125.5
127.77
134.13
128.38
126.88
124.51
124.99
134.65
134.46
134.58
134.44
128.29
124.46
124.7
125.5
127.5
128.1
134.25
134.3
127.37
124.6
124.66
125.37
134.54
127.28
124.75
125.35
125.77
127.51
133.95
128.19
124.23
125.12
124.96
127.24
134.52
125.52
125.22
125.20
134.6
126.8
124.84
126.29
126.1
127.96
134.51
125.81
127.31
Sept 21/10
32 +050 to 32 +055
Coverage point
1:420
12-09-2010
by:HG
Page 2 of 6


Lake side
Pit side
080
060
040
020
32
32
32
125
125.5
124.5
125.5
124.5
125.5
125.5
127
127.5
128.5
129
129.5
130
130.5
131
131.5
132
132.5
133
133.5
134
134.5
135
135.5
136
32 +050 to 32 +055
Contour line (50cm)
1:250
12-09-2010
by:HG
Page 3 of 6



Lake bed soil

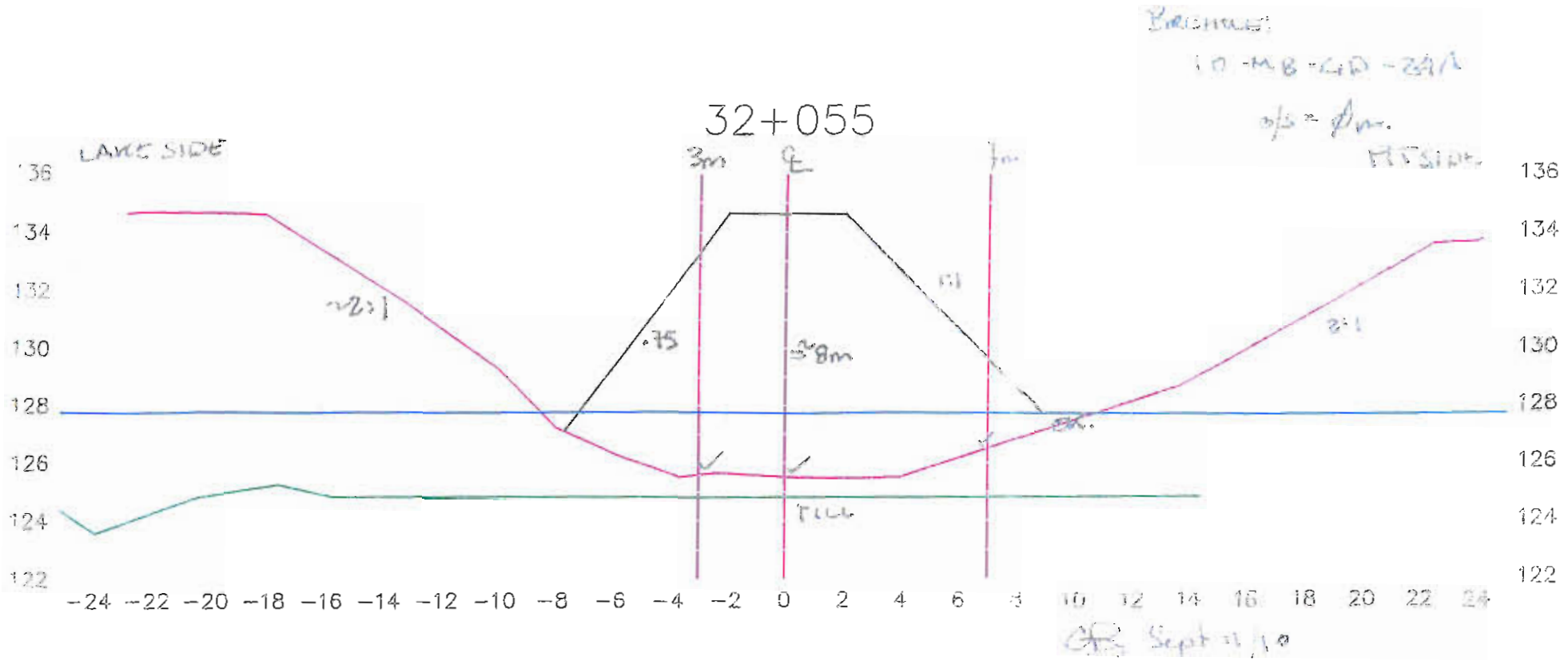
Dike

Target surface

Manual probing

Date: 12-09-10

Par: Hugues Gagnon



Lake bed soil

Dike

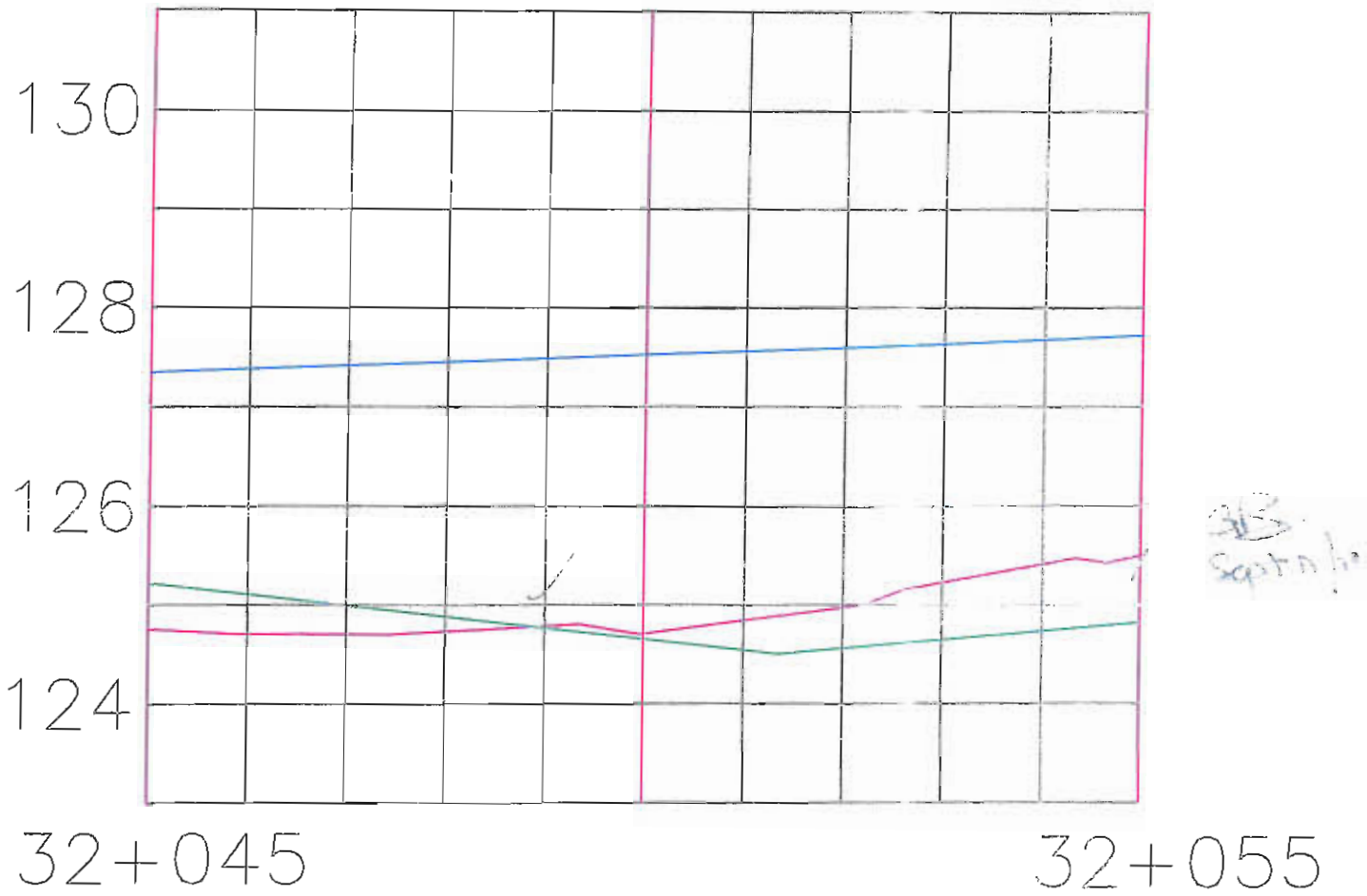
Target surface

Manual probing

Date: 12-09-10

Page: 5 of 6

Par: Hugues Gagnon



Station: 32+45 @ 32+055

Date: 12-09-10

Page: 6 OF 6

Par: Hugues Gagnon

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 32+055 Offset	SHIFT: NIGHT: ☐ DAY: ☒	DATE: 11 Sept 2010	SHEET 1 OF 6
To Sta. 32+060 Offset	LOCATION: Bay Goose Dike, South portion		
EQUIPMENT:			
DESCRIPTION			

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	MA	GB
2.	Storage areas planned for disposal of removed materials	MA	GB
3.	Occurrence of snow and ice removal method in place	MA	N/A GB
4.	Occurrence of boulders and removal method in place	MA	GB
5.	Occurrence of hummocks and scalping method in place	MA	GB
6.	Occurrence of surface and ground water and its impact mitigation in place	MA	GB
7.	Presence of other unsuitable materials and removal method in place	MA	GB
8.	Soil frozen or thawed and measures taken	N/A MA	N/A GB
9.	Blasting requirement to remove unsuitable material and safety measure checked	N/A MA	N/A GB
10.	Adjustment made to suit design in field	MA	GB none required
11.	Final walkover inspection before re-sloping or fill placement	MA	GB
12.	"As-excavated" survey conducted	MA	GB
13.	Final sounding conducted of lake bottom surface	MA	GB

REMARKS: (1) SILT SOUNDINGS TAKEN 32+055 to 32+060; THICKNESS 0.2 to 0.6m. NOT CLEANED

(2) BACKFILL APPROVED TO 32+049 (CREST) + 32+060 (toe)

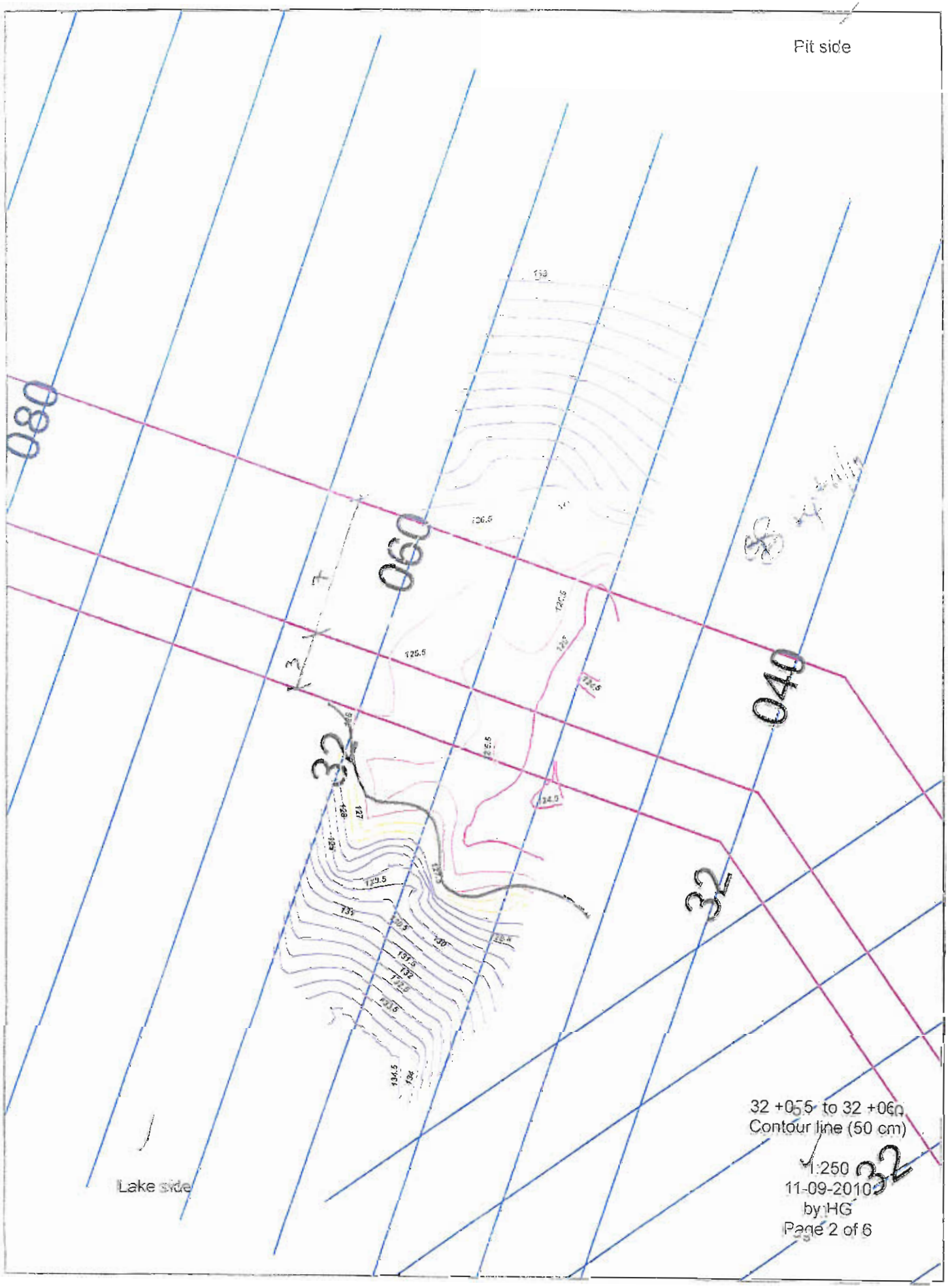
DEVIATIONS: (Attach list if necessary)

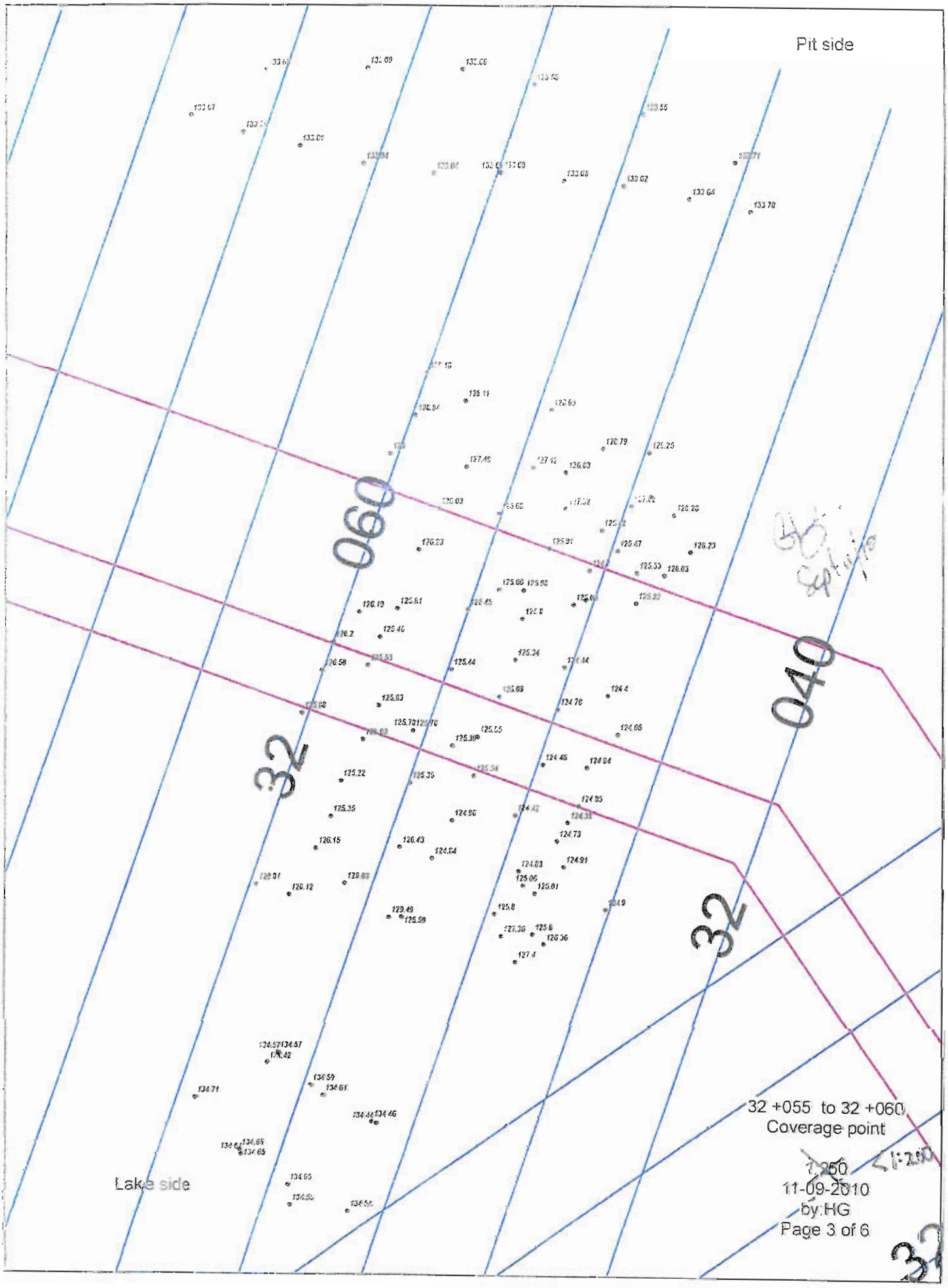
DATE OF RECTIFICATION:

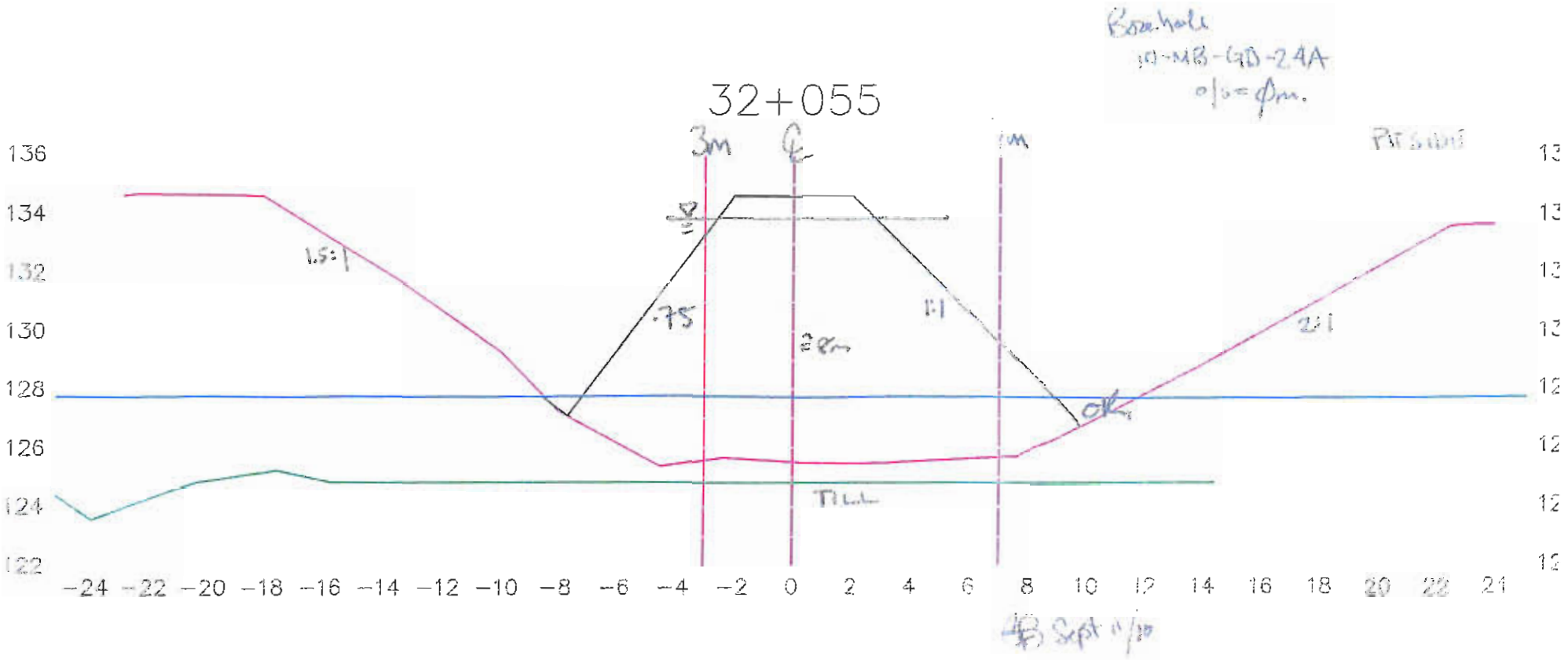
SURVEY VERIFICATION	ACCEPTED BY QA Manager:	ACCEPTED BY OWNER:
NAME: MAXIME GILBERT	NAME: GRANT BURNS	NAME:
SIGNATURE:	SIGNATURE: GB	SIGNATURE:
DATE 11-09-2010	DATE Sept 11/10	DATE

@ 19:56 MA @ 20:20

copy of the original 1/6


Pit side
080
060
040
32
32
32
125.5
125.5
125.5
124.5
127
129.5
130
131.5
132
134.5
Lake side
32 +055 to 32 +060
Contour line (50 cm)
1:250
11-09-2010
by HG


Pit side
060
040
32
32
Lake side
32 +055 to 32 +060
Coverage point
1:250
11-09-2010
by:HG
Page 3 of 6



Lake bed soil

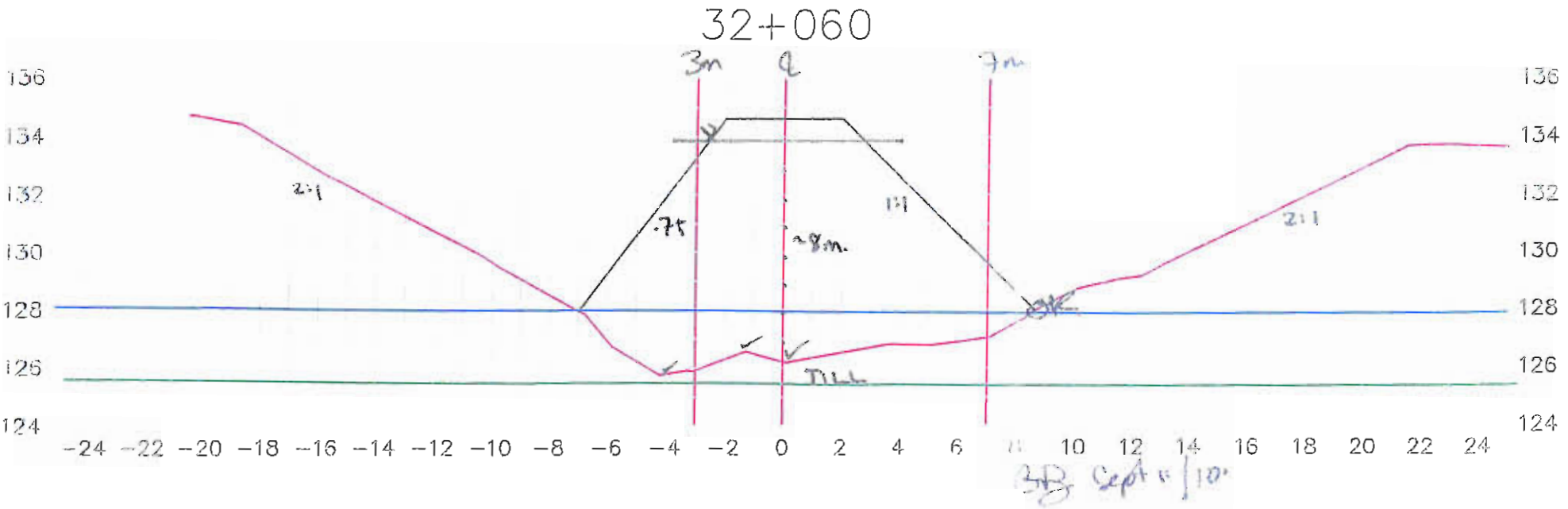
Dike

Target surface

Manual probing

Date: 11-09-10

Par: Hugues Gagnon



Lake bed soil

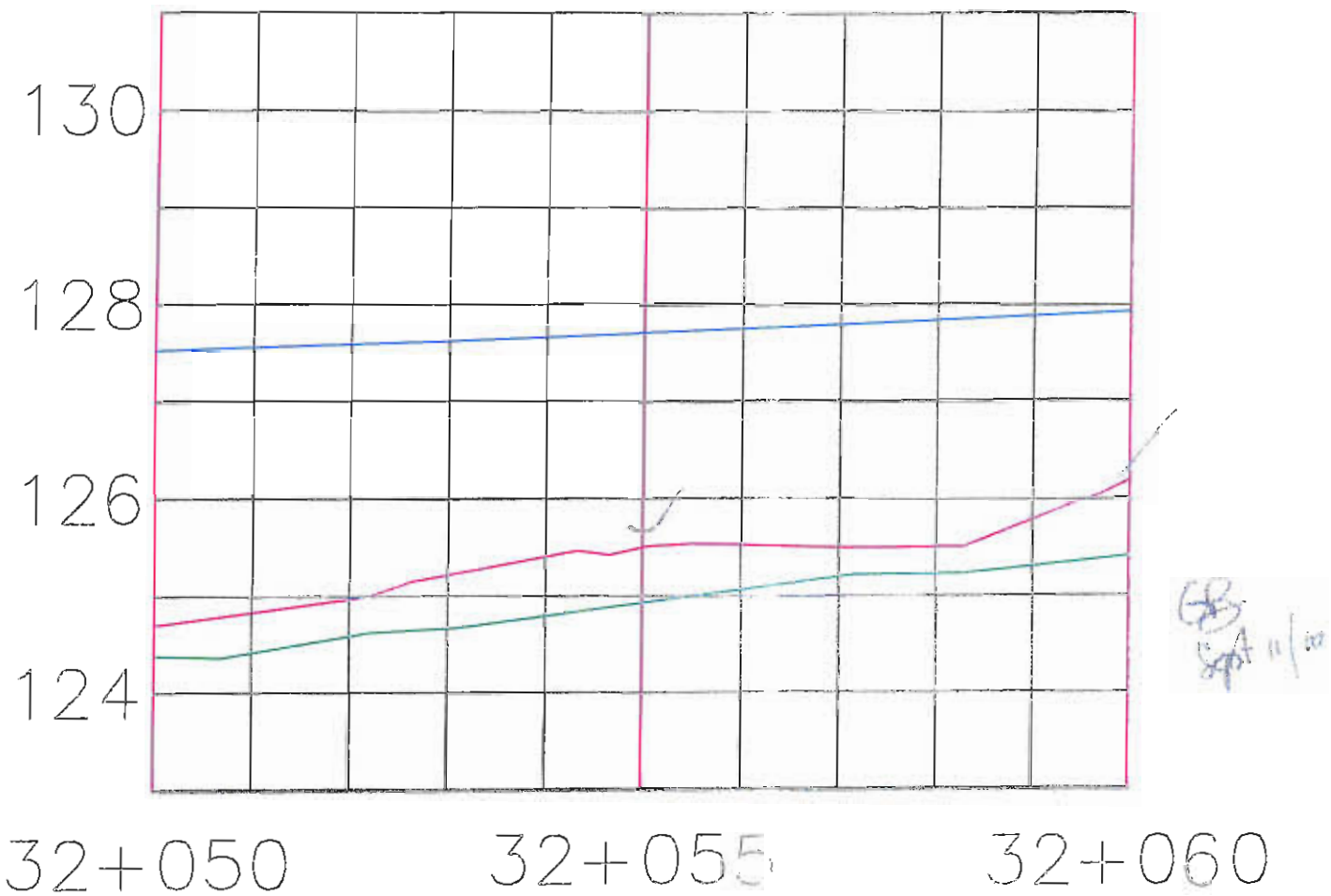
Dike

Target surface

Manual probing

Date: 11-09-10

Par: Hugues Gagnon



Station: 32+050 @ 32+060

Date: 11-09-10

Par: Hugues Gagnon

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 32+060 Offset	SHIFT: NIGHT ☐ DAY ☒	DATE: 12-09-10	SHEET 1 OF 6
To Sta. 32+065 Offset	LOCATION: Bay goose dike, South portion		
EQUIPMENT:			
DESCRIPTION			

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	MG	GB
2.	Storage areas planned for disposal of removed materials	MG	GB
3.	Occurrence of snow and ice removal method in place	MG	GB N/A
4.	Occurrence of boulders and removal method in place	MG	GB
5.	Occurrence of hummocks and scalping method in place	MG	GB
6.	Occurrence of surface and ground water and its impact mitigation in place	MG	GB
7.	Presence of other unsuitable materials and removal method in place	MG	GB
8.	Soil frozen or thawed and measures taken	N/A MG	GB N/A
9.	Blasting requirement to remove unsuitable material and safety measure checked	N/A MG	GB N/A
10.	Adjustment made to suit design in field	MG	GB NONE REQUIRED
11.	Final walkover inspection before re-sloping or fill placement	MG	GB
12.	"As-excavated" survey conducted	MG	GB
13.	Final sounding conducted of lake bottom surface	MG	GB

REMARKS : (1) SILT SOUNDING BETWEEN 32+060 to +065 THICKNESS 0.4 to 0.9m
(2) BACKFILL APPROVED TO 32+054(m) (CREST)

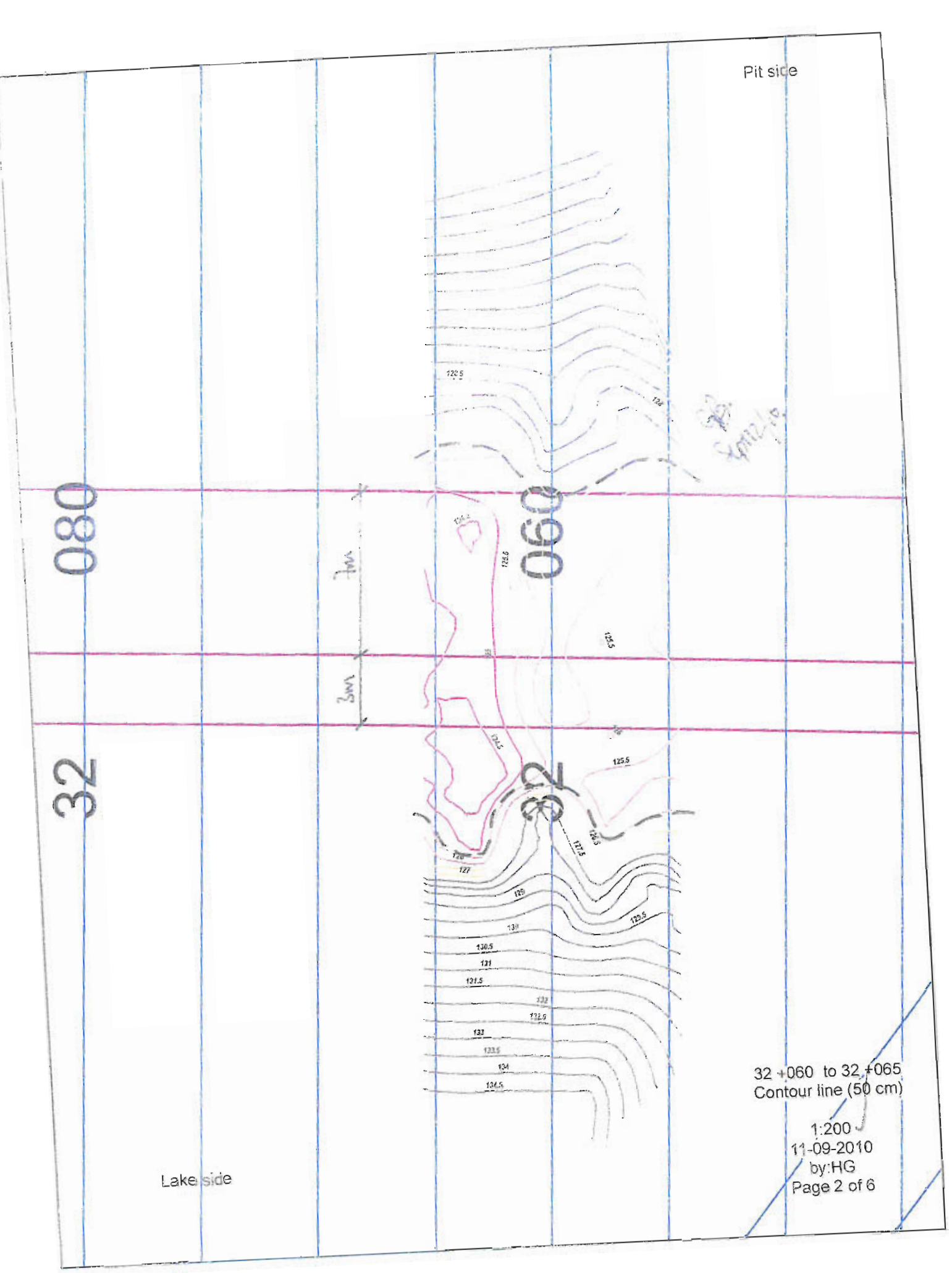
DEVIATIONS : (Attach list if necessary)

DATE OF RECTIFICATION :

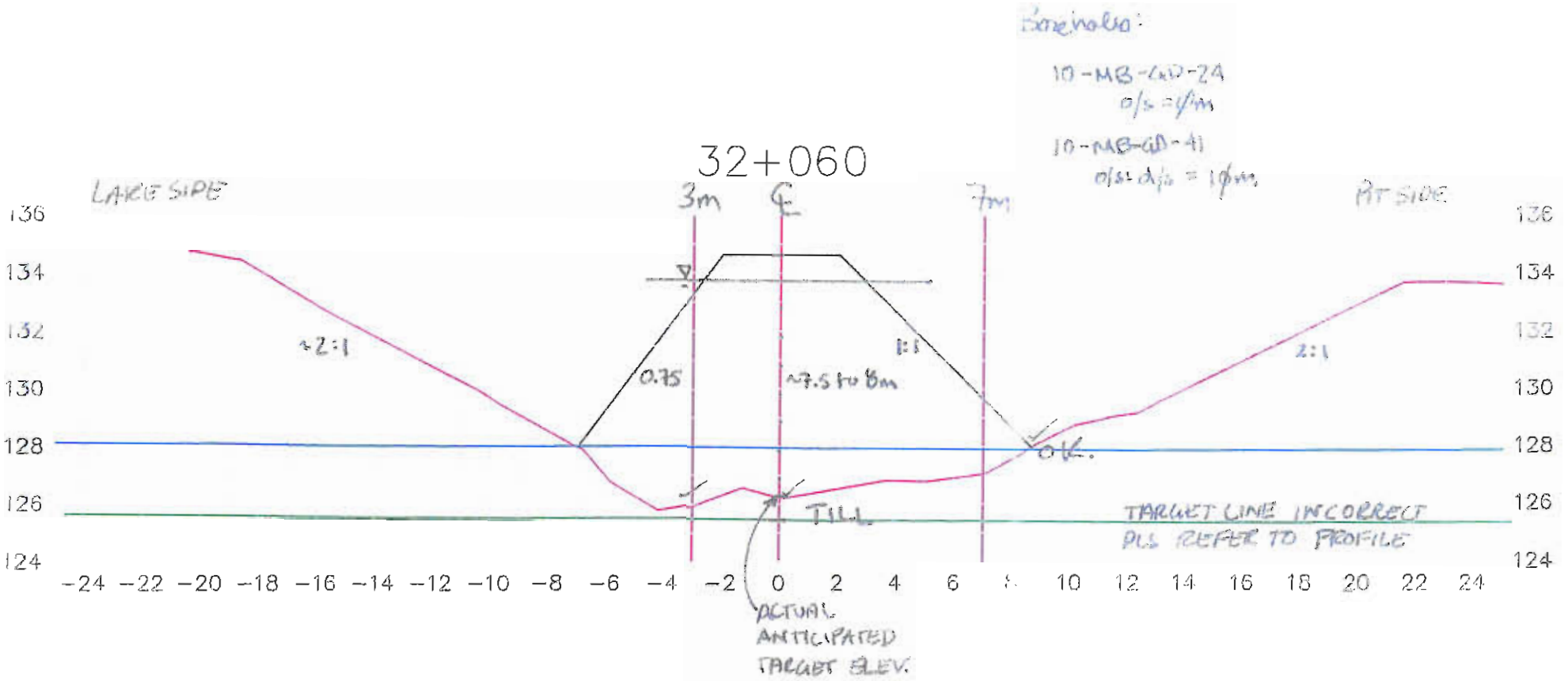
SURVEY VERIFICATION	ACCEPTED BY QA Manager :	ACCEPTED BY OWNER :
NAME: MAXIME GILBERT	NAME: GRANT BURNS	NAME:
SIGNATURE : Maxime Gilbert	SIGNATURE	SIGNATURE :
DATE 12-09-2010	DATE Sept 12, 2010	DATE

10:00 AM

Shift 18


Pit side
080
060
32
32
Lake side
32 +060 to 32 +065
Contour line (50 cm)
1:200
11-09-2010
by:HG
Page 2 of 6


Pit side
080
060
32
32
7m
3m
Lake side
32 +060 to 32 +065
Coverage point
1:200
11-09-2010
by:HG
Page 3 of 6



Lake bed soil

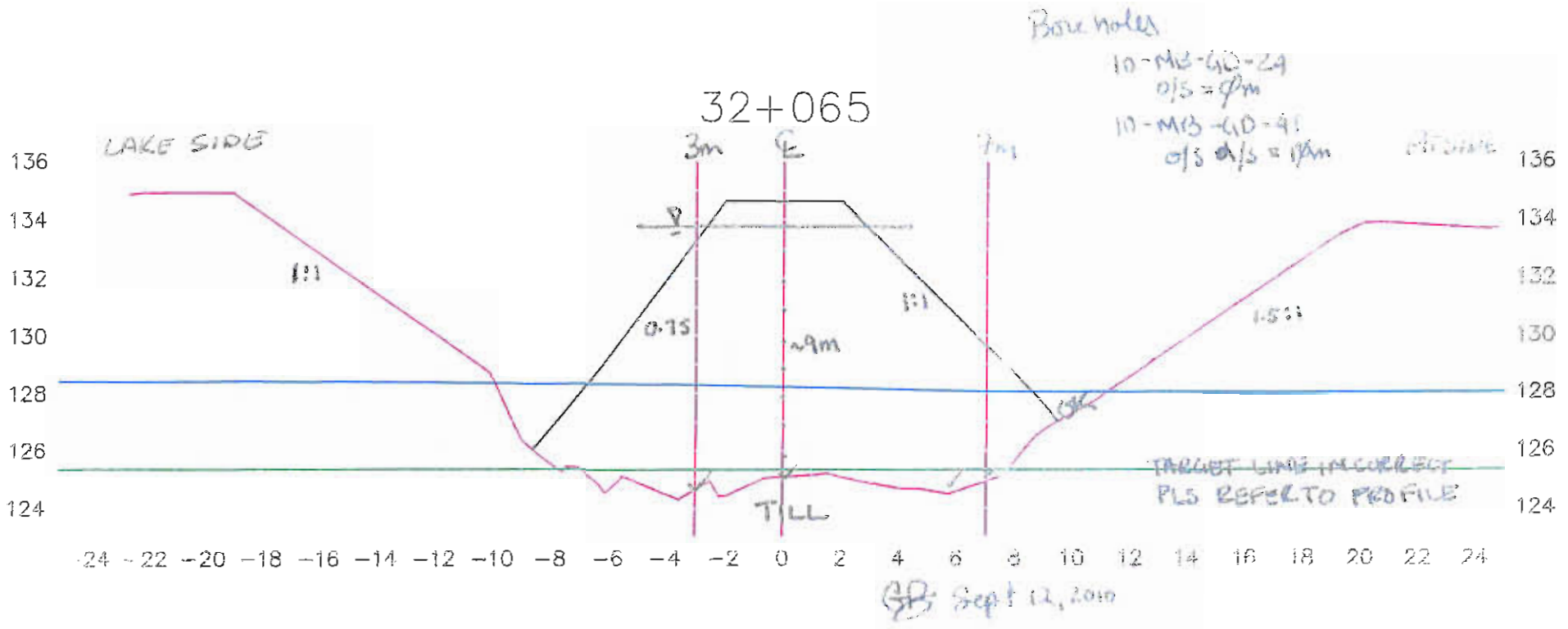
Dike

Target surface

Manual probing

Date: 12-09-10

Par: Hugues Gagnon



Lake bed soil

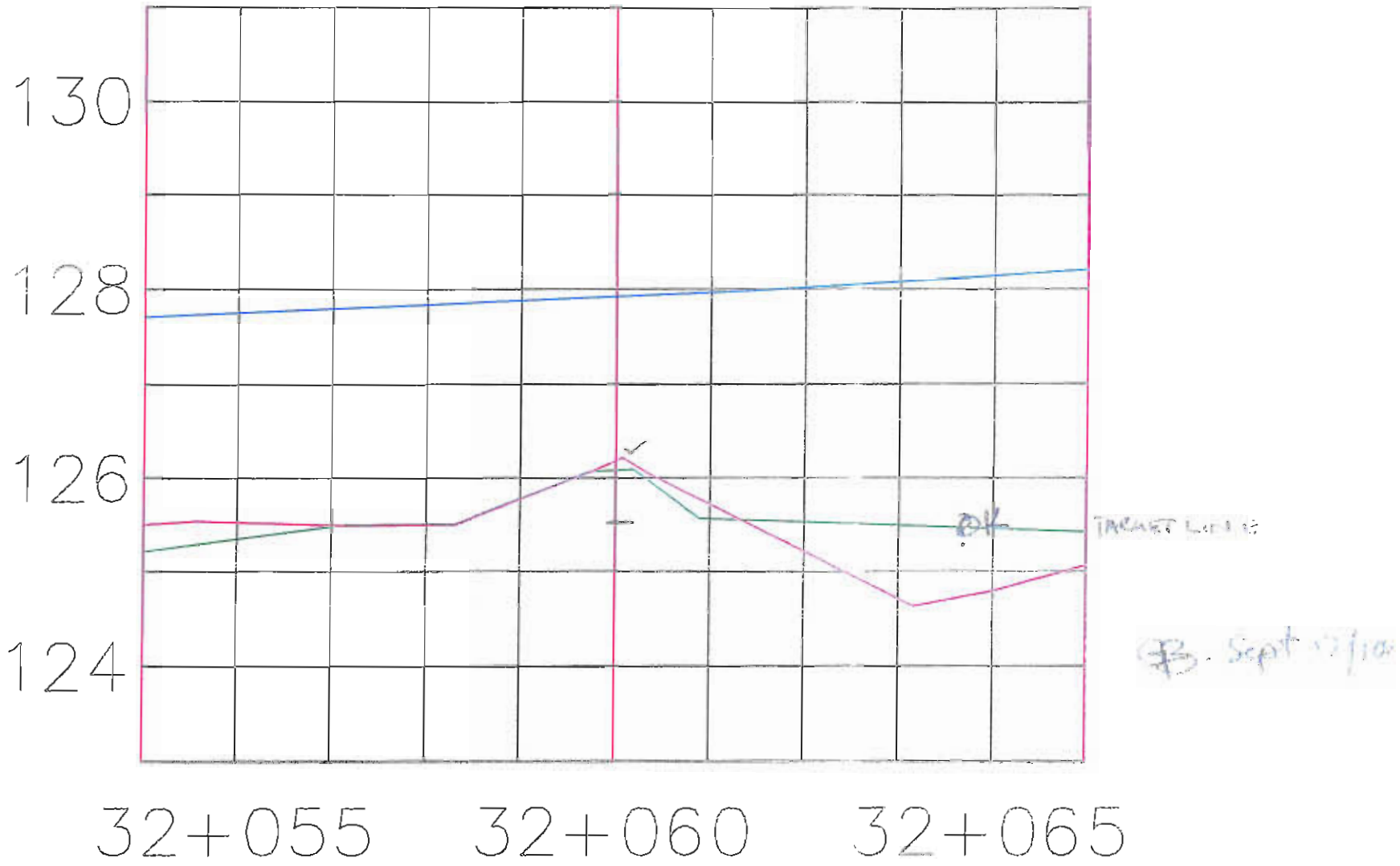
Dike

Target surface

Manual probing

Date: 12-09-10

Par: Hugues Gagnon



Station: 32+055 @ 32+065

Date: 12-09-10
Page: 6 OF 6
Par: Hugues Gagnon

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 32+065 Offset	SHIFT: NIGHT ☐ DAY : ☒	DATE : 12-09-10	SHEET 1 OF 6
To Sta. 32+070 Offset	LOCATION: : Bay Goose dike, South portion		
EQUIPMENT:			
DESCRIPTION			

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	MS	GB.
2.	Storage areas planned for disposal of removed materials	MS	GB.
3.	Occurrence of snow and ice removal method in place	MS	GB. N/A
4.	Occurrence of boulders and removal method in place	MS	GB
5.	Occurrence of hummocks and scalping method in place	MS	GB
6.	Occurrence of surface and ground water and its impact mitigation in place	MS	GB
7.	Presence of other unsuitable materials and removal method in place	MS	GB.
8.	Soil frozen or thawed and measures taken	N/A MS	GB N/A
9.	Blasting requirement to remove unsuitable material and safety measure checked	N/A MS	GB N/A
10.	Adjustment made to suit design in field	MS	GB NONE REQUIRED
11.	Final walkover inspection before re-sloping or fill placement	MS	GB.
12.	"As-excavated" survey conducted	MS	GB
13.	Final sounding conducted of lake bottom surface	MS	GB

REMARKS : ① SILT SOUNDINGS 32+065 to 32+070 APPROX 0.4 to 0.6m THICK.
② BACKFILL APPROVED TO CREST 32+059m + TOE 32+070.

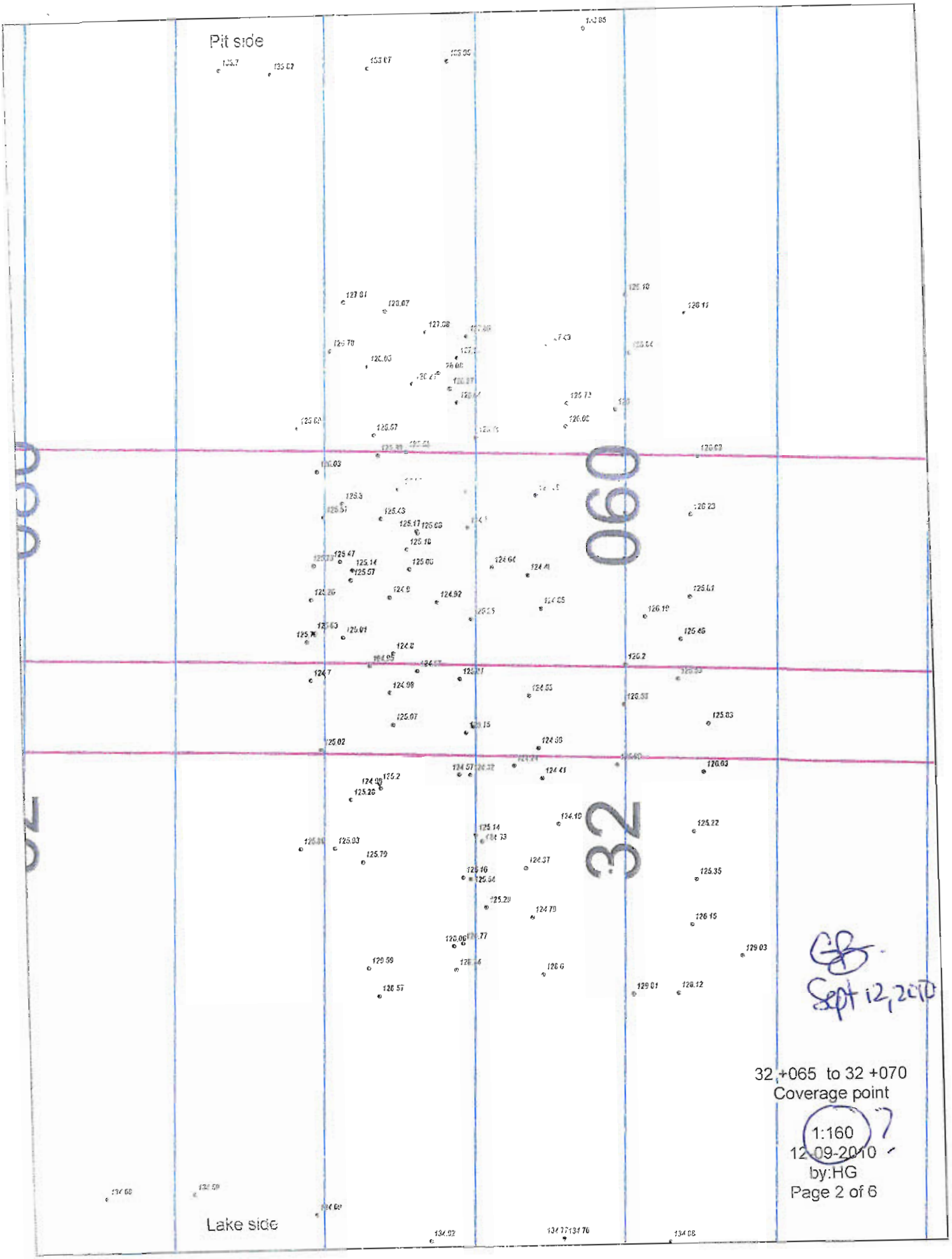
DEVIATIONS : (Attach list if necessary)

DATE OF RECTIFICATION :

SURVEY VERIFICATION	ACCEPTED BY QA Manager :	ACCEPTED BY OWNER :
NAME: MAXIME GILBERT	NAME: GRANT BURNS	NAME:
SIGNATURE :	SIGNATURE :	SIGNATURE :
DATE 12-09-2010	DATE Sept 12, 2010	DATE

19mm 35mm.

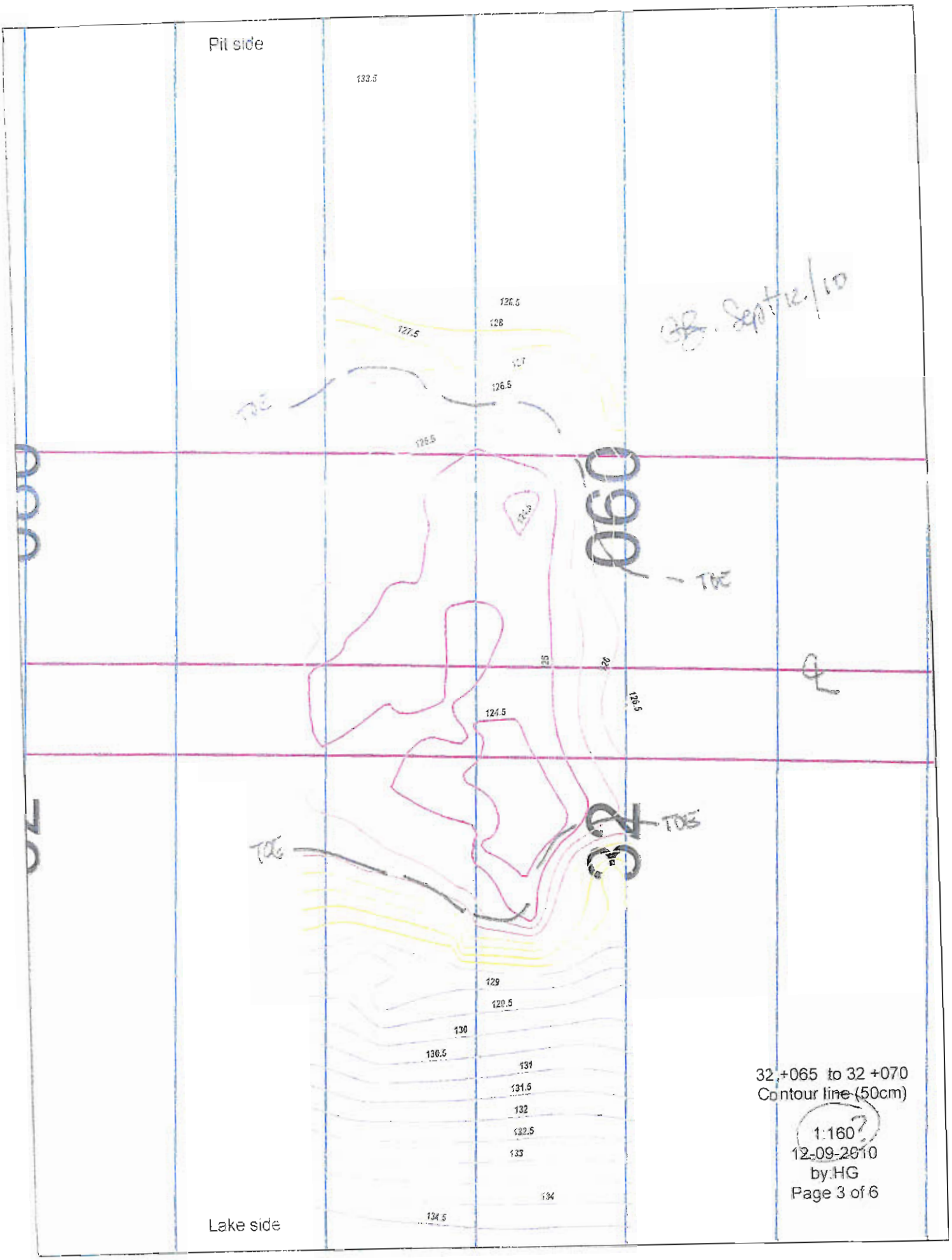
COPY OF ORIGINAL 1/6

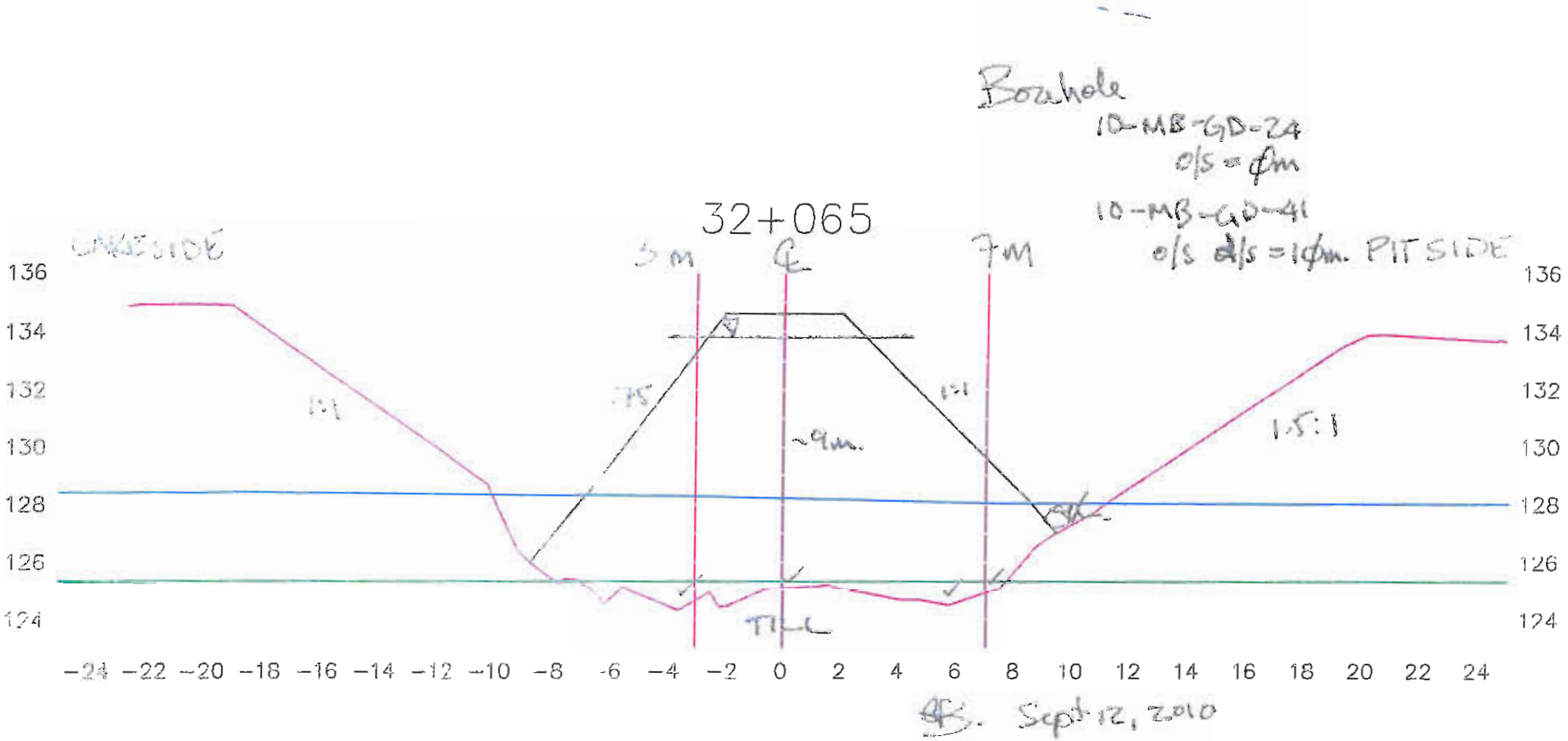


Sept 12, 2010

32 +065 to 32 +070
Coverage point

1:160
12-09-2010
by:HG


Pit side
133.5
126.5
128
127.5
127
126.5
125.5
124.5
129
129.5
130
130.5
131
131.5
132
132.5
133
134
134.5
Lake side
32,+065 to 32 +070
Contour line (50cm)
1:160
12-09-2010
by:HG
Page 3 of 6



Lake bed soil

Dike

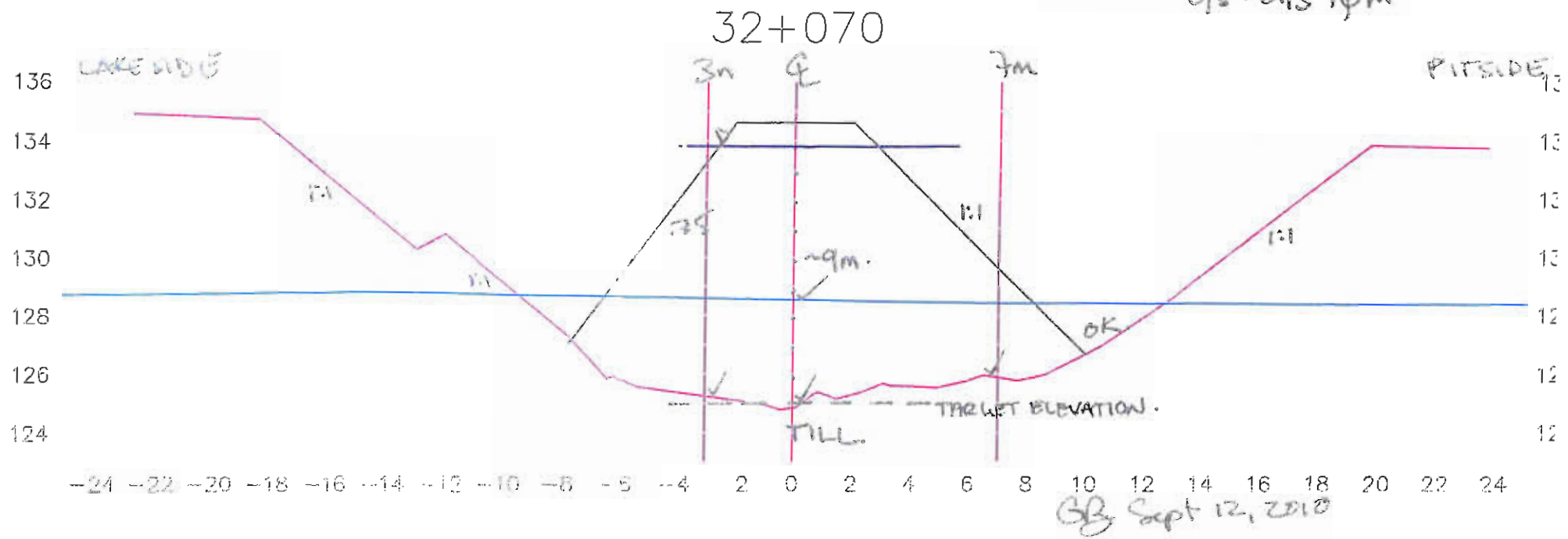
Target surface

Manual probing

Date: 12-09-10

Par: Hugues Gagnon

Borehole 10-MB-GD-41
o/s : d/s 10m



GB Sept 12, 2010

Lake bed soil

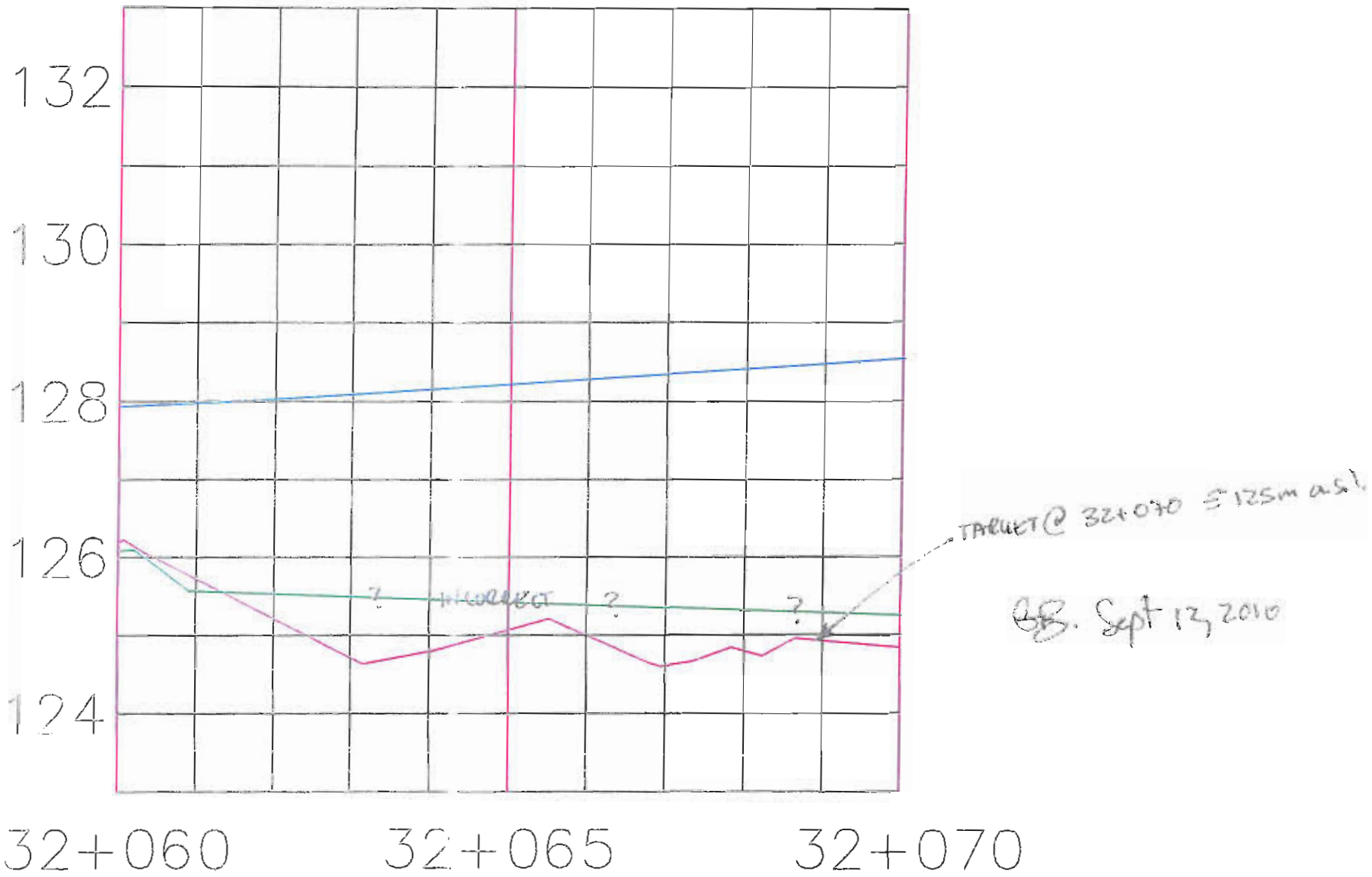
Dike

Target surface NOT INCLUDED AS ISSUE W/ PROGRAM.

Manual probing

Date: 12-09-10

Par: Hugues Gagnon



Station: 32+060 @ 32+070

Date: 12-09-10

Par: Hugues Gagnon

GOLDER

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 32+070 Offset	SHIFT: NIGHT: ☐ DAY: ☒	DATE: 13-09-10	SHEET 1 OF 6
To Sta. 32+075 Offset	LOCATION: Bay Goose Dike, South portion		
EQUIPMENT:			
DESCRIPTION			

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	MS	GB.
2.	Storage areas planned for disposal of removed materials	MS	GB.
3.	Occurrence of snow and ice removal method in place	MS	GB. N/A.
4.	Occurrence of boulders and removal method in place	MS	GB.
5.	Occurrence of hummocks and scalping method in place	MS	GB
6.	Occurrence of surface and ground water and its impact mitigation in place	MS	GB
7.	Presence of other unsuitable materials and removal method in place	MS	GB
8.	Soil frozen or thawed and measures taken	N/A MS	GB N/A
9.	Blasting requirement to remove unsuitable material and safety measure checked	N/A MS	GB N/A
10.	Adjustment made to suit design in field	MS	GB NONE REQUIRED.
11.	Final walkover inspection before re-sloping or fill placement	MS	GB.
12.	"As-excavated" survey conducted	MS	GB.
13.	Final sounding conducted of lake bottom surface	MS	GB.

REMARKS:
① SILT SOUNDINGS 32+070 to 32+075; THICKNESS 0.1 to 0.8m
② BACKFILL APPROVED TO 32+064 (CREST) + 32+075 (toe).

DEVIATIONS: (Attach list if necessary)

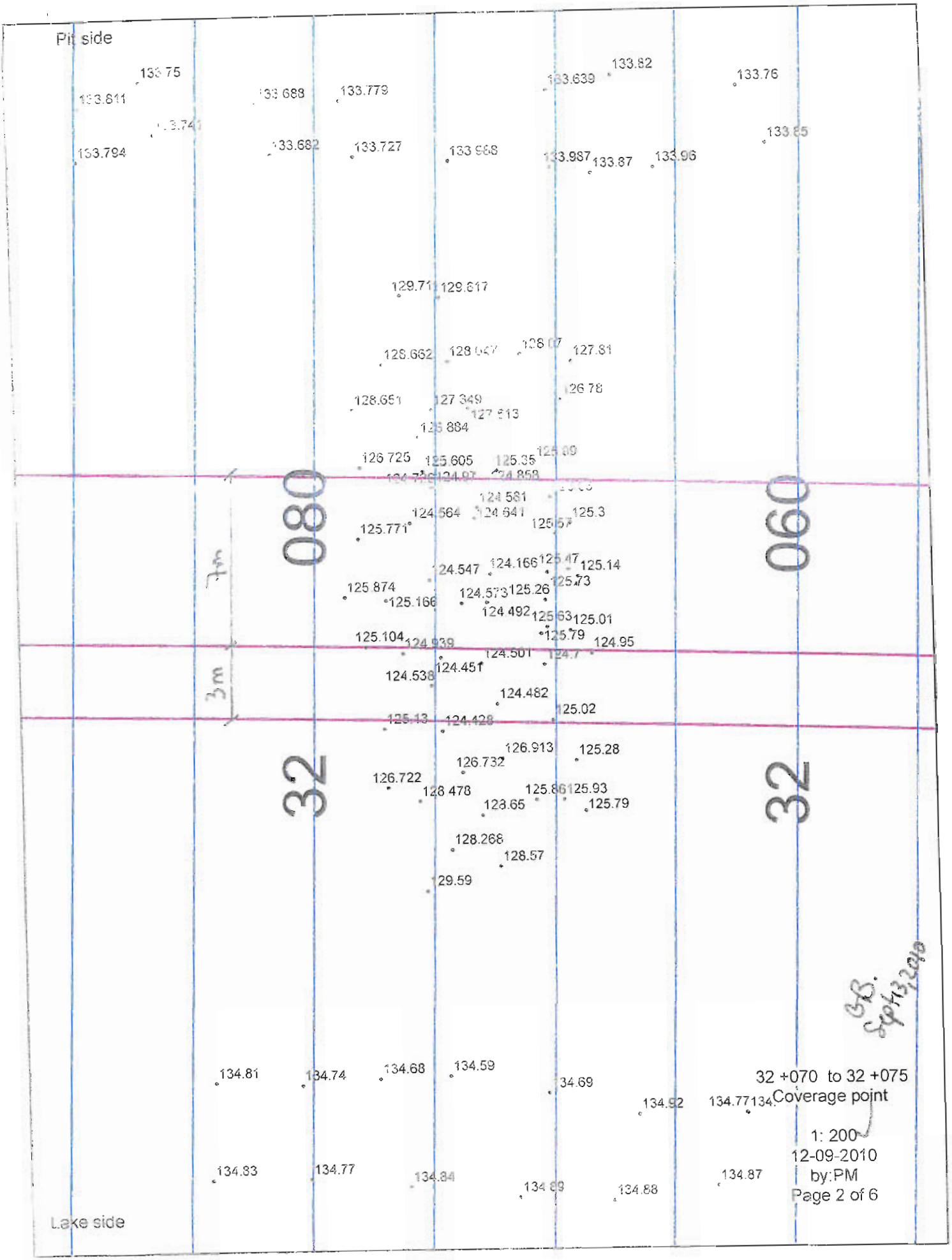
DATE OF RECTIFICATION:

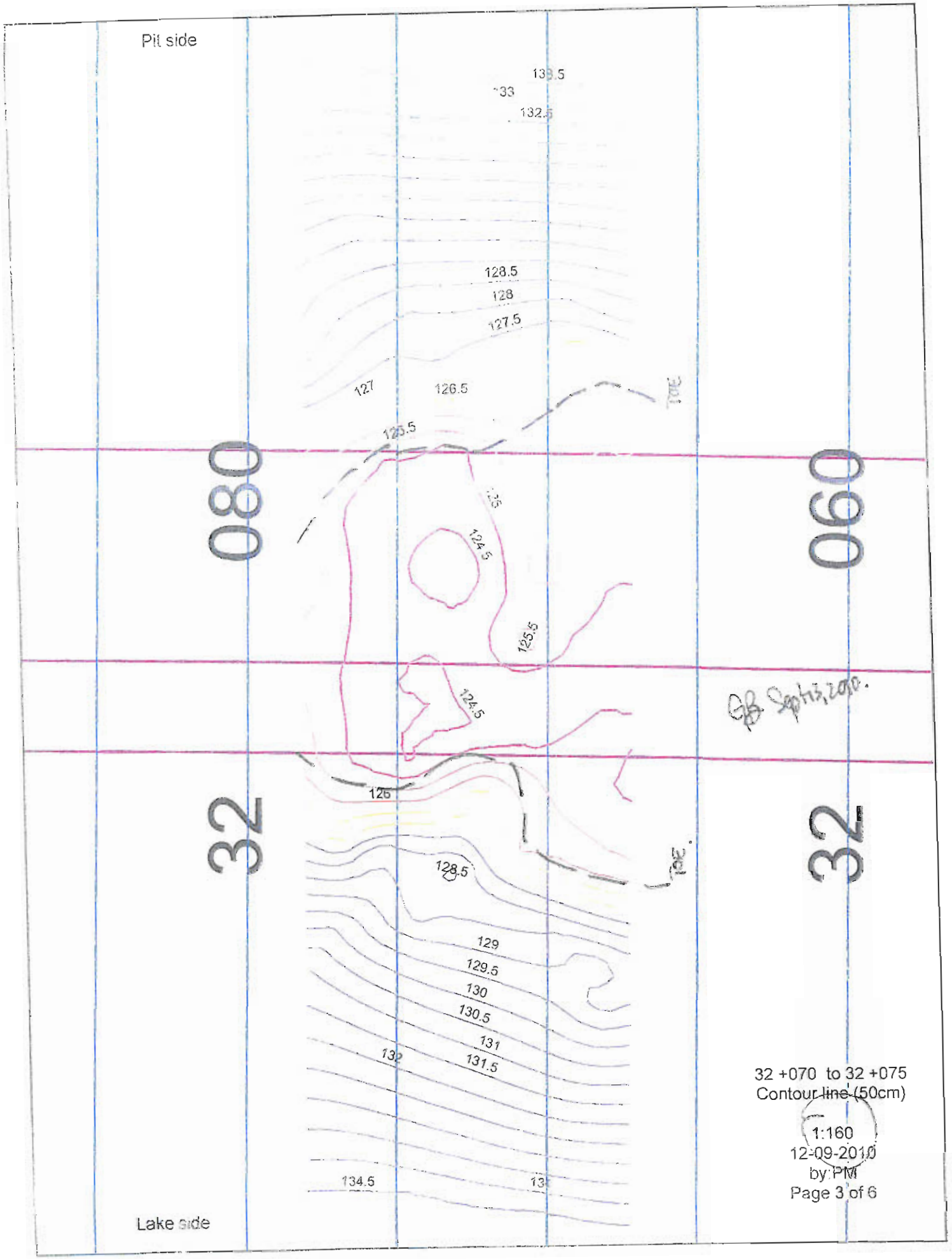
SURVEY VERIFICATION	ACCEPTED BY QA Manager:	ACCEPTED BY OWNER:
NAME: MAXIME GILBERT	NAME: GRANT BURN	NAME:
SIGNATURE: Maxime Rattée	SIGNATURE: GB	SIGNATURE:
DATE 13-09-2010	DATE SEPT 13, 2010.	DATE

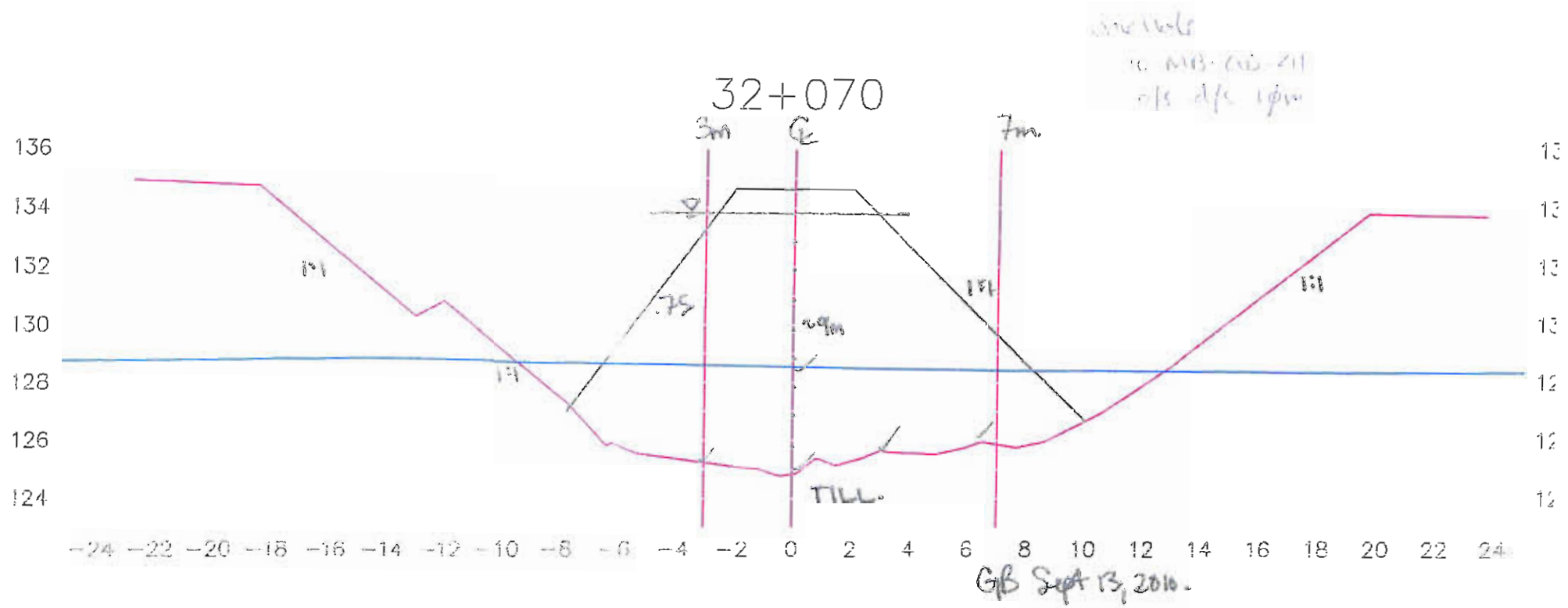
Arr. 5:55

7hr:50

COPY OF ORIGINAL 1/6


Pit side
133.75
133.811
133.794
133.688
133.779
133.682
133.727
133.968
133.82
133.639
133.987
133.87
133.96
133.76
133.85
129.711
129.617
128.662
127.81
128.651
127.349
126.78
126.725
125.605
125.35
124.581
124.564
124.641
125.3
125.771
124.547
124.166
125.14
125.874
125.166
124.573
125.26
125.73
124.492
125.63
125.01
125.104
124.939
125.79
124.95
124.501
124.451
124.538
124.482
125.02
125.13
124.428
126.913
125.28
126.732
126.722
128.478
125.86
125.93
123.65
125.79
128.268
128.57
129.59
080
060
32
32
3m
3m
134.81
134.74
134.68
134.59
134.69
134.92
134.77
134.83
134.77
134.84
134.88
134.87
Lake side
32 +070 to 32 +075
Coverage point
1: 200
12-09-2010
by:PM
Page 2 of 6


Pit side
138.5
133
132.5
128.5
128
127.5
127
126.5
125.5
125
124.5
125.5
124.5
126
128.5
129
129.5
130
130.5
131
131.5
132
134.5
080
060
32
32
GB Sept 13, 2010.
32 +070 to 32 +075
Contour line (50cm)
1:160
12-09-2010
by: PM
Page 3 of 6
Lake side



Lake bed soil

Dike

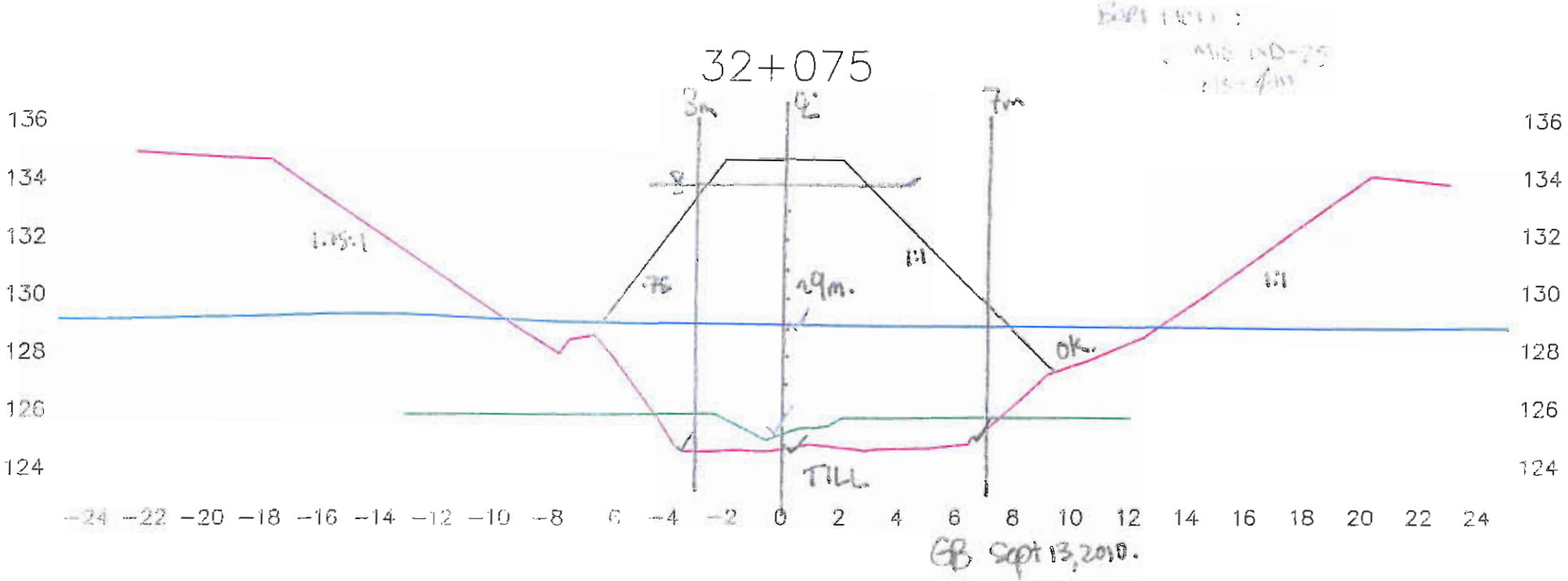
Target surface

ISSUE W MODELLING PROGRAM THEREFORE NOT INCLUDED (IT WAS INCORRECT)

Manual probing

Date: 12-09-10

Par: Pascale martel



Lake bed soil

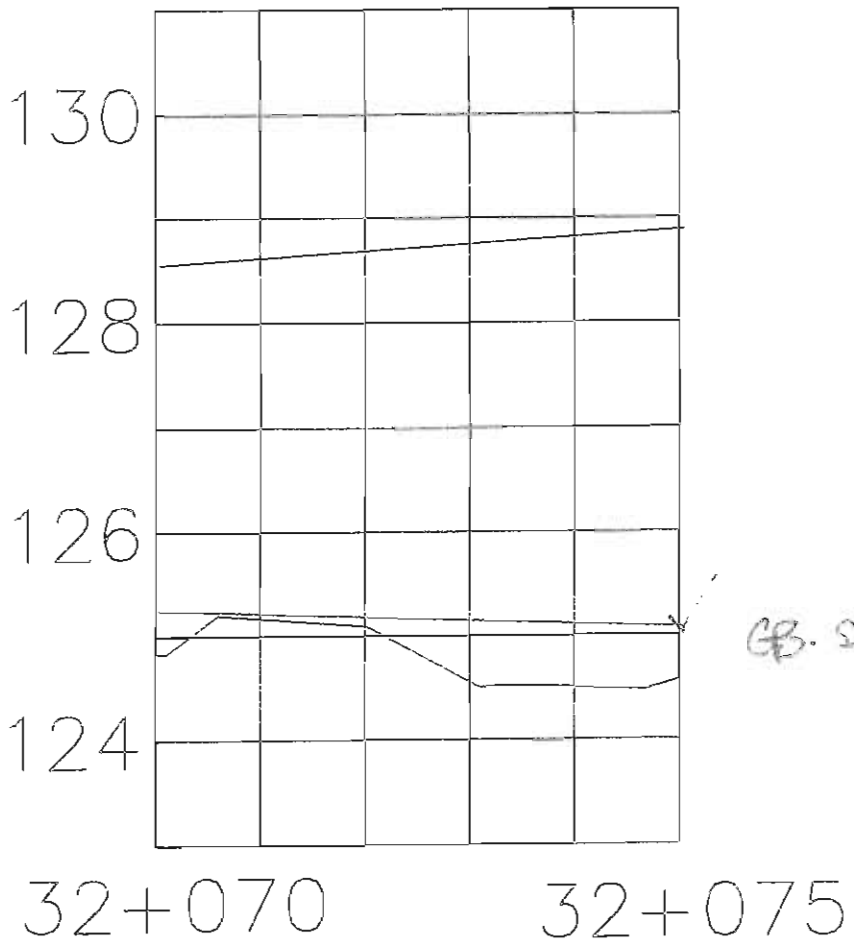
Dike

Target surface

Manual probing

Date: 12-09-10

Par: Pascale martel



GB. Sept 13, 2010.

Station: 32+070 @ 32+075

Date: 12-09-10

Par: Pascale Martel

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 32+075 Offset	SHIFT: NIGHT ☒ DAY ☐	DATE: 13-09-10	SHEET 1 OF 6
To Sta. 32+080 Offset	LOCATION: Bay Goose dike South PORTION		
EQUIPMENT:			
DESCRIPTION			

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	MA	GB
2.	Storage areas planned for disposal of removed materials	MA	GB
3.	Occurrence of snow and ice removal method in place	MA	GB N/A
4.	Occurrence of boulders and removal method in place	MA	GB
5.	Occurrence of hummocks and scalping method in place	MA	GB
6.	Occurrence of surface and ground water and its impact mitigation in place	MA	GB
7.	Presence of other unsuitable materials and removal method in place	MA	GB
8.	Soil frozen or thawed and measures taken	N/A MA	GB N/A
9.	Blasting requirement to remove unsuitable material and safety measure checked	N/A MA	GB N/A
10.	Adjustment made to suit design in field	MA	GB
11.	Final walkover inspection before re-sloping or fill placement	MA	GB
12.	"As-excavated" survey conducted	MA	GB
13.	Final sounding conducted of lake bottom surface	MA	GB

REMARKS :

BACK FILL APPROVED TO 32+069 (CREST)

DEVIATIONS : (Attach list if necessary)

DATE OF RECTIFICATION :

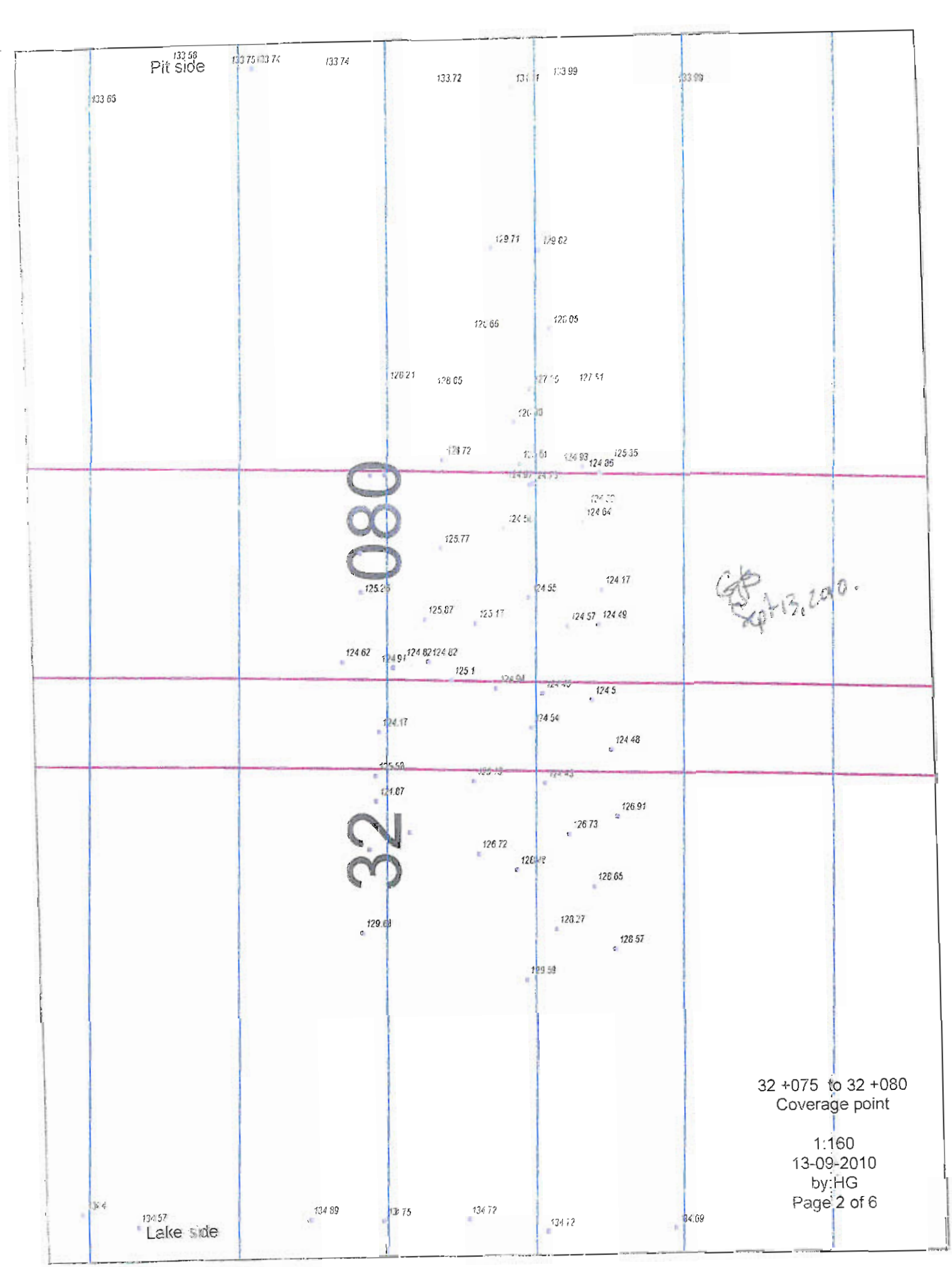
SURVEY VERIFICATION	ACCEPTED BY QA Manager :	ACCEPTED BY OWNER :
NAME: MAXIME GILBERT	NAME: GRANT BURNS	NAME:
SIGNATURE :	SIGNATURE :	SIGNATURE :
DATE 13-09-2010	DATE SEPT 13, 2010	DATE

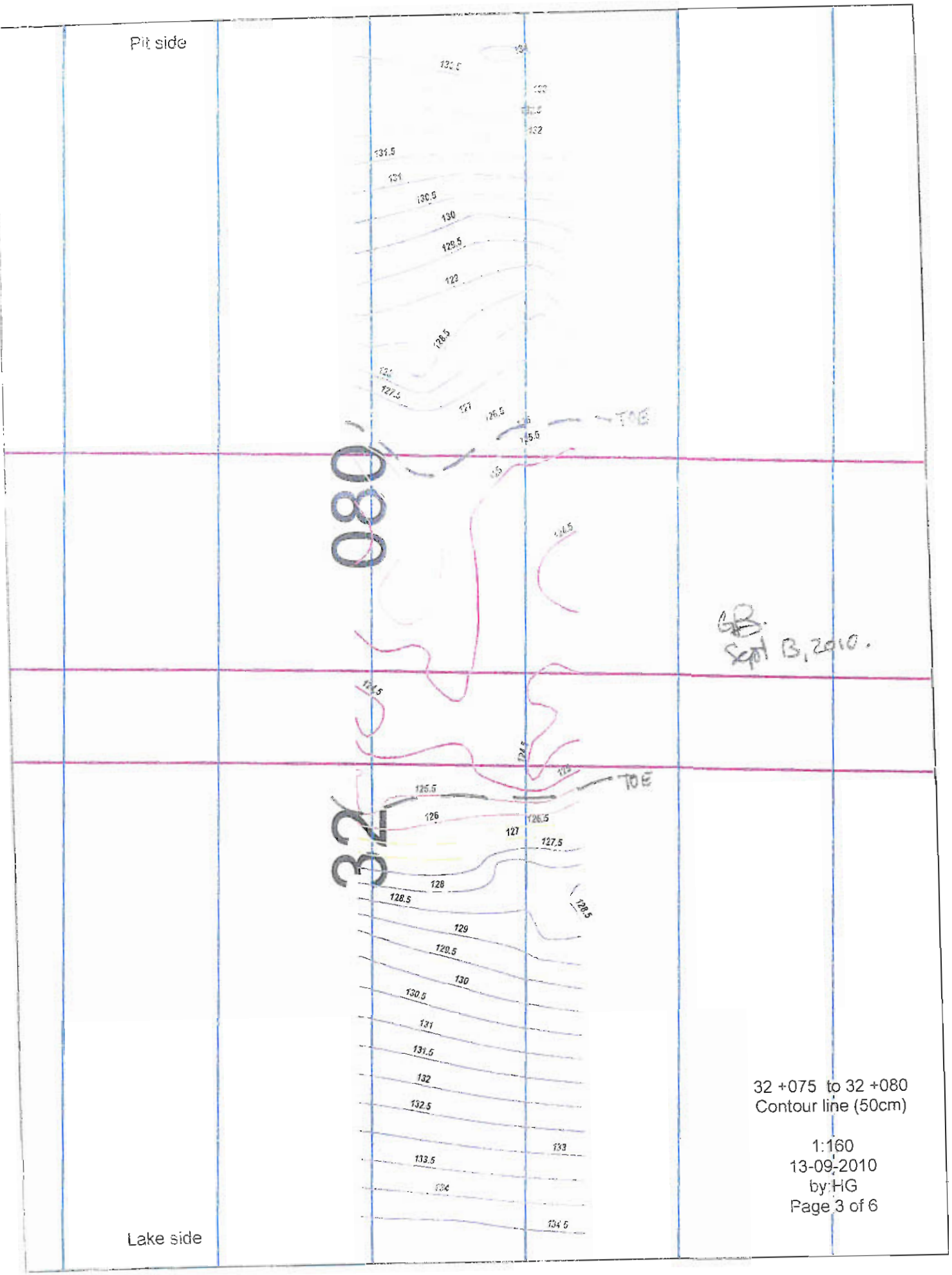
10:00 AM

11hrs 05

Golder Associates

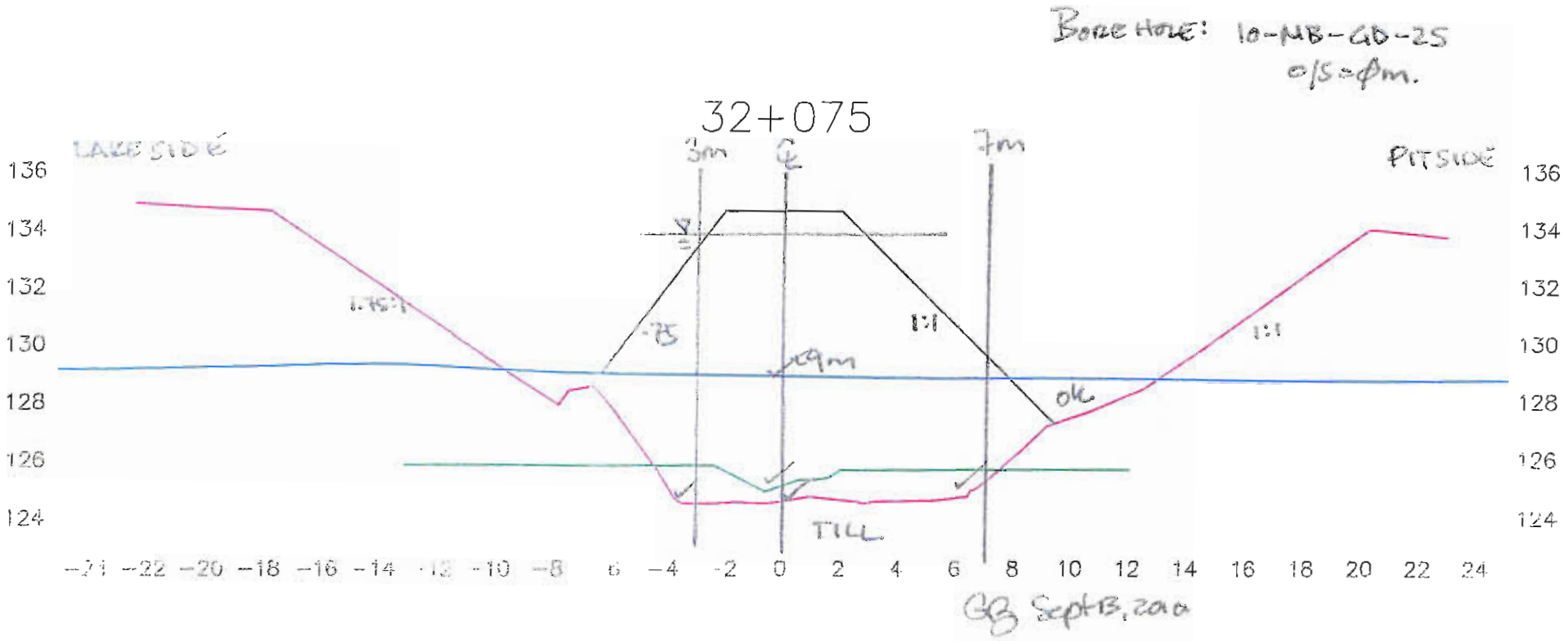
copy of original


Pit side
133.58
133.74
133.72
133.99
133.65
129.71
129.62
126.66
126.05
126.21
126.65
127.51
126.72
125.35
124.85
124.64
125.77
125.25
124.17
125.07
124.57
124.49
124.62
124.82
124.82
125.1
124.5
124.54
124.17
124.48
125.58
124.87
126.91
126.73
126.72
126.65
129.68
128.27
128.57
080
32
Lake side
32 +075 to 32 +080
Coverage point
1:160
13-09-2010
by: HG
Page 2 of 6



32 +075 to 32 +080
Contour line (50cm)

1:160
13-09-2010
by: HG
Page 3 of 6



Lake bed soil

Dike

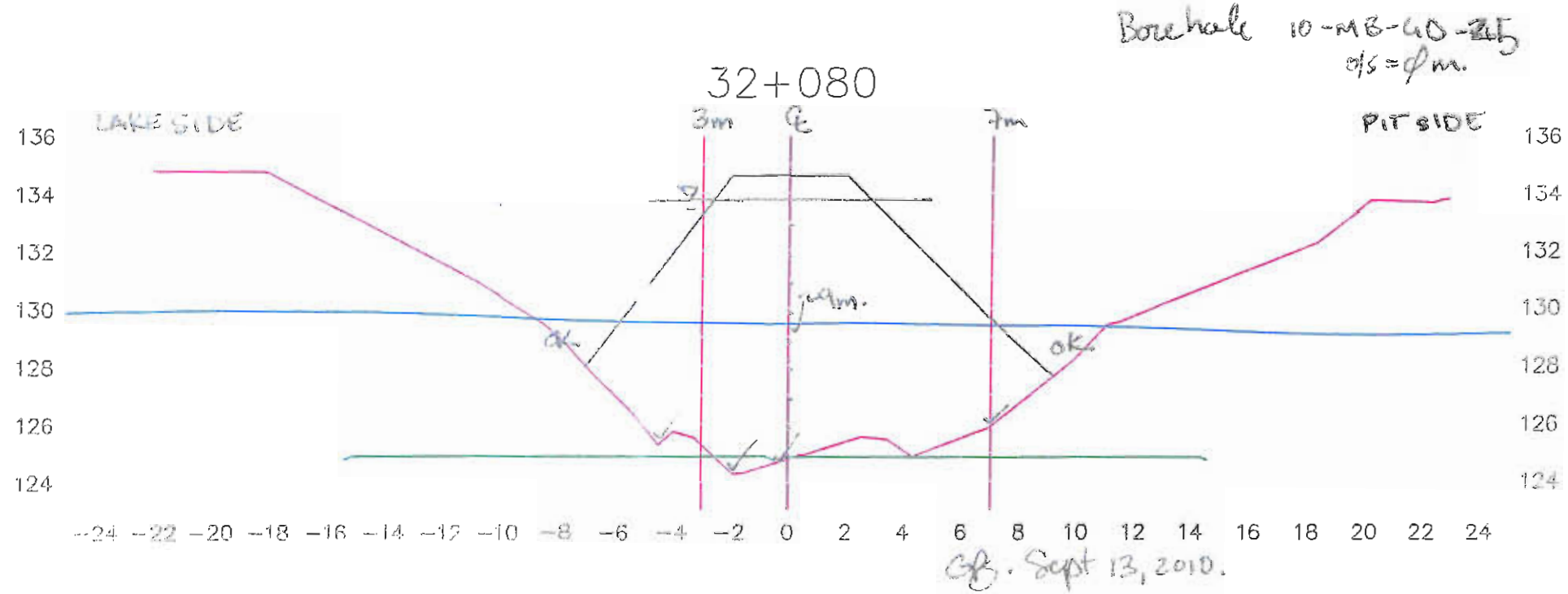
Target surface

Manual probing

Date: 13-09-10

Page: 4 of 6

Par: Hugues Gagnon



Lake bed soil

Dike

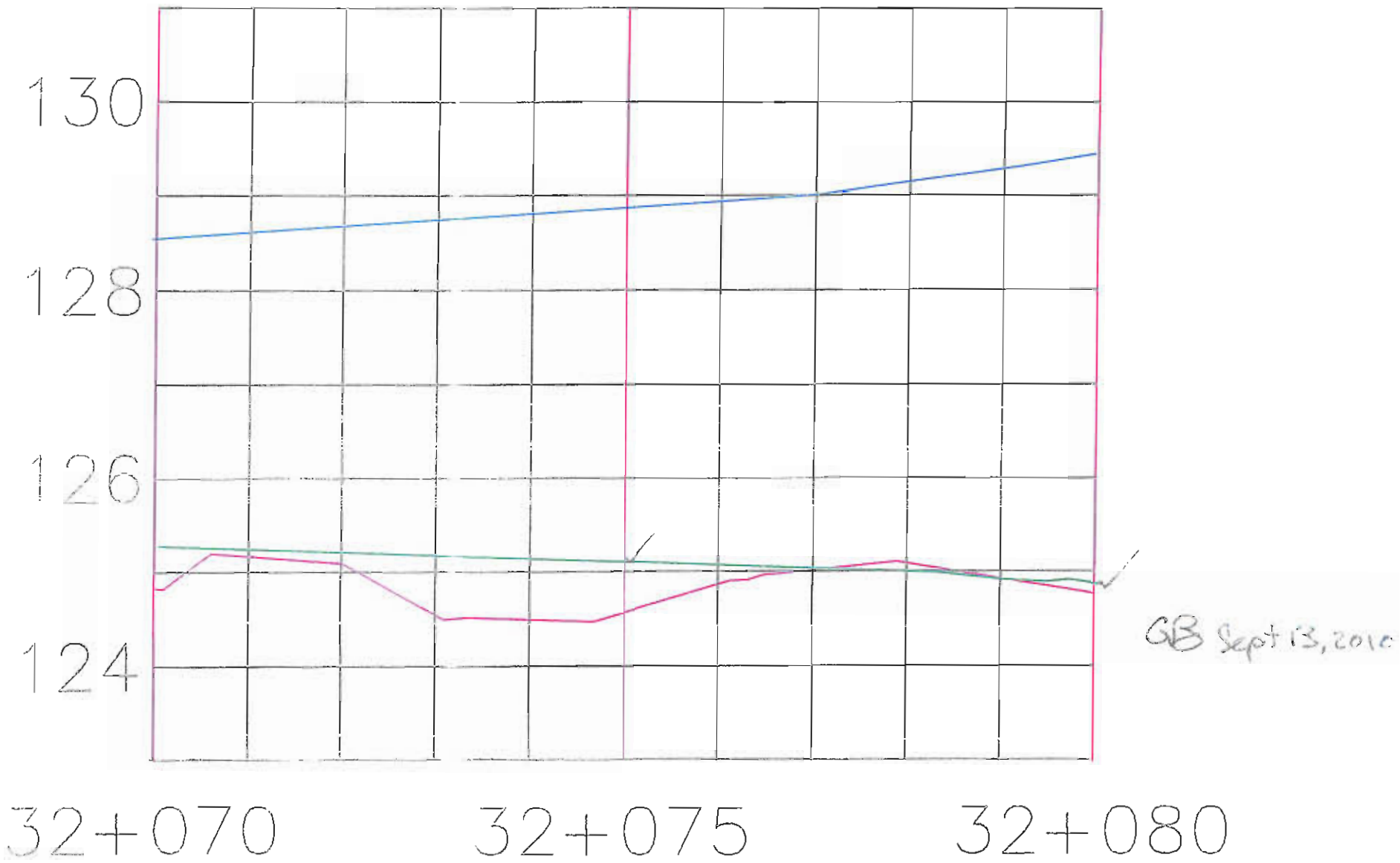
Target surface

Manual probing

Date: 13-09-10

Page: 5 of 6

Par: Hugues Gagnon



Station: 32+070 @ 32+80

Date: 13-09-10

Par: Hugues Gagnon

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 32+080 Offset	SHIFT: NIGHT :☐ DAY :☑	DATE : 13-09-10	SHEET 1 OF 6
To Sta. 32+085 Offset	LOCATION: : Bay Goose Dike, South portion		
EQUIPMENT:			

DESCRIPTION

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	MS	GB.
2.	Storage areas planned for disposal of removed materials	MS	GB.
3.	Occurrence of snow and ice removal method in place	MS	GB.
4.	Occurrence of boulders and removal method in place	MS	GB.
5.	Occurrence of hummocks and scalping method in place	MS	GB.
6.	Occurrence of surface and ground water and its impact mitigation in place	MS	GB.
7.	Presence of other unsuitable materials and removal method in place	MS	GB.
8.	Soil frozen or thawed and measures taken	N/A MS	GB N/A.
9.	Blasting requirement to remove unsuitable material and safety measure checked	N/A MS	GB N/A
10.	Adjustment made to suit design in field	MS	GB.
11.	Final walkover inspection before re-sloping or fill placement	MS	GB.
12.	"As-excavated" survey conducted	MS	GB.
13.	Final sounding conducted of lake bottom surface	MS	GB.

REMARKS:
(1) SILT SOUNDING @ 32+085 ~1m THICK.
(2) BACKFILL APPROVED TO STN 32+076 m (CREST)

DEVIATIONS : (Attach list if necessary)

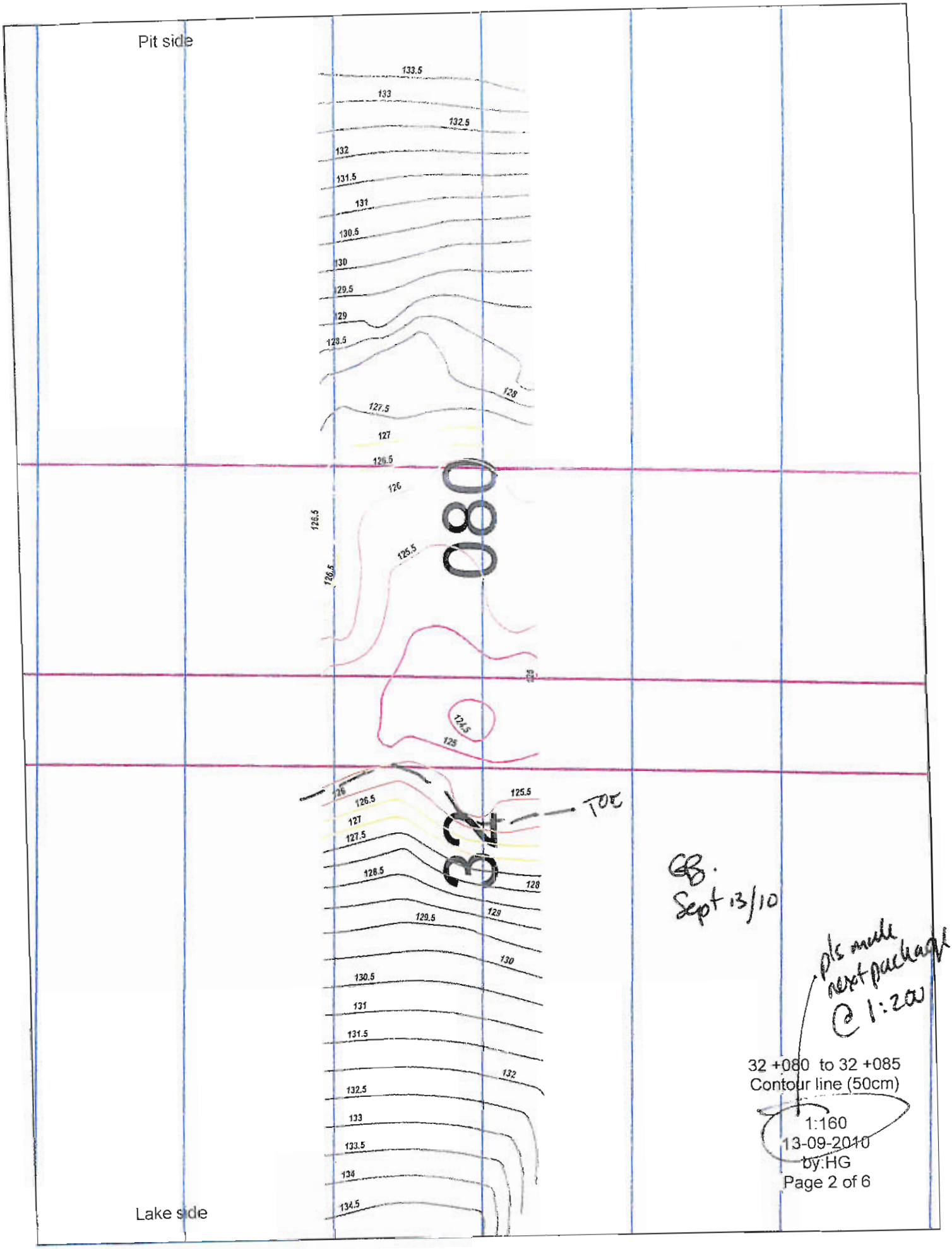
DATE OF RECTIFICATION :

SURVEY VERIFICATION	ACCEPTED BY QA Manager :	ACCEPTED BY OWNER :
NAME: MAXIME GILBERT	NAME: GRANT BURNS	NAME:
SIGNATURE :	SIGNATURE :	SIGNATURE :
DATE 13-09-2010	DATE Sept 13, 2010	DATE

15:43 PM

17:16

COPY OF ORIGINAL 1/6

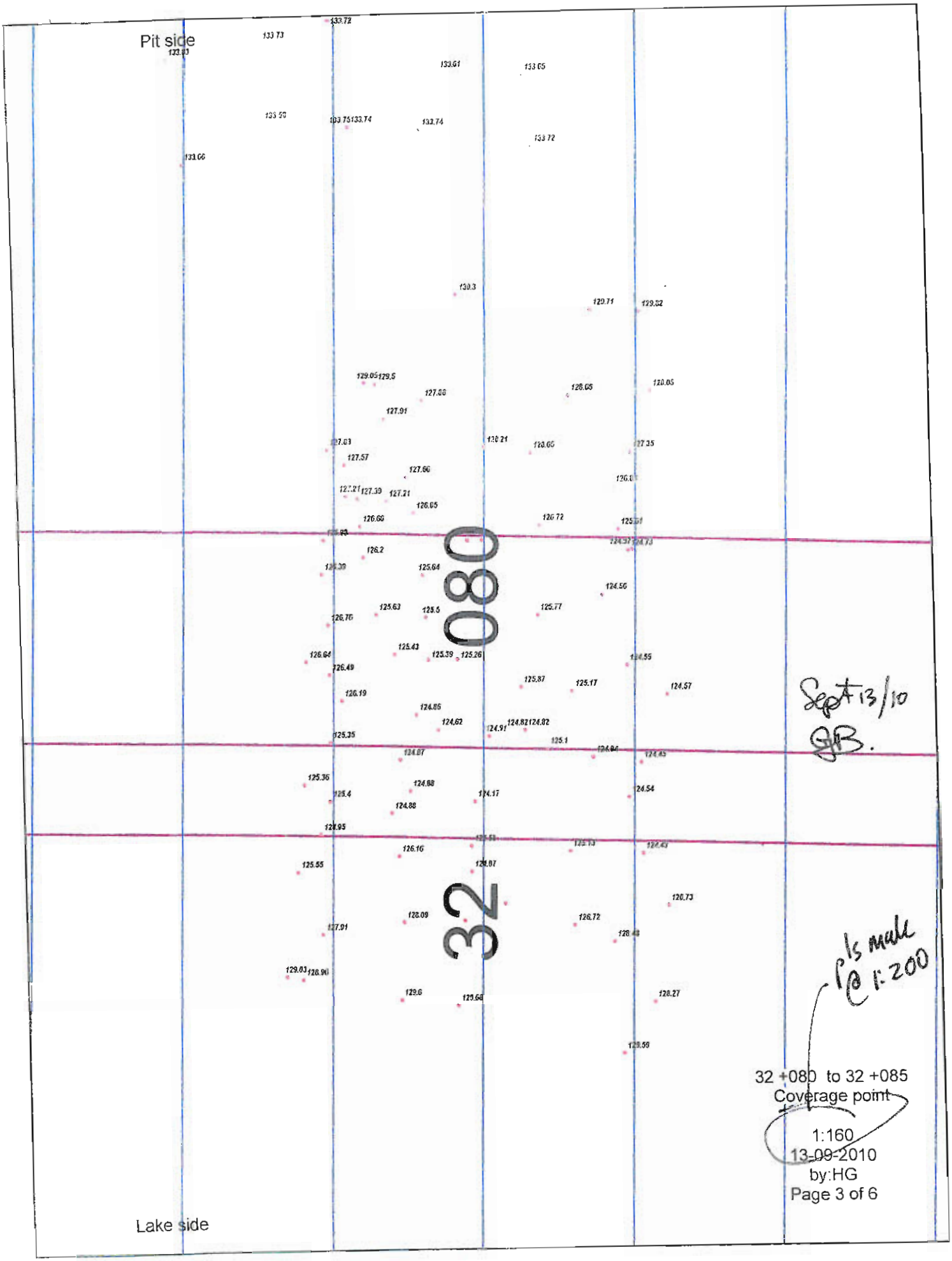


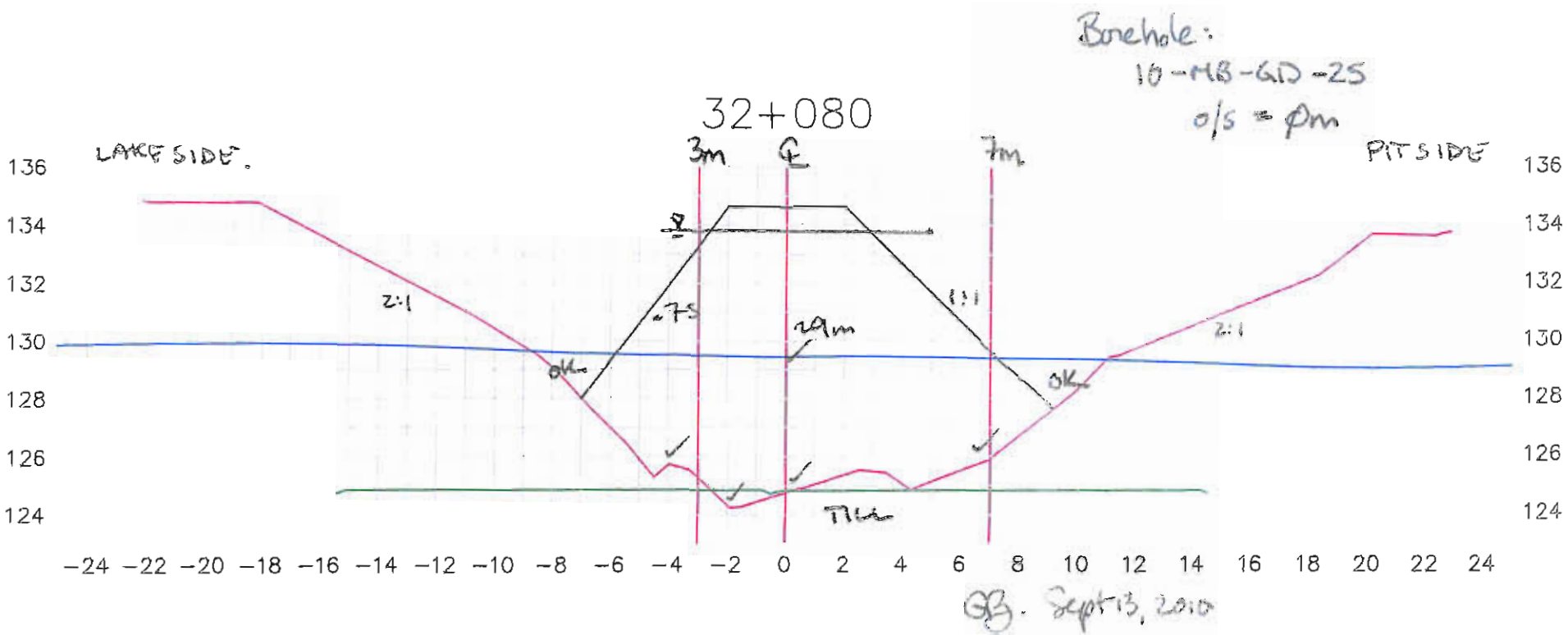
GB.
Sept 13/10

pls make next package @ 1:200

32 +080 to 32 +085
Contour line (50cm)

1:160
13-09-2010
by:HG


Pit side
133.72
133.73
133.61
133.65
133.58
133.75133.74
133.74
133.72
133.66
130.3
129.71
129.82
129.05129.5
128.65
128.05
127.88
127.91
127.57
127.66
127.21127.39
127.21
126.65
126.66
126.72
126.2
125.64
124.56
125.63
125.5
125.77
126.76
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126.64
125.39
125.26
126.49
124.55
125.87
125.17
124.57
126.19
124.86
124.62
124.91
124.82124.82
125.35
125.1
124.87
125.36
124.68
125.4
124.17
124.54
124.88
125.95
126.16
125.55
129.87
126.73
126.09
126.72
127.91
129.03129.90
129.6
129.66
128.27
129.59
080
32
Sept 13/10
GB.
pls make @ 1:200
32 +080 to 32 +085
Coverage point
1:160
13-09-2010
by:HG
Page 3 of 6
Lake side



Lake bed soil

Dike

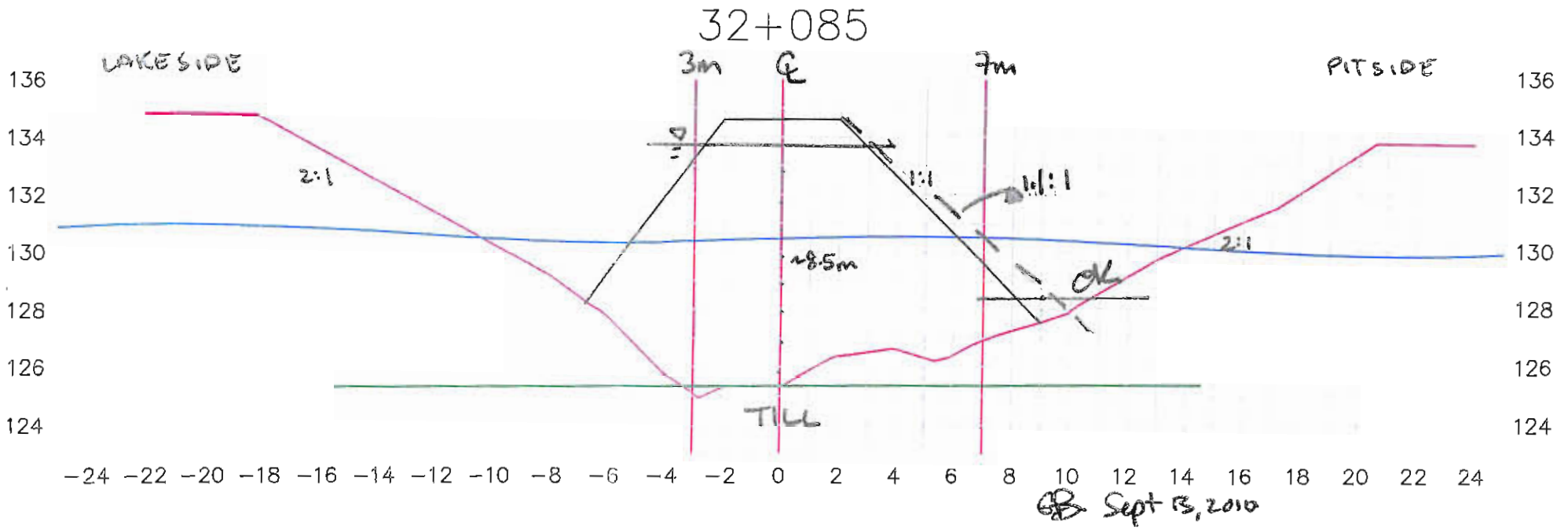
Target surface

Manual probing

Date: 13-09-10

Page: 4 of 6

Par: Hugues Gagnon



Lake bed soil

Dike

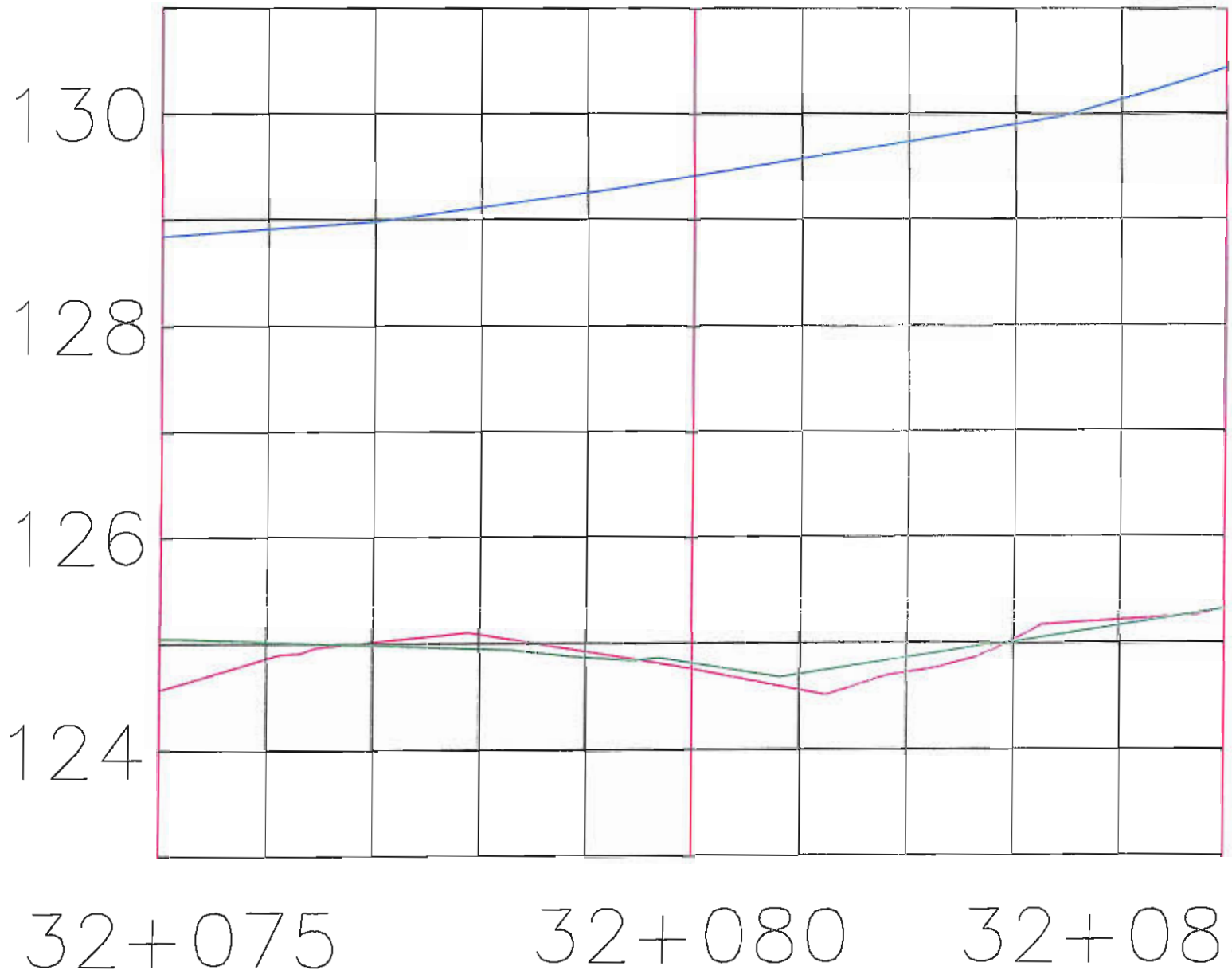
Target surface

Manual probing

Date: 13-09-10

Page: 5 of 6

Par: Hugues Gagnon



Station: 32+075 @ 32+085

Date: 13-09-10

Par: Hugues Gagnon

GOLDER

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 32+085 Offset	SHIFT: NIGHT :☐ DAY :☒	DATE : 13-09-10	SHEET 1 OF 6
To Sta. 32+090 Offset	LOCATION: : BAY goose dike, South portion		
EQUIPMENT:			

DESCRIPTION

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	MJ	GB
2.	Storage areas planned for disposal of removed materials	MJ	GB
3.	Occurrence of snow and ice removal method in place	MJ	GB
4.	Occurrence of boulders and removal method in place	MJ	GB
5.	Occurrence of hummocks and scalping method in place	MJ	GB
6.	Occurrence of surface and ground water and its impact mitigation in place	MJ	GB
7.	Presence of other unsuitable materials and removal method in place	MJ	GB
8.	Soil frozen or thawed and measures taken	N/A MJ	GB N/A
9.	Blasting requirement to remove unsuitable material and safety measure checked	N/A MJ	GB N/A
10.	Adjustment made to suit design in field	MJ	GB FILTER REQUIRED
11.	Final walkover inspection before re-sloping or fill placement	MJ	GB
12.	"As-excavated" survey conducted	MJ	GB
13.	Final sounding conducted of lake bottom surface	MJ	GB

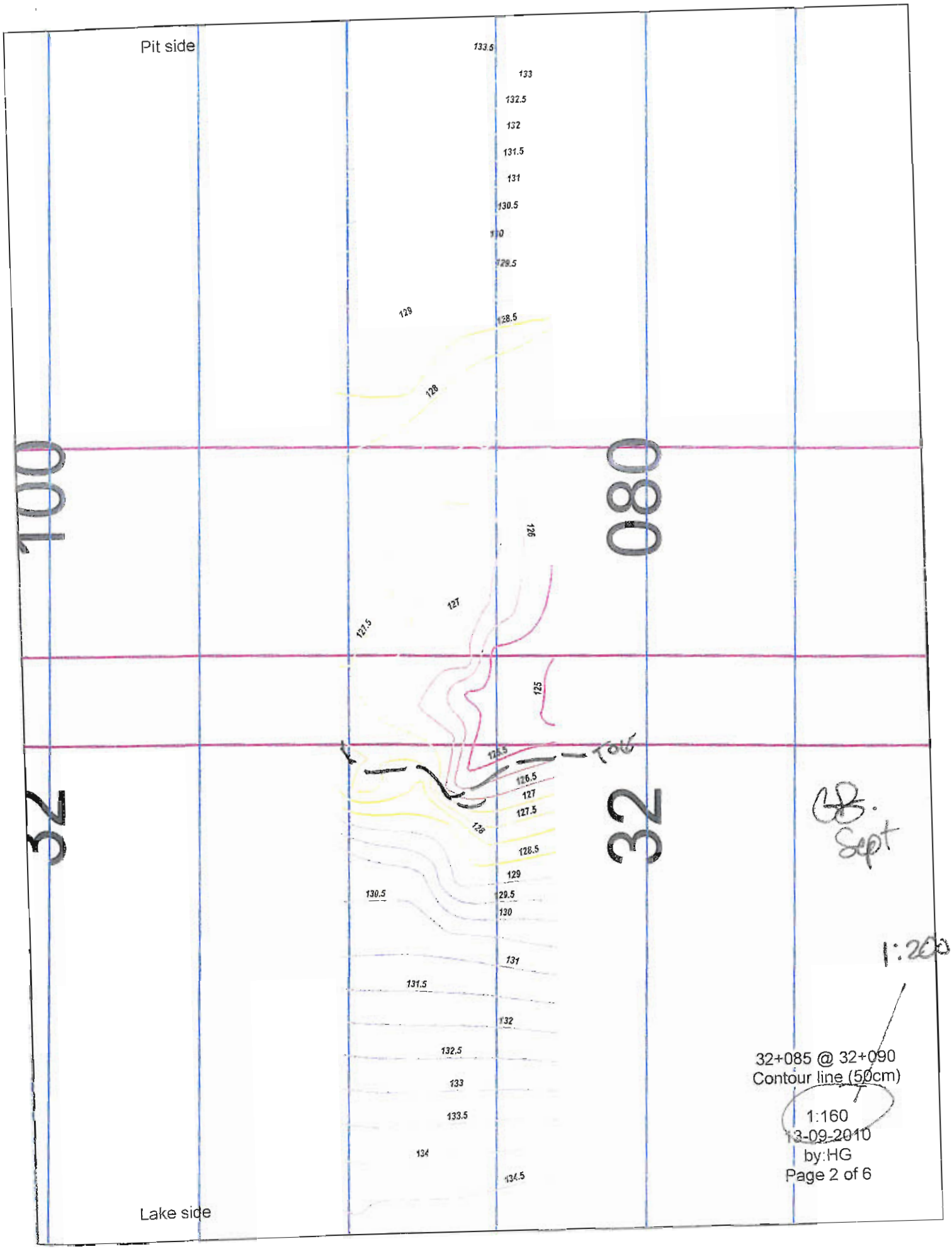
REMARKS : ① PLACE ADDITIONAL FILTER 1.5m THICK FROM 32+087 to 32+092 ... MORE MAY BE REQUIRE ONCE NEXT PACKAGE IS READY.
② BACKFILL APPROVED TO 32+082m CREST)

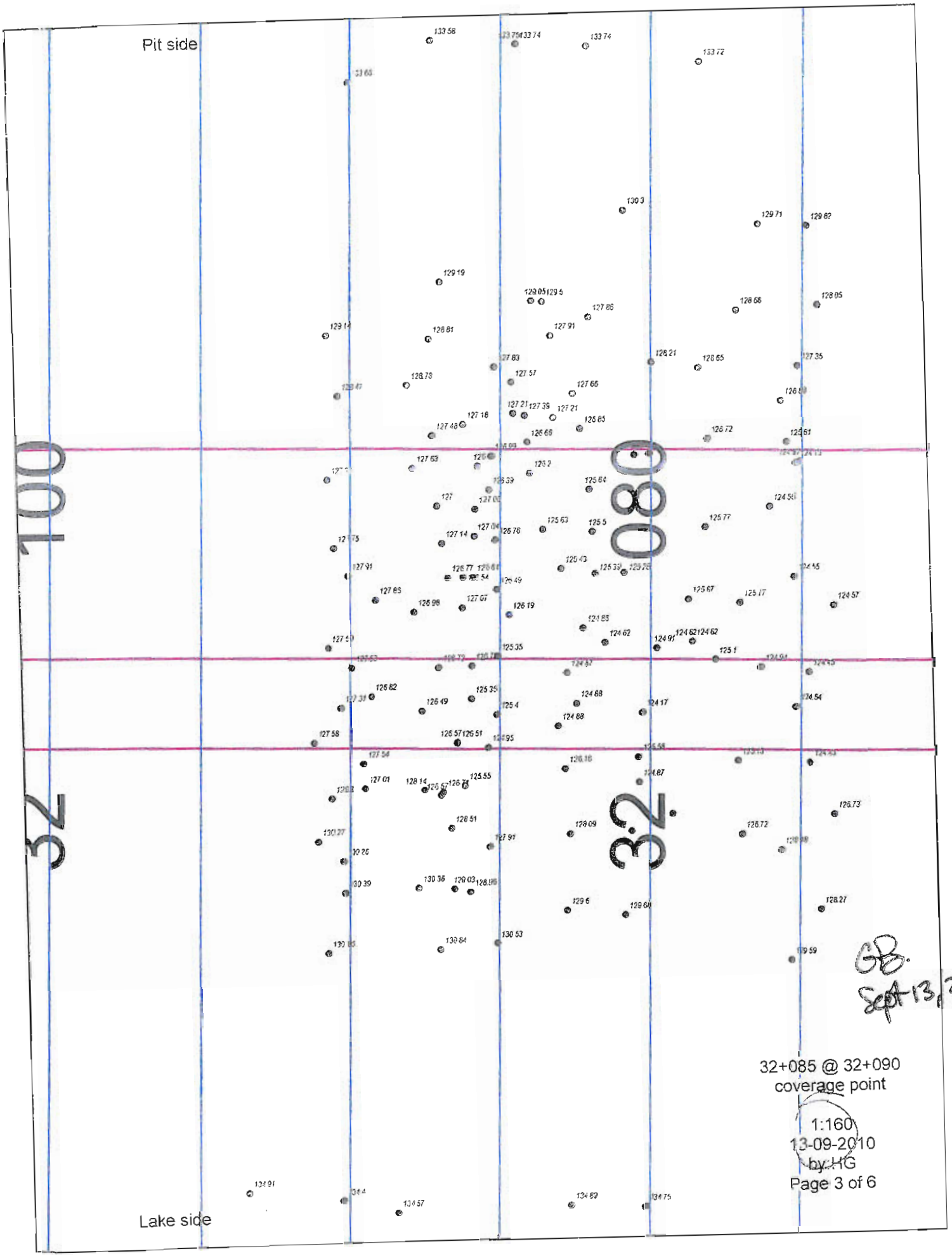
DEVIATIONS : (Attach list if necessary)

DATE OF RECTIFICATION :

SURVEY VERIFICATION	ACCEPTED BY QA Manager :	ACCEPTED BY OWNER :
NAME: MAXIME GILBERT	NAME: GRANT BURNS.	NAME:
SIGNATURE :	SIGNATURE :	SIGNATURE :
DATE 13-09-2010	DATE Sept 13, 2010.	DATE

19:03 19:24

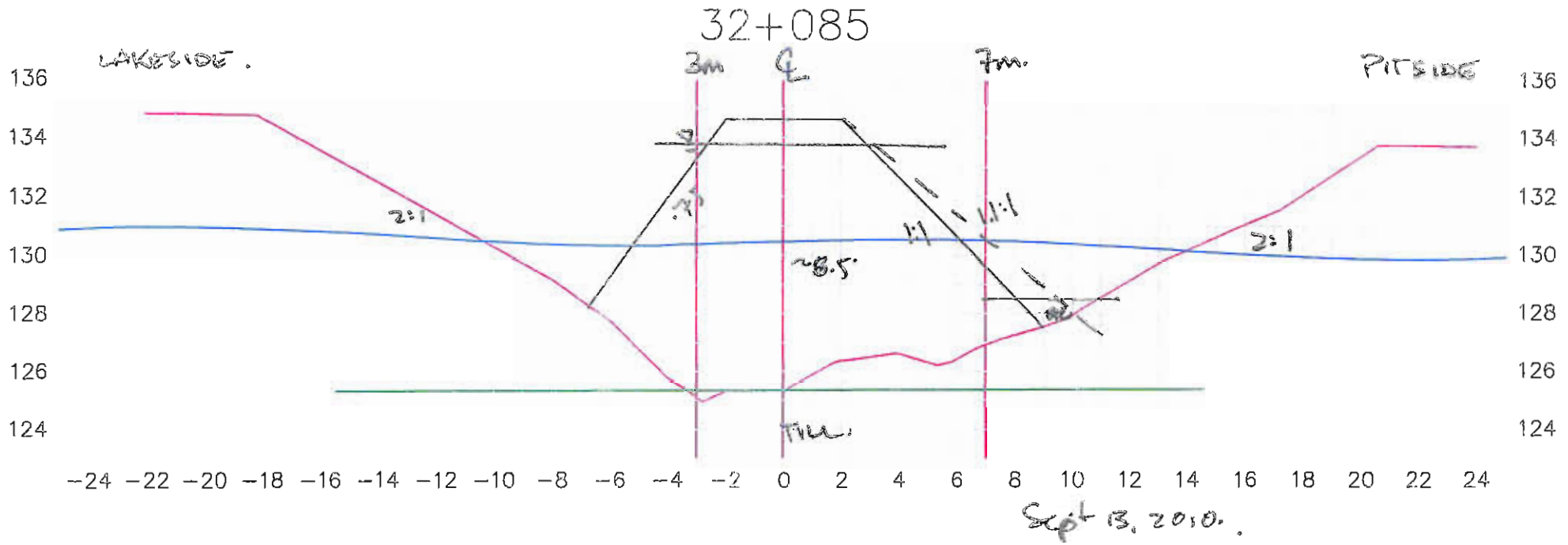

Pit side
133.5
133
132.5
132
131.5
131
130.5
130
129.5
129
128.5
128
127
127.5
126
125
126.5
127.5
128.5
129
130.5
129.5
130
131
131.5
132
132.5
133
133.5
134
134.5
100
080
32
32
Toe
Sept
1:200
32+085 @ 32+090
Contour line (50cm)
1:160
13-09-2010
by:HG
Page 2 of 6
Lake side



GB.
Sept 13, 2010

32+085 @ 32+090
coverage point

1:160
13-09-2010
by: HG



Lake bed soil

Dike

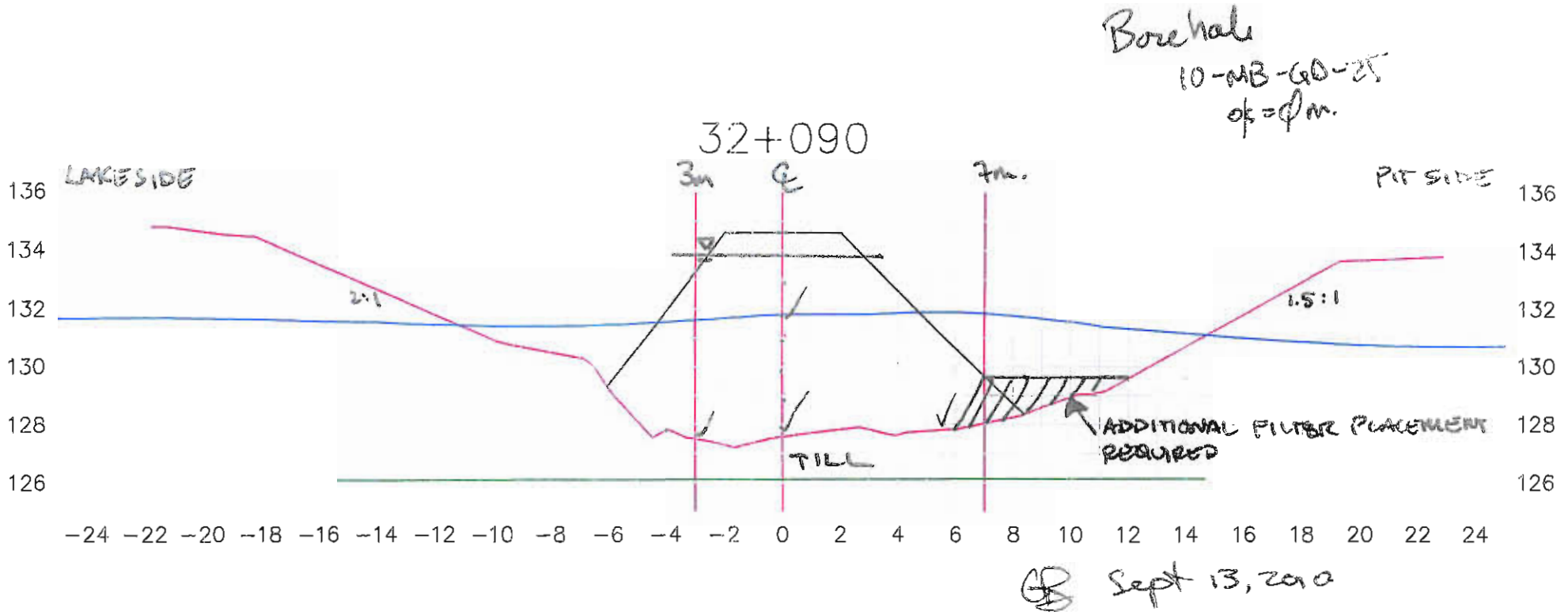
Target surface

Manual probing

Date: 13-09-10

Page: 4 of 6

Par: Hugues Gagnon



Lake bed soil

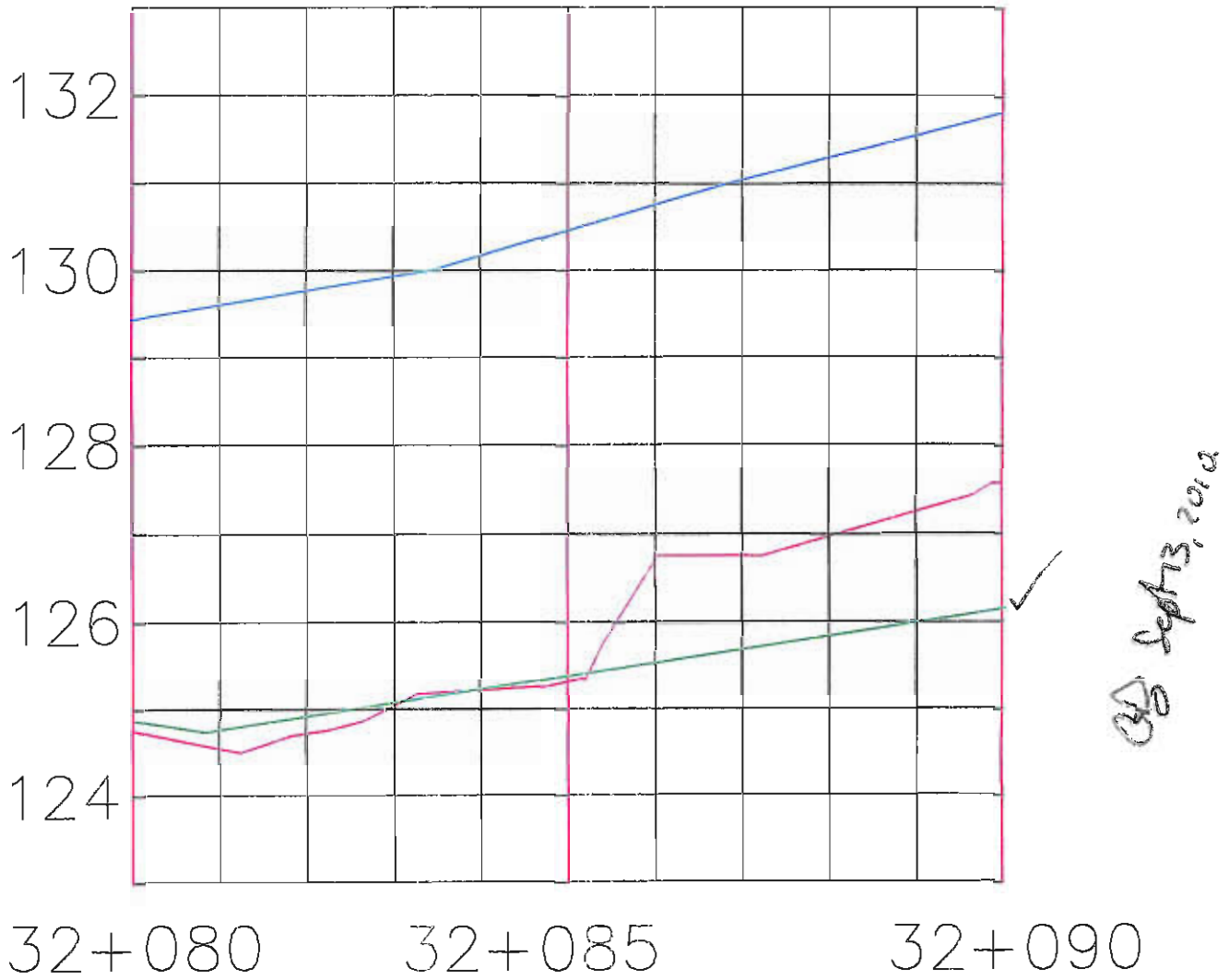
Dike

Target surface

Manual probing

Date: 13-09-10

Par: Hugues Gagnon



Station: 32+080 @ 32+090

Date: 13-09-10

Par: Hugues Gagnon

GOLDER

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 32+090 Offset	SHIFT: NIGHT :☐ DAY : ☐	DATE : 14-09-10	SHEET 1 OF 7
To Sta. 32+100 Offset	LOCATION: : Bay Goose Dike, Saem portion		
EQUIPMENT:			

DESCRIPTION

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	MA	YB
2.	Storage areas planned for disposal of removed materials	MA	YB
3.	Occurrence of snow and ice removal method in place	MA	YB
4.	Occurrence of boulders and removal method in place	MA	YB
5.	Occurrence of hummocks and scalping method in place	MA	YB
6.	Occurrence of surface and ground water and its impact mitigation in place	MA	YB
7.	Presence of other unsuitable materials and removal method in place	MA	YB
8.	Soil frozen or thawed and measures taken	N/A MA	YB N/A
9.	Blasting requirement to remove unsuitable material and safety measure checked	N/A MA	YB N/A
10.	Adjustment made to suit design in field	MA	YB
11.	Final walkover inspection before re-sloping or fill placement	MA	YB
12.	"As-excavated" survey conducted	MA	YB
13.	Final sounding conducted of lake bottom surface	MA	YB

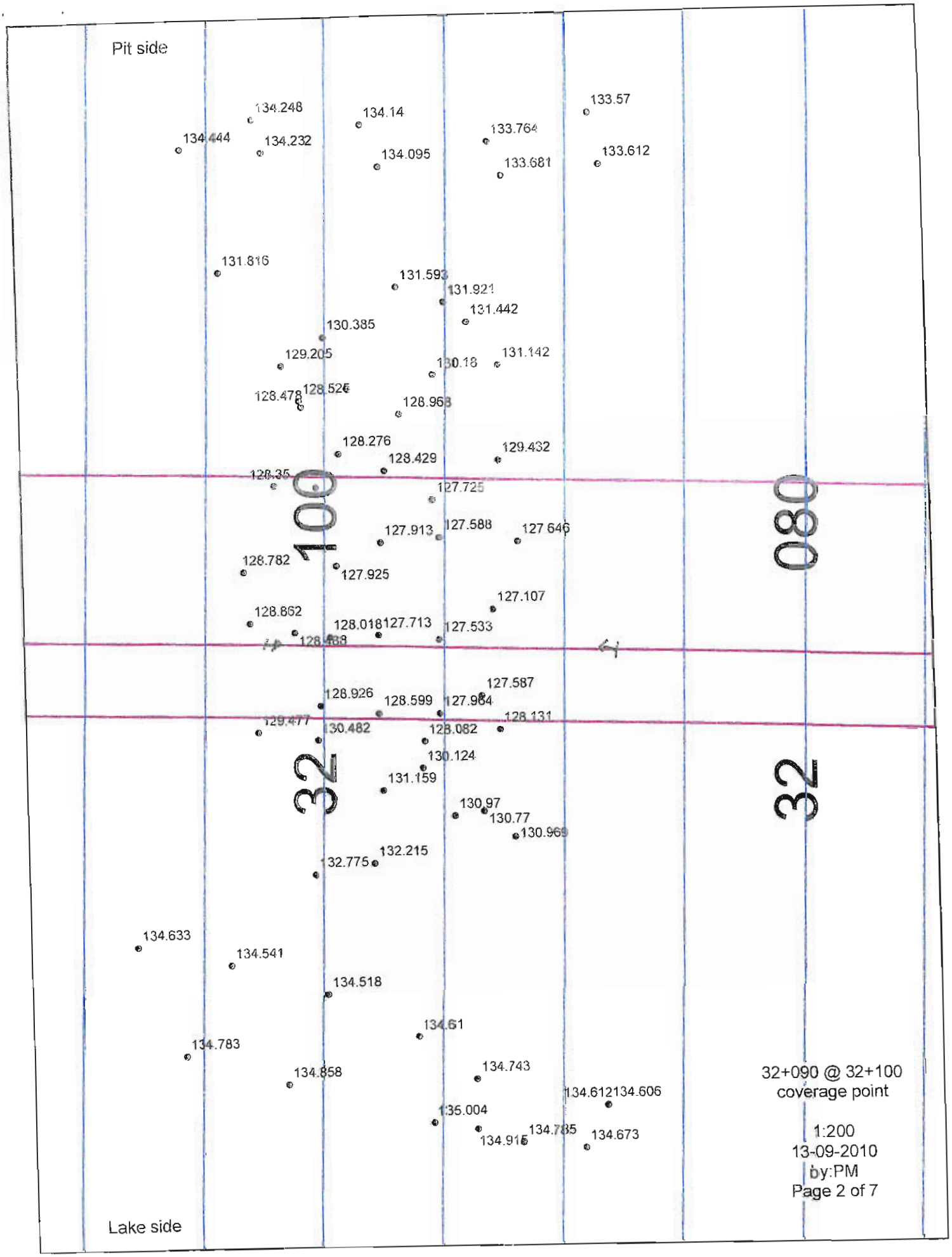
REMARKS : No frozen material encounters base of Trench on competent till. Filter required up to 3.5m below water surface.

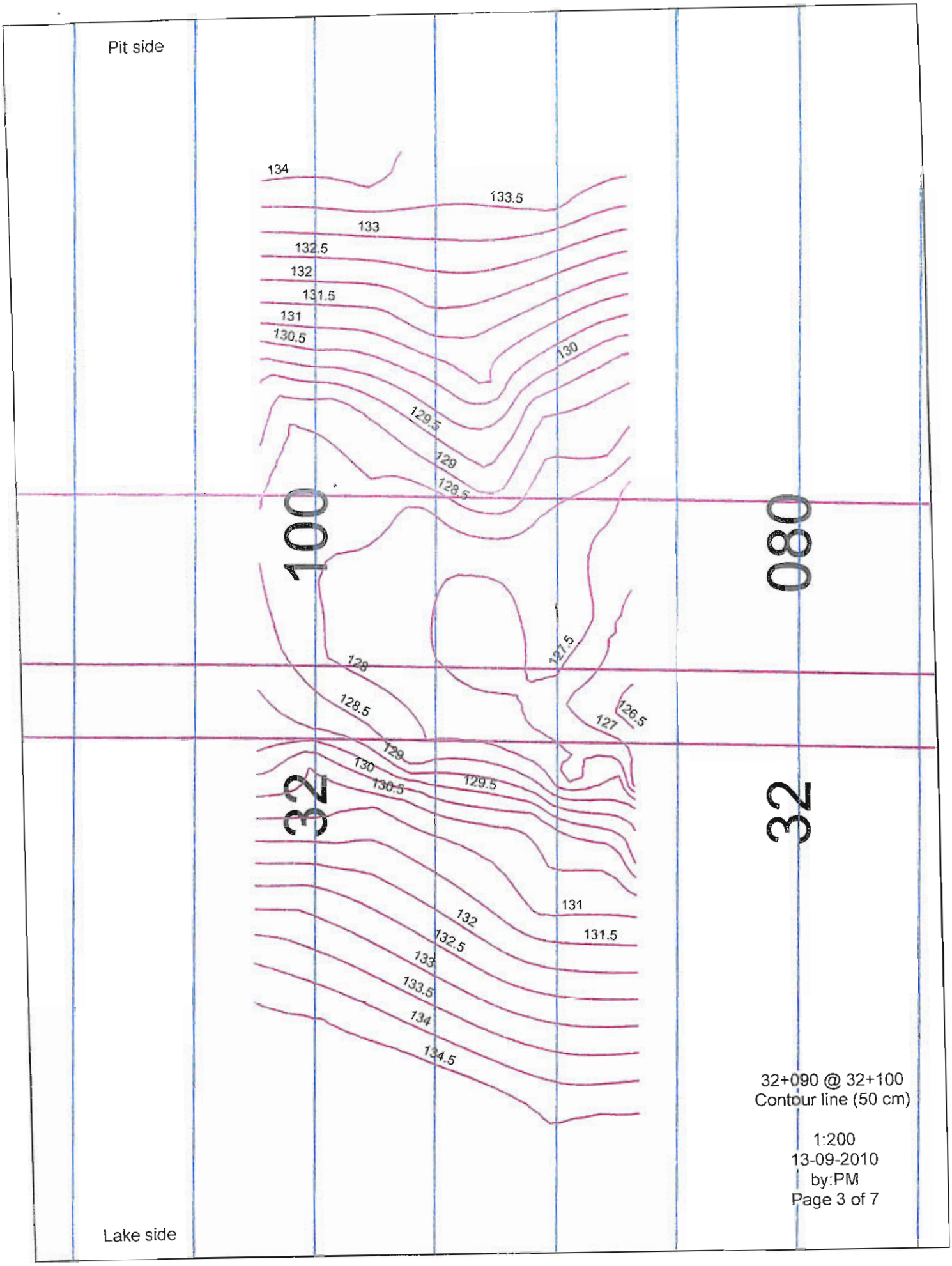
DEVIATIONS : (Attach list if necessary)

DATE OF RECTIFICATION :

SURVEY VERIFICATION	ACCEPTED BY QA Manager :	ACCEPTED BY OWNER :
NAME: MAXIME GILBERT	NAME: Yves Boulianne	NAME:
SIGNATURE :	SIGNATURE :	SIGNATURE :
DATE 14-09-2010	DATE Sept. 14, 2010	DATE

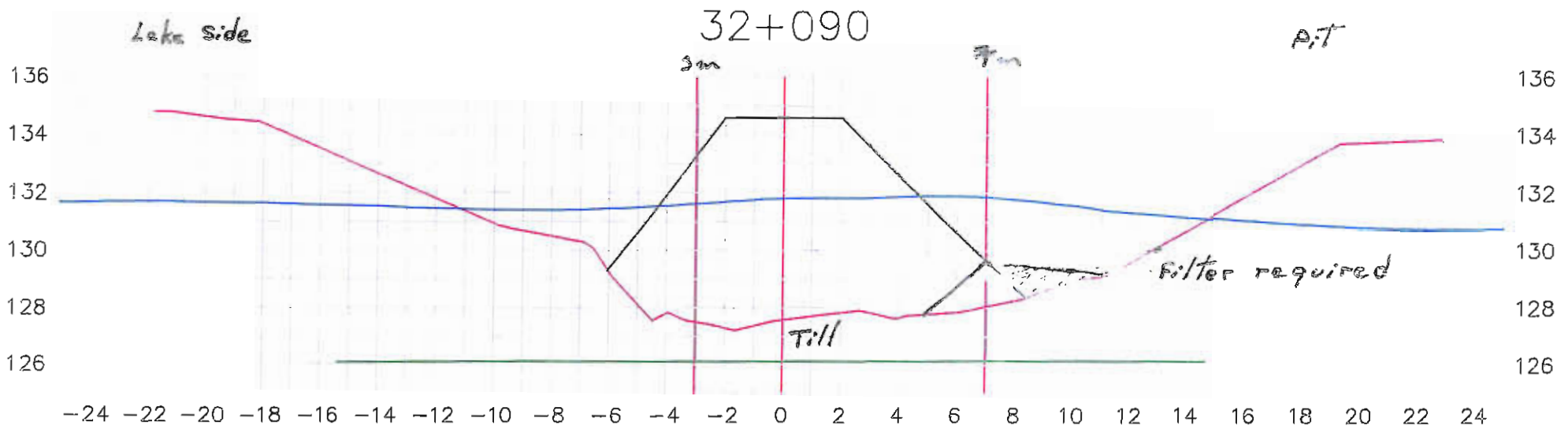
COPY OF ORIGINAL 1/2


Pit side
134.248
134.14
133.57
134.444
134.232
133.764
134.095
133.681
133.612
131.816
131.593
131.921
131.442
130.385
129.205
131.142
130.18
128.478
128.526
128.968
128.276
129.432
128.429
128.35
127.725
100
080
127.913
127.588
127.646
128.782
127.925
127.107
128.862
128.018
127.713
127.533
128.926
128.599
127.587
127.964
128.131
129.477
130.482
128.082
32
32
130.124
131.159
130.97
130.77
130.969
132.215
32.775
134.633
134.541
134.518
134.61
134.783
134.858
134.743
134.612
134.606
135.004
134.915
134.785
134.673
32+090 @ 32+100
coverage point
1:200
13-09-2010
by:PM
Page 2 of 7
Lake side



32+090 @ 32+100
Contour line (50 cm)

1:200
13-09-2010
by:PM
Page 3 of 7



Lake bed soil

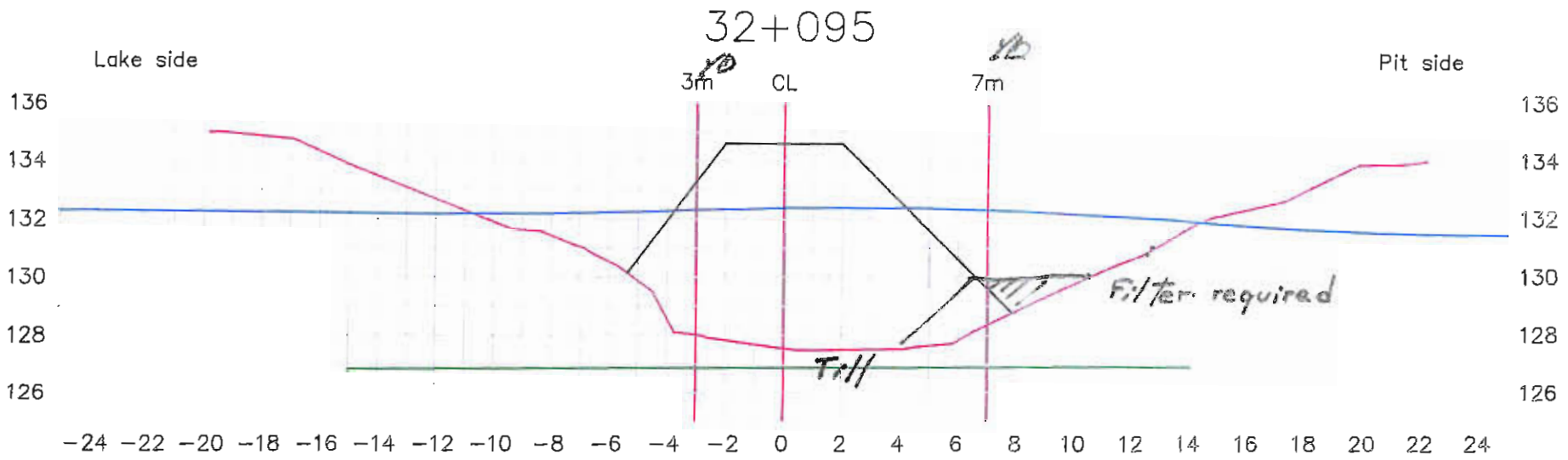
Dike

Target surface

Manual probing

Date: 13-09-10

Par: Hugues Gagnon



Lake bed soil

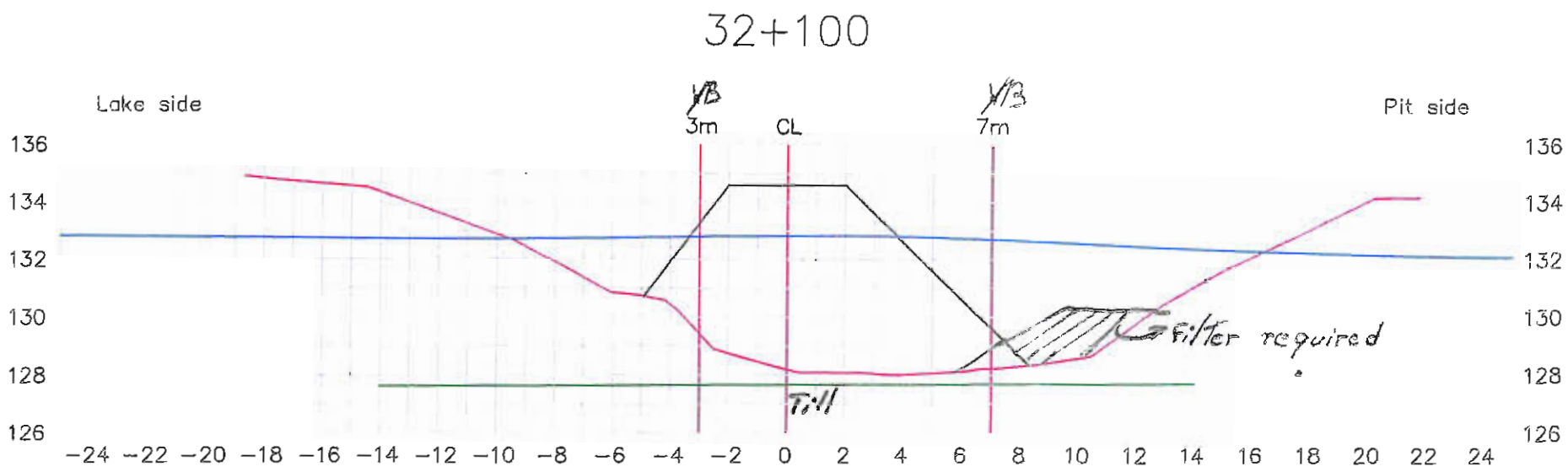
Dike

Target surface

Manual probing

Date: 13-09-10

Par: Pascale Martel



Lake bed soil

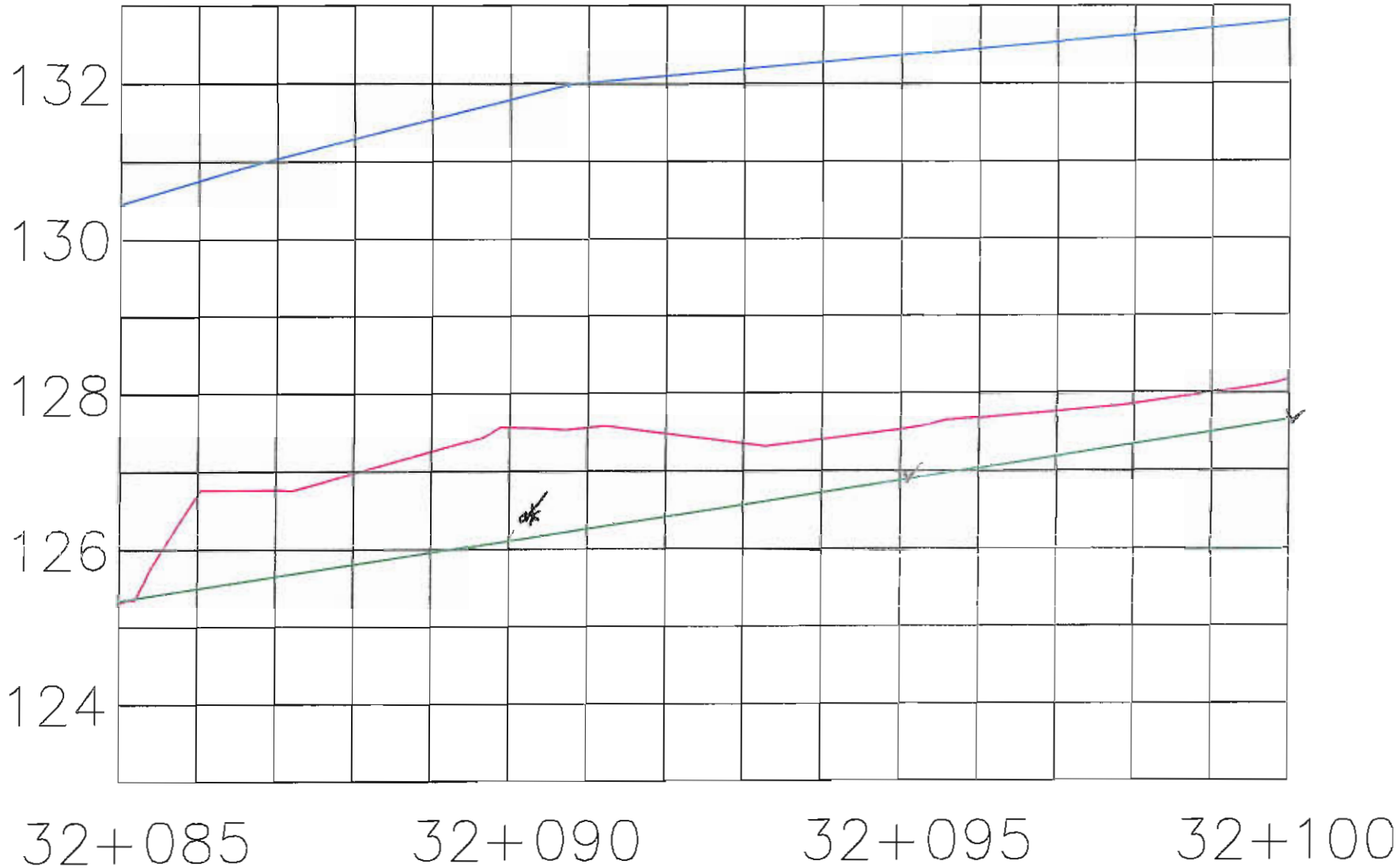
Dike

Target surface

Manual probing

Date: 13-09-10

Par: Pascale Martel



Station: 32+085 @ 32+100

Date: 13-09-10

Par: Pascale Martel

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 32+100 Offset	SHIFT: NIGHT: ☐ DAY: ☒	DATE: 14-09-2010	SHEET 1 OF 10
To Sta. 32+130 Offset	LOCATION: BAY GOOSE DIKE South Section		
EQUIPMENT:			

DESCRIPTION

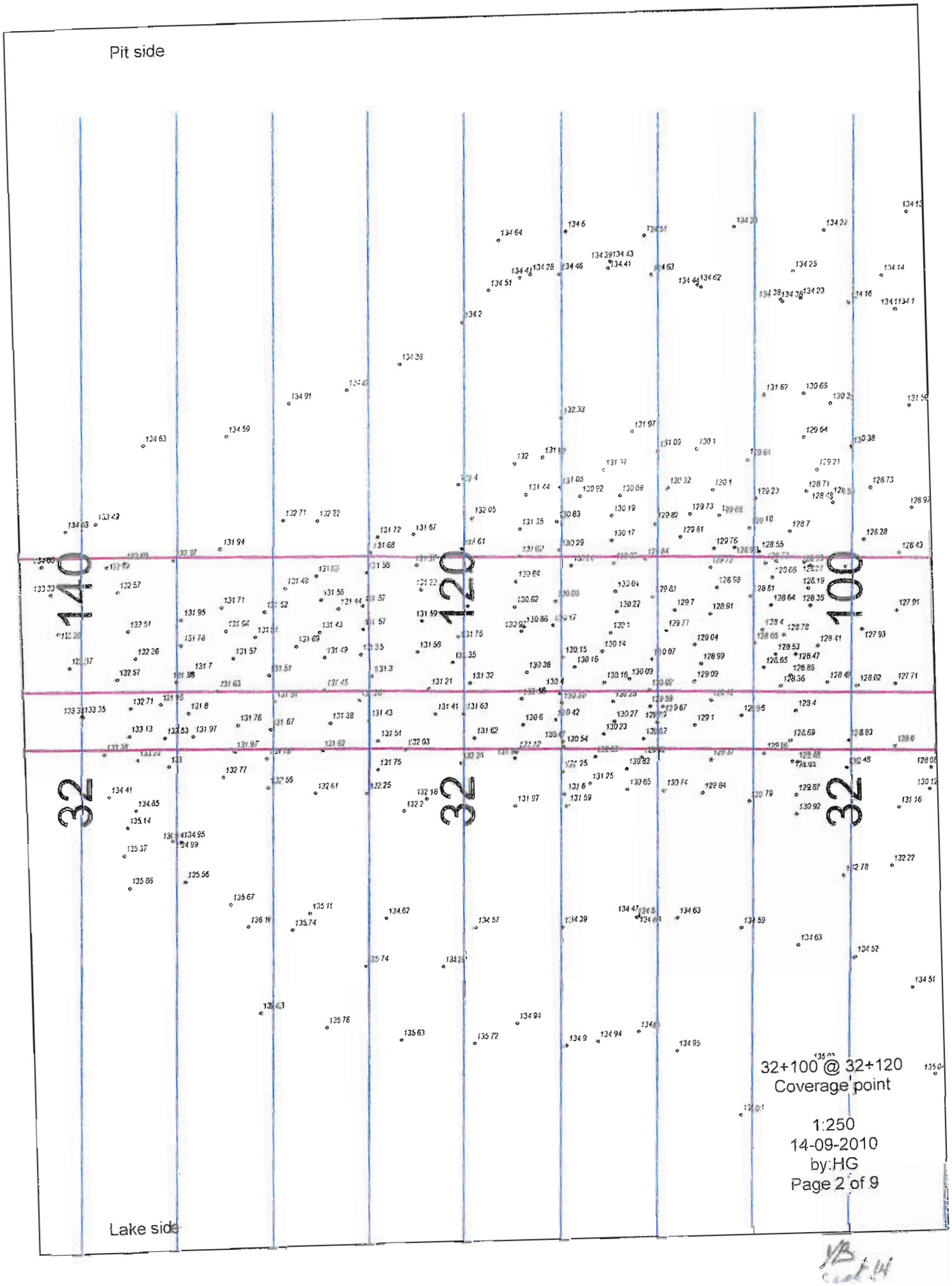
NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	MS	YB
2.	Storage areas planned for disposal of removed materials	MS	YB
3.	Occurrence of snow and ice removal method in place	MS	YB
4.	Occurrence of boulders and removal method in place	MS	YB
5	Occurrence of hummocks and scalping method in place	MS	YB
6.	Occurrence of surface and ground water and its impact mitigation in place	MS	YB
7.	Presence of other unsuitable materials and removal method in place	MS	YB
8.	Soil frozen or thawed and measures taken	N/A MS	YB N/A
9.	Blasting requirement to remove unsuitable material and safety measure checked	N/A MS	YB N/A
10.	Adjustment made to suit design in field	MS	YB
11.	Final walkover inspection before re-sloping or fill placement	MS	YB
12.	"As-excavated" survey conducted	MS	YB
13.	Final sounding conducted of lake bottom surface	MS	YB

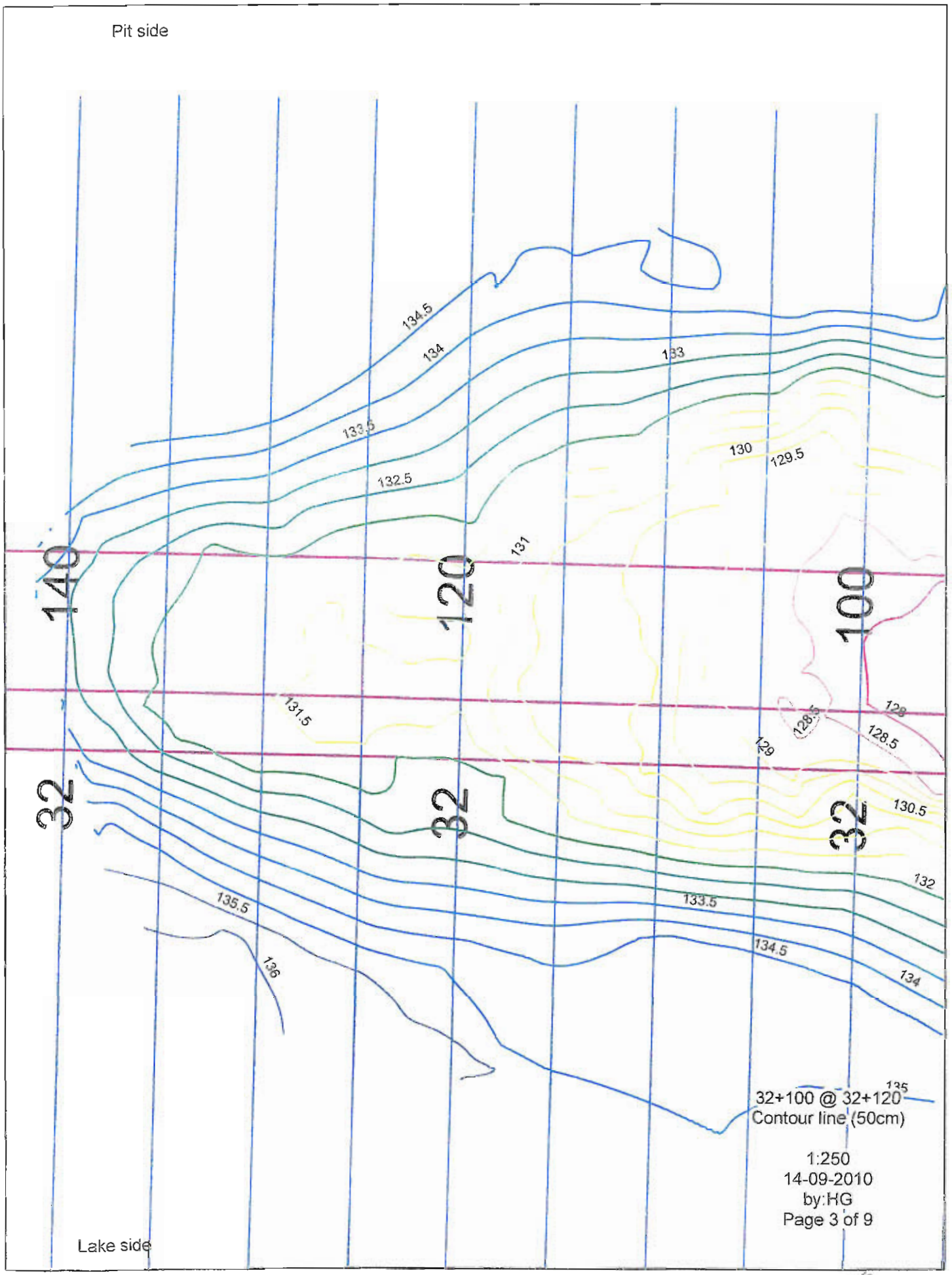
REMARKS: Filter required down to 131 m elevi (2.9m below water line). Base of Core Backfill 9m wide to 32+110, then 5m wide. YB Sept. 14

DEVIATIONS: (Attach list if necessary)

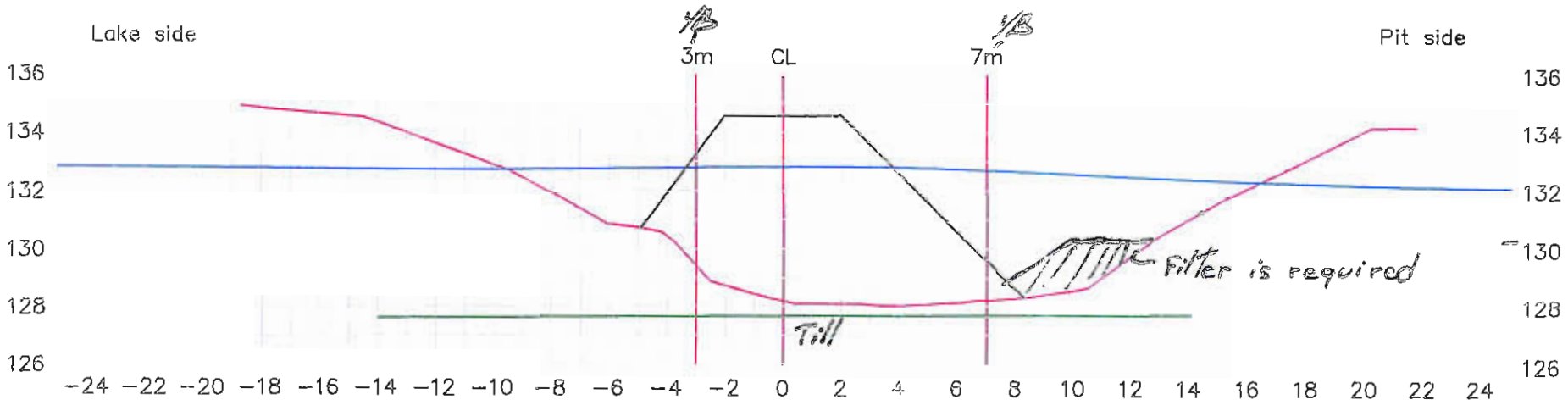
DATE OF RECTIFICATION:

SURVEY VERIFICATION	ACCEPTED BY QA Manager:	ACCEPTED BY OWNER:
NAME: MAXIME GILBERT	NAME: Yves Boulianne	NAME:
SIGNATURE: Maxime Gilbert	SIGNATURE: Yves B	SIGNATURE:
DATE 14-09-2010 @ 12:34	DATE Sept. 14 2010 14h00	DATE


Pit side
32+100
32+120
32+140
Lake side
32+100 @ 32+120
Coverage point
1:250
14-09-2010
by:HG
Page 2 of 9


Pit side
140
120
100
32
32
32
134.5
134
133
133.5
132.5
130
129.5
131
131.5
129
128.5
128
130.5
132
133.5
135.5
134.5
134
136
135
32+100 @ 32+120
Contour line (50cm)
1:250
14-09-2010
by:HG
Page 3 of 9
Lake side

32+100



Lake bed soil

Dike

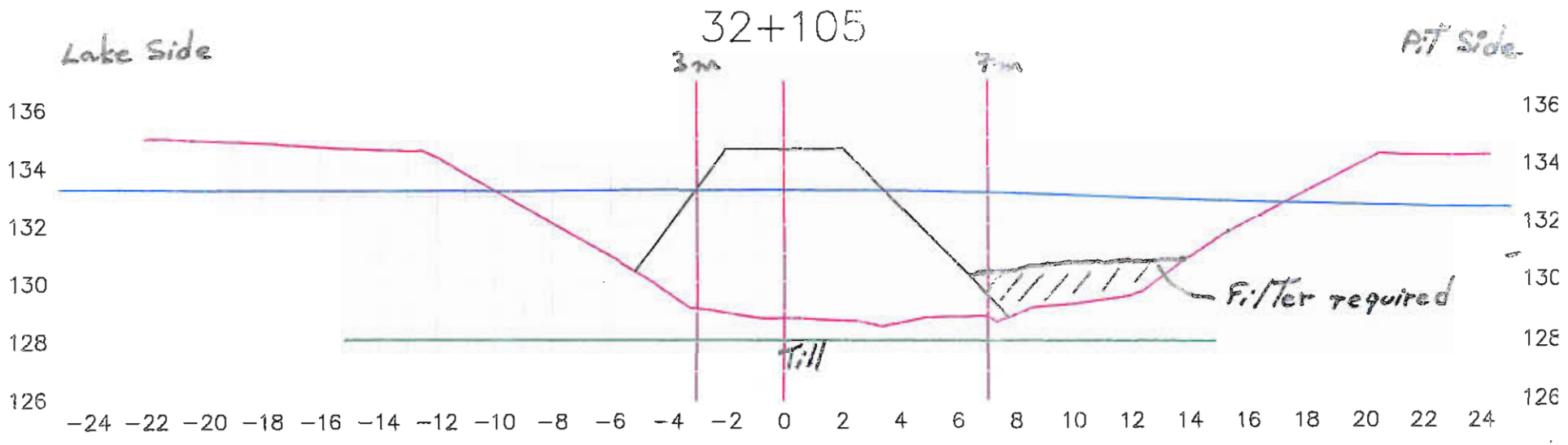
Target surface

Manual probing

Date: 14-09-10

Page: 4 of ~~13~~ 9

Par: Hugues Gagnon



Lake side

Pit side

Lake bed soil

Dike

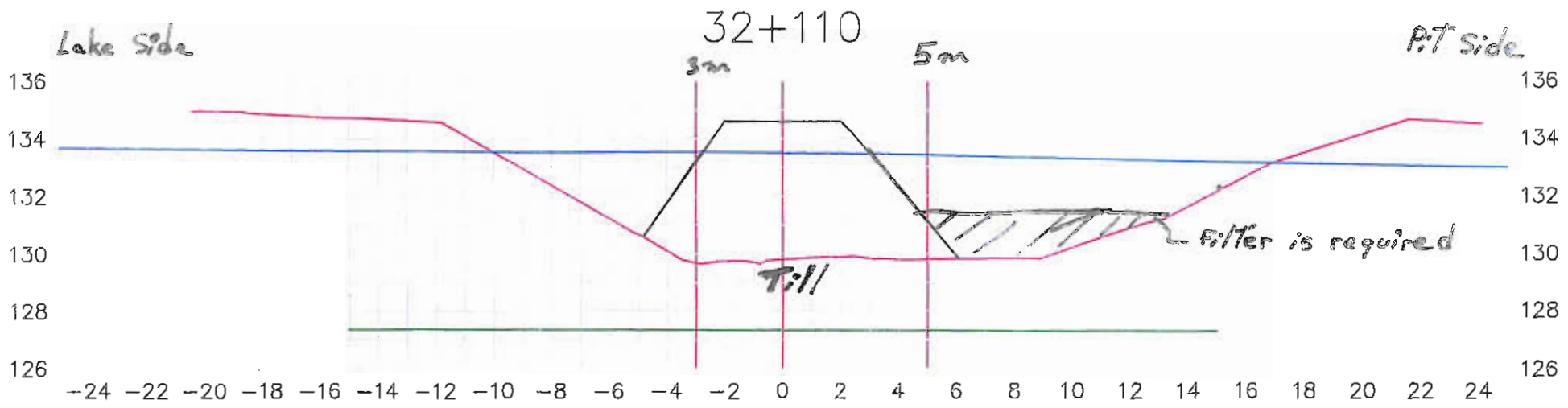
Target surface

Manual probing

Date: 14-09-10

Par: Hugues Gagnon

sept. 14



Lake side

Pit side

Lake bed soil

Dike

Target surface

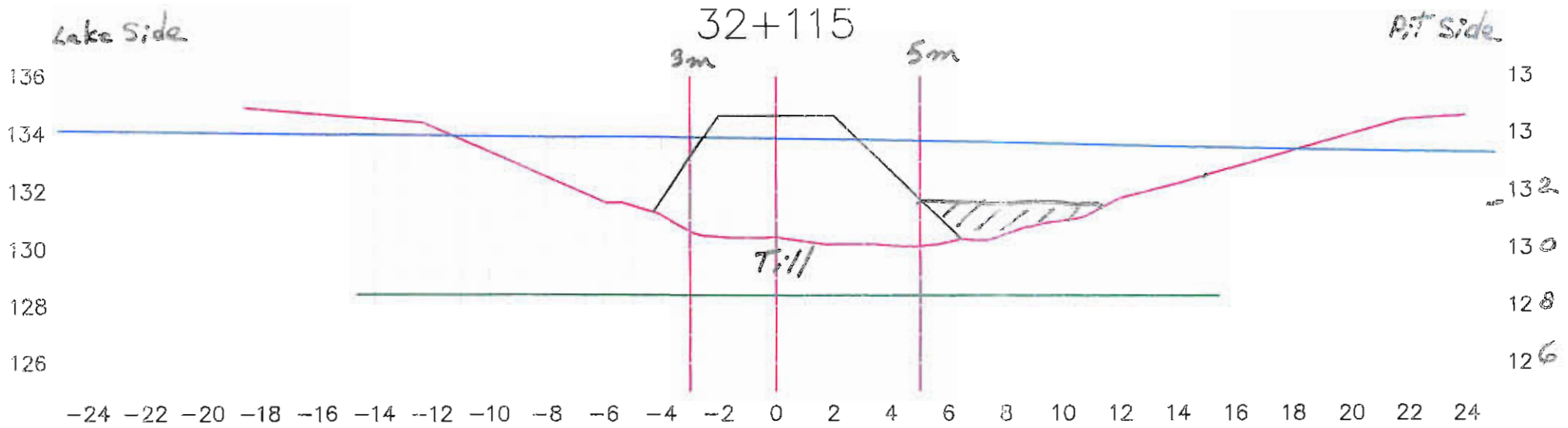
Manual probing

Date: 14-09-10

Page: 6 of 9

VB
Sept. 14

Par: Hugues Gagnon



Lake side

Pit side

Lake bed soil

Dike

Target surface

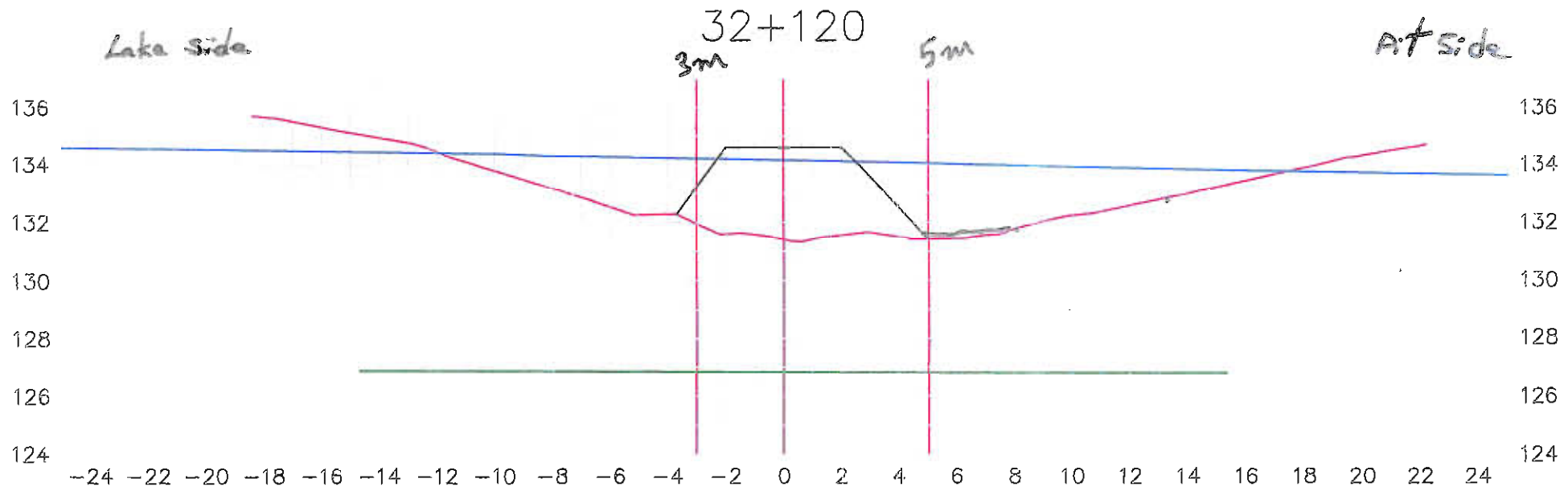
Manual probing

Date: 14-09-10

Page: 7 of 9

MB. Sept.14

Par: Hugues Gagnon



Lake side

Pit side

Lake bed soil

Dike

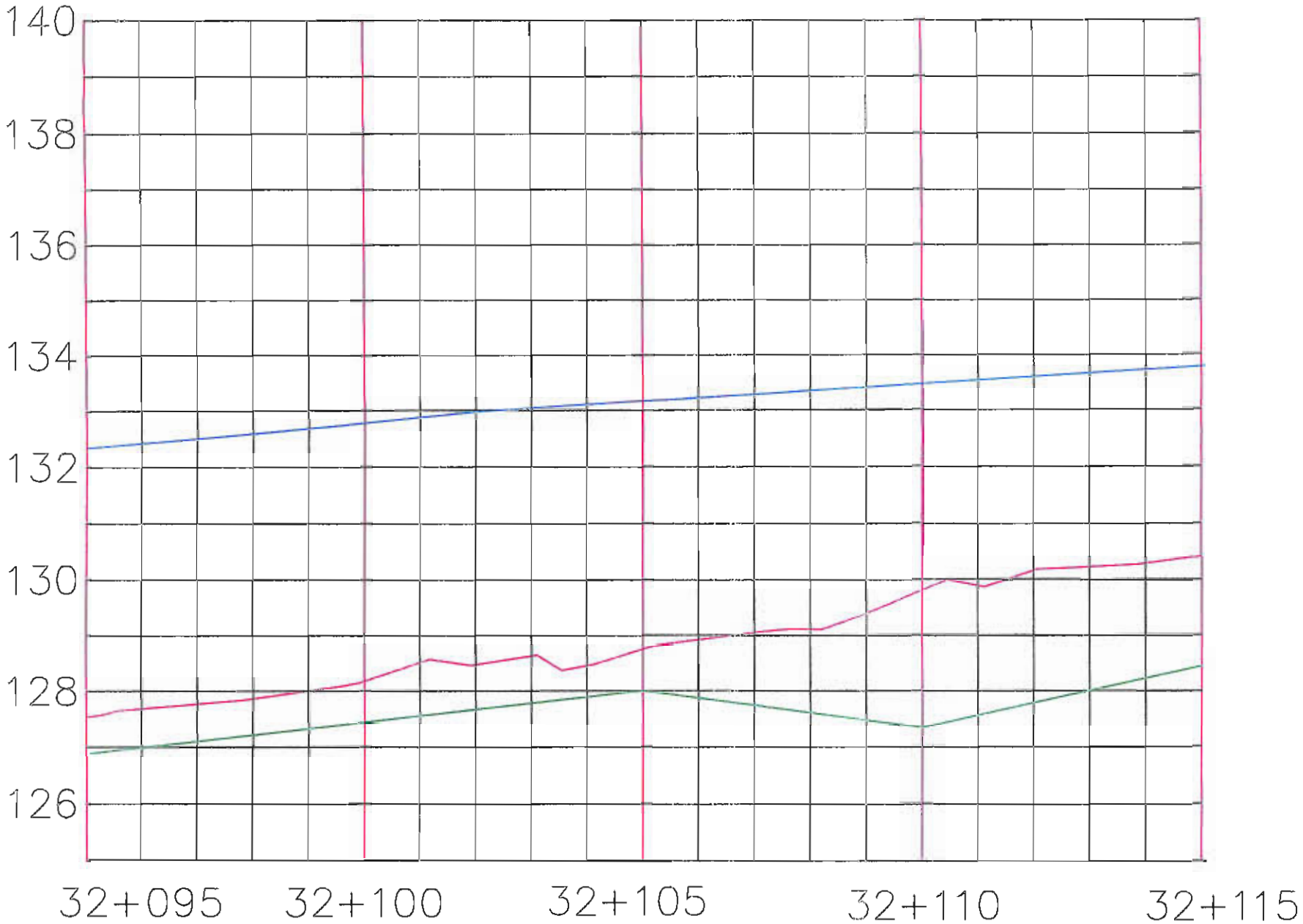
Target surface

Manual probing

Date: 14-09-10

Page: 8 of 9

Par: Hugues Gagnon



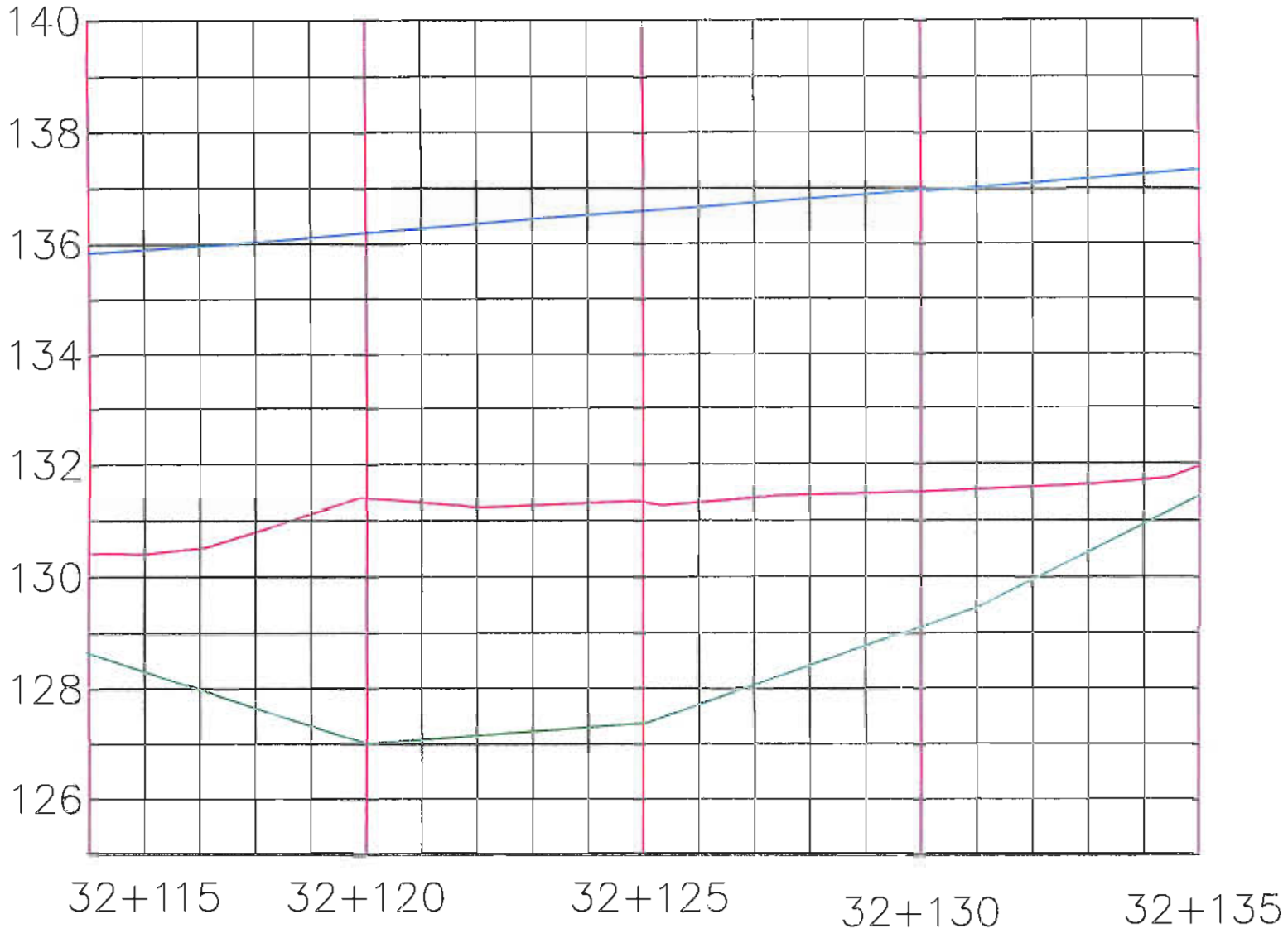
Station: 32+095 @ 32+115

Date: 14-09-10

Page: 9 (part 1 of 2) of 9

Par: Hugues Gagnon

Sept. 14



Station: 32+115 @ 32+135

Date: 14-09-10

Par: Hugues Gagnon

GOLDER

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 32+106 Offset	SHIFT: NIGHT: ☐ DAY: ☒	DATE: 14-09-2010	SHEET 1 OF 9
To Sta. 32+135 Offset	LOCATION: : BAY GOOSE DIKE South Section		
EQUIPMENT:			
DESCRIPTION			

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	M.L	Y.B.
2.	Storage areas planned for disposal of removed materials	M.L	Y.B.
3.	Occurrence of snow and ice removal method in place	M.L	Y.B.
4.	Occurrence of boulders and removal method in place	M.L	Y.B.
5.	Occurrence of hummocks and scalping method in place	M.L	Y.B
6.	Occurrence of surface and ground water and its impact mitigation in place	M.L	Y.B
7.	Presence of other unsuitable materials and removal method in place	M.L	Y.B.
8.	Soil frozen or thawed and measures taken	N/A M.L	Y.B
9.	Blasting requirement to remove unsuitable material and safety measure checked	N/A M.L	Y.B. N/A
10.	Adjustment made to suit design in field	M.L	Y.B
11.	Final walkover inspection before re-sloping or fill placement	M.L	Y.B.
12.	"As-excavated" survey conducted	M.L	Y.B.
13.	Final sounding conducted of lake bottom surface	M.L	Y.B.

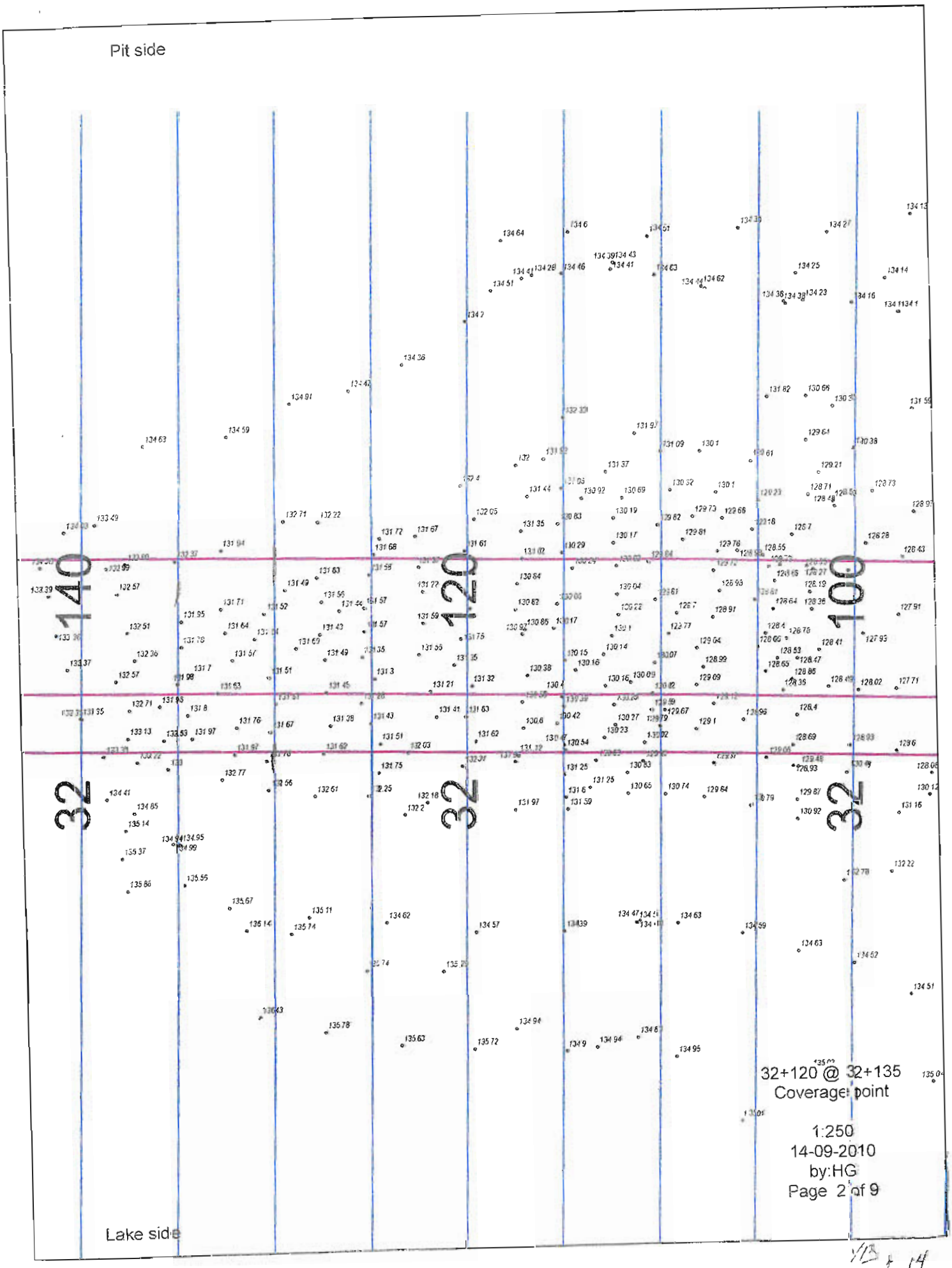
REMARKS: Soil frozen and ice rich encountered from 32+125 to 32+135. Filter is required at 132m (1.7m below water) from 32+120 to 32+127; and at 133m elev. (0.7m below water) from 32+127 to 32+135.

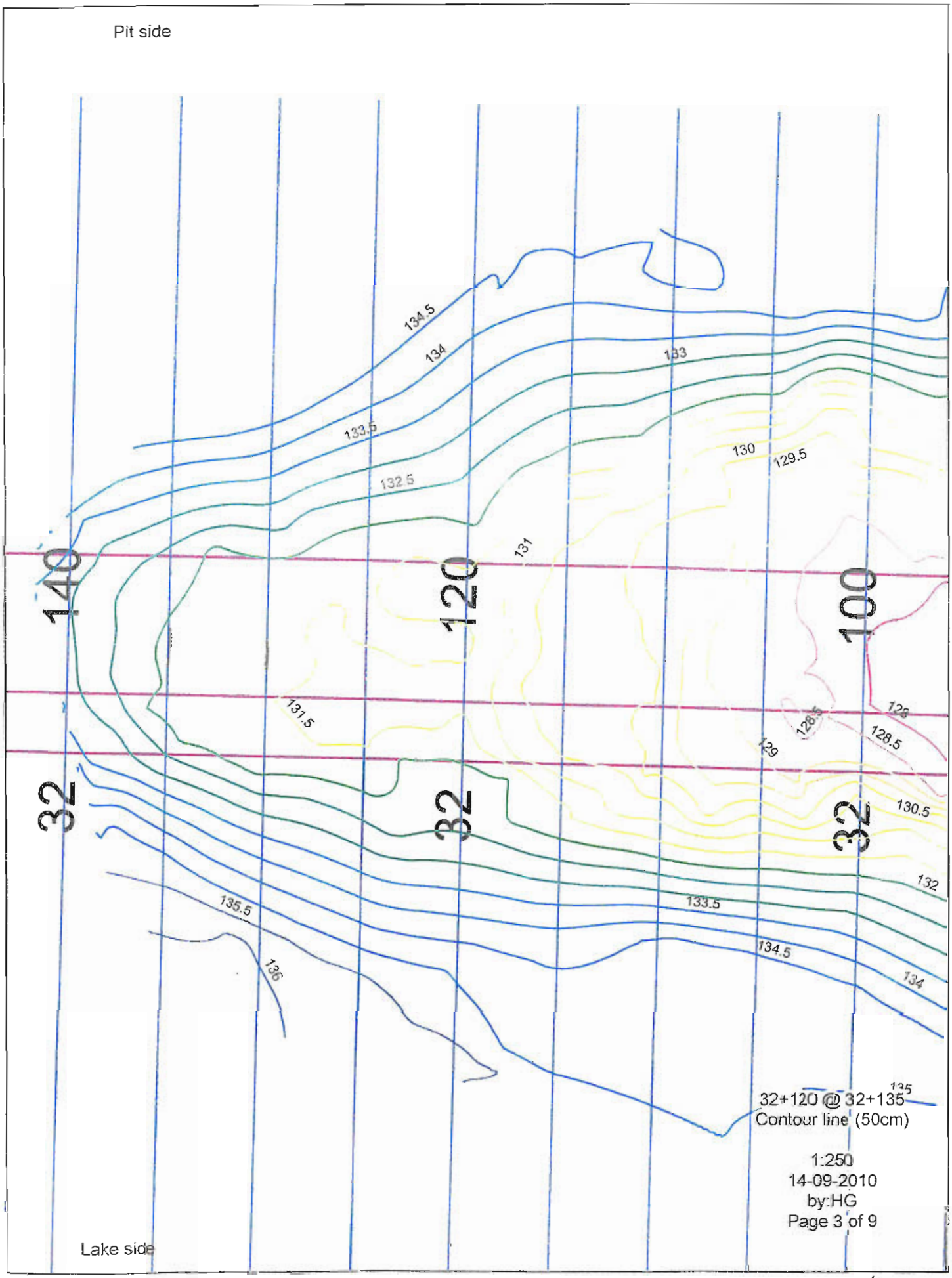
DEVIATIONS: (Attach list if necessary)

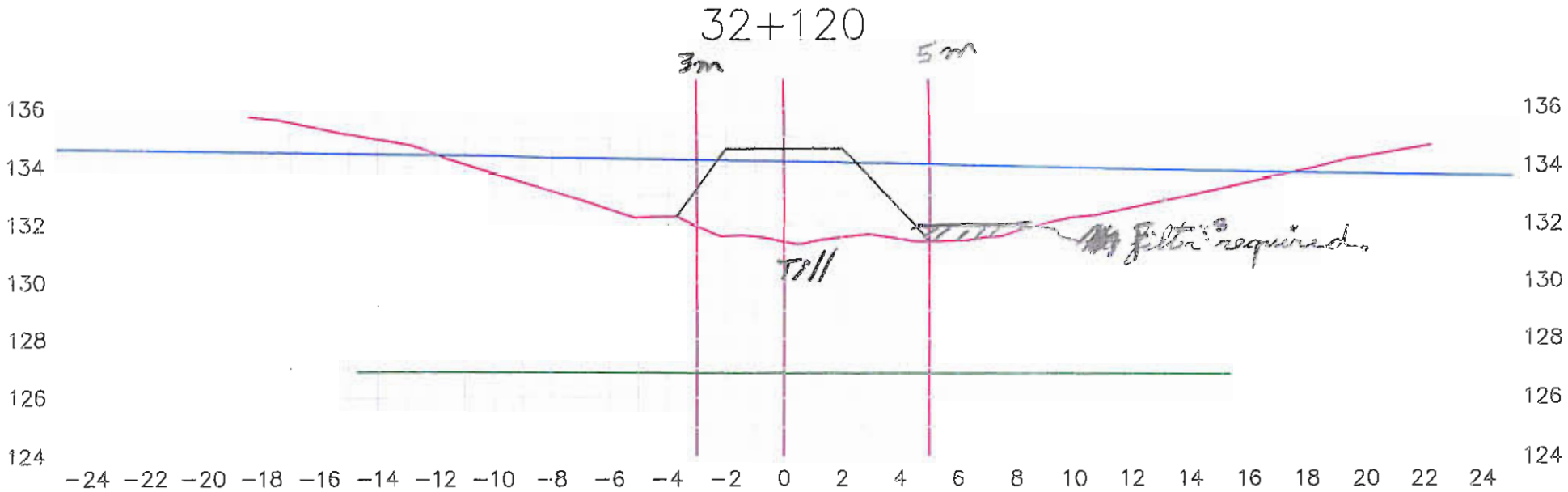
No measure was taken for frozen soil but removing as much as they can with teeth bucket.

DATE OF RECTIFICATION:

SURVEY VERIFICATION	ACCEPTED BY QA Manager:	ACCEPTED BY OWNER:
NAME: MAXIME GILBERT	NAME: Yves Boulanger	NAME:
SIGNATURE:	SIGNATURE:	SIGNATURE:
DATE 14-09-2010 @ 12:34	DATE Sept. 14, 10 15h50	DATE


Pit side
140
120
100
32
32
32
32+120 @ 32+135
Coverage point
1:250
14-09-2010
by:HG
Page 2 of 9
Lake side


Pit side
140
120
100
32
32
32
134.5
134
133
133.5
132.5
130
129.5
131
131.5
129
128.5
128
128.5
130.5
132
133.5
134.5
134
135.5
136
135
32+120 @ 32+135
Contour line (50cm)
1:250
14-09-2010
by:HG
Page 3 of 9
Lake side



Lake side

Pit side

Lake bed soil

Dike

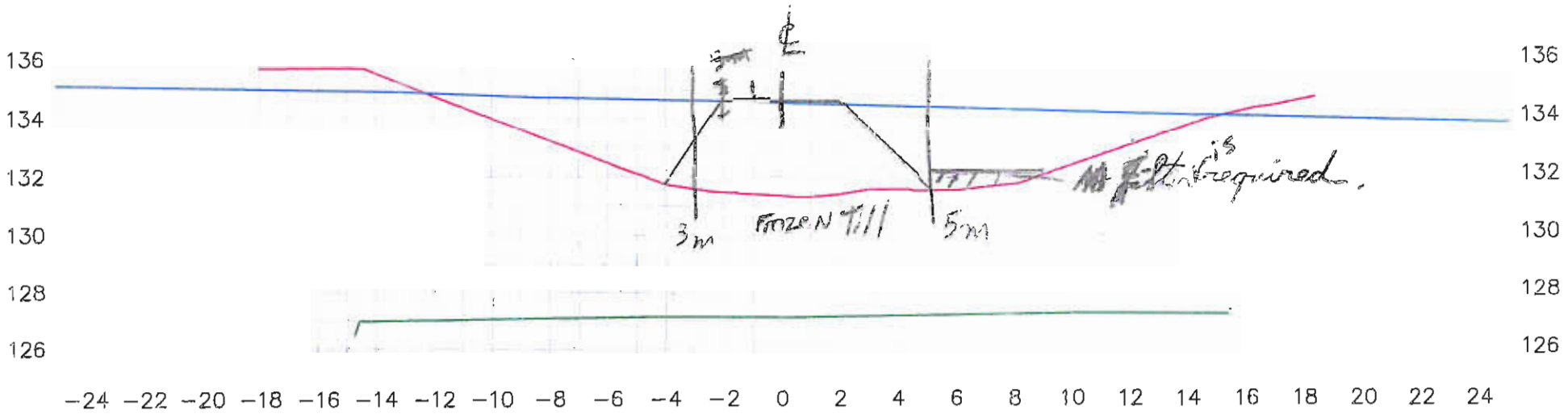
Target surface

Manual probing

Date: 14-09-10

Par: Hugues Gagnon

32+125



Lake side

Pit side

Lake bed soil

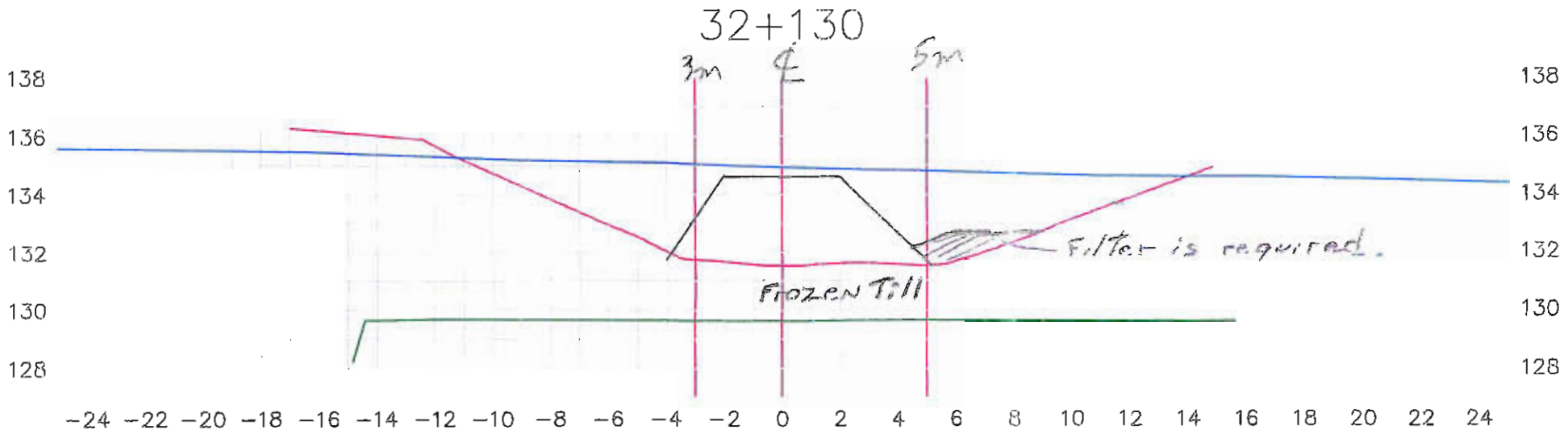
Dike

Target surface

Manual probing

Date: 14-09-10

Par: Hugues Gagnon



Lake side

Pit side

Lake bed soil

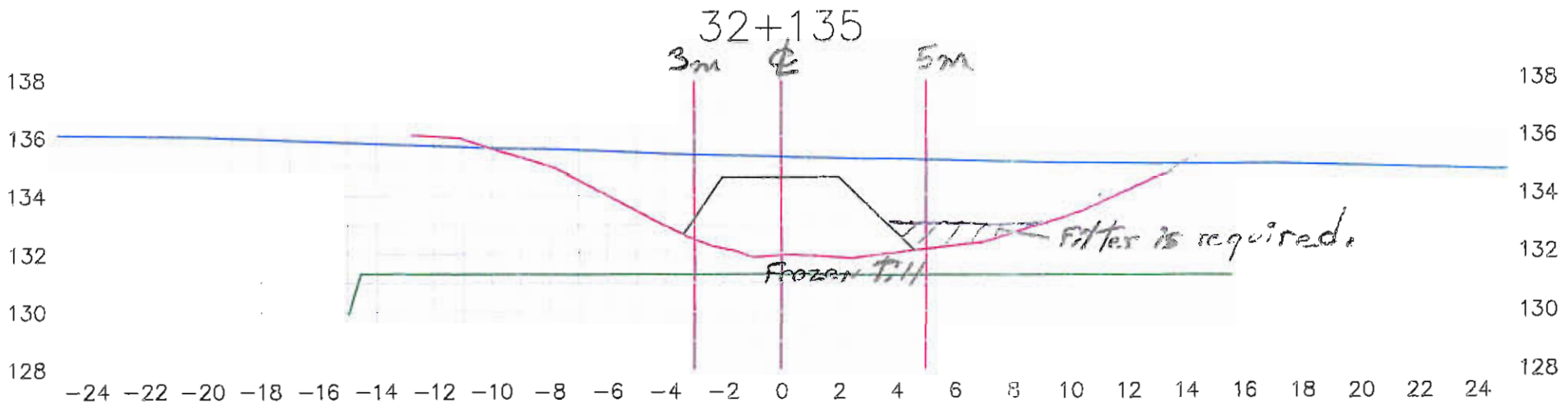
Dike

Target surface

Manual probing

Date: 14-09-10

Par: Hugues Gagnon



Lake side

Pit side

Lake bed soil

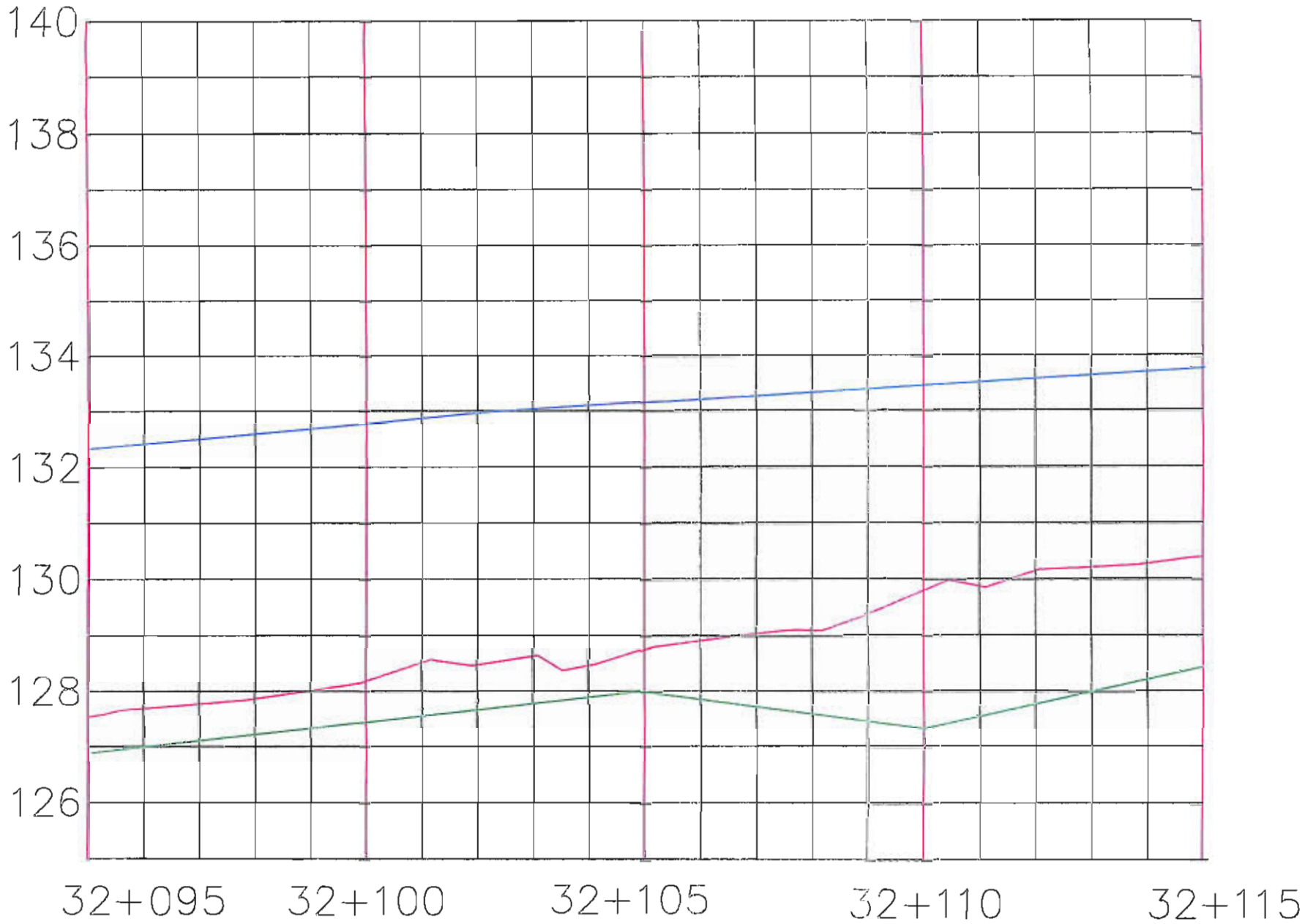
Dike

Target surface

Manual probing

Date: 14-09-10

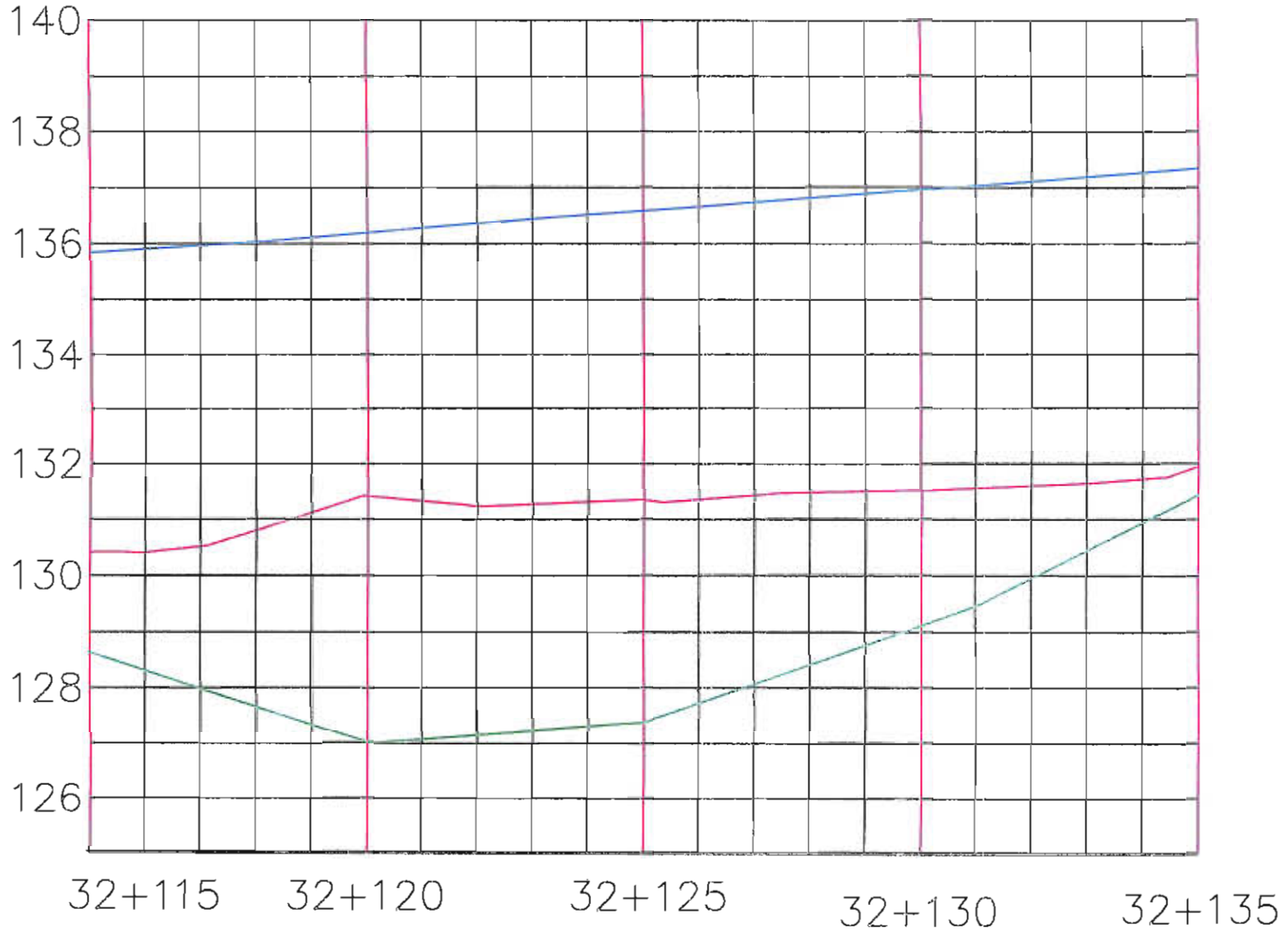
Par: Hugues Gagnon



Station: 32+095 @ 32+115

Date: 14-09-10

Par: Hugues Gagnon



YB.
Sept. 14

Station: 32+115 @ 32+135

Date: 14-09-10

Par: Hugues Gagnon

Foundation Preparation and Excavation

BAY-GOOSE DIKE CONSTRUCTION CHECKLIST - FOUNDATION PREPARATION and EXCAVATION

From Sta. 32+135 Offset	SHIFT: NIGHT :☐ DAY :☒	DATE : 14-09-10	SHEET 1 OF 10
To Sta. 32+160 Offset	LOCATION: : BAY GOOSE DIKE, SOUTH PORTION		
EQUIPMENT:			
DESCRIPTION			

NO.	ITEMS TO BE INSPECTED	INSPECTED BY QC Manager	INSPECTED BY QA Manager
1.	Survey lines and layout checked to ensure the locations conform with the Drawings	MS	YB
2.	Storage areas planned for disposal of removed materials	MS	YB
3.	Occurrence of snow and ice removal method in place	MS	YB
4.	Occurrence of boulders and removal method in place	MS	YB
5.	Occurrence of hummocks and scalping method in place	MS	YB
6.	Occurrence of surface and ground water and its impact mitigation in place	MS	YB
7.	Presence of other unsuitable materials and removal method in place	MS	YB
8.	Soil frozen or thawed and measures taken	N/A MS	YB
9.	Blasting requirement to remove unsuitable material and safety measure checked	N/A MS	N/A YB
10.	Adjustment made to suit design in field	MS	YB
11.	Final walkover inspection before re-sloping or fill placement	MS	YB
12.	"As-excavated" survey conducted	MS	YB
13.	Final sounding conducted of lake bottom surface	MS	YB

REMARKS : Frozen soil & ice rich for all this section; No measure taken but removing as much as possible with Teeth bucket.
Filter is required at 133 m (0.7 m below water surface).

DEVIATIONS : (Attach list if necessary)

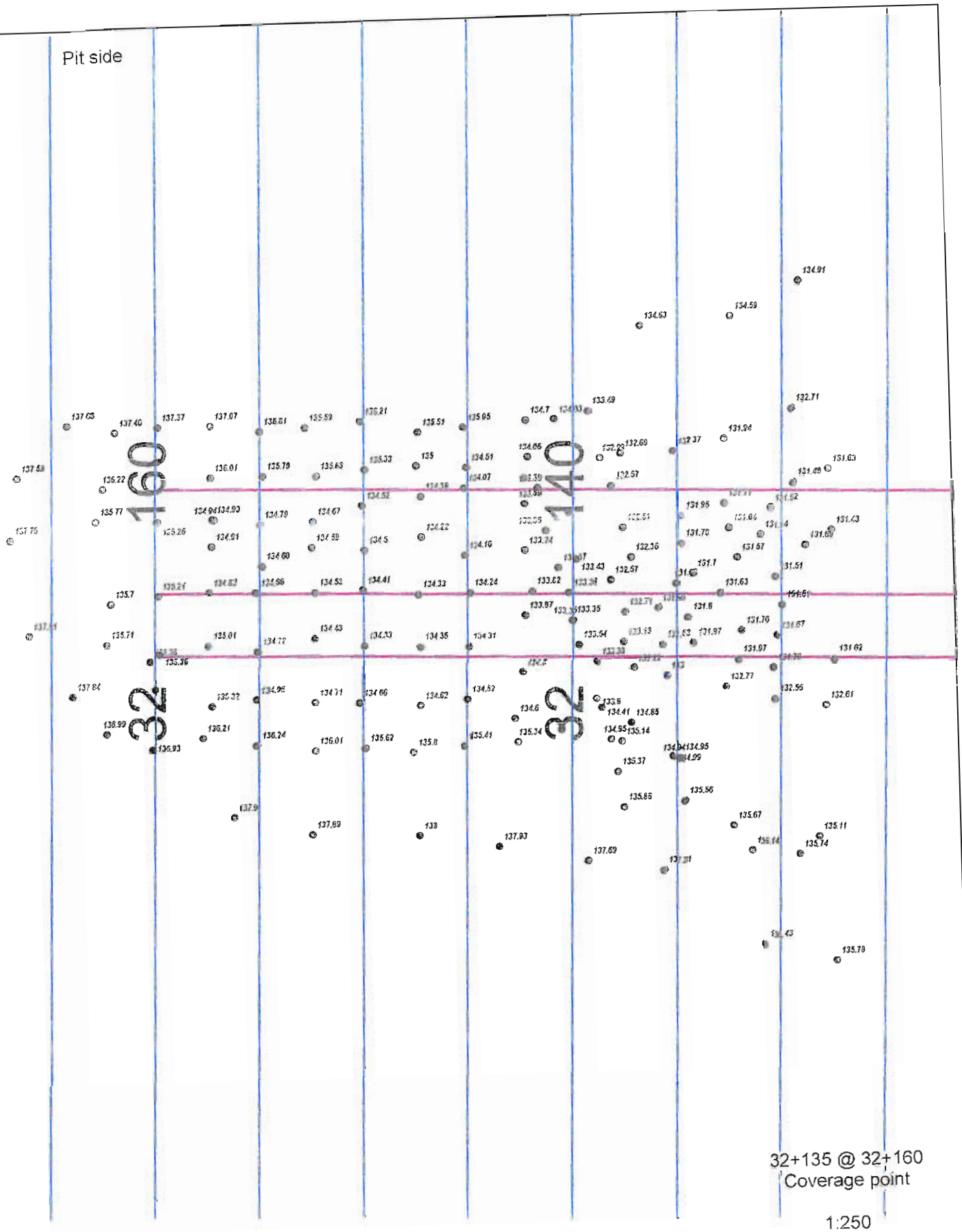
DATE OF RECTIFICATION :

SURVEY VERIFICATION	ACCEPTED BY QA Manager :	ACCEPTED BY OWNER :
NAME: MAXIME GILBERT	NAME: Yves Boudreault	NAME:
SIGNATURE :	SIGNATURE :	SIGNATURE :
DATE 14-09-2010	DATE Sept. 14, 2010	DATE

14:55 16h15

YB Sept. 14/10

Pit side

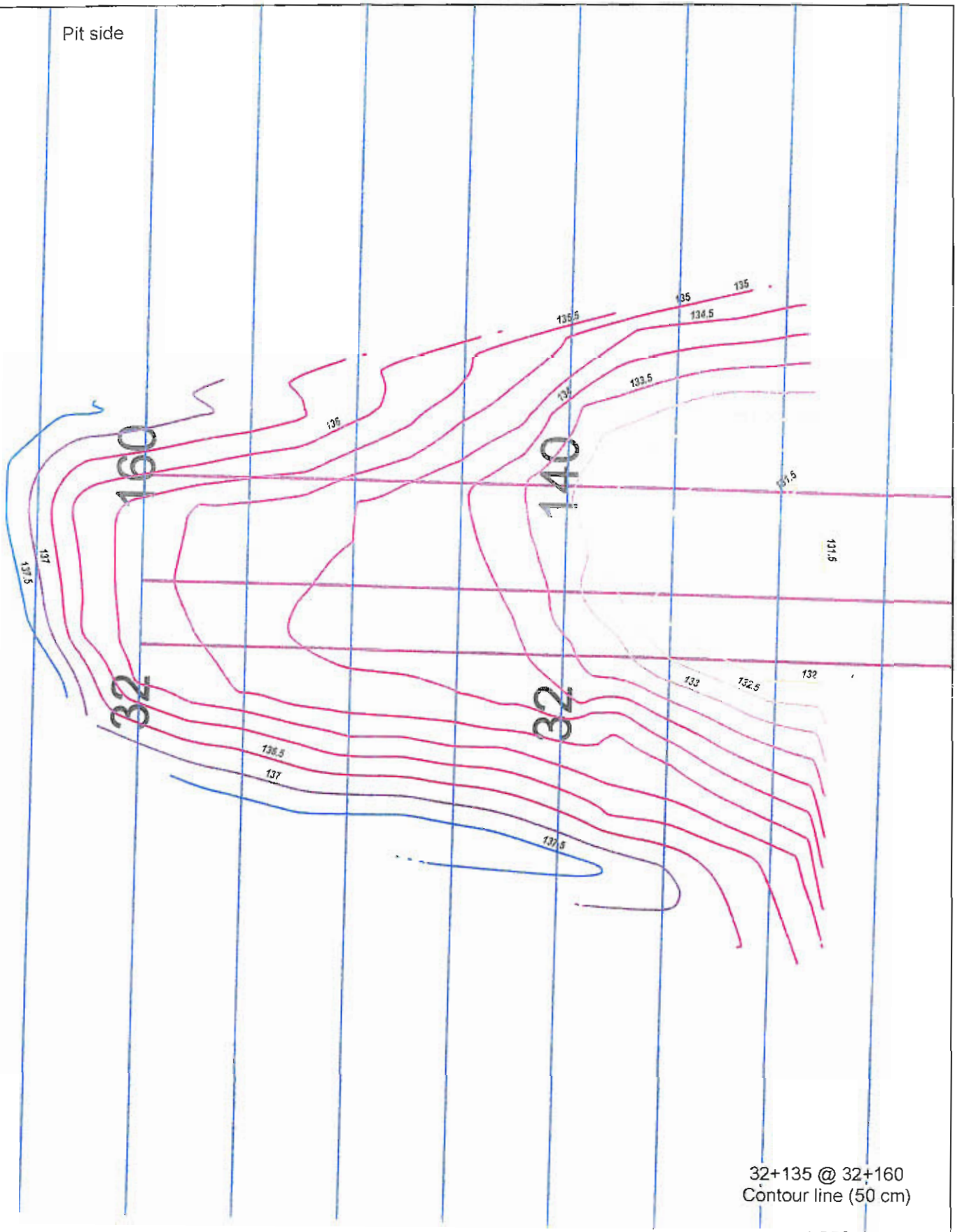


32+135 @ 32+160
Coverage point

1:250
14-09-2010
by:HG

Lake side

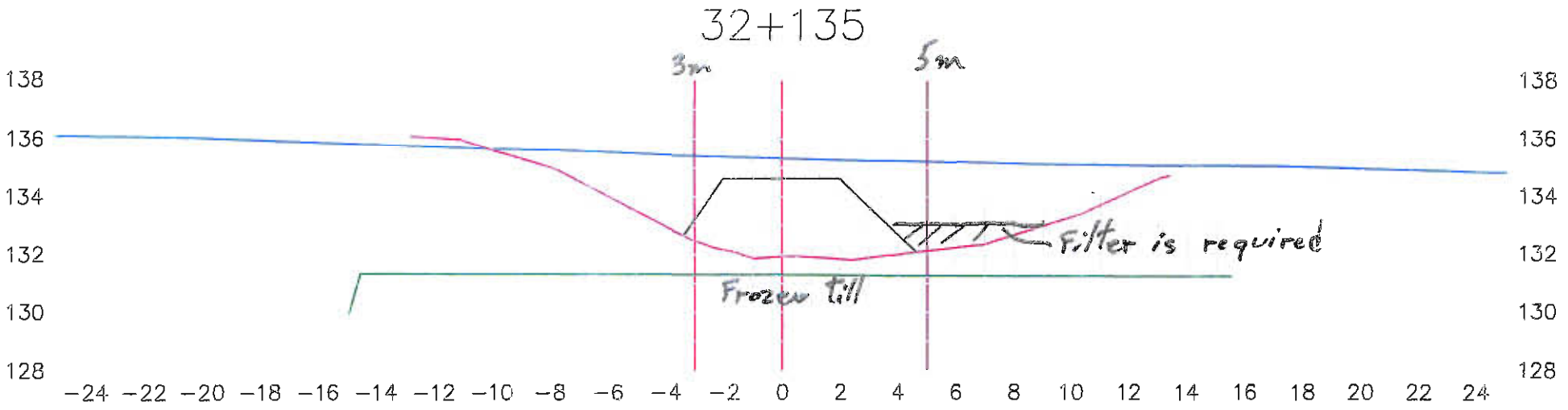
HG
Sept. 14/10



32+135 @ 32+160
Contour line (50 cm)

1:250
14-09-2010
by:HG
Page 3 of 10

Sept. 14/10



Lake side

Pit side

Lake bed soil

Dike

Target surface

Manual probing

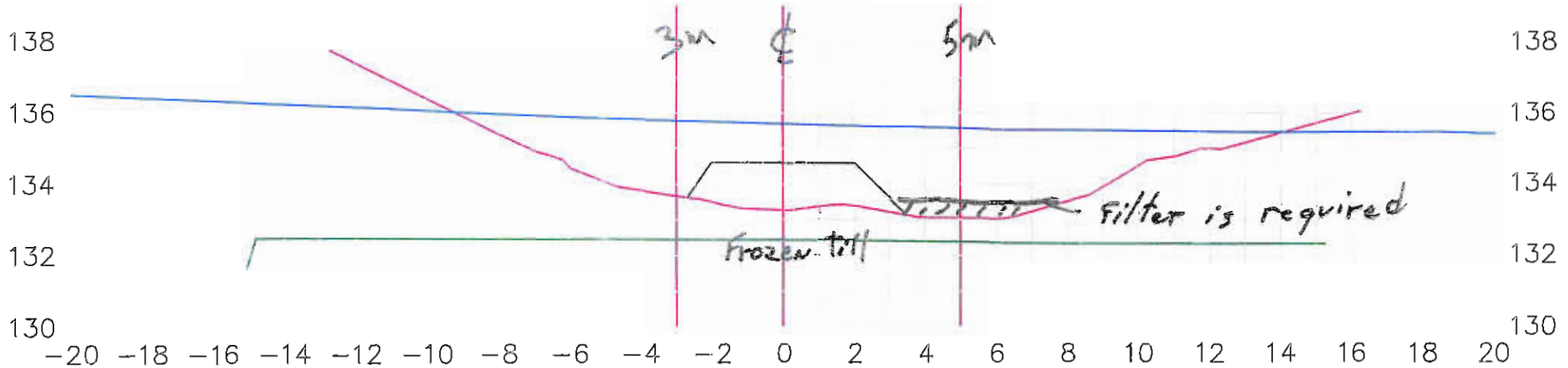
Date: 14-09-10

Page: 4 of 10

YB
Sept. 14/10

Par: Hugues Gagnon

32+140



Lake side

Pit side

Lake bed soil

Dike

Target surface

Manual probing

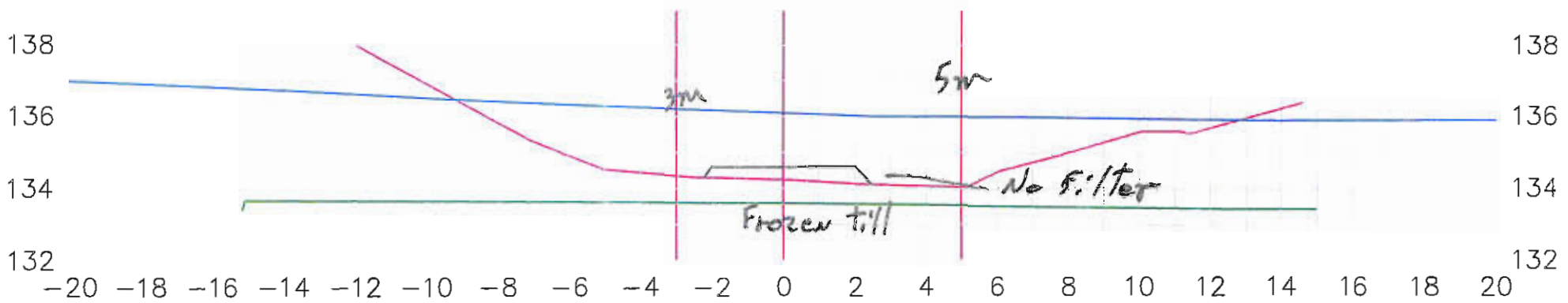
Date: 14-09-10

Page: 5 of 10

Par: Hugues Gagnon

YB
Sept. 14/10

32+145



Lake side

Pit side

Lake bed soil

Dike

Target surface

Manual probing

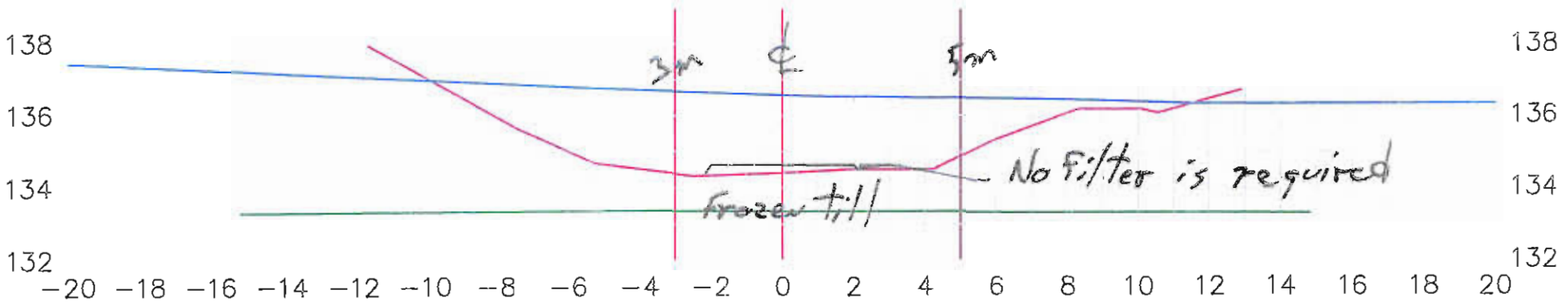
Date: 14-09-10

Page: 6 of 10

Par: Hugues Gagnon

YB
Sept. H /10

32+150



Lake side

Pit side

Lake bed soil

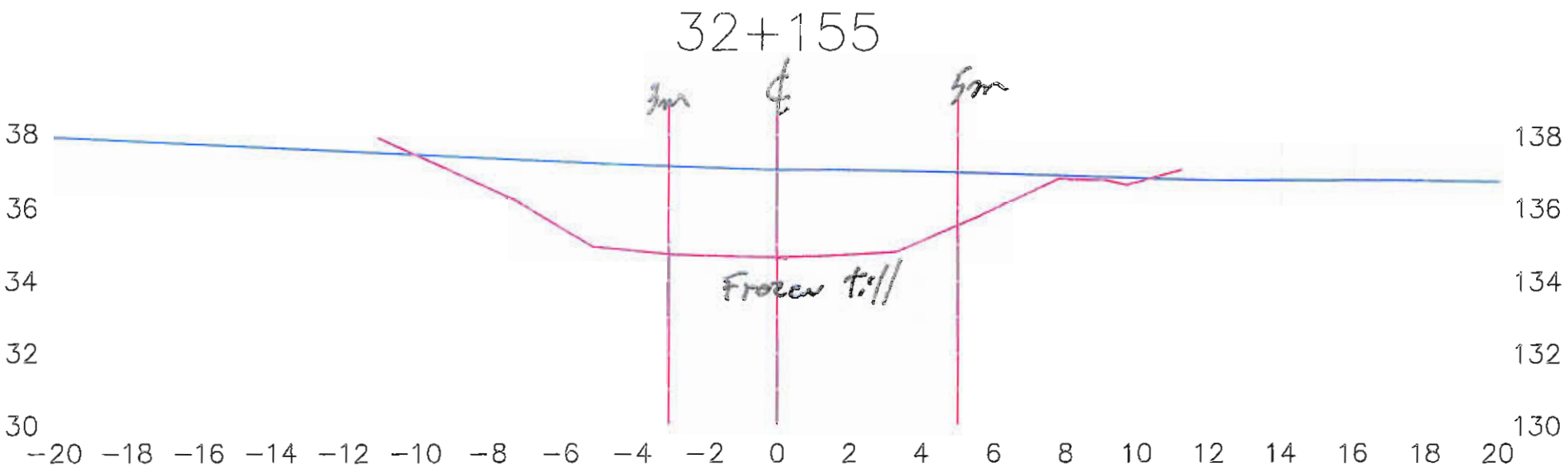
Dike

Target surface

Manual probing

Date: 14-09-10

Par: Hugues Gagnon



Lake side

Pit side

Lake bed soil

Dike

Target surface

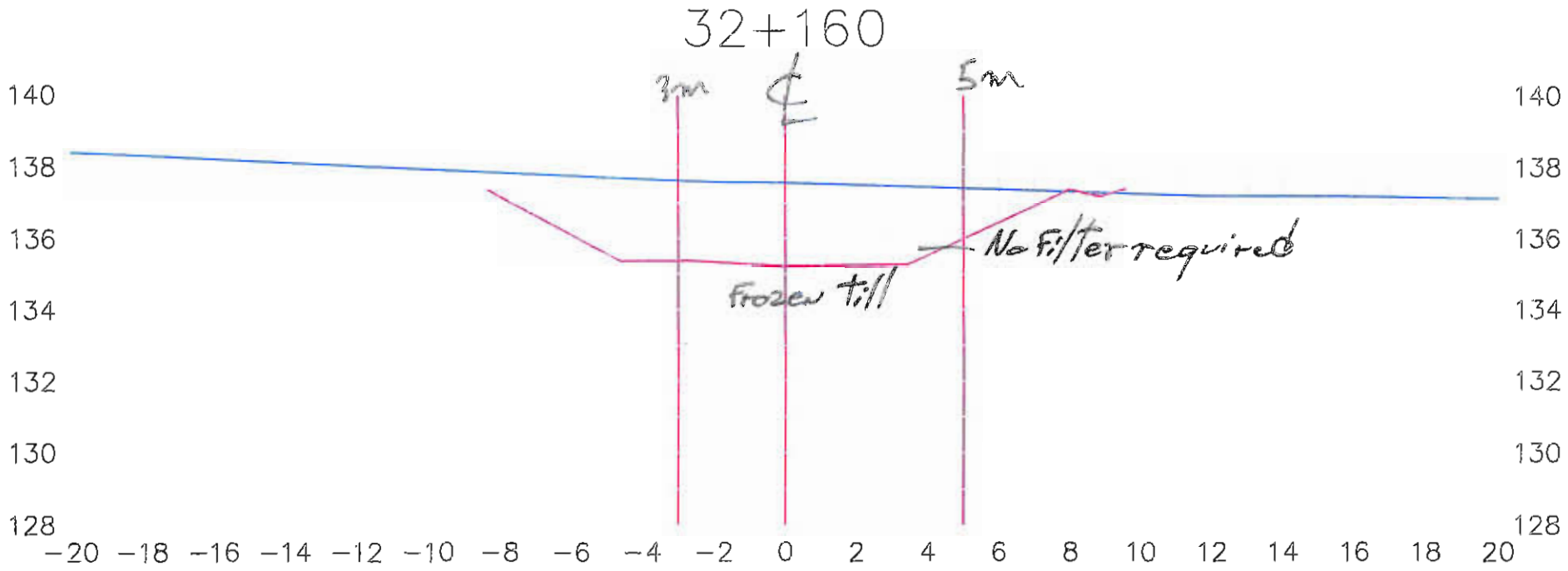
Manual probing

Date: 14-09-10

Page: 8 of 10

Par: Hugues Gagnon

Sept. 14/10



Lake side

Pit side

Lake bed soil

Dike

Target surface

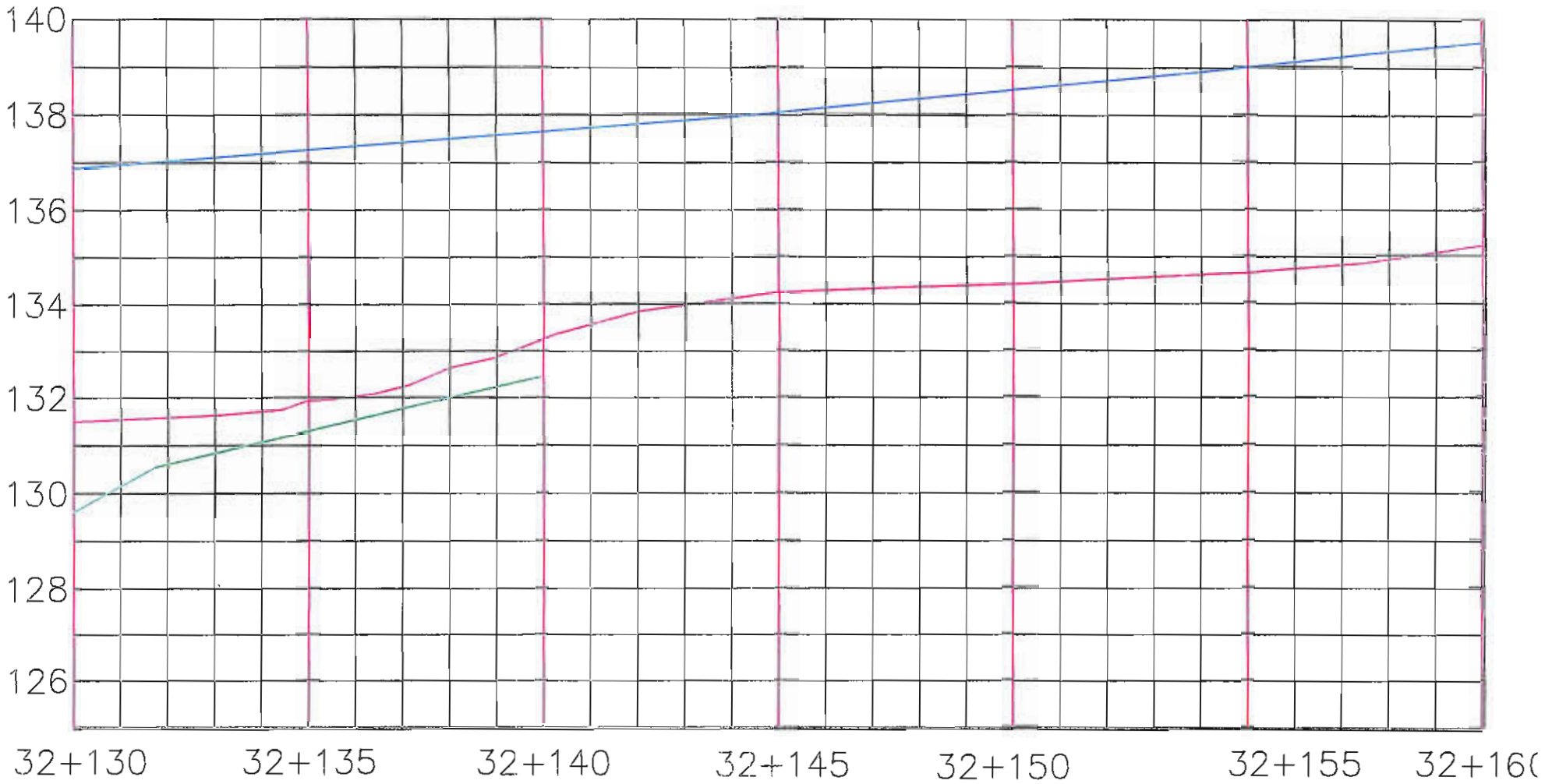
Manual probing

Date: 14-09-10

Page: 9 of 10

Par: Hugues Gagnon

Sept. 14/10



Sept. 14/10

Station: 32+130 @ 32+160

Date: 14-09-10

Par: Hugues Gagnon

C2 – Golder Site Memoranda

TECHNICAL MEMORANDUM

DATE	August 25, 2009	**PROJECT NO.**	08-1428-0028 Doc. No. 941 Ver. 0
TO	Gaston Blanchette and Eric Lamontagne Agnico-Eagle Mines Limited Meadowbank Division		
CC	Michel Julien; Dan Walker; Glen Rutherford		
FROM	Fiona Esford and Paul Bedell	**EMAIL**	fesford@golder.com; pbedell@golder.com

BAY-GOOSE DIKE CUTOFF WALL CONSTRUCTION, MEADOWBANK GOLD PROJECT

The following provides revisions to the Specifications (Rev. 1) and Drawings (Rev. 0 and Rev. 1) issued by Golder to AEM for the construction of the Bay Goose Dike at the Meadowbank Gold Project. The "Issued for Construction" Rev. 1 version of specifications are revised as follows.

S6 CUTOFF WALL

S6.1 General

Last bullet is revised to:

- Construction of the slurry trench and Cutoff Wall composed of cement soil bentonite (CSB) for the lower portion (at or below elevation 127.6 m) and soil-bentonite (SB) for the upper portion.

S6.4 Execution of CSB Cutoff Wall

S6.4.1 General

The first paragraph of this section is revised to:

Given that the natural average lake elevation is 134.1 m, when the trench bottom is at or below elevation 127.6 m CSB material shall be used for cutoff wall construction. In these locations, cement shall be added to the SB backfill and shall then be referred to as CSB. CSB shall be placed on the bottom of the trench and over-built up to a minimum elevation of 128.1 m and then SB backfill placed above, as described in Section S6.3, to the elevation shown on the Drawings. Time between placement of the CSB material and SB material shall be approximately 24 hours. The upper surface of the CSB material shall be scarified or cleaned to remove any deposited sediment or fines, prior to placement of the SB backfill, as approved by the Engineer.

Drawing 4200-07 Rev. 1, Section B-B'
CSB material shall be extended up to a minimum elevation of 128.1 m (for the over-build).

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Drawing 4200-17 Rev. 0., Section B – title is modified to:
Typical Section – Bedrock Elevation Between 127.6 and 129.1

Drawing 4200-17 Rev. 0., Section C – title is modified to:
Typical Section – Bedrock Elevation at or below 127.6
CSB material shall be extended up to a minimum elevation of 128.1 m (for the over-build).

Figure 1 below is provided to illustrate the revisions to Drawing 4200-17 Rev. 0, Section C. Figure 2 is provided to illustrate the estimated area where CSB and SB material are to be used for cutoff wall construction of the northern portion of the Bay-Goose Dike. Exact areas where CSB and SB material are to be used will be based on actual conditions encountered in the field and approved by the Engineer.

GOLDER ASSOCIATES LTD.

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ORIGINAL SIGNED

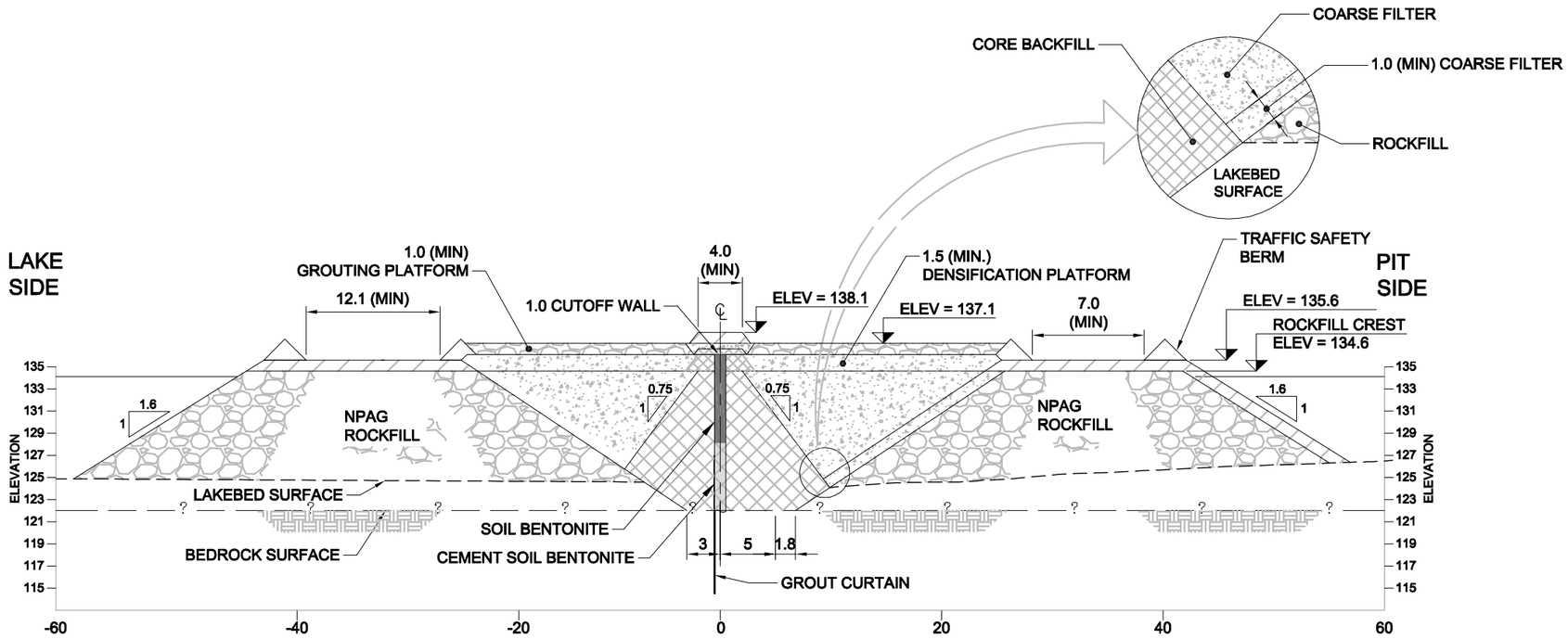
Fiona Esford, M.Sc., P.Eng. (BC, Yukon, NWT/NU)
Senior Geotechnical Engineer

Paul M. Bedell, P.Eng. (NT/NU)
Associate, Senior Geotechnical Engineer

DRW/MJ/FCE/PMB/rs

Attachments: Figures 1 and 2

\\bur1-s-filesrv2\final\2008\1428\08-1428-0028\doc 941 0825_09 tm\doc 941 0825_09 tm-bay-goose dike cutoff wall construction-meadowbank-ver 0.doc



TYPICAL SECTION - BEDROCK ELEVATION AT OR BELOW 127.6

0 5 10 15 20 25

SCALE1:500

LEGEND

- INFERRED BEDROCK
- COARSE FILTER / DENSIFICATION PLATFORM
- CORE BACKFILL
- NPAG ROCKFILL SURFACING AND THERMAL CAP
- ROCKFILL
- SOIL BENTONITE (SB) CUTOFF WALL
- CEMENT SOIL BENTONITE (CSB) CUTOFF WALL

NOTES

1) ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED.
2) ALL ELEVATIONS ARE IN METRES ABOVE SEA LEVEL (MASL), UNLESS OTHERWISE NOTED.
3) ALL SLOPES SHOWN ARE NOMINAL VALUES.

PROJECT

AEM

AGNICO-EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

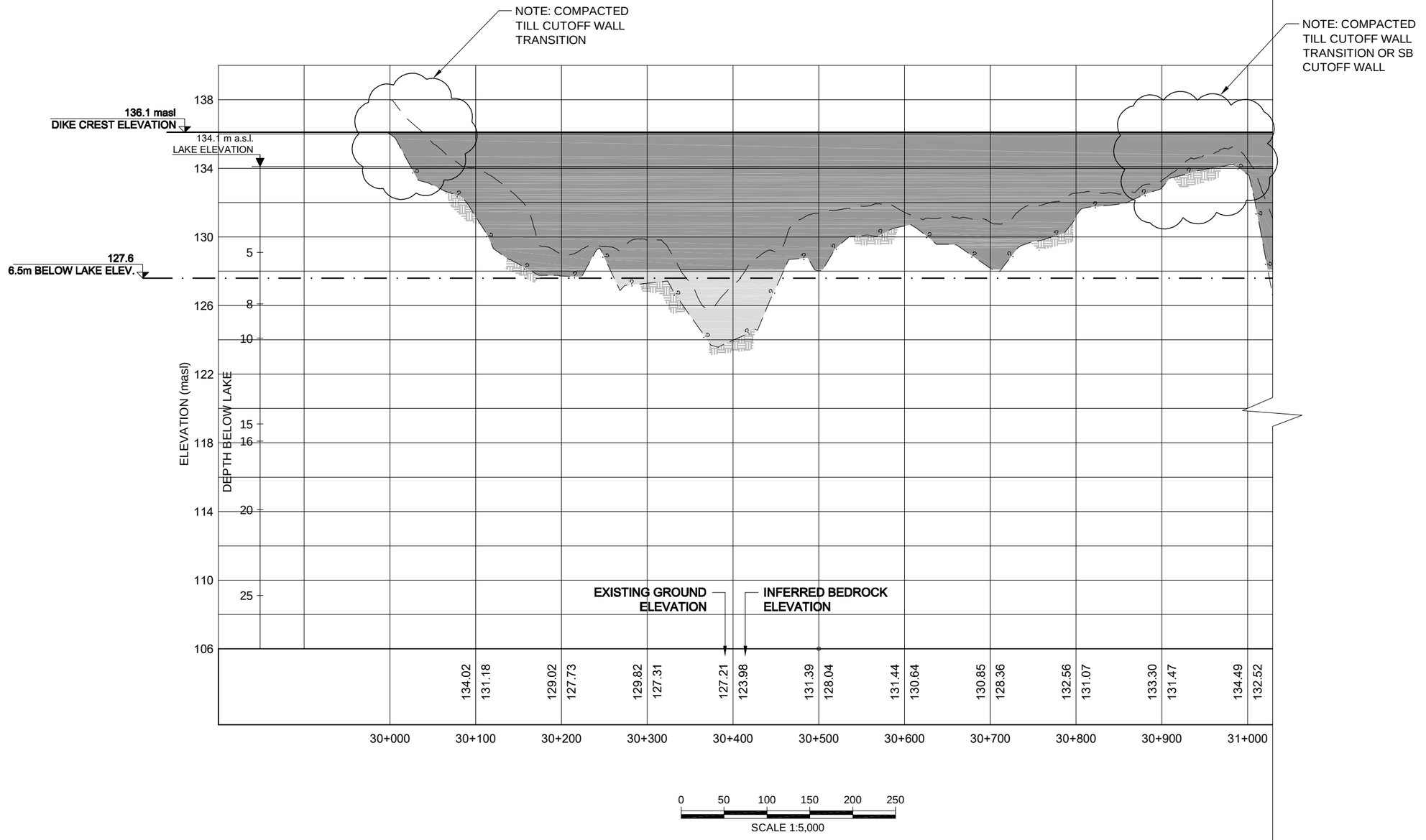
BAY-GOOSE DIKE
NORTH PORTION OF BAY-GOOSE DIKE
TYPICAL SECTION

Golder Associates
Greater Vancouver Office, BC

PROJECT No. 08-1428-0028			PHASE No.	4200
DESIGN	FE	21AUG09	SCALE AS SHOWN	REV. –
CADD	EA	21AUG09		
CHECK				
REVIEW				

FIGURE 1

Drawing File: N:\Bur-Graphics\Projects\2008\1428\08-1428-0028\Drafting\4200\Task-1000\Figures\0814280028-4200-FIG_01.dwg Friday, August 21, 2009 1:08:31 PM By: EAbella



LEGEND

- INFERRED BEDROCK
- SOIL BENTONITE (SB) CUTOFF WALL
- CEMENT SOIL BENTONITE (CSB) CUTOFF WALL

NOTES

1) ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE NOTED.
2) ALL ELEVATIONS ARE IN METERS ABOVE SEA LEVEL (MASL), UNLESS OTHERWISE NOTED.
3) LAKEBED SURFACE BASED ON OCTOBER 2008 BATHYMETRIC SURVEY.
4) DEPTH TO LAKEBED AND BEDROCK BENEATH CUTOFF WALL CENTRELINE INFERRED BASED ON GEOTECHNICAL INVESTIGATIONS, ACTUAL FIELD CONDITIONS MAY VARY.

PROJECT

AEM

AGNICO-EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

BAY-GOOSE DIKE
NORTH PORTION OF BAY-GOOSE DIKE
CUTOFF WALL CONSTRUCTION

Golder Associates
Greater Vancouver Office, BC

PROJECT No.			PHASE No.
DESIGN			SCALE AS SHOWN REV. –
CADD			
CHECK			
REVIEW			

FIGURE 2

Drawing File: N:\Bur-Graphics\Projects\2008\1428\08-1428-0028\Drafting\4200\Task-1000\Figures\08142800028-4200-FIG_02.dwg Monday, August 24, 2009 1:25:52 PM By: EAbella

TECHNICAL MEMORANDUM

DATE	31 August, 2009	**PROJECT No.**	08-1428-0028;081428-0029
TO	Gaston Blanchette and Eric Lamontagne Agnico-Eagle Mines Limited	**DOC NO.**	1102 Rev 0
CC	Dan Walker, Annie Beaulieu, Fiona Esford, Paul Bedell, Michel Julien		
FROM	Glen Rutherford, P. Eng. (BC)	**EMAIL**	grutherford@golder.com

RE-ALIGNMENT OF BAY GOOSE DIKE – STATION 30+725 TO 30+935
MEADOWBANK GOLD PROJECT

The following provides revisions to the Bay Goose Dike alignment from Station 30+725 to 30+935. In order to minimize the volume of rockfill placement, a field adjustment to the alignment will be carried out.

The alignment shown on Drawing 4200-03 Rev 0 will be changed such that a new centerline will be created from the existing centerline at station 30+725 in a straight line to point BG-CL-10 at approximately centerline station 30+935. The attached sketch shows the revised centerline in plan.

Please note that on Drawing 4200-04 Rev 1 rockfill crest control points BG-CREST-23 to 28 will be invalidated by this re-alignment. New points can be field fit by following the minimum width requirements on Drawing 4200-06 Rev 1.

Due to this revision, the rockfill will reach Goose Island sooner than originally anticipated and in an area of ground at or near the water level. Should the surface of the rockfill platform at its final width not match the existing Goose Island ground surface on the pit side, a minimum of 2 m surface width of final rockfill cover for the coarse filter and filter zones shall be provided as per the attached sketch. The point at which this rockfill toe intersects the approved bearing surface delineates the western edge of the minimum stripping zone for the permanent dike structure. The foundation area in the core backfill zone must consist of ice poor subgrade.

As noted on the sketch, it shows only the final configuration after dewatering. Any additional, temporary fill on Goose Island to the west of the final plan area does not require stripping.

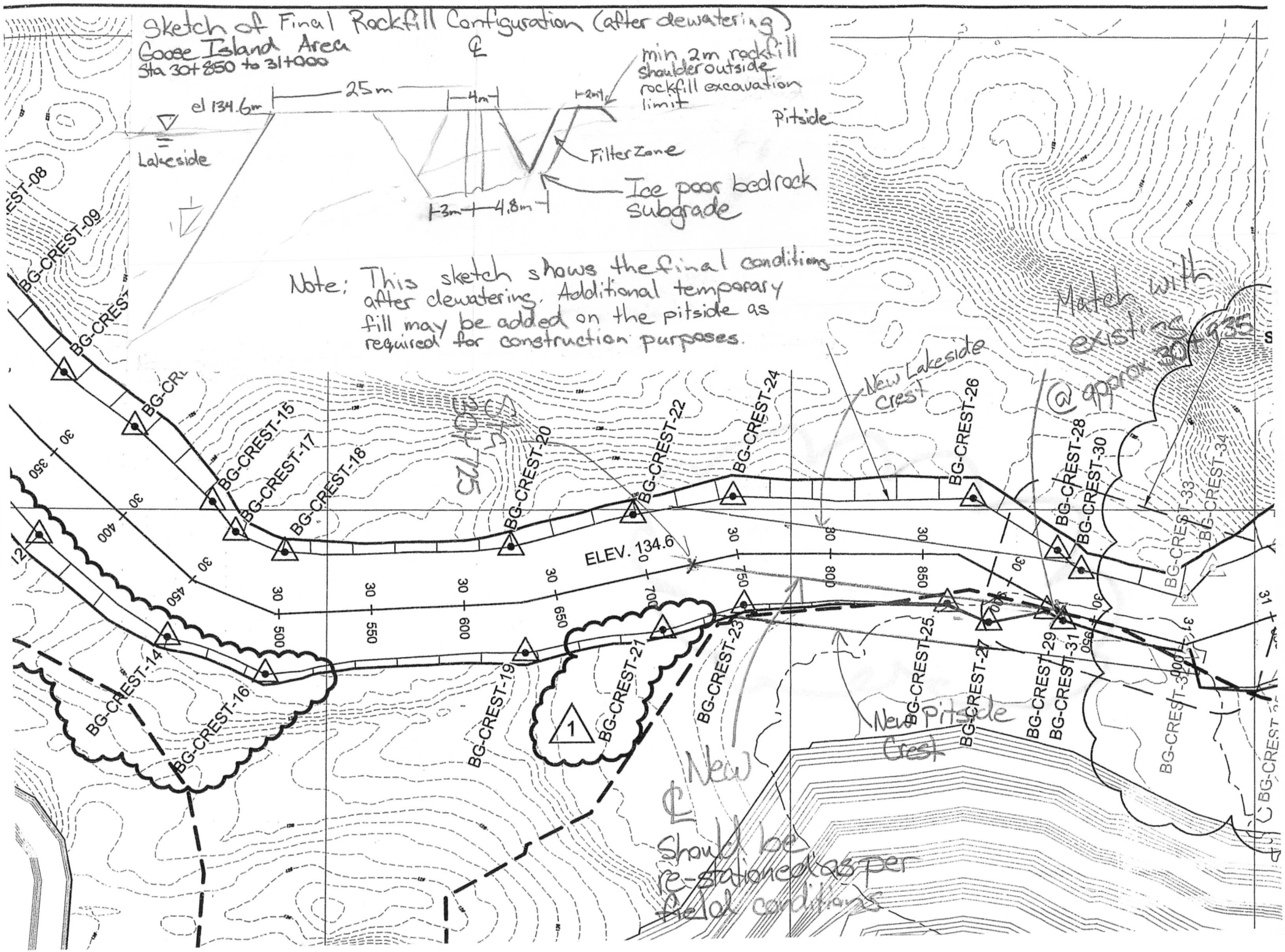
GR/MJ/gr

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Sketch of Final Rockfill Configuration (after dewatering)
Goose Island Area
Sta 30+850 to 31+000
℄
25m
4m
2m
min. 2m rockfill shoulder outside rockfill excavation limit
el 134.6m
Lakeside
Pitside
Filter Zone
Ice poor bedrock subgrade
3m
4.8m
Note: This sketch shows the final conditions after dewatering. Additional temporary fill may be added on the pitside as required for construction purposes.
Match with existing @ approx 30+935
New Lakeside crest
New Pitside Crest
New ℄ Should be re-stationed as per field conditions
ELEV. 134.6
BG-CREST-08
BG-CREST-09
BG-CREST-14
BG-CREST-15
BG-CREST-16
BG-CREST-17
BG-CREST-18
BG-CREST-19
BG-CREST-20
BG-CREST-21
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BG-CREST-30
BG-CREST-31
BG-CREST-33
BG-CREST-34
30+350
30+400
30+450
30+500
30+550
30+600
30+650
30+700
30+750
30+800
30+850
30+900
30+950
31+000

TECHNICAL MEMORANDUM

DATE	2 September, 2009	**PROJECT No.**	08-1428-0028;081428-0029
TO	Gaston Blanchette and Eric Lamontagne Agnico-Eagle Mines Limited	**DOC NO.**	1103 Rev. 0
CC	Michel Julien, Dan Walker, Paul Bedell, Fiona Esford		
FROM	Glen Rutherford, P. Eng. (BC)	**EMAIL**	Grutherford@golder.com

DRAFT REVISION TO THE BAY GOOSE DENSIFICATION PLATFORM SECTION MEADOWBANK GOLD PROJECT

The following presents the revisions to the densification platform design presented on drawing 4200-06 Rev. 1. As supplies of the 150 mm minus material are limited, the design presented on the attached sketch should be implemented to minimize the 150 mm minus material use, while maintaining the design intent.

The attached sketch shows a minimum 10 m wide zone of crushed material. This consists of 19 mm minus material for the central 4 m and 3 m of 150 mm minus material on either side of the 19 mm minus material. This crushed material zone should be confined with a minimum of 5 m of rockfill as shown on the sketch. We understand that this changed configuration meets Geopac's minimum 10 m wide crushed granular compaction zone requirements.

The elevation requirements for the densification platform remain the same.

GR/MJ/gr

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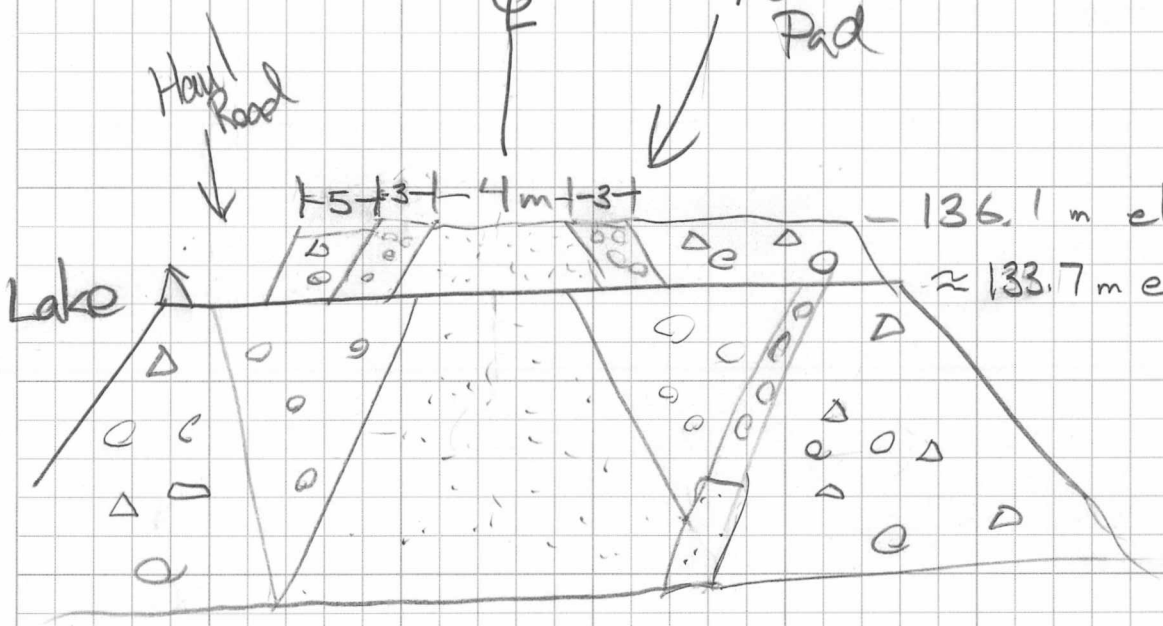
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SUBJECT	BG Dike – Densification Platform Change	Date	Aug 28/09
Job No.		Made by	GR
		Reviewed	
		Sheet	of

Golder Associates



- 3/4 Crush
- 6" Crush
- Rockfill

NTS

Notes:
1. Minimum haul road width will determine the lakeside rockfill shoulder
2. 6" material "shoulders" of the DC pad are to be widened if the DC plan shows infringement on the rockfill

September 4, 2009

Project No. 08-1428-0028
Doc. No. 945 Ver. 0

Dr. Eric Lamontagne
Agnico-Eagle Mines Limited
Meadowbank Division
P.O. Box 540
Baker Lake, Nunavut X0C 0A0

BAY GOOSE DIKE CONSTRUCTION

Dear Dr. Lamontagne,

It has come to our attention that there are some discussions on site regarding apparent discrepancies between the anticipated depth of bedrock along the Bay-Goose Dike centreline as inferred by lakebed bathymetry surveys completed in 2006 and 2008, air track drilling records completed during the 2009 geotechnical investigation, and more recent surveys of the excavated core backfill trench. With respect to these discussions, we offer the following comments for your consideration:

- The lakebed bathymetry data is inferred based on spatial extent of survey completed in 2008. These surveys were completed on 5 m spacings based on the original dike alignment. The data collected was considered of suitable quality for dike design purposes.
- The most important issue from a dike design and construction perspective is obtaining an accurate measure of bedrock depths. This information is particularly relevant to founding of the cutoff wall and for grouting of the contact zone.
- Approximate depths to bedrock were obtained from the 2009 geotechnical investigation; however the bedrock profile along the dike alignment can only be inferred from this investigation based on the limited spatial extent of the drilling.
- It is understood that recent surveys of the excavated trench have identified potentially localized features (*e.g.,* elevated ridges) in the bedrock surface along the excavation alignment that may not get picked up from spaced borehole program. It is further understood that the localized nature of these features may make it difficult to quantify their extent without a detailed high density survey which typically is not feasible given tight time constraints of construction.
- There appears to be a mechanism underway that results in infilling of the excavated zone with fine materials (poorly graded silt). This infilling appears to be rapid and may be significant to the issue of surveyed excavation extent (*i.e.,* surveys may be recording an infilled surface). In addition, infilling of the excavation with fine materials is a potential concern with respect to ability to densify the core backfill at depth and thereby maintain an open trench for cutoff wall construction.

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Based on the comments above, and on our recent experience and learnings from the East Dike, we believe that a more robust approach to defining trench bottom elevation or elevation of the bedrock is required. As such, it is recommended that the buckets of the excavators be instrumented prior to initiation of slurry trench excavation for slurry wall construction to enable monitoring of the bottom trench elevation in real-time. This approach may also assist with achieving the proposed construction schedule. Data collected from bucket instrumentation would be used for as-built purposes, comparison with bathymetry and use/comparison of excavation depths to bedrock during slurry wall excavation.

We understand the potential issues and concerns with the robustness of this technology in an difficult environment like the one encountered at the base of the excavation of the trench but it should be noted that instrumentation of excavator buckets is not a new technology and is being used successfully around the world in difficult environments. Furthermore, it is our understanding that FGL has successfully used bucket instrumentation in the past to excavate under water. With this approach, the excavator boom and stick are measured and equipped with inclinometers that may be easily replaced. The cab is instrumented with a GPS and software is required to show the operator where his bucket is in profile on an in-cab display. The system requires an RTK GPS to obtain suitable accuracy; however, we understand that FGL may already have a RTK GPS system on site for the current work.

It is further recommended that a field trial be considered whereby a detailed survey of an excavated area is undertaken immediately following excavation and after a prescribed amount of time of inactivity in an attempt to quantify the potential magnitude of the infilling process, if present. It is understood that discussions are currently underway on site to perform such a survey trial. It is recommended that consideration be given to performing a trial using both the current survey practice and instrumented excavator buckets as this approach may help to identify potential limitations to the current survey process which may be lending to some of the apparent survey discrepancies being observed on site.

Yours very truly,

GOLDER ASSOCIATES LTD.

ORIGINAL SIGNED

Dan Walker, Ph.D., P.Eng. (BC, NWT/NU)
Associate, Project Manager

ORIGINAL SIGNED

Michel Julien, Ph.D., P.Eng. (QC)
Principal, Project Director

DRW/MJ/ja

CC: Gaston Blanchette (AEM)
Paul Bedell, Fiona Esford and Glen Rutherford (Golder)

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TECHNICAL MEMORANDUM

DATE	6 September 2009	**PROJECT NO.**	08-1428-0028 ; 08-1428-0029
TO	Gaston Blanchette and Eric Lamontagne Agnico-Eagle Mines Limited	**DOC. NO.**	1104 Rev. 0
CC	Michel Julien, Dan Walker, Paul Bedell		
FROM	Glen Rutherford, Fiona Esford	**EMAIL**	Glen_Rutherford@golder.com

REQUEST FOR INFORMATION, MEADOWBANK GOLD PROJECT

As discussed, Golder requests the following information be provided by AEM:

General

1. Particle size distribution results from the production of Core Backfill/ Fine Filter (19mm minus) material produce from the "Contractor's crusher" and AEM crusher, in accordance with the specifications for the Bay Goose Dike construction and draft specifications for the Tailings Storage Facility construction.
2. Particle size distribution results from the production of 6" minus (200 mm minus; coarse filter) material produced by the "Contractor's crusher" and AEM crusher.
3. Total production amounts of 200 mm minus material and 19mm minus material from each crushing facility.

In addition, Golder suggests that a washed sieve be performed to determine particle size distribution of the above rather than a dry sieve as there is potential for fine particles to adhere to coarser particles and potentially bias the results.

Bay-Goose Dike

4. CAD drawing of turbidity barrier installation and rockfill platform placement.
5. Survey data from Geopac craters provided in electronic format and the updated crater quantity worksheet, every second day.
6. Curing temperature of CSB mix design samples.
7. Slurry subcontractor's (Inquip) work plan meeting the requirements specified in S3.7.1, specifically including details regarding:
    - Procedure for water-bentonite slurry mixing, transportation and re-circulation;
    - Procedure for trench excavation, including turning points in the alignment;
    - Procedure for mixing, transporting, and placement of trench backfill materials, for both Soil Bentonite (SB) and Cement Soil Bentonite (CSB) material;
    - Sequence and setup of equipment for zones of wall construction consisting of both SB and CSB;
    - QC program, including tests to be performed, testing frequency, sampling method, template of forms
    - Survey, soundings, or other method used to identify and record contact with bedrock.

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8. As-built survey quantities for work, as information becomes available from Fernand Gilbert Ltee. (FGL).
9. Bentonite and cement manufacturer's quality control certificates.

Tailings Storage Facility

10. Survey results in CAD drawing format, showing material placement and lift thicknesses, provided twice per week.
11. Liner installer qualifications for the selected subcontractor and their personnel (master seamers and foreman).
12. Manufacturer quality control certificates for the bituminous geomembrane liner and LLDPE liner.
13. Updated construction schedules, as they become available.

East Dike

14. As-built survey data in CAD drawing format showing final material placement.

South Camp Dike

15. As-built survey data in CAD drawing format and photographic documentation showing liner welding and liner cover material placement.

We understand the demands on your time, but would appreciate receiving the information as soon as practical.

FE\GR\fe

C:\Doc 1104 060909 MFD Information Request – Rev 0.doc

TECHNICAL MEMORANDUM

DATE	7 September 2009	**PROJECT NO.**	08-1428-0028
TO	Gaston Blanchette and Eric Lamontagne Agnico-Eagle Mines Limited	**DOC. NO.**	1105 Rev. 0
CC	Michel Julien, Dan Walker, Paul Bedell		
FROM	Fiona Esford, Glen Rutherford	**EMAIL**	Fiona_Esford@golder.com

SOIL-BENTONITE (SB) AND CEMENT SOIL BENTONITE (CSB) MIX DESIGNS FOR CUTOFF WALL CONSTRUCTION, BAY-GOOSE DIKE , MEADOWBANK GOLD PROJECT

Golder has reviewed the soil-bentonite (SB) and cement soil bentonite (CSB) mix designs for construction of the cutoff wall at the Bay-Goose Dike. The information was provided by Fernand Gilbert Ltee. (FGL) and the testing was conducted by JLT Laboratories, Inc. Test reports reviewed were dated August 19, 2009 and September 3, 2009 for the SB and CSB mix designs, respectively.

Based on the results of the mix design and our experience, Golder recommends that the SB cutoff wall be constructed using:

- Mix 2: Till plus 1 % dry bentonite plus bentonite slurry to reach a slump close to 5 inches.

Golder accepts JLT's recommended mix 2-8 design for the CSB cutoff consisting of:

- 8 % dry addition of cement

Golder requests information on the curing temperature of the CSB mix design samples.

Golder requests submission of a work plan for the construction of the cutoff wall, meeting the requirements specified in S3.7.1, specifically including details regarding:

- Procedure for water-bentonite slurry mixing, transportation and re-circulation;
- Procedure for trench excavation, including turning points in the alignment;
- Procedure for mixing, transporting, and placement of trench backfill materials, for both Soil Bentonite (SB) and Cement Soil Bentonite (CSB) material;
- Sequence and setup of equipment for zones of wall construction consisting of both SB and CSB;
- QC program, including tests to be performed, testing frequency, sampling method, template of forms
- Survey, soundings, or other method used to identify and record contact with bedrock..

Based on experience from the East Dike construction, Golder is concerned about the method of placement of the SB material and the risk of segregation during placement. A clear work procedure should be defined that will minimize this risk.

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FE\GR\fe

C:\Doc 1105 070909 MFD Cutoff Wall Mix Design BG – Rev 0.doc

TECHNICAL MEMORANDUM

DATE	7 September 2009	**PROJECT NO.**	08-1428-0028
TO	Gaston Blanchette and Eric Lamontagne Agnico-Eagle Mines Limited	**DOC. NO.**	1106 Rev. B
CC	Michel Julien, Dan Walker, Paul Bedell		
FROM	Fiona Esford, Glen Rutherford	**EMAIL**	Fiona_Esford@golder.com

DRAFT - 2009-2010 CUTOFF WALL TIE-IN, BAY-GOOSE DIKE , MEADOWBANK GOLD PROJECT

As requested by AEM, Golder is providing additional information on construction of the cutoff wall tie-in between the 2009 and 2010 construction seasons for the Bay-Goose Dike.

Golder recognizes the limitations presented by the location of the turbidity barriers attached at Goose Island; however, recommends that the tie-in be constructed on Goose Island. Based on the proposed cutoff wall alignment's proximity to the shore of Goose Island, and that once bedrock is exposed the centerline is near or just below lake level, the cutoff wall should be constructed using soil-bentonite (SB) rather than compacted till (in accordance with drawing 4200-13 rather than drawing 4200-09). The alignment and termination point of the cutoff wall constructed in 2009 shall be accurately surveyed. The cutoff wall constructed in 2010 should be constructed such that a minimum 5 m length overlaps and is parallel to the 2009 cutoff wall, as shown schematically on Figure 1. At the tie-in location, the trench width shall be increased by a minimum of 3 m and backfilled accordingly with Core Backfill and Coarse Filter to ensure adequate space for construction of the overlapping cutoff walls in this area.

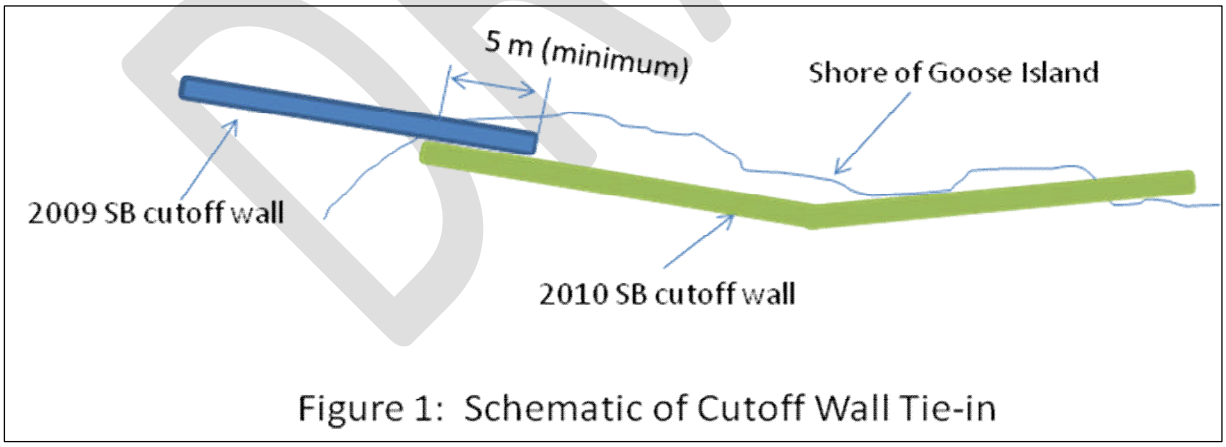


Figure 1: Schematic of Cutoff Wall Tie-in

FE\GR\fe

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DRAFT

TECHNICAL MEMORANDUM

DATE	13Sep2009	**PROJECT No.**	081428-0029/5000
TO	Gaston Blanchette and Eric Lamontagne Agnico-Eagle Mines Limited	**DOC NO.**	1107 Rev. 0
CC			
FROM	Paul M. Bedell	**EMAIL**	paul_bedell@golder.com

REVISION TO CUTOFF WALL, BAY-GOOSE DIKE
MEADOWBANK GOLD PROJECT

This technical memorandum presents the revised details for the Bay-Goose Dike to provide a 3.0 m wide cement soil bentonite cutoff wall between Sta. 30+850 and Sta. 30+860. This portion of the cutoff wall is widened to enable the completion of the 2009 portion of the construction and provide a tie-in for the 2010 portion of the construction whilst providing for continuity of the cutoff wall. The information presented herein is related to the 2009 portion of the construction.

The attached Details 1 to 4, inclusive, illustrate the details for construction. The cutoff wall has a width of 1.0 m to Sta. 30+845 as shown on Detail 1 and Detail A on Drawing No. 4200-17, Rev. 1. As shown on Detail 1, the cutoff wall increases from a width of 1.0 m to 3.0 m between Sta. 30+845 and Sta. 30+850. The cutoff wall has a width of 3.0 m between Sta. 30+850 to Sta. 30+860.

For the purposes of construction and this document, five points are identified and defined as follows:

1. Point A: limit of core trench excavation at the surface of the rockfill platform. Sta. 30+870 (min.) at Elev. 134.1 m (±).
2. Point B: limit of core trench excavation at the bedrock surface. Sta. 30+865 (min.) at the actual bedrock surface.
3. Point C: limit of cutoff wall excavation at the densification platform. Sta. 30+865 (max.) at Elev. 136.1 m (±).
4. Point D: limit of cutoff wall excavation at the bedrock surface. Sta. 30+860 (exactly) at the actual bedrock surface.
5. Point E: limit of soil bentonite at the bedrock surface. Sta. 30+850 (max.) at the actual bedrock surface.

Points A to E, inclusive, are shown on Details 2 and 3. Detail 4 shows the cutoff cross-section between Sta. 30+845 and Sta. 30+850.

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Golder Associates: Operations in Africa, Asia, Australasia, Europe, North America and South America

The general steps for the construction of this portion of the cutoff wall comprise:

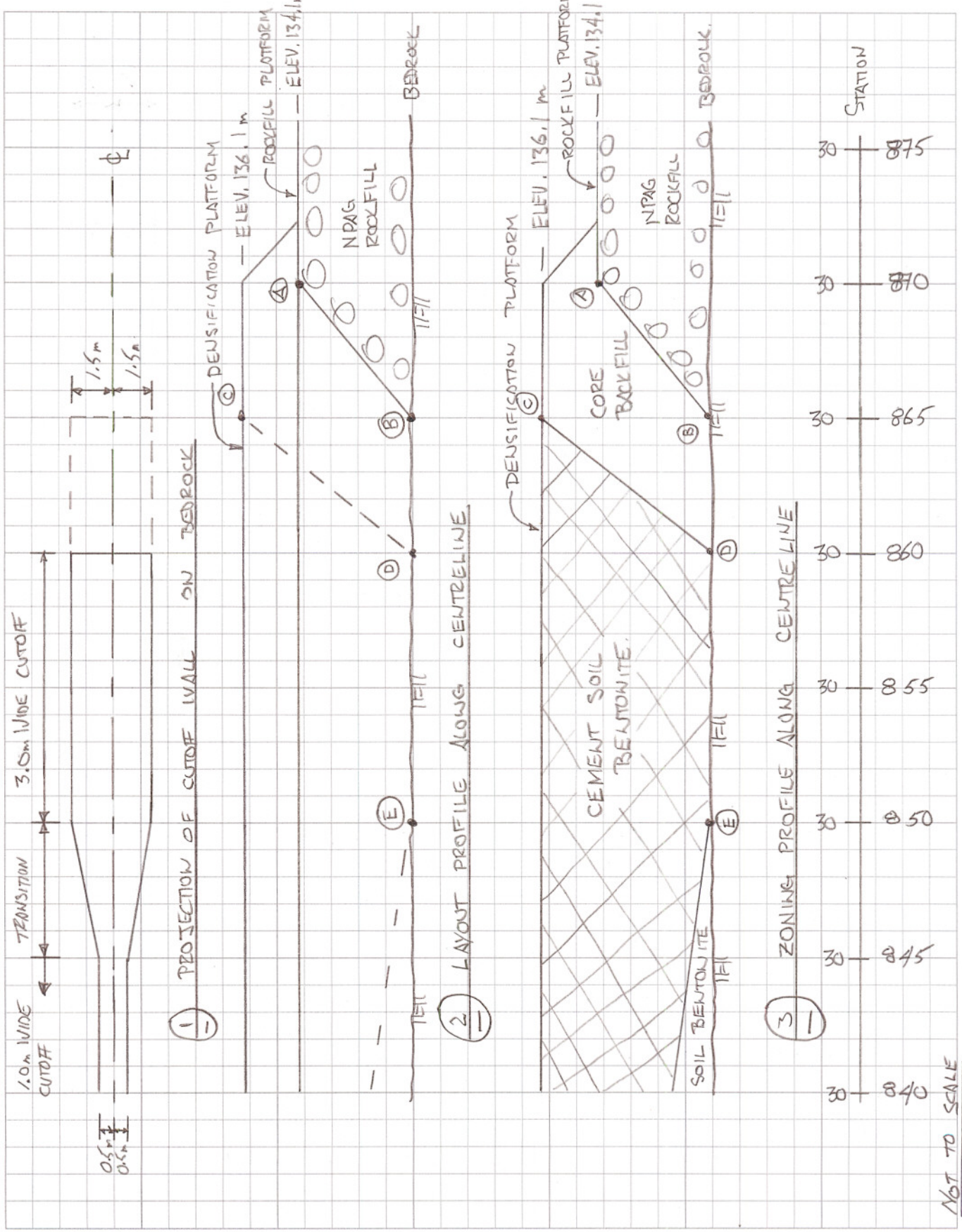
1. Excavate the core trench from the rockfill platform to the limit defined by Point A to Point B.
2. Clean the bedrock to the lines and grades of the cross-section.
3. Survey the excavation for review and approval.
4. Place core backfill and coarse filter zones.
5. Place core backfill and supporting fills to construct the densification platform.
6. Dynamically compact the core backfill material.
7. Excavate the cutoff wall from the densification platform to the limit defined by Point C to Point D and to the widths discussed above.
8. Place soil bentonite in the cutoff wall to Point E.
9. Place cement soil bentonite to complete the remainder of the soil bentonite wall.
10. Construct the grouting platform.

PMB/GB/pmb

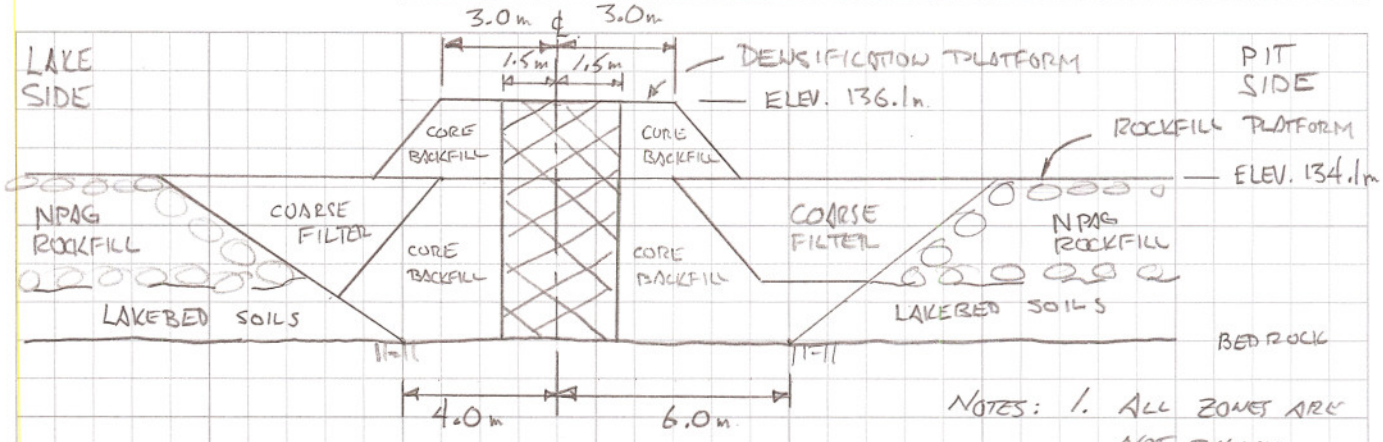
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Golder Associates

SUBJECT	REVISED CUTOFF WALL, BAY-GOOSE DIKE		
Job No. 08-1428-0029 5000	Made by		Date 13SEP2009
	Reviewed		Sheet 1 of 2



SUBJECT	REVISED CUTOFF WALL, BAY-GOOSE DIKE		
Job No. 08-1428-0029 5006	Made by PMS	Date 13 SEP 2009	
	Reviewed	Sheet 2 of 2	



NOTES: 1. ALL ZONES ARE NOT SHOWN

2. NOT TO SCALE.

(4) TYPICAL SECTION – CUTOFF WALL BETWEEN STA. 30+850 AND STA. 30+860.

TECHNICAL MEMORANDUM

DATE November 4, 2009 **PROJECT No.** 09-1428-5007
Doc. No. 959 Ver. 0

TO Eric Lamontagne and Gaston Blanchette
Agnico-Eagle Mines Limited Meadowbank Division

CC Annie Beaulieu

FROM Dan Walker and Michel Julien **EMAIL** abeaulieu@golder.com

GOLDER'S OPINION ON PROCEEDING WITH THE INSTALLATION OF GROUT CASINGS AT THE BAY-GOOSE DIKE DURING THE MONTH OF NOVEMBER 2009

This Technical Memorandum is provided in response to AEM's request of October 18, 2009 to provide an opinion on a proposal to proceed with casing installations on Bay Goose Dike in preparation of the grouting works scheduled to be initiated in March 2010.

It is understood that AEM is currently proposing to start the installation of casings at Bay-Goose during the month of November 2009, about 5 months prior to the grouting program schedule.

Following a series of internal technical discussions involving the senior Golder engineers involved in the project, Golder recommends that casings installation not proceed until a series of technical points can be discussed and agreed upon. Golder further recommends that grouting specialists from TCG be involved such discussions.

It can be recalled that:

- A special methodology was used during East Dike construction for contact grouting at the base of the cut-off wall. This technique involved the use of a casing perforator that punched a series of holes in the casings.
- While this technology was found to work well above the bedrock contact, its ability to punch holes below the bedrock contact was limited. As a result, grouting was typically initiated through perforations located above the bedrock contact.
- Furthermore, the casing perforator technology did not allow for proper stage grouting where the contact zone exceeded 0.6 m. Instead, these zones were grouted as one single stage, potentially resulting in a window between the contact grouting and the base of the cutoff wall.
- With the perforated casing approach there is the possibility for the grout to flow vertically upwards in the annular space between the casing and surrounding soil or rock, rather than laterally into the voids within the soil or rock.

The East Dike sinkhole area is located in a region where the contact zone was fairly thick, about 1.0 m, and therefore; a potential un-grouted window may exist beneath the base of the cutoff wall.

Two potential grouting techniques were identified in the technical specifications for the Bay Goose Dike; namely, Tube à Manchette (TAM) and perforating casings. In light of the grouting issues identified at the East Dike, Golder recommends that prior to commencing with installation of grouting casings; review and discussions take place to ensure that the proposed grouting technique can address the following technical issues:

- Proper grouting below the bedrock contact (at the interface);
- Staging of contact grouting in zones where the contact zone is estimated to 0.6 m thick or greater; and
- Lateral grout flow into the surrounding rock or soil.

Golder proposes that discussions be held between AEM, the grouting contractor, and Golder to review how the proposed grouting approach for the Bay-Goose Dike will address the technical issues listed above, or to develop an alternative approach to meet these criteria. These discussions could take place in a face-to-face meeting or via conference call with the purpose of obtaining agreement on the preferred grouting technique and methodology for the Bay-Goose Dike, given all the technical, economical and logistical challenges of the current situation.

Yours very truly,

GOLDER ASSOCIATES LTD.

ORIGINAL SIGNED AND SEALED

Dan Walker, Ph.D., P.Eng. (BC, NWT/NU)
Associate, Project Manager

ORIGINAL SIGNED

Michel Julien, Ph.D., P.Eng. (QC)
Principal, Project Director

FE/DRW/MRJ/lw

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TECHNICAL MEMORANDUM

DATE November 27, 2009 **PROJECT No.** 09-1428-5007/3000
Doc. No. 977 Ver. 0

TO Eric Lamontagne and Gaston Blanchette
Agnico-Eagle Mines Limited Meadowbank Division

CC Fiona Esford, Grant Bonin and Paul Bedell (Golder Associates Ltd.)

FROM Dan Walker and Michel Julien **EMAIL** drwalker@golder.com; mjulien@golder.com

FURTHER CONSIDERATIONS ON CASING INSTALLATION AND CUT-OFF WALL GROUTING, NORTHERN PORTION OF BAY-GOOSE DIKE – MEADOWBANK GOLD PROJECT

This technical memorandum provides further considerations regarding the installation of casings and cut-off wall grouting for the northern portion of the Bay-Goose Dike to those provided in Golder (2009b).

Review and discussions are on-going between Agnico-Eagle Mines Limited (AEM), Golder Associates Ltd. (Golder) and the contractor (Dynamitage T.C.G. (1993) Inc, TCG) in the development of an updated grouting technique to address the technical issues presented in Golder (2009b), namely:

- Proper grouting below the bedrock contact (at the interface);
- Staging of contact grouting in zones where the contact zone is estimated to be 0.6 m thick or greater; and
- Lateral grout flow into the surrounding rock or soil.

It is expected that the cut-off grouting requirements will be based on those presented in the technical specifications (Golder 2009a); however, there remain several details to be sorted out in order to address the technical issues listed above with respect to execution in the field. Nevertheless, Golder is confident that these details will be addressed with continued review and discussions between AEM, Golder and TCG. Therefore, based on the information provided in TCG (2009), it is considered practical that casing installation is started before April 2009 (*i.e.,* prior to the planned start of cut-off wall grouting operations). It has therefore to be understood that if casing installation is to proceed during the winter 2009-2010, it is implicit that the technology that will be used to allow contact grouting to proceed next year will be the casing perforator method as used during East Dike grouting.

Also, Golder recommends that casings installation, given its importance, be done while Golder staff is on site so the proper monitoring of depth of placement of casings can be undertaken. It is essential that casing placement be monitored very closely so there is minimal ambiguity on depth of installation with respect to depth of bedrock.

It is recommended that the installation of casings not begin before finalization of a casing location plan. This plan would include requirements for casing placement, spacing and depth along the dike alignment. Golder is currently in the process of preparing a draft of the plan. It is anticipated that the draft will be issued for AEM review by mid-December. Pending receipt of AEM's comments on the draft by the end of December, a finalized plan can be prepared for the beginning of January 2010.

Yours very truly,

GOLDER ASSOCIATES LTD.

ORIGINAL SIGNED

Dan Walker, Ph.D., P.Eng. (BC, NWT/NU)
Associate, Project Manager

ORIGINAL SIGNED

Michel Julien, Ph.D., P.Eng., (QC)
Principal, Project Director

DRW/MRJ/lw

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REFERENCES

Golder Associates Ltd. (Golder) 2009a. Meadowbank Gold Project, Bay-Goose Dike Construction Technical Specification No. 0/-1428-0028/4300 Rev. 1 "Issued for Construction", submitted to Agnico-Eagle Mines Limited Meadowbank Division, dated July 17, 2009.

Golder 2009b. Golder's Opinion on Proceeding with the Installation of Grout Casings at the Bay-Goose Dike during the Month of November 2009. Technical Memorandum No. 09-1428-5007 Doc. No. 959 Ver. 0. Submitted to Agnico-Eagle Mines Limited Meadowbank Division, dated November 4, 2009.

Dynamic T.C.G. (1993) Inc (TCG) 2009. Electronic mail communication from Bernard Vachon, dated November 16, 2009.

SITE INSTRUCTION

Meadowbank Gold Project – Bay-Goose Dike Grouting	DATE: May 7, 2010	Page 1 of 1
Contract No: 984246	**Document No. SI-001 – QC Frequency**	
TO: **Quamanittuaq Sana (TCG)** Ingrid Carluer, Site Manager Ken Lachance, Superintendant	**FROM:** **Golder Associates Ltd.** Grant Bonin, QA Manager Vafa Rombough, Site Representative	**CC:** **Agnico Eagle Mines Ltd.** Eric Lamontagne, Operation Manager Gaston Blanchette, Dike Superintendant

REFERENCE DOCUMENTS: **Doc 873 0717_09 Bay Goose Dike Construction Specifications REV 1 - Issued for Construction - 17 Jul 2009**

REFERENCE DRAWING:	REVISION	TITLE

The following supersedes the Grout Mix sub-section of Drilling and Grouting in Table 9-2 QC/QA Activity and Testing Frequency in S9.1.1 of Doc 873 0717_09 Bay Goose Dike Construction Specifications REV 1 - Issued for Construction - 17 Jul 2009.

For the Bay-Goose Dike grouting program, Grout Mix QC requirements as directed by the Engineer shall be:

	Quality Control		
Work	**Test and Criteria**	**Frequency**	**Responsible**
Apparent Viscosity	Marsh Funnel	1 every 10 batches and at every change of mix type.	Contractor
Specific Gravity	Mud Balance	1 every 3 batches and at every change of mix type.	Contractor
Bleed	Measured over 2hr period as clear water at the top of a 500 mL graduated cylinder	1 every shift, per grout plant, for each mix type injected.	Contractor
Mix Water and Grout Mix Temperature	Digital Thermometers	1 every 10 batches and at every change of mix type.	Contractor
Gelation / Set Time	Vane Shear	1 per proposed grout mix type during initial full scale mix testing or when adjustments are made to the designs.	Contractor
Strength Testing	Six 2" x 4" Cylinders	1 per proposed grout mix type during initial full scale mix testing or when adjustments are made to the mix designs.	Contractor

PREPARED BY: Golder	APPROVED BY: AEM	RECEIVED BY: Quamanittuaq Sana
Grant Bonin	2010-05-07	

SITE INSTRUCTION

Meadowbank Gold Project – Bay-Goose Dike Grouting	DATE: May 7, 2010	Page 1 of 1
Contract No: 984246	**Document No. SI-003 – Extension of Tertiary Grout Holes**	
TO: **Quamanittuaq Sana (TCG)** Ingrid Carluer, Site Manager Ken Lachance, Superintendant	**FROM:** **Golder Associates Ltd.** Grant Bonin, QA Manager Vafa Rombough, Site Representative	**CC:** **Agnico Eagle Mines Ltd.** Eric Lamontagne, Operation Manager Gaston Blanchette, Dike Superintendant
REFERENCE DOCUMENTS:	**Doc 873 0717_09 Bay Goose Dike Construction Specifications REV 1 - Issued for Construction - 17 Jul 2009**	

REFERENCE DRAWING:	REVISION	TITLE

For the Bay-Goose Dike grouting program, if grout take in the bottom stage of a secondary hole is > 200 L/m, then the adjacent tertiary holes on either side shall be drilled a full 5 m deeper beyond the high take secondary depth. An extra stage of grouting shall then be injected at the bottom of the tertiary holes.

PREPARED BY: Golder Grant Bonin	APPROVED BY: AEM G Blanchette 2010-05-07	RECEIVED BY: Quamanittuaq Sana

Project No. 09-1428-5007

Golder Associates

SITE INSTRUCTION

Meadowbank Gold Project – Bay-Goose Dike Grouting	DATE: May 7, 2010	Page 1 of 1
Contract No: 984246	**Document No. SI-004 – Thickening Sequence**	
TO: **Quamanittuaq Sana (TCG)** Ingrid Carluer, Site Manager Ken Lachance, Superintendant	**FROM:** **Golder Associates Ltd.** Grant Bonin, QA Manager Vafa Rombough, Site Representative	**CC:** **Agnico Eagle Mines Ltd.** Eric Lamontagne, Operation Manager Gaston Blanchette, Dike Superintendant

REFERENCE DOCUMENTS: **Doc 873 0717_09 Bay Goose Dike Construction Specifications REV 1 - Issued for Construction - 17 Jul 2009**

REFERENCE DRAWING:	REVISION	TITLE

For the Bay-Goose Dike grouting program, during injection grouting in bedrock, the following sequence shall be followed with respect to grout mix thickening:

Stages 1 and 2

Scenario A: Pressure is <30% Pmax or Penetrability is not steadily decreasing; then inject a maximum

- 200 L of Mix A
- 200 L of Mix B
- 200 L of Mix C
- Mix D to volume limit

Scenario B: Pressure is >30% Pmax and Penetrability is steadily decreasing; then

- Continue injecting Mix A or current mix (B, C) until refusal of <0.25 L/min/m/bar penetrability is met

Stage 3

Scenario A: Pressure is < 30% Pmax or Penetrability is not steadily decreasing; then inject a maximum

- 160 L of Mix A
- 160 L of Mix B
- 160 L of Mix C
- Mix D to volume limit of 1000 L

Scenario B: Pressure is >30% Pmax and Penetrability is steadily decreasing; then

- Continue injecting Mix A or current mix (B, C) until refusal of <0.25 L/min/m/bar penetrability is met

PREPARED BY: Golder Grant Bonin	APPROVED BY: AEM 2010-05-07	RECEIVED BY: Quamanittuaq Sana

SITE INSTRUCTION

Meadowbank Gold Project – Bay-Goose Dike Grouting	DATE: May 7, 2010	Page 1 of 1
Contract No: 984246	**Document No. SI-005 – Downstage Grouting**	
TO: **Quamanittuaq Sana (TCG)** Ingrid Carluer, Site Manager Ken Lachance, Superintendant	**FROM:** **Golder Associates Ltd.** Grant Bonin, QA Manager Vafa Rombough, Site Representative	**CC:** **Agnico Eagle Mines Ltd.** Eric Lamontagne, Operation Manager Gaston Blanchette, Dike Superintendant
REFERENCE DOCUMENTS:	**Doc 873 0717_09 Bay Goose Dike Construction Specifications REV 1 - Issued for Construction - 17 Jul 2009**	

REFERENCE DRAWING:	REVISION	TITLE

For the Bay-Goose Dike grouting program, the following shall be carried out where return flush is lost while drilling grout holes in bedrock.

If return flush is lost while drilling bedrock:

- Note the depth at which the return was lost.
- Complete the drilling of that stage to the closest 5 m depth beyond the end of the casing (i.e., to 5 m, 10 m, 15 m, or 20 m, etc.)
- Using alternating air-lift and water, flush the grout hole a maximum of 30 minutes, or until the water in the hole is clear, as per the Specifications.
- Inject the stage in which return was lost, starting with Mix C.
- If no buildup to >30% Pmax or Penetrability not decreasing within 160 L of Mix C; switch to Mix D until volume limit is reached or until refusal of <0.25 L/min/m/bar penetrability.
- If the stage in which downstage grouting was required is Stage 2, pull up and inject Stage 3 using the normal thickening sequence as per Site Instruction SI-004.
- Wait 12 hours before returning to re-drill through the set grout to target depth in bedrock.

PREPARED BY: Golder Grant Bonin	APPROVED BY: AEM G Blanchette 2010-05-07	RECEIVED BY: Quamanittuaq Sana

Project No. 09-1428-5007

Golder Associates

SITE INSTRUCTION

Meadowbank Gold Project – Bay-Goose Dike Grouting	DATE: June 12, 2010	Page 1 of 1
Contract No: 984246	**Document No. SI-006 – Stage 4 Tertiary – Thickening Sequence**	
TO: **Quamanittuaq Sana (TCG)** Ingrid Carluer, General Manager Ken Lachance, Superintendant	**FROM:** **Golder Associates Ltd.** Grant Bonin, QA Manager Vafa Rombough, Site Representative	**CC:** **Agnico Eagle Mines Ltd.** Eric LaMontagne, Mine Manager Gaston Blanchette, Dike Superintendant
REFERENCE DOCUMENTS: Doc 873 0717_09 Bay Goose Dike Construction Specifications - Issued for Construction - 17 Jul 2009		
REFERENCE DRAWING:	**REVISION**	**TITLE**

For the Bay-Goose Dike grouting program, during injection grouting of tertiary Stage 4's (*i.e.*, perforated casings), the following sequence shall be followed with respect to grout mix thickening:

Stage 4 - Tertiary

Scenario A: Pressure is < 30% Pmax or Penetrability is not steadily decreasing; then inject a maximum

- 250 L of Mix MF (Nittetsu at 1.2:1 w:c ratio)
- 160 L of Mix A
- 160 L of Mix B
- 160 L of Mix C
- Mix D to volume limit of 1000 L

Scenario B: Pressure is >30% Pmax and Penetrability is steadily decreasing; then

- Continue injecting Mix MF, or current mix (A, B, or C) until refusal where the maximum design injection pressure is held for a period of 10 minutes, while the penetrability is < 0.25 L/min/m /bar.

PREPARED BY: Golder	APPROVED BY: AEM	RECEIVED BY: Quamanittuaq Sana
Vafa Rombough		

SITE INSTRUCTION

Meadowbank Gold Project – Bay-Goose Dike Grouting **DATE: Nov 25, 2010** **Page 1 of 1**		
Contract No: 984246	**Document No. SI-007 Rev 1 – Revised Thickening Sequence**	
TO: **Quamanittuaq Sana (TCG)** Ingrid Carluer, Site Manager Ken Lachance, Superintendant	**FROM:** **Golder Associates Ltd.** Grant Bonin, QA Manager Vafa Rombough, Site Representative	**CC:** **Agnico-Eagle Mines Ltd.** Eric Lamontagne, Operation Manager Gaston Blanchette, Dike Superintendant
REFERENCE DOCUMENTS: **Doc 873 0717_09 Bay Goose Dike Construction Specifications REV 1 - Issued for Construction - 17 Jul 2009**		
REFERENCE DRAWING:	**REVISION**	**TITLE**

For the Bay-Goose Dike grouting program, during injection grouting in bedrock, the following sequence shall be followed with respect to grout mix thickening:

Stages 1 and 2 (all grout holes)

Scenario A: Pressure is <30% Pmax or Penetrability is not steadily decreasing; then inject a maximum:

- 200 L of Mix A
- 200 L of Mix B
- 200 L of Mix C
- 200 L of Mix D
- Mix X (with Celbex) to volume limit

Scenario B: Pressure is >30% Pmax and Penetrability is steadily decreasing; then:

- Continue injecting Mix A or current mix (B, C) until refusal of <0.25 L/min/m/bar penetrability is met.

Stage 3 (primary and secondary grout holes)

Scenario A: Pressure is < 30% Pmax or Penetrability is not steadily decreasing; then inject a maximum:

- 160 L of Mix B
- 160 L of Mix C
- 160 L of Mix D
- Mix X (with Celbex) to volume limit of 600 L

Scenario B: Pressure is >30% Pmax and Penetrability is steadily decreasing; then:

- Continue injecting Mix B or current mix (C, D) until refusal of <0.25 L/min/m/bar penetrability is met.

Stage 3 (tertiary and higher order grout holes)

Scenario A: Pressure is < 30% Pmax or Penetrability is not steadily decreasing; then inject a maximum:

- 160 L of Mix A
- 160 L of Mix B
- 160 L of Mix C
- 80 L of Mix D
- Mix X to volume limit of 600 L

Scenario B: Pressure is >30% Pmax and Penetrability is steadily decreasing; then:

- Continue injecting Mix A or current mix (B, C) until refusal of <0.25 L/min/m/bar penetrability is met.

PREPARED BY: Golder	APPROVED BY: AEM	RECEIVED BY: Quamanittuaq Sana
Vafa Rombough		

SITE INSTRUCTION

Meadowbank Gold Project – Bay-Goose Dike Grouting **DATE: November 25, 2010** **Page 1 of 1**		
Contract No: 984246	**Document No. SI-008 Rev 1 – Stage 4 – Revised Thickening Sequence**	
TO: **Quamanittuaq Sana (TCG)** Ingrid Carluer, General Manager Ken Lachance, Superintendant	**FROM:** **Golder Associates Ltd.** Grant Bonin, QA Manager Vafa Rombough, Site Representative	**CC:** **Agnico Eagle Mines Ltd.** Eric LaMontagne, Mine Manager Gaston Blanchette, Dike Superintendant
REFERENCE DOCUMENTS: **Doc 873 0717_09 Bay Goose Dike Construction Specifications REV 1 - Issued for Construction - 17 Jul 2009**		
REFERENCE DRAWING:	**REVISION**	**TITLE**

For the Bay-Goose Dike grouting program, during injection grouting of Stage 4's (i.e., perforated casings), the following sequence shall be followed with respect to grout mix thickening:

Stage 4 (primary and secondary grout holes)

Scenario A: Pressure is <30% Pmax or Penetrability is not steadily decreasing; then inject a maximum:

- 160 L of Mix B
- 160 L of Mix C
- 200 L of Mix D
- Mix X (with Celbex) to volume limit of 800 L

Scenario B: Pressure is >30% Pmax and Penetrability is steadily decreasing; then:

- Continue injecting Mix B, or current mix (C, D, or X) until refusal where the maximum design injection pressure is held for a period of 10 minutes, while the <0.25 L/min/m/bar penetrability is met.

Stage 4 – (tertiary and higher order grout holes)

Scenario A: Pressure is < 30% Pmax or Penetrability is not steadily decreasing; then inject a maximum

- 180 L of Mix MF (Spinor A12 at 1.2:1 w:c ratio)
- 160 L of Mix B
- 160 L of Mix C
- 160 L of Mix D
- Mix X (with Celbex) to volume limit of 800 L

Scenario B: Pressure is >30% Pmax and Penetrability is steadily decreasing; then

- Continue injecting Mix MF, or current mix (B, C or D) until refusal where the maximum design injection pressure is held for a period of 10 minutes, while the <0.25 L/min/m/bar penetrability is met.

PREPARED BY: Golder Vafa Rombough for	**APPROVED BY: AEM**	**RECEIVED BY: Quamanittuaq Sana**

SITE INSTRUCTION

Meadowbank Gold Project – Bay-Goose Dike Grouting **DATE: December 7, 2010** **Page 1 of 1**		
Contract No: 984246	**Document No. SI-009 – Stage 4 Communication**	
TO: **Quamanittuaq Sana (TCG)** Ingrid Carluer, General Manager Ken Lachance, Superintendant	**FROM:** **Golder Associates Ltd.** Grant Bonin, QA Manager Vafa Rombough, Site Representative	**CC:** **Agnico Eagle Mines Ltd.** Gaston Blanchette, Dike Superintendant
REFERENCE DOCUMENTS: **Doc 873 0717_09 Bay Goose Dike Construction Specifications REV 1 - Issued for Construction - 17 Jul 2009**		
REFERENCE DRAWING:	**REVISION**	**TITLE**

For the Bay-Goose Dike grouting program, if grout connects to the next hole to be grouted in sequence during the injection of Stage 4, insert and inflate a packer in the casing to which grout has connected and continue grouting the original stage.

When communication is noticed, if the P_{INJ} < 80% P_{MAX} the following should be carried out:

- Thicken to the next thickest mix when the current mix in the agitator has been used;
- Switch to using 2 bag (~ 80 L) batches;
- Thicken every 80 L until the P_{INJ} > 80% P_{MAX}; and then
- Return to the thickening every 160 L.

When using this special thickening sequence for Stage 4 communications:

- Mix E, having a Marsh time of 90 to 120 sec, may be used to thicken beyond Mix D; and
- "Close" the Stage 4 being injected with Mix X (using Celbex) when > 720 L of grout has been injected

After closing the initial stage, proceed to the casing to which grout communicated and attempt to close that Stage 4. The starting mix for this stage shall now be based on the previous hole's final mix. If the initial stage was closed with:

- Mixes D, E or X → start injection of the communicated to casing with Mix C;
- Mix C → start injection of the communicated to casing with Mix B;
- Mix B (primary and secondary Stage 4) → start injection of the communicated to casing with Mix A;
- Mix B (tertiary or higher order Stage 4) → start injection of the communicated to casing with Mix MF;

PREPARED BY: Golder Grant Bonin	**APPROVED BY: AEM**	**RECEIVED BY: Quamanittuaq Sana**

SITE INSTRUCTION

Meadowbank Gold Project – Bay-Goose Dike Grouting **DATE: April 21, 2011** **Page 1 of 1**		
Contract No: 984246	**Document No. SI-010 – Revised Bedrock Refusal Criteria**	
TO: **Quamanittuaq Sana (TCG)** Ingrid Carluer, General Manager Ken Lachance, Superintendant	**FROM:** **Golder Associates Ltd.** Grant Bonin, QA Manager Vafa Rombough, QA Manager	**CC:** **Agnico Eagle Mines Ltd.** Gaston Blanchette, Dike Superintendant
REFERENCE DOCUMENTS: **Doc 873 0717_09 Bay Goose Dike Construction Specifications REV 1 - Issued for Construction - 17 Jul 2009**		

REFERENCE DRAWING:	REVISION	TITLE

For the Bay-Goose Dike grouting program, refusal shall be considered for bedrock grouting of Stages 1a, 1b, 1c, 1 and 2 in the jet grouted Channels as follows:

- Maximum design pressure held for 10 minutes while penetrability <0.25 L/min/m/bar

AND

- Q <0.5 L/min/m stage length

The following table provides the required flow rates at refusal for each of the listed Stages:

Stage	Length (m)	Required Flow Rate at Closure (L/min)
1a	5	< 2.5
1b	5	< 2.5
1c	5	< 2.5
1	5	< 2.5
2	4	< 2.0

Refusal criteria for Stages 3 and 4 within the jet-grouted Channels shall remain unchanged as per the specifications.

PREPARED BY: Golder Vafa Rombough	**APPROVED BY: AEM**	**RECEIVED BY: Quamanittuaq Sana**

SITE INSTRUCTION

Meadowbank Gold Project – Bay-Goose Dike Grouting **DATE: May 4, 2011** **Page 1 of 1**		
Contract No: 984246	**Document No. SI-011 – Downstage Grouting - Channel 1**	
TO: **Quamanittuaq Sana (TCG)** Ingrid Carluer, General Manager Ken Lachance, Superintendant	**FROM:** **Golder Associates Ltd.** Grant Bonin, QA Manager Vafa Rombough, QA Manager	**CC:** **Agnico Eagle Mines Ltd.** Julie Belanger, Engineering Superintendent Sebastien Tolgyesi, Services Superintendent
REFERENCE DOCUMENTS: Doc 873 0717_09 Bay Goose Dike Construction Specifications REV 1 - Issued for Construction - 17 Jul 2009		

REFERENCE DRAWING:	REVISION	TITLE

As a result of the recently observed difficulties with installing casing within Channel 1, the elevated number of communications noted between casings while installing within the jet grout wall, and the inability to embed casings within competent bedrock, downstage grouting techniques shall be used, as follows:

For all primary and secondary grout holes within Channel 1:

- Drill with top hammer through the jet grout column and approximately 0.5 m into competent bedrock.
- Stop drilling and note the depth.
- Using alternating air-lift and water, flush the grout hole a maximum of 30 minutes, or until the water in the hole is clear, as per the Specifications.
- Inflate the packer inside the casing and grout the stage as a Stage 3 out the bottom of the casing as per Site Instruction No. SI-007_rev.1 “Revised Thickening Sequence”
- Wait a minimum of 12 hours before returning to re-drill through the set grout and to the target depth in bedrock.

PREPARED BY: Golder	APPROVED BY: AEM	RECEIVED BY: Quamanittuaq Sana
Grant Bonin		

TECHNICAL MEMORANDUM

DATE July 20, 2010 **PROJECT No.** 09-1428-5007
Doc. No. 1070 Ver. 0

TO Eric Lamontagne and Gaston Blanchette
Agnico-Eagle Mines Limited Meadowbank Division

FROM Karine Doucet, Fiona Esford and Michel Julien **EMAIL** Annie_Beaulieu@golder.com

FOUNDATION AND BACKFILL APPROVAL PROCEDURES DURING INITIAL TRENCH EXCAVATION (ON ROCK AND ON SOIL) DURING CONSTRUCTION OF BAY-GOOSE DIKE - SOUTH PORTION MEADOWBANK GOLD PROJECT, NUNAVUT

1.0 INTRODUCTION

This memo summarizes the foundation and backfill approval procedures for the initial trench excavation during the construction of the south portion of Bay-Goose Dike. The intent of these procedures is to better prepare all parties and therefore, reduce the time between the initial trench excavation activity and backfill placement.

The initial trench excavation is to be extended to bedrock along most of the alignment for the south portion of Bay-Goose Dike, with the exception of 3 zones identified as Channel 1, Channel 2, and Channel 3 where it is intended to terminate on competent soil (partial cutoff wall zones identified on DWG 4300-04).

2.0 FOUNDATION APPROVAL ON ROCK

The procedure to approve the initial trench foundation on rock is described below:

1) FGL to excavate the trench to design dimensions and to bedrock contact.

2) Golder to observe excavator bucket scraping the bottom of the trench and to take notes of the bedrock surface shape. At this time, if the Golder representative believes the surface needs additional excavation or reshaping, Golder will directly communicate with the FGL foreman. They will identify their observations and recommend that FGL fix theses areas prior to doing any bathymetric survey.

3) Once both parties are satisfied the excavation is on bedrock, and with the bedrock shape at the bottom of the trench, and overall trench dimensions, FGL is to survey the excavated area by bathymetry and by manual sounding.

4) While FGL surveyors are performing their bathymetric survey Golder will also collect sounding information from the boat (using a weighted measuring tape) as part of their QA responsibilities

5) FGL surveyors shall prepare the foundation approval package (refer to Section 4.0 for details on the foundation approval package).

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6) FGL shall notify the QA Manager that a foundation approval package is being prepared. FGL shall provide an estimated time of when the package will be delivered so that the QA Manager can adjust his/her shift accordingly.

7) FGL senior personnel should review the foundation approval package prepared by their surveyors, and providing everything meets design, sign and then provide the package to Golder for review.

8) Golder will review the package based on the information presented therein along with Golder field personnel notes. These 2 sources will confirm that the initial trench excavation base has been extended onto rock, the width of the excavation meets the design, and the shape of the bedrock surface is relatively smooth without sharp transitions, in particular along the centreline where the cutoff wall is to be excavated. Golder personnel may request to see the 3D rendering of the bedrock surface from the surveyors to aid in the review.

9) Since foundation and backfill approval is to be done by the QA Manager, the working shift of the QA Manager will be adjusted to allow more flexibility in the review of foundation approval packages (*i.e.* split shift if required such as the QA Manager working in the morning and evening). Therefore, the requirement for FGL to provide notification of when an approval package is to be expected is necessary to avoid delays. Golder will provide additional comments and/or approval as quickly as practical.

10) On approved portions of the excavation, Golder will identify areas which require downstream filter placement and to what minimum elevation core backfill filter placement is required.

3.0 FOUNDATION APPROVAL ON COMPETENT SOIL

The procedure to approve the initial trench foundation on competent soil, for Channels 1, 2, and 3, is described below:

1) FGL to excavate the trench to design dimensions and to the target elevation (as presented on construction drawings 4300-04, -13 and -14).

2) FGL to excavate soil samples at bottom of trench and present it to the Golder field representative.

3) Golder to visually inspect soil samples and determine if the soil is competent (along with his/her observation of excavator response).

    a. If Golder is not satisfied that soil at bottom of trench is competent, Golder will request FGL foreman to excavate deeper until the FGL excavator operator feels that the soil density (resistance to excavation) increases. Steps 2 and 3 will repeat until Golder is satisfied that soil at the bottom of the trench is competent.

4) When Golder is satisfied that the soil at the bottom of the trench is competent and that the excavation dimension and shape are satisfactory, FGL is to survey the trench with: the instrumented bucket (if possible), bathymetric survey, and manual (pole) soundings. It is understood that bathymetric survey becomes less accurate when the water depth is greater than 8 m. Therefore, recording the bottom of the trench with the instrumented bucket (GPS) is required. If not operational, manual recording of the GPS readings will need to be performed by FGL and Golder and additional manual soundings will be required to be taken, recorded and presented to Golder as part of the submittal package.

5) While FGL surveyors are performing the bathymetric survey Golder will conduct manual soundings in the area as part of the QA procedures.

6) FGL surveyors shall prepare the foundation approval package (refer to Section 4.0 for details on the foundation approval package).

7) FGL shall notify the QA Manager that a foundation approval package is being prepared. FGL shall provide an estimated time of when the package will be delivered so that the QA Manager can adjust his/her shift accordingly.

8) FGL senior personnel should review the foundation approval package prepared by the surveyors, and providing it is satisfactory, sign and then provide the package to Golder for review.

9) Golder will review the package based on the information presented therein along with Golder field personnel notes. These 2 sources will confirm that the initial trench excavation base has been extended onto competent material, the width of the excavation meets the design, and the shape of the excavated surface is relatively smooth without sharp transitions, in particular along the centreline where the cutoff wall is to be excavated. Golder personnel may request to see the 3D rendering of the excavated surface from the surveyors to aid in the review.

10) Since foundation and backfill approval is to be done by the QA Manager, the working shift of the QA Manager will be adjusted to allow more flexibility in the review of foundation approval packages (*i.e.* split shift if required such as the QA Manager working in the morning and evening). Therefore, the requirement for FGL to provide notification of when an approval package is to be expected is necessary to avoid delays. Golder will provide additional comments and/or approval as quickly as practical.

11) On approved portions of the excavation, Golder will identify areas which require downstream filter placement and to what minimum elevation core backfill filter placement is required.

4.0 FOUNDATION APPROVAL PACKAGE

The FGL foundation approval package shall consist of, but not be limited to, the following items:

a) The foundation Preparation and Excavation checklist (included in the Technical Specification), completed, reviewed and signed by FGL;

b) Contour plan views of the area surveyed:

- Date and plan label;
- Pit side and lake side labels;
- Centreline and chainage;
- 0.5 m contours of the surveyed trench excavation;
- Upstream and downstream crest of the trench excavation (obtained from land survey); and
- Upstream and downstream design toe of trench excavation (3 m on upstream side and 5 m, 7 m, or 9 m on downstream side).

c) Coverage plan views of the section surveyed:

- Date and plan label;
- Pit side and lake side labels;
- Centreline and chainage;
- Coverage points of the surveyed trench excavation; and
- Upstream and downstream crest of the trench excavation (obtained from land survey).

d) Profile view along centreline of the section surveyed (elevation vs. chainage):

- Date and profile label;
- Inferred bedrock profile;
- Inferred lakebed soil surface;
- Bottom of initial trench excavation surveyed with instrumented bucket, for the partial cutoff wall zones; and
- Trench excavation bottom obtained from the bathymetric survey.

e) Cross-section, at each 5 m interval, of the surveyed area (elevation vs. distance from centreline):

- Date and section label;
- Centreline;
- Design section outlined showing (mainly the core backfill side slope extent to assess if filter placement is required);
- Inferred bedrock profile;
- Inferred lakebed soil surface;
- Bottom of initial trench excavation surveyed with instrumented bucket, for the partial cutoff wall zones; and
- Trench excavation obtained from the bathymetric survey.

All drawings shall be provided in hard copy format, printed to scale, and also in electronic format.

Yours very truly,

GOLDER ASSOCIATES LTD.

ORIGINAL SIGNED

Karine Doucet, P.Eng., (BC)
Geotechnical Engineer

ORIGINAL SIGNED AND SEALED

Fiona Esford, P.Eng., (BC, Yukon, NWT/NU)
Geotechnical Engineer

ORIGINAL SIGNED

Michel Julien, Ph.D., P.Eng. (QC)
Principal, Project Director

KD/FD/MRJ/lw/ja

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TECHNICAL MEMORANDUM

DATE August 17, 2010 **PROJECT No.** 09-1428-5007
Doc. No. 1084 Ver. 0

TO Eric Lamontagne and Gaston Blanchette
Agnico-Eagle Mines Limited Meadowbank Division

FROM Karine Doucet, Fiona Esford and Michel Julien **EMAIL** Annie_Beaulieu@golder.com

FOUNDATION AND BACKFILL APPROVAL PROCEDURES DURING CUTOFF WALL TRENCH EXCAVATION (ON ROCK AND ON SOIL) DURING CONSTRUCTION OF BAY-GOOSE DIKE - SOUTH PORTION, MEADOWBANK GOLD PROJECT, NUNAVUT

This memo summarizes the foundation and backfill approval procedures for the cutoff wall trench excavation during construction of the south portion of the Bay-Goose Dike. The intent of these procedures is to better prepare all parties and therefore, reduce the time between the cutoff wall trench excavation activity and backfill placement.

The cutoff wall trench excavation is to be extended to bedrock along most of the alignment for the south portion of the dike, with the exception of 3 zones identified as Channel 1, Channel 2, and Channel 3, where it is intended to terminate the cutoff trench on competent soil (partial cutoff wall zones identified on DWG 4300-04).

Verifications are to be done prior to backfilling with SB or CSB to make sure that a minimal accumulation of soft sediments is present on top of bedrock. Verifications are to be carried out using manual probing. If sediments are found to be present greater than 0.2 m in thickness, further cleaning with the excavator is to be attempted. If cleaning is considered technically not feasible, or is unsuccessful, because of limited excavator reach or other reasons, the advancing front of backfill may be used to try to push the fine materials toward the excavator. This technique is not guaranteed to fix the problem but is considered a reasonable attempt to fix it.

1.0 FOUNDATION APPROVAL ON ROCK

The procedure to approve the cutoff wall trench foundation on rock is described below:

1) FGL to excavate the 1 m wide minimum cutoff wall trench to the bedrock contact.

2) Golder to observe excavator bucket scraping the bottom of the trench and to take notes of the bedrock surface shape.

3) Once both parties are satisfied that the excavation is on bedrock, FGL to survey the excavated area by manually taking sounding readings of the depth of the excavation every 2 m along the alignment. FGL also to survey the elevation of the manual sounding reference crest.

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4) Golder is to be present during both the collection of sounding data and recording of the data.

   a) If the excavated depth is deeper than the expected depth based on the bedrock depth recorded during the intial trench excavation, or within 0.2 m of this depth, Golder field representative to approve foundation preparation and backfill placement.

   b) If surveyed depth is more than 0.2 m above the expected depth, FGL to clean area again and repeat Steps 3 and 4.

   c) If survey depth is still 0.2 m or more above the expected depth, but FGL and Golder are confident that excavation has reached bedrock, then Golder to approve the foundation preparation and backfill placement. Golder to note this occurrence in the shift report.

5) If placement of backfill is delayed, additional sounding readings of the depth of the cutoff trench excavation are to be collected and recorded and compared to the readings collected in Step 4.

2.0 FOUNDATION APPROVAL ON COMPETENT SOIL

The procedure to be used to approve the cutoff wall trench foundation on competent soil for Channels 1, 2, and 3 is described below:

1) FGL to excavate the 1 m wide trench at least 1 m below the initial trench bottom surveyed depth. Golder to observe this excavation and the equipment's response to the excavation (resistance to excavation).

   a) If schedule and material volume permit, excavation to go deeper until clear refusal is acheived or until the limit of the equipment's reach is met.

2) Golder to periodically observe soil samples from the base of trench.

3) Golder to visually inspect soil samples and excavator response to excavation and evaluate if the soil is competent (along with observations of the excavator's response).

   a) If Golder does not consider that soil collected from the base of the trench is sufficiently competent, Golder will ask FGL foreman to excavate deeper. Once FGL's excavator operator feels that the soil density (resistance to excavation) increases, then Steps 2 and 3 are to be repeated until Golder is satisfied that soil at the bottom of the trench is competent.

   b) If cutoff trench is being excavated in an area where significant silt accumulation (> 1.5 m) is detected, and attempts to remove it are not successful or feasible, proceed to Step 4. Area to be treated with Jet Grouting.

4) FGL to survey and record the base of the trench elevation with the instrumented bucket (if possible) and manual soundings every 2 m. FGL also to survey the elevation of the manual sounding reference crest.

5) Golder to be present during both surveys and recording of the data.

   a) If sounded depth meets the minimum requirement of 1 m below the depth of the initial trench excavation then Golder field representitive to approve foundation preparation and backfill placement.

b) If minimum requirement is not met, FGL to excavate trench deeper and repeat Steps 3 and 4 until cutoff wall excavation is at least 1 m below initial trench and founded on competent ground. If FGL not able to achieve the criteria described above, the zone will be flagged and treated with Jet Grouting.

Yours very truly,

GOLDER ASSOCIATES LTD.

Karine Doucet, P.Eng. (BC)
Geotechnical Engineer

Fiona Esford, P.Eng. (BC, Yukon, NWT/NU)
Geotechnical Engineer

Michel Julien, Ph.D., P.Eng. (QC)
Principal, Project Director

KD/FD/MRJ/ja/rs

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TECHNICAL MEMORANDUM

DATE September 18, 2010 **REFERENCE No.** 09-1428-5007 Doc. 1113 Rev0

TO Gaston Blanchette, Éric Lamontagne and Yohan Jalbert
Agnico-Eagle Mines Limited - Meadowbank Division

CC Dan Walker, Michel Julien, Annie Beaulieu, Paul Bedell, Grant Bonin, Fiona Esford

FROM Yves Boulianne and Fiona Esford **EMAIL** Yves_Boulianne@golder.com

CUT-OFF WALL EXCAVATION IN ZONES WITH THICKER SOFT SEDIMENTS

As discussed during the daily construction meeting, the following provides the approach for excavating the cut-off wall in zones with thicker soft sediments, based on data collected during the initial trench excavation and backfilling. Data showing zones of thicker soft sediment is being compiled by Golder and on ongoing basis provided to AEM.

- Continue to excavate the cut-off trench to bedrock, or as deep as practical. A minimum of 1 metre into dense till, below the base of the initial trench is required, as stated in the specifications and on the construction drawings,
- Conduct site verification to demonstrate that the cut-off wall is continuous and reaches the depth excavated (either bedrock or till surface). Verification could be through various methods including: casing installation for bedrock grouting, other drilling methods, and /or geophysical logging. This verification is to be done prior to demobilization of the jet grouting contractor, and
- If silt pockets are identified at the base of the cut-off wall, then based on an assessment of the thickness of any such silt deposits a determination will be made as to whether jet grouting or other suitable treatment method is required.

It is recognized that there may be limitations on the practical depth of excavation. Golder field staff will assess this on an ongoing basis.

YB/FE/

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TECHNICAL MEMORANDUM

DATE October 1, 2010 **REFERENCE No.** 09-1428-5007
Doc. No. 1114 Ver. 0

TO Gaston Blanchette
Agnico-Eagle Mines Ltd. Meadowbank Division

CC Dan Walker, Michel Julien, Annie Beaulieu, Fiona Esford, Paul Bedell and Grant Burns

FROM Yves Boulianne **EMAIL** Yves_Boulianne@golder.com

2010 DIKE CONSTRUCTION QA LABORATORY TESTING ANALYSIS REPORT – MEADOWBANK GOLD PROJECT, NUNAVUT

Please see the attached laboratory test results to date for the 2010 Bay-Goose Dike QA construction. A portion of these analyses were provided unofficially at the September 25, 2010 construction meeting and others were issued in the weekly report of September 9, 2010. The results issued in the weekly report are the same; however, some additional remarks have since been added to the analyses.

It is to be noted that sample SA-210 to SA-248 (moisture content from SD2 foundation) are not attached as they were forwarded to your attention early in August, 2010.

The results are compiled by material type as follow:

- Core Backfill or fine filter
- Coarse filter
- Till (Borrow pit, stockpile mix with bentonite for SB and CSB, liner toe tie-in plug)
- Native soil from Bay Goose trench bottom

List of reported laboratory testing analysis;

SA-200 to SA-209, SA-249 to SA-301, SA-303 to SA-313, SA-318 to SA-320, SA-322 to SA-324, SA-330 to SA-338, SA-342, SA-344, SA-346 to SA-348 and SA-351.

If have any questions or concerns please do not hesitate to contact us.

YB/lw

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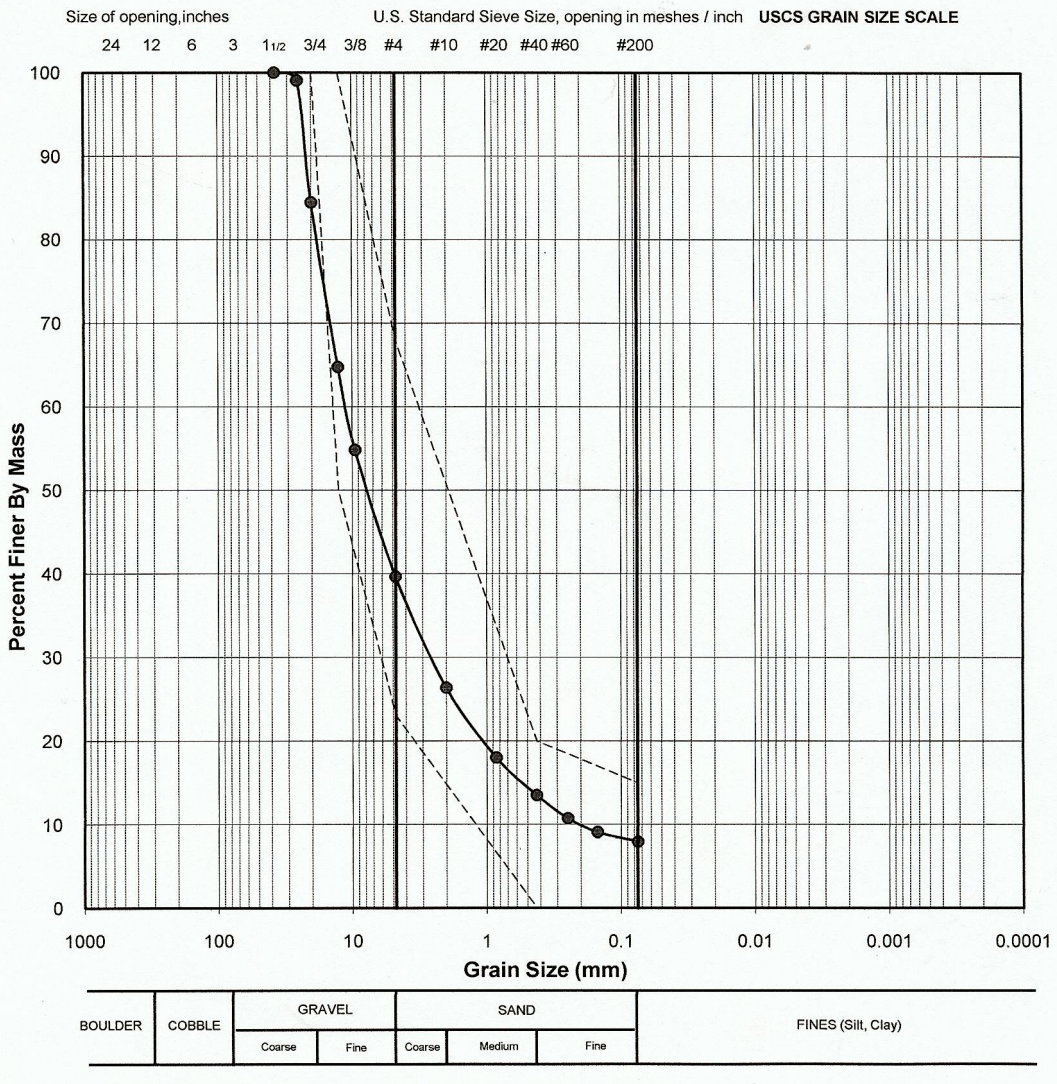
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**200**
Client:	AEM	**Field Label:**	BG072810-1
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA 200
Remarks:	Water Content = 1.0%	**Date Sampled:**	July 28, 2010
Location:	PAG STOCKPILE4	**Material Specification:**	0-20 mm crushed stone
		Method:	COMBINED, WASHED
		Date Tested:	August 7, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
8"	200.0	100.0
6"	152.4	100.0
3"	76.2	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.4	99.1
3/4"	20.0	84.5
1/2"	12.7	64.8
3/8"	9.5	54.9
#4	4.760	39.7
#10	2.000	26.4
#20	0.850	18.0
#40	0.425	13.5
#60	0.250	10.8
#100	0.150	9.1
#200	0.075	8.0



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

MO	August 7, 2010	YB	Sept. 21, 2010
TESTED BY	DATE	CHECKED BY	DATE

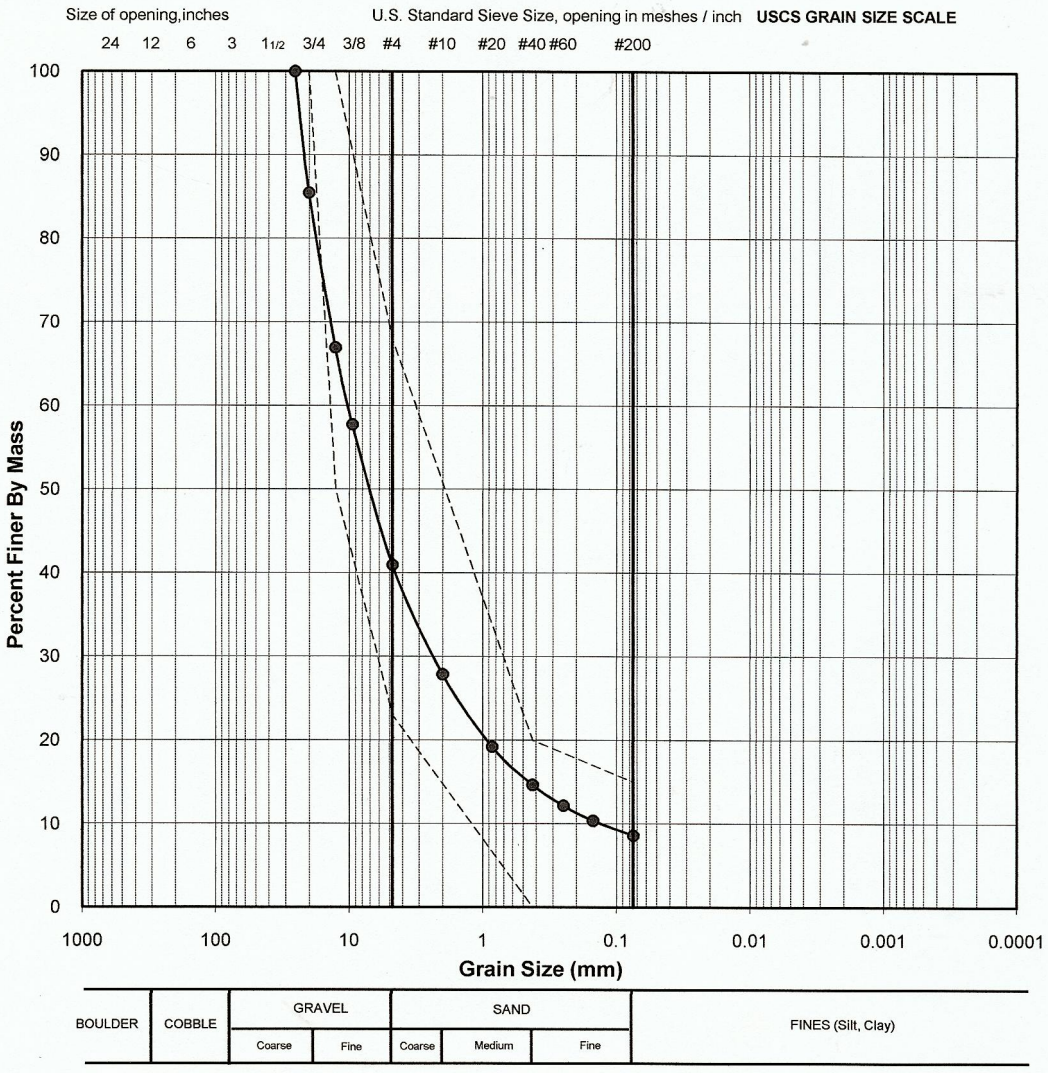
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**201**
Client:	AEM	**Field Label:**	BG072810-2
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA 201
Remarks:	Water Content = 1.5%	**Date Sampled:**	July 28, 2010
Location:	NPAG STOCKPILE 2	**Material Specification:**	0-20 mm crushed stone
		Method:	COMBINED, WASHED
		Date Tested:	August 7, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
8"	200.0	100.0
6"	152.4	100.0
3"	76.2	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.4	100.0
3/4"	20.0	85.5
1/2"	12.7	67.0
3/8"	9.5	57.8
#4	4.760	40.9
#10	2.000	27.9
#20	0.850	19.2
#40	0.425	14.7
#60	0.250	12.2
#100	0.150	10.4
#200	0.075	8.6



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MO	August 7, 2010	YB	Sept. 21, 2010
TESTED BY	DATE	CHECKED BY	DATE

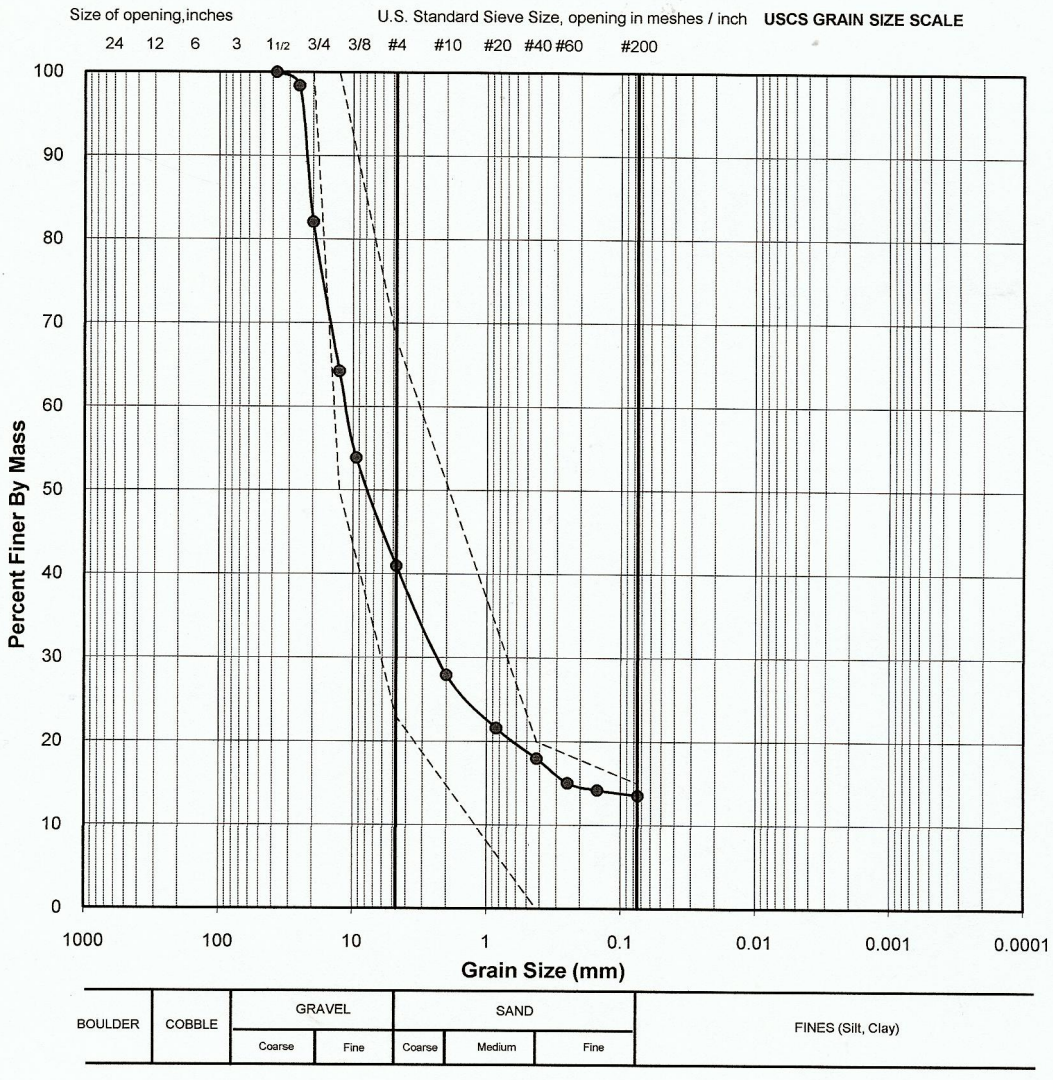
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PARTICLE SIZE ANALYSIS OF SOILS

Reference: ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**202**
Client:	AEM	**Field Label:**	BG072810-3
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA 202
Remarks:	Water Content = 1.2%	**Date Sampled:**	July 28, 2010
Location:	NPAG Stockpile 1	**Material Specification:**	0-20 mm crushed stone
		Method:	COMBINED, WASHED
		Date Tested:	August 6, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
8"	200.0	100.0
6"	152.4	100.0
3"	76.2	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.4	98.4
3/4"	20.0	82.1
1/2"	12.7	64.3
3/8"	9.5	53.9
#4	4.760	41.0
#10	2.000	28.0
#20	0.850	21.6
#40	0.425	18.0
#60	0.250	15.1
#100	0.150	14.2
#200	0.075	13.6



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MO	August 6, 2010	YB	Sept. 21, 2010
TESTED BY	DATE	CHECKED BY	DATE

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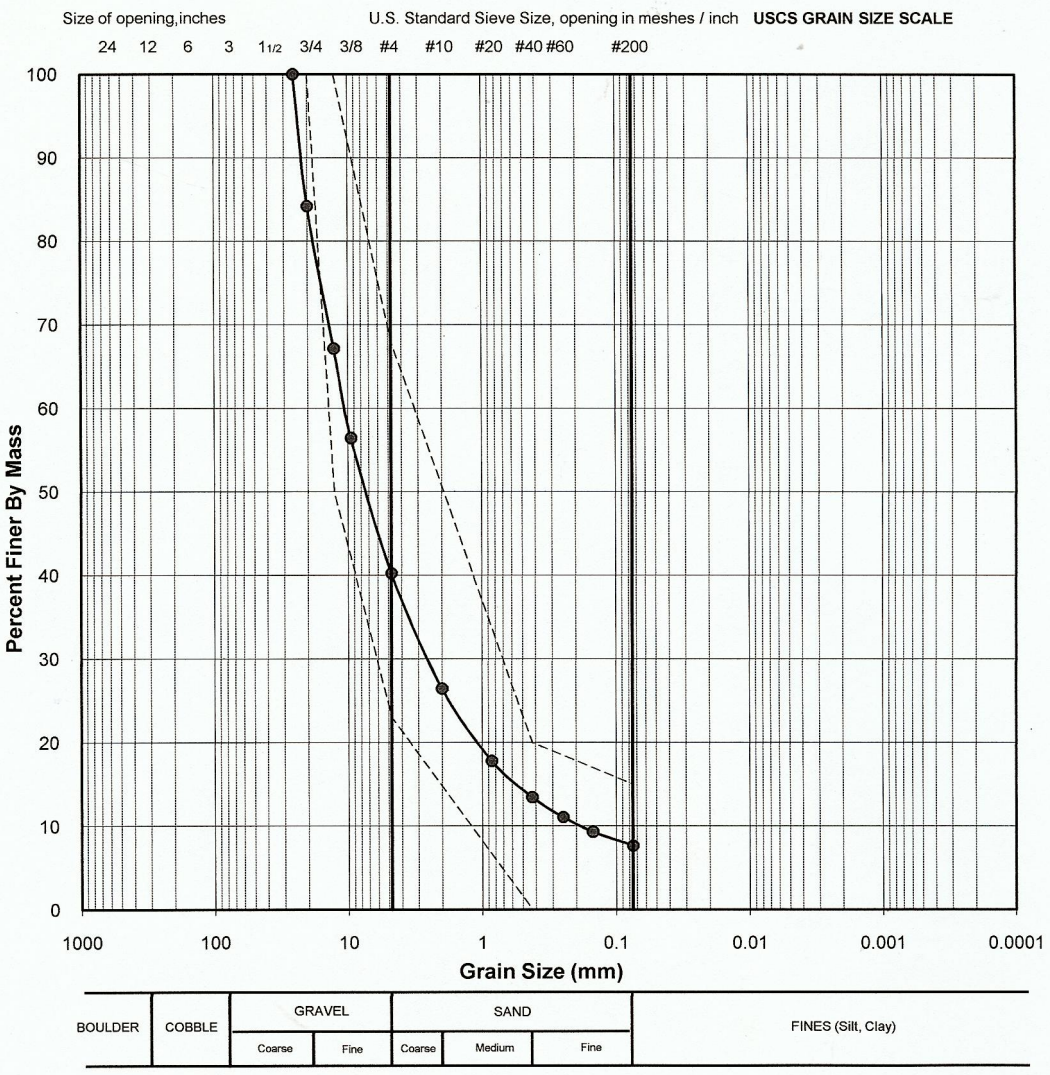
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**203**
Client:	AEM	**Field Label:**	BG072810-4
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA 203
Remarks:	Water Content = 1.2%	**Date Sampled:**	July 28, 2010
Location:	PAG Stockpile 3	**Material Specification:**	0-20 mm crushed stone
		Method:	COMBINED, WASHED
		Date Tested:	August 7, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
8"	200.0	100.0
6"	152.4	100.0
3"	76.2	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.4	100.0
3/4"	20.0	84.2
1/2"	12.7	67.2
3/8"	9.5	56.5
#4	4.760	40.3
#10	2.000	26.5
#20	0.850	17.8
#40	0.425	13.5
#60	0.250	11.1
#100	0.150	9.3
#200	0.075	7.7



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

MO	August 7, 2010	YB	Sept. 21, 2010
TESTED BY	DATE	CHECKED BY	DATE

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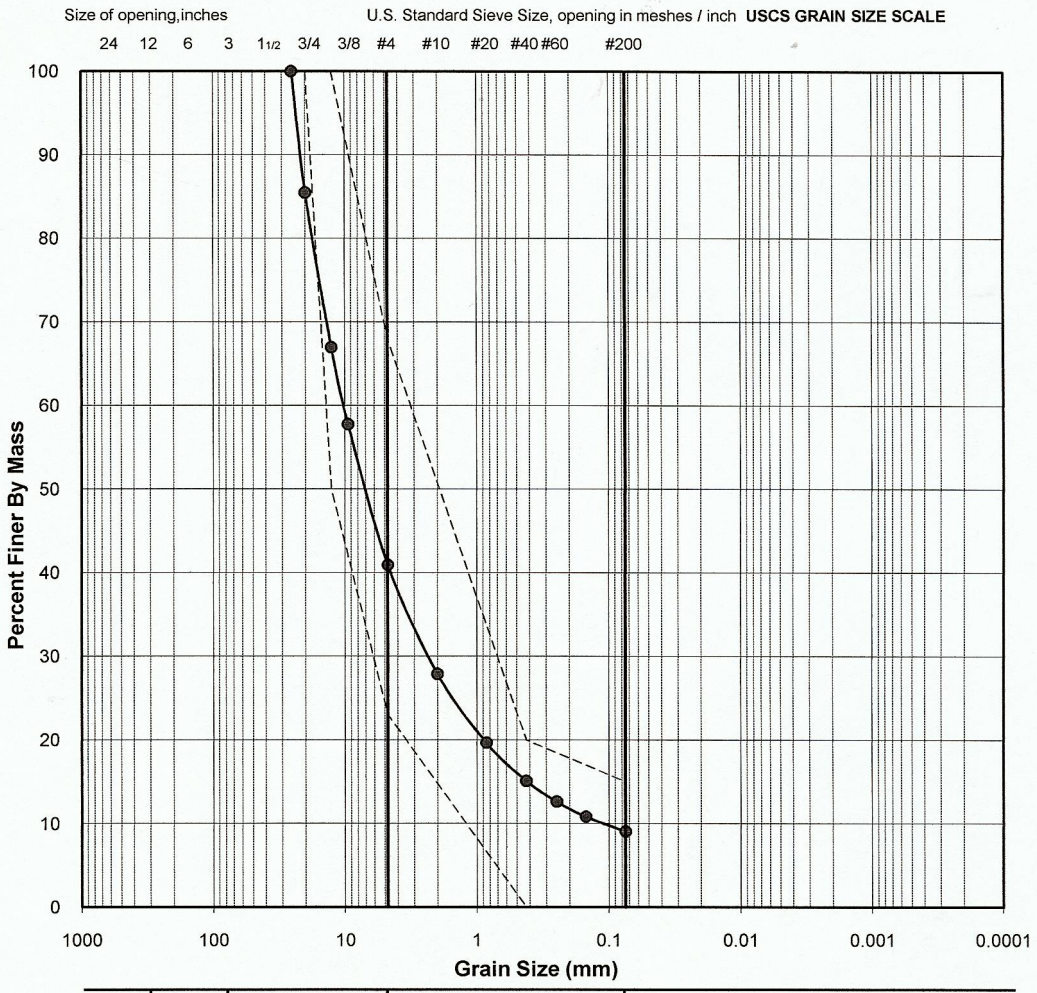
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**204**
Client:	AEM	**Field Label:**	BG072910-1
Project:	Meadowbank Gold Project	**Depth (m):**	2
Location:	Nunavut	**Lab ID No:**	SA 204
Remarks:	under water	**Date Sampled:**	July 29, 2010
Location:	STA.31 +030	**Material Specification:**	CORE BACKFILL
		Method:	COMBINED, WASHED
		Date Tested:	August 6, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
8"	200.0	100.0
6"	152.4	100.0
3"	76.2	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.4	100.0
3/4"	20.0	85.5
1/2"	12.7	67.0
3/8"	9.5	57.8
#4	4.760	40.9
#10	2.000	27.9
#20	0.850	19.6
#40	0.425	15.1
#60	0.250	12.6
#100	0.150	10.8
#200	0.075	9.1



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MO	August 6, 2010	YB	Sept. 21, 2010
TESTED BY	DATE	CHECKED BY	DATE

M:\Meadowbank 2010 QAQC DataBase\Laboratory\Lab Testing-Reviewed by QA Manager\SA 204.xlsm

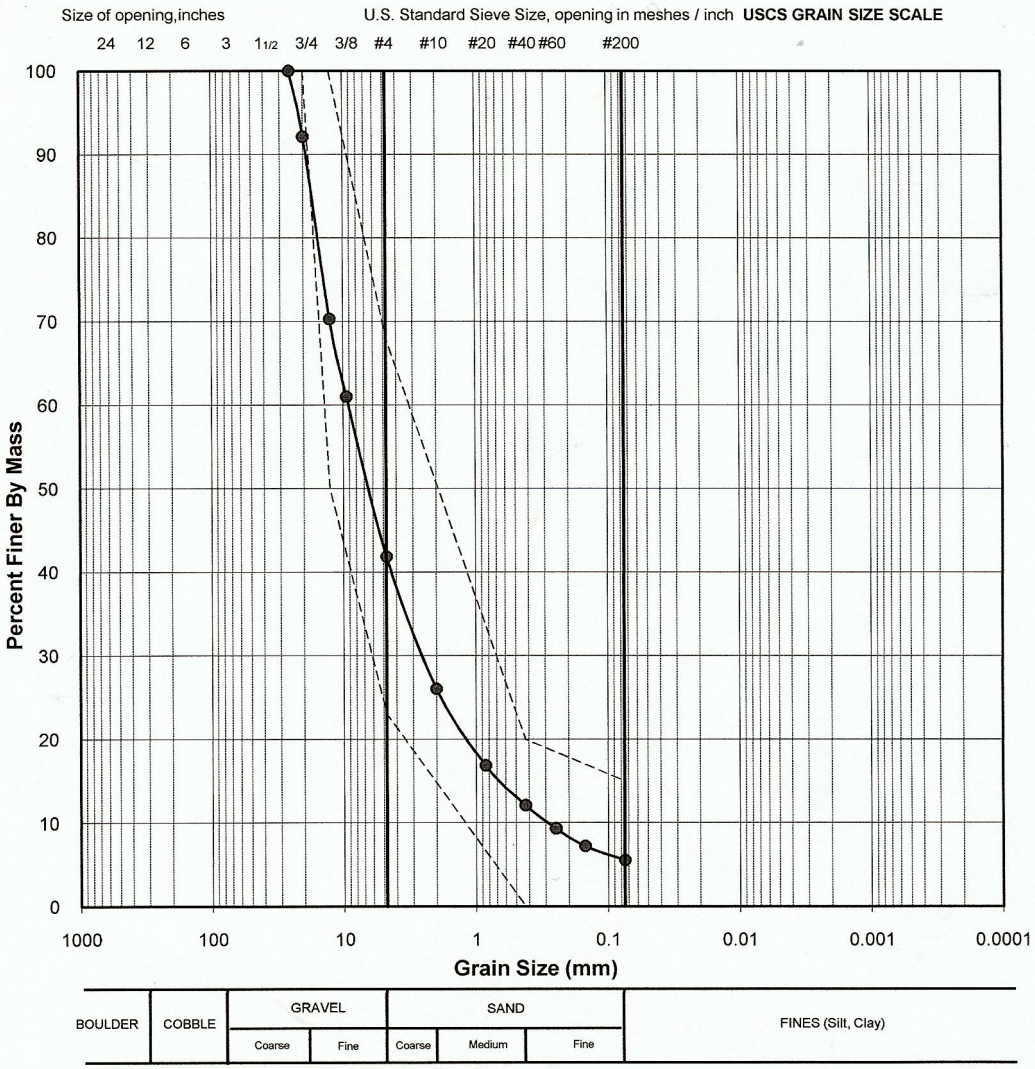
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Burnaby, B.C. Canada V5C 6C8

PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**206**
Client:	AEM	**Field Label:**	BG072910-3
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA 206
Remarks:	under water	**Date Sampled:**	July 29, 2010
Sa. Location:	Bay Goose STA.31 +052	**Material Specification:**	CORE BACKFILL
		Method:	COMBINED, WASHED
		Date Tested:	August 7, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
8"	200.0	100.0
6"	152.4	100.0
3"	76.2	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.4	100.0
3/4"	20.0	92.1
1/2"	12.7	70.3
3/8"	9.5	61.0
#4	4.760	41.9
#10	2.000	26.0
#20	0.850	16.9
#40	0.425	12.1
#60	0.250	9.4
#100	0.150	7.2
#200	0.075	5.6



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

MO	August 7, 2010	YB	Sept. 22, 2010
TESTED BY	DATE	CHECKED BY	DATE

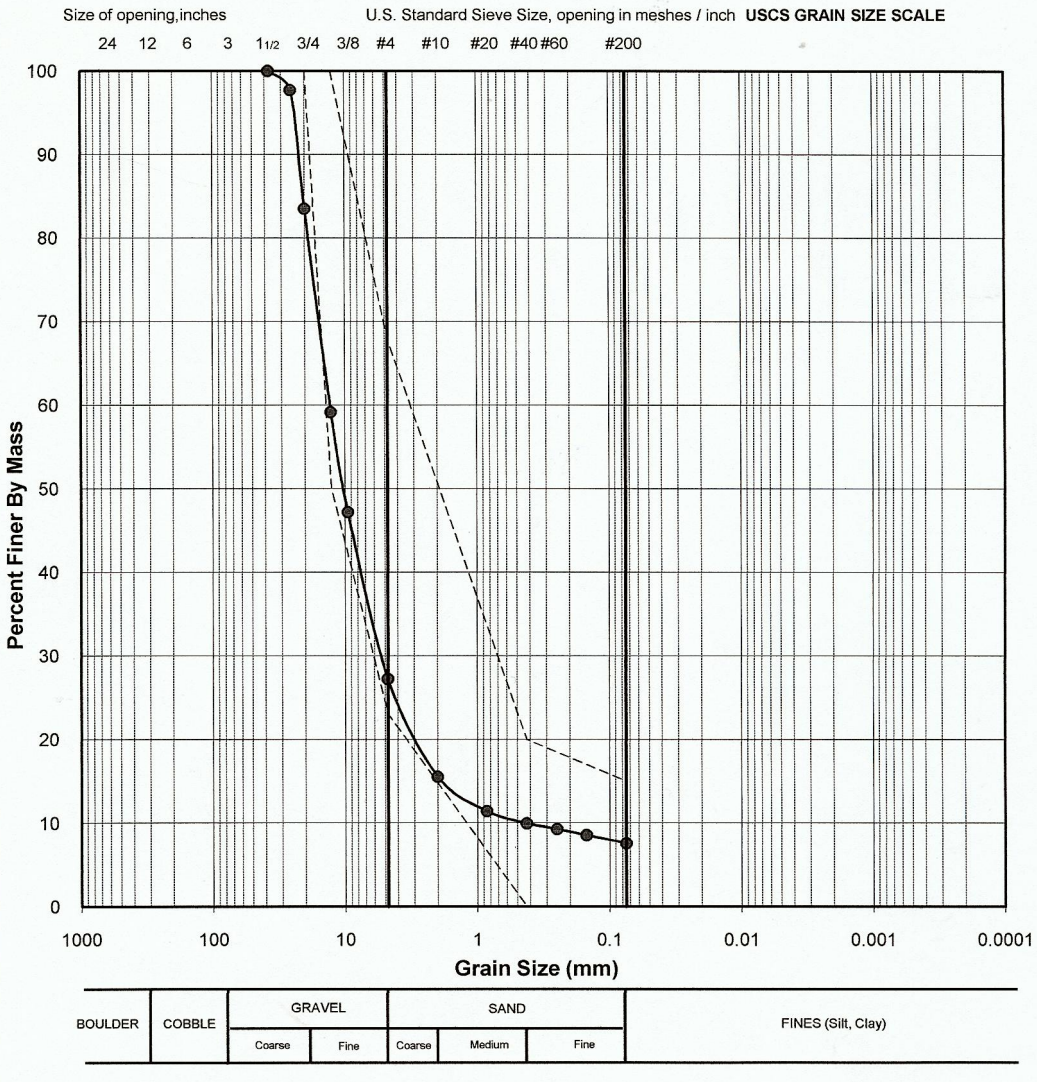
Golder Associates Ltd. - Burnaby Laboratory
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Burnaby, B.C. Canada V5C 6C8

PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**249**
Client:	AEM	**Field Label:**	BG080210-1
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA 249
Remarks:	under water	**Date Sampled:**	August 2, 2010
Sa. Location:	Bay Goose STA.31 +169	**Material Specification:**	CORE BACKFILL
		Method:	COMBINED, WASHED
		Date Tested:	August 6, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
8"	200.0	100.0
6"	152.4	100.0
3"	76.2	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.4	97.7
3/4"	20.0	83.5
1/2"	12.7	59.2
3/8"	9.500	47.2
#4	4.760	27.3
#10	2.000	15.5
#20	0.850	11.4
#40	0.425	10.0
#60	0.250	9.3
#100	0.150	8.6
#200	0.075	7.6



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MO	August 6, 2010	YB	Sept. 23, 2010
TESTED BY	DATE	CHECKED BY	DATE

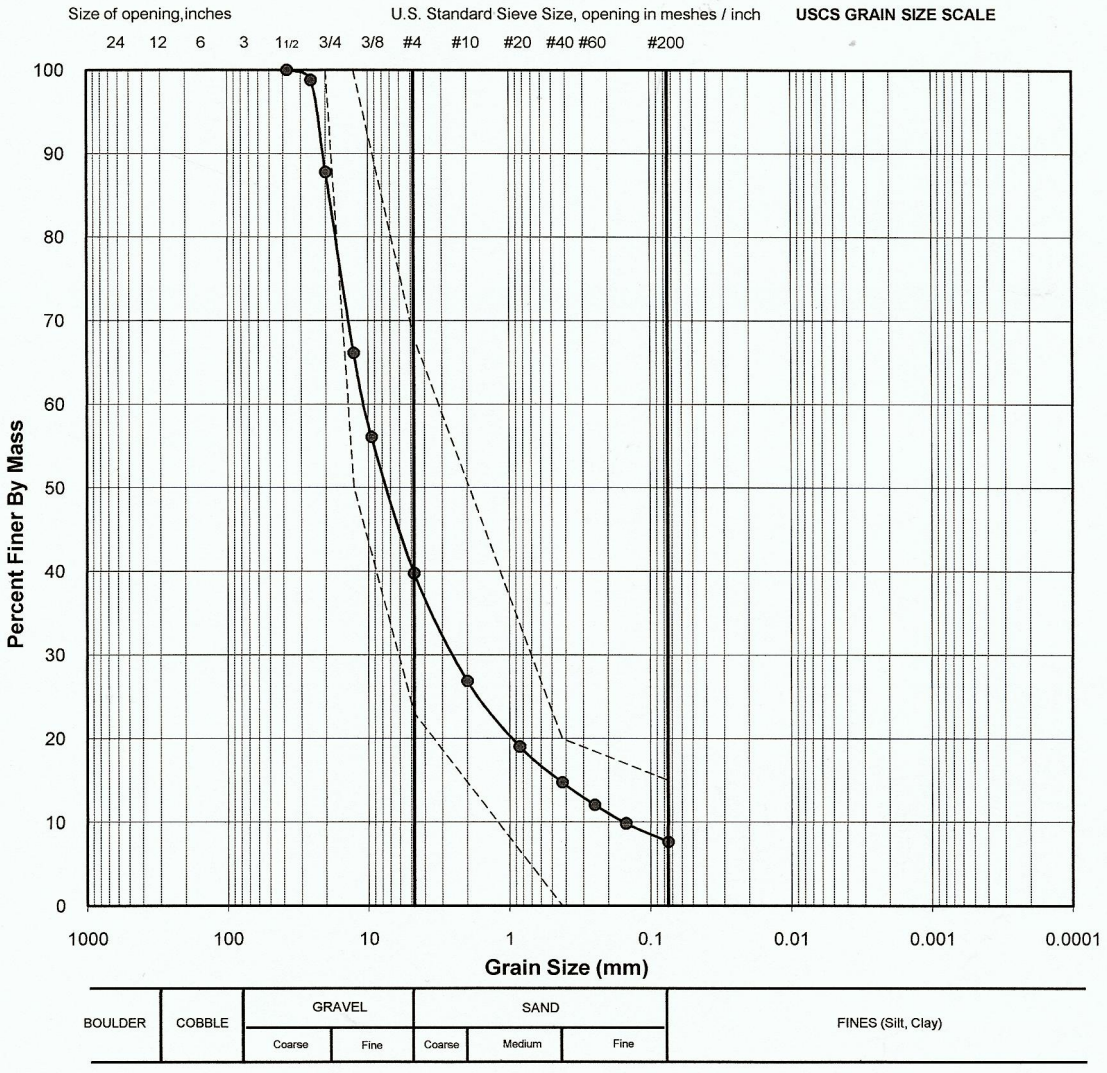
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**258**
Client:	AEM	**Field Label:**	BG080710-1
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA 258
Remarks:	under water	**Date Sampled:**	August 7, 2010
Sa. Location:	BG STA.31 +411	**Material Specification:**	CORE BACKFILL
		Method:	COMBINED, WASHED
		Date Tested:	August 9, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
8"	200.0	100.0
6"	152.4	100.0
3"	76.2	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.4	98.8
3/4"	20.0	87.8
1/2"	12.7	66.2
3/8"	9.5	56.1
#4	4.760	39.8
#10	2.000	26.9
#20	0.850	19.1
#40	0.425	14.8
#60	0.250	12.1
#100	0.150	9.9
#200	0.075	7.7



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MO	August 9, 2010	YB	Sept. 23, 2010
TESTED BY	DATE	CHECKED BY	DATE

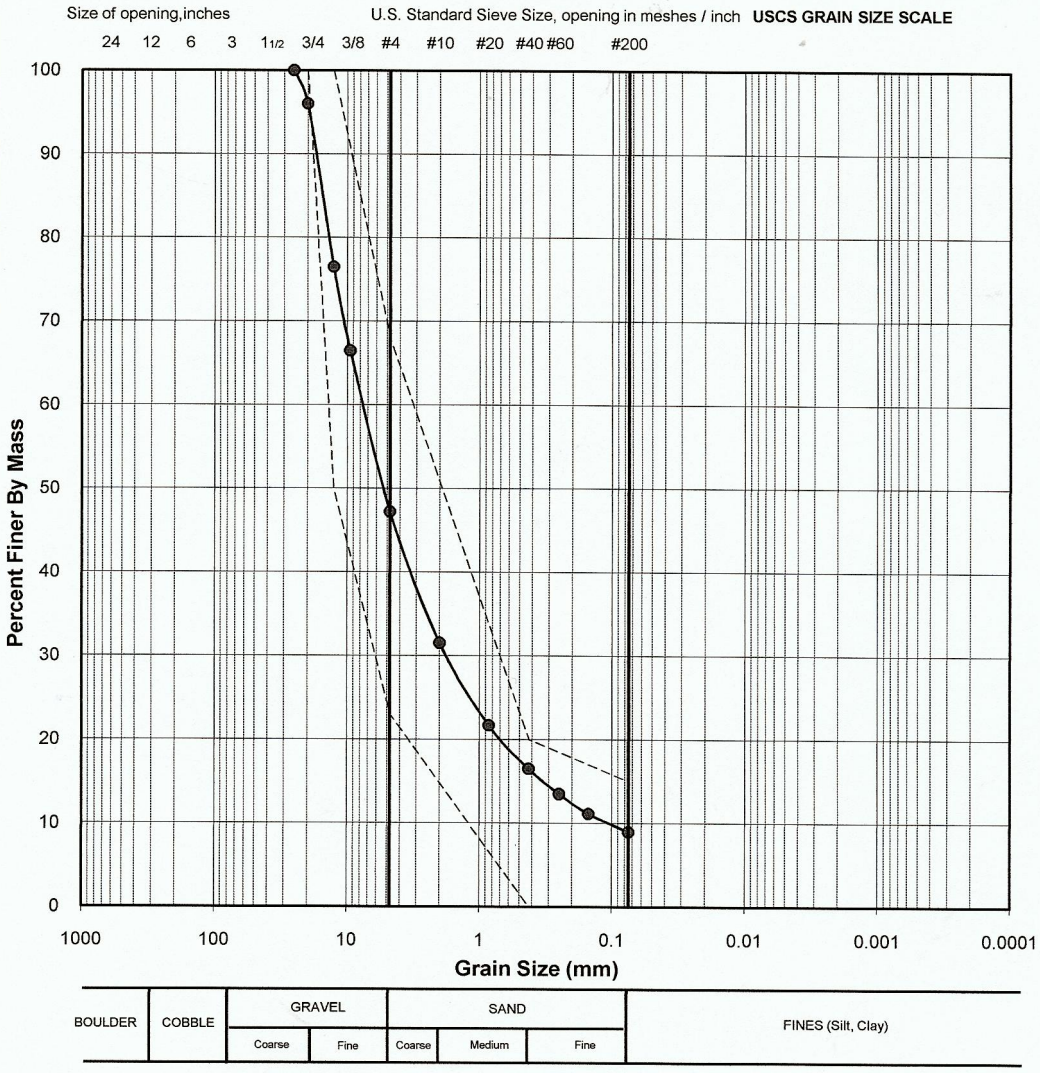
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**251**
Client:	AEM	**Field Label:**	BG080410-1
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA 251
Remarks:	under water	**Date Sampled:**	August 4, 2010
Sa. Location:	Bay Goose STA.31 +685	**Material Specification:**	CORE BACKFILL
		Method:	COMBINED, WASHED
		Date Tested:	August 6, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
8"	200.0	100.0
6"	152.4	100.0
3"	76.2	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.4	100.0
3/4"	20.0	96.0
1/2"	12.7	76.5
3/8"	9.5	66.5
#4	4.760	47.2
#10	2.000	31.5
#20	0.850	21.7
#40	0.425	16.5
#60	0.250	13.5
#100	0.150	11.2
#200	0.075	9.0



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

MO	August 6, 2010	YB	Sept. 9, 2010
TESTED BY	DATE	CHECKED BY	DATE

M:\Meadowbank 2010 QAQC DataBase\Laboratory\LabTesting-Reviewed by QA Manager\SA 251.xlsm

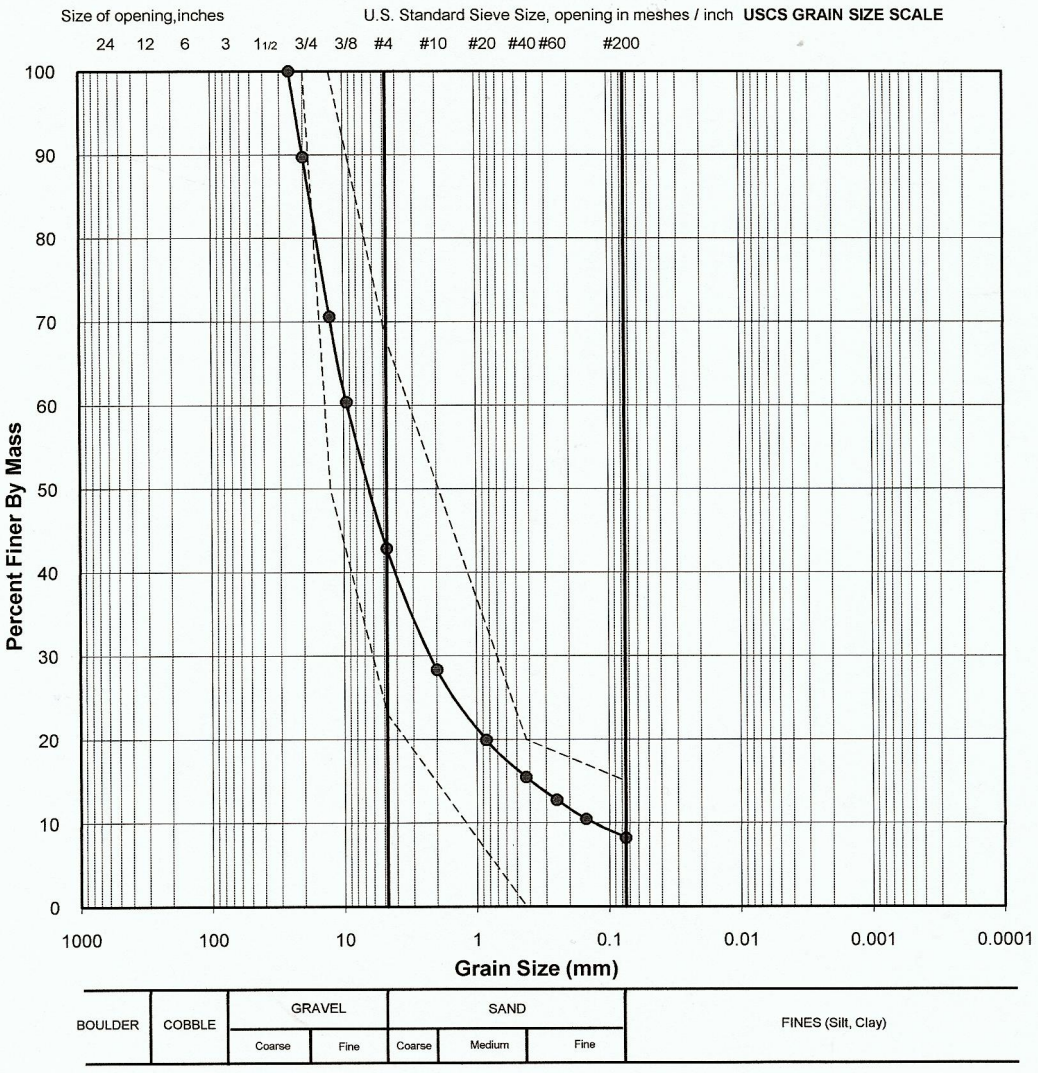
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**252**
Client:	AEM	**Field Label:**	BG080510-1
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA 252
Remarks:	under water	**Date Sampled:**	August 5, 2010
Sa. Location:	BG STA.31 +333	**Material Specification:**	CORE BACKFILL
		Method:	COMBINED, WASHED
		Date Tested:	August 7, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
8"	200.0	100.0
6"	152.4	100.0
3"	76.2	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.4	100.0
3/4"	20.0	89.7
1/2"	12.7	70.6
3/8"	9.5	60.4
#4	4.760	42.9
#10	2.000	28.4
#20	0.850	19.9
#40	0.425	15.5
#60	0.250	12.8
#100	0.150	10.5
#200	0.075	8.3



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MO	August 7, 2010	YB	Sept. 23, 2010
TESTED BY	DATE	CHECKED BY	DATE

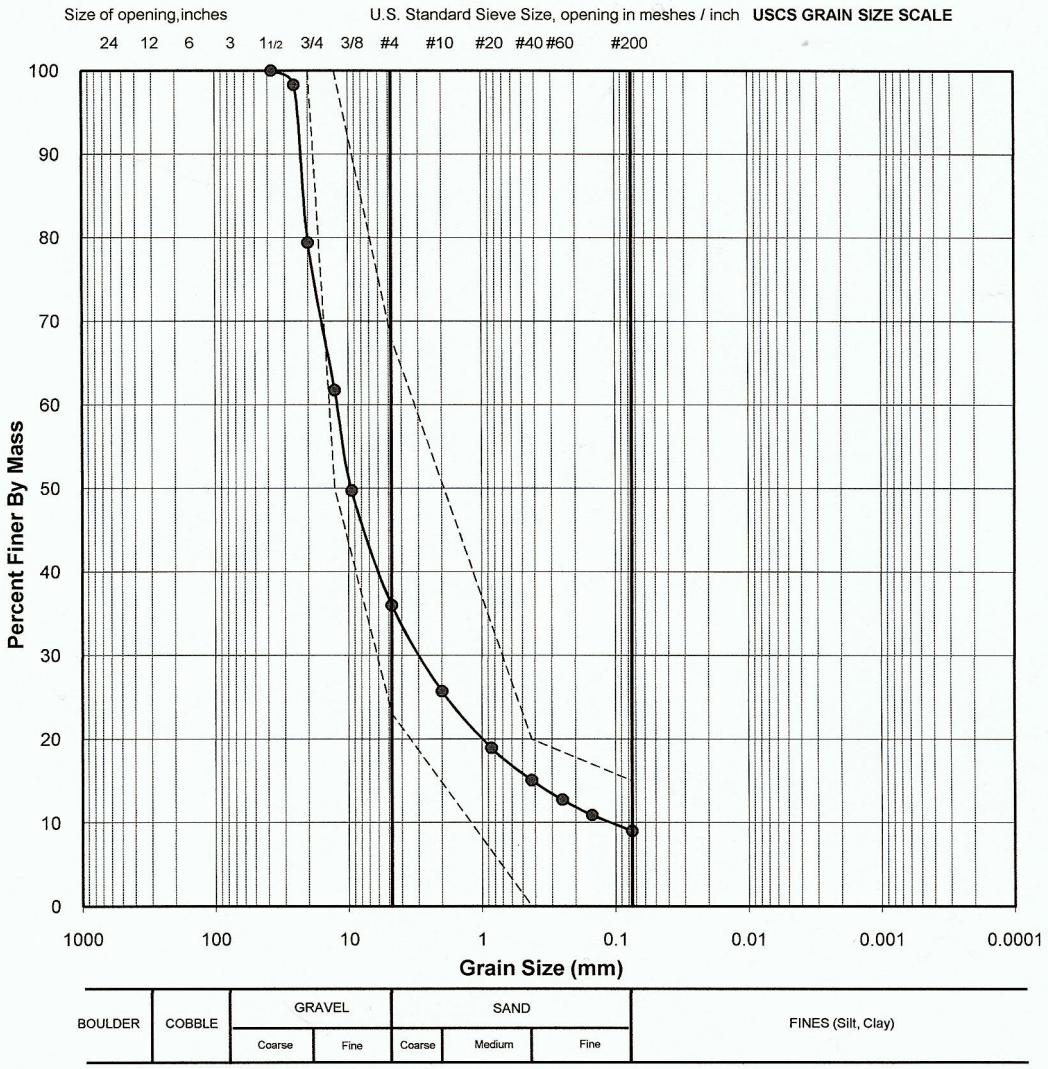
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**253 (2)**
Client:	AEM	**Field Label:**	BG080510-2
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA 253 (2)
Remarks:	under water	**Date Sampled:**	August 5, 2010
Sa. Location:	BG STA.31 +341	**Material Specification:**	CORE BACKFILL
		Method:	COMBINED, WASHED
		Date Tested:	August 9, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
8"	200.0	100.0
6"	152.4	100.0
3"	76.2	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.4	98.3
3/4"	20.0	79.4
1/2"	12.7	61.8
3/8"	9.5	49.7
#4	4.760	36.0
#10	2.000	25.7
#20	0.850	18.9
#40	0.425	15.1
#60	0.250	12.7
#100	0.150	10.9
#200	0.075	9.0



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MO	August 9, 2010	YB	Sept. 23, 2010
TESTED BY	DATE	CHECKED BY	DATE

M:\Meadowbank 2010 QAQC DataBase\Laboratory\LabTesting-Reviewed by QA Manager\SA 253-2.xlsm

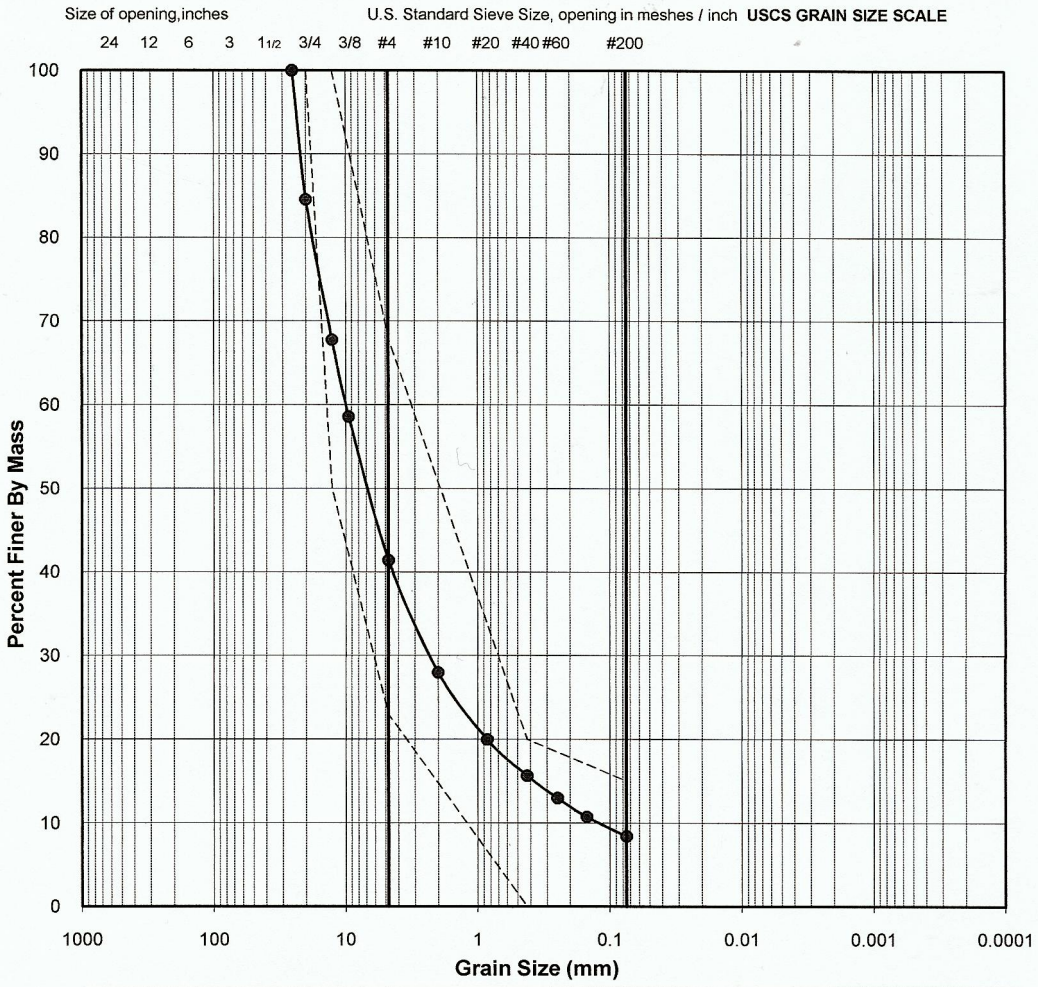
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Burnaby, B.C. Canada V5C 6C8

PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**261**
Client:	AEM	**Field Label:**	BG080710-4
Project:	Meadowbank Gold Project	**Depth (m):**	9-10
Location:	Nunavut	**Lab ID No:**	SA 261
Remarks:	9-10 m under water	**Date Sampled:**	August 7, 2010
Sa. Location:	BG STA.31 +600	**Material Specification:**	CORE BACKFILL
		Method:	COMBINED, WASHED
		Date Tested:	August 9, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
8"	200.0	100.0
6"	152.4	100.0
3"	76.2	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.4	100.0
3/4"	20.0	84.6
1/2"	12.7	67.8
3/8"	9.500	58.6
#4	4.760	41.4
#10	2.000	28.0
#20	0.850	20.0
#40	0.425	15.7
#60	0.250	13.0
#100	0.150	10.7
#200	0.075	8.4



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MO	August 9, 2010	YB	Sept. 24, 2010
TESTED BY	DATE	CHECKED BY	DATE

M:\Meadowbank 2010 QAQC DataBase\Laboratory\LabTesting-Rev by QA Manager\SA 261

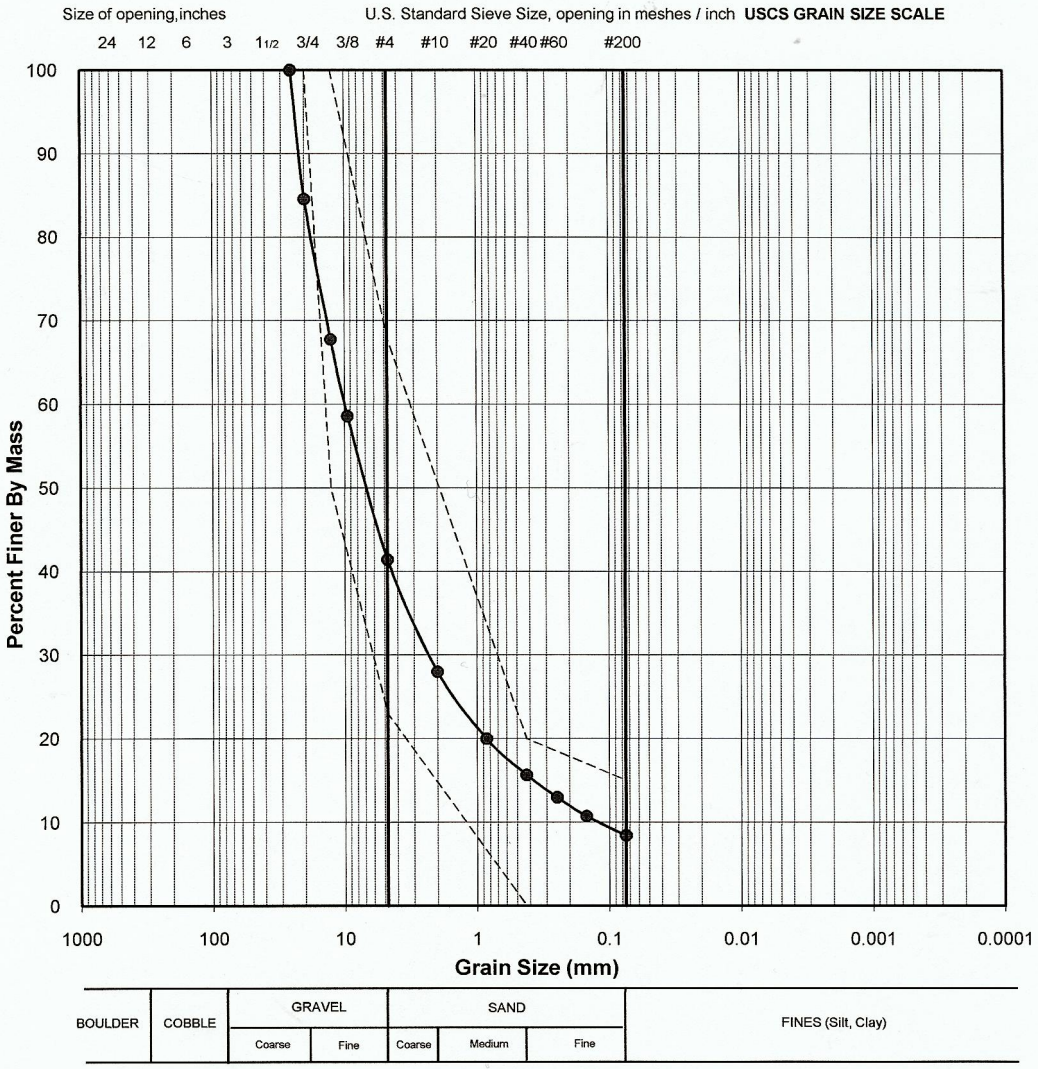
Golder Associates Ltd. - Burnaby Laboratory
4280 Still Creek Drive
Burnaby, B.C. Canada V5C 6C8

PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**262**
Client:	AEM	**Field Label:**	BG080810-1
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA 262
Remarks:	under water	**Date Sampled:**	August 7, 2010
Sa. Location:	BG STA.31+446	**Material Specification:**	CORE BACKFILL
		Method:	COMBINED, WASHED
		Date Tested:	August 9, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
8"	200.0	100.0
6"	152.4	100.0
3"	76.2	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.4	100.0
3/4"	20.0	84.6
1/2"	12.7	67.8
3/8"	9.5	58.6
#4	4.760	41.4
#10	2.000	28.0
#20	0.850	20.0
#40	0.425	15.7
#60	0.250	13.0
#100	0.150	10.7
#200	0.075	8.4



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MO	August 9, 2010	YB	Sept. 24, 2010
TESTED BY	DATE	CHECKED BY	DATE

M:\Meadowbank 2010 QAQC DataBase\Laboratory\LabTesting-Rev by QA Manager\SA 262

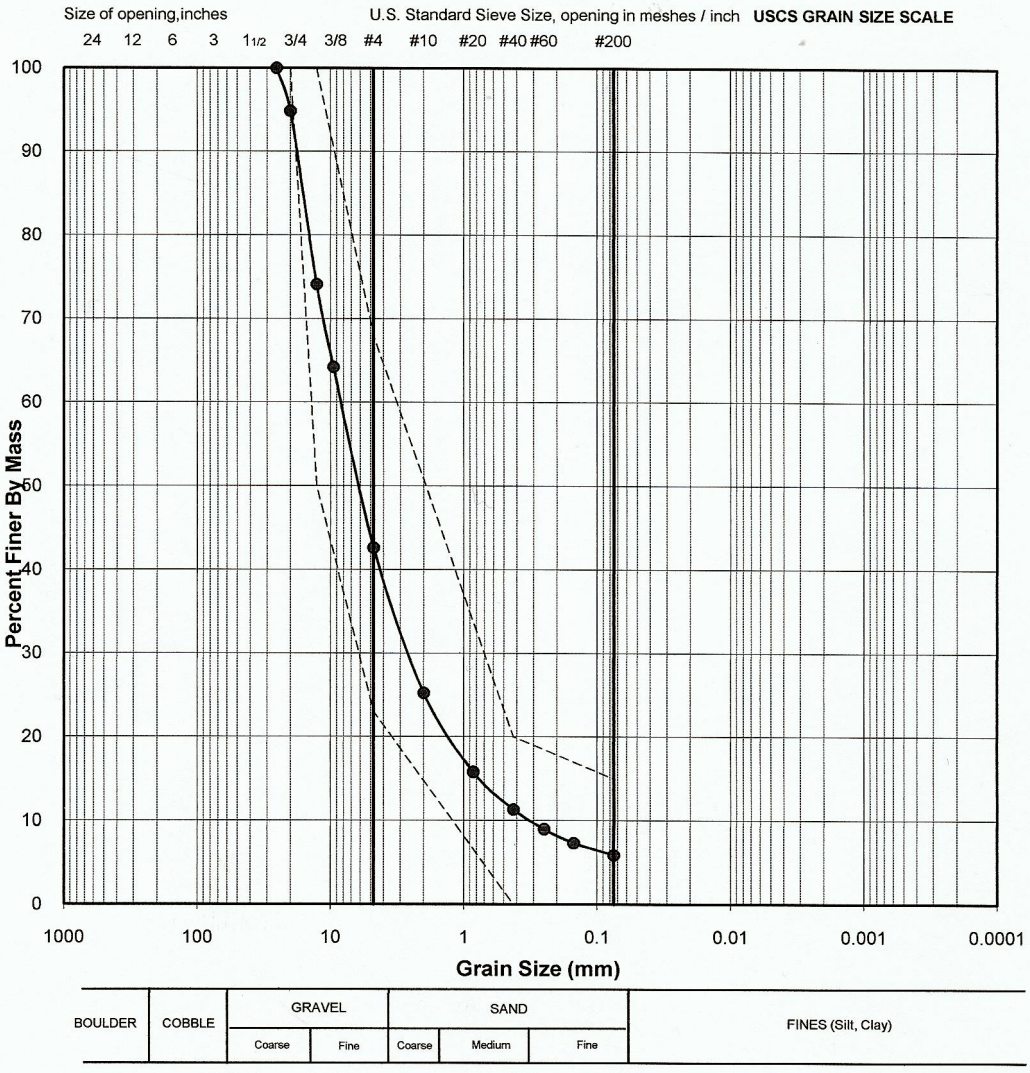
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**264**
Client:	AEM	**Field Label:**	BG080810-3
Project:	Meadowbank Gold Project	**Depth (m):**	5
Location:	Nunavut	**Lab ID No:**	SA 264
Remarks:	under water	**Date Sampled:**	August 8, 2010
Sa. Location:	BG STA.31 +764	**Material Specification:**	CORE BACKFILL
		Method:	COMBINED, WASHED
		Date Tested:	August 10, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
8"	200.0	100.0
6"	152.4	100.0
3"	76.2	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.4	100.0
3/4"	20.0	94.9
1/2"	12.7	74.1
3/8"	9.5	64.2
#4	4.760	42.6
#10	2.000	25.2
#20	0.850	15.8
#40	0.425	11.3
#60	0.250	9.0
#100	0.150	7.3
#200	0.075	5.9



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

MO	August 10, 2010	YB	Sept. 24, 2010
TESTED BY	DATE	CHECKED BY	DATE

M:\Meadowbank 2010 QAQC DataBase\Laboratory\LabTesting-Rev by QA Manager\SA 264

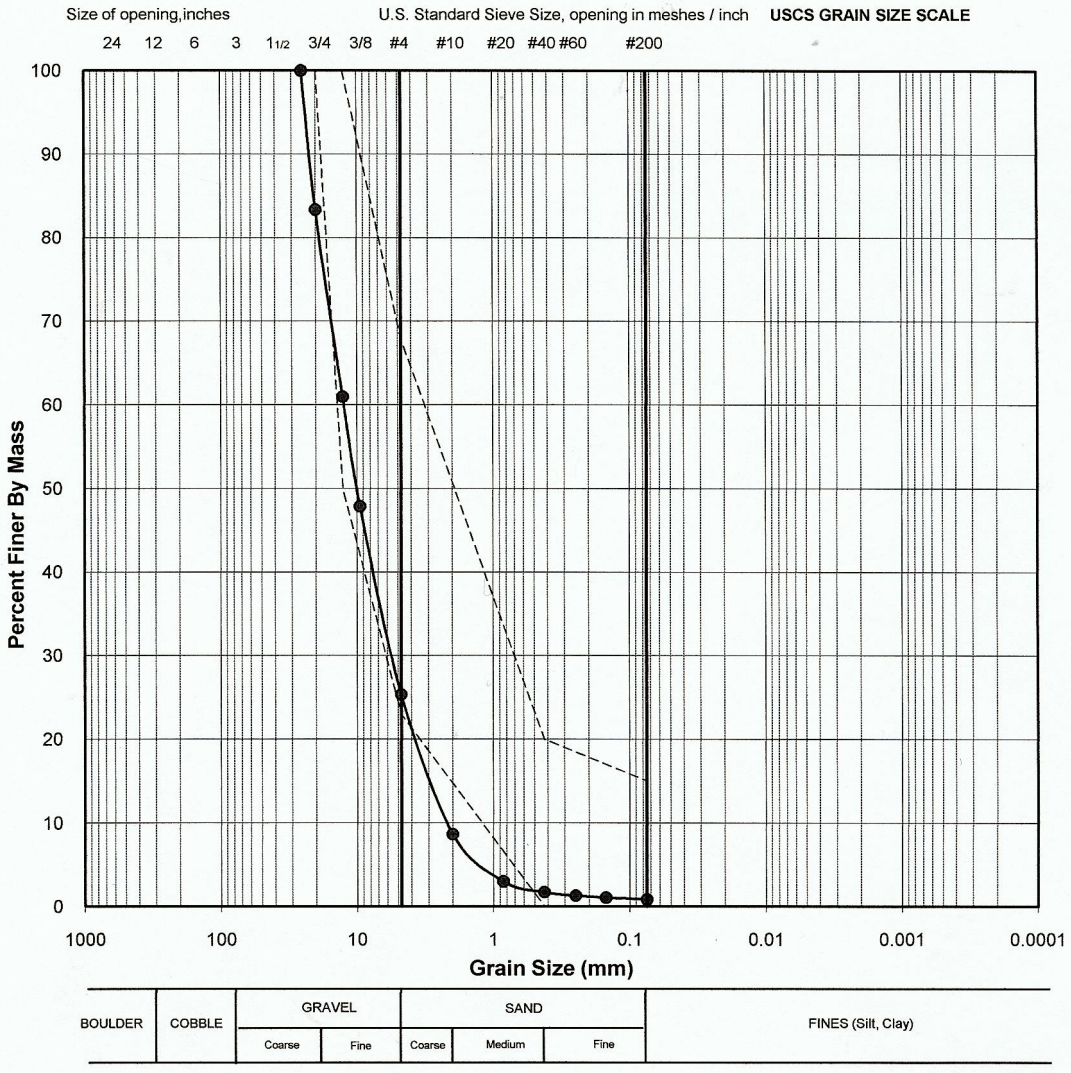
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**265**
Client:	AEM	**Field Label:**	BG080910
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA 265
Remarks:	under water	**Date Sampled:**	August 9, 2010
Sa. Location:	BG STA.31 +520	**Material Specification:**	CORE BACKFILL
		Method:	COMBINED, WASHED
		Date Tested:	August 10, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
8"	200.0	100.0
6"	152.4	100.0
3"	76.2	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.4	100.0
3/4"	20.0	83.4
1/2"	12.7	61.0
3/8"	9.5	47.9
#4	4.760	25.4
#10	2.000	8.7
#20	0.850	3.0
#40	0.425	1.7
#60	0.250	1.3
#100	0.150	1.1
#200	0.075	0.9



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

MO	August 10, 2010	YB	Sept. 24, 2010
TESTED BY	DATE	CHECKED BY	DATE

M:\Meadowbank 2010 QAQC DataBase\Laboratory\LabTesting-Rev by QA Manager\SA 265

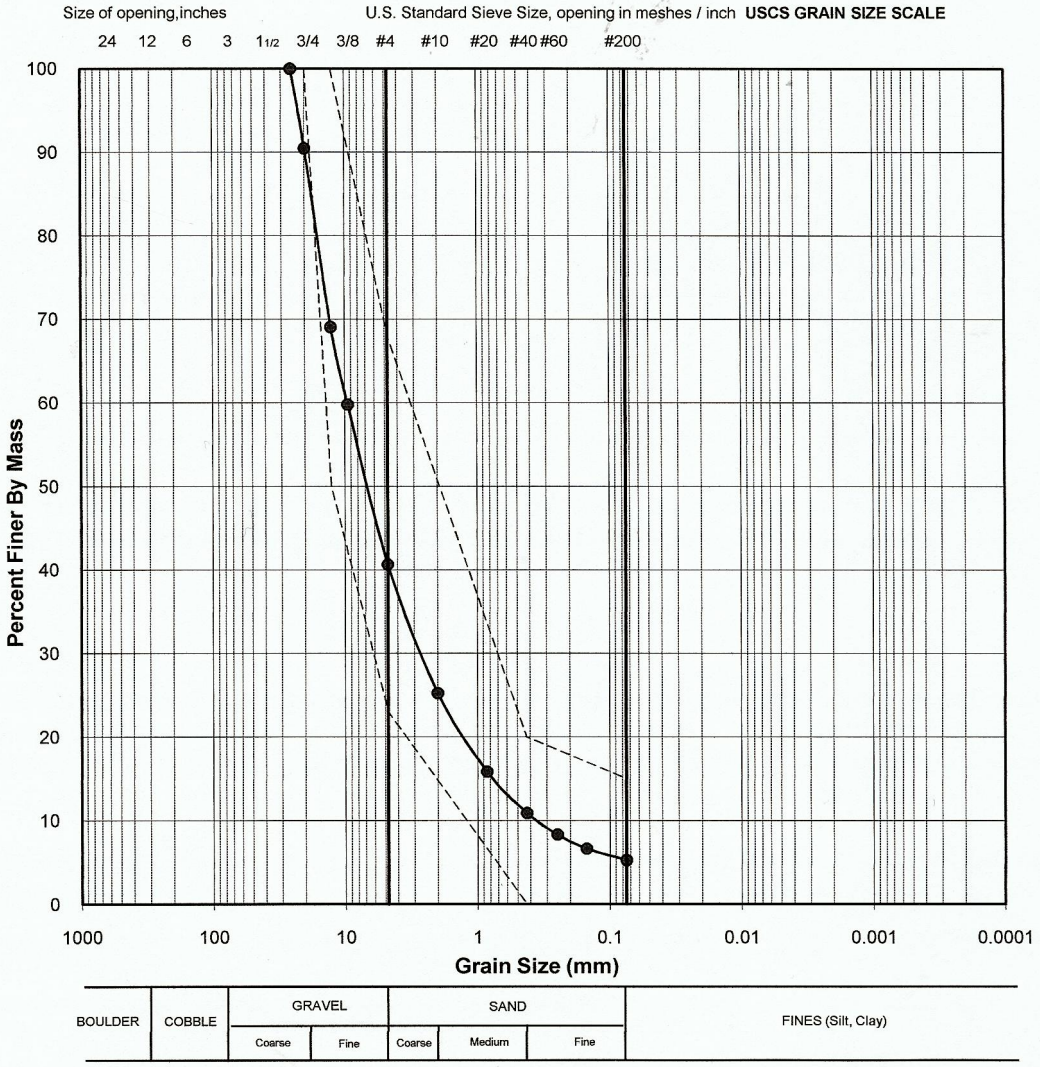
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**270**
Client:	AEM	**Field Label:**	BG081010
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA 270
Remarks:	under water	**Date Sampled:**	August 10, 2010
Sa. Location:	BG STA.31+793, under water	**Material Specification:**	CORE BACKFILL
		Method:	COMBINED, WASHED
		Date Tested:	August 16, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
3.5"	87.5	100.0
3"	76.2	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.4	100.0
3/4"	20.0	90.5
1/2"	12.7	69.1
3/8"	9.5	59.8
#4	4.76	40.6
#10	2.00	25.2
#20	0.850	15.8
#40	0.425	10.9
#60	0.250	8.3
#100	0.150	6.6
#200	0.075	5.3



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

Dieudonne BARAHEBURA	August 16, 2010	YB	Sept. 24, 2010
TESTED BY	DATE	CHECKED BY	DATE

M:\Meadowbank 2010 QAQC DataBase\Laboratory\LabTesting-Rev by QA Manager\SA 270

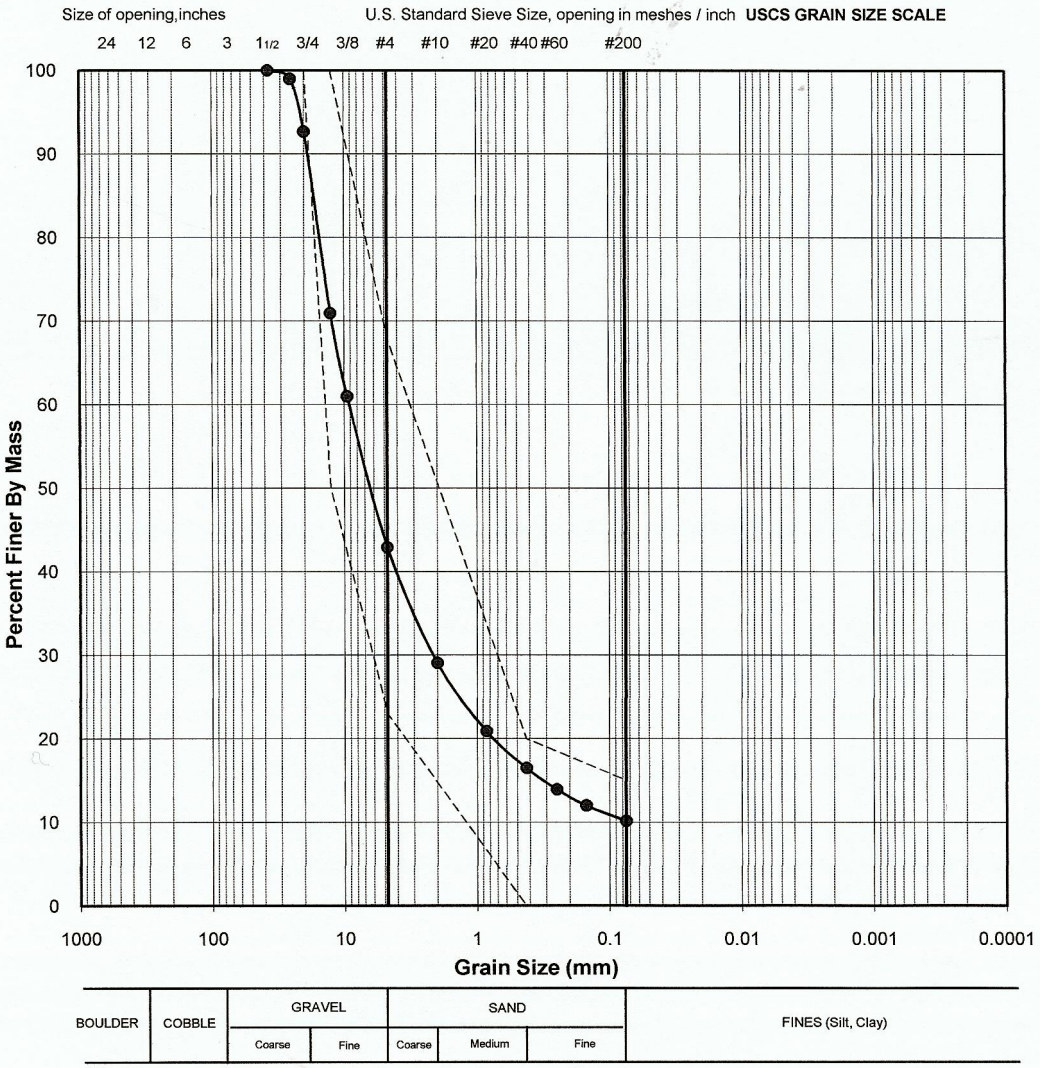
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Burnaby, B.C. Canada V5C 6C8

PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**273**
Client:	AEM	**Field Label:**	BG081610-2
Project:	Meadowbank Gold Project	**Depth (m):**	2-3
Location:	Nunavut	**Lab ID No:**	SA 273
Remarks:	under water	**Date Sampled:**	August 16, 2010
Sa. Location:	BG STA.31+825,	**Material Specification:**	CORE BACKFILL
		Method:	COMBINED, WASHED
		Date Tested:	August 21, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
3.5"	87.5	100.0
3"	76.2	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.4	99.0
3/4"	20.0	92.7
1/2"	12.7	70.9
3/8"	9.5	61.0
#4	4.76	42.9
#10	2.00	29.1
#20	0.850	20.9
#40	0.425	16.5
#60	0.250	13.9
#100	0.150	12.0
#200	0.075	10.2



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

Dieudonne BARAHEBURA	August 21, 2010	YB	Sept. 24, 2010
TESTED BY	DATE	CHECKED BY	DATE

M:\Meadowbank 2010 QAQC DataBase\Laboratory\LabTesting-Rev by QA Manager\SA 273

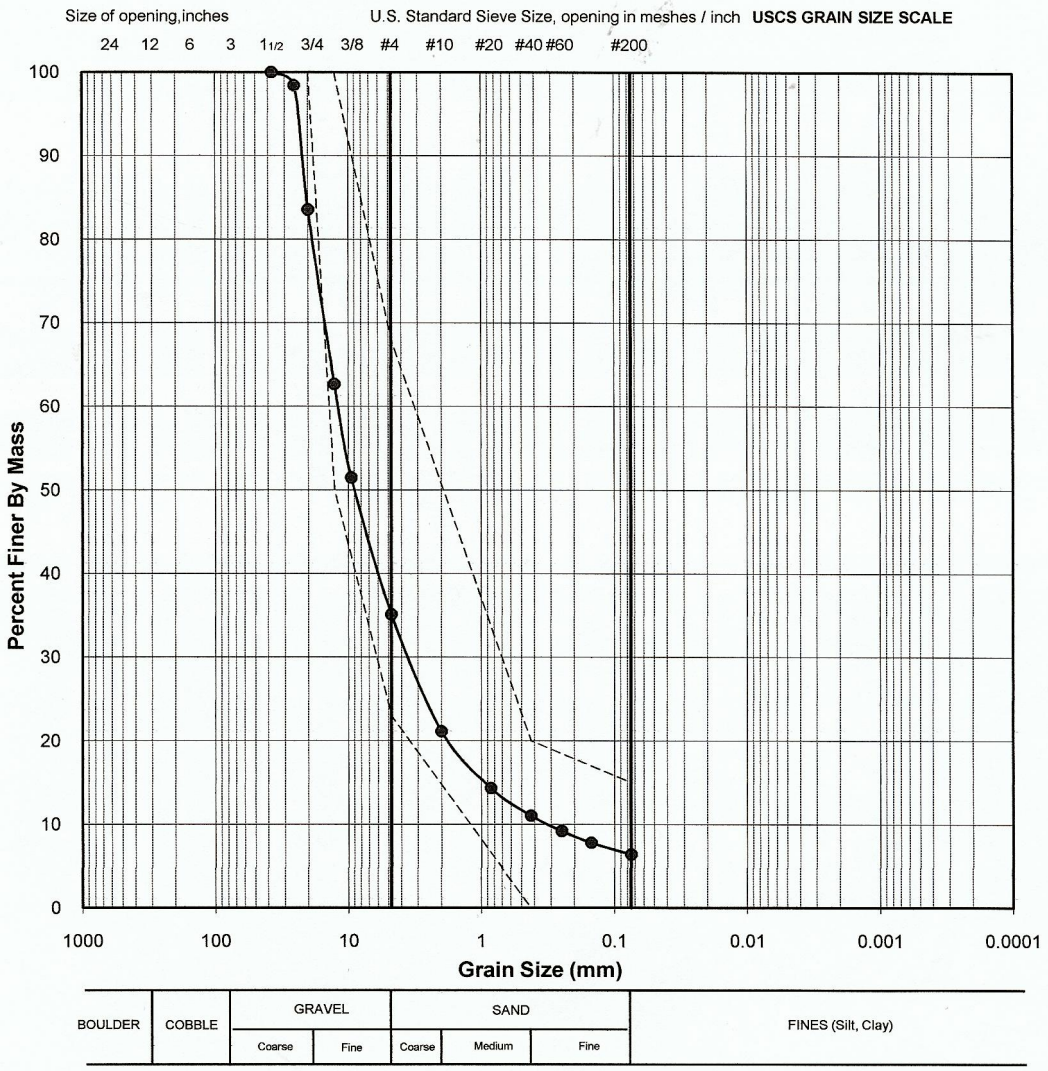
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**279**
Client:	AEM	**Field Label:**	BG081910-2
Project:	Meadowbank Gold Project	**Depth (m):**	1-2
Location:	Nunavut	**Lab ID No:**	SA 279
Remarks:	under water	**Date Sampled:**	August 19, 2010
Sa. Location:	BG STA.31+860, under water	**Material Specification:**	CORE BACKFILL
Remarks#2:	Lab sheet sample entry indicate a coarse filter material type, but the result fit more with a core backfill.	**Method:**	COMBINED, WASHED
		Date Tested:	August 22, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
3.5"	87.5	100.0
3"	76.2	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.4	98.4
3/4"	20.0	83.6
1/2"	12.7	62.7
3/8"	9.5	51.5
#4	4.76	35.1
#10	2.00	21.1
#20	0.850	14.3
#40	0.425	11.0
#60	0.250	9.2
#100	0.150	7.8
#200	0.075	6.4



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

Dieudonne BARAHEBURA	August 22, 2010	YB	~~Sept. 24~~, 2010
TESTED BY	DATE	CHECKED BY	DATE

M:\Meadowbank 2010 QAQC DataBase\Laboratory\LabTesting-Rev by QA Manager\SA 279

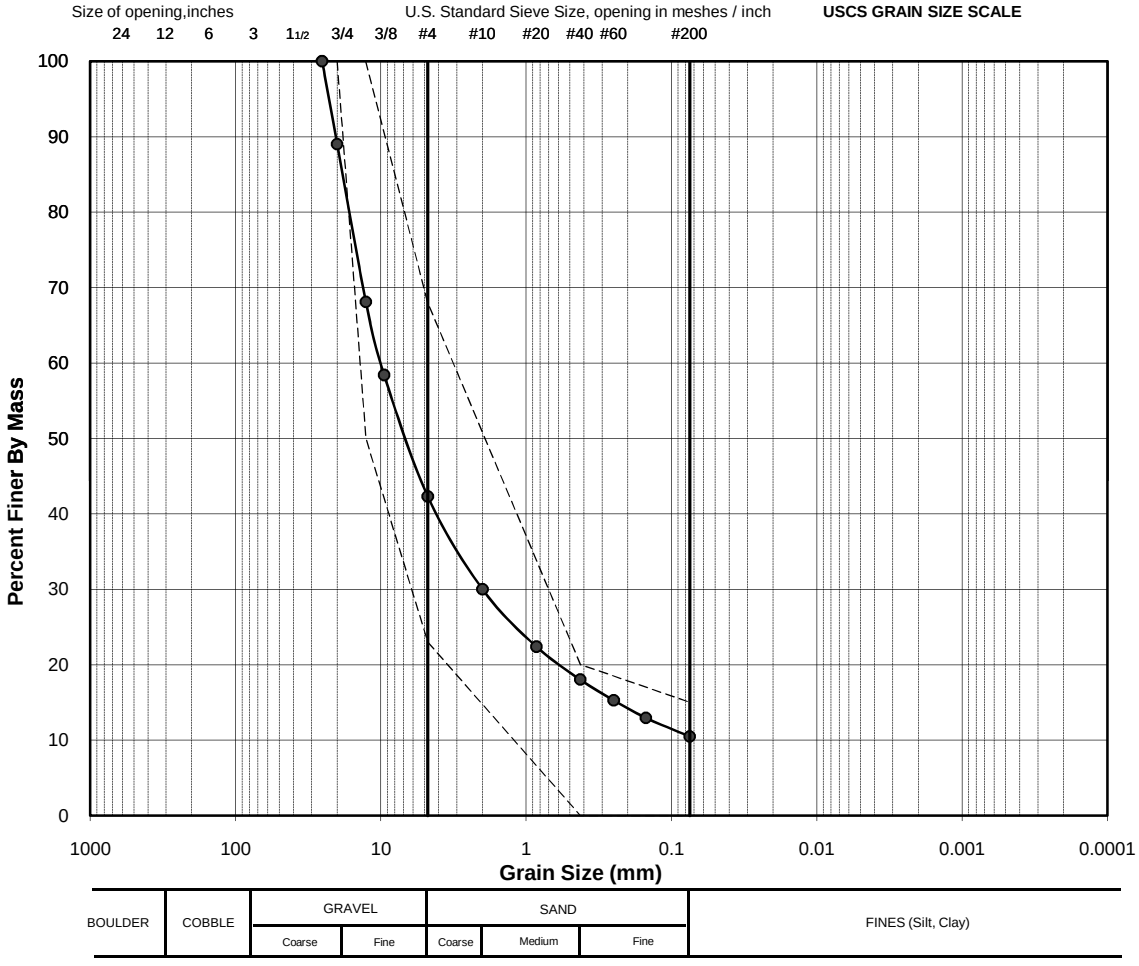
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**280**
Client:	AEM	**Field Label:**	BG082010-1
Project:	Meadowbank Gold Project	**Depth (m):**	1.5
Location:	Nunavut	**Lab ID No:**	SA 280
Remarks:	1.6m under water	**Date Sampled:**	August 20, 2010
Sa. Location:	BG STA.31+866	**Material Specification:**	CORE BACKFILL
		Method:	COMBINED, WASHED
		Date Tested:	August 22, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
3.5"	87.5	100.0
3"	76.2	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.4	100.0
3/4"	20.0	89.0
1/2"	12.7	68.1
3/8"	9.5	58.4
#4	4.76	42.3
#10	2.00	30.0
#20	0.850	22.4
#40	0.425	18.0
#60	0.250	15.3
#100	0.150	12.9
#200	0.075	10.5



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Dieudonne BARAHEBURA	August 22, 2010	YB	Sept. 24, 2010
TESTED BY	DATE	CHECKED BY	DATE

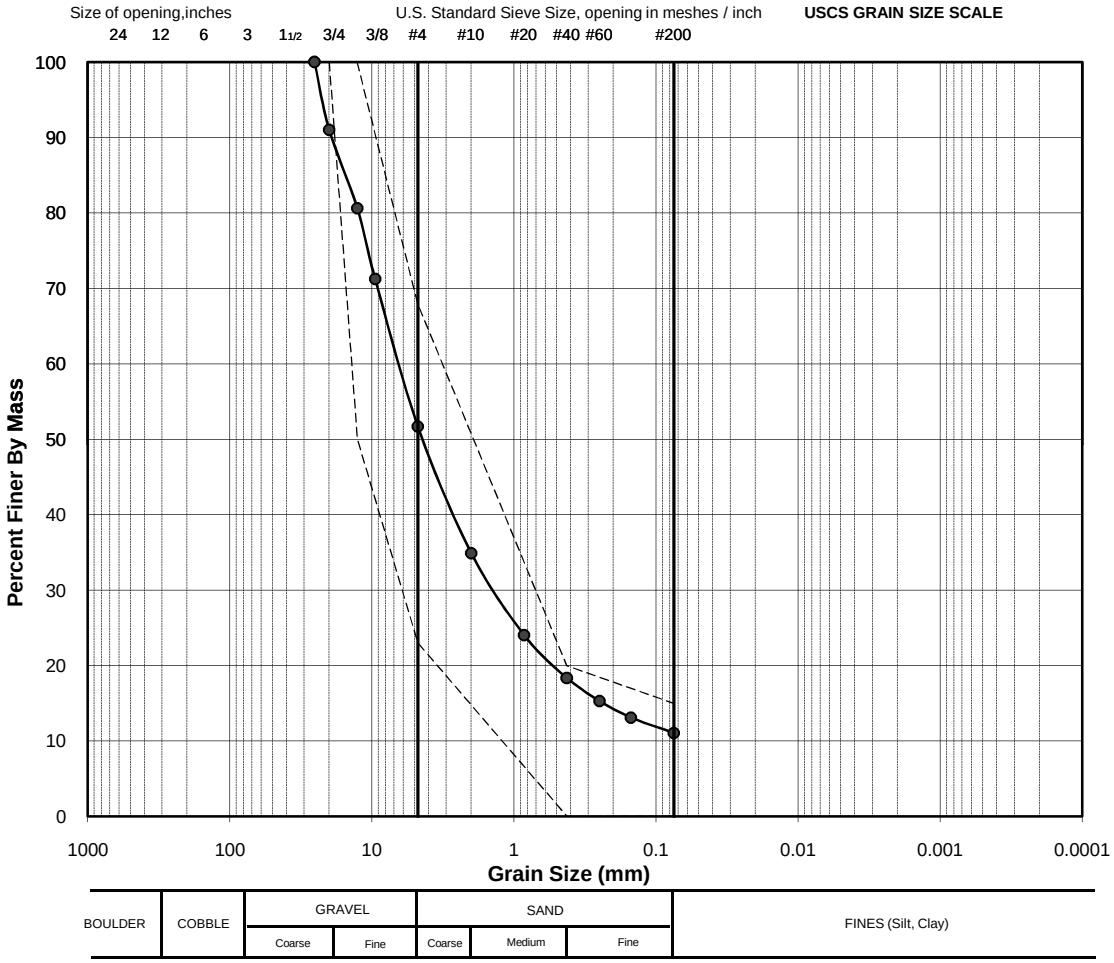
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**283**
Client:	AEM	**Field Label:**	BG082110-2
Project:	Meadowbank Gold Project	**Depth (m):**	1.5
Location:	Nunavut	**Lab ID No:**	SA 283
Remarks:	1.5m under water	**Date Sampled:**	August 21, 2010
Sa. Location:	BG STA.31 +881	**Material Specification:**	CORE BACKFILL
		Method:	COMBINED, WASHED
		Date Tested:	August 24, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
8"	200.0	100.0
6"	152.4	100.0
3"	76.2	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.4	100.0
3/4"	20.0	91.0
1/2"	12.7	80.6
3/8"	9.5	71.2
#4	4.760	51.7
#10	2.000	34.9
#20	0.850	24.1
#40	0.425	18.4
#60	0.250	15.3
#100	0.150	13.1
#200	0.075	11.1



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MO	August 24, 2010	YB	Sept. 25, 2010
TESTED BY	DATE	CHECKED BY	DATE

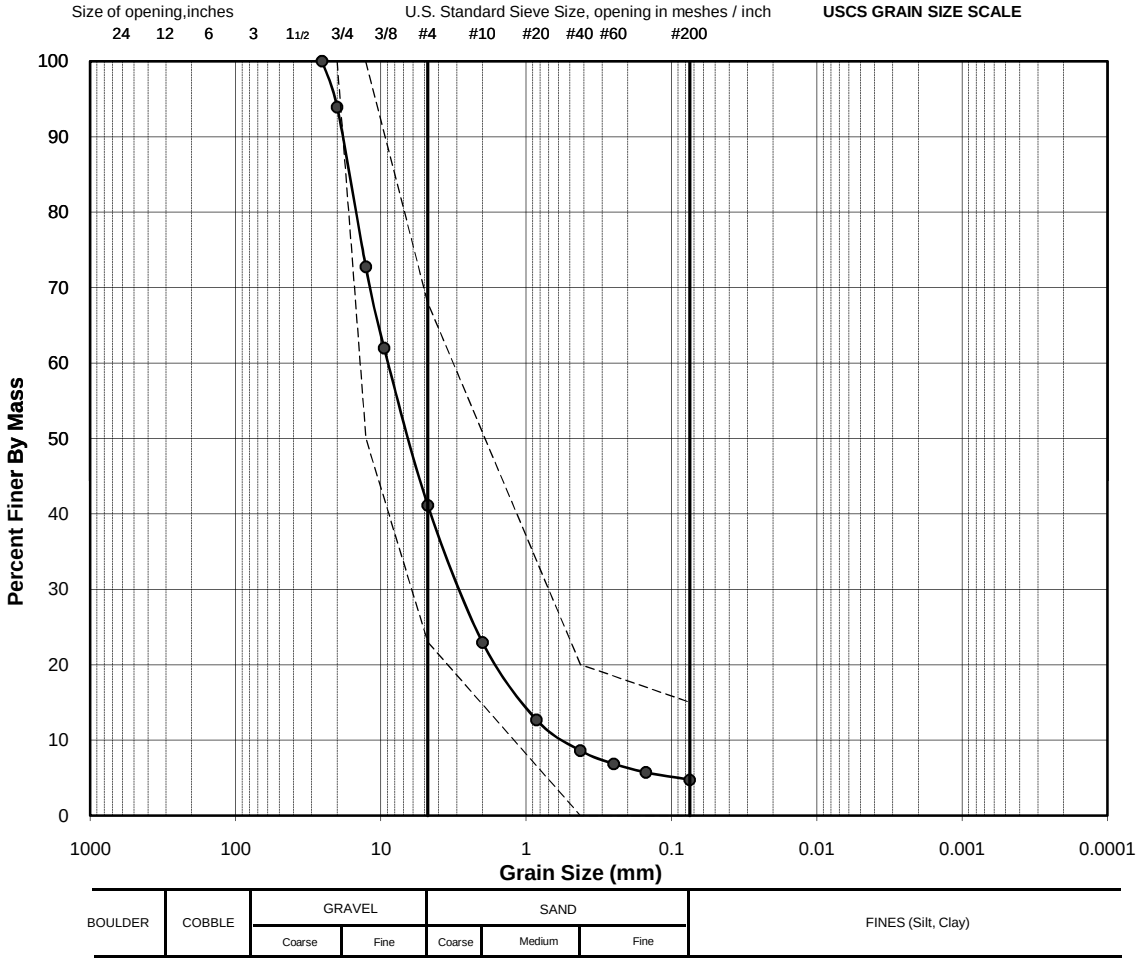
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**285**
Client:	AEM	**Field Label:**	BG082110-3
Project:	Meadowbank Gold Project	**Depth (m):**	1
Location:	Nunavut	**Lab ID No:**	SA 285
Remarks:	underwater	**Date Sampled:**	August 21, 2010
Sa. Location:	BG STA.31+887, 1m under water	**Material Specification:**	CORE BACKFILL
		Method:	COMBINED, WASHED
		Date Tested:	August 22, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
3.5"	87.5	100.0
3"	76.2	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.4	100.0
3/4"	20.0	93.9
1/2"	12.7	72.7
3/8"	9.5	62.0
#4	4.76	41.1
#10	2.00	22.9
#20	0.850	12.7
#40	0.425	8.6
#60	0.250	6.8
#100	0.150	5.7
#200	0.075	4.7



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Dieudonne BARAHEBURA	August 22, 2010	YB	Sept. 25, 2010
TESTED BY	DATE	CHECKED BY	DATE

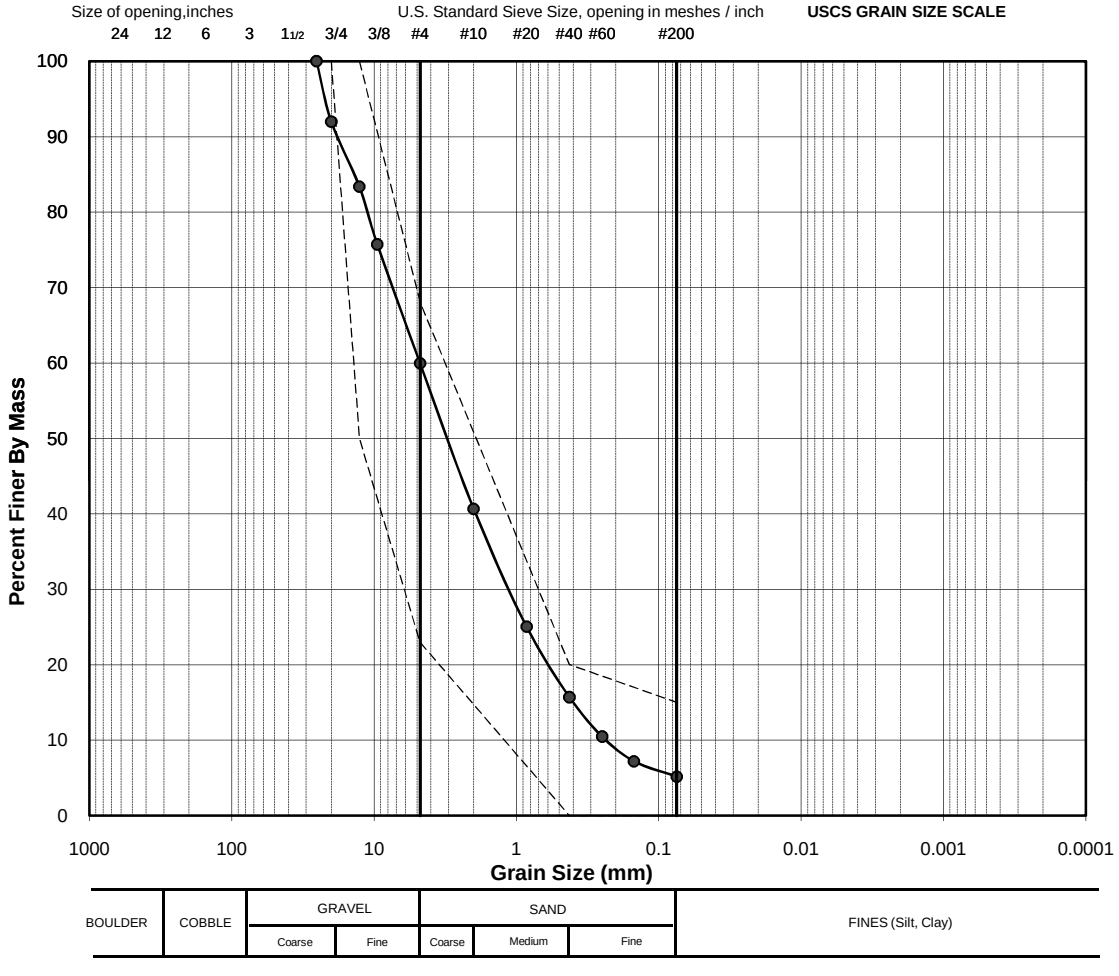
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**286**
Client:	AEM	**Field Label:**	BG082010-1
Project:	Meadowbank Gold Project	**Depth (m):**	4
Location:	Nunavut	**Lab ID No:**	SA 286
Remarks:		**Date Sampled:**	August 22, 2010
Sa. Location:	BG STA.31+898, 4m under water	**Material Specification:**	CORE BACKFILL
		Method:	COMBINED, WASHED
		Date Tested:	August 22, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
3.5"	87.5	100.0
3"	76.2	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.4	100.0
3/4"	20.0	92.0
1/2"	12.7	83.4
3/8"	9.5	75.7
#4	4.76	60.0
#10	2.00	40.7
#20	0.850	25.0
#40	0.425	15.7
#60	0.250	10.5
#100	0.150	7.2
#200	0.075	5.2



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Dieudonne BARAHEBURA	August 22, 2010	YB	Sept. 25, 2010
TESTED BY	DATE	CHECKED BY	DATE

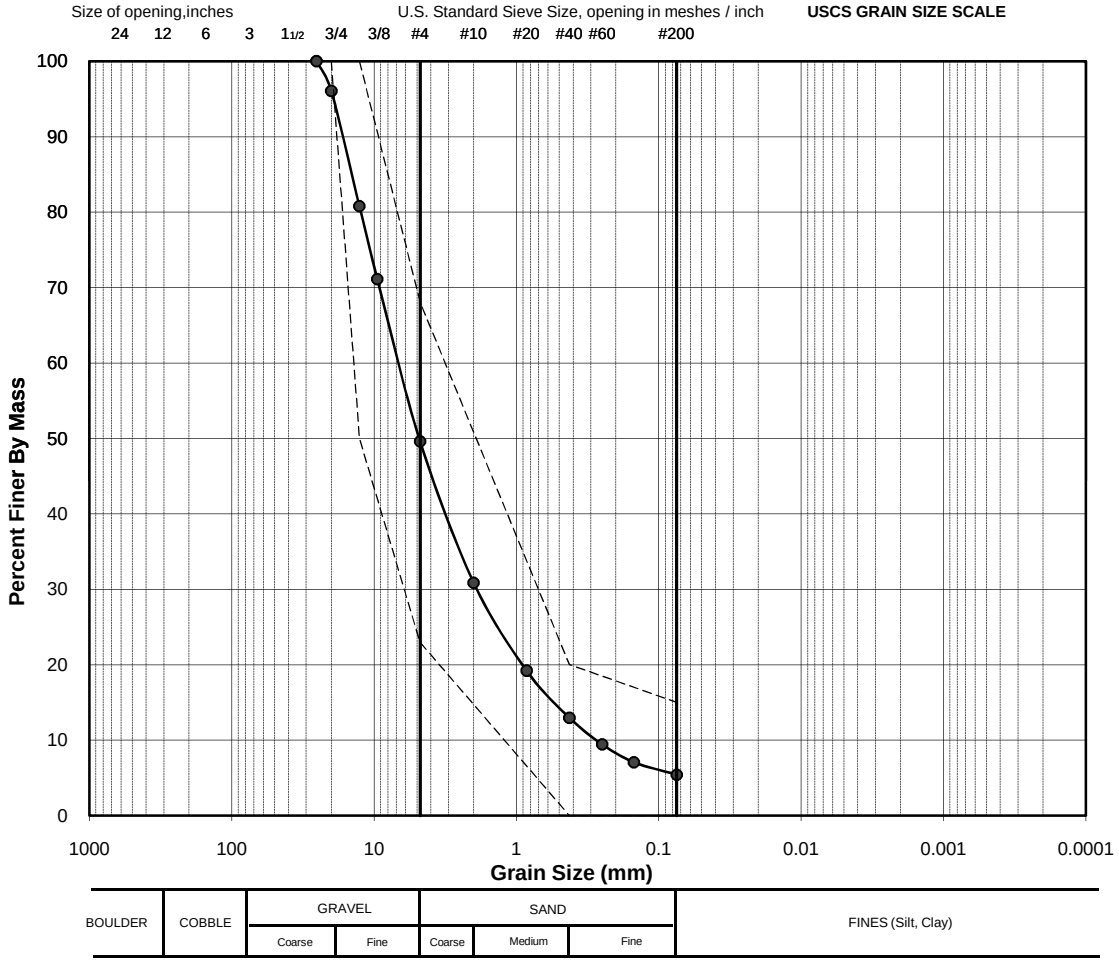
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**288**
Client:	AEM	**Field Label:**	BG082310
Project:	Meadowbank Gold Project	**Depth (m):**	4
Location:	Nunavut	**Lab ID No:**	SA 288
Remarks:		**Date Sampled:**	August 23, 2010
Sa. Location:	BG STA.31+920, 4m under water	**Material Specification:**	CORE BACKFILL
		Method:	COMBINED, WASHED
		Date Tested:	August 25, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
3.5"	87.5	100.0
3"	76.2	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.4	100.0
3/4"	20.0	96.1
1/2"	12.7	80.8
3/8"	9.5	71.1
#4	4.76	49.6
#10	2.00	30.9
#20	0.850	19.2
#40	0.425	13.0
#60	0.250	9.4
#100	0.150	7.1
#200	0.075	5.4



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

Dieudonne BARAHEBURA	August 25, 2010	YB	Sept. 25, 2010
TESTED BY	DATE	CHECKED BY	DATE

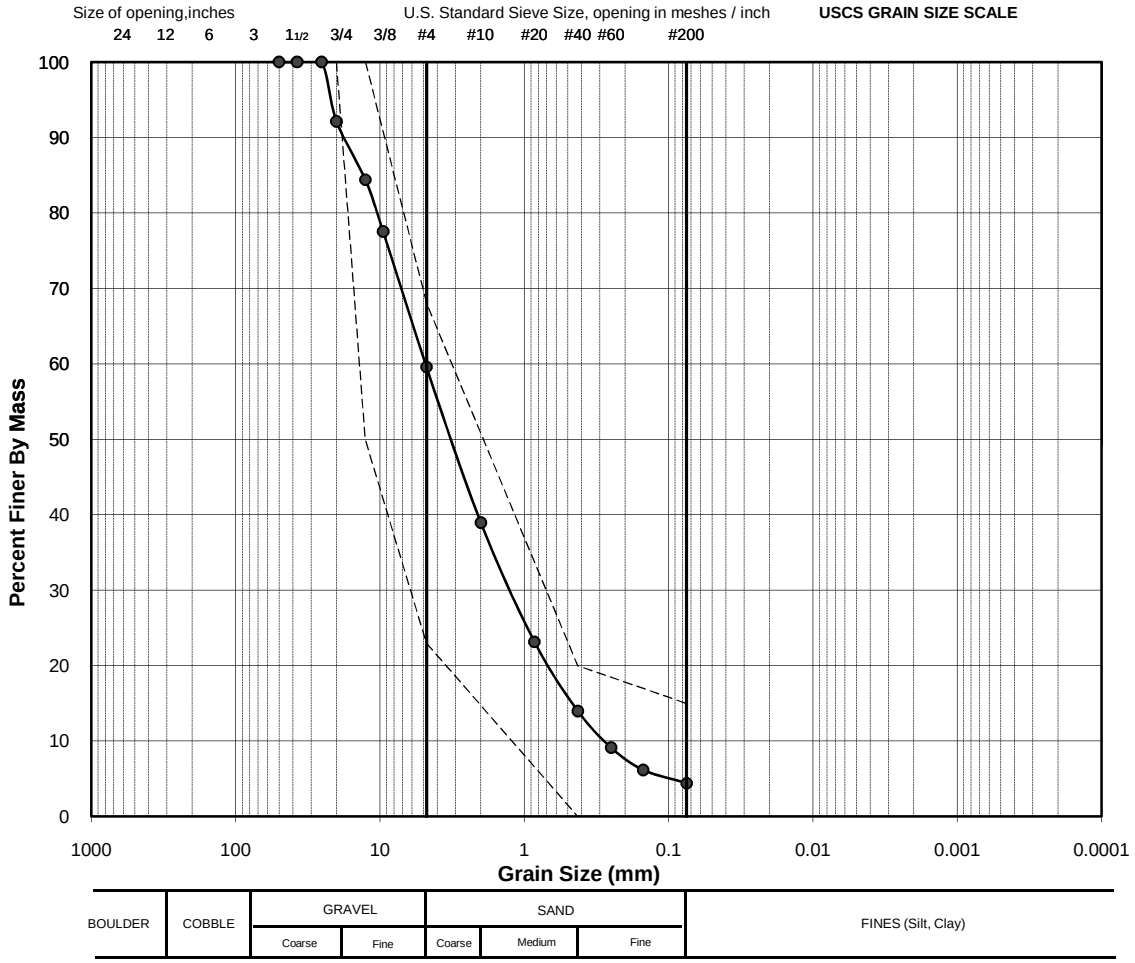
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**290**
Client:	AEM	**Field Label:**	BG082410-2
Project:	Meadowbank Gold Project	**Depth (m):**	4
Location:	Nunavut	**Lab ID No:**	SA 290
Remarks:	under water	**Date Sampled:**	August 24, 2010
Sa. Location:	BG STA.31+940	**Material Specification:**	CORE BACKFILL
		Method:	COMBINED, WASHED
		Date Tested:	August 25, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
8"	200.0	100.0
6"	152.4	100.0
3"	76.2	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.4	100.0
3/4"	20.0	92.1
1/2"	12.6	84.4
3/8"	9.5	77.5
#4	4.760	59.6
#10	2.000	39.0
#20	0.850	23.1
#40	0.425	14.0
#60	0.250	9.1
#100	0.150	6.2
#200	0.075	4.4



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MO	August 25, 2010	YB	Sept. 25, 2010
TESTED BY	DATE	CHECKED BY	DATE

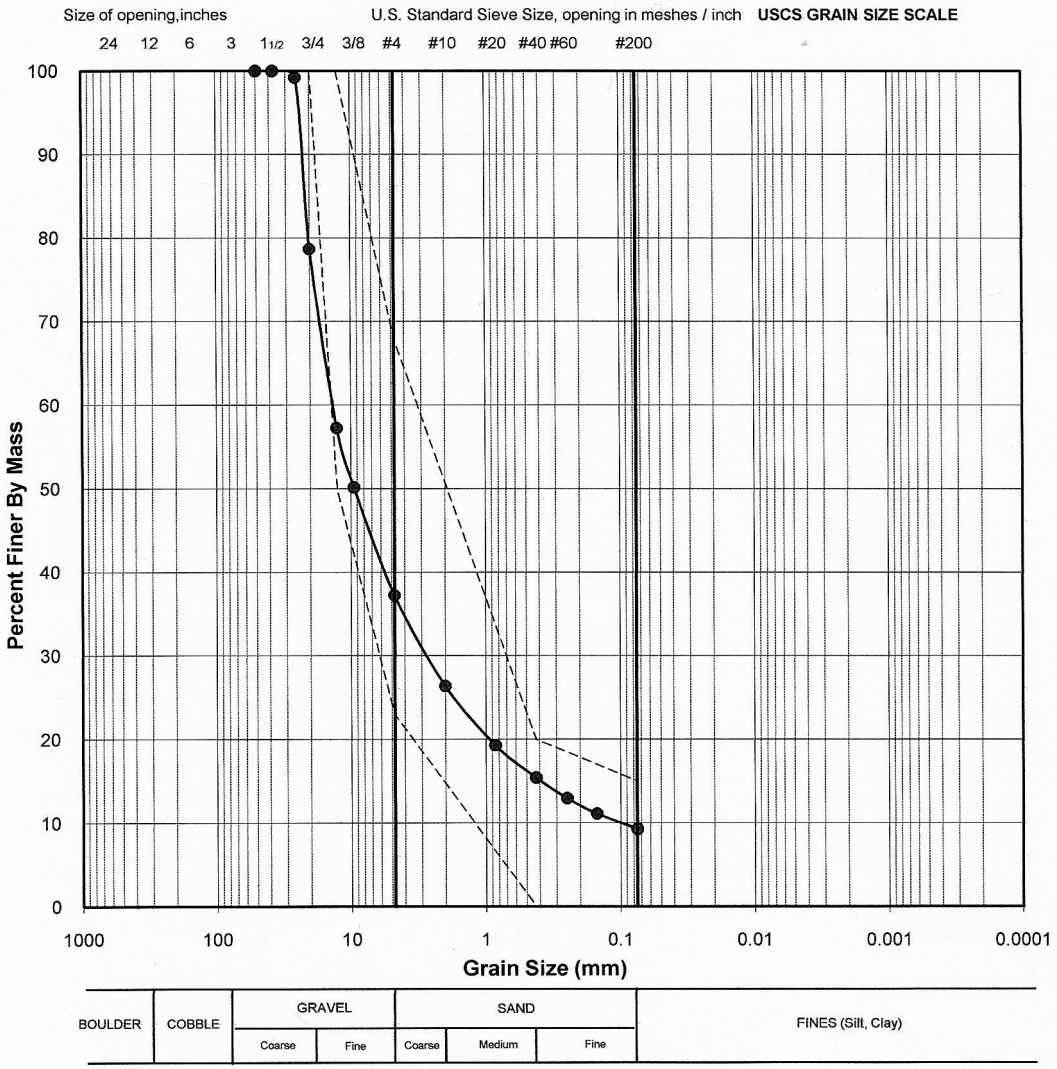
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**292**
Client:	AEM	**Field Label:**	BG082410-4
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA 292
Remarks:	Water Content = 1.4%	**Date Sampled:**	August 24, 2010
Sa. Location:	BG STA.31+940 (Dry densification platform)	**Material Specification:**	CORE BACKFILL
		Method:	COMBINED, WASHED
		Date Tested:	August 26, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
8"	200.0	100.0
6"	152.4	100.0
3"	76.2	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.4	99.2
3/4"	20.0	78.7
1/2"	12.7	57.3
3/8"	9.5	50.2
#4	4.760	37.2
#10	2.000	26.4
#20	0.850	19.3
#40	0.425	15.4
#60	0.250	13.0
#100	0.150	11.1
#200	0.075	9.3



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

MO	August 26, 2010	YB	Sept. 27, 2010
TESTED BY	DATE	CHECKED BY	DATE

M:\Meadowbank 2010 QAQC DataBase\Laboratory\LabTesting-Rev by QA Manager\SA 292

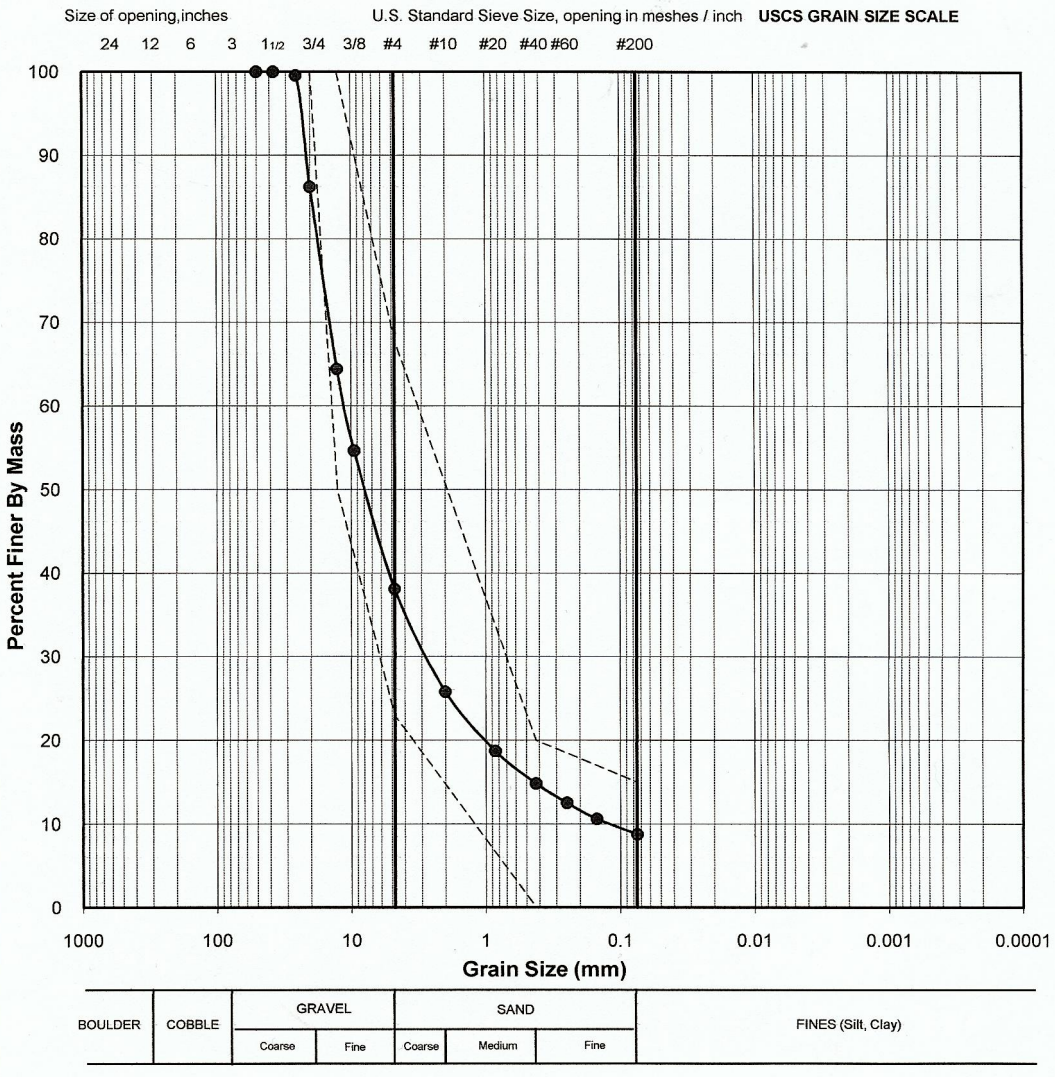
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**293**
Client:	AEM	**Field Label:**	BG082510-1
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA 293
Remarks:	Water Content = 1.1%	**Date Sampled:**	August 25, 2010
Sa. Location:	BG STA.31+795, densification platform	**Material Specification:**	CORE BACKFILL
		Method:	COMBINED, WASHED
		Date Tested:	August 27, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
8"	200.0	100.0
6"	152.4	100.0
3"	76.2	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.4	99.6
3/4"	20.0	86.2
1/2"	12.7	64.4
3/8"	9.5	54.7
#4	4.760	38.1
#10	2.000	25.8
#20	0.850	18.7
#40	0.425	14.8
#60	0.250	12.5
#100	0.150	10.6
#200	0.075	8.8



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MO	August 27, 2010	YB	Sept. 27, 2010
TESTED BY	DATE	CHECKED BY	DATE

M:\Meadowbank 2010 QAQC DataBase\Laboratory\LabTesting-Rev by QA Manager\SA 293

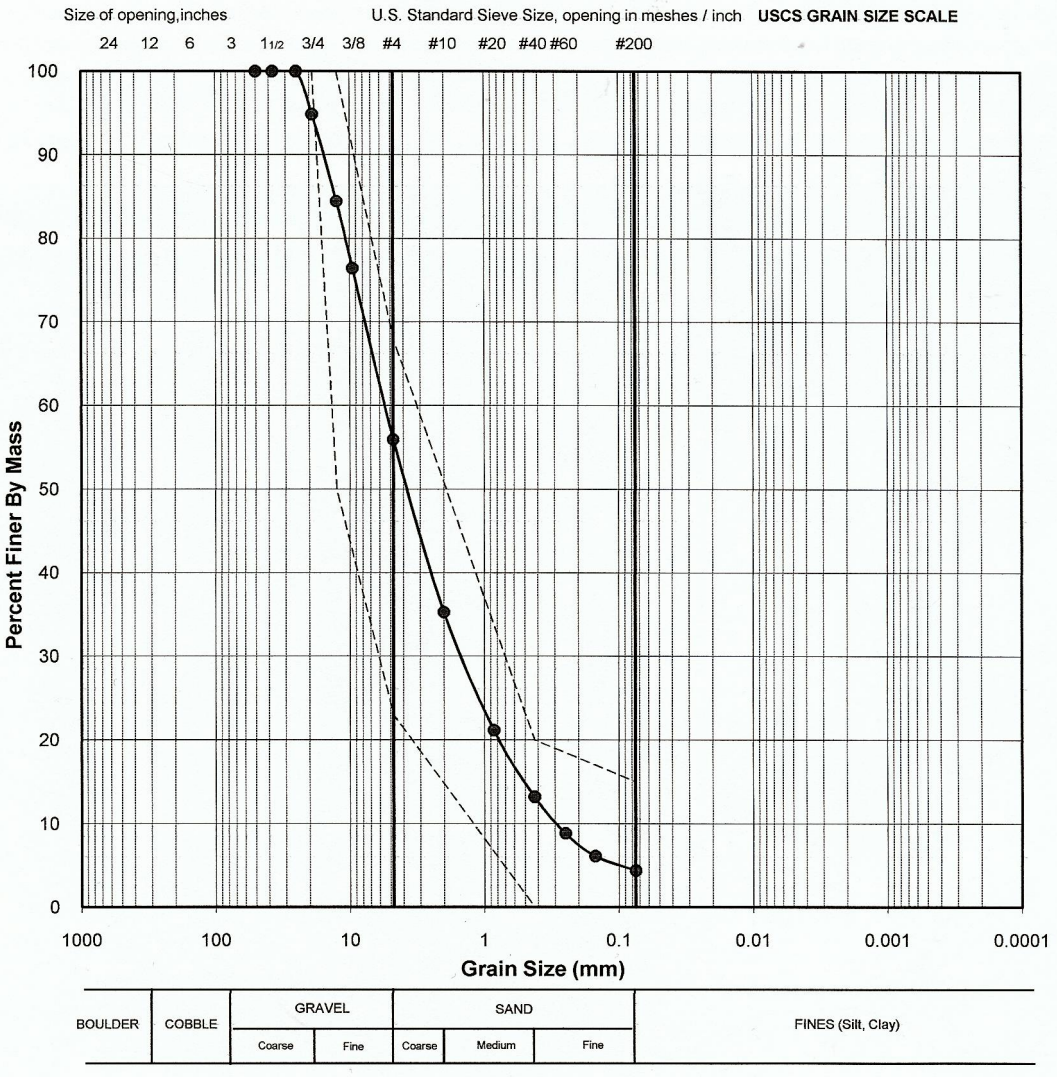
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**294**
Client:	AEM	**Field Label:**	BG082510-2
Project:	Meadowbank Gold Project	**Depth (m):**	4
Location:	Nunavut	**Lab ID No:**	SA 294
Remarks:		**Date Sampled:**	August 25, 2010
Sa. Location:	BG STA.31+795, 4m under water	**Material Specification:**	CORE BACKFILL
		Method:	COMBINED, WASHED
		Date Tested:	August 27, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
8"	200.0	100.0
6"	152.4	100.0
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.0	94.9
1/2"	12.5	84.5
3/8"	9.5	76.4
#4	4.750	56.0
#10	2.000	35.3
#20	0.850	21.2
#40	0.425	13.2
#60	0.250	8.9
#100	0.150	6.1
#200	0.075	4.4



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MO	August 27, 2010	YB	Sept. 27, 2010
TESTED BY	DATE	CHECKED BY	DATE

M:\Meadowbank 2010 QAQC DataBase\Laboratory\LabTesting-Rev by QA Manager\SA 294

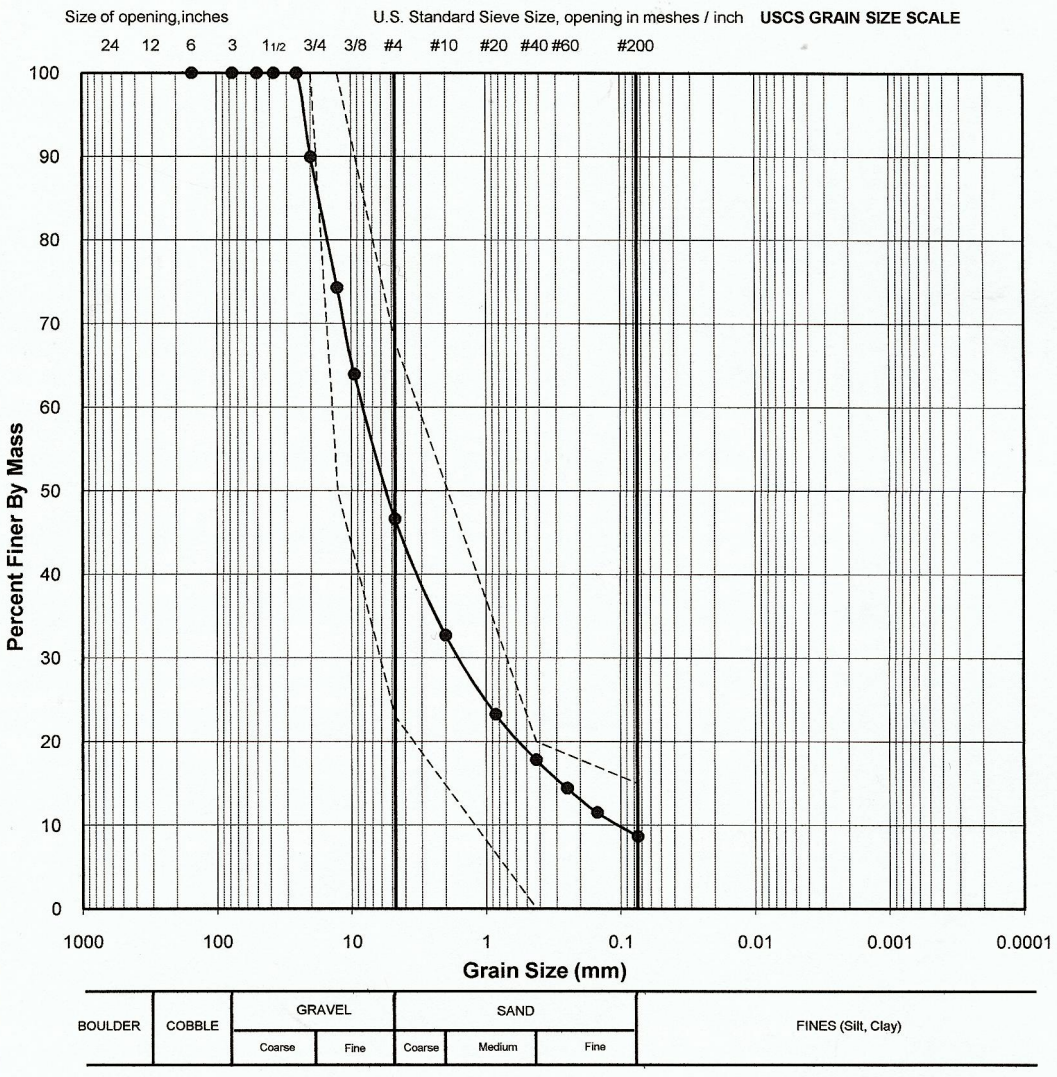
Golder Associates

PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**296**
Client:	AEM	**Field Label:**	SD1082710-1
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA 296
Remarks:	Water Content = 1.0%	**Date Sampled:**	August 27, 2010
Sa. Location:	SD1 STA.0+015	**Material Specification:**	FINE FILTER
		Method:	COMBINED, WASHED
		Date Tested:	August 29, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
8"	200.0	100.0
6"	152.4	100.0
3"	76.2	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.4	100.0
3/4"	20.0	90.0
1/2"	12.7	74.3
3/8"	9.5	63.9
#4	4.760	46.6
#10	2.000	32.7
#20	0.850	23.3
#40	0.425	17.8
#60	0.250	14.4
#100	0.150	11.5
#200	0.075	8.7



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MO	August 29, 2010	YB	Sept. 27, 2010
TESTED BY	DATE	CHECKED BY	DATE

M:\Meadowbank 2010 QAQC DataBase\Laboratory\LabTesting-Rev by QA Manager\SA 296.xlsm

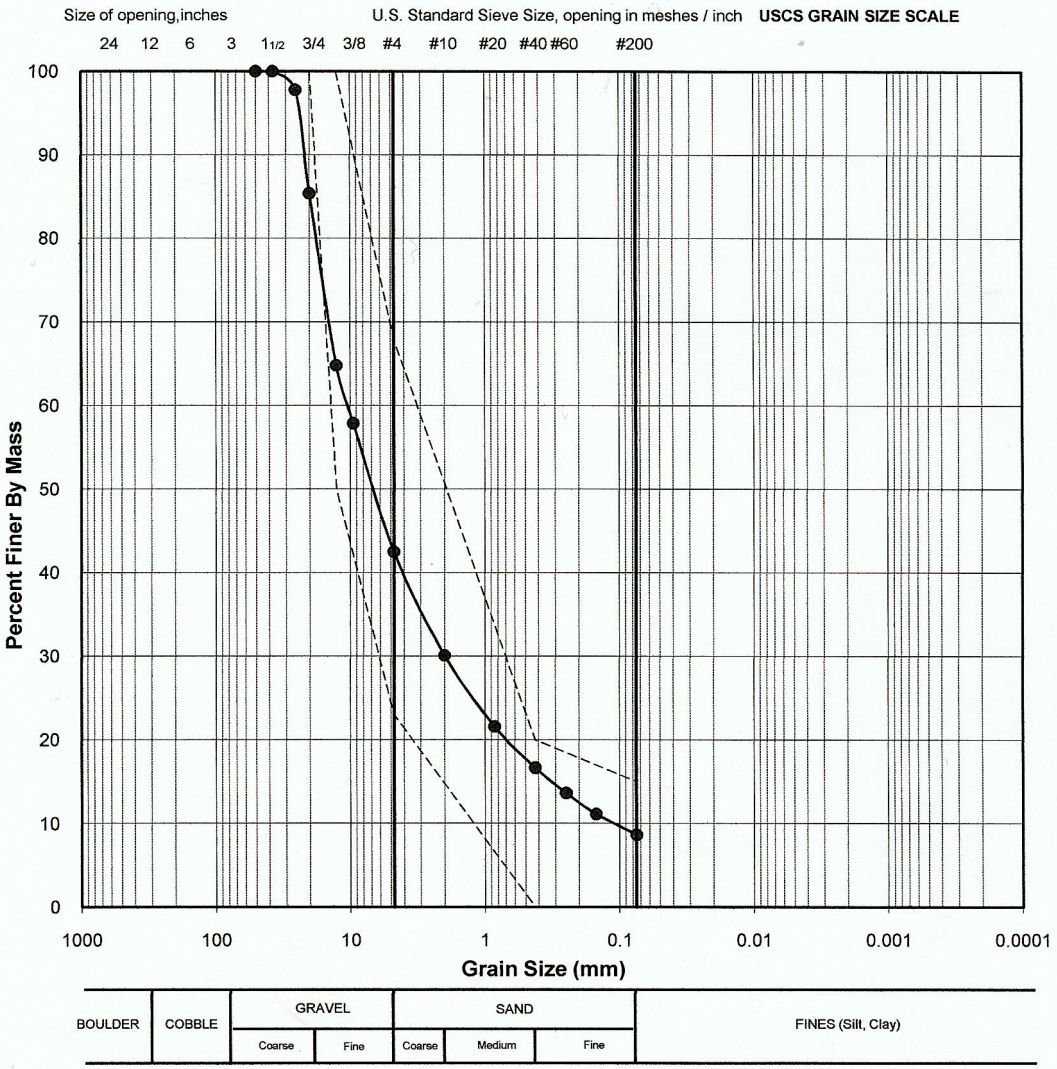
Golder Associates

PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**297**
Client:	AEM	**Field Label:**	SD1082710-2
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA 297
Remarks:	Water Content = 0.9%	**Date Sampled:**	August 27, 2010
Sa. Location:	SD1 STA.31+055	**Material Specification:**	FINE FILTER
		Method:	COMBINED, WASHED
		Date Tested:	August 29, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
8"	200.0	100.0
6"	152.4	100.0
3"	76.2	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.4	97.8
3/4"	20.0	85.4
1/2"	12.7	64.8
3/8"	9.5	57.9
#4	4.760	42.5
#10	2.000	30.1
#20	0.850	21.6
#40	0.425	16.7
#60	0.250	13.6
#100	0.150	11.1
#200	0.075	8.7



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MO	August 29, 2010	YB	Sept. 27, 2010
TESTED BY	DATE	CHECKED BY	DATE

M:\Meadowbank 2010 QAQC DataBase\Laboratory\LabTesting-Rev by QA Manager\SA 297.xlsm

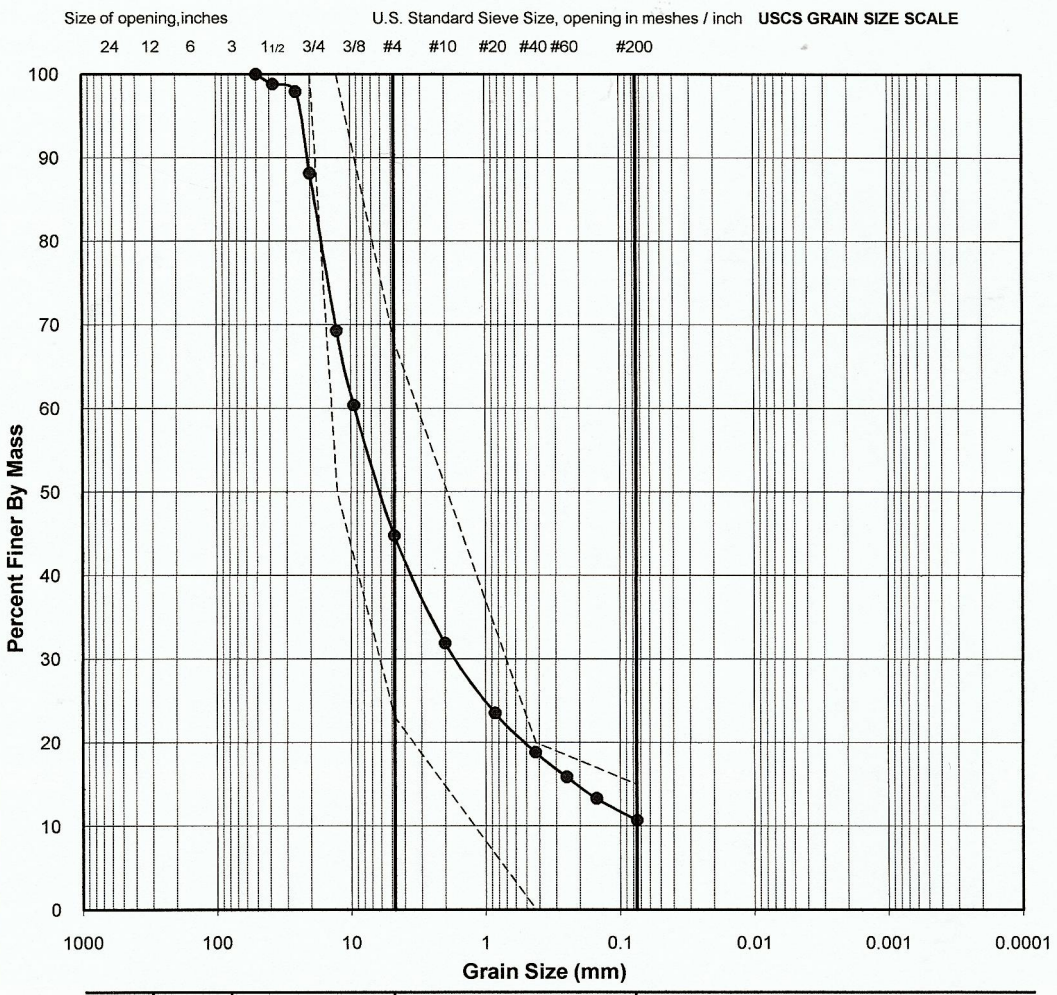
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**298**
Client:	AEM	**Field Label:**	BG082510-1
Project:	Meadowbank Gold Project	**Depth (m):**	1
Location:	Nunavut	**Lab ID No:**	SA 298
Remarks:	Water Content = 1.4%	**Date Sampled:**	August 28, 2010
Sa. Location:	BG STA.31+050	**Material Specification:**	CORE BACKFILL - After densification, 1.0m below elev. 136.0
		Method:	COMBINED, WASHED
		Date Tested:	August 29, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
8"	200.0	100.0
6"	152.4	100.0
3"	76.2	100.0
2"	50.0	100.0
1.5"	37.5	98.8
1"	25.4	97.9
3/4"	20.0	88.1
1/2"	12.7	69.3
3/8"	9.5	60.4
#4	4.760	44.8
#10	2.000	31.9
#20	0.850	23.5
#40	0.425	18.8
#60	0.250	15.9
#100	0.150	13.3
#200	0.075	10.7



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

MO	August 29, 2010	YB	Sept. 27, 2010
TESTED BY	DATE	CHECKED BY	DATE

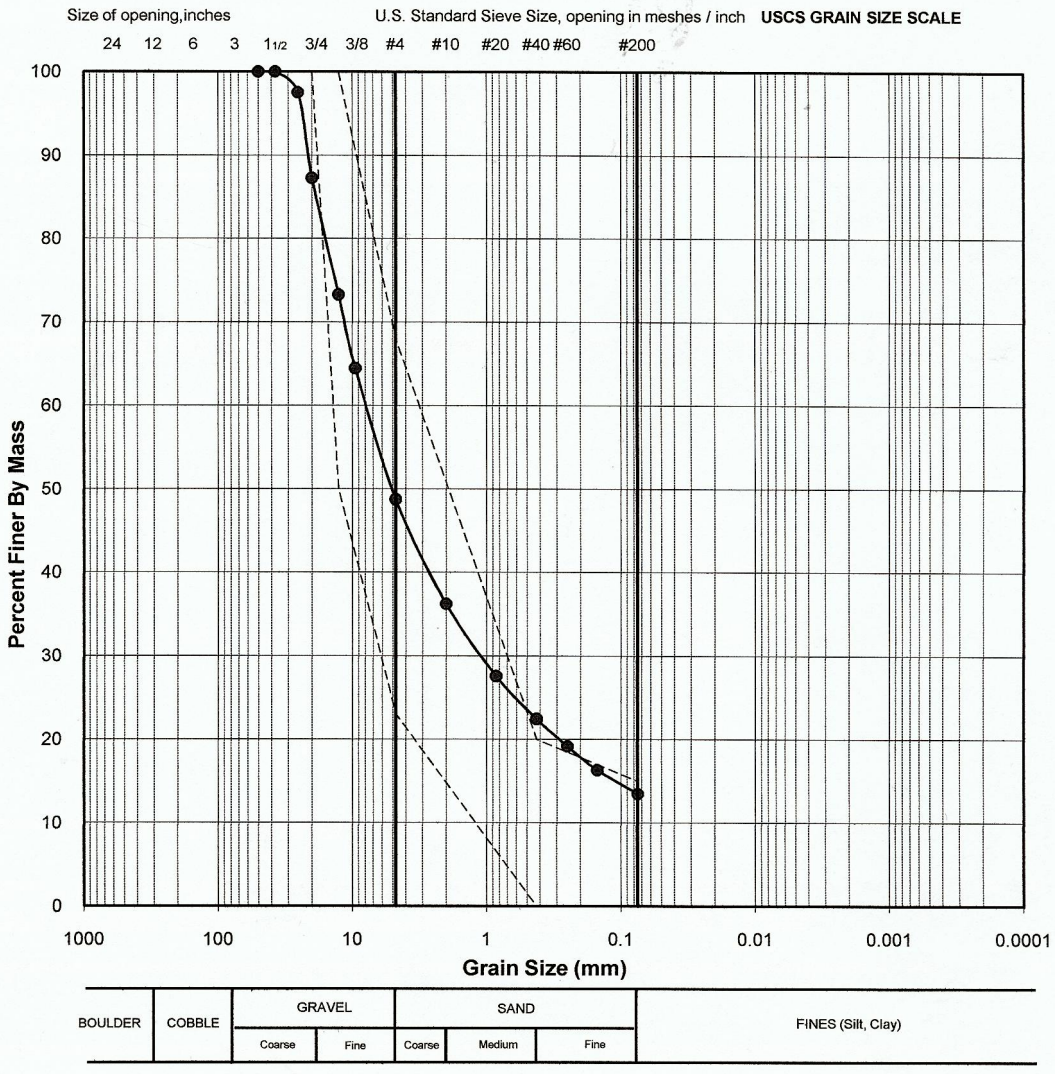
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4280 Still Creek Drive
Burnaby, B.C. Canada V5C 6C8

PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**299**
Client:	AEM	**Field Label:**	BG082510-2
Project:	Meadowbank Gold Project	**Depth (m):**	2
Location:	Nunavut	**Lab ID No:**	SA 299
Remarks:	Water Content = 1.8%	**Date Sampled:**	August 28, 2010
Sa. Location:	BG STA.31+050	**Material Specification:**	CORE BACKFILL, after densification at 2.0m below 136.0 elev.
		Method:	COMBINED, WASHED
		Date Tested:	August 29, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
8"	200.0	100.0
6"	152.4	100.0
3"	76.2	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.4	97.5
3/4"	20.0	87.3
1/2"	12.7	73.3
3/8"	9.5	64.5
#4	4.760	48.8
#10	2.000	36.2
#20	0.850	27.6
#40	0.425	22.5
#60	0.250	19.2
#100	0.150	16.3
#200	0.075	13.5



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

MO	August 29, 2010	YB	Sept. 27, 2010
TESTED BY	DATE	CHECKED BY	DATE

M:\Meadowbank 2010 QAQC DataBase\Laboratory\LabTesting-Rev by QA Manager\SA 299.xlsm

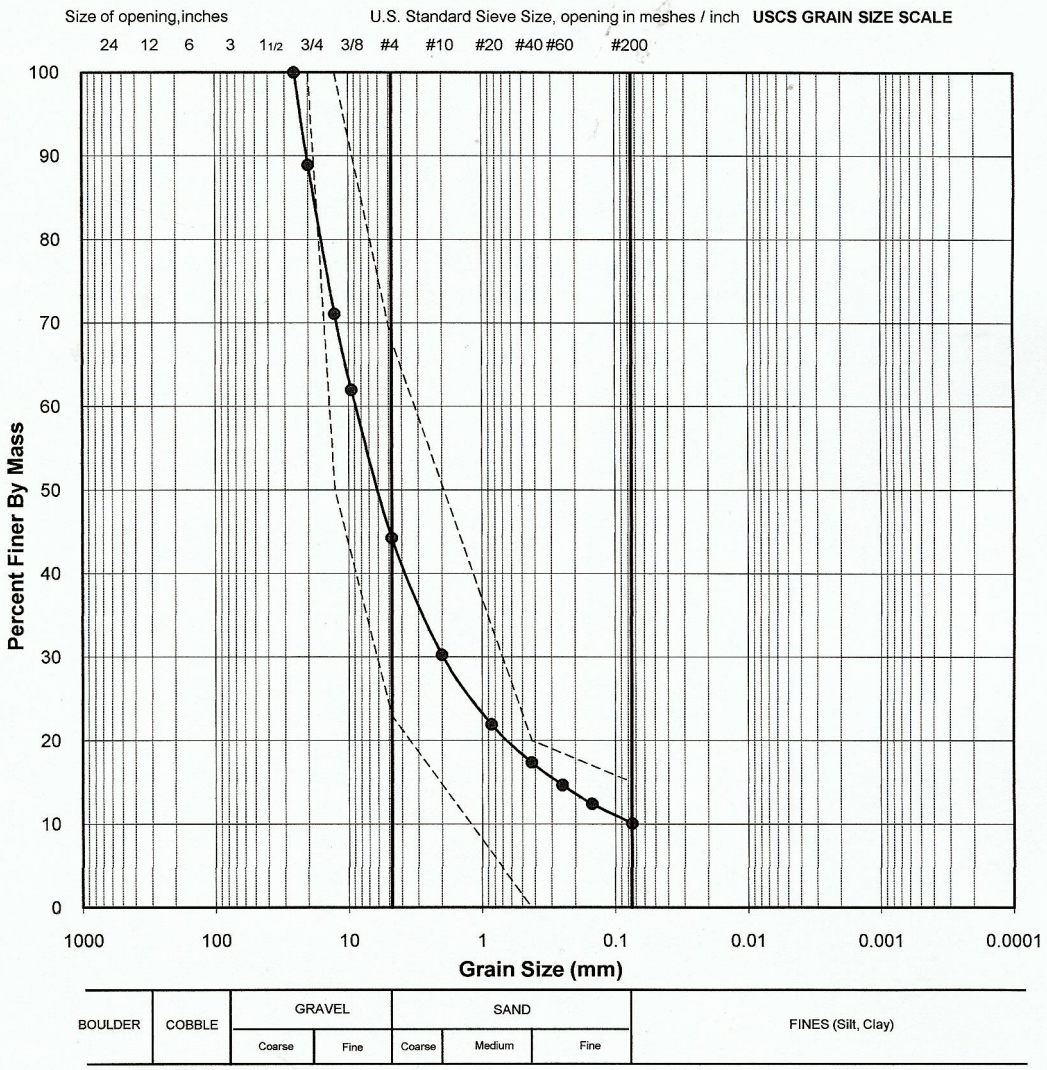
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**342**
Client:	AEM	**Field Label:**	BG091810
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA 342
Remarks:	Water content 6.4%	**Date Sampled:**	September 18, 2010
Sa. Location:	BG STA.32+010	**Material Specification:**	CORE BACKFILL FOR VIBRO-COMPACTION
		Method:	SPLIT, WASHED
		Date Tested:	September 24, 2010

Sieve Size (USS)	(mm)	Passing %
3.5"	87.5	100.0
3"	76.2	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.4	100.0
3/4"	20.0	88.9
1/2"	12.7	71.1
3/8"	9.500	62.0
#4	4.760	44.3
#10	2.000	30.3
#20	0.850	21.9
#40	0.425	17.4
#60	0.250	14.7
#100	0.150	12.4
#200	0.075	10.1



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

M.O	September 24, 2010	YB	Sept. 28, 2010
TESTED BY	DATE	CHECKED BY	DATE

M:\Meadowbank 2010 QAQC DataBase\Laboratory\LabTesting-Rev by QA Manager\SA 342

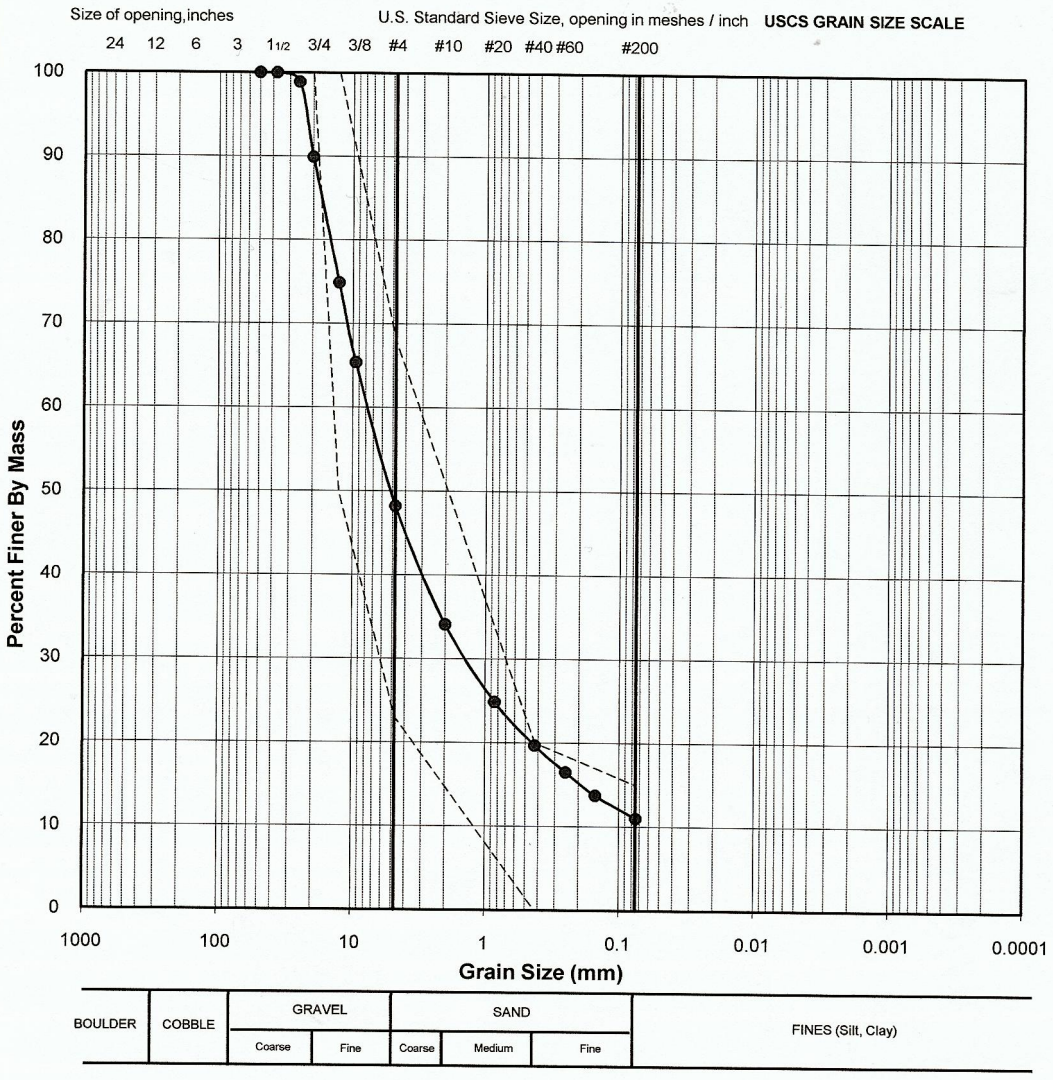
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**300**
Client:	AEM	**Field Label:**	BG082510-3
Project:	Meadowbank Gold Project	**Depth (m):**	3
Location:	Nunavut	**Lab ID No:**	SA 300
Remarks:	Water Content = 6.7%	**Date Sampled:**	August 28, 2010
Sa. Location:	BG STA.31+050	**Material Specification:**	CORE BACKFILL, after densification at 3.0m below 136.0 elev.
		Method:	COMBINED, WASHED
		Date Tested:	August 29, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
8"	200.0	100.0
6"	152.4	100.0
3"	76.2	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.4	98.9
3/4"	20.0	89.9
1/2"	12.7	74.9
3/8"	9.5	65.4
#4	4.760	48.2
#10	2.000	34.1
#20	0.850	24.9
#40	0.425	19.7
#60	0.250	16.5
#100	0.150	13.8
#200	0.075	11.1



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

MO	August 29, 2010	YB	Sept. 27, 2010
TESTED BY	DATE	CHECKED BY	DATE

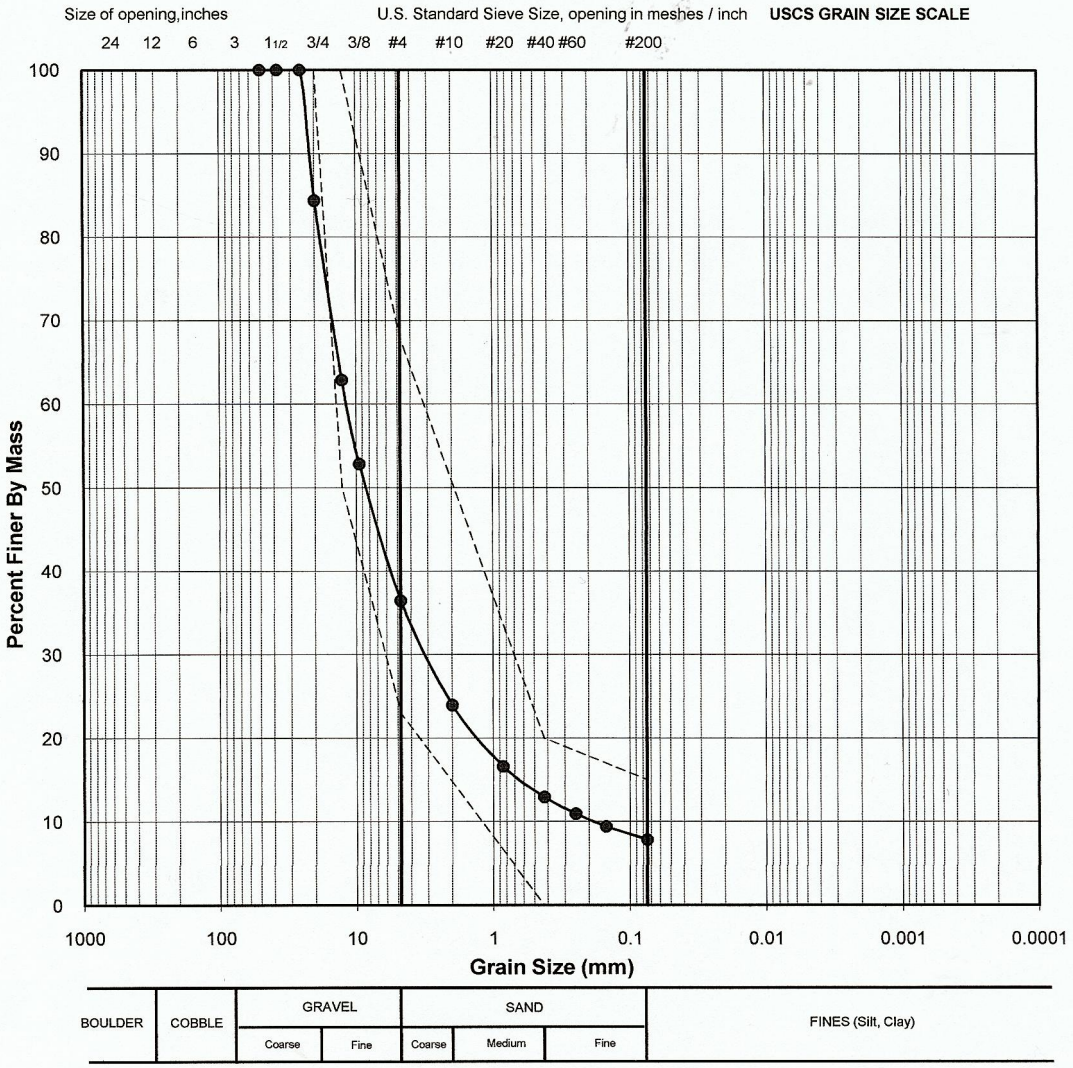
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**303**
Client:	AEM	**Field Label:**	BG090110
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA 303
Remarks:	Water content 0.90%	**Date Sampled:**	September 1, 2010
Sa. Location:	BG STA.31 +860	**Material Specification:**	CORE BACKFILL for Vibro- compaction
		Method:	COMBINED, WASHED
		Date Tested:	September 8, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
8"	200.0	0.0
6"	152.4	100.0
3"	76.2	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.4	100.0
3/4"	20.0	84.4
1/2"	12.7	62.9
3/8"	9.50	52.8
#4	4.76	36.5
#10	2.000	24.0
#20	0.850	16.6
#40	0.425	13.0
#60	0.250	11.0
#100	0.150	9.4
#200	0.075	7.9



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

Dieudonne BARAHEBURA	September 8, 2010	YB	Sept. 27, 2010
TESTED BY	DATE	CHECKED BY	DATE

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PARTICLE SIZE ANALYSIS OF SOILS

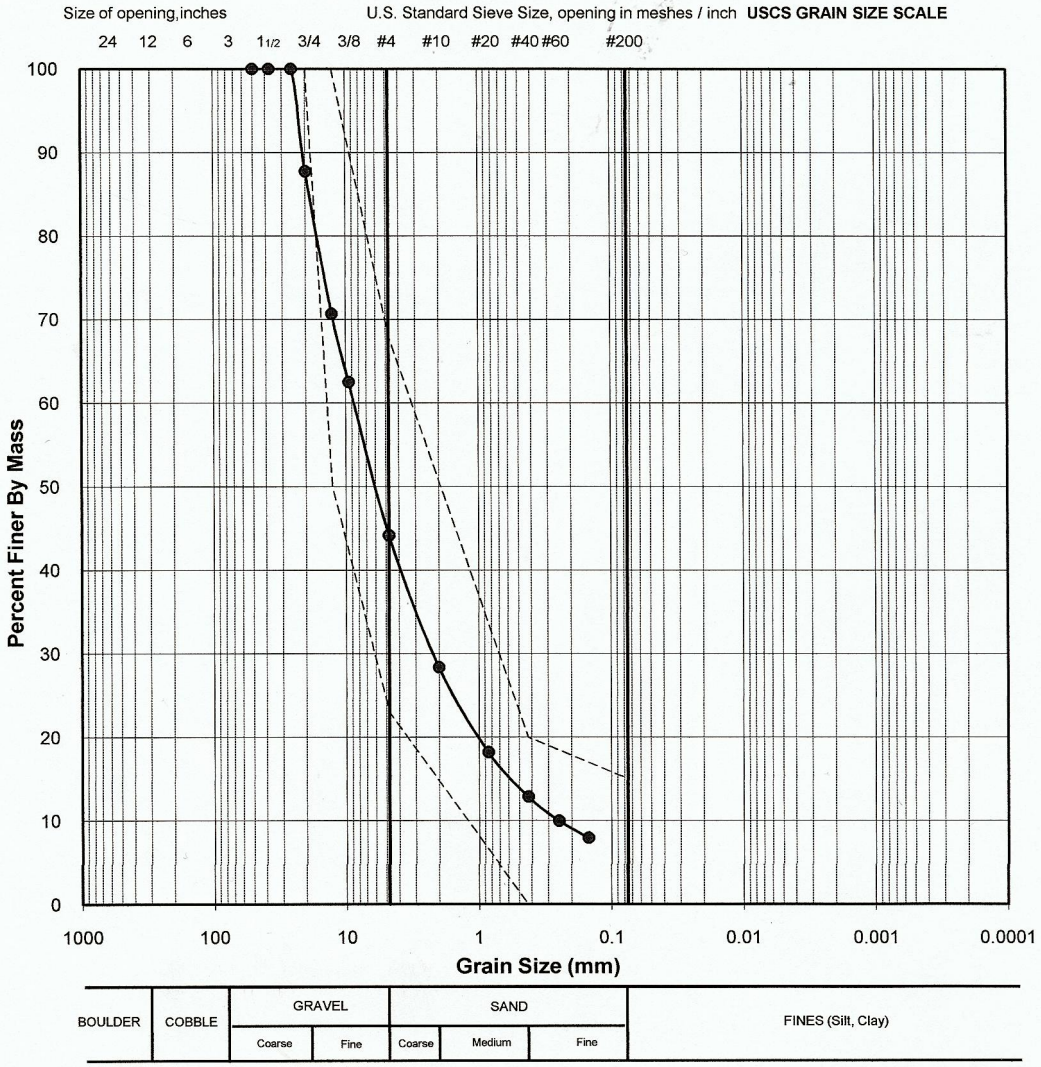
Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**307**
Client:	AEM	**Field Label:**	BG090810
Project:	Meadowbank Gold Project	**Depth (m):**	1.0
Location:	Nunavut	**Lab ID No:**	SA 307

Remarks:
Sa. Location: BG STA.31+990, 1.0m below water level

Date Sampled:	September 8, 2010
Material Specification:	CORE BACKFILL
Method:	COMBINED, WASHED
Date Tested:	September 9, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
8"	200.0	0.0
6"	152.4	100.0
3"	76.2	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.4	100.0
3/4"	20.0	87.8
1/2"	12.7	70.7
3/8"	9.50	62.5
#4	4.76	44.2
#10	2.000	28.4
#20	0.850	18.2
#40	0.425	12.9
#60	0.250	10.0
#100	0.150	8.0



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

Dieudonne BARAHEBURA	September 9, 2010	YB	Sept. 27, 2010
TESTED BY	DATE	CHECKED BY	DATE

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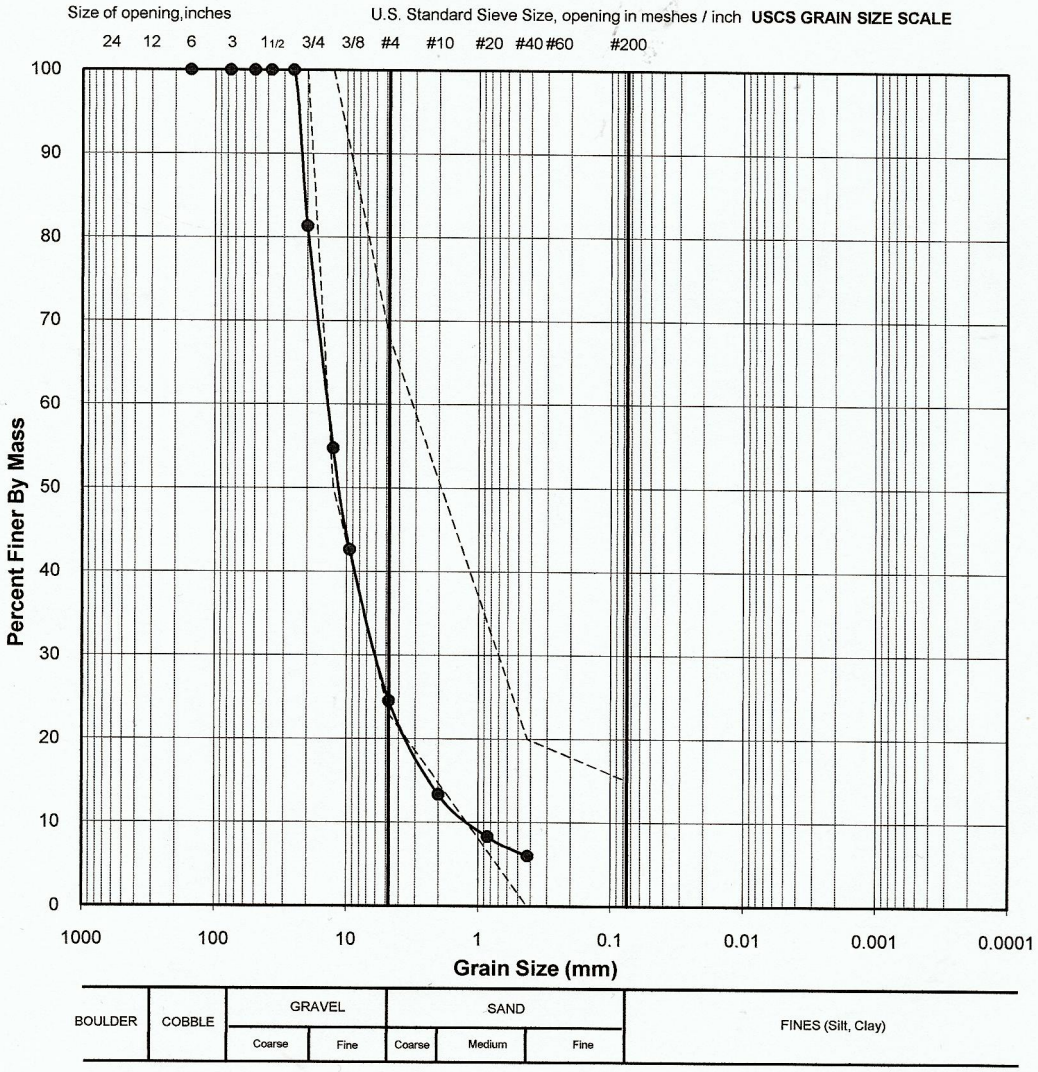
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**318**
Client:	AEM	**Field Label:**	BG091110-1
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA 318
Remarks:		**Date Sampled:**	September 11, 2010
Sa. Location:	BG STA. 32+028, below water	**Material Specification:**	CORE BACKFILL
		Method:	COMBINED, WASHED
		Date Tested:	September 12, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
8"	200.0	0.0
6"	152.4	100.0
3"	76.2	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.4	100.0
3/4"	20.0	81.3
1/2"	12.7	54.7
3/8"	9.50	42.6
#4	4.76	24.5
#10	2.000	13.3
#20	0.850	8.3
#40	0.425	6.0
#60	0.250	4.9
#100	0.150	4.0
#200	0.075	3.1



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

B.Dieudonne	September 12, 2010	YB	Sept. 27, 2010
TESTED BY	DATE	CHECKED BY	DATE

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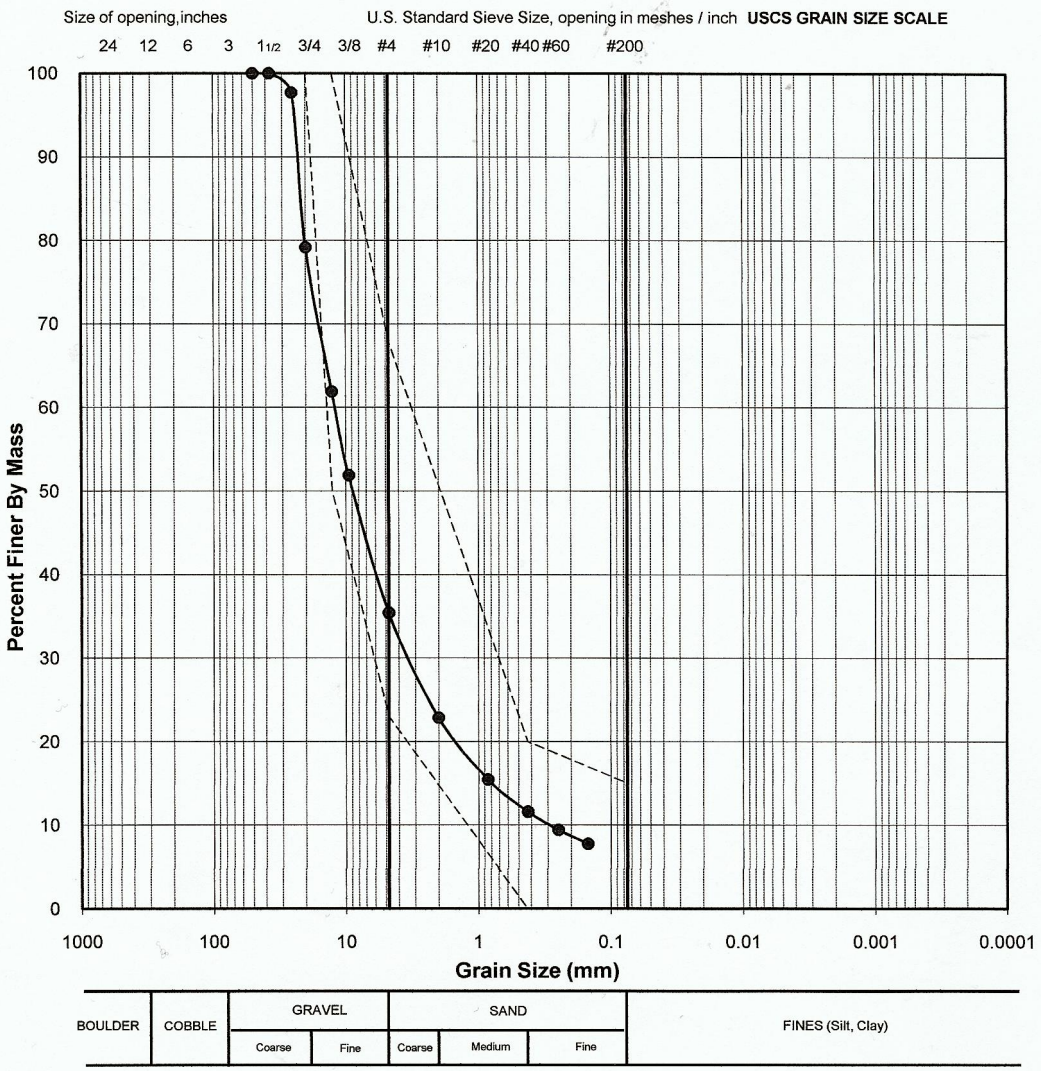
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**323**
Client:	AEM	**Field Label:**	BG091310-1
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA 323
Remarks:		**Date Sampled:**	September 13, 2010
Sa. Location:	BG STA. 32+067, below water level	**Material Specification:**	CORE BACKFILL
		Method:	COMBINED, WASHED
		Date Tested:	September 15, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
8"	200.0	0.0
6"	152.4	100.0
3"	76.2	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.4	97.7
3/4"	20.0	79.2
1/2"	12.7	61.9
3/8"	9.50	51.9
#4	4.76	35.4
#10	2.000	22.8
#20	0.850	15.5
#40	0.425	11.6
#60	0.250	9.4
#100	0.150	7.8



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B. Dieudonne	September 15, 2010	YB	Sept. 27, 2010
TESTED BY	DATE	CHECKED BY	DATE

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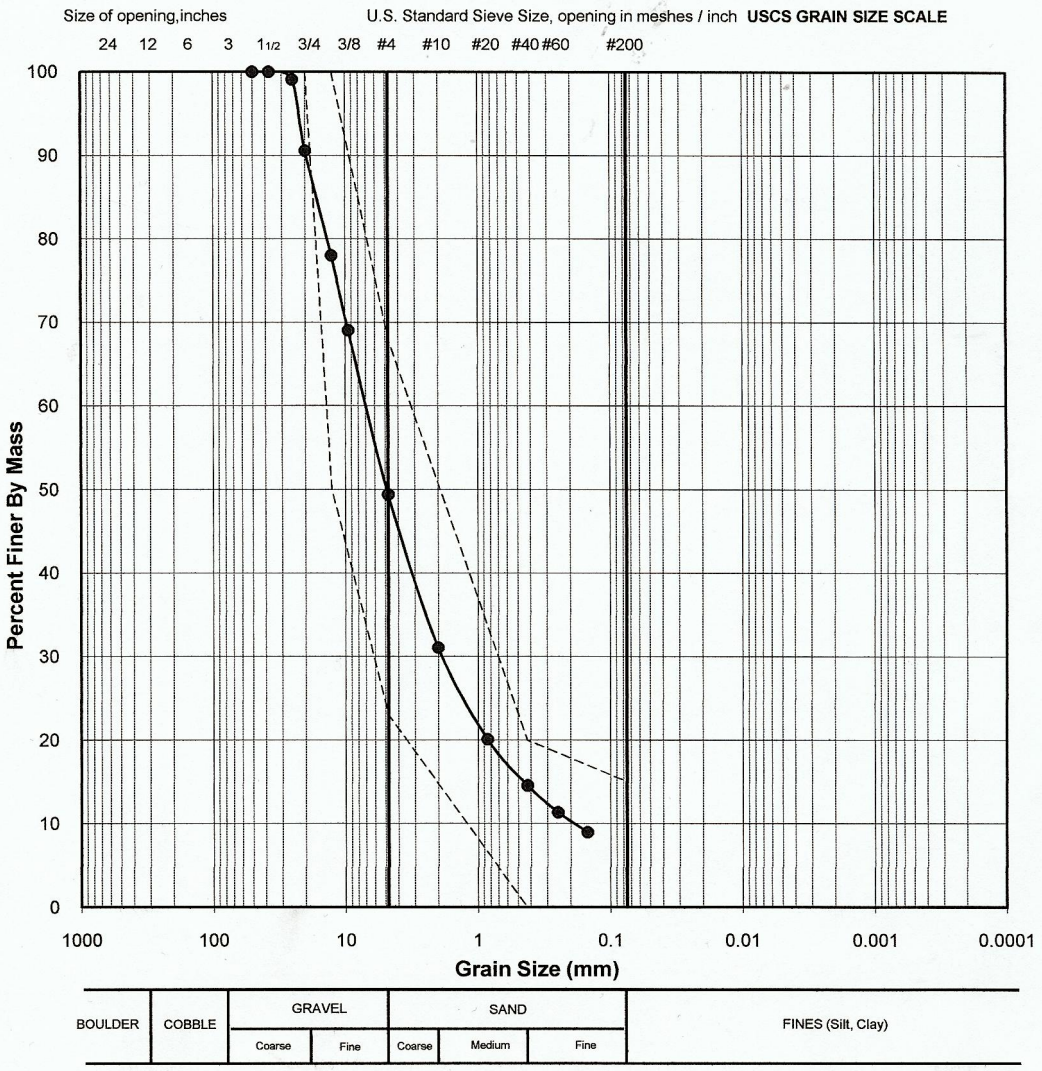
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**330**
Client:	AEM	**Field Label:**	BG091410-6
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA 330
Remarks:		**Date Sampled:**	September 14, 2010
Sa. Location:	BG STA. 32+085, below water level	**Material Specification:**	CORE BACKFILL
		Method:	COMBINED, WASHED
		Date Tested:	September 16, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
8"	200.0	0.0
6"	152.4	100.0
3"	76.2	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	99.1
3/4"	20.0	90.6
1/2"	12.7	78.0
3/8"	9.50	69.1
#4	4.76	49.4
#10	2.000	31.1
#20	0.850	20.1
#40	0.425	14.6
#60	0.250	11.4
#100	0.150	9.0



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

B. Dieudonne	September 16, 2010	YB	Sept. 27, 2010
TESTED BY	DATE	CHECKED BY	DATE

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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

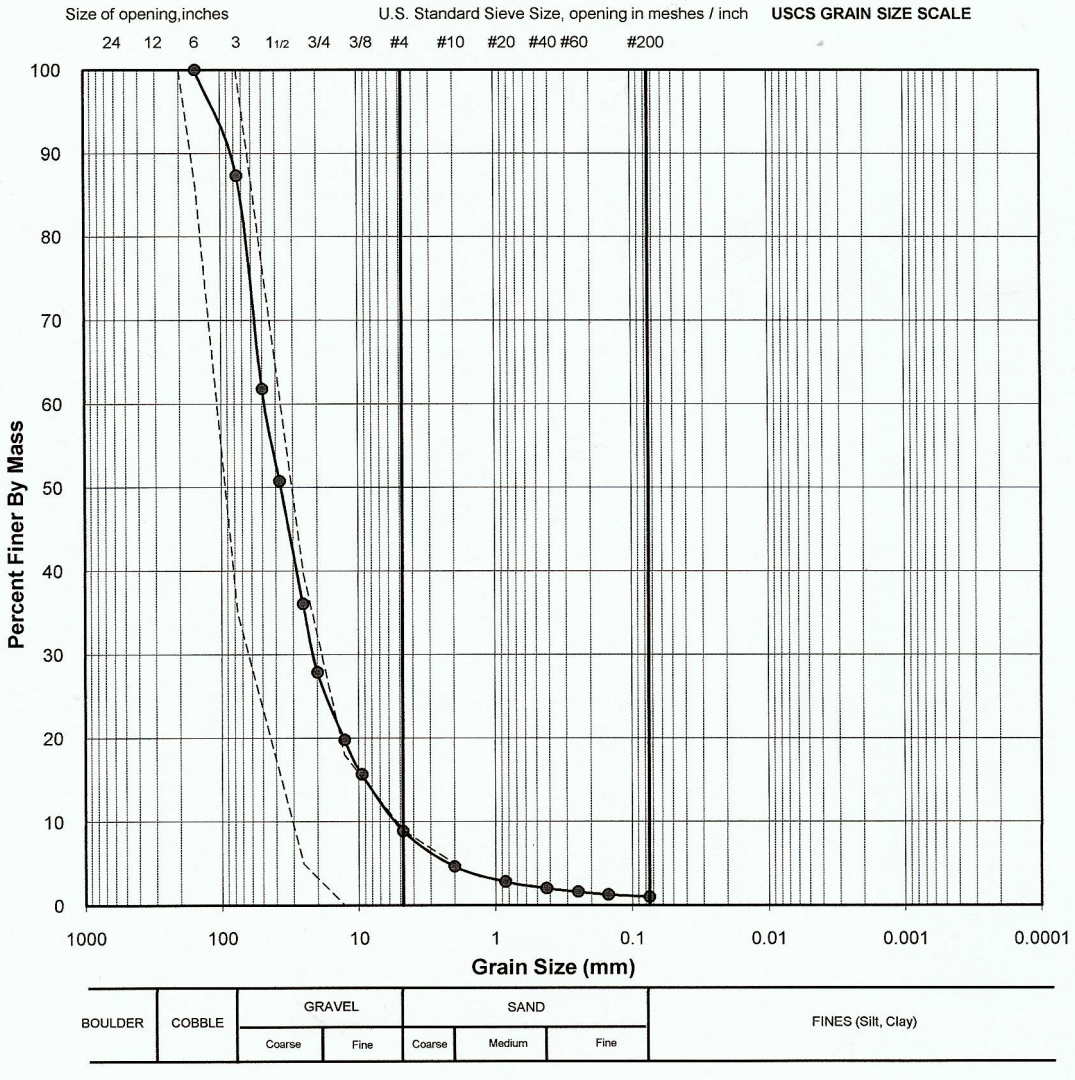
Project No.:	09-1428-5007 (2000)	**Sample No.:**	**256**
Client:	AEM	**Field Label:**	BG080610-3
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA 256

Sa. Location: 31+372

Remarks: Particules over 76mm were not included into the analysis.

Date Sampled: August 6, 2010
Material Specification: COARSE FILTER
Method: COMBINED, WASHED
Date Tested: August 12, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
8"	200.0	100.0
6"	152.4	100.0
3"	76.2	87.3
2"	50.0	61.8
1.5"	37.5	50.8
1"	25.4	36.1
3/4"	20.0	27.9
1/2"	12.7	19.8
3/8"	9.5	15.7
#4	4.760	8.9
#10	2.000	4.7
#20	0.850	2.8
#40	0.425	2.1
#60	0.250	1.6
#100	0.150	1.3
#200	0.075	1.0



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

DB	August 12, 2010	YB	Sept. 23, 2010
TESTED BY	DATE	CHECKED BY	DATE

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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

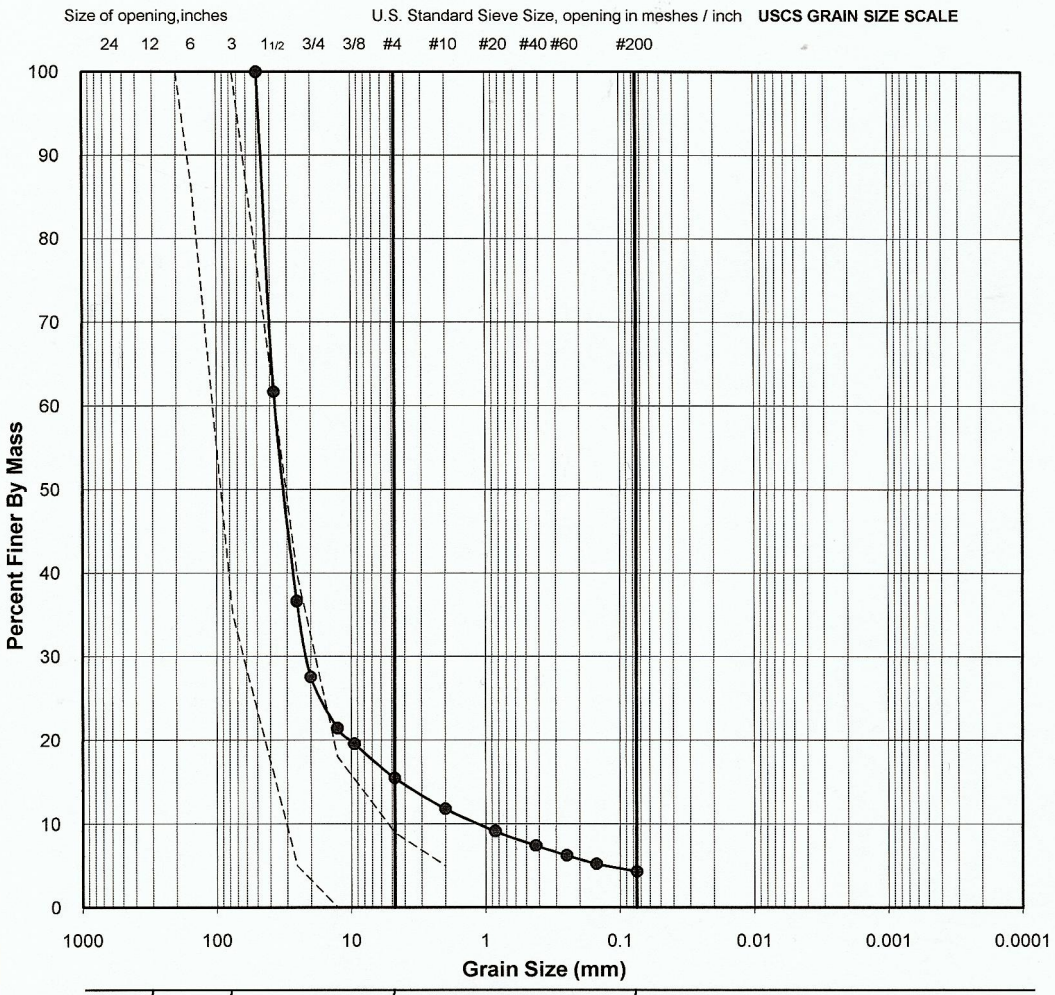
Project No.:	09-1428-5007 (2000)	**Sample No.:**	**268**
Client:	AEM	**Field Label:**	BG081110
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA 268

Sa. Location: BG STA.31 +804, under water

Remarks: Particules over 76mm were not included into the analysis.

Date Sampled: August 11, 2010
Material Specification: COARSE FILTER
Method: COMBINED, WASHED
Date Tested: August 13, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
8"	200.0	100.0
6"	152.4	100.0
3"	76.2	100.0
2"	50.0	100.0
1.5"	37.5	61.7
1"	25.4	36.6
3/4"	20.0	27.6
1/2"	12.7	21.5
3/8"	9.5	19.6
#4	4.760	15.5
#10	2.000	11.8
#20	0.850	9.2
#40	0.425	7.4
#60	0.250	6.3
#100	0.150	5.3
#200	0.075	4.3



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

Dieudonné BARAHEBURA	August 13, 2010	YB	Sept. 24, 2010
TESTED BY	DATE	CHECKED BY	DATE

M:\Meadowbank 2010 QAQC DataBase\Laboratory\LabTesting-Rev by QA Manager\SA 268_BRR

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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**276**
Client:	AEM	**Field Label:**	BG081710-2
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA 276

Remarks: Water content= 1.3%

Sa. Location: BG STA.31 +835, under water

Remarks: Particles over 76mm were all weigthed and included into the 76mm sieve. Particles over 152mm might exist.

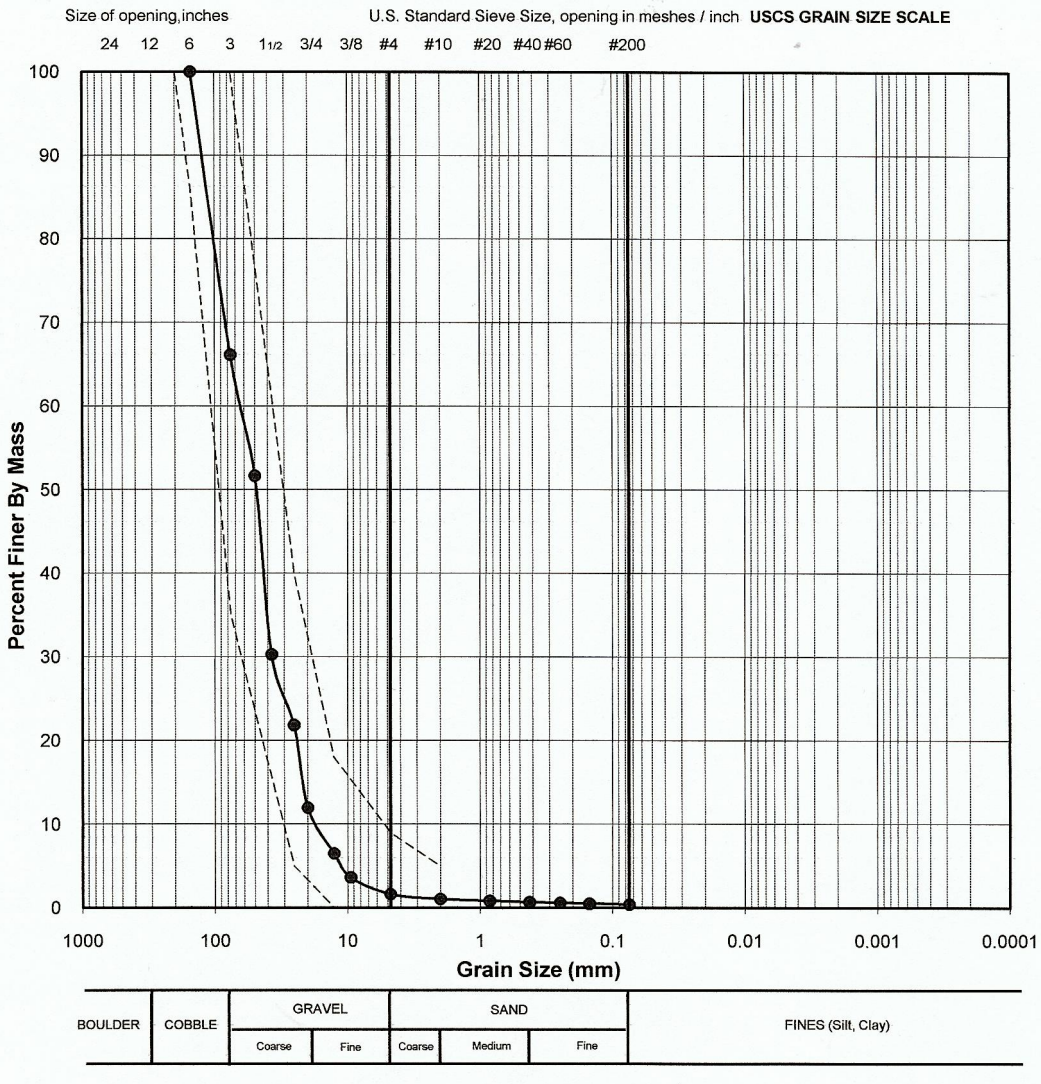
Date Sampled: August 17, 2010

Material Specification: COARSE FILTER

Method: COMBINED, WASHED

Date Tested: August 19, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
8"	200.0	100.0
6"	152.4	100.0
3"	76.2	66.2
2"	50.0	51.7
1.5"	37.5	30.3
1"	25.4	21.8
3/4"	20.0	12.0
1/2"	12.7	6.5
3/8"	9.5	3.7
#4	4.760	1.7
#10	2.000	1.1
#20	0.850	0.8
#40	0.425	0.7
#60	0.250	0.6
#100	0.150	0.5
#200	0.075	0.4



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

Dieudonné BARAHEBURA	August 19, 2010	YB	Sept. 24, 2010
TESTED BY	DATE	CHECKED BY	DATE

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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**287**
Client:	AEM	**Field Label:**	BG082210-2
Project:	Meadowbank Gold Project	**Depth (m):**	3
Location:	Nunavut	**Lab ID No:**	SA 287

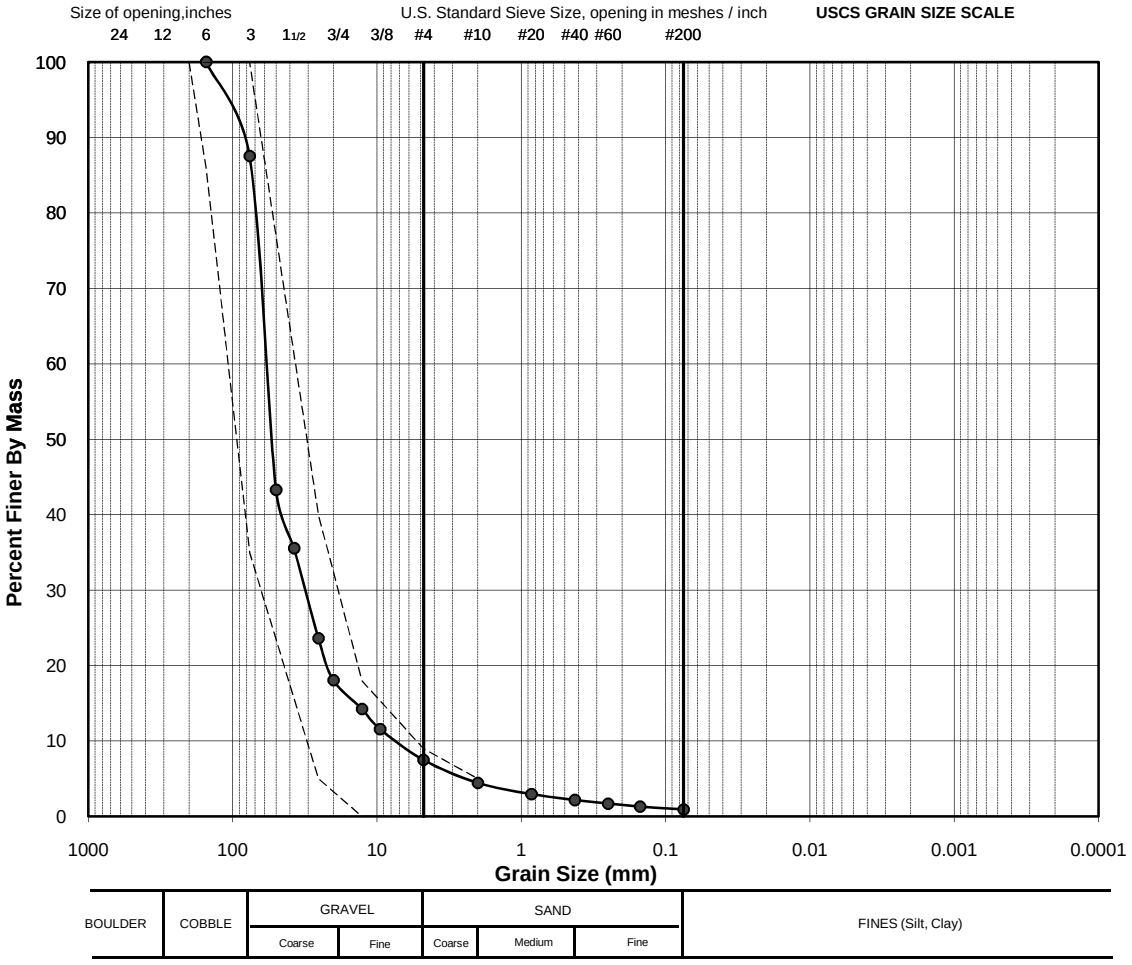
Remarks:

Sa. Location: BG STA.31+897, 3m under water

Remarks: Particules over 76mm were all weigthed and included into the 76 mm sieve. Some particules might be over 152mm.

Date Sampled:	August 22, 2010
Material Specification:	COARSE FILTER
Method:	COMBINED, WASHED
Date Tested:	August 25, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
8"	200.0	100.0
6"	152.4	100.0
3"	76.2	87.5
2"	50.0	43.3
1.5"	37.5	35.6
1"	25.4	23.6
3/4"	20.0	18.1
1/2"	12.7	14.3
3/8"	9.5	11.6
#4	4.760	7.5
#10	2.000	4.5
#20	0.850	3.0
#40	0.425	2.2
#60	0.250	1.7
#100	0.150	1.3
#200	0.075	0.9



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

Dieudonné BARAHEBURA	August 25, 2010	YB	Sept. 25, 2010
TESTED BY	DATE	CHECKED BY	DATE

Golder Associates Ltd. - Burnaby Laboratory
4280 Still Creek Drive
Burnaby, B.C. Canada V5C 6C8

PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**291**
Client:	AEM	**Field Label:**	BG082410-3
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA 291

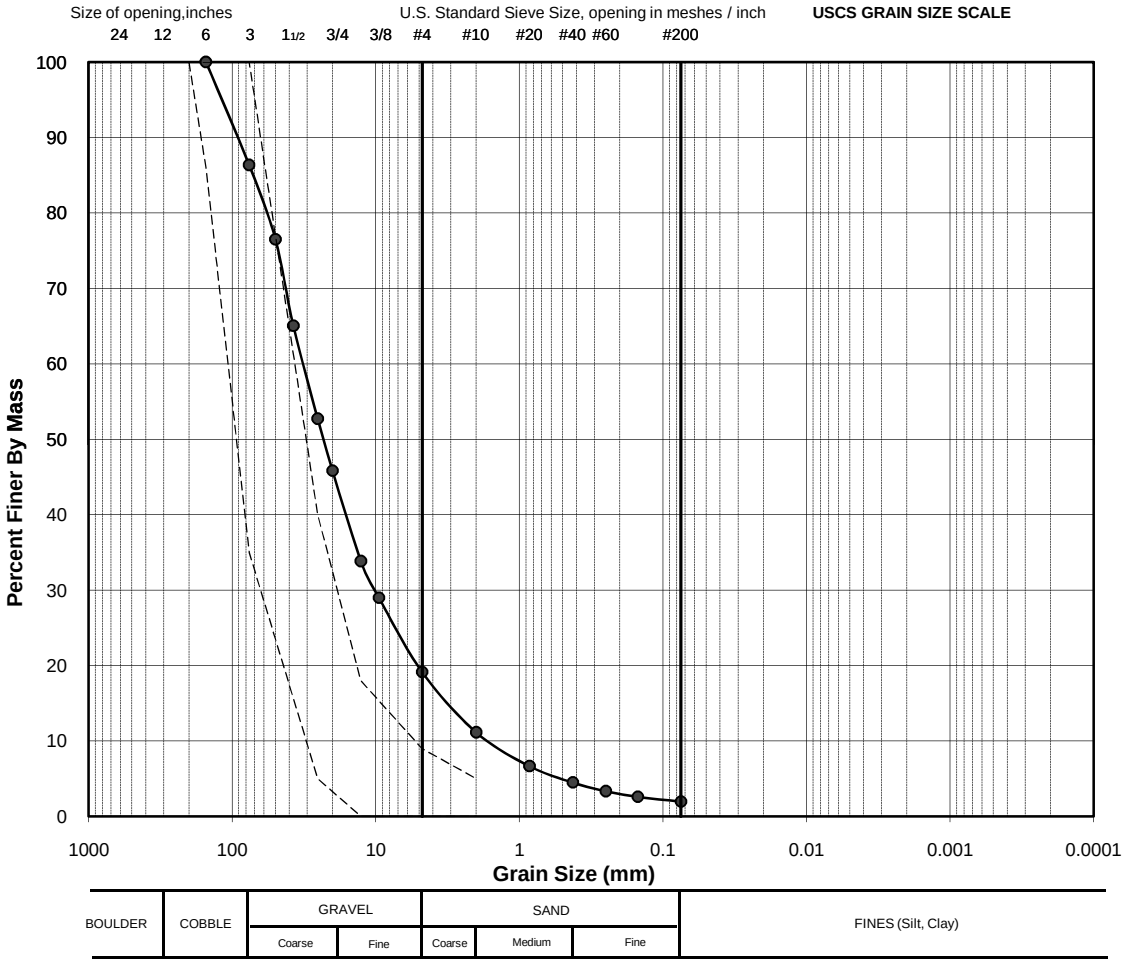
Remarks:

Sa. Location: BG STA.31+945, under water

Remarks #2: Particules over 76mm were all weigthed and included into the 76 mm sieve. Particules over 152mm might be present.

Date Sampled:	August 24, 2010
Material Specification:	COARSE FILTER
Method:	COMBINED, WASHED
Date Tested:	August 26, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
8"	200.0	100.0
6"	152.4	100.0
3"	76.2	86.4
2"	50.0	76.5
1.5"	37.5	65.0
1"	25.4	52.7
3/4"	20.0	45.8
1/2"	12.7	33.8
3/8"	9.5	29.0
#4	4.760	19.2
#10	2.000	11.2
#20	0.850	6.7
#40	0.425	4.5
#60	0.250	3.4
#100	0.150	2.6
#200	0.075	2.0



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

M.O	August 26, 2010	YB	Sept. 25, 2010
TESTED BY	DATE	CHECKED BY	DATE

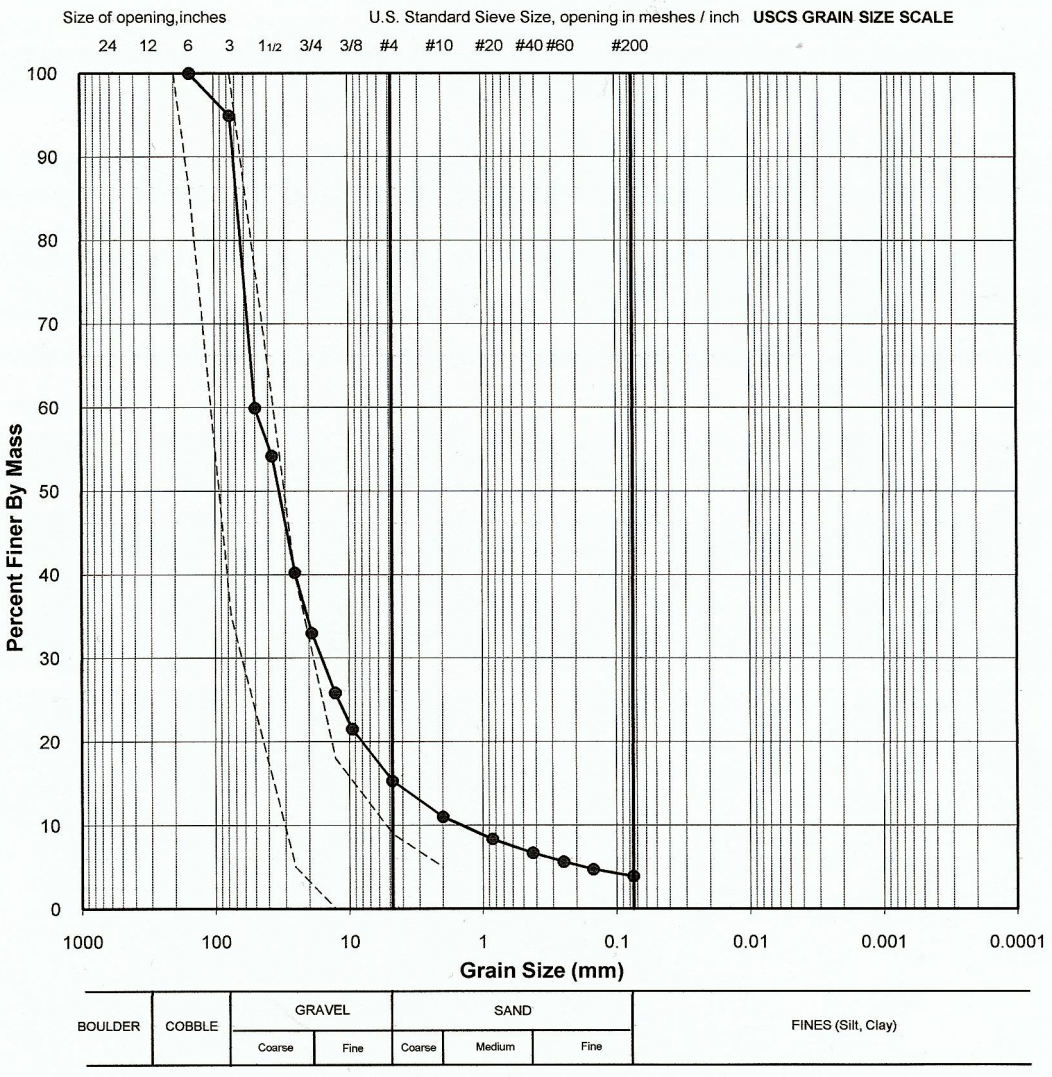
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**295**
Client:	AEM	**Field Label:**	BG082410
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA 295
Remarks:	Water Content = NA	**Date Sampled:**	August 25, 2010
Sa. Location:	STA.31+795	**Material Specification:**	COARSE FILTER
	(Dry densification platform)		
Remarks #2: Particules over 76mm were all weigthed and included into the 76 mm sieve. Particules over 152mm might be present.		**Method:**	COMBINED, WASHED
		Date Tested:	August 27, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
8"	200.0	100.0
6"	152.4	100.0
3"	76.2	94.9
2"	50.0	59.9
1.5"	37.5	54.2
1"	25.4	40.2
3/4"	19.0	33.0
1/2"	12.7	25.8
3/8"	9.5	21.5
#4	4.760	15.3
#10	2.000	11.0
#20	0.850	8.4
#40	0.425	6.7
#60	0.250	5.6
#100	0.150	4.7
#200	0.075	3.9



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

M.O	August 27, 2010	YB	Sept. 27, 2010
TESTED BY	DATE	CHECKED BY	DATE

M:\Meadowbank 2010 QAQC DataBase\Laboratory\LabTesting-Rev by QA Manager\SA 295

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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**309**
Client:	AEM	**Field Label:**	BG090910-2
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA 309

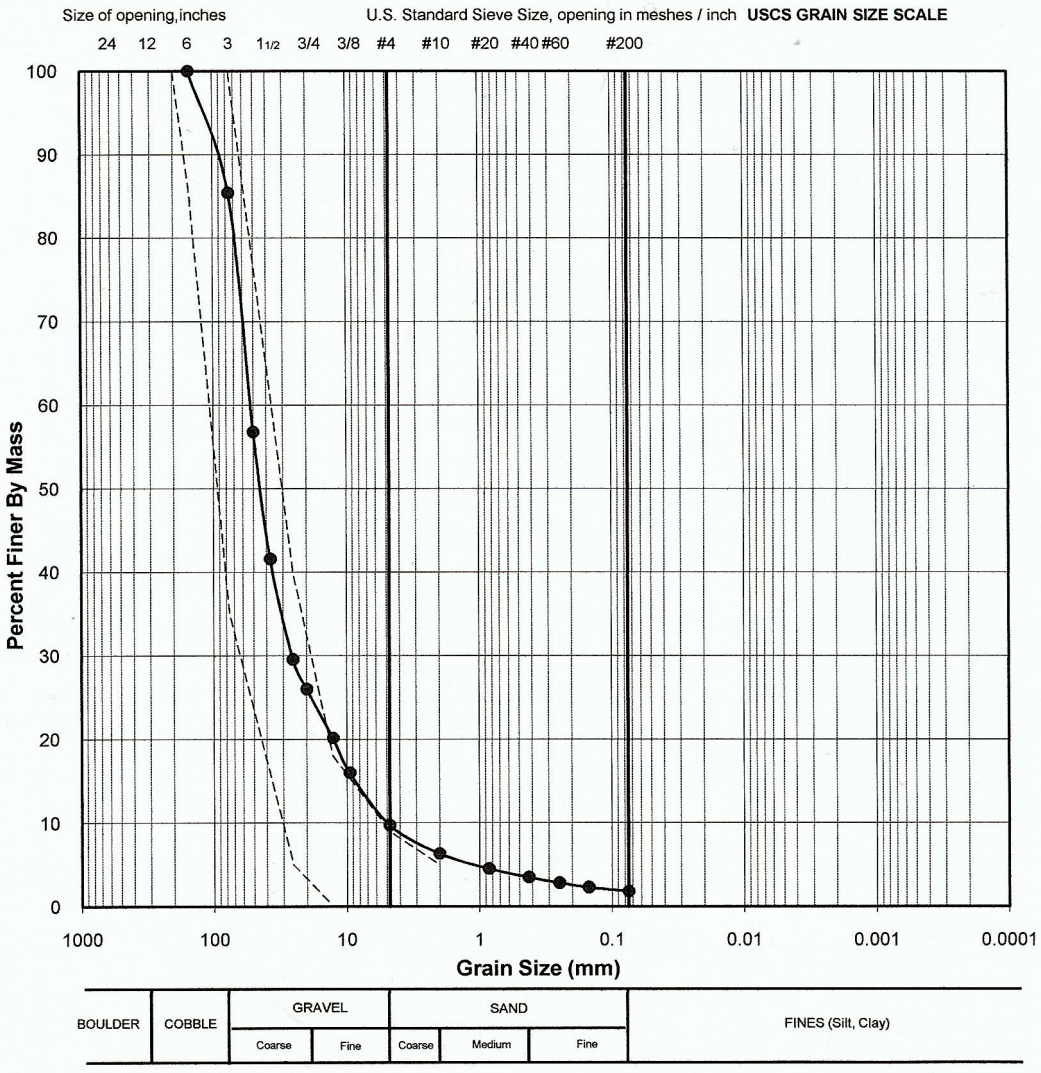
Remarks:

Sa. Location: BG 31+988, below water

Remark#2: Particules over 76mm were all weigthed and included into the 76 mm sieve. Particules over 152mm might exist.

Date Sampled:	September 9, 2010
Material Specification:	COARSE FILTER
Method:	COMBINED, WASHED
Date Tested:	September 11, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
8"	200.0	100.0
6"	152.4	100.0
3"	76.2	85.4
2"	50.0	56.8
1.5"	37.5	41.6
1"	25.4	29.6
3/4"	20.0	26.0
1/2"	12.7	20.1
3/8"	9.5	16.0
#4	4.760	9.8
#10	2.000	6.4
#20	0.850	4.5
#40	0.425	3.5
#60	0.250	2.8
#100	0.150	2.3
#200	0.075	1.8



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

B.Dieudonné	September 11, 2010	YB	Sept. 27, 2010
TESTED BY	DATE	CHECKED BY	DATE

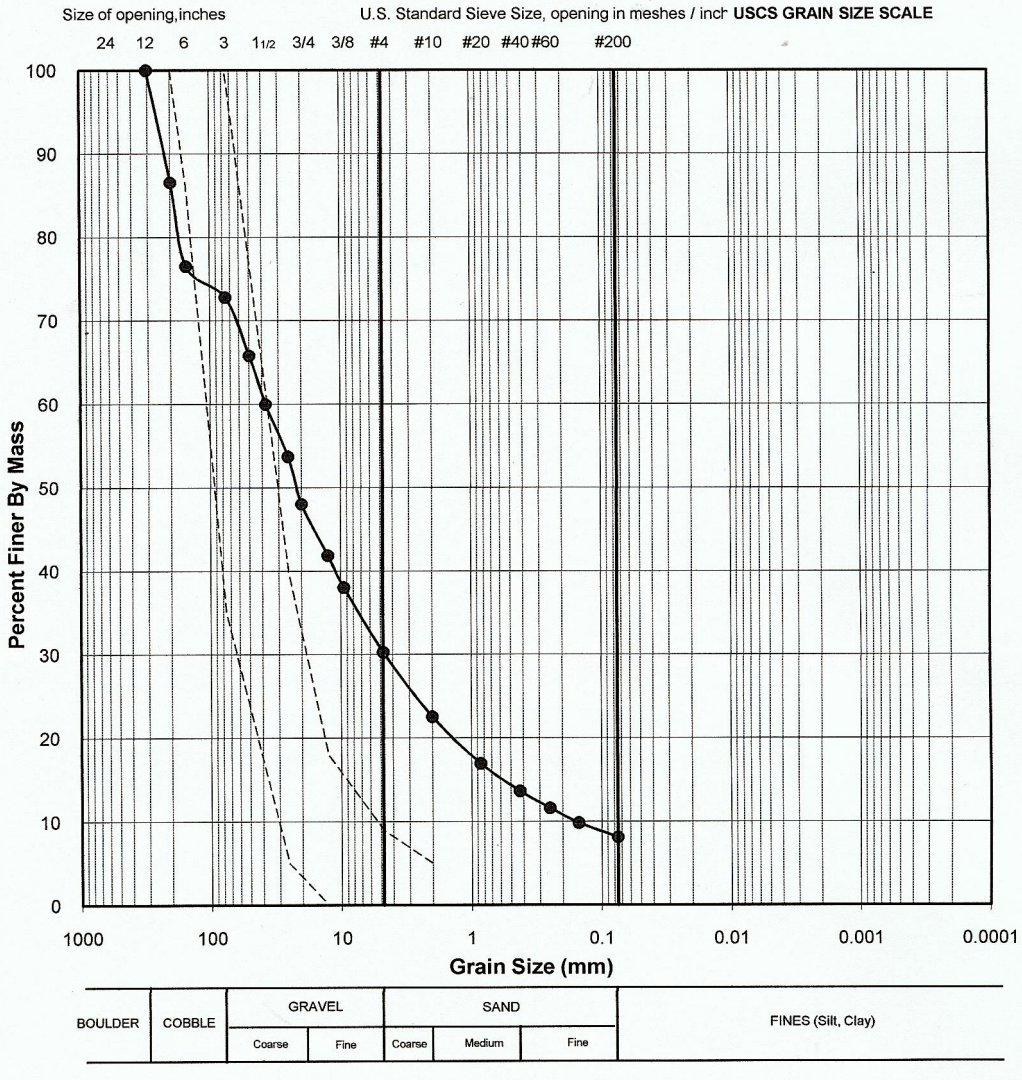
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PARTICLE SIZE ANALYSIS OF SOILS

Reference: ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**344**
Client:	AEM	**Field Label:**	BG091910
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA 344
Remarks:	Water Content = 2.5%	**Date Sampled:**	
Sa. Location:	BG 31+565, cap of cut-off wall over densification platform	**Material Specification:**	COARSE FILTER
		Method:	SPLIT, WASHED
		Date Tested:	

Sieve Size (USS)	(mm)	Passing %
For graph:	0.0	100.0
8"	200.0	86.6
6"	152.4	76.5
3"	76.2	72.8
2"	50.0	65.8
1.5"	37.5	60.0
1"	25.4	53.7
3/4"	20.0	48.0
1/2"	12.600	41.9
3/8"	9.500	38.0
#4	4.760	30.3
#10	2.000	22.5
#20	0.850	16.9
#40	0.425	13.6
#60	0.250	11.6
#100	0.150	9.8
#200	0.075	8.1



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

		YB	Sept. 28, 2010
TESTED BY	DATE	CHECKED BY	DATE

M:\Meadowbank 2010 QAQC DataBase\Laboratory\LabTesting-Rev by QA Manager\SA 344

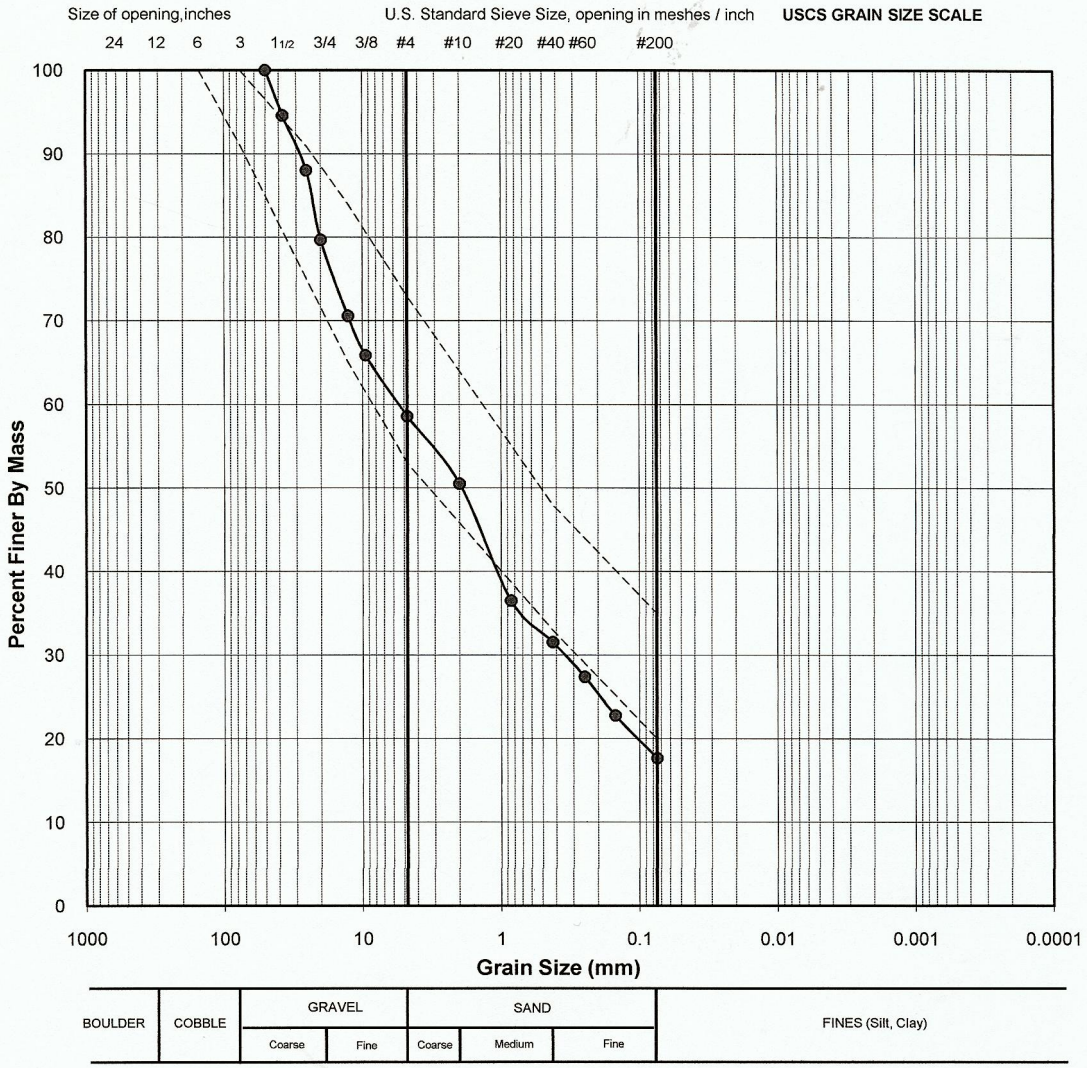
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**205**
Client:	AEM	**Field Label:**	BG072910-2
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA 205
Remarks:	Water Conten 7.8%	**Date Sampled:**	July 29, 2010
Location:	BAYGOOSE NATIVE BORROW	**Material Specification:**	TILL
		Method:	COMBINED, WASHED
		Date Tested:	August 6, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
6"	152.4	100.0
3"	76.2	100.0
2"	50.0	100.0
1.5"	37.5	94.6
1"	25.4	88.0
3/4"	20.0	79.7
1/2"	12.7	70.6
3/8"	9.5	65.9
#4	4.760	58.6
#10	2.000	50.6
#20	0.850	36.5
#40	0.425	31.6
#60	0.250	27.4
#100	0.150	22.8
#200	0.075	17.7



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

MO	August 6, 2010	YB	Sept. 22, 2010
TESTED BY	DATE	CHECKED BY	DATE

M:\Meadowbank 2010 QAQC DataBase\Laboratory\LabTesting-Reviewed by QA Manager\SA 205.xlsm

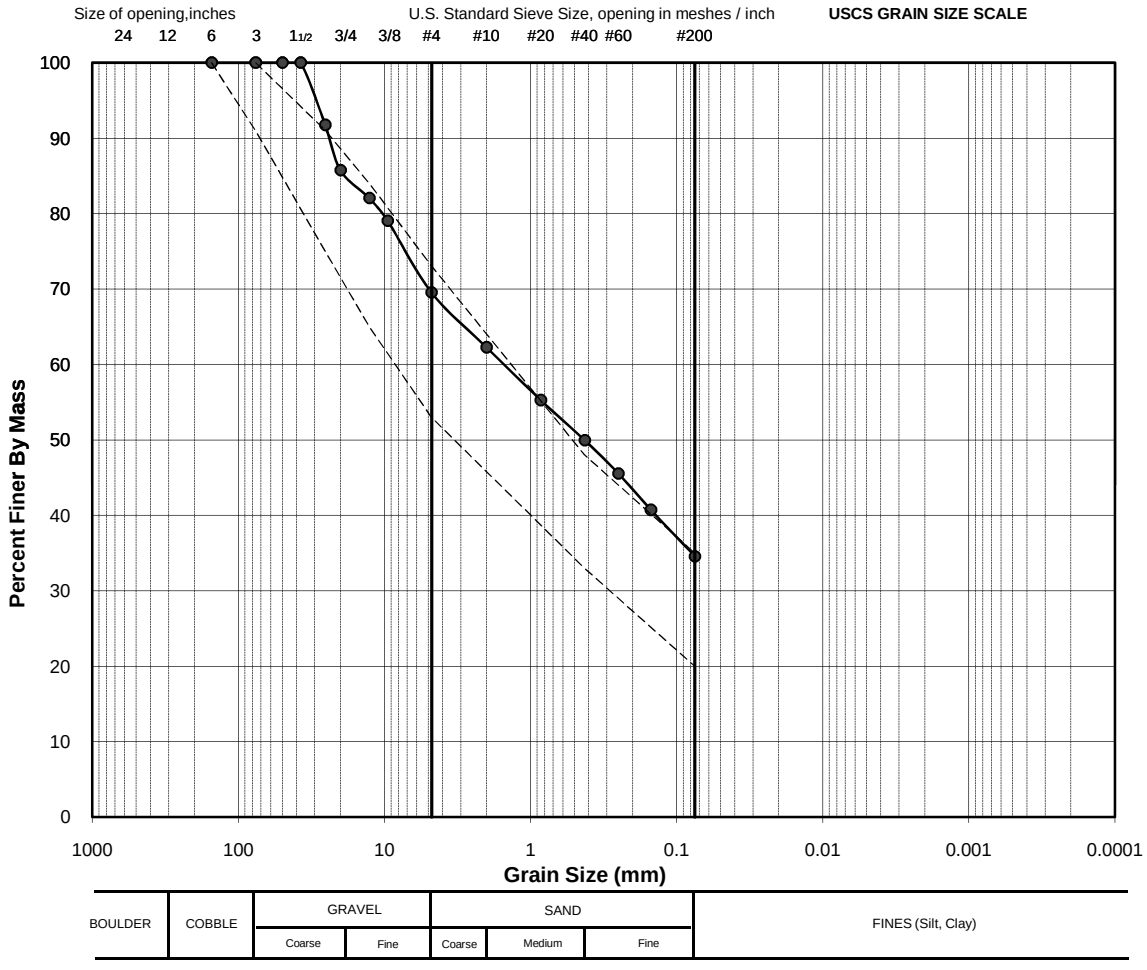
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Burnaby, B.C. Canada V5C 6C8

PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**289**
Client:	AEM	**Field Label:**	BG082410-1
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA 289
Remarks:	water content = 5.3%	**Date Sampled:**	August 24, 2010
Sa. Location:	BG STA.31 +610	**Material Specification:**	Till for CSB (Stockpile along cut-off)
		Method:	COMBINED, WASHED
		Date Tested:	August 26, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
6"	152.4	100.0
3"	76.2	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.4	91.8
3/4"	20.0	85.8
1/2"	12.7	82.1
3/8"	9.5	79.1
#4	4.76	69.5
#10	2.00	62.3
#20	0.850	55.3
#40	0.425	50.0
#60	0.250	45.5
#100	0.150	40.7
#200	0.075	34.6



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

MO	August 26, 2010	YB	Sept. 25, 2010
TESTED BY	DATE	CHECKED BY	DATE

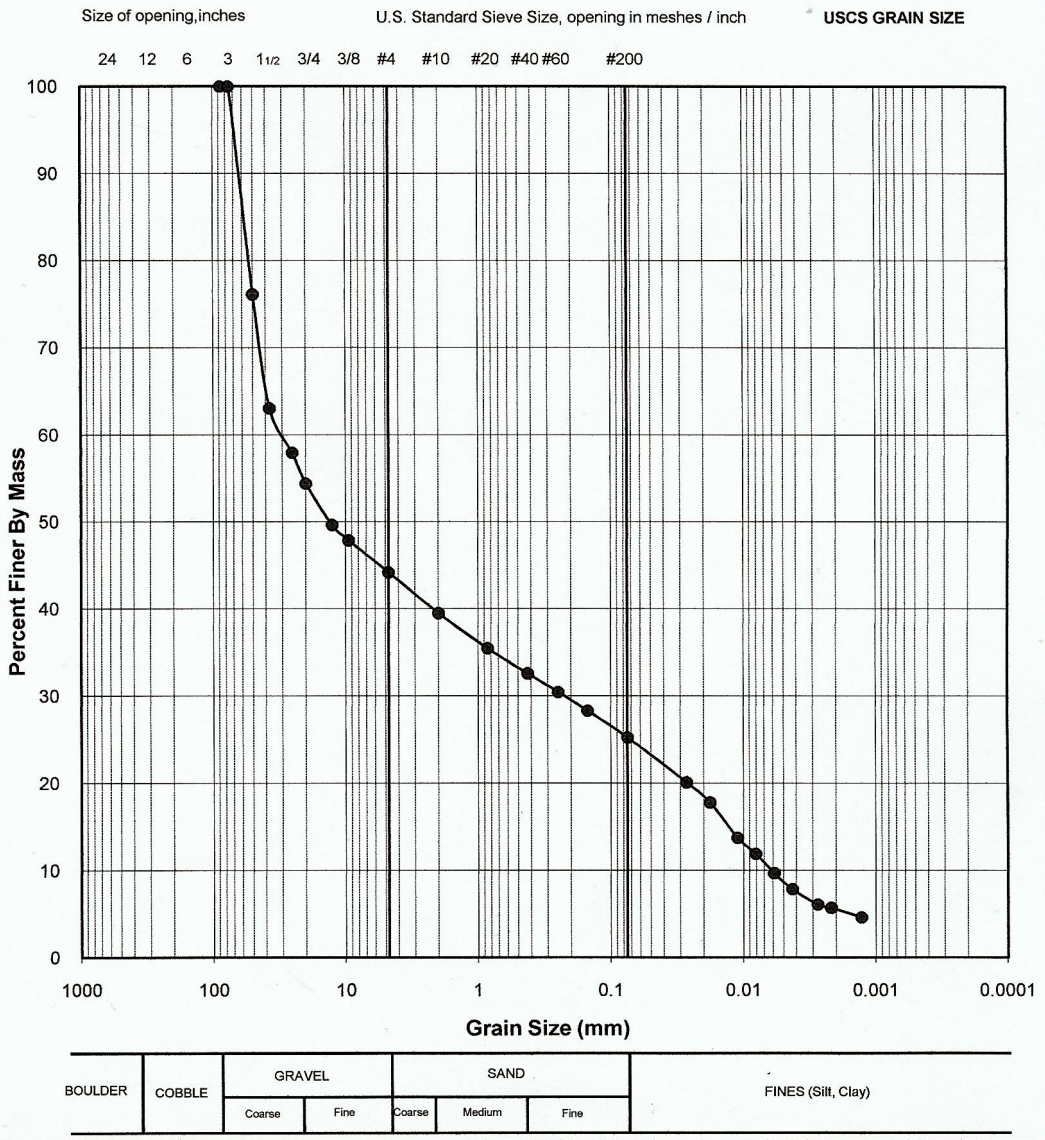
Golder Associates Ltd. - Kelowna Laboratory
1755 Springfield Road
Kelowna, B.C. Canada V1Y 5V5

PARTICLE SIZE ANALYSIS OF SOILS

Reference: ASTM D 422-63 (2007)

Project No.:	09-1428-5007 (2000)	**Field ID**	**Till stockpile portage pit**
Client:	AEM	**Sample No.:**	319
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA 319
Specific Gravity (assumed):	2.70	**Other**	Till from stockpile, water content = 8.5%
Date sampled:	September 11, 2010	**Remarks:**	
Dispersion Method:	Stirring		
Dispersion Period (min):	5.00		

Sieve Size (USS)	Sieve Size (mm)	% Passing
3.5"	87.50	100.0
3"	76.20	100.0
2"	50.00	76.1
1.5"	37.50	63.1
1"	25.40	58.0
3/4"	20.00	54.4
1/2"	12.70	49.6
3/8"	9.50	47.9
#4	4.76	44.2
#10	2.00	39.5
#20	0.850	35.5
#40	0.425	32.6
#60	0.250	30.4
#100	0.150	28.3
#200	0.075	25.2
-	0.0269	20.1
-	0.0179	17.8
-	0.0111	13.7
-	0.0081	11.9
-	0.0059	9.7
-	0.0043	7.8
-	0.0028	6.1
-	0.0022	5.7
-	0.0013	4.6



B.Dieudonne	September 16, 2010	YB	Sept 27, 2010
TESTED BY	DATE	CHECKED BY	DATE

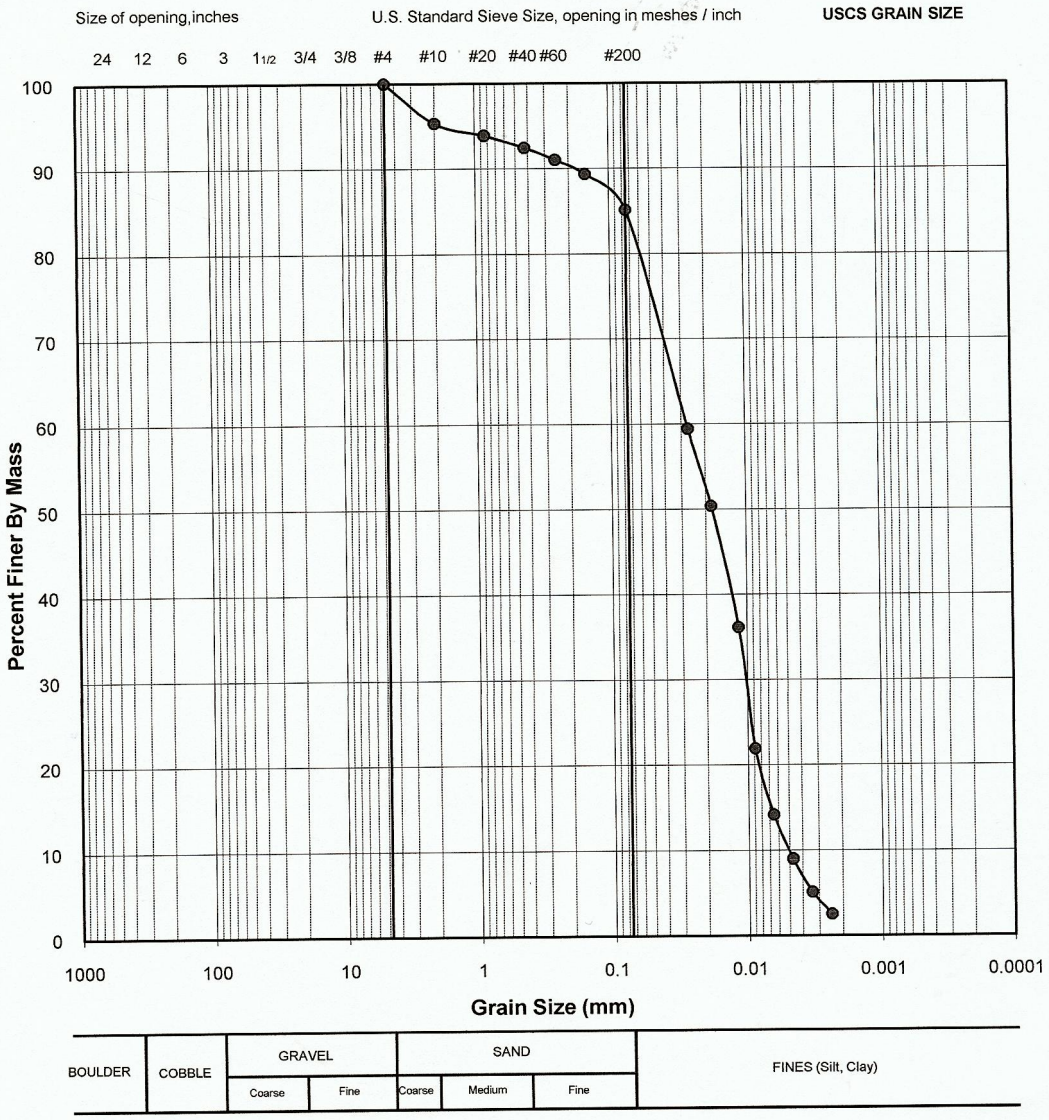
Golder Associates Ltd. - Kelowna Laboratory
1755 Springfield Road
Kelowna, B.C. Canada V1Y 5V5

PARTICLE SIZE ANALYSIS OF SOILS

Reference: ASTM D 422-63 (2007)

Project No.:	09-1428-5007 (2000)	**Sample No:**	**207**
Client:	AEM	**Field Label:**	BG073010-1
Project:	Meadowbank Gold Project	**Depth (m):**	5
Location:	Nunavut	**Lab ID No:**	SA 207
Specific Gravity (assumed):	2.70	**Other**	STA. 31+115
Date sampled:	July 30, 2010	**Remarks:**	BG - Soft sediment at trench bottom
Dispersion Method:	Stirring		
Dispersion Period (min):	5.00		

Sieve Size (USS)	Sieve Size (mm)	% Passing
3.5"	87.50	100.0
3"	76.20	100.0
2"	50.00	100.0
1.5"	37.50	100.0
1"	25.40	100.0
3/4"	20.00	100.0
1/2"	12.70	100.0
3/8"	9.50	100.0
#4	4.76	100.0
#10	2.00	95.3
#20	0.850	93.9
#40	0.425	92.5
#60	0.250	91.0
#100	0.150	89.3
#200	0.075	85.2
-	0.0267	59.4
-	0.0182	50.4
-	0.0115	36.2
-	0.0088	21.9
-	0.0065	14.2
-	0.0047	9.0
-	0.0034	5.1
-	0.0024	2.5
-	0.0014	0.0



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

MO	August 8, 2010	YB	Sept. 23, 2010
TESTED BY	DATE	CHECKED BY	DATE

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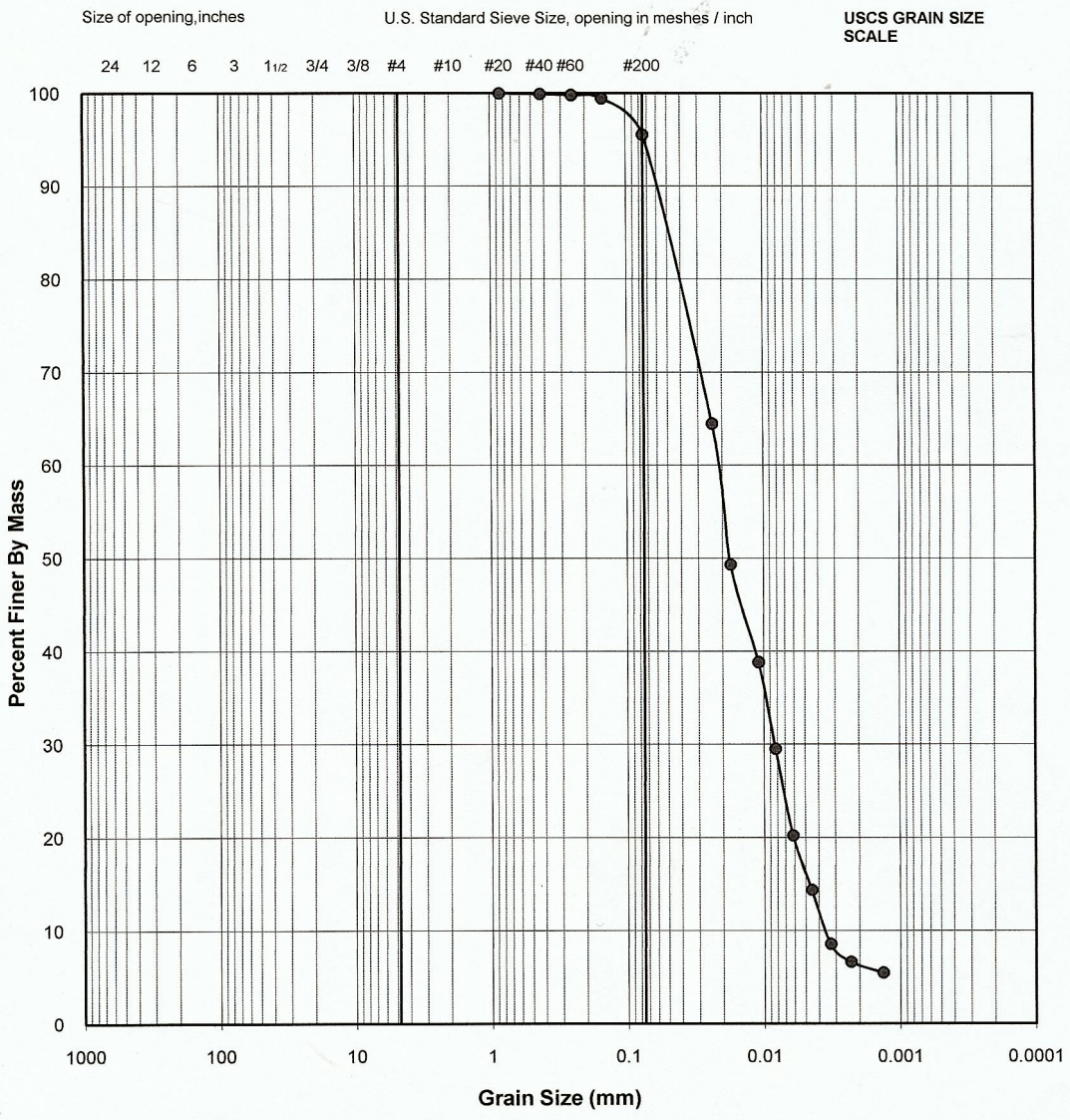
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PARTICLE SIZE ANALYSIS OF SOILS

Reference: ASTM D 422-63 (2007)

Project No.:	09-1428-5007 (2000)	**Sample No:**	**208**
Client:	AEM	**Field Label:**	BG073010-2
Project:	Meadowbank Gold Project	**Depth (m):**	5
Location:	Nunavut	**Lab ID No:**	SA 208
Specific Gravity (assumed):	2.70	**Other**	STA. 31+115
Date sampled:	July 30, 2010	**Remarks:**	BG-Soft sediment at trench bottom, Water content: 64.4%
Dispersion Method:	Stirring		
Dispersion Period (min):	5.00		

Sieve Size (USS)	Sieve Size (mm)	% Passing
3.5"	87.50	100.0
3"	76.20	100.0
2"	50.00	100.0
1.5"	37.50	100.0
1"	25.40	100.0
3/4"	20.00	100.0
1/2"	12.70	100.0
3/8"	9.50	100.0
#4	4.76	100.0
#10	2.00	100.0
#20	0.850	100.0
#40	0.425	99.9
#60	0.250	99.8
#100	0.150	99.4
#200	0.075	95.5
-	0.0237	64.4
-	0.0174	49.3
-	0.0109	38.8
-	0.0082	29.5
-	0.0062	20.2
-	0.0045	14.4
-	0.0033	8.5
-	0.0023	6.6
-	0.0013	5.5



TESTED BY	DATE	CHECKED BY	DATE
B.Dieudonné	August 17, 2010	YB	Sept. 23, 2010

M:\Meadowbank 2010 QAQC DataBase\Laboratory\LabTesting-Reviewed by QA Manager\File

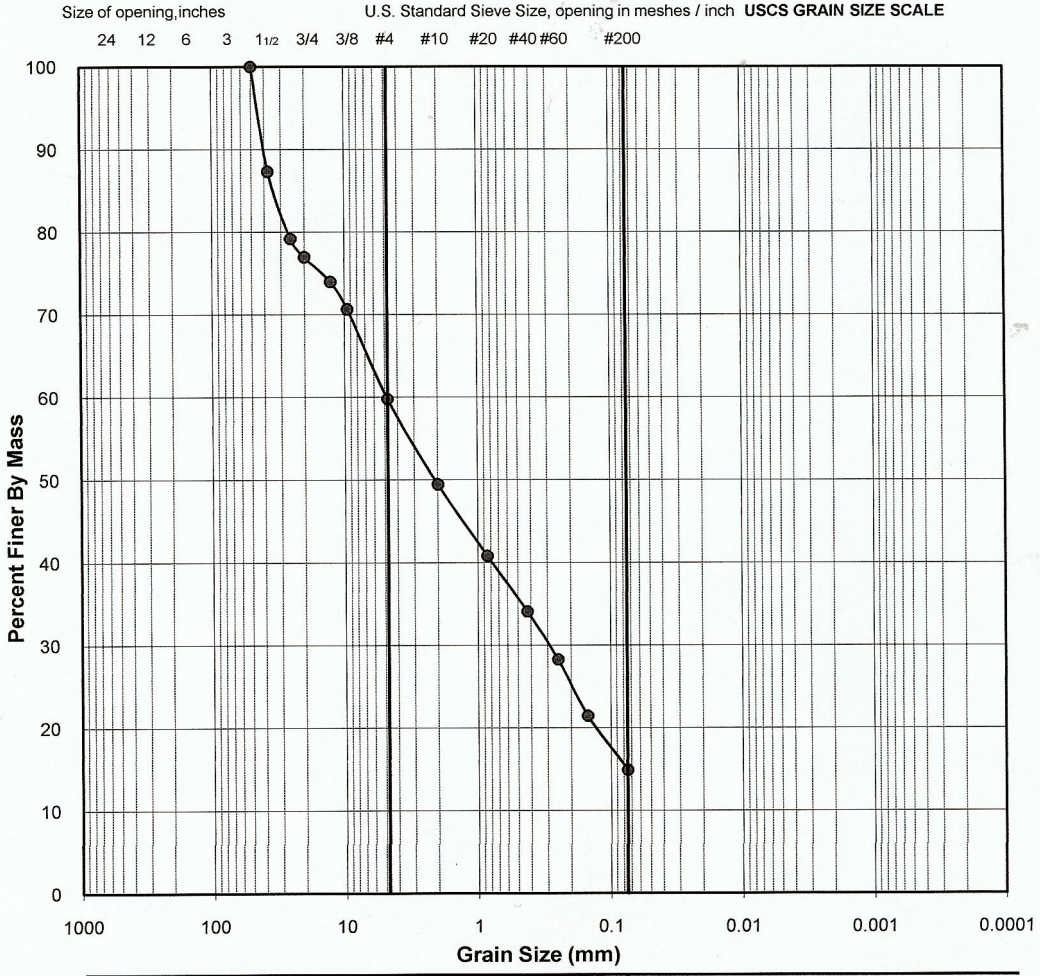
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**209 (2)**
Client:	AEM	**Field Label:**	BG080110-1
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA 209 (2)
Remarks:	Water Conten 7.8%	**Date Sampled:**	August 1, 2010
Sa. Location:	Bay Goose STA.31 +699	**Material Specification:**	Till from trench bottom
		Method:	COMBINED, WASHED
		Date Tested:	August 6, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
6"	152.4	100.0
3"	76.2	100.0
2"	50.0	100.0
1.5"	37.5	87.3
1"	25.4	79.2
3/4"	20.0	77.0
1/2"	12.7	74.0
3/8"	9.5	70.7
#4	4.760	59.8
#10	2.000	49.5
#20	0.850	40.8
#40	0.425	34.1
#60	0.250	28.2
#100	0.150	21.4
#200	0.075	14.9



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

MO	August 6, 2010	YB	Sept. 23, 2010
TESTED BY	DATE	CHECKED BY	DATE

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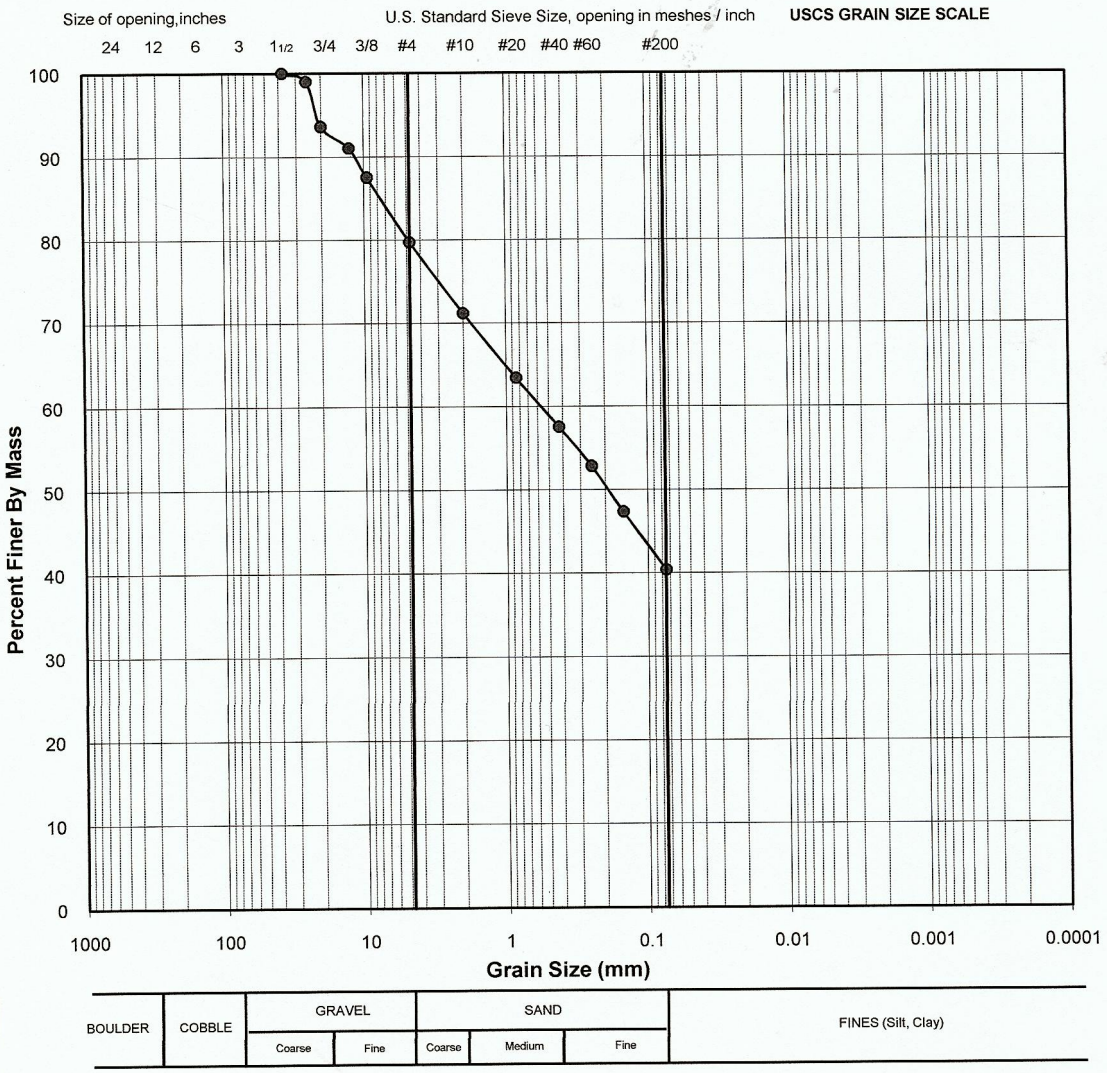
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Burnaby, B.C. Canada V5C 6C8

PARTICLE SIZE ANALYSIS OF SOILS

Reference: ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**250 (2)**
Client:	AEM	**Field Label:**	BG080210-2
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA 250
Remarks:	Water Conten 9.1%	**Date Sampled:**	August 2, 2010
Sa. Location:	Bay Goose STA.31 +438	**Material Specification:**	Till from initial trench bottom
		Method:	COMBINED, WASHED
		Date Tested:	August 7, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
6"	152.4	100.0
3"	76.2	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.4	99.0
3/4"	20.0	93.6
1/2"	12.7	91.0
3/8"	9.500	87.5
#4	4.760	79.8
#10	2.000	71.2
#20	0.850	63.5
#40	0.425	57.5
#60	0.250	52.9
#100	0.150	47.4
#200	0.075	40.4



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

MO	August 7, 2010	YB	Sept. 23, 2010
TESTED BY	DATE	CHECKED BY	DATE

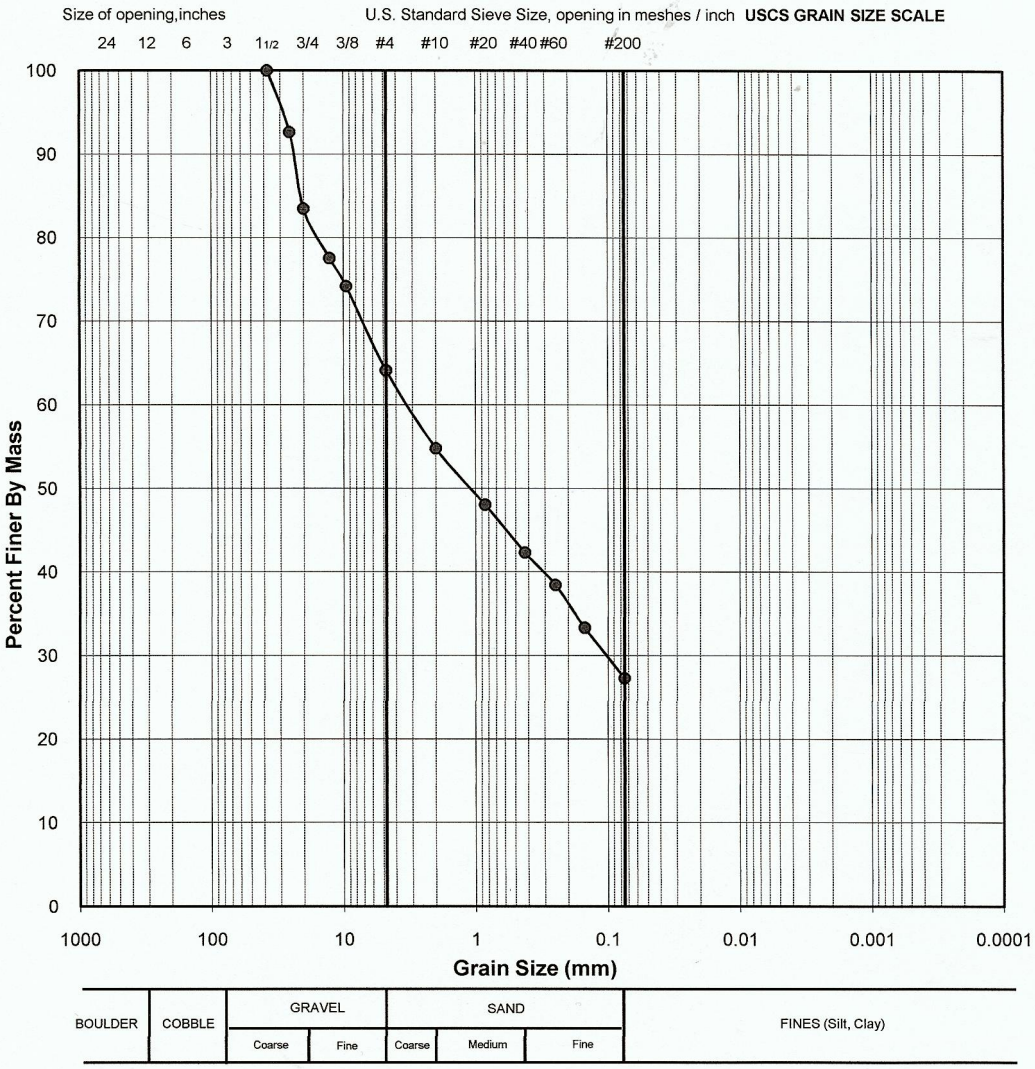
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**254**
Client:	AEM	**Field Label:**	BG080610-1
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA 254
Remarks:	Water Content = 8.4%	**Date Sampled:**	August 6, 2010
Sa. Location:	BG STA.31 +588	**Material Specification:**	Till from initial trench bottom
		Method:	COMBINED, WASHED
		Date Tested:	August 7, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
6"	152.4	100.0
3"	76.2	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.4	92.6
3/4"	20.0	83.5
1/2"	12.7	77.6
3/8"	9.5	74.2
#4	4.760	64.1
#10	2.000	54.8
#20	0.850	48.1
#40	0.425	42.3
#60	0.250	38.5
#100	0.150	33.3
#200	0.075	27.3



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

MO	August 7, 2010	YB	Sept. 23, 2010
TESTED BY	DATE	CHECKED BY	DATE

M:\Meadowbank 2010 QAQC DataBase\Laboratory\LabTesting-Reviewed by QA Manager\SA 254.xlsm

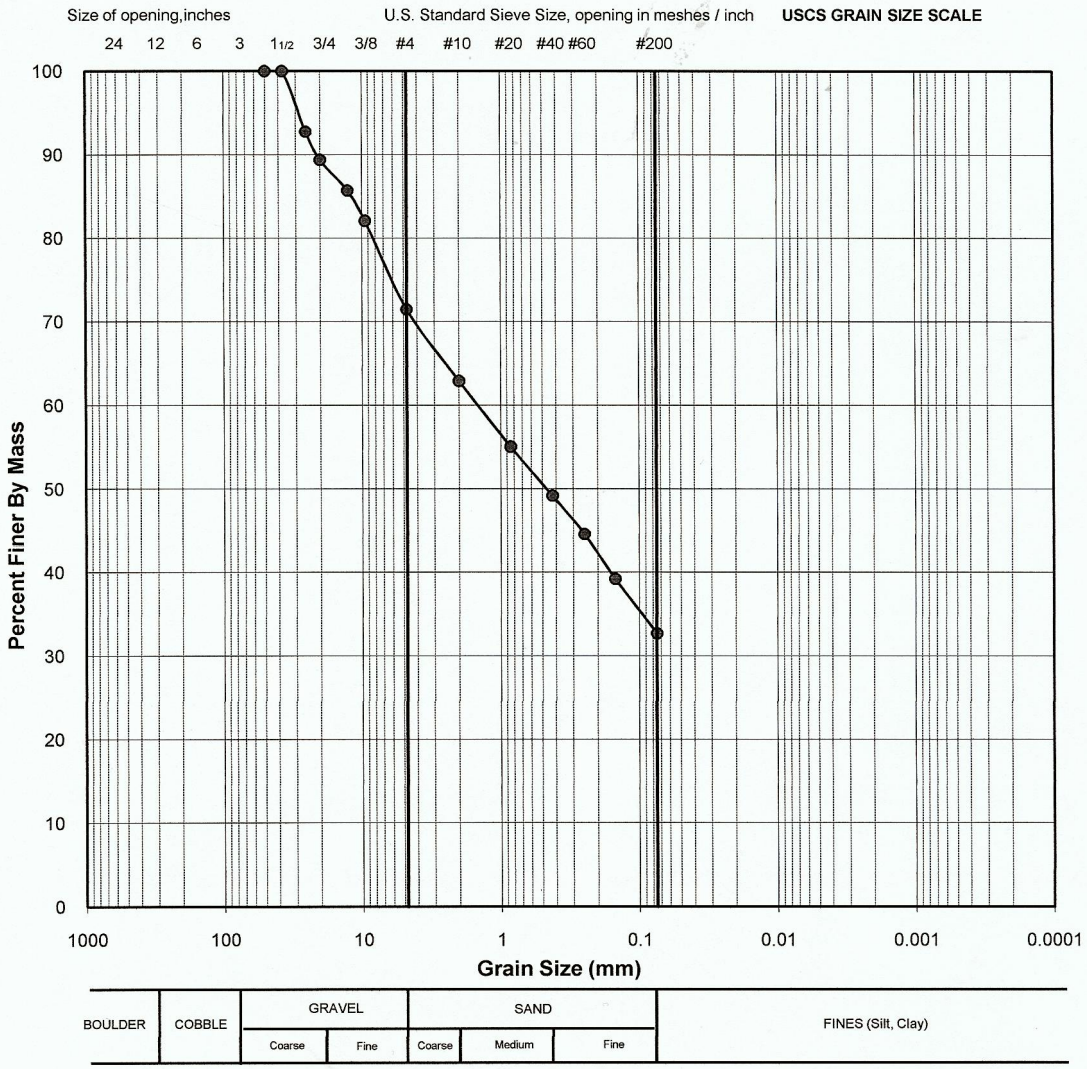
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4280 Still Creek Drive
Burnaby, B.C. Canada V5C 6C8

PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**255 (2)**
Client:	AEM	**Field Label:**	BG080610-2
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA 255 (2)
Remarks:	Water Conten 8.5%	**Date Sampled:**	August 6, 2010
Sa. Location:	BG STA.31 +590	**Material Specification:**	Till from initial trench bottom
		Method:	COMBINED, WASHED
		Date Tested:	August 7, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
6"	152.4	100.0
3"	76.2	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.4	92.8
3/4"	20.0	89.4
1/2"	12.7	85.7
3/8"	9.5	82.1
#4	4.760	71.5
#10	2.000	62.9
#20	0.850	55.0
#40	0.425	49.2
#60	0.250	44.6
#100	0.150	39.2
#200	0.075	32.7



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

MO	August 7, 2010	YB	Sept. 23, 2010
TESTED BY	DATE	CHECKED BY	DATE

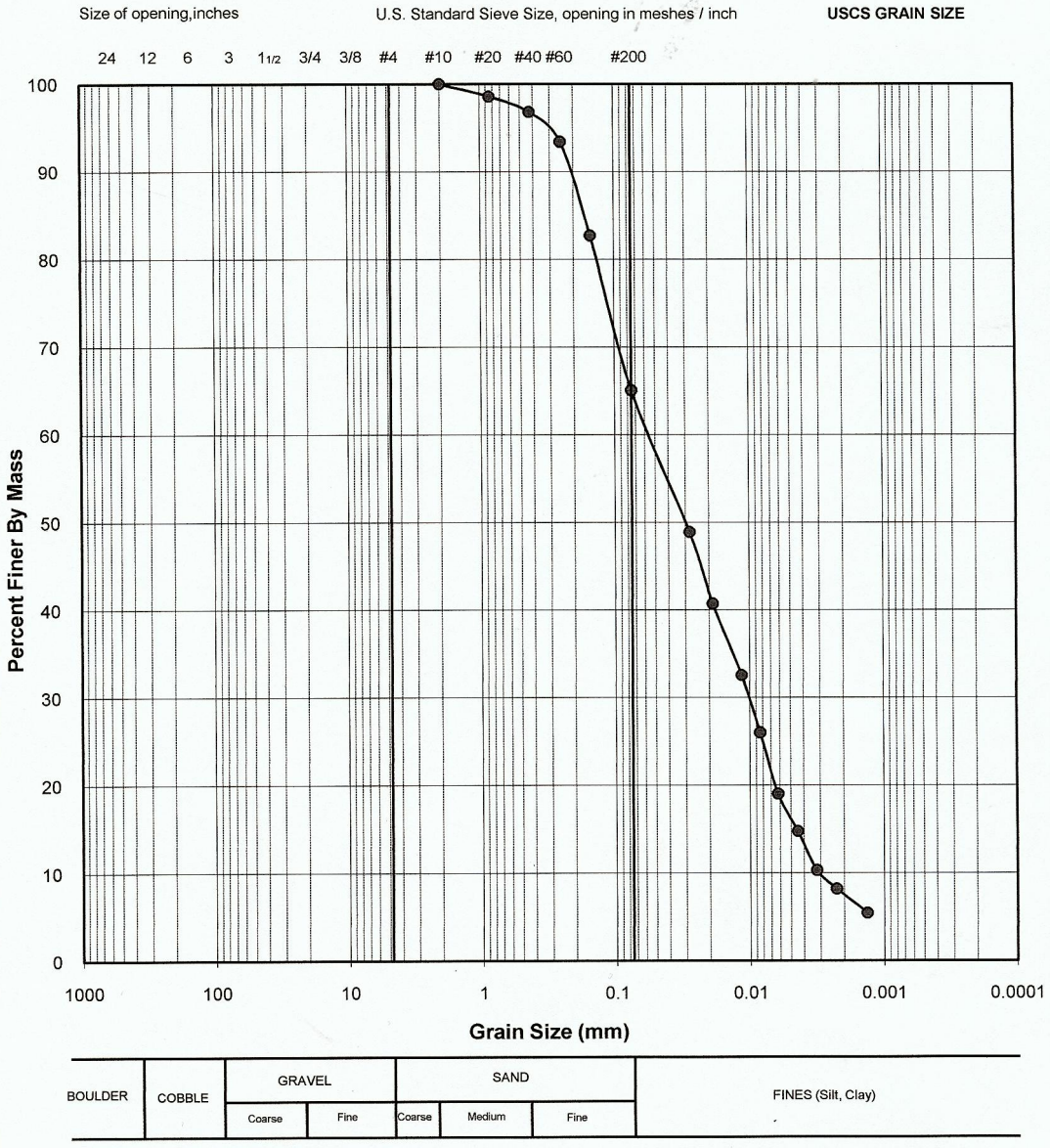
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PARTICLE SIZE ANALYSIS OF SOILS

Reference: ASTM D 422-63 (2007)

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**257**
Client:	AEM	**Field Label**	BG080610-4
Project:	Meadowbank Gold Project	**Depth (m):**	7
Location:	Nunavut	**Lab ID No:**	SA 257
Specific Gravity (assumed):	2.70	**Other**	BG STA. 31+585; fine material from trench bottom
Date sample	August 6, 2010	**Remarks:**	Water content: 20.4%
Dispersion Method:	Stirring		
Dispersion Period (min):	5.00		

Sieve Size (USS)	Sieve Size (mm)	% Passing
3.5"	87.50	100.0
3"	76.20	100.0
2"	50.00	100.0
1.5"	37.50	100.0
1"	25.40	100.0
3/4"	20.00	100.0
1/2"	12.70	100.0
3/8"	9.50	100.0
#4	4.76	100.0
#10	2.00	100.0
#20	0.850	98.6
#40	0.425	96.8
#60	0.250	93.4
#100	0.150	82.7
#200	0.075	65.1
-	0.0279	48.9
-	0.0188	40.7
-	0.0115	32.6
-	0.0084	26.0
-	0.0062	19.0
-	0.0044	14.8
-	0.0032	10.3
-	0.0023	8.2
-	0.0013	5.5
-		



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

B.Dieudonné	August 21, 2010	YB	Sept. 23, 2010
TESTED BY	DATE	CHECKED BY	DATE

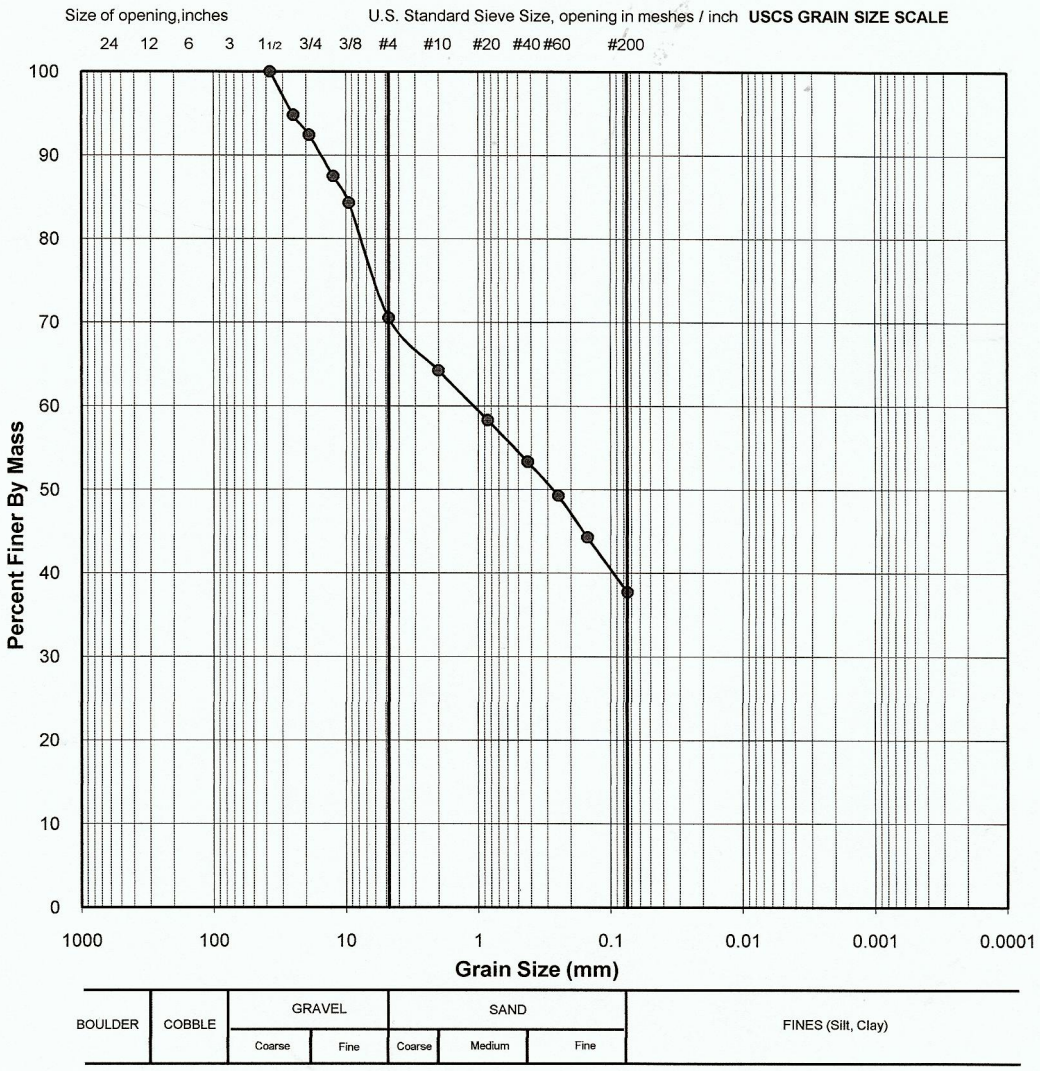
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**259**
Client:	AEM	**Field Label:**	BG080710-2
Project:	Meadowbank Gold Project	**Depth (m):**	10
Location:	Nunavut	**Lab ID No:**	SA 259
Remarks:	Water Content = 9.8% but taken under water	**Date Sampled:**	August 7, 2010
Sa. Location:	BG 31 +600 upstream side	**Material Specification:**	Till from initial trench bottom
		Method:	COMBINED, WASHED
		Date Tested:	August 9, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
6"	152.4	100.0
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	94.8
3/4"	19.0	92.4
1/2"	12.5	87.5
3/8"	9.5	84.3
#4	4.750	70.6
#10	2.000	64.3
#20	0.850	58.3
#40	0.425	53.3
#60	0.250	49.3
#100	0.150	44.3
#200	0.075	37.8



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

MO	August 9, 2010	YB	Sept. 23, 2010
TESTED BY	DATE	CHECKED BY	DATE

M:\Meadowbank 2010 QAQC DataBase\Laboratory\LabTesting-Reviewed by QA Manager\SA 259.xlsm

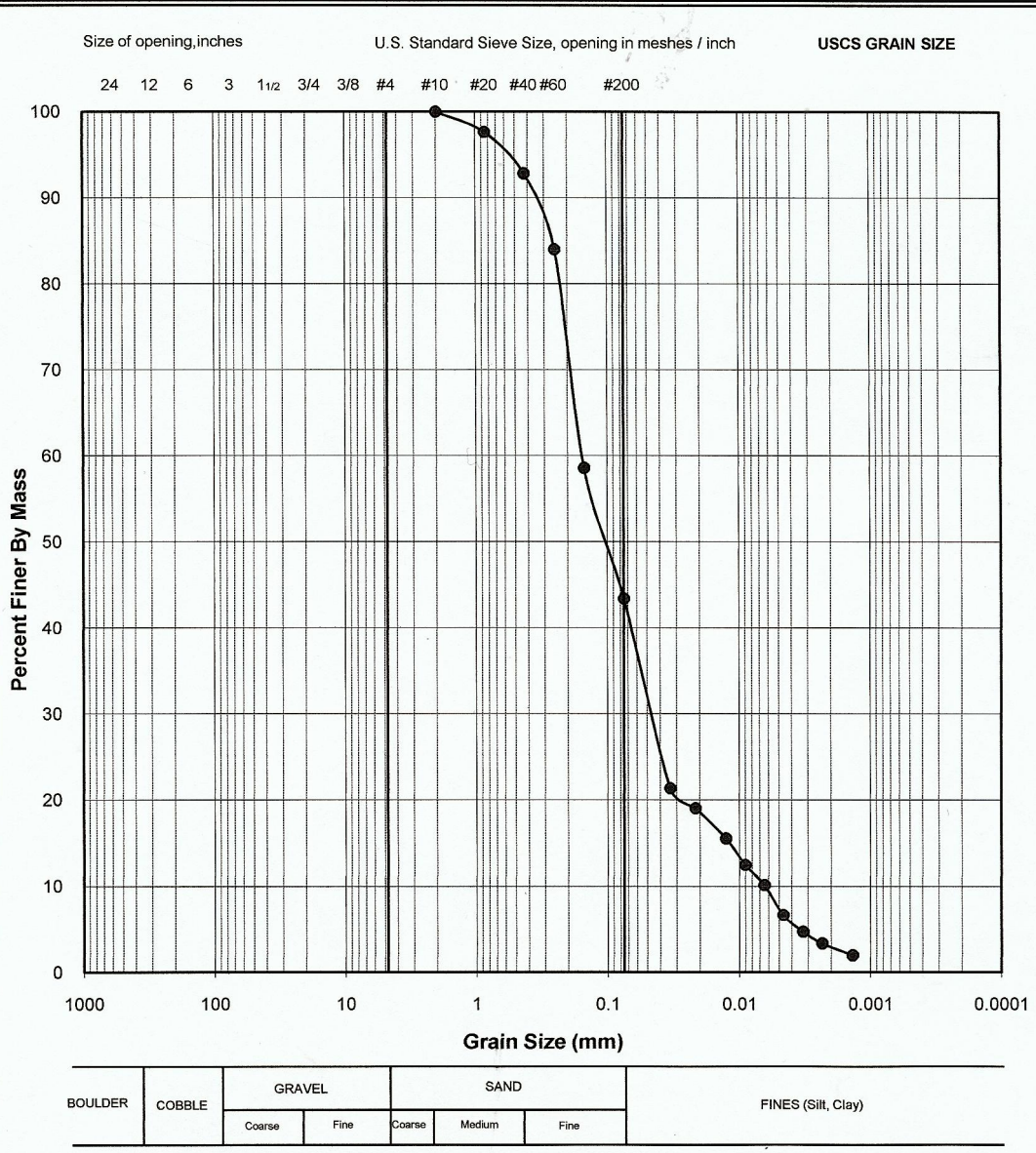
Golder Associates Ltd. - Kelowna Laboratory
1755 Springfield Road
Kelowna, B.C. Canada V1Y 5V5

PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM D 422-63 (2007)

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**260**
Client:	AEM	**Field Label**	BG080710-3
Project:	Meadowbank Gold Project	**Depth (m):**	9-10
Location:	Nunavut	**Lab ID No:**	SA 260
Specific Gravity (assumed):	2.70	**Other**	BG STA. 31+600, Silty sand, water content = 20.7%
Date sampled:	August 7, 2010	**Remarks:**	Initial trench bottom, 9-10 m under water
Dispersion Method:	Stirring		
Dispersion Period (min):	5.00		

Sieve Size (USS)	Sieve Size (mm)	% Passing
3.5"	87.50	100.0
3"	76.20	100.0
2"	50.00	100.0
1.5"	37.50	100.0
1"	25.40	100.0
3/4"	20.00	100.0
1/2"	12.70	100.0
3/8"	9.50	100.0
#4	4.76	100.0
#10	2.00	100.0
#20	0.850	97.6
#40	0.425	92.8
#60	0.250	84.0
#100	0.150	58.6
#200	0.075	43.4
-	0.0335	21.3
-	0.0215	19.0
-	0.0126	15.5
-	0.0090	12.4
-	0.0064	10.1
-	0.0046	6.6
-	0.0033	4.7
-	0.0023	3.3
-	0.0014	2.0



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

B.Dieudonné	August 21, 2010	YB	Sept. 24, 2010
TESTED BY	DATE	CHECKED BY	DATE

M:\Meadowbank 2010 QAQC DataBase\Laboratory\Lab Testing-Rev by QA Manager\File

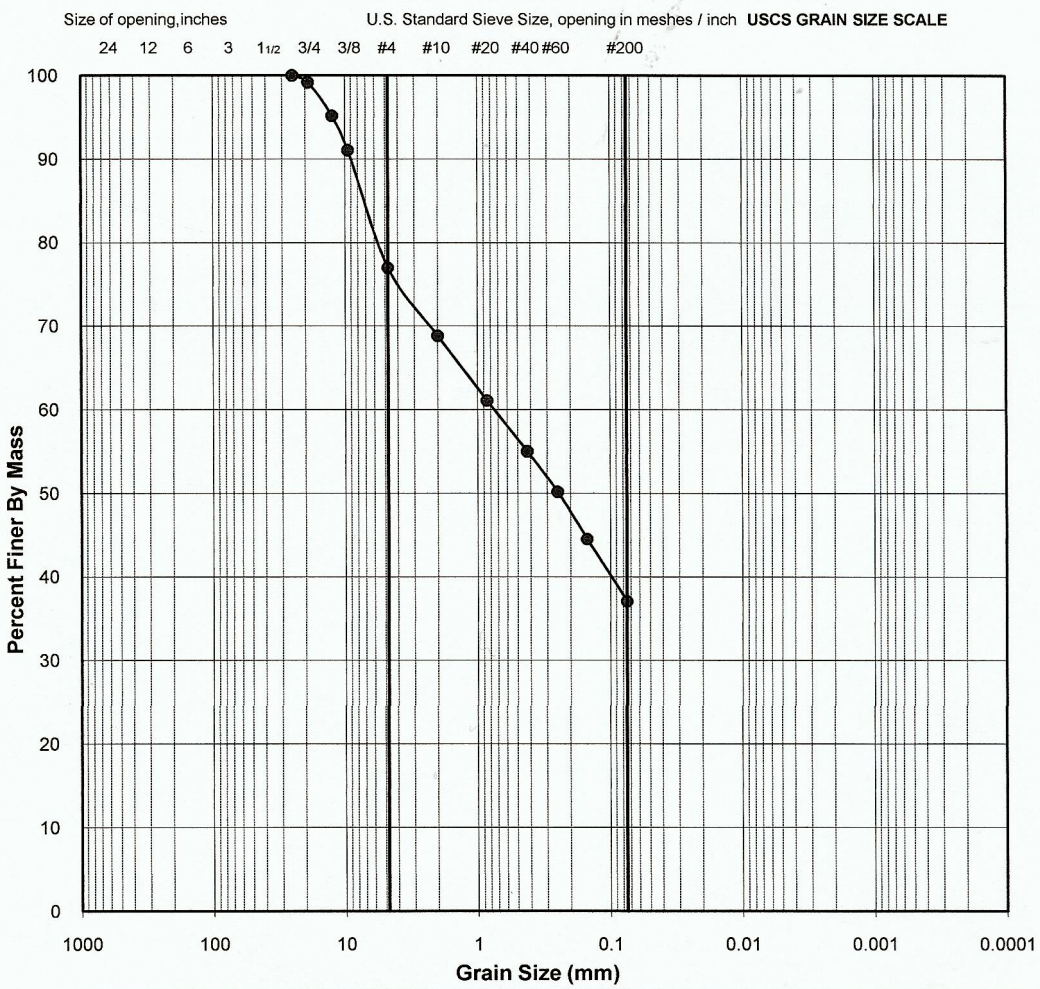
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Burnaby, B.C. Canada V5C 6C8

PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**266**
Client:	AEM	**Field Label:**	BG080810-4
Project:	Meadowbank Gold Project	**Depth (m):**	9-10
Location:	Nunavut	**Lab ID No:**	SA 266
Remarks:	Water Content = 9.3%	**Date Sampled:**	August 8, 2010
Sa. Location:	BG STA.31 +607-608, 9-10m under water	**Material Specification:**	Till from initial trench bottom
		Method:	COMBINED, WASHED
		Date Tested:	August 9, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
6"	152.4	100.0
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.0	99.2
1/2"	12.5	95.2
3/8"	9.5	91.1
#4	4.750	77.0
#10	2.000	68.8
#20	0.850	61.1
#40	0.425	55.0
#60	0.250	50.2
#100	0.150	44.5
#200	0.075	37.1



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

MO	August 9, 2010	YB	Sept. 24, 2010
TESTED BY	DATE	CHECKED BY	DATE

M:\Meadowbank 2010 QAQC DataBase\Laboratory\LabTesting-Rev by QA Manager\SA 266

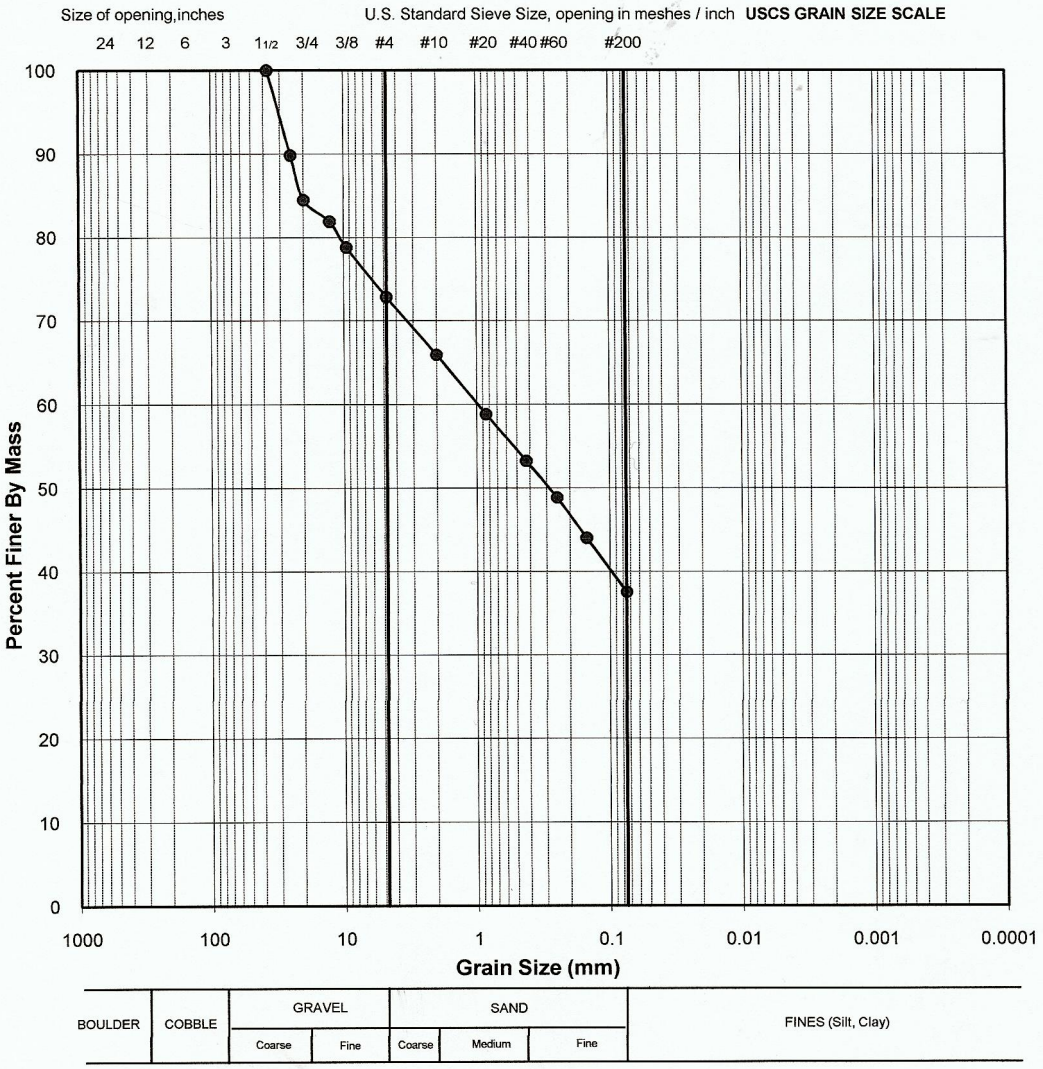
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Burnaby, B.C. Canada V5C 6C8

PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**267**
Client:	AEM	**Field Label:**	BG081210-1
Project:	Meadowbank Gold Project	**Depth (m):**	12
Location:	Nunavut	**Lab ID No:**	SA 267
Remarks:	water content: 10.1%	**Date Sampled:**	August 12, 2010
Sa. Location:	BG STA.31 +833, 12m under water	**Material Specification:**	Till from initial trench bottom
		Method:	COMBINED, WASHED
		Date Tested:	August 12, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
6"	152.4	100.0
3"	76.2	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	89.8
3/4"	20.0	84.5
1/2"	12.7	81.9
3/8"	9.5	78.8
#4	4.760	72.9
#10	2.000	65.9
#20	0.850	58.8
#40	0.425	53.2
#60	0.250	48.9
#100	0.150	44.0
#200	0.075	37.5



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B.Dieudonné	August 12, 2010	YB	Sept. 24, 2010
TESTED BY	DATE	CHECKED BY	DATE

M:\Meadowbank 2010 QAQC DataBase\Laboratory\LabTesting-Rev by QA Manager\SA 267

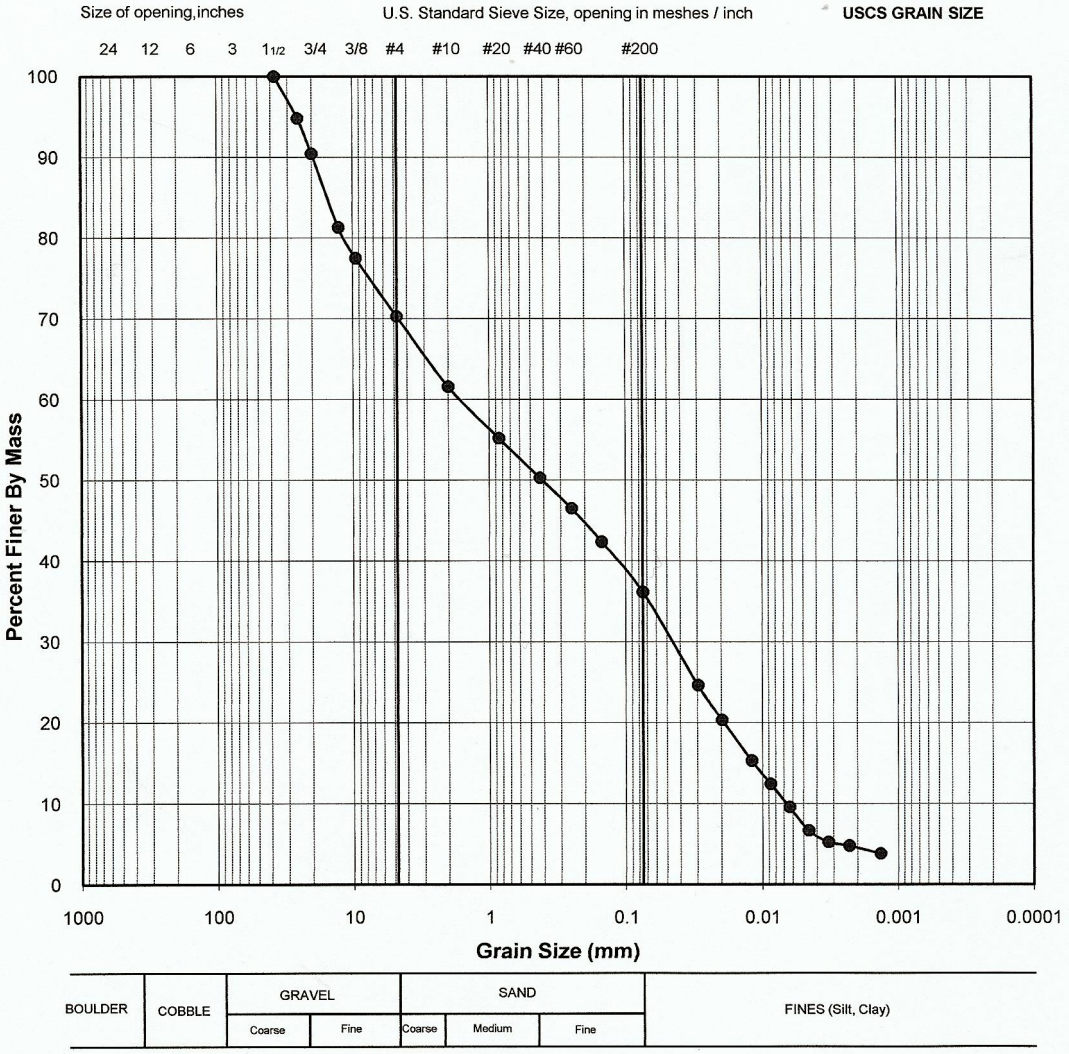
Golder Associates Ltd. - Kelowna Laboratory
1755 Springfield Road
Kelowna, B.C. Canada V1Y 5V5

PARTICLE SIZE ANALYSIS OF SOILS

Reference: ASTM D 422-63 (2007)

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**269**
Client:	AEM	**Field Label**	BG081210-2
Project:	Meadowbank Gold Project	**Depth (m):**	12.5
Location:	Nanavut	**Lab ID No:**	SA 269
Specific Gravity (assumed):	2.70	**Other**	BG STA.31+839, 12m under water
Date sampled:	August 12, 2010	**Remarks:**	Till from initial bottom trench, Water content: 9.5%
Dispersion Method:	Stirring		
Dispersion Period (min):	5.00		

Sieve Size (USS)	Sieve Size (mm)	% Passing
3.5"	87.50	100.0
3"	76.20	100.0
2"	50.00	100.0
1.5"	37.50	100.0
1"	25.40	94.8
3/4"	20.00	90.5
1/2"	12.70	81.3
3/8"	9.50	77.5
#4	4.76	70.3
#10	2.00	61.6
#20	0.850	55.2
#40	0.425	50.3
#60	0.250	46.5
#100	0.150	42.4
#200	0.075	36.2
-	0.0297	24.6
-	0.0197	20.3
-	0.0120	15.3
-	0.0087	12.4
-	0.0063	9.6
-	0.0046	6.7
-	0.0033	5.3
-	0.0023	4.8
-	0.0014	3.8



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

B.Dieudonné	Aug.21, 2010	YB	Sept. 24, 2010
TESTED BY	DATE	CHECKED BY	DATE

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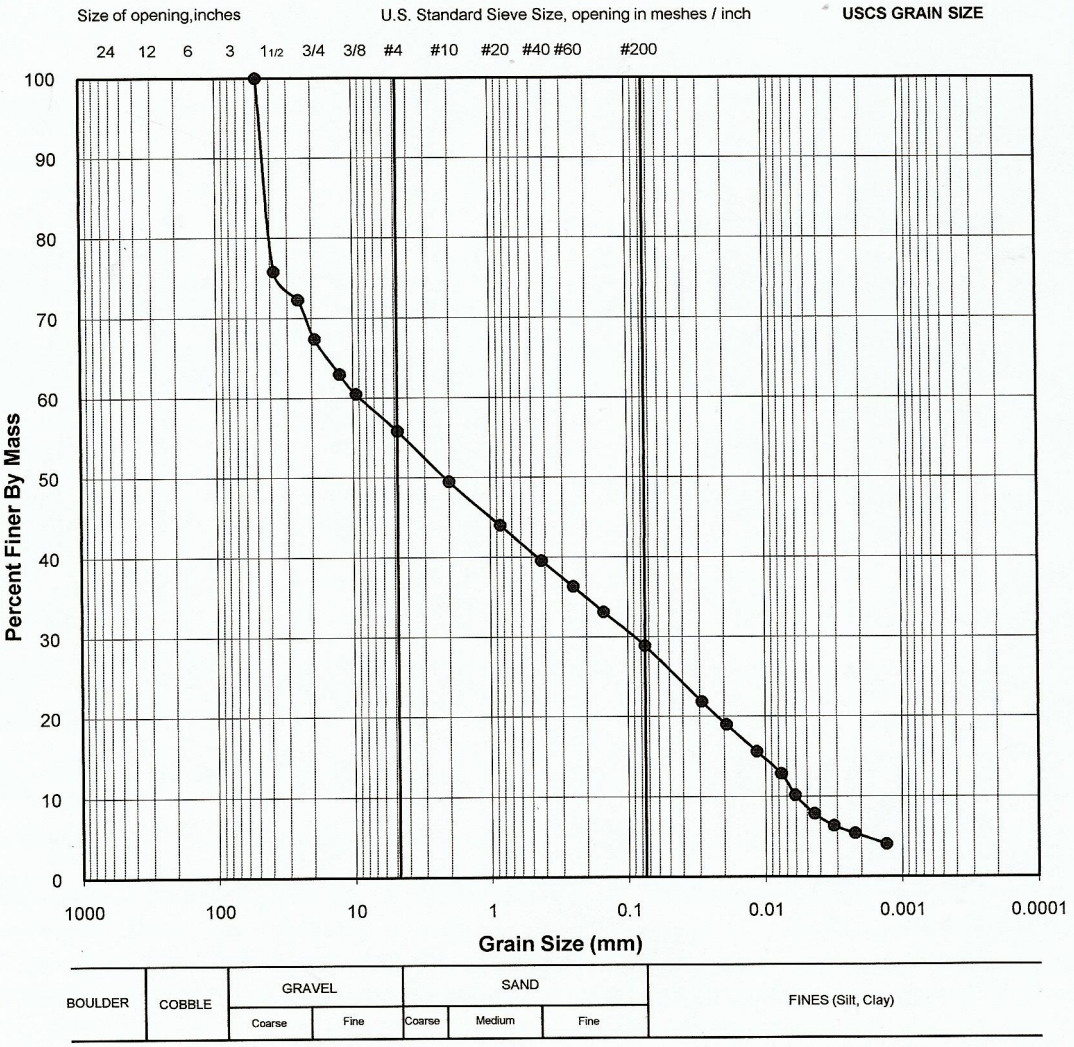
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PARTICLE SIZE ANALYSIS OF SOILS

Reference: ASTM D 422-63 (2007)

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**271**
Client:	AEM	**Field Label**	BG081510
Project:	Meadowbank Gold Project	**Depth (m):**	14
Location:	Nunavut	**Lab ID No:**	SA 271
Specific Gravity (assumed):	2.70	**Other**	BG STA.31+855, 14m under water
Date sampled:	August 15, 2010	**Remarks:**	Till from initial trench bottom, water content: 10.4%
Dispersion Method:	Stirring		
Dispersion Period (min):	5.00		

Sieve Size (USS)	Sieve Size (mm)	% Passing
3.5"	87.50	100.0
3"	75.00	100.0
2"	50.00	100.0
1.5"	37.50	75.8
1"	25.00	72.3
3/4"	19.00	67.4
1/2"	12.50	63.0
3/8"	9.50	60.5
#4	4.75	55.8
#10	2.00	49.5
#20	0.850	44.0
#40	0.425	39.6
#60	0.250	36.3
#100	0.150	33.1
#200	0.075	28.9
-	0.0290	21.9
-	0.0192	19.0
-	0.0115	15.6
-	0.0077	12.9
-	0.0061	10.2
-	0.0044	7.9
-	0.0032	6.4
-	0.0022	5.4
-	0.0013	4.1



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

B.Dieudonné	August 22, 2010	YB	Sept. 24, 2010
TESTED BY	DATE	CHECKED BY	DATE

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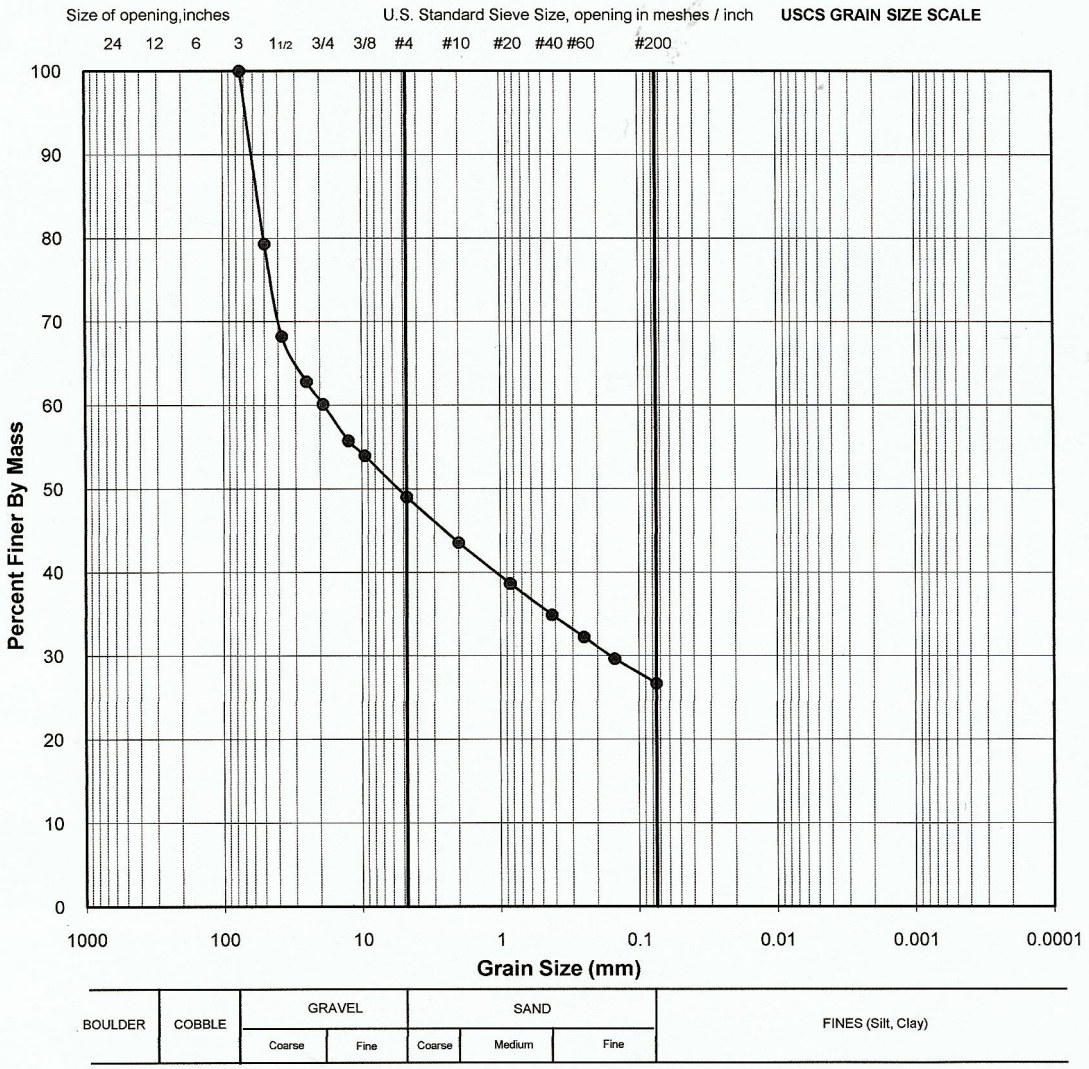
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Burnaby, B.C. Canada V5C 6C8

PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**272**
Client:	AEM	**Field Label:**	BG081610-1
Project:	Meadowbank Gold Project	**Depth (m):**	14
Location:	Nunavut	**Lab ID No:**	SA 272
Remarks:	water content: 12.5%	**Date Sampled:**	August 16, 2010
Sa. Location:	BG STA.31+863, 14m under water	**Material Specification:**	Till from initial trench bottom
		Method:	COMBINED, WASHED
		Date Tested:	August 19, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
6"	152.4	100.0
3"	75.0	100.0
2"	50.0	79.3
1.5"	37.5	68.2
1"	25.0	62.8
3/4"	19.0	60.1
1/2"	12.5	55.7
3/8"	9.5	54.0
#4	4.75	49.0
#10	2.00	43.5
#20	0.850	38.6
#40	0.425	34.9
#60	0.250	32.2
#100	0.150	29.7
#200	0.075	26.7



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

B.Dieudonné	August 19, 2010	YB	Sept. 24, 2010
TESTED BY	DATE	CHECKED BY	DATE

M:\Meadowbank 2010 QAQC DataBase\Laboratory\LabTesting-Rev by QA Manager\SA 272

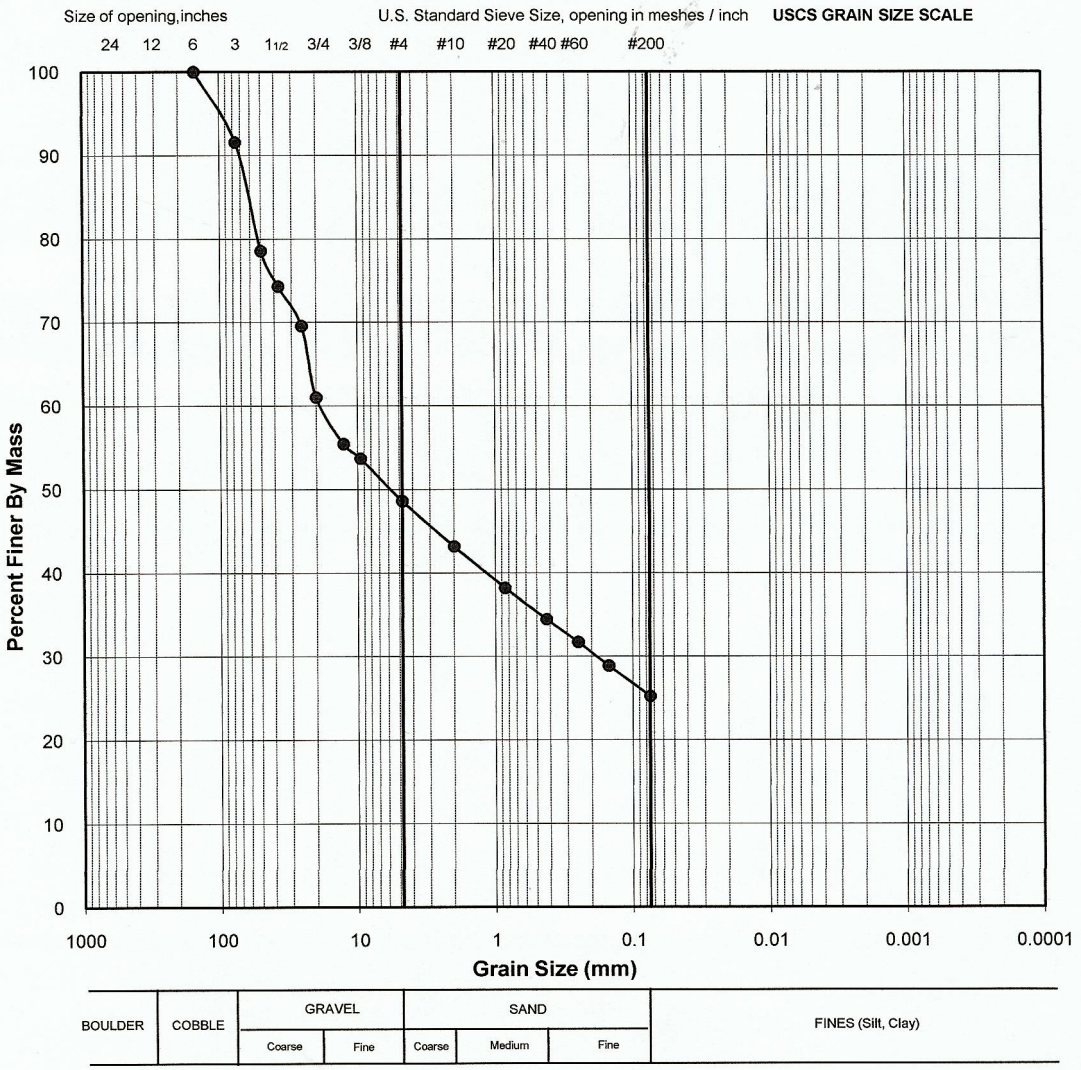
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PARTICLE SIZE ANALYSIS OF SOILS

Reference: ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**274**
Client:	AEM	**Field Label:**	BG081710-1
Project:	Meadowbank Gold Project	**Depth (m):**	13
Location:	Nunavut	**Lab ID No:**	SA 274
Remarks:	Water Content = 10.4%	**Date Sampled:**	August 17, 2010
Sa. Location:	BG STA.31+873, 13m under water	**Material Specification:**	Till from initial bottom trench
		Method:	COMBINED, WASHED
		Date Tested:	September 1, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
6"	152.4	100.0
3"	76.2	91.6
2"	50.0	78.6
1.5"	37.5	74.3
1"	25.4	69.6
3/4"	20.0	61.0
1/2"	12.7	55.4
3/8"	9.5	53.7
#4	4.76	48.6
#10	2.00	43.2
#20	0.850	38.2
#40	0.425	34.4
#60	0.250	31.7
#100	0.150	28.9
#200	0.075	25.2



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

MO	September 1, 2010	YB	Sept. 24, 2010
TESTED BY	DATE	CHECKED BY	DATE

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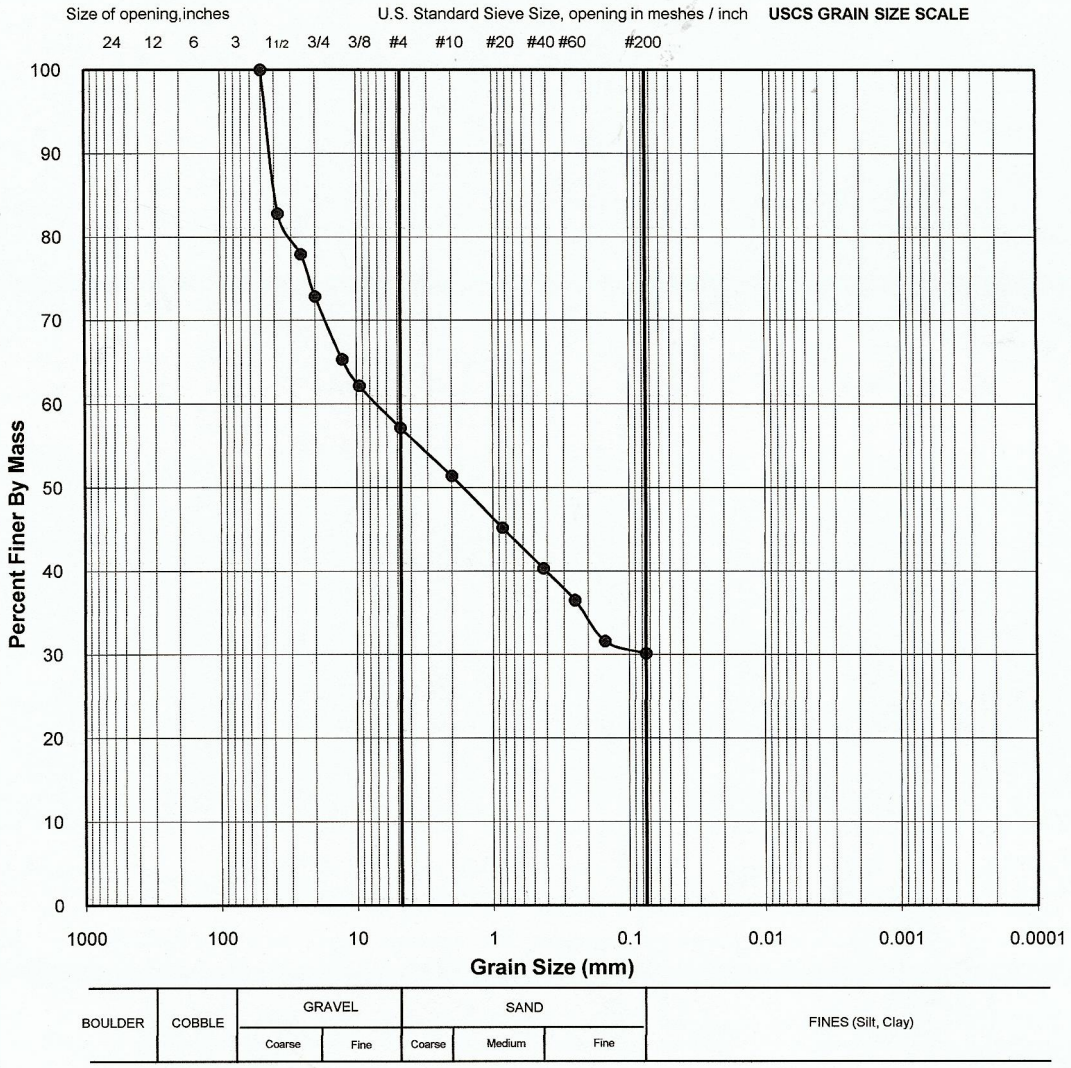
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**275**
Client:	AEM	**Field Label:**	BG081210-3
Project:	Meadowbank Gold Project	**Depth (m):**	2-3
Location:	Nunavut	**Lab ID No:**	SA 275
Remarks:	Water Content = 25.2%	**Date Sampled:**	August 12, 2010
Sa. Location:	BG STA.30 +860, 2-3m under water	**Material Specification:**	Sandy silt from initial trench bottom
		Method:	COMBINED, WASHED
		Date Tested:	August 24, 2010

Sieve Size (USS)	(mm)	Passing %
6"	152.4	100.0
3"	76.2	100.0
2"	50.0	100.0
1.5"	37.5	82.8
1"	25.4	77.9
3/4"	20.0	72.9
1/2"	12.7	65.3
3/8"	9.5	62.2
#4	4.76	57.1
#10	2.00	51.4
#20	0.850	45.2
#40	0.425	40.3
#60	0.250	36.5
#100	0.150	31.6
#200	0.075	30.1



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

B.Dieudonné	August 24, 2010	YB	Sept. 24, 2010
TESTED BY	DATE	CHECKED BY	DATE

M:\Meadowbank 2010 QAQC DataBase\Laboratory\LabTesting-Rev by QA Manager\SA 275

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Kelowna, B.C. Canada V1Y 5V5

PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM D 422-63 (2007)

Project No.:	09-1428-5007 (2000)	**Sample No:**	**277**
Client:	AEM	**Field Label.:**	BG081810
Project:	Meadowbank Gold Project	**Depth (m):**	13
Location:	Nunavut	**Lab ID No:**	SA 277

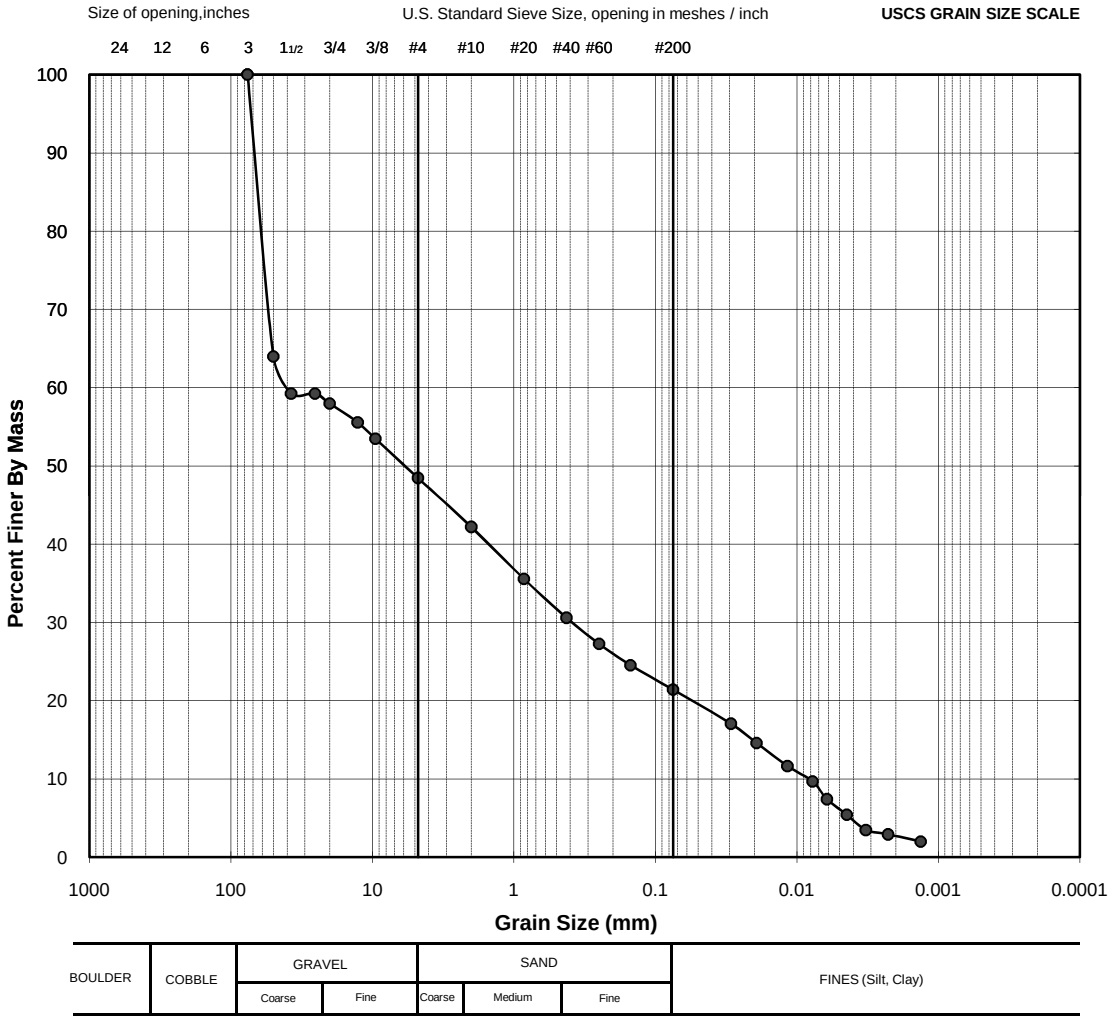
Specific Gravity (assumed): 2.70
Date sampled: August 18, 2010
Other BG STA.31+883, under water
Remarks: Till from initial bottom trench, Water content=10.8 %

Dispersion Method: Stirring
Dispersion Period (min): 5.00

Remark #2: This analysis indicate an error of sampling.

Remark #3: 25.4mm sieve do not retained any particles.

Sieve Size (USS)	Sieve Size (mm)	% Passing
3.5"	87.50	100.0
3"	76.20	100.0
2"	50.00	64.0
1.5"	37.50	59.2
1"	25.40	59.2
3/4"	20.00	58.0
1/2"	12.70	55.6
3/8"	9.50	53.5
#4	4.76	48.5
#10	2.00	42.2
#20	0.850	35.5
#40	0.425	30.6
#60	0.250	27.3
#100	0.150	24.5
#200	0.075	21.4
-	0.0293	17.0
-	0.0193	14.6
-	0.0117	11.6
-	0.0077	9.7
-	0.0061	7.4
-	0.0044	5.4
-	0.0033	3.5
-	0.0023	2.9
-	0.0013	2.0



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

B.Dieudonné	August 24, 2010	YB	Sept. 24, 2010
TESTED BY	DATE	CHECKED BY	DATE

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PARTICLE SIZE ANALYSIS OF SOILS

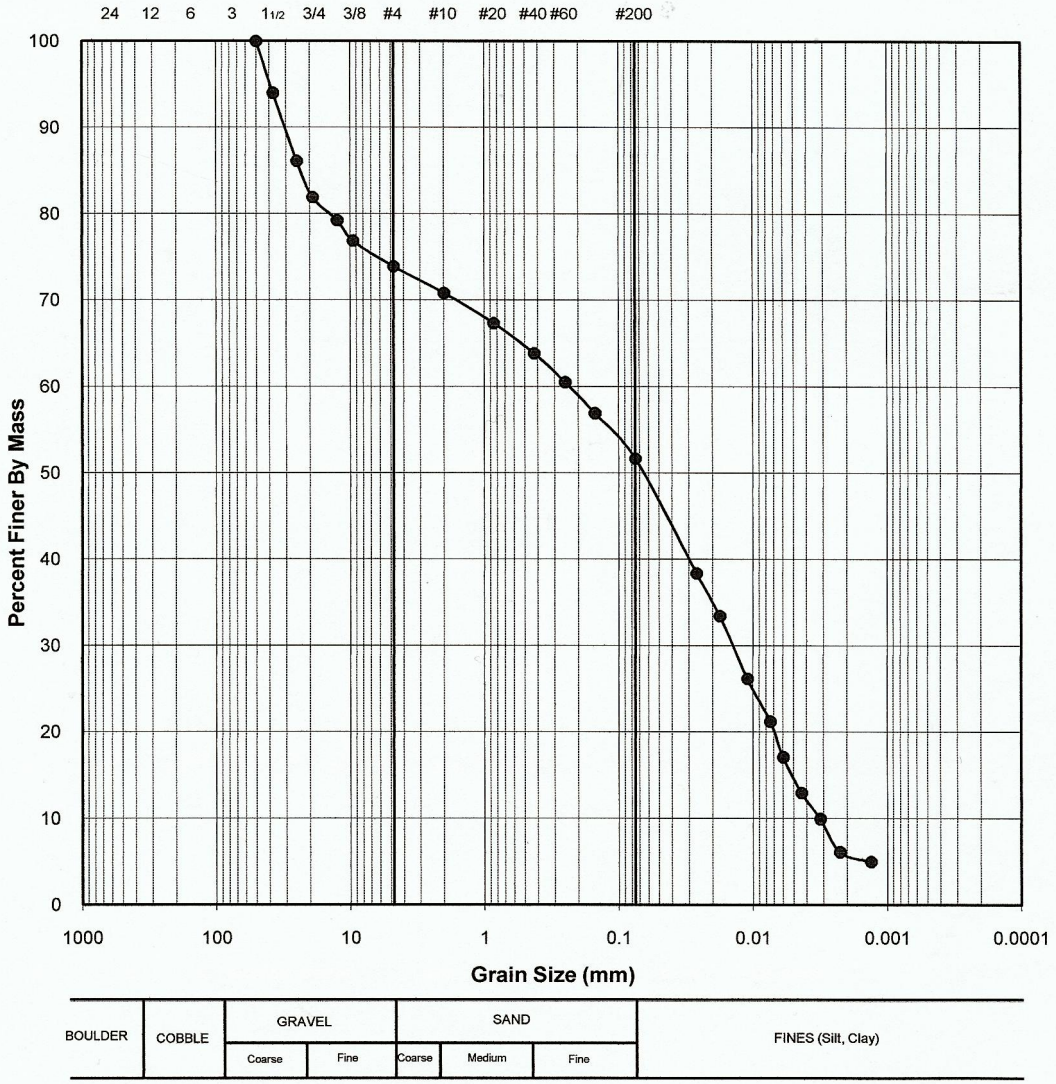
Reference
ASTM D 422-63 (2007)

Project No.:	09-1428-5007 (2000)	**Sample No:**	**278**
Client:	AEM	**Field Label**	BG081910-1
Project:	Meadowbank Gold Project	**Depth (m):**	13
Location:	Nunavut	**Lab ID No:**	SA 278

Specific Gravity (assumed): 2.70
Date sampled: August 19, 2010
Other BG STA.31+893, 13m under water
Remarks Till from initial bottom trench, Water content : 17.5%

Dispersion Method: Stirring
Dispersion Period (min): 5.00

Sieve Size (USS)	Sieve Size (mm)	% Passing
3.5"	87.50	100.0
3"	75.00	100.0
2"	50.00	100.0
1.5"	37.50	94.0
1"	25.00	86.1
3/4"	19.00	81.9
1/2"	12.50	79.3
3/8"	9.50	76.9
#4	4.75	73.9
#10	2.00	70.8
#20	0.850	67.3
#40	0.425	63.8
#60	0.250	60.5
#100	0.150	56.9
#200	0.075	51.7
-	0.0262	38.4
-	0.0176	33.4
-	0.0110	26.1
-	0.0074	21.2
-	0.0060	17.1
-	0.0044	12.9
-	0.0032	9.9
-	0.0022	6.1
-	0.0013	5.0



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

DB	August 25,10	YB	Sept. 24, 2010
TESTED BY	DATE	CHECKED BY	DATE

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PARTICLE SIZE ANALYSIS OF SOILS

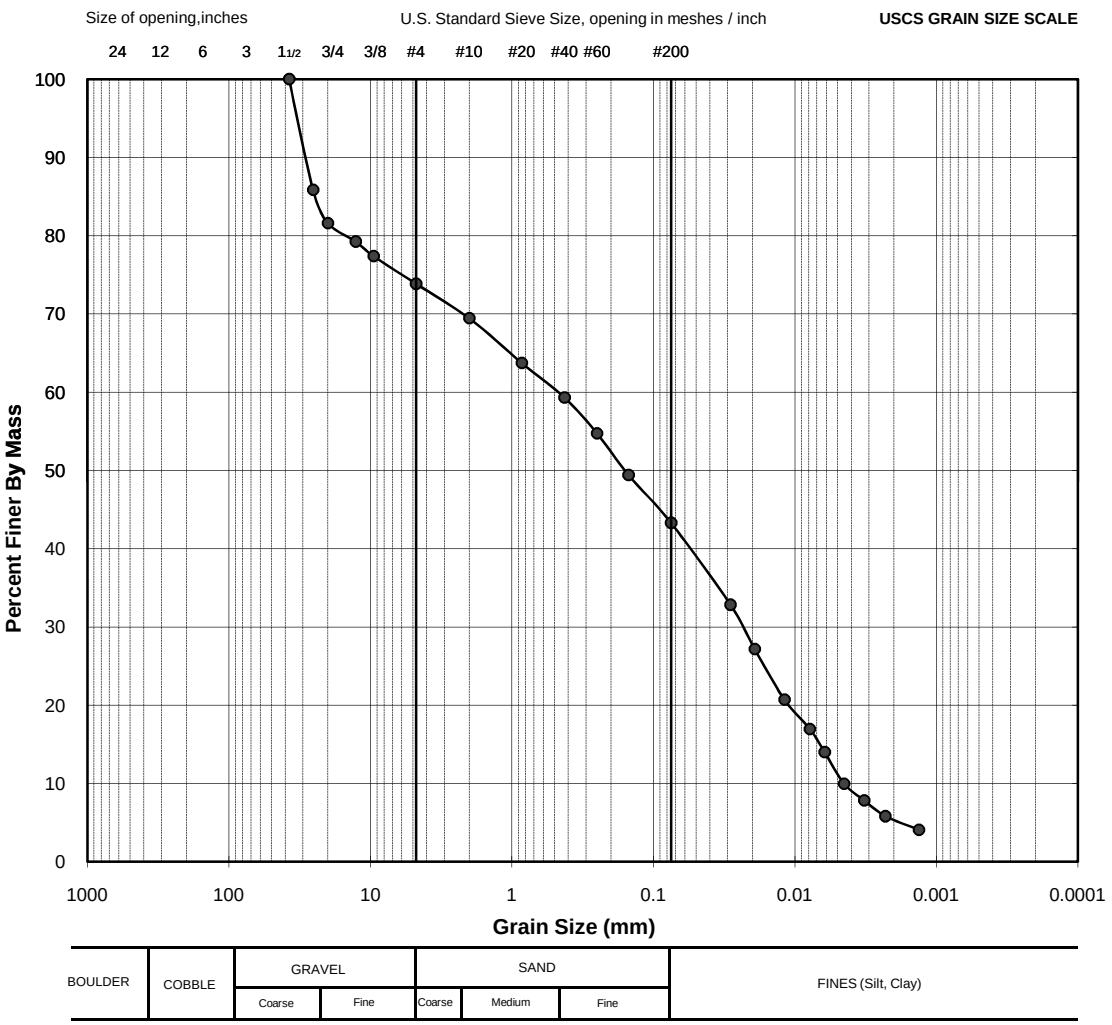
Reference
ASTM D 422-63 (2007)

Project No.:	09-1428-5007 (2000)	**Sample No:**	**281**
Client:	AEM	**Field Label.:**	BG082010-2
Project:	Meadowbank Gold Project	**Depth (m):**	12
Location:	Nunavut	**Lab ID No:**	SA 281

Specific Gravity (assumed):	2.70	**Other**	BG STA.31+907, 12m under water
Date sampled:	August 20, 2010	**Remarks:**	Till from initial bottom trench, Water content = 17 %

Dispersion Method:	Stirring
Dispersion Period (min):	5.00

Sieve Size (USS)	Sieve Size (mm)	% Passing
3.5"	87.50	100.0
3"	76.20	100.0
2"	50.00	100.0
1.5"	37.50	100.0
1"	25.40	85.8
3/4"	20.00	81.6
1/2"	12.70	79.3
3/8"	9.50	77.4
#4	4.76	73.9
#10	2.00	69.4
#20	0.850	63.7
#40	0.425	59.3
#60	0.250	54.7
#100	0.150	49.4
#200	0.075	43.3
-	0.0285	32.8
-	0.0192	27.2
-	0.0119	20.7
-	0.0078	17.0
-	0.0062	14.0
-	0.0045	10.0
-	0.0032	7.8
-	0.0023	5.8
-	0.0013	4.1



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

MO	August 26, 2010	YB	Sept. 25, 2010
TESTED BY	DATE	CHECKED BY	DATE

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PARTICLE SIZE ANALYSIS OF SOILS

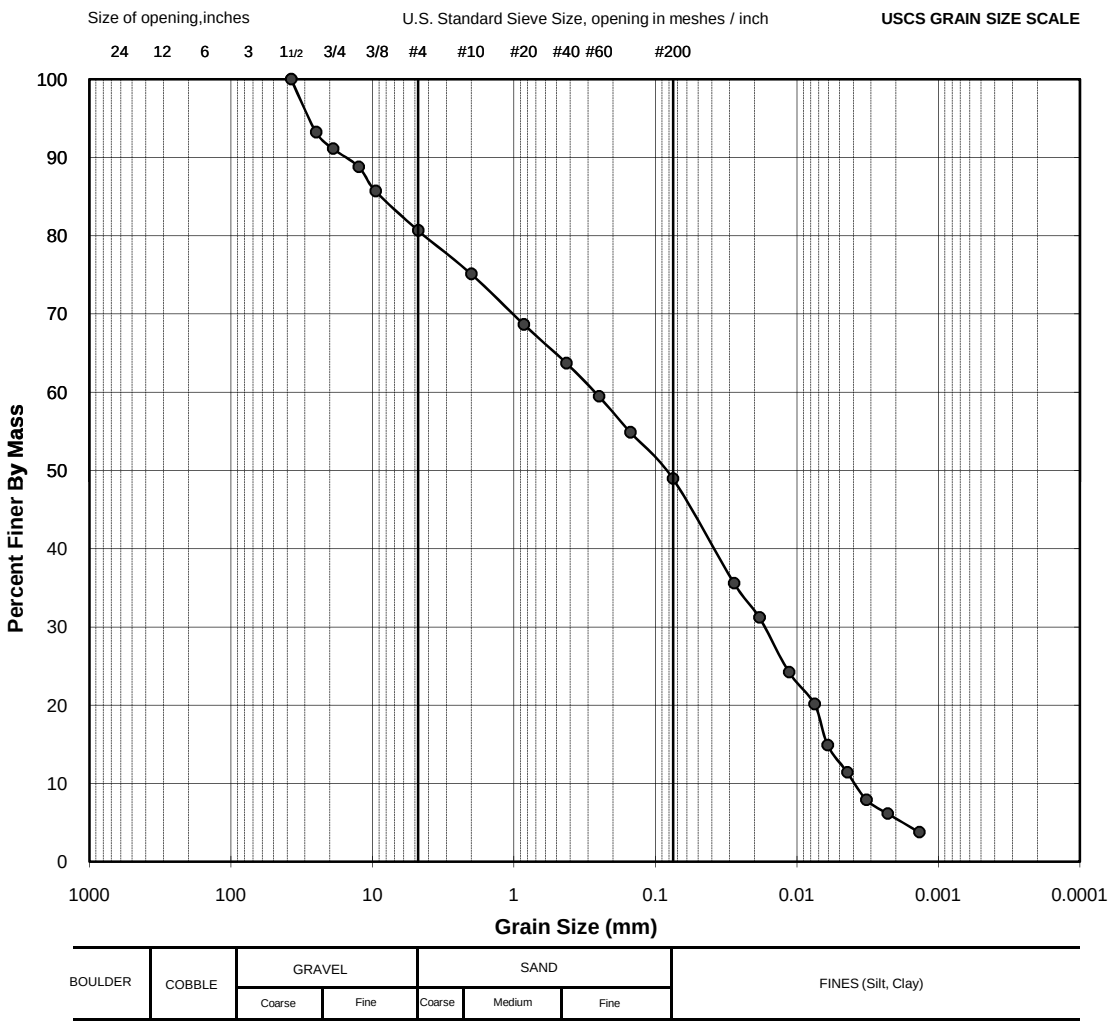
Reference
ASTM D 422-63 (2007)

Project No.:	09-1428-5007 (2000)	**Sample No:**	**282**
Client:	AEM	**Field Label.:**	BG082010-2
Project:	Meadowbank Gold Project	**Depth (m):**	10
Location:	Nunavut	**Lab ID No:**	SA 282

Specific Gravity (assumed):	2.70	**Other**	BG STA.31+923, 10m under water
Date sampled:	August 20, 2010	**Remarks:**	Till from initial trench bottom, Water content=18.1 %

Dispersion Method:	Stirring
Dispersion Period (min):	5.00

Sieve Size (USS)	Sieve Size (mm)	% Passing
3.5"	87.50	100.0
3"	75.00	100.0
2"	50.00	100.0
1.5"	37.50	100.0
1"	25.00	93.2
3/4"	19.00	91.1
1/2"	12.50	88.8
3/8"	9.50	85.7
#4	4.75	80.7
#10	2.00	75.1
#20	0.850	68.7
#40	0.425	63.7
#60	0.250	59.5
#100	0.150	54.9
#200	0.075	49.0
-	0.0277	35.6
-	0.0184	31.2
-	0.0113	24.2
-	0.0075	20.2
-	0.0061	14.9
-	0.0044	11.4
-	0.0032	7.9
-	0.0023	6.2
-	0.0014	3.8



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

TESTED BY	DATE	CHECKED BY	DATE
MO	August 29,2010	YB	Sept. 25, 2010

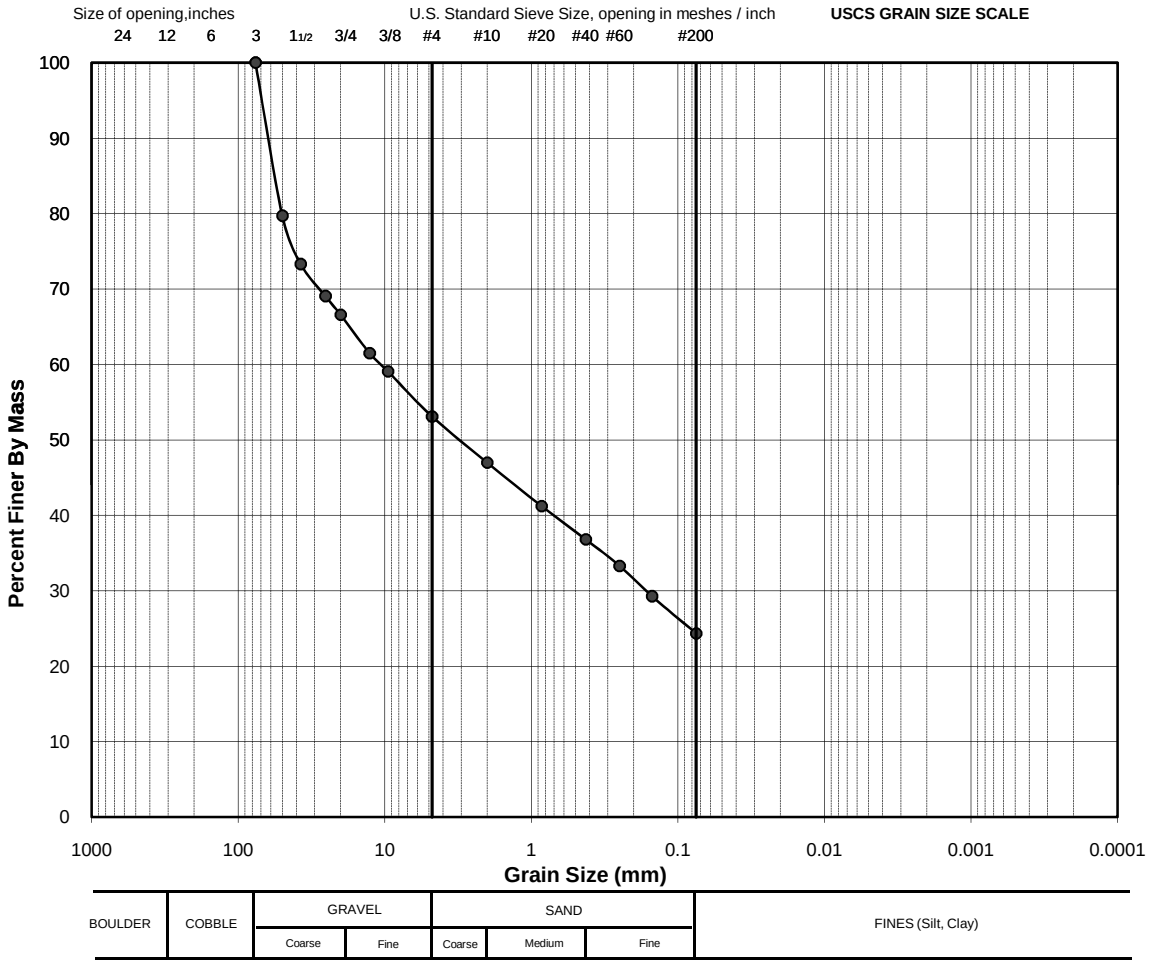
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4280 Still Creek Drive
Burnaby, B.C. Canada V5C 6C8

PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**284**
Client:	AEM	**Field Label:**	BG080910
Project:	Meadowbank Gold Project	**Depth (m):**	10
Location:	Nunavut	**Lab ID No:**	SA 284
Remarks:	Water Content = 9.9%	**Date Sampled:**	August 09, 2010
Sa. Location:	BG STA.31+825, 10m under water	**Material Specification:**	Till from initial trench bottom
		Method:	COMBINED, WASHED
		Date Tested:	August 21, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
6"	152.4	100.0
3"	76.2	100.0
2"	50.0	79.7
1.5"	37.5	73.3
1"	25.4	69.1
3/4"	20.0	66.6
1/2"	12.7	61.5
3/8"	9.5	59.1
#4	4.76	53.1
#10	2.00	47.0
#20	0.850	41.2
#40	0.425	36.8
#60	0.250	33.3
#100	0.150	29.3
#200	0.075	24.4



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

B.Dieudonné	August 21, 2010	YB	Sept. 25, 2010
TESTED BY	DATE	CHECKED BY	DATE

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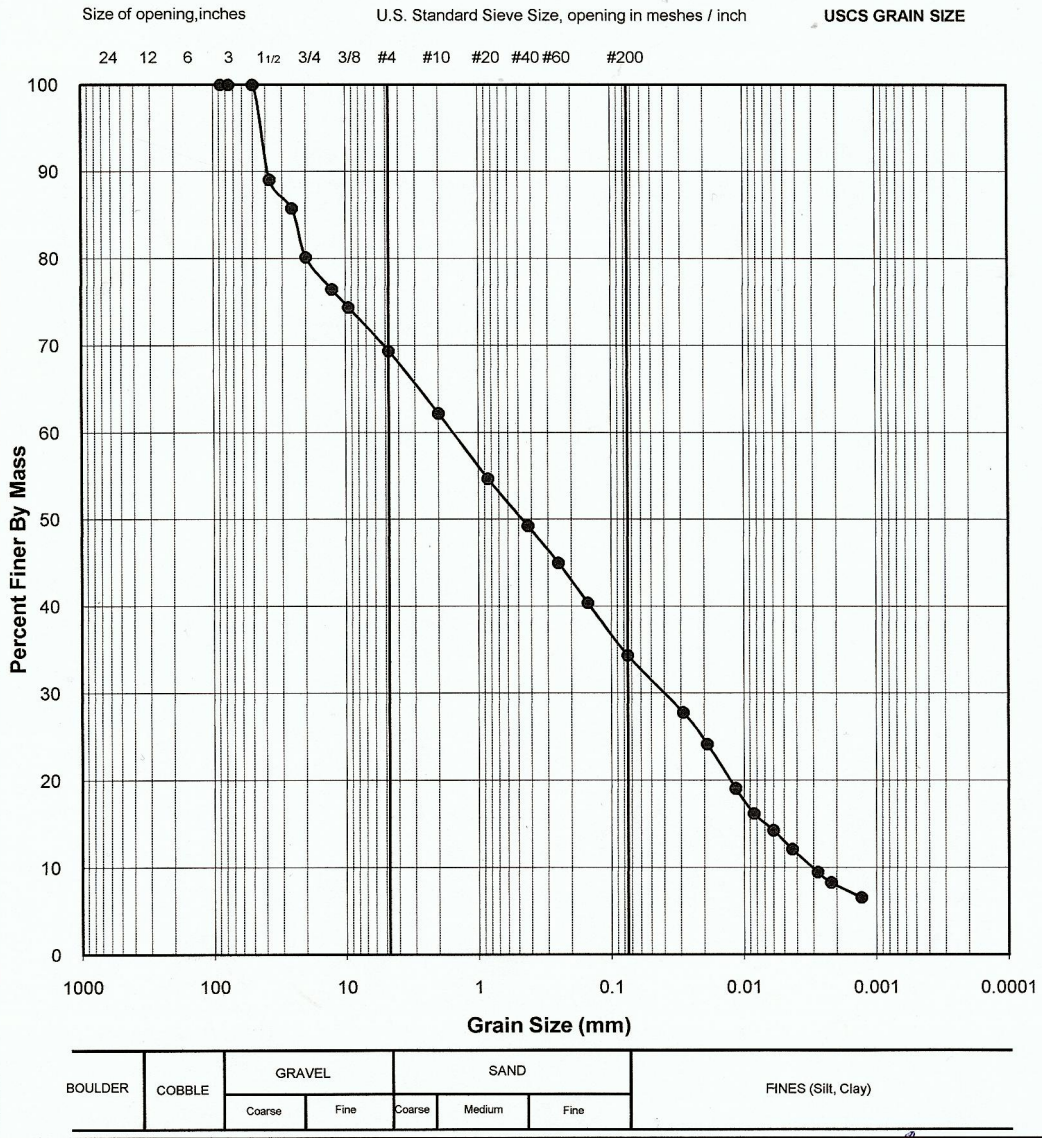
PARTICLE SIZE ANALYSIS OF SOILS

Reference: ASTM D 422-63 (2007)

Project No.:	09-1428-5007 (2000)	**Field ID**	**BG090910-1**
Client:	AEM	**Sample No.:**	308
Project:	Meadowbank Gold Project	**Depth (m):**	8
Location:	Nunavut	**Lab ID No:**	SA 308

Specific Gravity (assumed):	2.70	**Other**	Till from initial trench bottom, water content=9.4%
Date sampled:	September 9, 2010	**Remarks:**	BG 32+032, center line, 8m below water lever
Dispersion Method:	Stirring		
Dispersion Period (min):	5.00		

Sieve Size (USS)	Sieve Size (mm)	% Passing
3.5"	87.50	100.0
3"	76.20	100.0
2"	50.00	100.0
1.5"	37.50	89.1
1"	25.40	85.8
3/4"	20.00	80.1
1/2"	12.70	76.4
3/8"	9.50	74.4
#4	4.75	69.4
#10	2.00	62.2
#20	0.850	54.7
#40	0.425	49.2
#60	0.250	45.0
#100	0.150	40.4
#200	0.075	34.3
-	0.0286	27.8
-	0.0189	24.1
-	0.0116	19.1
-	0.0084	16.2
-	0.0060	14.3
-	0.0043	12.1
-	0.0028	9.4
-	0.0022	8.3
-	0.0013	6.6



B.Dieudonne	September 14, 2010	YB	Sept. 27, 2010
TESTED BY	DATE	CHECKED BY	DATE

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PARTICLE SIZE ANALYSIS OF SOILS

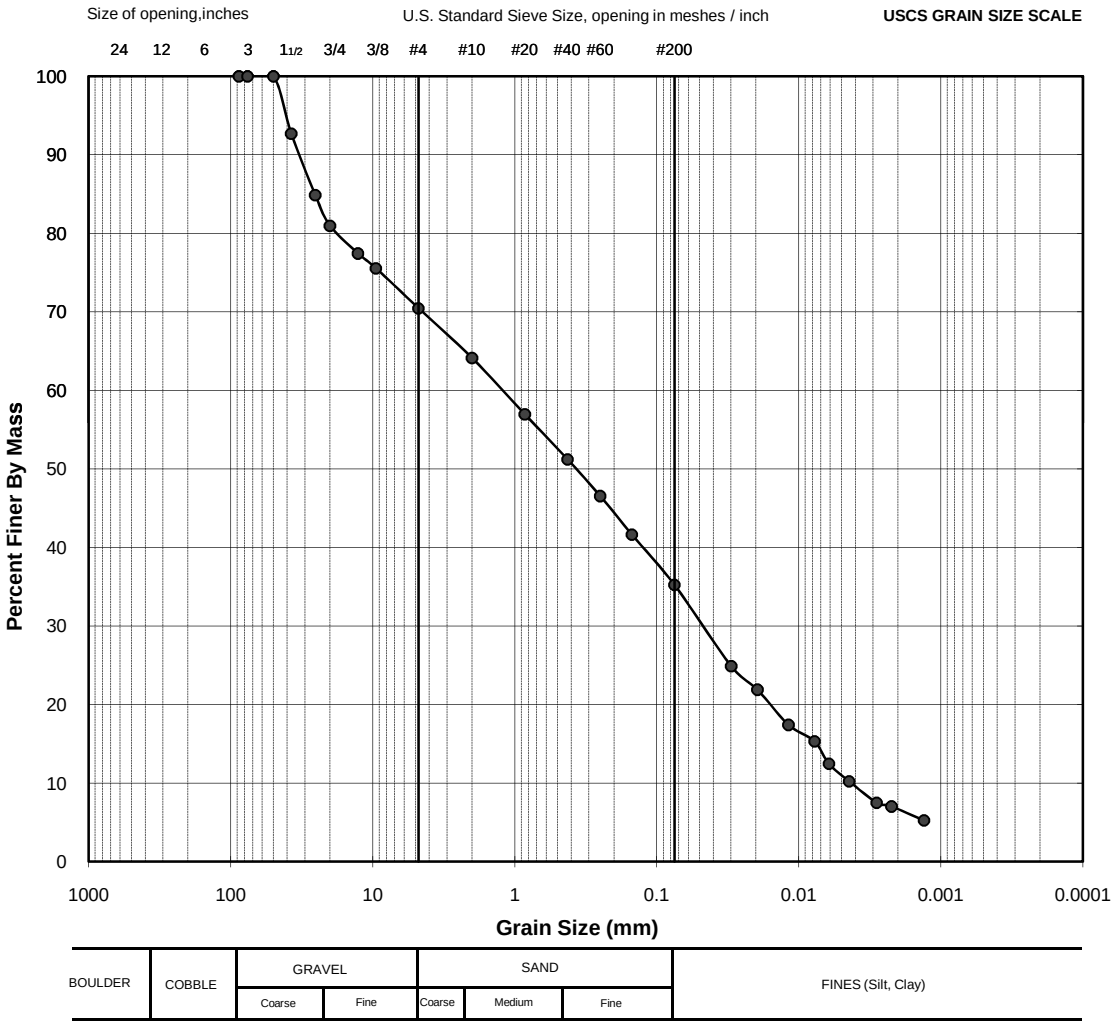
Reference
ASTM D 422-63 (2007)

Project No.:	09-1428-5007 (2000)	**Field ID**	**BG090910-3**
Client:	AEM	**Sample No.:**	310
Project:	Meadowbank Gold Project	**Depth (m):**	8.5
Location:	Nunavut	**Lab ID No:**	SA 310

Specific Gravity (assumed):	2.70	**Other**	Till from initial trench bottom, water content = 9.6%
Date sampled:	September 9, 2010	**Remarks:**	BG STA. 32+029, 8.5m below water level

Dispersion Method:	Stirring
Dispersion Period (min):	5.00

Sieve Size (USS)	Sieve Size (mm)	% Passing
3.5"	87.50	100.0
3"	76.20	100.0
2"	50.00	100.0
1.5"	37.50	92.7
1"	25.40	84.9
3/4"	20.00	81.0
1/2"	12.70	77.4
3/8"	9.50	75.6
#4	4.76	70.5
#10	2.00	64.1
#20	0.850	57.0
#40	0.425	51.2
#60	0.250	46.6
#100	0.150	41.7
#200	0.075	35.2
-	0.0299	24.9
-	0.0196	21.9
-	0.0118	17.4
-	0.0077	15.3
-	0.0061	12.5
-	0.0044	10.2
-	0.0028	7.5
-	0.0022	7.0
-	0.0013	5.3



B.Dieudonne	September 14, 2010	YB	Sept. 27, 2010
TESTED BY	DATE	CHECKED BY	DATE

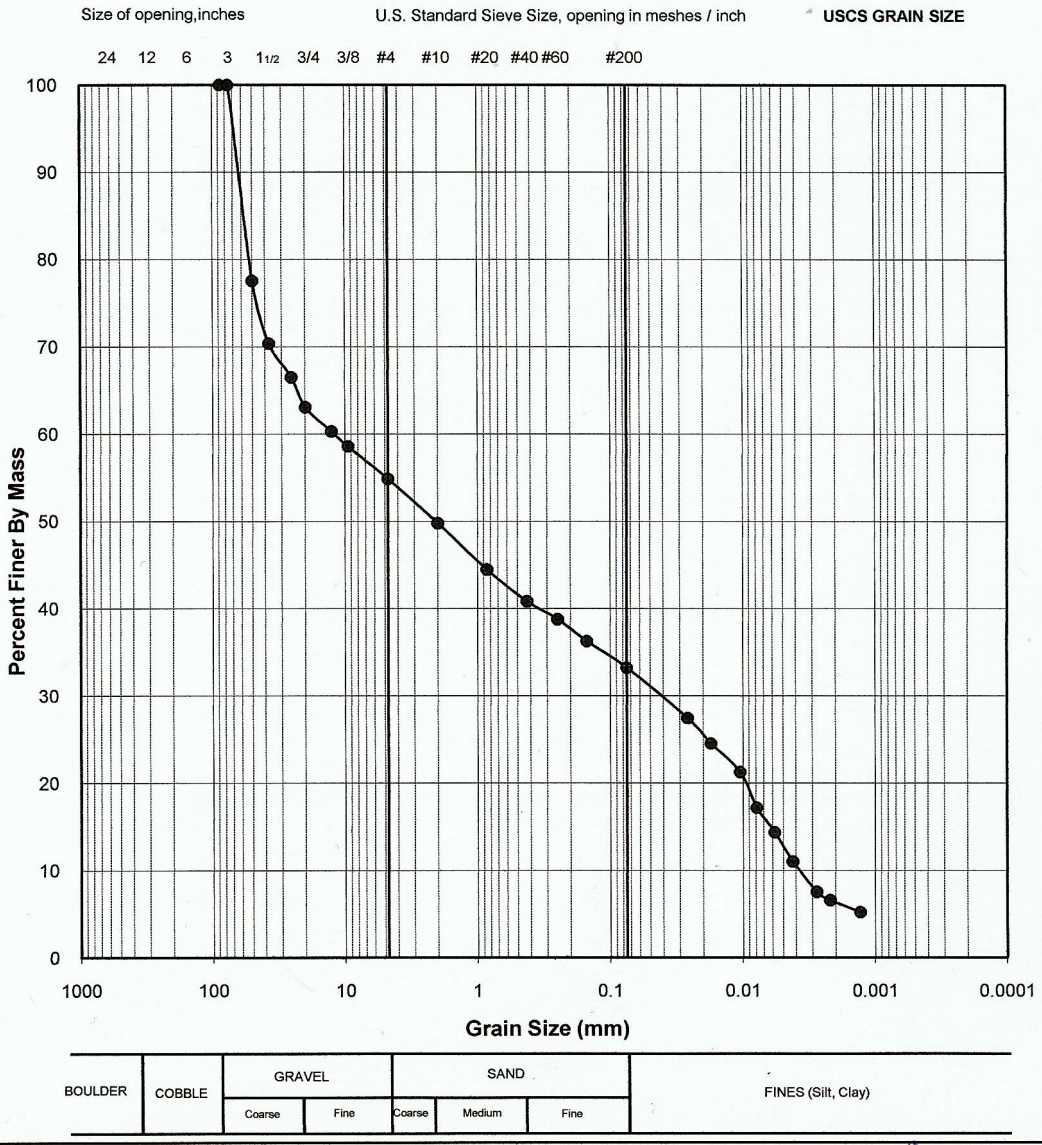
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PARTICLE SIZE ANALYSIS OF SOILS

Reference: ASTM D 422-63 (2007)

Project No.:	09-1428-5007 (2000)	**Field ID**	**BG091010-1**
Client:	AEM	**Sample No.:**	311
Project:	Meadowbank Gold Project	**Depth (m):**	9
Location:	Nunavut	**Lab ID No:**	SA 311
Specific Gravity (assumed):	2.70	**Other**	Till from initial trench bottom, water content=17.9
Date sampled:	September 10, 2010	**Remarks:**	BG STA. 32+048, 9.0m below water level
Dispersion Method:	Stirring		
Dispersion Period (min):	5.00		

Sieve Size (USS)	Sieve Size (mm)	% Passing
3.5"	87.50	100.0
3"	76.20	100.0
2"	50.00	77.5
1.5"	37.50	70.4
1"	25.40	66.5
3/4"	20.00	63.1
1/2"	12.70	60.3
3/8"	9.50	58.6
#4	4.76	54.9
#10	2.00	49.8
#20	0.850	44.5
#40	0.425	40.8
#60	0.250	38.8
#100	0.150	36.3
#200	0.075	33.2
-	0.0261	27.4
-	0.0174	24.5
-	0.0105	21.3
-	0.0079	17.2
-	0.0058	14.4
-	0.0042	11.0
-	0.0028	7.6
-	0.0022	6.6
-	0.0013	5.2



B.Dieudonne	September 15, 2010	YB	Sept. 27, 2010
TESTED BY	DATE	CHECKED BY	DATE

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PARTICLE SIZE ANALYSIS OF SOILS

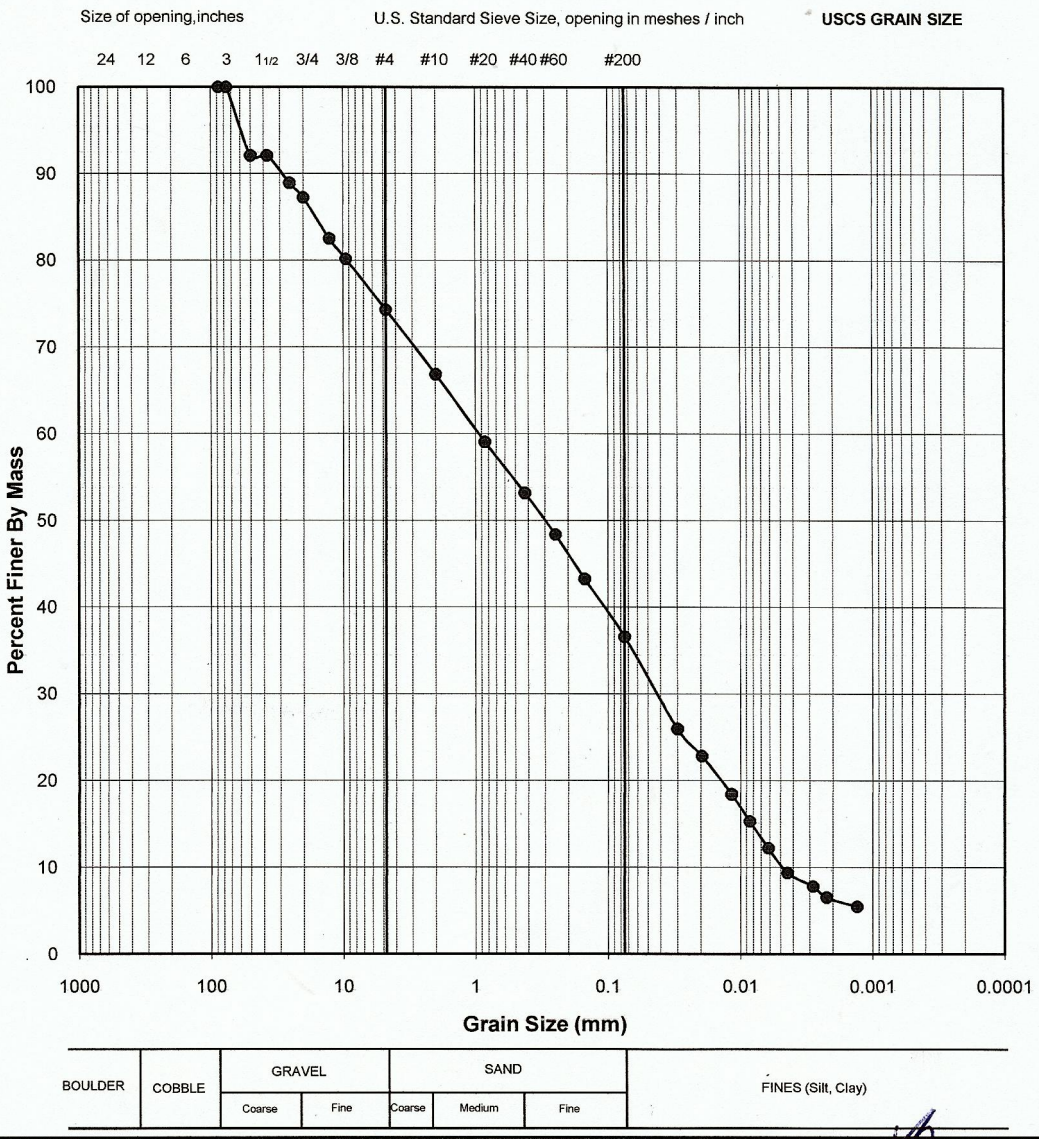
Reference
ASTM D 422-63 (2007)

Project No.:	09-1428-5007 (2000)	**Field ID**	**BG091010-2**
Client:	AEM	**Sample No.:**	312
Project:	Meadowbank Gold Project	**Depth (m):**	8
Location:	Nunavut	**Lab ID No:**	SA 312

Specific Gravity (assumed): 2.70
Date sampled: September 10, 2010
Other Till from initial trench bottom, Water content=10%
Remarks: BG STA. 32+031, 8.0m below water level

Dispersion Method: Stirring
Dispersion Period (min): 5.00

Sieve Size (USS)	Sieve Size (mm)	% Passing
3.5"	87.50	100.0
3"	76.20	100.0
2"	50.00	92.1
1.5"	37.50	92.1
1"	25.40	88.9
3/4"	20.00	87.2
1/2"	12.70	82.5
3/8"	9.50	80.1
#4	4.76	74.3
#10	2.00	66.9
#20	0.850	59.1
#40	0.425	53.2
#60	0.250	48.4
#100	0.150	43.3
#200	0.075	36.6
-	0.0299	26.0
-	0.0196	22.8
-	0.0117	18.4
-	0.0085	15.3
-	0.0062	12.2
-	0.0044	9.4
-	0.0028	7.8
-	0.0022	6.5
-	0.0013	5.5



TESTED BY	DATE	CHECKED BY	DATE
B.Dieudonne	September 15, 2010	YB	Sept. 27, 2010

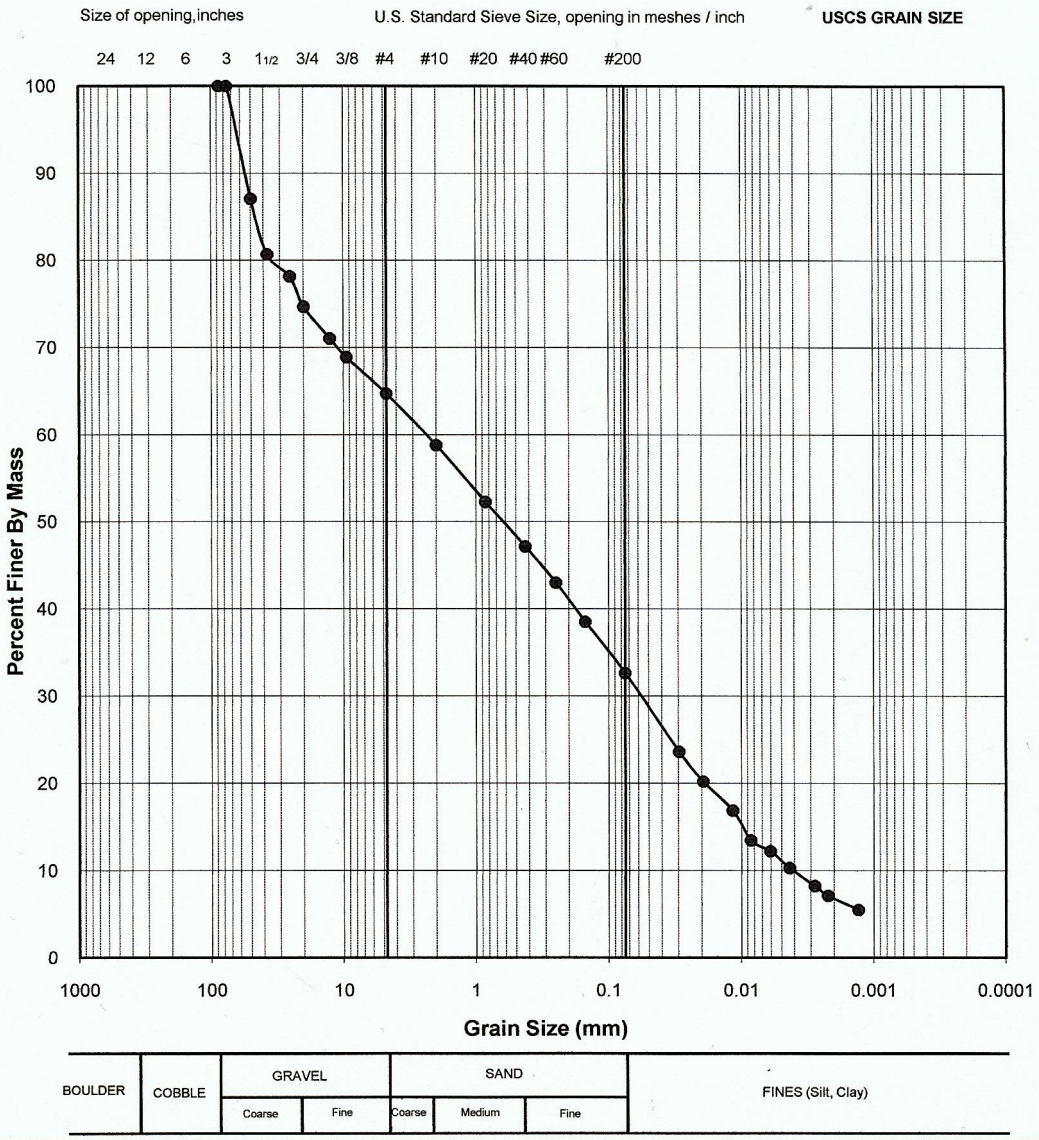
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM D 422-63 (2007)

Project No.:	09-1428-5007 (2000)	**Field ID**	**BG091010-3**
Client:	AEM	**Sample No.:**	313
Project:	Meadowbank Gold Project	**Depth (m):**	8
Location:	Nunavut	**Lab ID No:**	SA 313
Specific Gravity (assumed):	2.70	**Other**	Till from initial trench bottom, water content = 8.2%
Date sampled:	September 10, 2010	**Remarks:**	BG STA. 32+037, 8.0m below water level
Dispersion Method:	Stirring		
Dispersion Period (min):	5.00		

Sieve Size (USS)	Sieve Size (mm)	% Passing
3.5"	87.50	100.0
3"	76.20	100.0
2"	50.00	87.1
1.5"	37.50	80.7
1"	25.40	78.2
3/4"	20.00	74.7
1/2"	12.70	71.0
3/8"	9.50	68.9
#4	4.76	64.7
#10	2.00	58.8
#20	0.850	52.3
#40	0.425	47.2
#60	0.250	43.0
#100	0.150	38.5
#200	0.075	32.6
-	0.0295	23.6
-	0.0194	20.2
-	0.0116	16.9
-	0.0085	13.5
-	0.0060	12.2
-	0.0043	10.3
-	0.0028	8.2
-	0.0022	7.1
-	0.0013	5.5



B.Dieudonne	September 16, 2010	YB	Sept. 27, 2010
TESTED BY	DATE	CHECKED BY	DATE

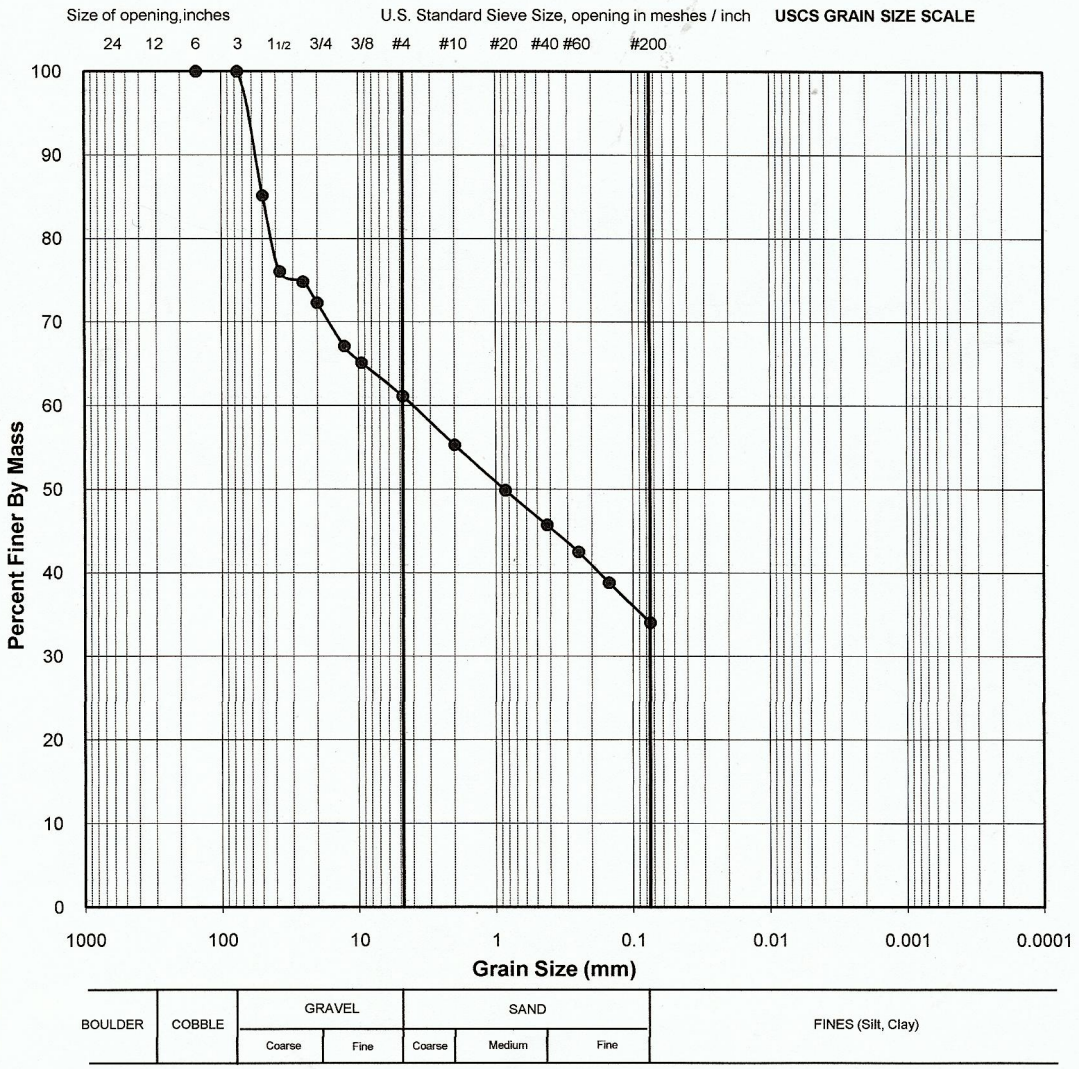
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4280 Still Creek Drive
Burnaby, B.C. Canada V5C 6C8

PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**320**
Client:	AEM	**Field Label:**	BG091110
Project:	Meadowbank Gold Project	**Depth (m):**	7.5-8
Location:	Nunavut	**Lab ID No:**	SA 320
Remarks:	Water Content = 10.4%	**Date Sampled:**	September 11, 2010
Sa. Location:	BG STA.32 +060, 8.0m below water level	**Material Specification:**	Till from initial trench bottom
		Method:	COMBINED, WASHED
		Date Tested:	September 12, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
6"	152.4	100.0
3"	76.2	100.0
2"	50.0	85.1
1.5"	37.5	76.0
1"	25.4	74.8
3/4"	20.0	72.3
1/2"	12.7	67.1
3/8"	9.5	65.1
#4	4.76	61.1
#10	2.00	55.3
#20	0.850	49.9
#40	0.425	45.7
#60	0.250	42.5
#100	0.150	38.8
#200	0.075	34.0



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

B.Dieudonné	September 12, 2010	YB	Sept. 27, 2010
TESTED BY	DATE	CHECKED BY	DATE

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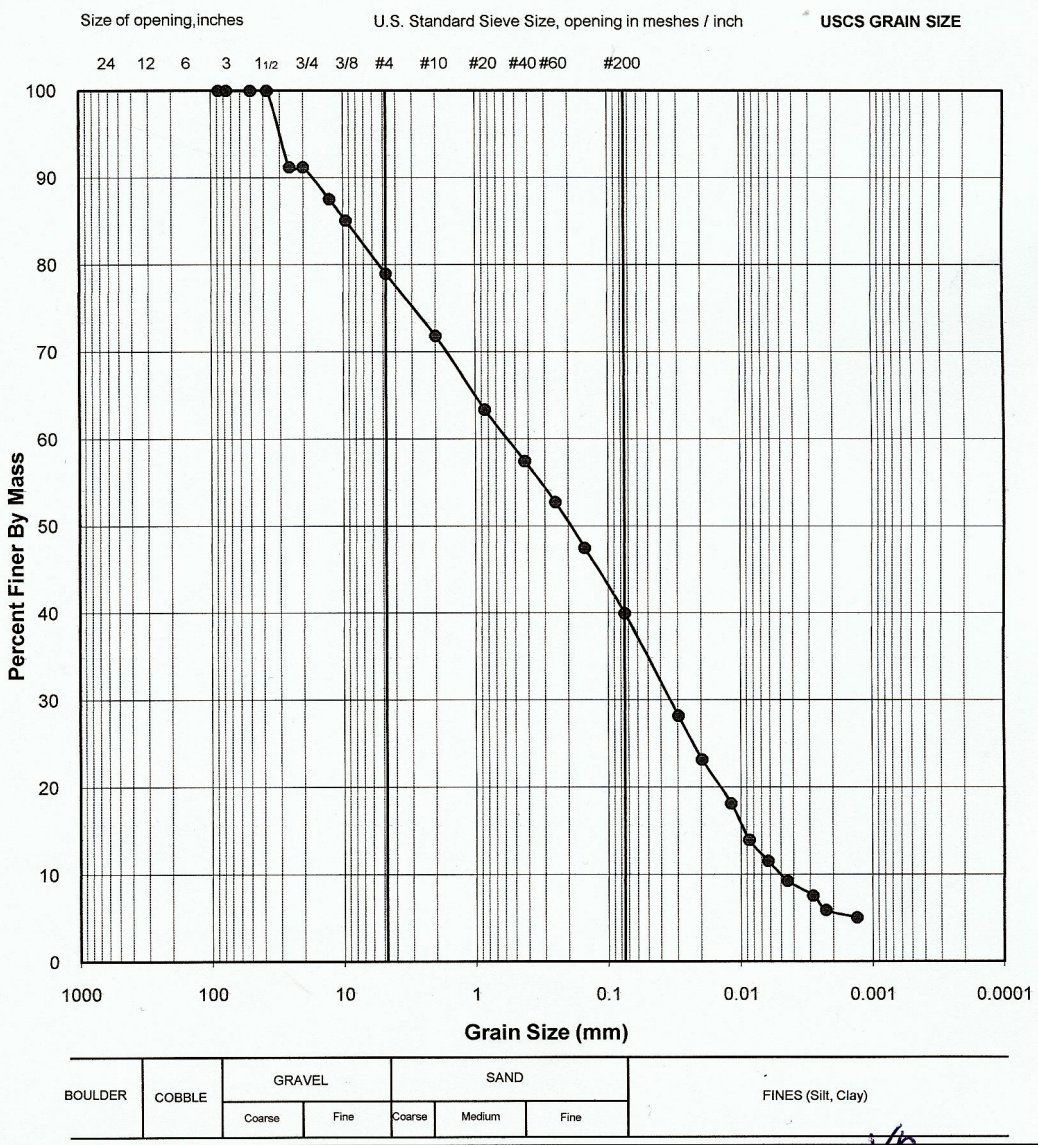
Golder Associates Ltd. - Kelowna Laboratory
1755 Springfield Road
Kelowna, B.C. Canada V1Y 5V5

PARTICLE SIZE ANALYSIS OF SOILS

Reference: ASTM D 422-63 (2007)

Project No.:	09-1428-5007 (2000)	**Field ID**	**BG091310-2**
Client:	AEM	**Sample No.:**	324
Project:	Meadowbank Gold Project	**Depth (m):**	8.5
Location:	Nunavut	**Lab ID No:**	SA 324
Specific Gravity (assumed):	2.70	**Other**	Till from initial trench bottom, Water content = 7.9%
Date sampled:	September 13, 2010	**Remarks:**	BG STA. 32+082, 8.5m below water level
Dispersion Method:	Stirring		
Dispersion Period (min):	5.00		

Sieve Size (USS)	Sieve Size (mm)	% Passing
3.5"	87.50	100.0
3"	76.20	100.0
2"	50.00	100.0
1.5"	37.50	100.0
1"	25.40	91.2
3/4"	20.00	91.2
1/2"	12.70	87.5
3/8"	9.50	85.1
#4	4.76	79.0
#10	2.00	71.8
#20	0.850	63.4
#40	0.425	57.4
#60	0.250	52.7
#100	0.150	47.5
#200	0.075	40.0
-	0.0295	28.2
-	0.0196	23.2
-	0.0118	18.1
-	0.0087	14.0
-	0.0062	11.5
-	0.0044	9.2
-	0.0028	7.6
-	0.0023	5.9
-	0.0013	5.1



B.Dieudonne	September 18, 2010	YB	Sept. 27, 2010
TESTED BY	DATE	CHECKED BY	DATE

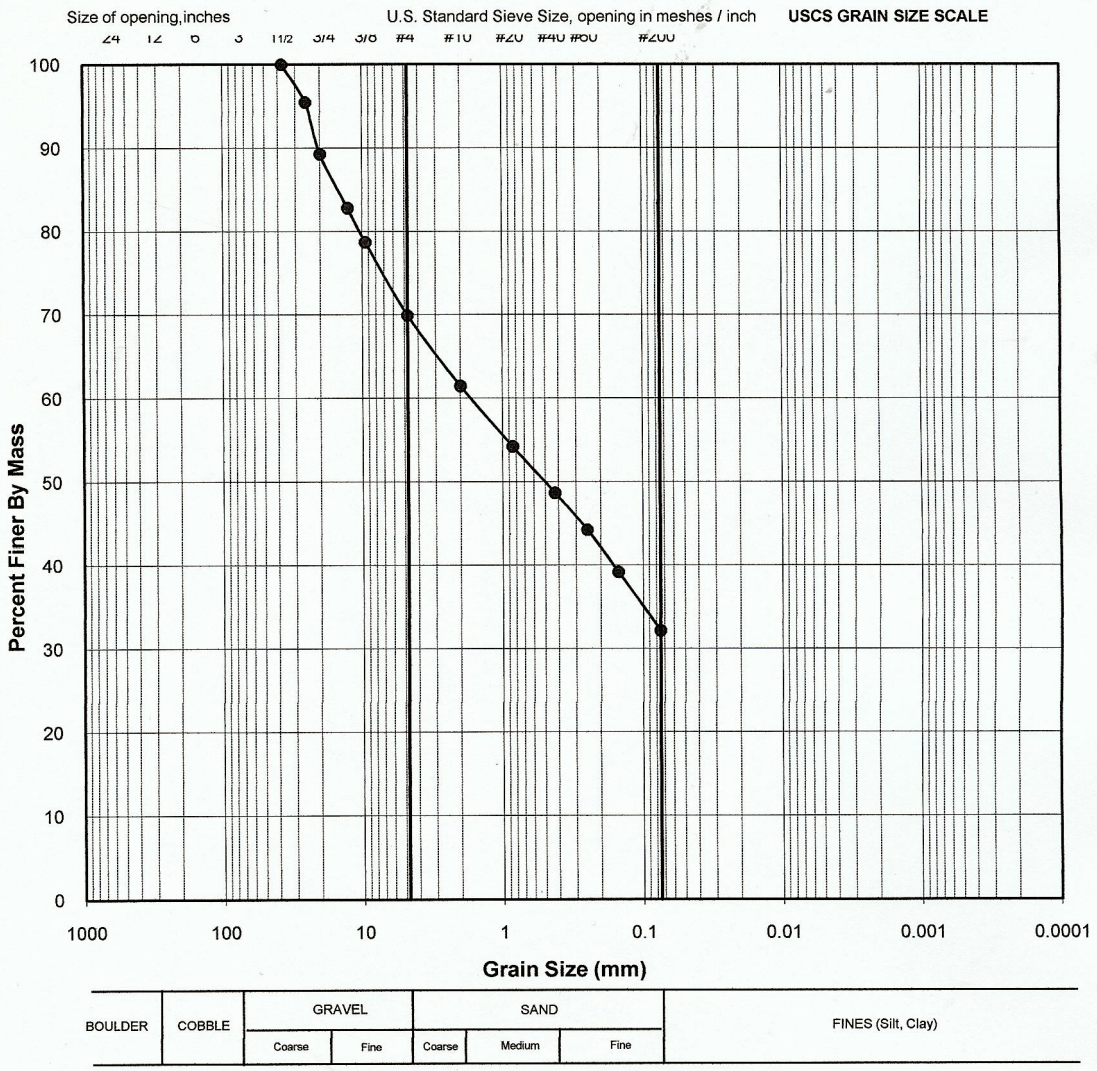
Golder Associates Ltd. - Burnaby Laboratory
4280 Still Creek Drive
Burnaby, B.C. Canada V5C 6C8

PARTICLE SIZE ANALYSIS OF SOILS

Reference: ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**348**
Client:	AEM	**Field Label:**	BG092210
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA 348
Remarks:	Water Content = 9.6%	**Date Sampled:**	September 22, 2010
Sa. Location:	BG STA 32+080, below water level	**Material Specification:**	TILL
	Till from cut-off trench bottom	**Method:**	SPLIT, WASHED
		Date Tested:	September 26, 2010

Sieve Size (USS)	(mm)	Passing %
6"	152.4	100.0
3"	76.2	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.4	95.5
3/4"	20.0	89.3
1/2"	12.7	82.8
3/8"	9.500	78.7
#4	4.760	69.9
#10	2.000	61.5
#20	0.850	54.2
#40	0.425	48.6
#60	0.250	44.2
#100	0.150	39.2
#200	0.075	32.2



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

MO	September 26, 2010	YB	Sept. 28, 2010
TESTED BY	DATE	CHECKED BY	DATE

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TECHNICAL MEMORANDUM

DATE November 21, 2012

PROJECT No. 09-1428-5007/4000
Doc 1311 Rev.0

TO Julie Belanger
Agnico-Eagle Mines Ltd.

CC Thomas Lepine, Erika Voyer - AEM

FROM Grant Bonin, Gabriel Pilon

EMAIL gpilon@golder.com

RE: WATER LOSS INVESTIGATION OF CSB OVER SB INTERFACE FOR THE NORTH PORTION OF BAY GOOSE DIKE, MEADOWBANK GOLD PROJECT, NUNAVUT

1.0 INTRODUCTION

1.1 Context

The Bay-Goose and South Camp dikes have been constructed in such a manner as to isolate a portion of Third Portage Lake, referred to as the Bay-Goose Basin. Isolation of this portion of the lake has been done to allow the area to be dewatered and thereafter, to permit the extraction of ore from the Goose Pit and southern portion of the Portage Pit.

On July 24, 2011, Agnico-Eagle Mines Ltd. (AEM) started dewatering the Bay-Goose Basin. Early monitoring of instrumentation installed within the Bay-Goose Dike indicated the possibility of a seepage pathway near Thermistors T3 to T6 (between Sta. 30+259.25 and 30+350.75), where a transition between the Cement-Soil-Bentonite (CSB) and Soil-Bentonite (SB) cutoff walls exists. A second zone of possible seepage was also identified near Thermistor T12 (near sta. 30+650.75) along the SB/bedrock interface. Thermistor data are presented graphically on Figures 1 and 2.

During Meadowbank Review Board Meeting (MDRB) No.9 on September 14, 2011, AEM requested that Golder Associates Ltd (Golder) prepare and conduct a site investigation in the above noted areas of potential seepage concern at the Bay-Goose Dike. The following summarizes the results of that site investigation.

1.2 Mandate and Objectives

The field investigation proposed in the vicinity of Thermistors T3 to T6 (between Sta. 30+259.25 and 30+350.75) involved tri-cone drilling with water flushing through the CSB upper layer to the interface with the underlying SB material where the water seepage was thought to be occurring. Any water loss noted while drilling would indicate that seepage was potentially occurring along the interface. At the end of drilling, depending on the results of the investigation program, the open hole would be either backfilled (if no water loss was encountered) to prevent a weak zone / void from developing in the cutoff wall or adjacent core backfill materials, or pressure grouted via perforated steel casings (if a water loss or connection between adjacent, installed casings was noted).

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Golder Associates: Operations in Africa, Asia, Australasia, Europe, North America and South America

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A rough evaluation of the hydraulic conductivity of the slurry wall, by rising/falling head test was also to be carried out before each investigation hole was backfilled / sealed.

For the potential seepage pathway located near Thermistor No.12 (approximately sta. 30+650), 4.5-inch OD steel casings were proposed be installed at sta. 30+647.75, 30+650.75 and 30+653.75 and the SB/bedrock interface sealed by grouting out the bottom of the casings.

The following presents the factual results obtained from the field investigation and a discussion of the results.

2.0 DESCRIPTION OF WORK PERFORMED AND METHODS USED

2.1 Field Program

The investigation was carried out over a total of 11 working days between September 21 and October 1, 2011, and comprised the following activities:

- Surveying / layout of 19 investigation holes (16 holes near Thermistor 3 to 6 and 3 holes near Thermistor No.12);
- Installation of 19 plastic collar casings through the upper, hard to advance through, work platform;
- Sealing of the bottom 5 feet of 16 plastic collar casings near Thermistor 3 to 6 (between sta. 30+259.25 and 30+350.75) with a thick, 0.5:1 w:c ratio collar grout;
- Rotary tri-cone drilling of the above 16 holes with a 4.25-inch diameter bit using pressurized water;
- Hydraulic conductivity testing within these 16 open holes;
- Installation of 19 steel casings(all surveyed holes), 0.5 m into the bedrock;
- Grouting of the 19 steel casings out the bottom (Stage 3) leaving them, where possible, open for future casing perforation and pressure grouting if the need arises.

Daily field reports summarizing the above activities were sent to AEM on a regular basis during the field investigation. All field activities were closely coordinated with Thomas Lepine and Erika Voyer of AEM, and the field investigations were carried out using equipment provided by Dynamitage TCG Ltee. (TCG).

2.2 Installation of Plastic Collar Casings

A RockMaster cabin-drill (see Photograph 1 – Appendix A) was used to install the plastic collar casings through the work platform. Pressurized air was used to activate the hammer of the drill and to lift cuttings back to surface (see Photograph 2 – Appendix A). Once the drill had advanced to lake level elevation (approximately elev.133.5 m asl), the bit was extracted leaving an open hole.

A black, low density polyethylene (LDPE), 6-inch ID plastic pipe was manually inserted in the open hole and pushed down with the boom of the drill (or the bucket of a loader for tighter holes). The LDPE casings were initially installed to between 0.3 and 0.45 m (1 and 1.5 feet) above the bottom of the drilled hole.

To seal the base of the casings to slightly below the water table and into the top of the CSB, a 0.5:1 water: cement ratio grout was poured into the casing to a level at least 5 feet from the bottom of the open hole. Thereafter, the casings were pushed to the bottom of the open hole by a loader. This collar grout, which was mixed by colloidal mixer in TCG's steel containerized grout shack (Unit No. C216) was left to set for more than 12 hours.

Table 1 summarizes the platform elevation, bottom of the casing and installation date for each casing.

Table 1: Black, LDPE Plastic Casing Installation Summary Data

Hole	Platform Elevation (masl)	Drilled Elevation (masl)	Date Installed
Q-30+259.25	137.30	133.34	27/09/2011
Q-30+266.75	137.29	133.39	22/09/2011
Q-30+272.75	137.31	133.28	22/09/2011
Q-30+278.75	137.30	133.50	22/09/2011
Q-30+284.75	137.42	133.46	22/09/2011
Q-30+290.75	137.23	133.63	22/09/2011
Q-30+296.75	137.30	133.80	22/09/2011
Q-30+302.75	137.14	133.48	22/09/2011
Q-30+308.75	137.22	133.12	22/09/2011
Q-30+314.75	136.99	133.09	22/09/2011
Q-30+320.75	137.08	133.48	22/09/2011
Q-30+326.75	137.10	133.03	22/09/2011
Q-30+332.75	136.99	133.54	21/09/2011
Q-30+338.75	137.25	133.25	21/09/2011
Q-30+344.75	137.40	132.83	21/09/2011
Q-30+350.75	137.78	132.98	21/09/2011
Q-30+647.75	136.93	132.97	27/09/2011
Q-30+650.75	137.27	133.31	27/09/2011
Q-30+653.75	137.27	133.31	27/09/2011

2.3 Rotary Tri-cone Drilling

A second drill rig (see Photograph 3 – Appendix A) was converted for the water-flush only, rotary tri-cone drilling of the proposed investigation holes. While not used during drilling, the drill was also capable of air-lifting cuttings and/or water from the open holes.

Investigation holes of 4.5-inch diameter were tri-coned through the CSB materials to the top of the SB between sta. 30+259.25 and 30+350.75. Water was steadily injected during drilling, and the flush return was observed to detect any water loss during advance (see Photograph 4 – Appendix A). The depth of investigation was targeted as 1.5 m lower than the as-built interpreted interface of the CSB over SB. If flush return was not lost during advance, tri-coning was halted at or slightly above/below the target investigation depth.

Table 2 summarizes the information collected including percent flush return loss, and observed connections to adjacent holes.

Table 2: Tricone Drilling Summary Data

Hole (Q-30+...)	Platform Elevation (masl)	Anticipated Depth Triconed (mbgs)	Actual Depth Triconed (mbgs)	Approximate Depth of CSB/SB	Comments
259.25	137.30	7.70	8.94	Not detected by driller	Triconed to bedrock. Lost 50% of water return at lower part of SB. Water pump was shut off and water level did not fall over a 5 minute observation period suggesting water loss was possibly due to SB blocking the tricone bit
266.75	137.29	6.67	6.71	5.38	No Loss of Water
272.75	137.31	7.01	7.32	5.13	Lost 40% of water return at upper part of SB. Bit retrieved and cleaned; redrilled and clogging occurred again at the same depth. Drilled deeper and recovered 100% water return suggesting water loss possibly due to SB blocking the tricone bit
278.75	137.3	7.34	7.37	6.23	No Loss of Water
284.75	137.42	7.76	8.3	5.9	Lost 50% of water return at bottom of hole (in SB). Water possibly lost due to SB blocking the triconing bit as particles were found in the bit upon retrieval. See permeability testing results below.
290.75	137.23	8.00	8.00	6.00	No Loss of Water
296.75	137.3	8.41	8.40	6.90	No Loss of Water
302.75	137.14	8.53	8.50	5.80	No Loss of Water
308.75	137.22	8.65	8.70	6.60	No Loss of Water
314.75	136.99	8.19	8.50	5.70	No Loss of Water
320.75	137.08	8.43	8.50	6.53	No Loss of Water
326.75	137.08	9.29	9.30	7.33	No Loss of Water
332.75	137.08	9.55	9.50	8.50	No Loss of Water
338.75	137.12	9.58	10.30	8.75	No Loss of Water, triconed to bedrock
344.75	137.19	10.50	11.50	9.22	No Loss of Water. Softer zone encountered at 7.97m & 9.22m
350.75	137.23	11.55	11.80	8.92	No Loss of Water. Softer zone encountered at 8.92m

2.4 Hydraulic Conductivity Testing

Upon completion of tri-cone drilling, hydraulic conductivity testing of the 16 tri-coned investigation holes between sta. 30+259.25 and 30+350.75 was carried out.

Initially it was proposed that a constant head test be carried out within any hole that had a significant water loss during tri-cone drilling. However, as water loss was not encountered while drilling (see explanations provided in Table 2), it was subsequently decided that a rising head or falling head test would be carried out in each hole.

Water must be removed from the open investigation hole to carry out a rising head test. After several attempts using various techniques, it was established that using a low air pressure, applied very slowly through the drill rods, was the most reliable method of removing water from the hole without destabilizing the borehole walls and causing the hole to sediment back in. A measurement of the depth of the open hole was carried out with a weighted cloth tape as soon as the drill rods were extracted from the hole (and the drill mobilized over another hole), and all 16 investigation holes, regardless of the technique for removal of cuttings/water from the hole, were found to have collapsed/sedimented to some extent.

A pressure transducer, hard-wired to a datalogger on surface, was then inserted to the bottom of the hole (lower than the rising water table) to record the recovery of the water column with time for a period of approximately 45 minutes. In holes where a falling head test was also completed, the pressure transducer was left below the water table, and water was added to the open hole until it reached the collar of the plastic casing. The recovery of the water column to static conditions with time, was then measured. Table 5 summarizes the tests conditions that occurred during the program.

Hydraulic conductivity testing was carried out when drilling activities in a neighboring investigation hole were further than 6 m away. On a few occasions, the tests were carried out when tri-cone drilling was within 12 m (with no impact on the result), and later when steel casing was being installed (using an air-actuated DTH) in a nearby hole. Since communications while casing installation were often noted thus falsifying the results these later tests were redone to obtain a more representative test result before a steel casing was installed within the tested open hole to the desired depth.

The recorded pressure-time curves for each test are provided in Appendix B.

2.5 Installation of Steel Casings

Prior to starting the investigation program, it had been proposed that the need for steel casing would depend on the hydraulic conductivity test results and the loss of return flush while tri-cone drilling. Specifically, if significant water loss was to be observed, a steel casing would be installed through the CSB and SB materials, and 0.5 m into bedrock. Otherwise, if flush return was not lost, the investigation holes were to be backfilled with a thick grout mix (i.e., 60+ second Marsh time) via tremie tube from the bottom upwards.

However, as noted above, all 16 investigation holes were found to have collapsed/sedimented to some extent following removal of water and cuttings. Consequently it was not possible to insert a hose line to the fully drilled bottom of the hole to carry out the planned tremie backfilling. As such, steel casing was installed in each of the holes after all hydraulic conductivity testing had been completed. The casings were initially installed either into bedrock, or in six cases, 1.5 m into the SB materials. However, as the program advanced, it was decided that all casings should be installed through the SB materials and into bedrock, and the drilling crew subsequently returned and deepened the six holes that were not initially extended to bedrock.

The same drill that was used for Tricone drilling, outfitted with a 115-mm (4.5-inch) diameter, air-actuated down-the-hole (DTH) hammer, was used for the installation of the steel casings. When necessary, high pressurized air was used to actuate the DTH hammer to remove cuttings, push through encountered cobbles, and install the casing into bedrock. Communication between adjacent investigation holes was noted during the installation, As a visual aid to the detection of communication, adjacent casings were filled with water; air bubble percolation to surface being a good indication of communication (see Photograph 5 – Appendix A).

Table 3 summarizes the depths to which casings were installed, and observed communications to adjacent investigation holes during installation.

Table 3: Steel Casing Summary Data

Hole (Q-30+...)	Platform Elevation (masl)	Depth of Casing Installed (mbgs)	Final Stickup (mags)	Embedment Length in Bedrock (m)	Bedrock Depth from Platform (m)	Comments
259.25	137.30	9.29	0.15	0.5	8.79	
266.75	137.29	9.91	0.38	0.5	9.41	
272.75	137.31	9.75	0.18	0.48	9.27	Communication to hole Q-30+266.75
278.75	137.3	9.48	0.13	0.50	8.98	Communication to hole Q-30+284.75 & Q-30+272.75
284.75	137.42	9.22	0.23	0.50	8.72	Communication to hole Q-30+290.75 & Q-30+296.75
290.75	137.23	8.79	0.25	0.50	8.29	Communication to hole Q-30+284.75
296.75	137.3	8.91	0.05	0.45	8.46	Communication to hole Q-30+302.75 (between Steel and black plastic casing)
302.75	137.14	9.56	0.03	0.30	9.26	
308.75	137.22	9.32	0.10	0.50	8.82	Communication to hole Q-30+302.75
314.75	136.99	9.62	0.20	0.50	9.12	
320.75	137.08	9.22	0.13	0.48	8.74	
326.75	137.08	9.89	0.13	0.30	9.59	Communication to hole Q-30+332.75
332.75	137.08	10.62	0.30	0.50	10.12	Installed beyond triconed SB
338.75	137.12	11.49	0.13	0.50	10.99	
344.75	137.19	11.56	0.15	0.50	11.06	
350.75	137.23	11.58	0.20	0.48	11.10	Communication to 30+344.75
647.75	136.93	8.46	0.30	0.50	7.96	
650.75	137.27	8.58	0.18	0.50	8.08	Communication to hole Q-30+647.75
653.75	137.27	8.18	0.13	0.50	7.68	

2.6 Grouting out the Bottom of the Installed Casings

Throughout the grouting program, TCG provided a containerized, 12.2 m (40-foot) long, steel Seacan / grouting shelter (Unit No. C-216). The container was on site following the completion of the grouting program for the southern portion of the Bay-Goose Dike. Each grout plant comprised a 420-L capacity Chemgrout CG-680/3L8/EH high shear colloidal mixer and agitator and a progressive cavity, helical-screw Moyno grout pump with an 18 bar maximum injection pressure.

The container was mobilized back to the crest of the north portion of the Bay-Goose Dike to seal the SB / bedrock interface, and the communications created during casing installation procedures at the two investigation areas (i.e., near Thermistors T3 to T6, and T12). Injection was carried out through the bottom of the installed casing (i.e., Stage 3 only), leaving the casings open / not backfilled so that they could be perforated and injected at a specified interval at a later time, if necessary.

Grouting of Stage 3 was considered necessary as connections between adjacent casings were often established during casing installation, and at a minimum, so that no SB/bedrock interface would be left unsealed.

Injection commenced with Mix B (a 35-sec Marsh time grout) and continued to closure, as per the Bay-Goose Grouting program Specifications, with the maximum injection pressure for Stage 3 being Pmax = 3.0 bar. However, the starting mix was thinned and grouting initiated thereafter with Mix A (a 32-sec Marsh time grout) after several of the initial casings reached refusal too quickly with Mix B.

Table 4 summarizes the volumes injected, pressures and closure penetrability achieved.

Table 4: Grouting Summary Data

Hole	Stage			Mix	Pdef (bar)	Pfinal (bar)	Pen. (L/min/m/bar)	Volume (L)	Total Volume (L)
	No.	From* (m)	To* (m)						
Q-30+259.25	3	8.44	9.44	A	3	3.5	0.01	76.6	76.6
Q-30+266.75	3	9.29	10.29	A	3	3.2	0.01	2.6	2.6
Q-30+272.75	3	8.92	9.92	A	3	3.1	0	108.1	108.1
Q-30+278.75	3	8.61	9.61	A	3	3.2	0.05	4.3	4.3
Q-30+284.75	3	8.45	9.45	A	3	3.1	0	10.5	10.5
Q-30+290.75	3	8.05	9.05	A	3	3	0.01	13.1	13.1
Q-30+296.75	3	7.96	8.96	A	3	3.1	0.01	41.5	41.5
Q-30+302.75	3	8.59	9.59	A	3	2.1	3.1	187.3	-
				B	3	3	0	170	357.3
Q-30+308.75	3	8.42	9.42	A	3	3	2.02	208.7	-
				A+	3	3.1	0	52	260.7
Q-30+314.75	3	9.32	9.82	A	3	3.3	0	10	10

Hole	Stage			Mix	Pdef (bar)	Pfinal (bar)	Pen. (L/min/m/bar)	Volume (L)	Total Volume (L)
	No.	From* (m)	To* (m)						
Q-30+320.75	3	8.85	9.35	B	3	1.9	11.43	212	-
				C	3	3	0.02	66.6	278.6
Q-30+326.75	3	9.52	10.02	B	3	3.3	0.01	7.7	7.7
Q-30+332.75	3	10.42	10.92	B	3	3.2	0.01	77.6	77.6
Q-30+338.75	3	11.11	11.61	B	3	3.2	0.01	5.4	5.4
Q-30+344.75	3	11.21	11.71	B	3	3	0.2	9.7	9.7
Q-30+350.75	3	11.28	11.78	B	3	1.1	24.8	200.9	-
				C	3	2.9	1.18	53	-
				C	3	3.3	0.09	8	261.9
Q-30+647.75	3	7.76	8.76	A	3	3	0	104.5	104.5
Q-30+650.75	3	7.76	8.76	A	3	3.1	0.01	2.6	2.6
Q-30+653.75	3	7.31	8.31	A	3	3	0.01	74.8	74.8

* Depths are measured from top of casing.

Figure 3 and 4 shows the results of injection near the Thermistors 3 to 6 (between Sta. 30+259.25 and 30+350.75) and Figure 5 shows the results of injection near the Thermistors 12.

3.0 HYDRAULIC CONDUCTIVITY INTERPRETATIONS

As previously discussed, none of the investigation holes stayed open following tri-coning. Consequently, the hydraulic conductivity tests carried out, for the most part, were falling head tests.

The attached Table 5 summarizes the results from the permeability tests. Interpretation of the tests was carried out using the well test analysis software package HydroBench®, the results of which are provided in Appendix B. It is believed that the more rapid recoveries of imposed head difference to the static water table (eg., 30+332.75) are most likely due to the black LDPE casings not being seated and sealed within the CSB.

4.0 CONCLUSION AND RECOMMENDATIONS

The investigation program of the interface between the SB and overlying CSB materials marks the second time that an attempt to inject grout along this contact has been carried out (the first time being during the grouting program when the dike was under construction – see Figures 3 and 5 for more details). In neither instance were large quantities of cementitious grout injected.

The following summarizes the main observations from the program:

1) Loss of return flush potentially associated with the development of a gap between the SB and overlying CSB was not observed during tri-coning. Those instances where return was lost are believed to be associated with the clogging of the tri-cone bit with SB materials.

2) During hydraulic conductivity testing, it is believed that the more rapid recoveries of imposed head difference to the static water table are most likely due to the black LDPE casings not being seated and sealed within the CSB.

3) The observed communication to adjacent casings along the SB/bedrock interface (for the most part) is believed to be due to the use of an air-actuated DTH hammer during installation of the steel casings. This phenomenon was also noted during the Bay-Goose grouting program, occasionally even at the quaternary level of casing installation, through previously set and brittle, cementitious grout.

Based on the above, it is believed that the potentially anomalous zone associated with an increase in thermal profile at/along the CSB/SB interface is currently not characterized by obvious large openings that could result in large inflows. Nevertheless, this interface should continue to be monitored as the dewatering progresses, and it is important to remain prepared to intervene quickly if large inflows were to happen. Experience has shown that degradation can occur very rapidly, and having all casings installed to bedrock and ready to be perforated and grouted, if needed, is considered a prudent path forward given the circumstances.

GOLDER ASSOCIATES LTD.

ORIGINAL SIGNED

Gabriel Pilon, ing. (QC)
Geotechnical/Civil Engineer

ORIGINAL SIGNED

Grant Bonin, M.Eng., P.Eng. (BC)
Associate, Mining Geotechnical Engineer

GP/GB/md

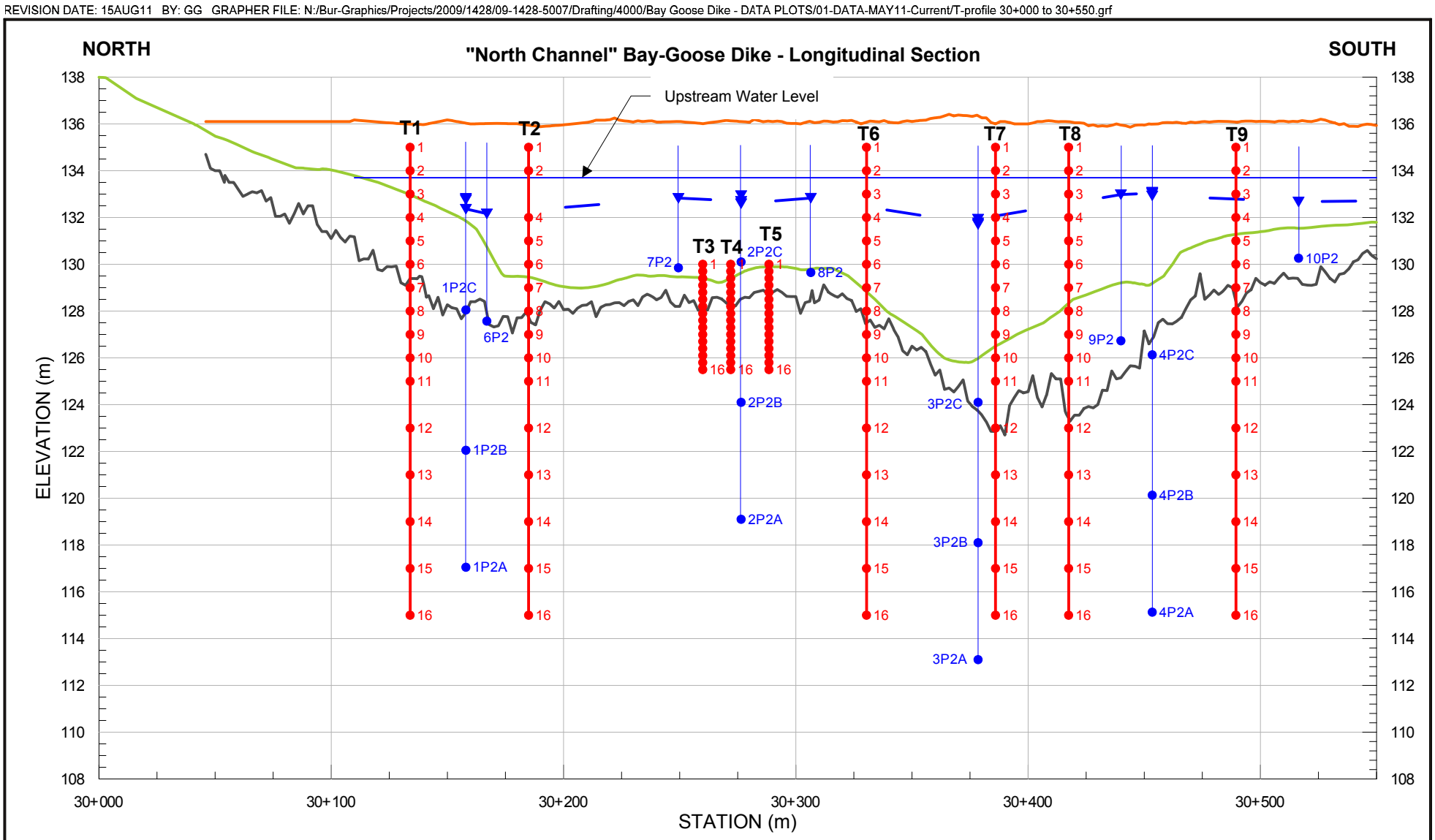
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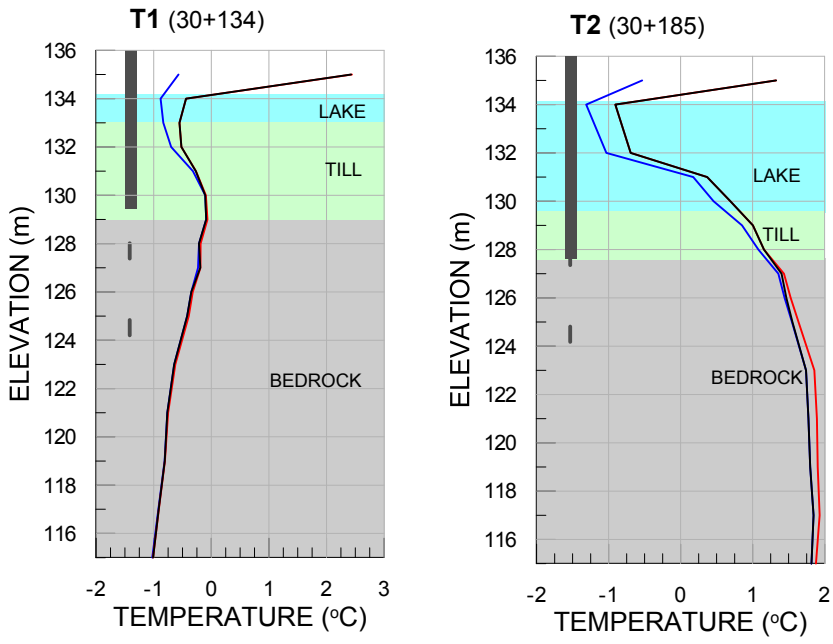
Att.: Table 5 – Hydraulic Response Testing Summary
Figure 1 – Bay-Goose Dike, 30+000 to 30+550 Temperature Data (Jul. 2011 to Sep. 2011)
Figure 2 – Bay-Goose Dike, 30+550 to 31+000 Temperature Data (Jul. 2011 to Sep. 2011)
Figure 3 – Bay-Goose Dike, Water Loss Inv. Grout Takes, Sta. 30+207.5 to 30+303.5
Figure 4 – Bay-Goose Dike, Water Loss Inv. Grout Takes, Sta. 30+303.5 to 30+401
Figure 5 – Bay-Goose Dike, Water Loss Inv. Grout Takes, Sta. 30+597.5 to 30+692
Appendix A – Photos
Appendix B – HydroBench® Analyses

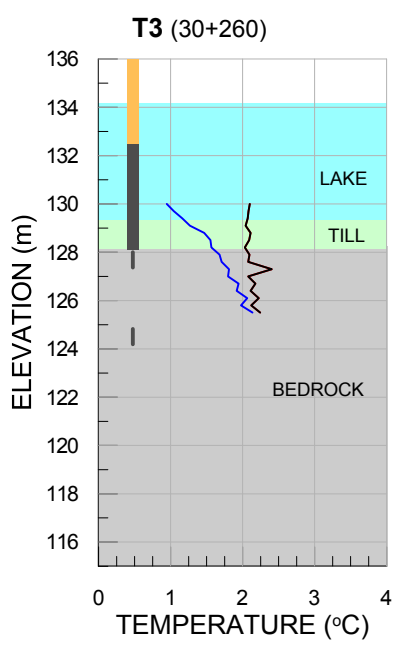
Table 5: Hydraulic Response Testing Summary

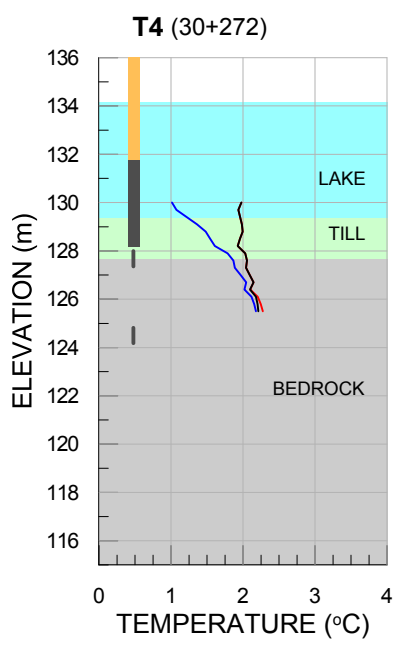
Hole	Depth of black plastic casing (mbgs)	Triconed to (mbgs)	Test Interval Length (m)	Hole Collapsed to (m from Top of black casing)	FH Test Field Measurements		RH Test Field Measurements		HydroBench Analysis (FH tests)		Comments	Permeability Test Date
					Fall (m)	Time (minutes)	Rise (m)	Time (minutes)	Transmissivity (m2/sec)	Hydraulic Conductivity (m/sec)		
Q-30+259.25	3.9	8.94	5.04	8.0	4.00	70	0.34	50	9.3E-06	1.8E-06	Cuttings were airlifted with drill rig slowly bringing up pressure; removed rods without water pressure. Installed RST water level reader at the bottom of the hole for a rising head test starting 10 minutes after final flush of hole, 5 minutes after extraction of rods.	9/28/2011
Q-30+266.75	3.9	6.71	2.81	7.5	1.47	42	-	-	8.5E-07	3.0E-07	Cuttings were not airlifted with drill rig; removed rods without water pressure and airlifted water only inside of black plastic casing.	9/26/2011
Q-30+272.75	4	7.32	3.32	5.0	3.05	65	-	-	4.4E-06	1.3E-06	Cuttings were not airlifted with drill rig; removed rods without water pressure and airlifted water only inside of black plastic casing. Hole mostly collapsed (at 1107 hrs, ~5.02 m deep remained open; at 14:00 hrs, ~3.85 m deep remained open).	9/26/2011
Q-30+278.75	3.8	7.37	3.57	4.9	0.27	145	-	-	3.3E-07	9.2E-08	Cuttings were not airlifted with drill rig; removed rods without water pressure and airlifted water only inside of black plastic casing.	9/26/2011
Q-30+284.75	4	8.30	4.30	3.0	1.30	75	-	-	2.3E-06	5.3E-07	Cuttings were not airlifted with drill rig; removed rods without water pressure and airlifted water only inside of black plastic casing	9/25/2011
Q-30+290.75	3.6	8.00	4.40	6.4	1.37	700	-	-	2.5E-07	5.6E-08	Cuttings were not airlifted with drill rig; removed rods without water pressure and airlifted water only inside of black plastic casing.	9/26/2011
Q-30+296.75	3.5	8.40	4.90	3.0	0.36	60	-	-	6.0E-07	1.2E-07	Cuttings were not airlifted with drill rig; removed rods without water pressure.	9/25/2011
Q-30+302.75	3.7	8.50	4.80	3.0	0.32	100	-	-	9.5E-08	2.0E-08	Cuttings were not airlifted with drill rig; removed rods without water pressure.	9/25/2011
Q-30+308.75	4.1	8.70	4.60	7.5	0.44	40	-	-	1.2E-06	2.6E-07	Cuttings were not airlifted with drill rig; removed rods without water pressure and airlifted water only inside of black plastic casing.	9/25/2011
Q-30+314.75	3.9	8.50	4.60	4.3	0.58	60	-	-	1.1E-06	2.5E-07	Cuttings were not airlifted with drill rig; removed rods without water pressure.	9/25/2011
Q-30+320.75	3.6	8.50	4.90	7.3	0.91	120	-	-	1.3E-06	2.6E-07	Cuttings were not airlifted with drill rig; removed rods limiting water pressure.	9/24/2011
Q-30+326.75	4.1	9.30	5.20	4.3	3.25	15	-	-	NOT ANALYZABLE		Airlifted cuttings with drill rig; removed rods. Air was observed coming up through ground around the plastic casing.	9/24/2011
Q-30+332.75	3.5	9.50	6.05	7.4	0.38	55	-	-	7.0E-06	1.2E-06	Cuttings were not airlifted with drill rig; pulled and pushed rods out without water pressure to avoid hole collapse	9/24/2011
Q-30+338.75	4	10.30	6.30	6.2	3.78	180	0	45	4.8E-06	7.6E-07	Airlifted cuttings with drill rig; removed rods. After attempting a rising head test, the hole was filled with water to top of casing for a falling head test; air / bubbles lowered the water level very fast so re-added water after bubbles stopped coming back up to surface.	9/23/2011
Q-30+344.75	4.6	11.50	6.90	5.6	1.07	160	0	40	1.1E-06	1.6E-07	Airlifted cuttings with drill rig; Filled with water to top of casing; air / bubbles settled very fast so re-added water after bubbles stopped coming back up to surface	9/22/2011
Q-30+350.75	4.8	11.80	7.00	3.3	0.93	45	-	-	NOT ANALYZABLE		Removed rods with water pressure. After triconing, didn't blow out the water, directly filled hole with water and carried out FH test. Leak through bottom of plastic casing until water reached ground elevation.	9/22/2011

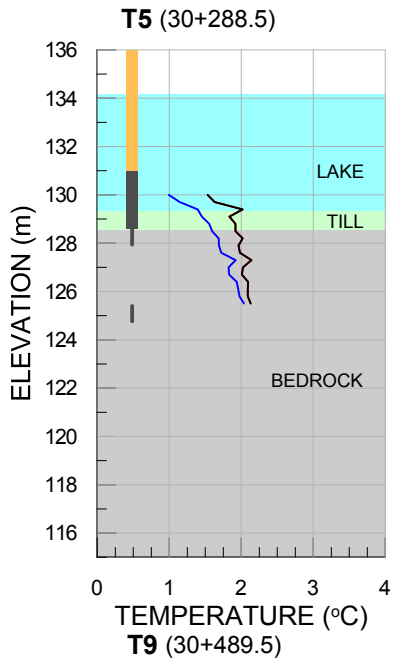
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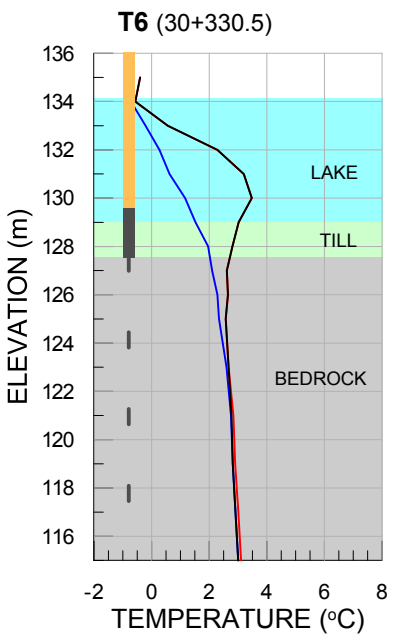


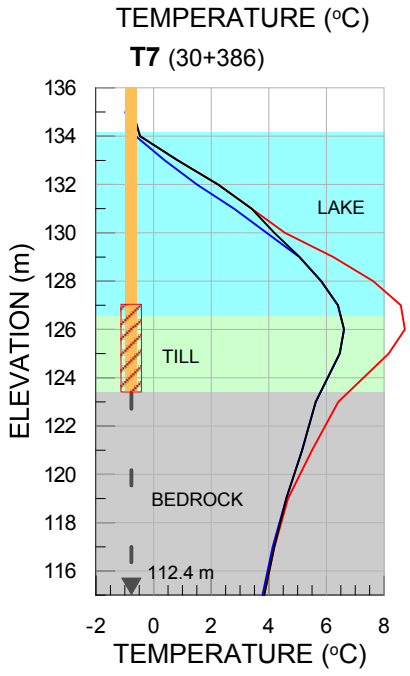


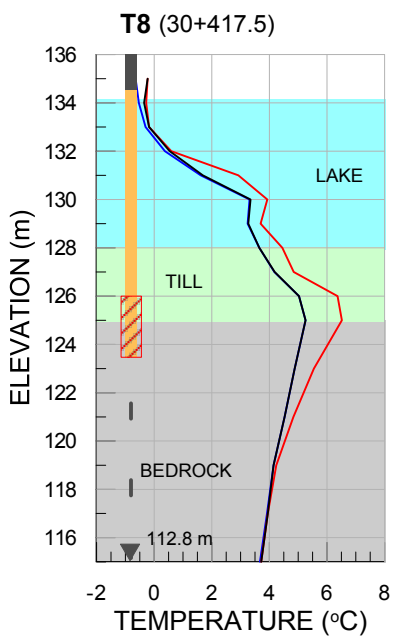


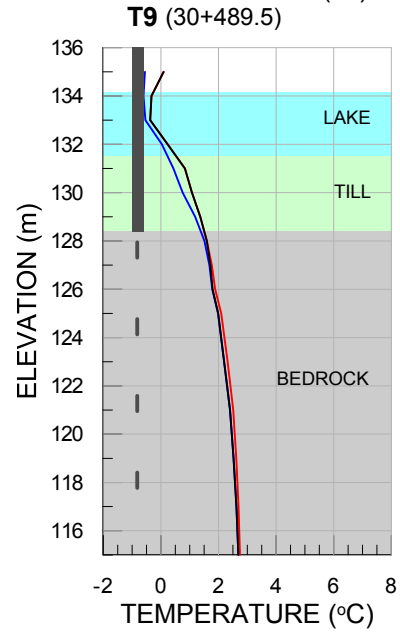












LEGEND

- Dike Crest
- Piezometric Head in Downstream Piezometers (Sep. 2, 2011)
- Lake Bed
- Bedrock
- Lake
- Till
- Bedrock
- Thermistor with Bead Locations
- Vibrating Wire Piezometer Installation Level
- SB
- CSB
- Jet Grouting
- Grouting

- T min (Jul. 24 to Sep. 2, 2011)
- T current (Sep. 2, 2011)
- T max (Jul. 24 to Sep. 2, 2011)

NOTE: 3rd node of thermistor T2 (elevation 135 m) is not functional.

PROJECT AEM

AGNICO-EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

BAY-GOOSE DIKE
30+000 to 30+550 - TEMPERATURE DATA (JUL. 2011 TO SEP. 2011)

Golder Associates

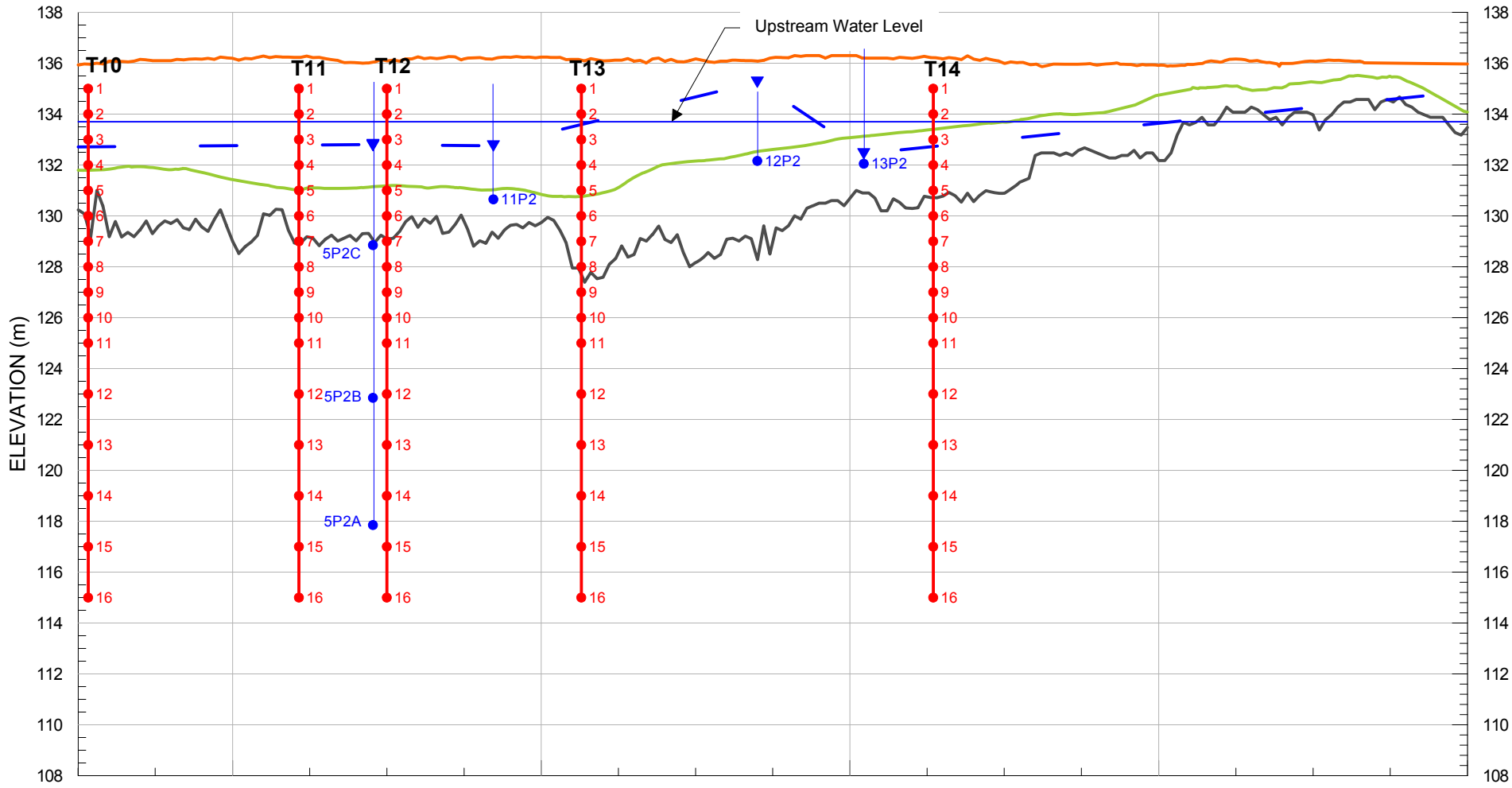
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CADD	GG	16AUG11	FIGURE 1	
CHECK	GRB	10NOV12		
REVIEW	FE	12NOV12		

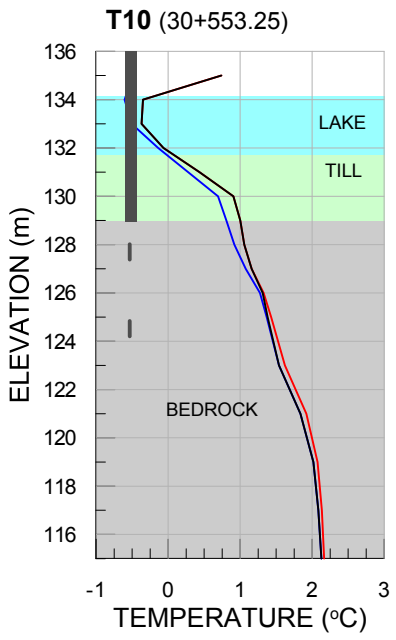
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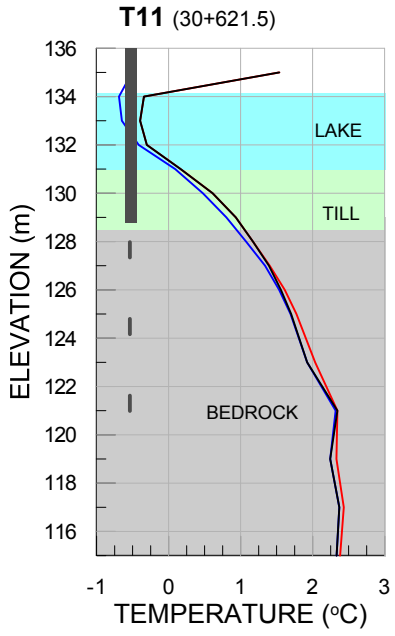
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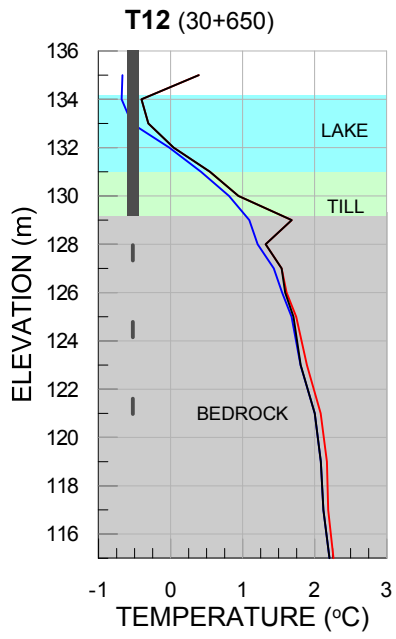
"North Shallows" Bay-Goose Dike - Longitudinal Section

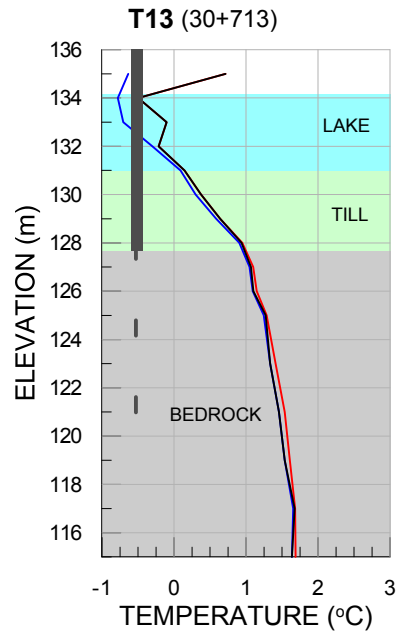
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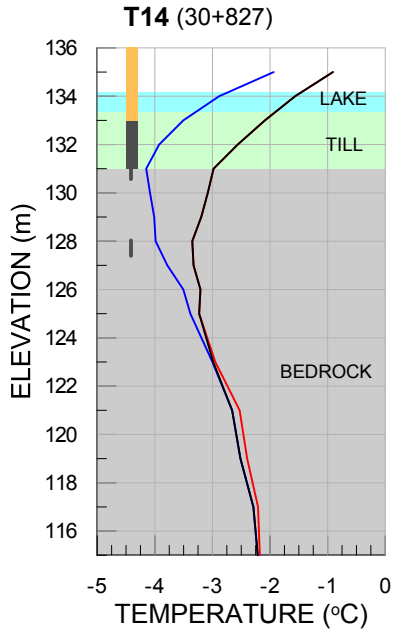












LEGEND

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- Lake Bed
- Bedrock
- Lake
- Till
- Bedrock
- Thermistor with Bead Locations
- Vibrating Wire Piezometer Installation Level
- SB
- CSB
- Jet Grouting
- Grouting

- T min (Jul. 24 to Sep. 2, 2011)
- T current (Sep. 2, 2011)
- T max (Jul. 24 to Sep. 2, 2011)

PROJECT

AEM

AGNICO-EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

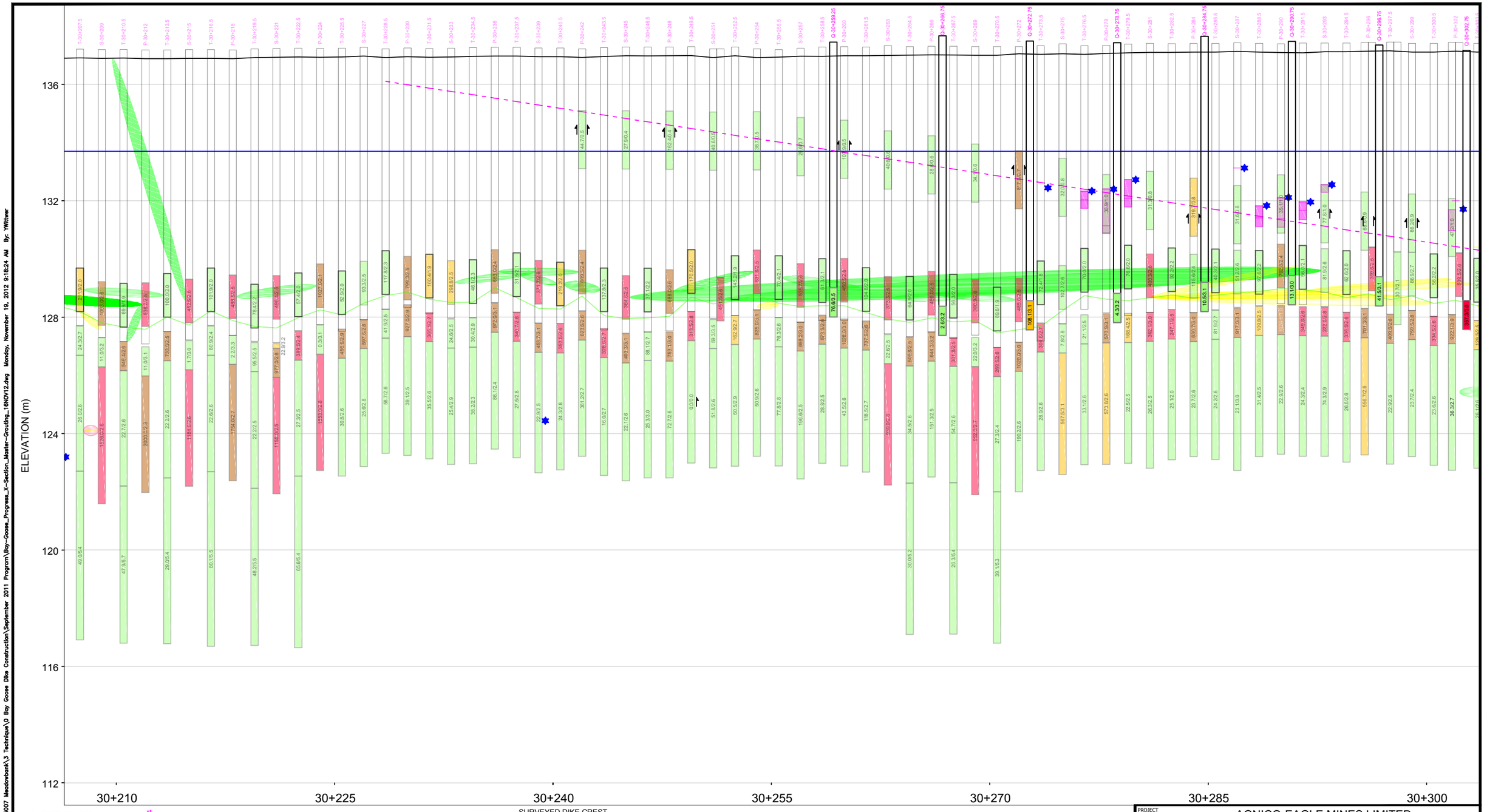
TITLE

BAY-GOOSE DIKE
30+550 to 31+000 - TEMPERATURE DATA
(JUL. 2011 TO SEP. 2011)

Golder Associates

PROJECT No. 09-1428-5007			PHASE No. 4000	
DESIGN	GP	16AUG11	SCALE AS SHOWN	REV. 0
CADD	GG	16AUG11		
CHECK	GRB	10NOV12		
REVIEW	FE	12NOV12		

FIGURE 2



LEGEND:

BOREHOLE NAME
P-PRIMARY
S-SECONDARY
T-TERTIARY
Q-QUATERNARY

CLOSED WITH CELEBEX

GROUTED WITH MICROFINE CEMENT

START OF FINAL GROUTING FOR GIVEN GROUT HOLE

P - 60+104
8-Jun
3.3/2.0

STARTED WITH MICROFINE AND CLOSED WITH CELEBEX

BY-PASS OUTSIDE STEEL CASING

DRILLING RETURN LOST

PRESSURE OBTAINED (BARS)

VOLUME INJECTED (L)

BY-PASS WITHIN STEEL CASING

		TAKE: L/m
VOL / P	LOW	< 100
VOL / P	M.HIGH	100< >200
VOL / P	HIGH	200< >400
VOL / P	V.HIGH	>400

*White Numbers indicate > 80% of Pmax not achieved (Stage 3 & 4)
*Black Numbers indicate > 80% of Pmax achieved (Stage 3 & 4)

SURVEYED DIKE CREST
LAKE LEVEL: ~133.7m
ORIGINAL TRENCH (SOUNDING)
BASE OF CUT-OFF WALL (SOUNDING)
INTERPRETED BEDROCK (DRILLING)
BEDROCK (2010 INVESTIGATION)
GROUTING COMMUNICATION
CASING COMMUNICATION
DRILLING COMMUNICATION

NOTES:

1) ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED.
2) ALL ELEVATIONS ARE IN METRES ABOVE SEA LEVEL (MASL), UNLESS OTHERWISE NOTED
3) CASING COLLAR REFERENCE ELEVATIONS PROVIDED BY AEM.

0 1 2 3 4 5
VERTICAL SCALE IN METRES

0 2 4 6 8 10
HORIZONTAL SCALE IN METRES

DRAFT

PROJECT
AGNICO-EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE
BAY-GOOSE DIKE
WATER LOSS INV. GROUT TAKES
STA. 30+207.5 TO 30+303.5

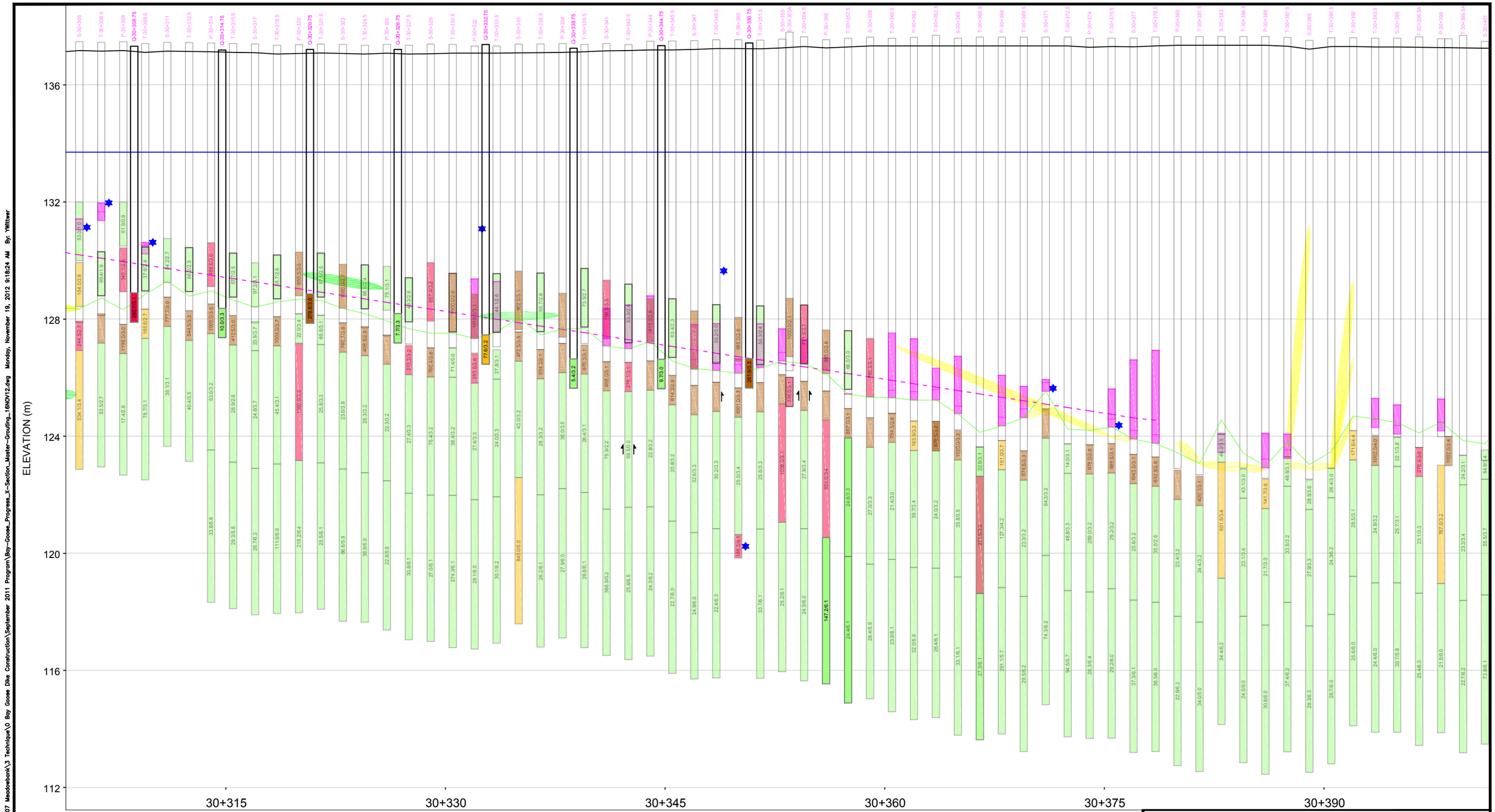
Golder Associates

PROJECT No.		09-1428-5007	FILE No.		
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CADD	YEW	OCT11			
CHECK	GRB	NOV12			
REVIEW	FE	NOV12			

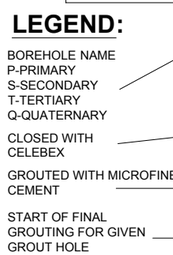
FIGURE 3

Drawing File: Y:\Montreal\Acti\2009\1428\09-1428-5007 Meadowbank\3 Technique\Q Boy Goose Dike Construction\September 2011 Program\Boy-Goose_Progress_X-Section_Master-Grouting_16NOV12.dwg Monday, November 19, 2012 9:18:24 AM By: YWittwer

Drawing File: Y:\Montreal\Acti\2009\1428\09-1428-5007 Meadowbank\3 Technique\0 Bay Goose Dike Construction\September 2011 Program\Bay-Goose_Progress_X-Section_Master-Grouting_16NOV12.dwg Monday, November 19, 2012 9:18:24 AM By: YMittwer



LEGEND:



		TAKE: L/m
VOL / P	LOW	< 100
VOL / P	M.HIGH	100< >200
VOL / P	HIGH	200< >400
VOL / P	V.HIGH	>400

*White Numbers indicate > 80% of Pmax not achieved (Stage 3 & 4)
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- SURVEYED DIKE CREST
- LAKE LEVEL: ~133.7m
- ORIGINAL TRENCH (SOUNDING)
- BASE OF CUT-OFF WALL (SOUNDING)
- INTERPRETED BEDROCK (DRILLING)
- BEDROCK (2010 INVESTIGATION)
- GROUTING COMMUNICATION
- CASING COMMUNICATION
- DRILLING COMMUNICATION

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0 1 2 3 4 5
VERTICAL SCALE IN METRES

0 2 4 6 8 10
HORIZONTAL SCALE IN METRES

DRAFT

PROJECT
AGNICO-EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE
BAY-GOOSE DIKE
WATER LOSS INV. GROUT TAKES
STA. 30+303.5 TO 30+401

Golder Associates

PROJECT No.		09-1428-5007	FILE No.		
DESIGN	VTR	OCT11	SCALE	AS SHOWN	REV. 0
CADD	YEW	OCT11			
CHECK	GRB	NOV12			
REVIEW	FE	NOV12			

FIGURE 4

Drawing File: Y:\Montreal\Active\2009\1428\09-1428-5007 Meadowbank\3 Technique\0 Bay Goose Dike Construction\September 2011 Program\Bay-Goose_Progress_X-Section_Master-Grouting_16NOV12.dwg Monday, November 19, 2012 9:18:24 AM By: YWittwer

ELEVATION (m)

136
132
128
124
120
116
112

30+600 30+615 30+630 30+645 30+660 30+675 30+690

LEGEND:

BOREHOLE NAME
P-PRIMARY
S-SECONDARY
T-TERTIARY
Q-QUATERNARY

CLOSED WITH CELEBEX

GROUTED WITH MICROFINE CEMENT

START OF FINAL GROUTING FOR GIVEN GROUT HOLE

P - 60+104

3.3/2.0

8-Jun

STARTED WITH MICROFINE AND CLOSED WITH CELEBEX

BY-PASS OUTSIDE STEEL CASING

DRILLING RETURN LOST

PRESSURE OBTAINED (BARS)

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0 1 2 3 4 5
VERTICAL SCALE IN METRES

0 2 4 6 8 10
HORIZONTAL SCALE IN METRES

DRAFT

PROJECT
AGNICO-EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE
BAY-GOOSE DIKE
WATER LOSS INV. GROUT TAKES
STA. 30+597.5 TO 30+692

Golder Associates

PROJECT No.		09-1428-5007	FILE No.		
DESIGN	VTR	OCT11	SCALE	AS SHOWN	REV. 0
CADD	YEW	OCT11	FIGURE 5		
CHECK	GRB	NOV12			
REVIEW	FE	NOV12			

APPENDIX A
Photographs



Photograph 1 : RockMaster Cabin Drill Used For LDPE Black Casings Installation at Station 30+350.75



Photograph 2 : Cuttings Coming Back to Surface as The Activated Hammer of The Drill Used Pressurized Air For LDPE Black Pipe Installation



Photograph 3 : Second Drill Used Near Station 30+650.75 For Rotary Tricone Drilling and Casing Installation.



Photograph 4 : Water Outflow Coming from within the Drilling Rods and the LDPE Black Casing Used to Identify Water Loss during Advance.



Photograp 5: Detected Communication From Hole 30+302.75 While Installation of Steel Casing in 30+308.75

APPENDIX B
HydroBench® Analyses

HYDROBENCH REPORT

Project	Meadowbank
Site	Bay Goose Dike
Source Well	Q-30+259.25
Test Name	Test 2
Test Date/Time	28/09/2011, 10:22
Interval	top: 3.96 m bottom: 8.94 m
Description	Falling head test
	Open hole, no packers
	Measured with pressure transducer
	Pressure response shows effective water column above transducer

Basic Data

Test Interval	4.98 m		
Porosity	0.10		
Well Radius	0.057 m	Tubing Radius	0.076 m
Inclination	0.0 deg		
Test Volume	50.831 l		
Well Type	Source		

Fluid Properties

Viscosity	0.001 Pa*s
Density	1000.0 kg/m³
Compressibility	2.0e-09 1/Pa

Sequence Definition

Name	Category	t(o) [hrs]	P(o) [kPa]	P(i) [kPa]	Rate [l/min]	C [m³/Pa]
PSR	Recovery	0.00000	26.55			1.9e-06
SI-Init	dP-Event	0.28667	26.92	-44.3 *		1.9e-06
SI	Slug	0.34250	71.24	26.9		1.9e-06

Analysis Results

Analysis "SI_Final"

Static Pressure: 27.09 kPa

Shell Parameters:

Name	Transmissivity [m²/s]	Storativity [-]	Radius [m]	Flow Dimension [-]
Shell 1	9.9e-03	2.0e-05	1.75	2.0
Shell 2	9.3e-06	2.0e-05	55.18	2.0
Shell 3	1.2e-07	2.0e-05	- -	2.0

Sequence Parameters:

Name	Wellbore Storage [m³/Pa]	Skin [-]
PSR	1.0e-06	0.0
SI-Init	1.9e-06	0.0
SI	1.9e-06	0.0

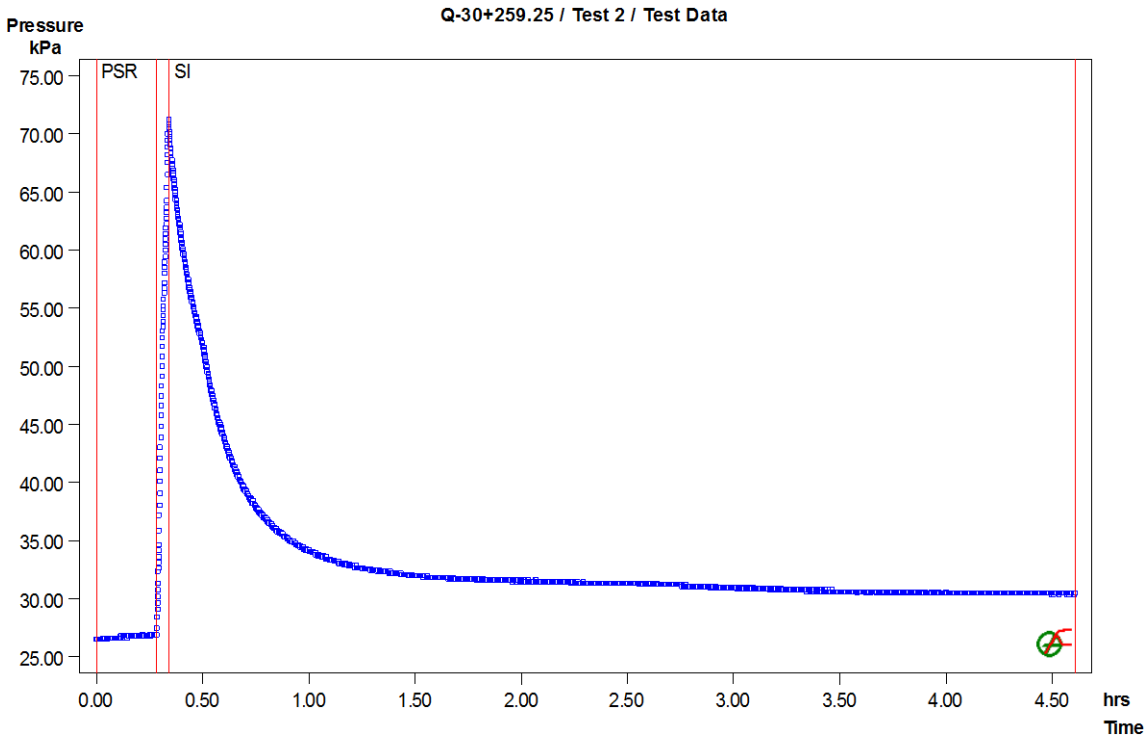


Figure 1: Pressure response and sequence definition

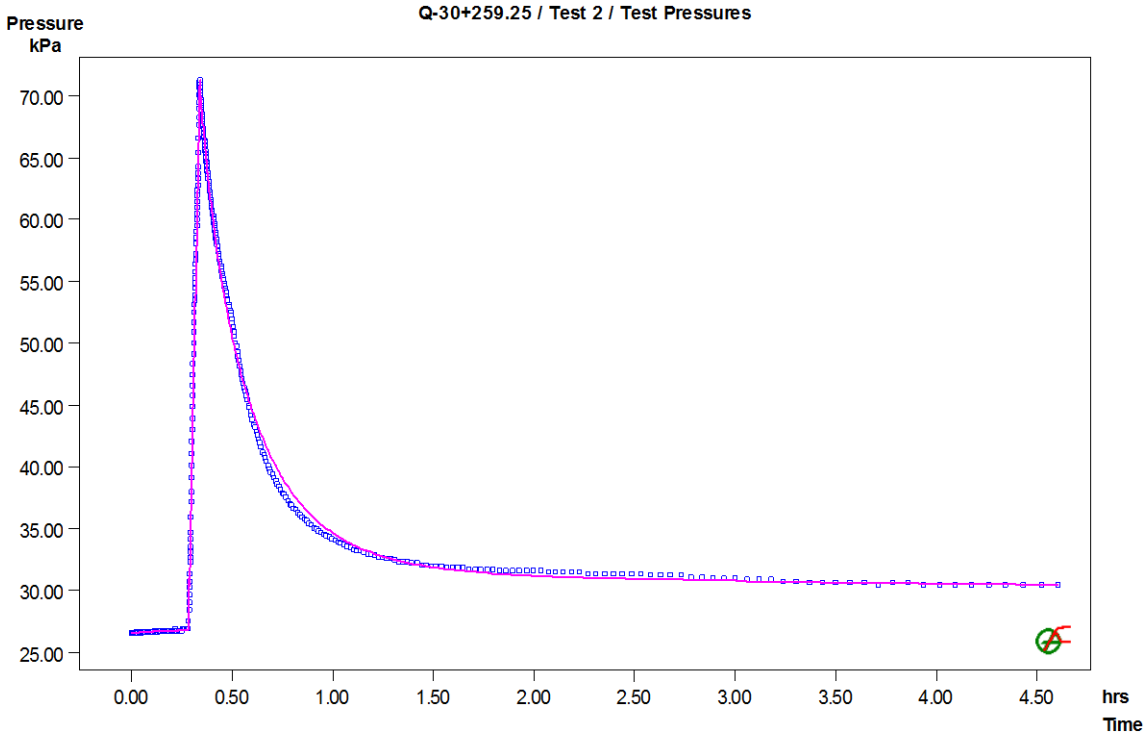


Figure 2: Pressure response and simulation: cartesian plot

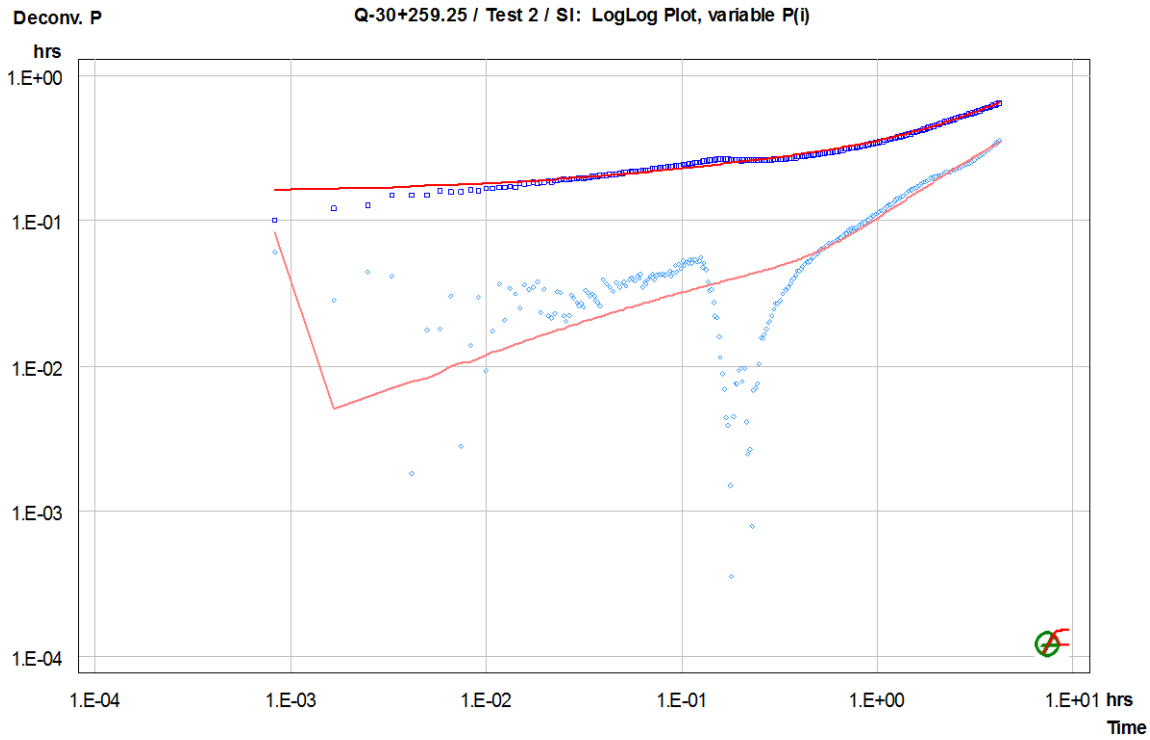


Figure 3: Deconvolved pressure response, derivative and simulation: Log-Log diagnostic plot, SI sequence

HYDROBENCH REPORT

Project	Meadowbank
Site	Bay Goose Dike
Source Well	Q-30+266.75
Test Name	Test 1
Test Date/Time	26/09/2011, 15:00
Interval	top: 3.90 m bottom: 6.71 m
Description	Falling head test
	Open hole, no packers
	Measured with pressure transducer
	Pressure response shows effective water column above transducer

Basic Data

Test Interval	2.81 m		
Porosity	0.10		
Well Radius	0.057 m	Tubing Radius	0.076 m
Inclination	0.0 deg		
Test Volume	28.883 l		
Well Type	Source		

Fluid Properties

Viscosity	0.001 Pa*s
Density	1000.0 kg/m³
Compressibility	2.0e-09 1/Pa

Sequence Definition

Name	Category	t(o) [hrs]	P(o) [kPa]	P(i) [kPa]	Rate [l/min]	C [m³/Pa]
PSR	Recovery	0.00000	16.11			1.9e-06
SI-Init	dP-Event	0.05167	15.36	-28.4 *		1.9e-06
SI	Slug	0.08167	43.80	15.4		1.9e-06

Analysis Results

Analysis "SI_Final"

Static Pressure: 14.42 kPa

Shell Parameters:

Name	Transmissivity [m²/s]	Storativity [-]	Radius [m]	Flow Dimension [-]
Shell 1	8.5e-07	2.0e-05	- -	2.0

Sequence Parameters:

Name	Wellbore Storage [m³/Pa]	Skin [-]
PSR	2.1e-08	0.0
SI-Init	1.0e-06	0.0
SI	1.0e-06	0.0

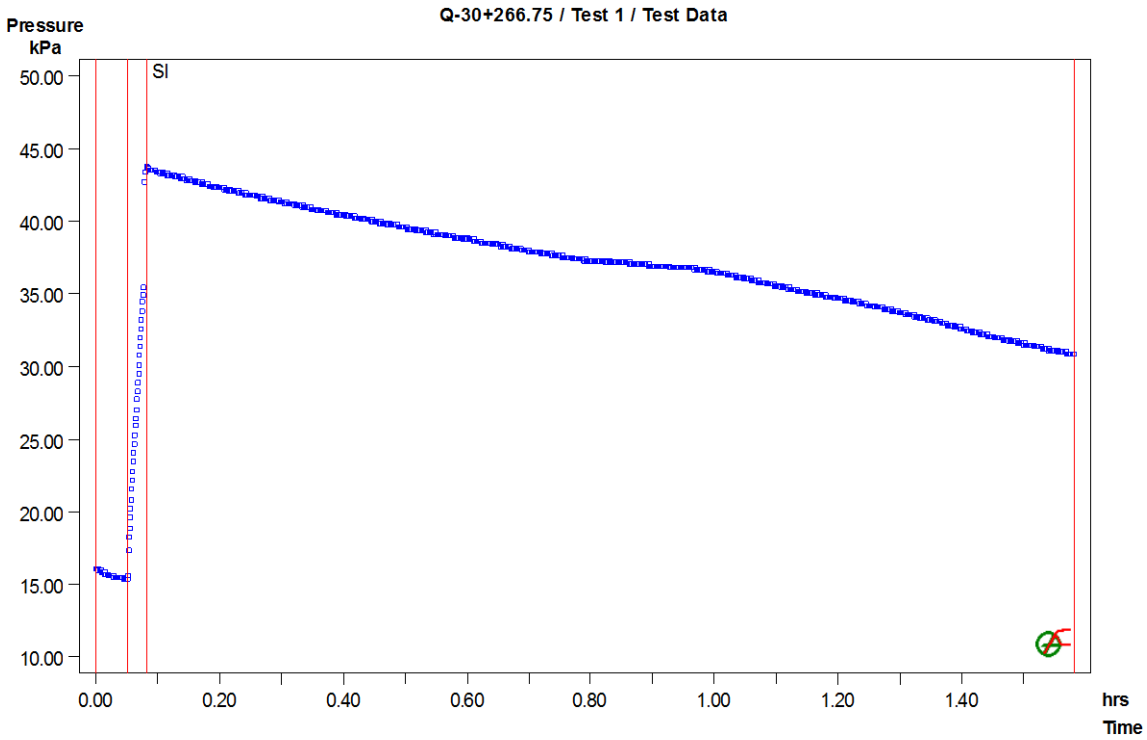


Figure 1: Pressure response and sequence definition

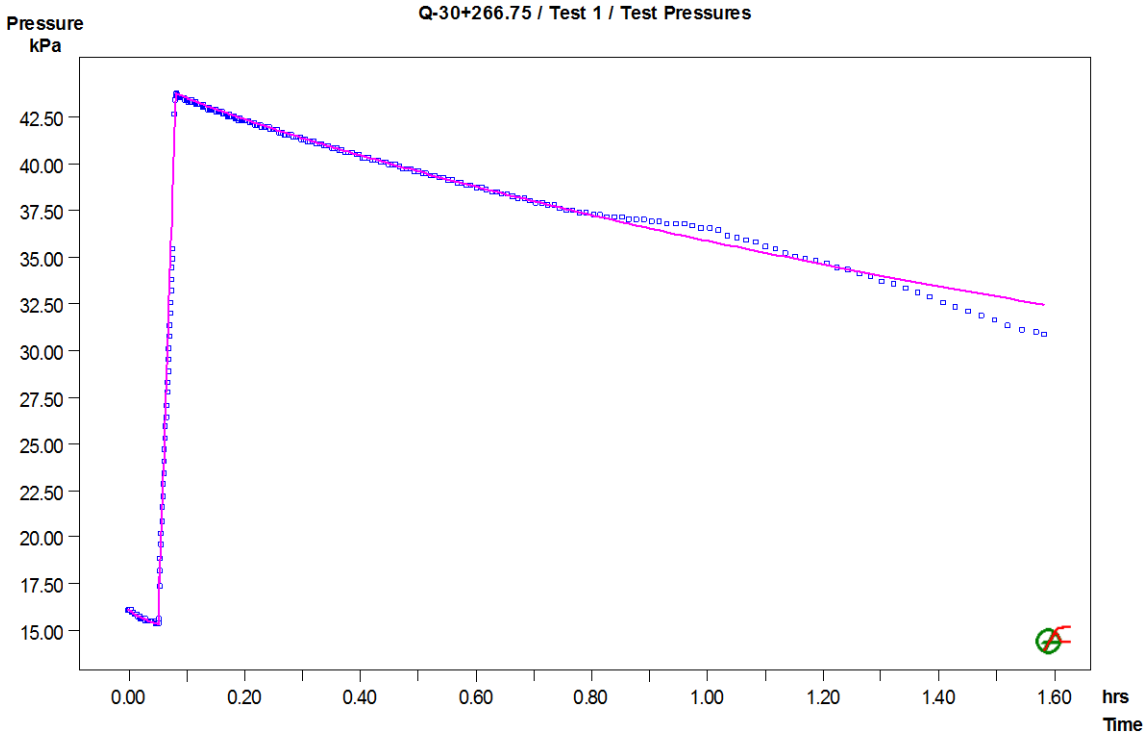


Figure 2: Pressure response and simulation: cartesian plot

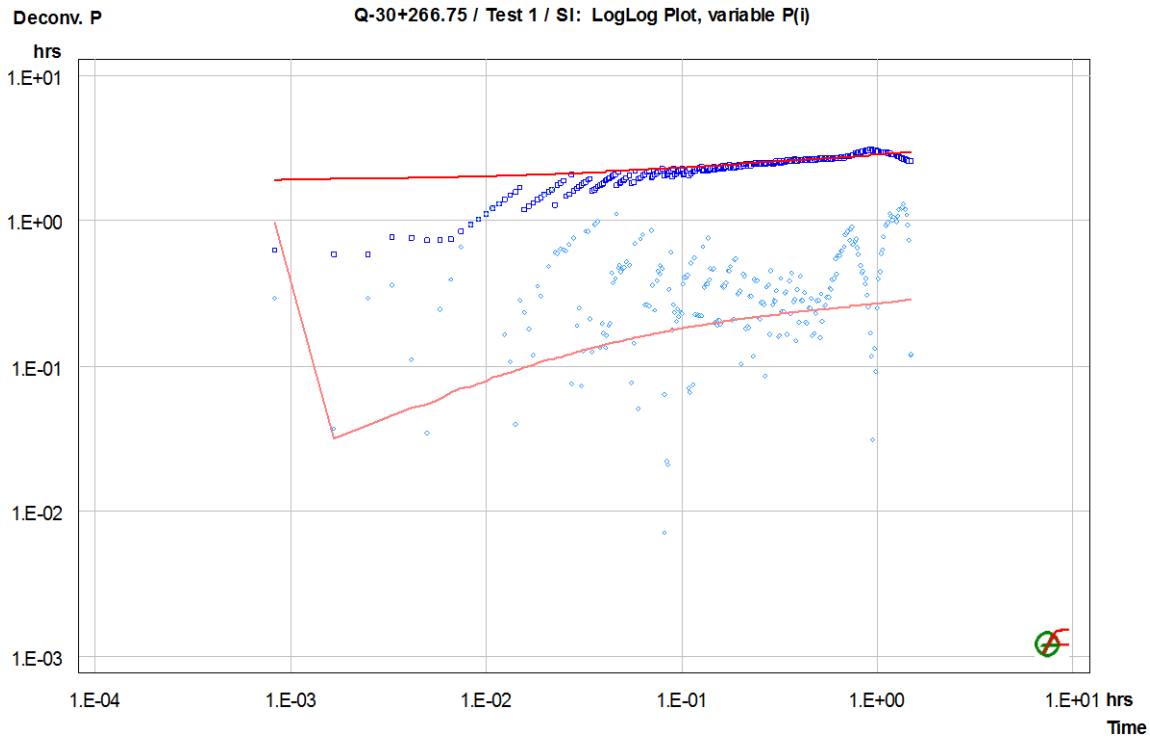


Figure 3: Deconvolved pressure response, derivative and simulation: Log-Log diagnostic plot, SI sequence

HYDROBENCH REPORT

Project	Meadowbank
Site	Bay Goose Dike
Source Well	Q-30+272.75
Test Name	Test 1
Test Date/Time	26/09/2011, 13:58
Interval	top: 4.03 m bottom: 7.32 m
Description	Falling head test
	Open hole, no packers
	Measured with pressure transducer
	Pressure response shows effective water column above transducer

Basic Data

Test Interval	3.29 m		
Porosity	0.10		
Well Radius	0.057 m	Tubing Radius	0.076 m
Inclination	0.0 deg		
Test Volume	33.581 l		
Well Type	Source		

Fluid Properties

Viscosity	0.001 Pa*s
Density	1000.0 kg/m³
Compressibility	2.0e-09 1/Pa

Sequence Definition

Name	Category	t(o) [hrs]	P(o) [kPa]	P(i) [kPa]	Rate [l/min]	C [m³/Pa]
PSR	Recovery	0.00000	8.73			1.9e-06
SI-Init	dP-Event	0.01250	9.23	-36.8 *		1.9e-06
SI	Slug	0.02083	46.00	9.2		1.9e-06

Analysis Results

Analysis "SI_Final"

Static Pressure: 13.35 kPa

Shell Parameters:

Name	Transmissivity [m²/s]	Storativity [-]	Radius [m]	Flow Dimension [-]
Shell 1	2.9e-05	2.0e-05	5.32	2.0
Shell 2	4.4e-06	2.0e-05	- -	2.0

Sequence Parameters:

Name	Wellbore Storage [m³/Pa]	Skin [-]
PSR	2.9e-07	0.0
SI-Init	1.9e-06	0.0
SI	1.9e-06	0.0

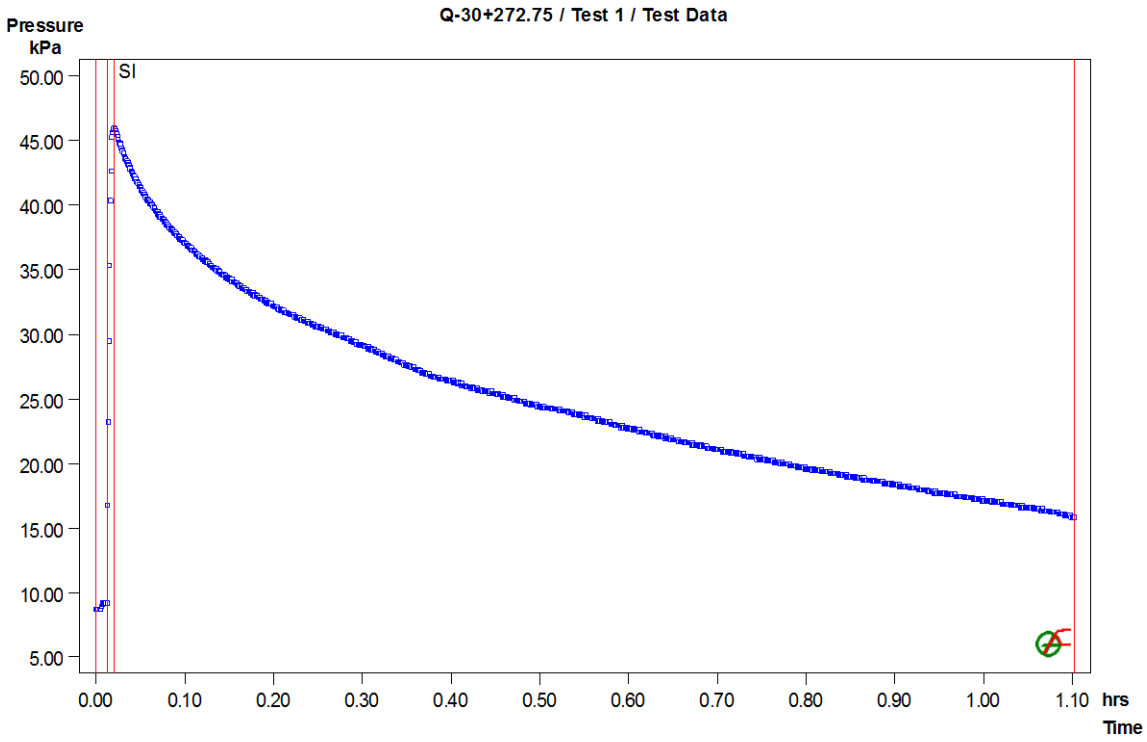


Figure 1: Pressure response and sequence definition

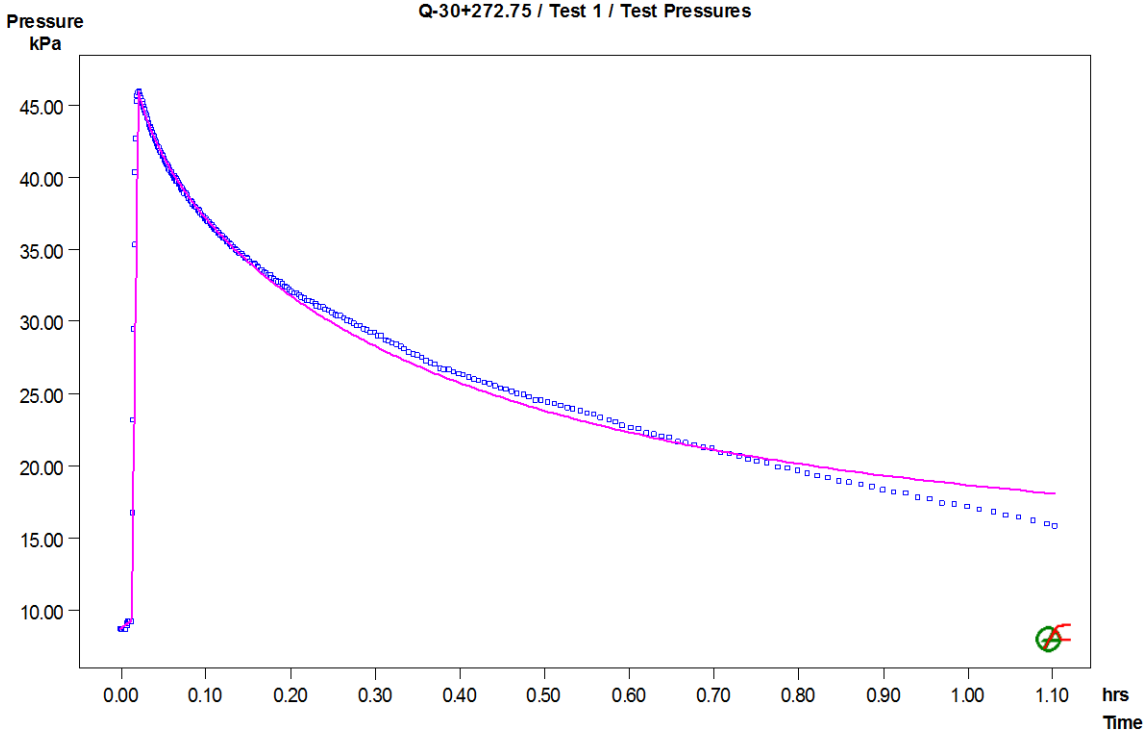


Figure 2: Pressure response and simulation: cartesian plot

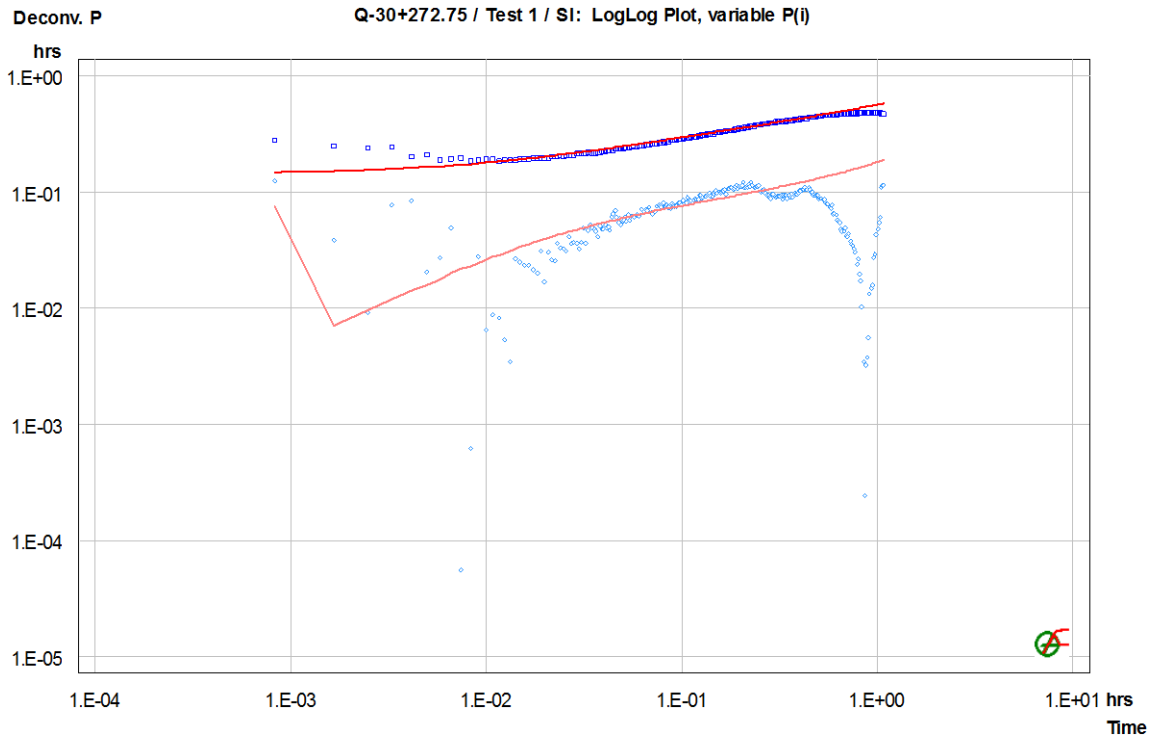


Figure 3: Deconvolved pressure response, derivative and simulation: Log-Log diagnostic plot, SI sequence

HYDROBENCH REPORT

Project	Meadowbank
Site	Bay Goose Dike
Source Well	Q-30+278.75
Test Name	Test 1
Test Date/Time	26/09/2011, 11:19
Interval	top: 3.80 m bottom: 7.37 m
Description	Falling head test
	Open hole, no packers
	Measured with pressure transducer
	Pressure response shows effective water column above transducer

Basic Data

Test Interval	3.57 m		
Porosity	0.10		
Well Radius	0.057 m	Tubing Radius	0.076 m
Inclination	0.0 deg		
Test Volume	36.695 l		
Well Type	Source		

Fluid Properties

Viscosity	0.001 Pa*s
Density	1000.0 kg/m³
Compressibility	2.0e-09 1/Pa

Sequence Definition

Name	Category	t(o) [hrs]	P(o) [kPa]	P(i) [kPa]	Rate [l/min]	C [m³/Pa]
PSR	Recovery	0.00000	21.09			1.9e-06
SI-Init	dP-Event	0.22667	20.84	-18.8 *		1.9e-06
SI	Slug	0.25917	39.63	20.8		1.9e-06

Analysis Results

Analysis "SI_Final"

Static Pressure: 20.72 kPa

Shell Parameters:

Name	Transmissivity [m²/s]	Storativity [-]	Radius [m]	Flow Dimension [-]
Shell 1	3.3e-07	2.0e-05	- -	2.0

Sequence Parameters:

Name	Wellbore Storage [m³/Pa]	Skin [-]
PSR	3.7e-08	0.0
SI-Init	1.9e-06	0.0
SI	1.9e-06	0.0

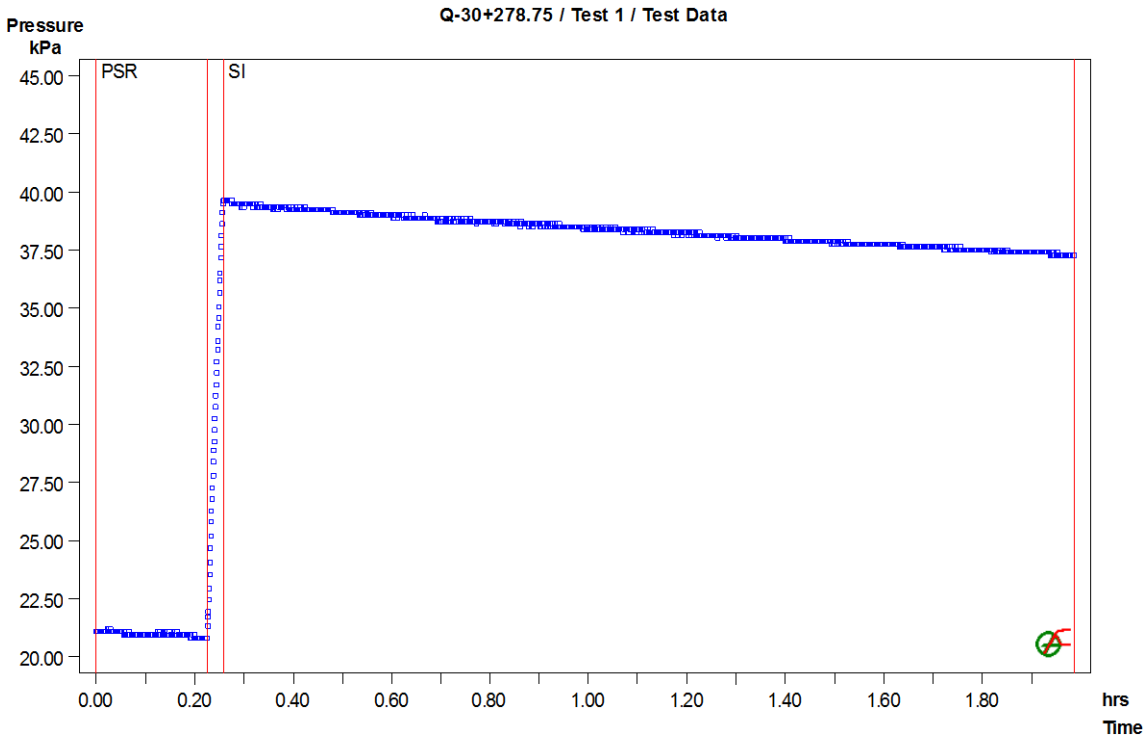


Figure 1: Pressure response and sequence definition

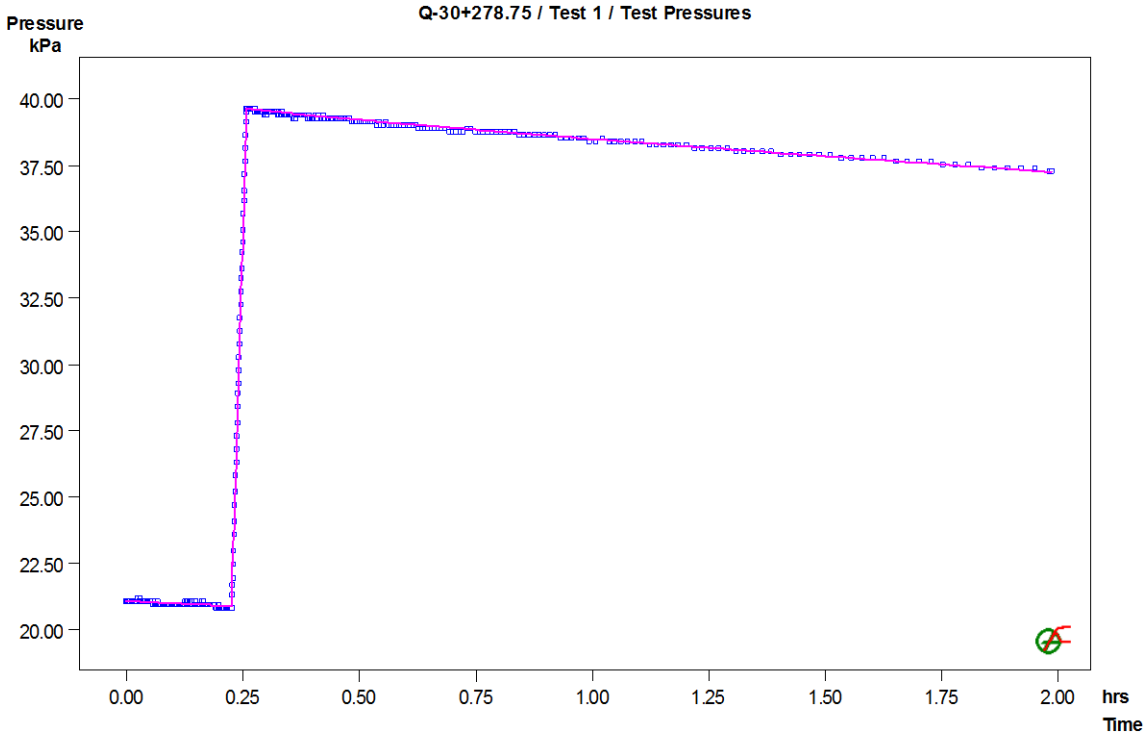


Figure 2: Pressure response and simulation: cartesian plot

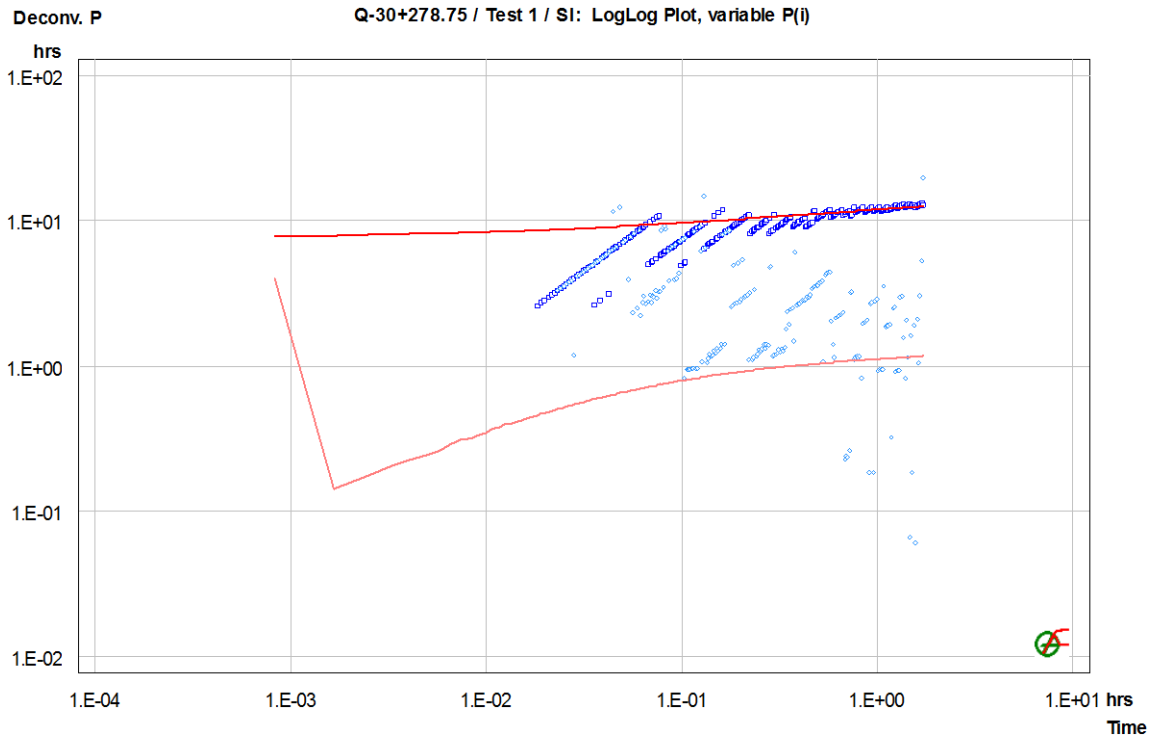


Figure 3: Deconvolved pressure response, derivative and simulation: Log-Log diagnostic plot, SI sequence

HYDROBENCH REPORT

Project	Meadowbank
Site	Bay goose Dike
Source Well	Q-30+284.75
Test Name	Test 1
Test Date/Time	25/09/2011, 17:37
Interval	top: 3.96 m bottom: 8.30 m
Description	Falling head test
	Open hole, no packers
	Measured with pressure transducer
	Pressure response shows effective water column above transducer

Basic Data

Test Interval	4.34 m		
Porosity	0.10		
Well Radius	0.057 m	Tubing Radius	0.076 m
Inclination	0.0 deg		
Test Volume	44.610 l		
Well Type	Source		

Fluid Properties

Viscosity	0.001 Pa*s
Density	1000.0 kg/m³
Compressibility	2.0e-09 1/Pa

Sequence Definition

Name	Category	t(o) [hrs]	P(o) [kPa]	P(i) [kPa]	Rate [l/min]	C [m³/Pa]
PSR	Recovery	0.00000	5.10			1.9e-06
SI-Init	dP-Event	0.02750	4.84	-20.4 *		1.9e-06
SI	Slug	0.09583	25.19	4.8		1.9e-06

Analysis Results

Analysis "SI_Final"

Static Pressure: 4.24 kPa

Shell Parameters:

Name	Transmissivity [m²/s]	Storativity [-]	Radius [m]	Flow Dimension [-]
Shell 1	9.9e-03	2.0e-05	51.40	2.0
Shell 2	2.3e-06	2.0e-05	- -	2.0

Sequence Parameters:

Name	Wellbore Storage [m³/Pa]	Skin [-]
PSR	1.9e-06	0.0
SI-Init	1.9e-06	0.0
SI	1.9e-06	0.0

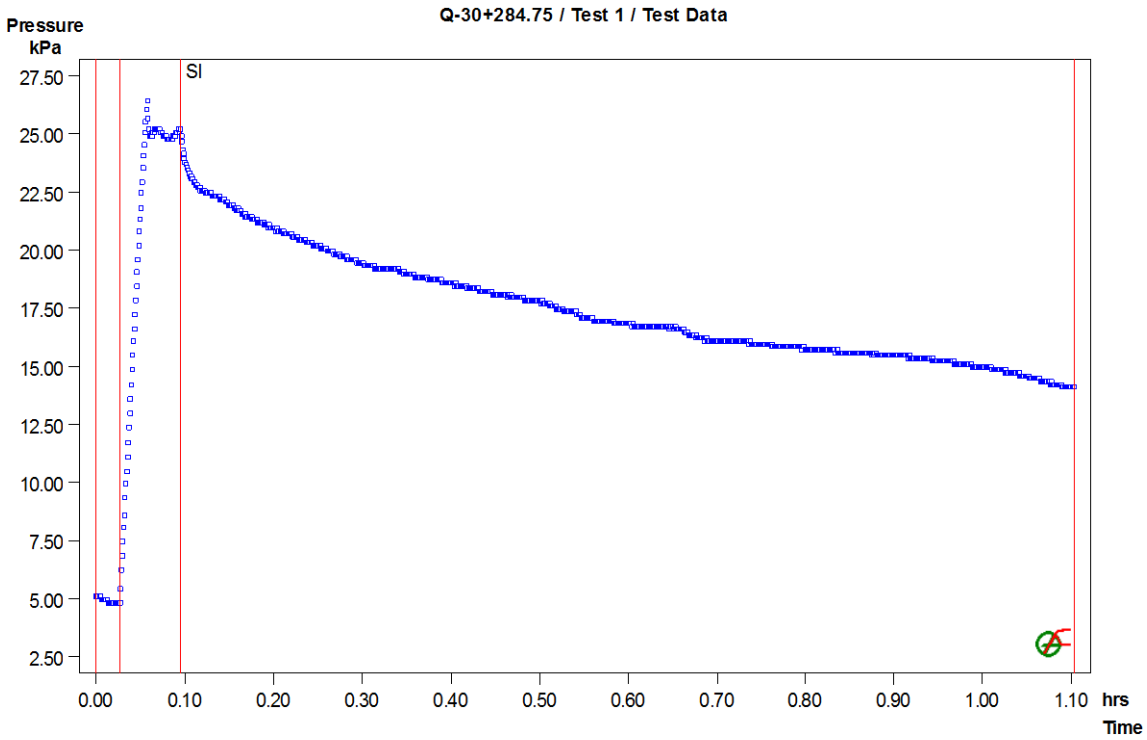


Figure 1: Pressure response and sequence definition

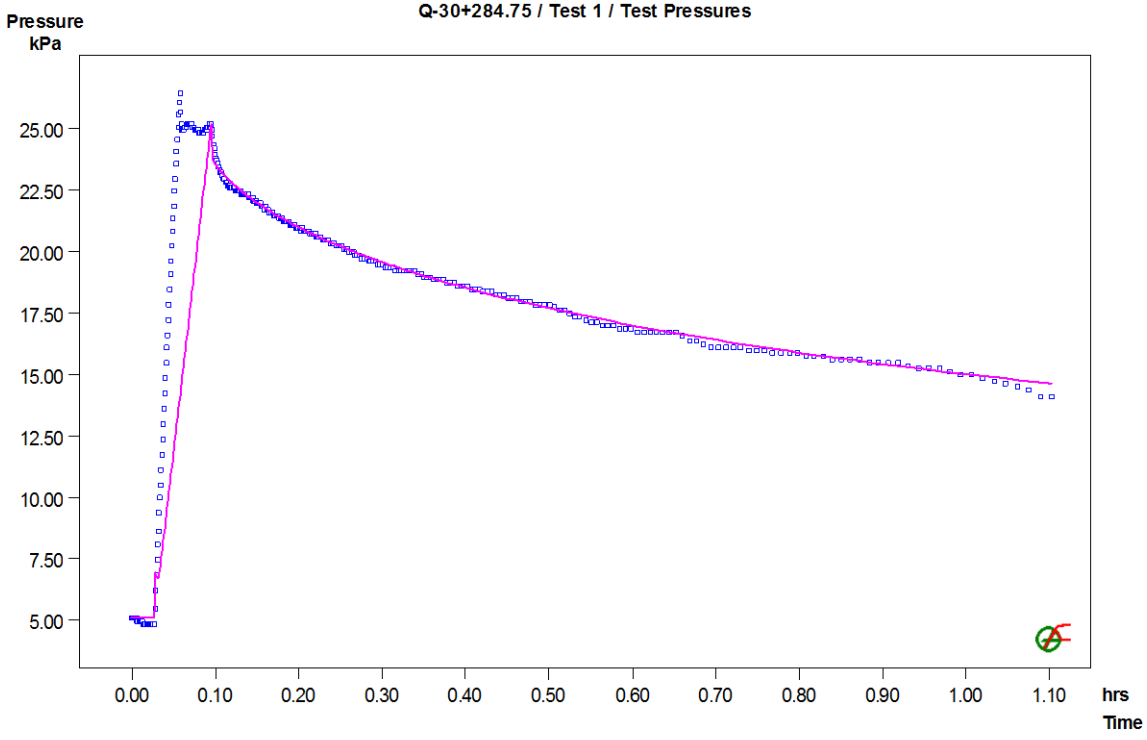


Figure 2: Pressure response and simulation: cartesian plot

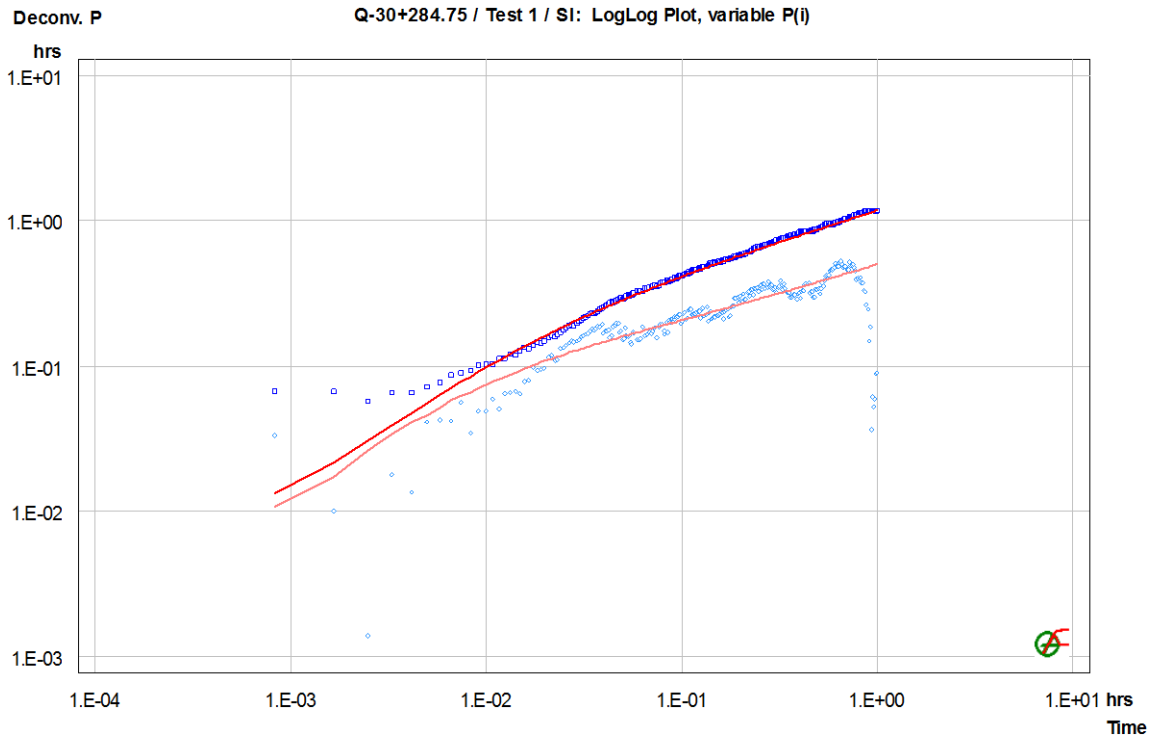


Figure 3: Deconvolved pressure response, derivative and simulation: Log-Log diagnostic plot, SI sequence

HYDROBENCH REPORT

Project	Meadowbank
Site	Bay Goose Dike
Source Well	Q-30+290.75
Test Name	Test 1
Test Date/Time	25/09/2011, 17:58
Interval	top: 3.96 m bottom: 8.30 m
Description	Falling head test
	Open hole, no packers
	Measured with pressure transducer
	Pressure response shows effective water column above transducer

Basic Data

Test Interval	4.34 m		
Porosity	0.10		
Well Radius	0.057 m	Tubing Radius	0.076 m
Inclination	0.0 deg		
Test Volume	44.610 l		
Well Type	Source		

Fluid Properties

Viscosity	0.001 Pa*s
Density	1000.0 kg/m³
Compressibility	2.0e-09 1/Pa

Sequence Definition

Name	Category	t(o) [hrs]	P(o) [kPa]	P(i) [kPa]	Rate [l/min]	C [m³/Pa]
PSR	Recovery	0.00000	22.21			1.9e-06
SI-Init	dP-Event	0.18667	22.08	-17.2 *		1.9e-06
SI	Slug	0.21083	39.26	22.1		1.9e-06

Analysis Results

Analysis "SI_Final"

Static Pressure: 21.93 kPa

Shell Parameters:

Name	Transmissivity [m²/s]	Storativity [-]	Radius [m]	Flow Dimension [-]
Shell 1	2.4e-05	2.0e-05	2.64	2.0
Shell 2	2.5e-07	2.0e-05	- -	2.0

Sequence Parameters:

Name	Wellbore Storage [m³/Pa]	Skin [-]
PSR	1.9e-06	0.0
SI-Init	1.9e-06	0.0
SI	1.9e-06	0.0

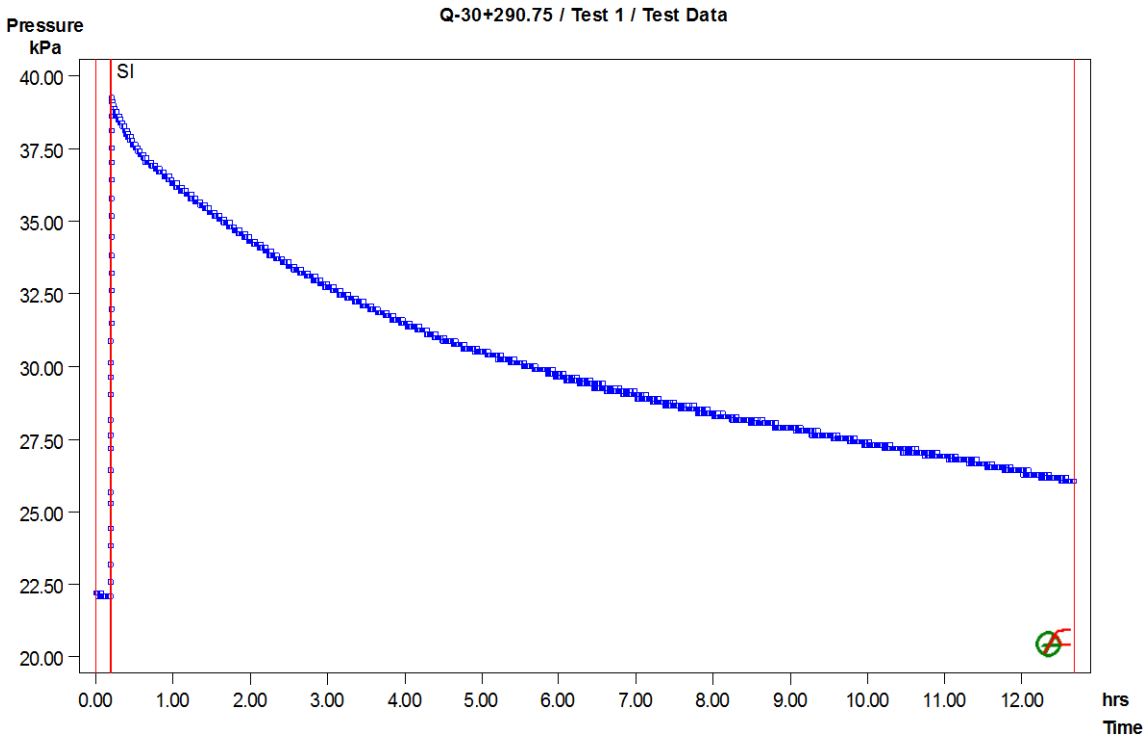


Figure 1: Pressure response and sequence definition

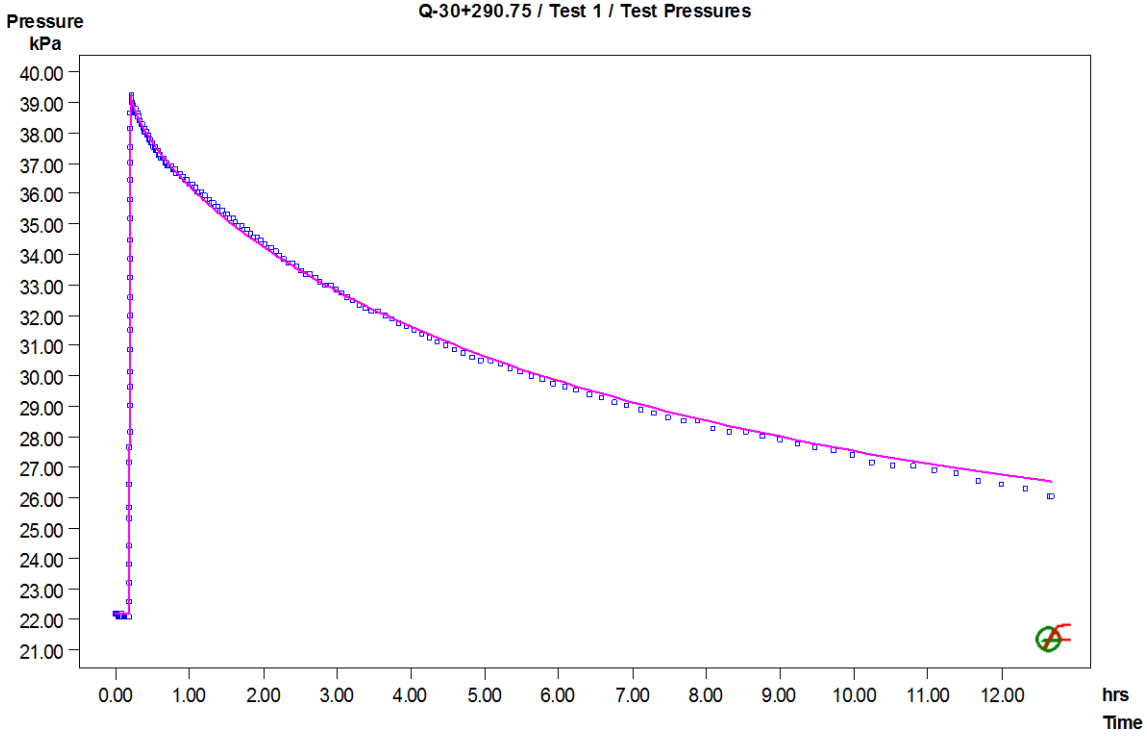


Figure 2: Pressure response and simulation: cartesian plot

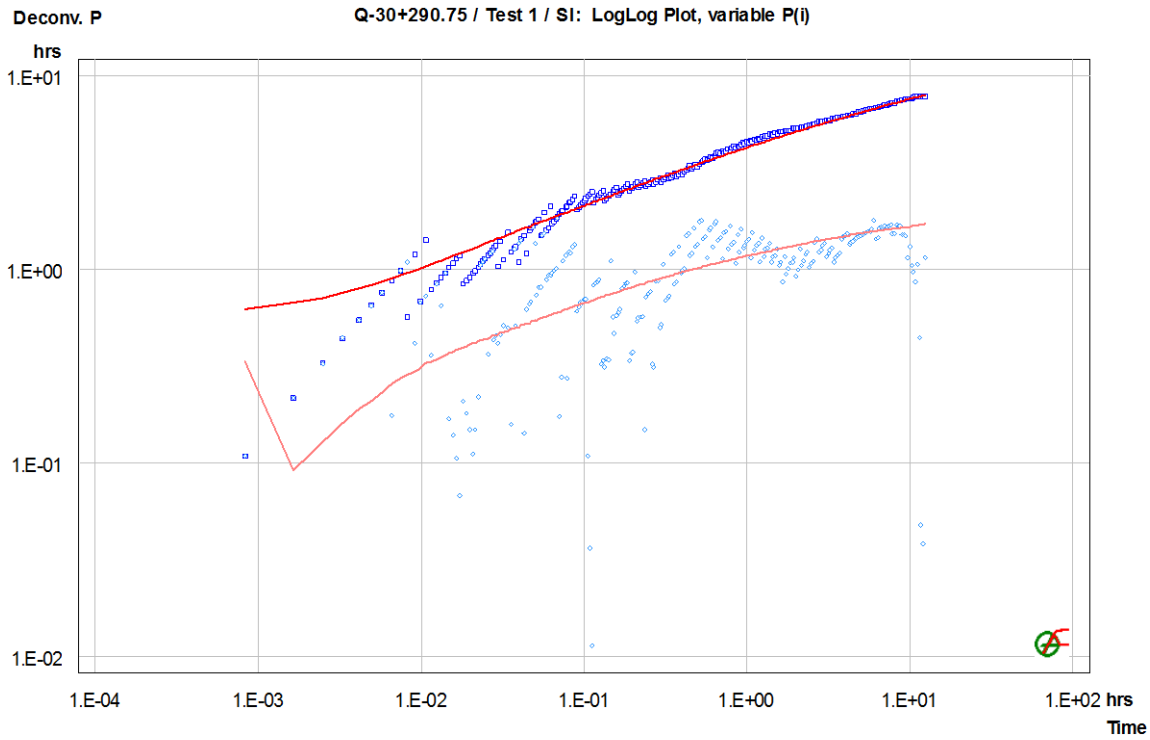


Figure 3: Deconvolved pressure response, derivative and simulation: Log-Log diagnostic plot, SI sequence

HYDROBENCH REPORT

Project	Meadowbank
Site	Bay Goose Dike
Source Well	Q-30+296.75
Test Name	Test 1
Test Date/Time	25/09/2011, 16:16
Interval	top: 3.50 m bottom: 8.40 m
Description	Falling head test
	Open hole, no packers
	Measured with pressure transducer
	Pressure response shows effective water column above transducer

Basic Data

Test Interval	4.90 m		
Porosity	0.10		
Well Radius	0.057 m	Tubing Radius	0.076 m
Inclination	0.0 deg		
Test Volume	50.366 l		
Well Type	Source		

Fluid Properties

Viscosity	0.001 Pa*s
Density	1000.0 kg/m³
Compressibility	2.0e-09 1/Pa

Sequence Definition

Name	Category	t(o) [hrs]	P(o) [kPa]	P(i) [kPa]	Rate [l/min]	C [m³/Pa]
PSR	Recovery	0.00000	40.61			1.9e-06
SI-Init	dP-Event	0.03083	40.00	-15.6 *		1.9e-06
SI	Slug	0.05083	55.64	40.0		1.9e-06

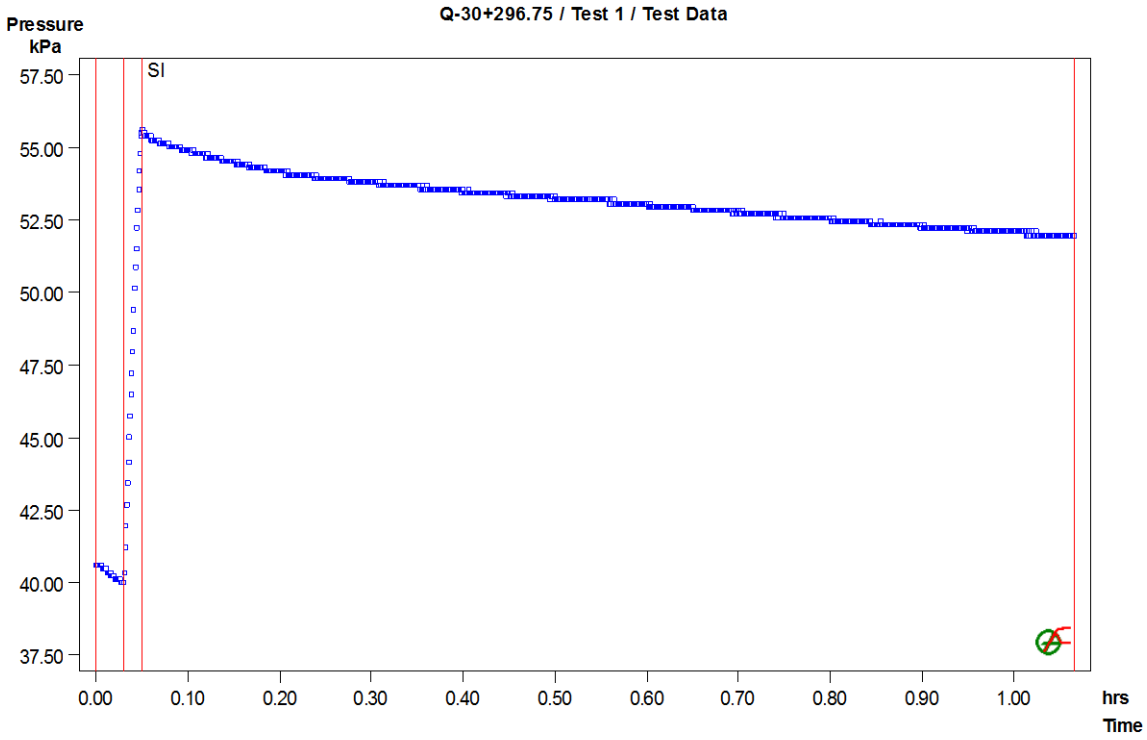


Figure 1: Pressure response and sequence definition

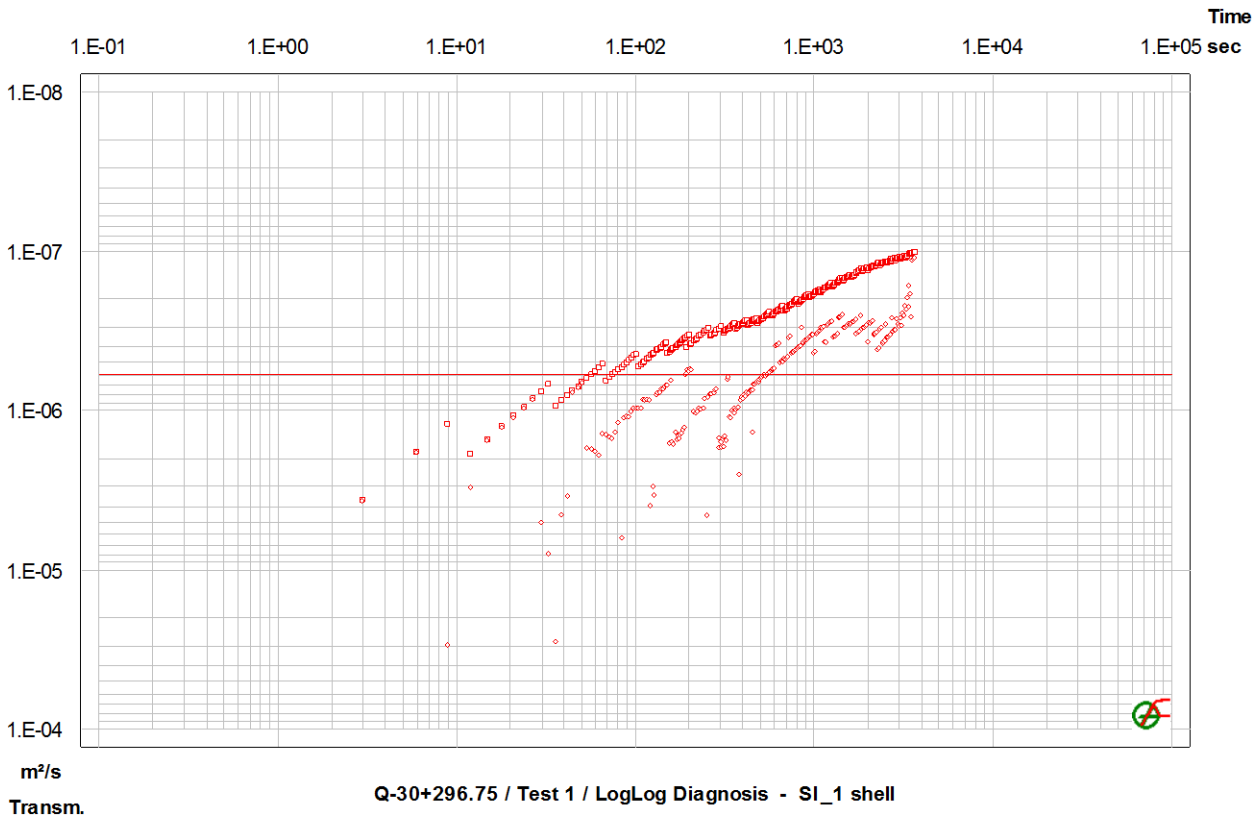


Figure 2: Transmissivity estimate: Transmissivity Normalized Plot, SI sequence, red horizontal line indicates estimated transmissivity of 6 x 10^{-07} m^2/s

HYDROBENCH REPORT

Project	Meadowbank
Site	Bay Goose Dike
Source Well	Q-30+302.75
Test Name	Test 1
Test Date/Time	25/09/2011, 12:30
Interval	top: 3.66 m bottom: 8.50 m
Description	Falling head test
	Open hole, no packers
	Measured with pressure transducer
	Pressure response shows effective water column above transducer

Basic Data

Test Interval	4.84 m		
Porosity	0.10		
Well Radius	0.057 m	Tubing Radius	0.076 m
Inclination	0.0 deg		
Test Volume	49.749 l		
Well Type	Source		

Fluid Properties

Viscosity	0.001 Pa*s
Density	1000.0 kg/m³
Compressibility	2.0e-09 1/Pa

Sequence Definition

Name	Category	t(o) [hrs]	P(o) [kPa]	P(i) [kPa]	Rate [l/min]	C [m³/Pa]
PSR	Recovery	0.00000	13.24			1.9e-06
SI-Init	dP-Event	0.08222	13.23	-23.8 *		1.9e-06
SI	Slug	0.11056	37.04	13.2		1.9e-06

Analysis Results

Analysis "SI_Final"

Static Pressure: 13.02 kPa

Shell Parameters:

Name	Transmissivity [m²/s]	Storativity [-]	Radius [m]	Flow Dimension [-]
Shell 1	4.8e-06	2.0e-05	1.71	2.0
Shell 2	9.5e-08	2.0e-05	- -	2.0

Sequence Parameters:

Name	Wellbore Storage [m³/Pa]	Skin [-]
PSR	1.9e-06	0.0
SI-Init	1.9e-06	0.0
SI	1.9e-06	0.0

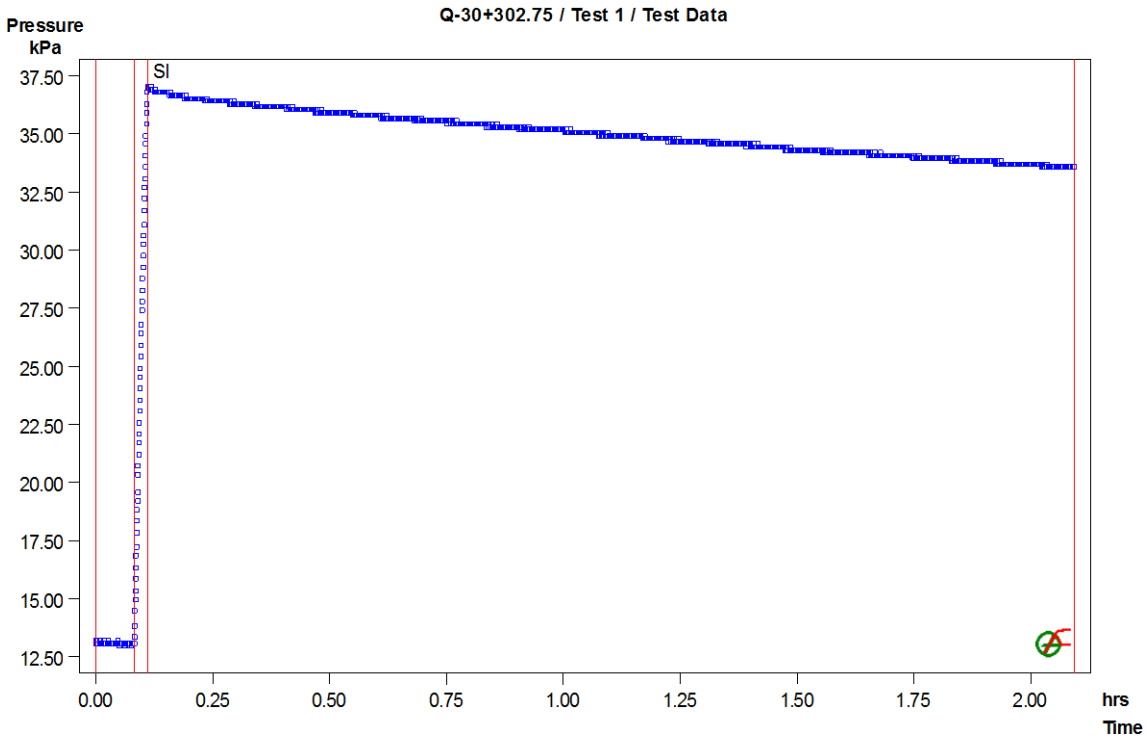


Figure 1: Pressure response and sequence definition

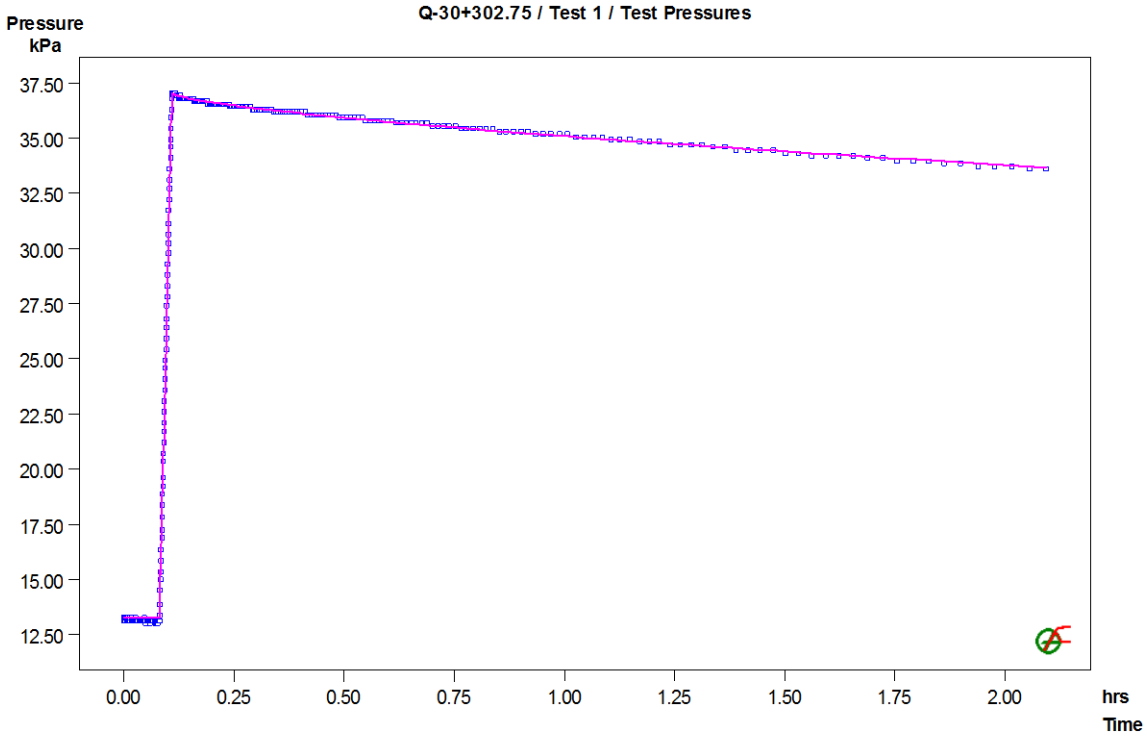


Figure 2: Pressure response and simulation: cartesian plot

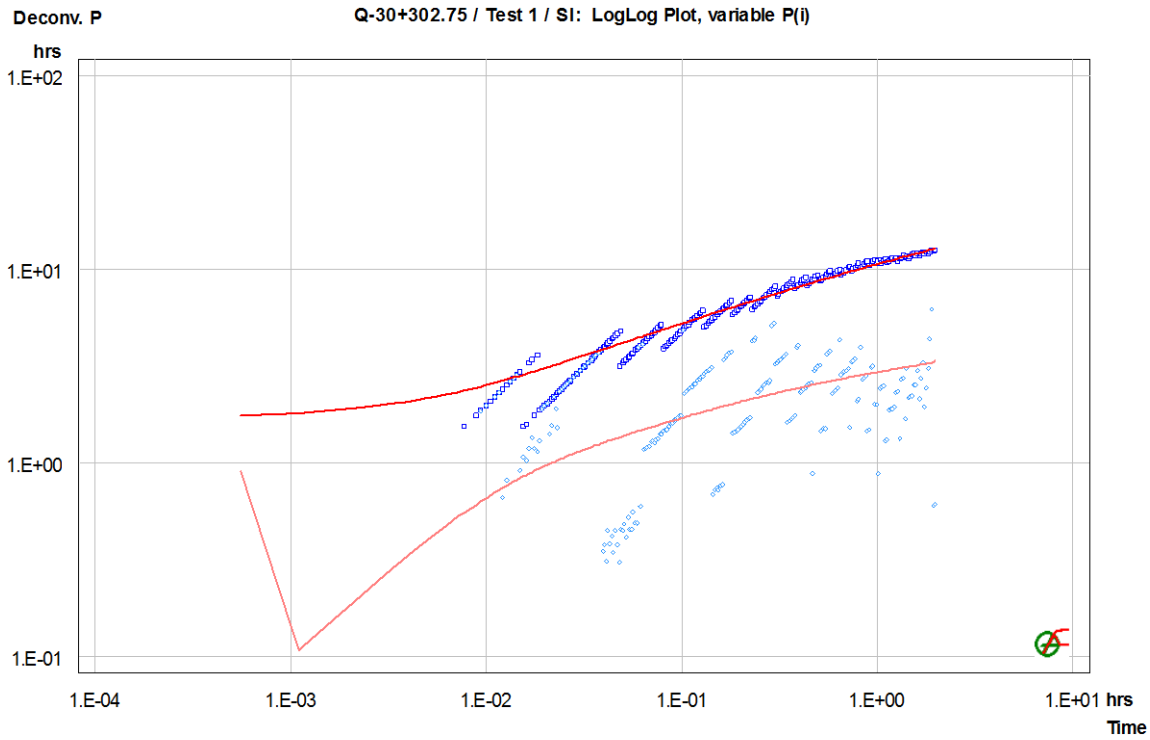


Figure 3: Deconvolved pressure response, derivative and simulation: Log-Log diagnostic plot, SI sequence

HYDROBENCH REPORT

Project	Meadowbank
Site	Bay Goose Dike
Source Well	Q-30+308.75
Test Name	Test 1
Test Date/Time	25/09/2011, 10:21
Interval	top: 4.10 m bottom: 8.70 m
Description	Falling head test
	Open hole, no packers
	Measured with pressure transducer
	Pressure response shows effective water column above transducer

Basic Data

Test Interval	4.60 m		
Porosity	0.10		
Well Radius	0.057 m	Tubing Radius	0.076 m
Inclination	0.0 deg		
Test Volume	47.282 l		
Well Type	Source		

Fluid Properties

Viscosity	0.001 Pa*s
Density	1000.0 kg/m³
Compressibility	2.0e-09 1/Pa

Sequence Definition

Name	Category	t(o) [hrs]	P(o) [kPa]	P(i) [kPa]	Rate [l/min]	C [m³/Pa]
PSR	Recovery	0.00000	13.74			1.9e-06
SI-Init	dP-Event	0.11611	13.99	-14.4 *		1.9e-06
SI	Slug	0.13389	28.41	14.0		1.9e-06

Analysis Results

Analysis "SI_Final"

Static Pressure: 14.31 kPa

Shell Parameters:

Name	Transmissivity [m²/s]	Storativity [-]	Radius [m]	Flow Dimension [-]
Shell 1	3.9e-03	2.0e-05	1.19	2.0
Shell 2	1.2e-06	2.0e-05	- -	2.0

Sequence Parameters:

Name	Wellbore Storage [m³/Pa]	Skin [-]
PSR	6.0e-08	0.0
SI-Init	1.9e-06	0.0
SI	1.9e-06	0.0

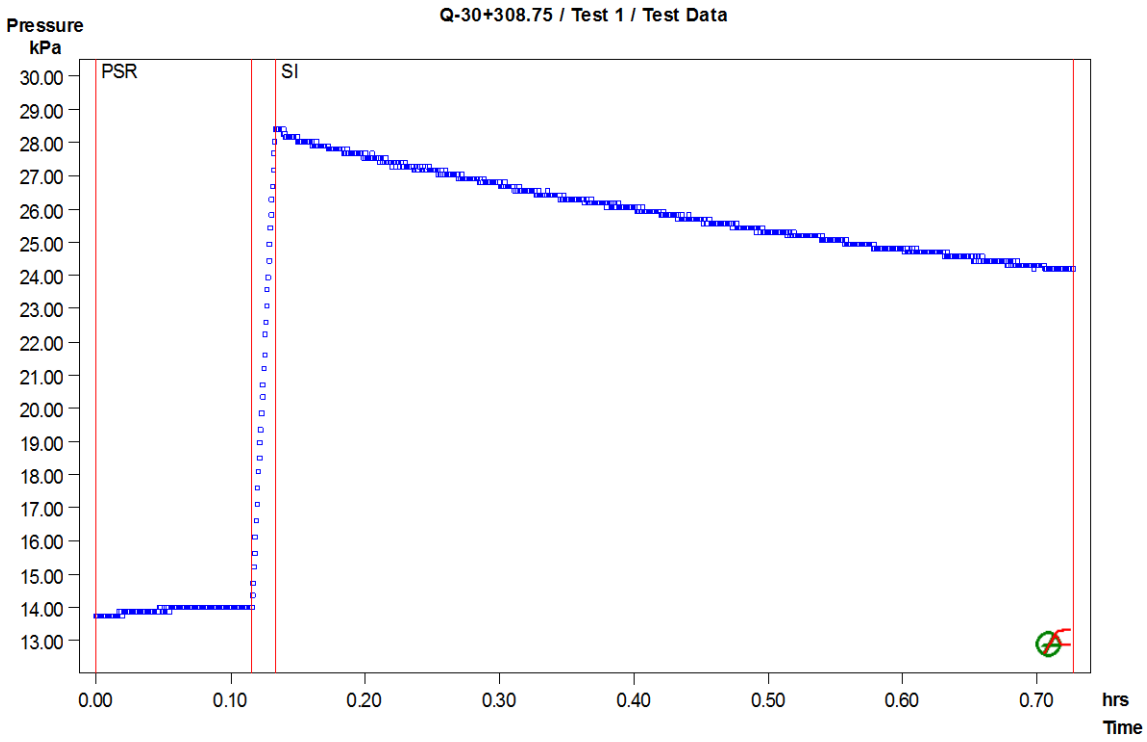


Figure 1: Pressure response and sequence definition

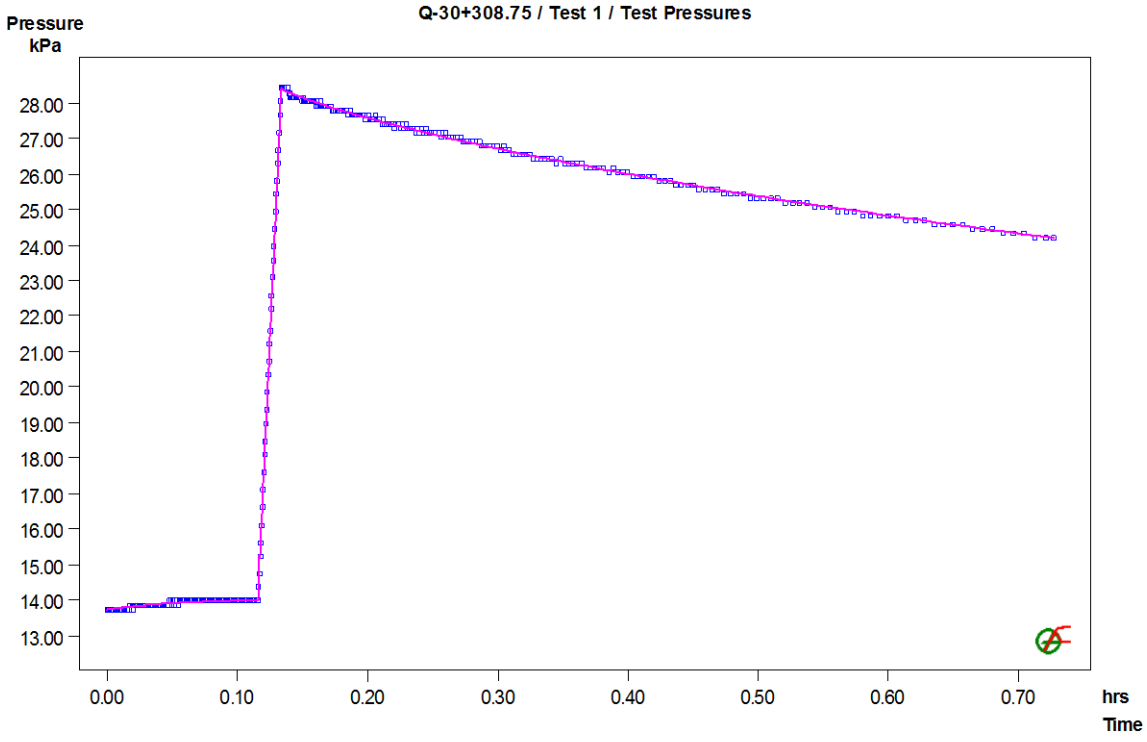


Figure 2: Pressure response and simulation: cartesian plot

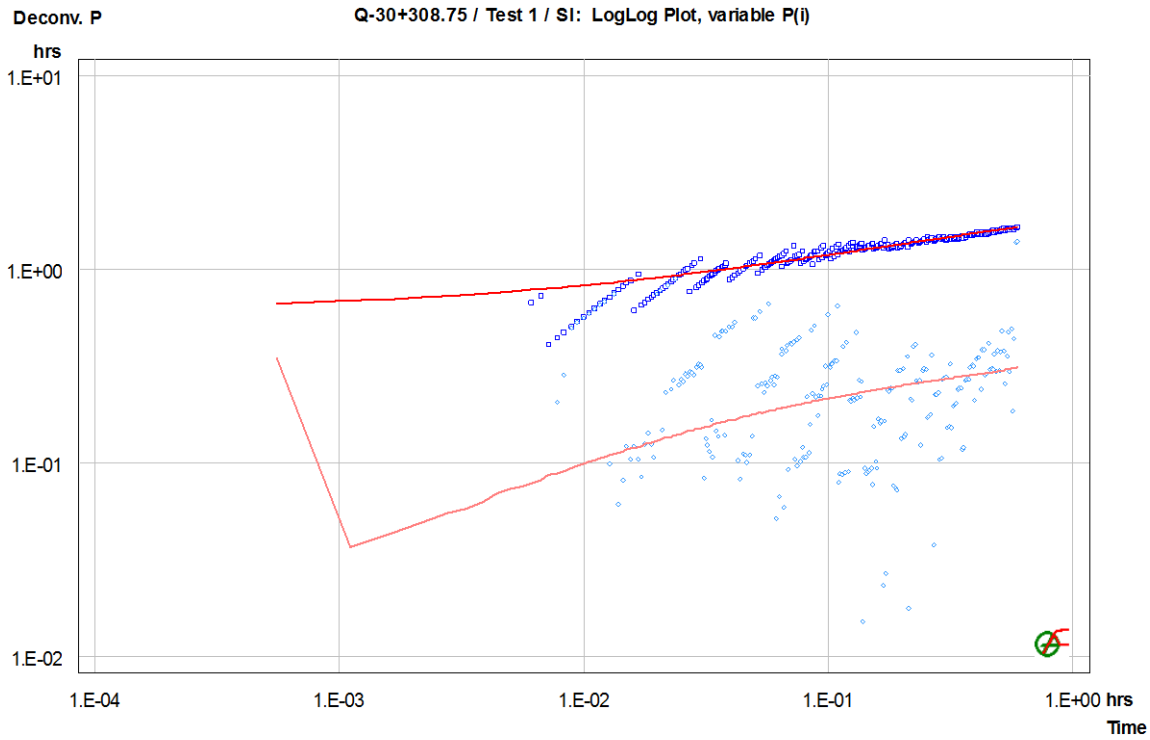


Figure 3: Deconvolved pressure response, derivative and simulation: Log-Log diagnostic plot, SI sequence

HYDROBENCH REPORT

Project	Meadowbank
Site	Bay Goose Dike
Source Well	Q-30+314.75
Test Name	Test 1
Test Date/Time	25/09/2011, 08:49
Interval	top: 3.90 m bottom: 8.50 m
Description	Falling head test
	Open hole, no packers
	Measured with pressure transducer
	Pressure response shows effective water column above transducer

Basic Data

Test Interval	4.60 m		
Porosity	0.10		
Well Radius	0.057 m	Tubing Radius	0.076 m
Inclination	0.0 deg		
Test Volume	47.282 l		
Well Type	Source		

Fluid Properties

Viscosity	0.001 Pa*s
Density	1000.0 kg/m³
Compressibility	2.0e-09 1/Pa

Sequence Definition

Name	Category	t(o) [hrs]	P(o) [kPa]	P(i) [kPa]	Rate [l/min]	C [m³/Pa]
PSR	Recovery	0.00000	29.03			1.9e-06
SI-Init	dP-Event	0.19444	28.41	-12.4 *		1.9e-06
SI	Slug	0.21056	40.85	28.4		1.9e-06

Analysis Results

Analysis "SI_Final"

Static Pressure: 28.00 kPa

Shell Parameters:

Name	Transmissivity [m²/s]	Storativity [-]	Radius [m]	Flow Dimension [-]
Shell 1	2.1e-03	2.0e-05	1.06	2.0
Shell 2	1.1e-06	2.0e-05	- -	2.0

Sequence Parameters:

Name	Wellbore Storage [m³/Pa]	Skin [-]
PSR	2.2e-08	0.0
SI-Init	1.9e-06	0.0
SI	1.9e-06	0.0

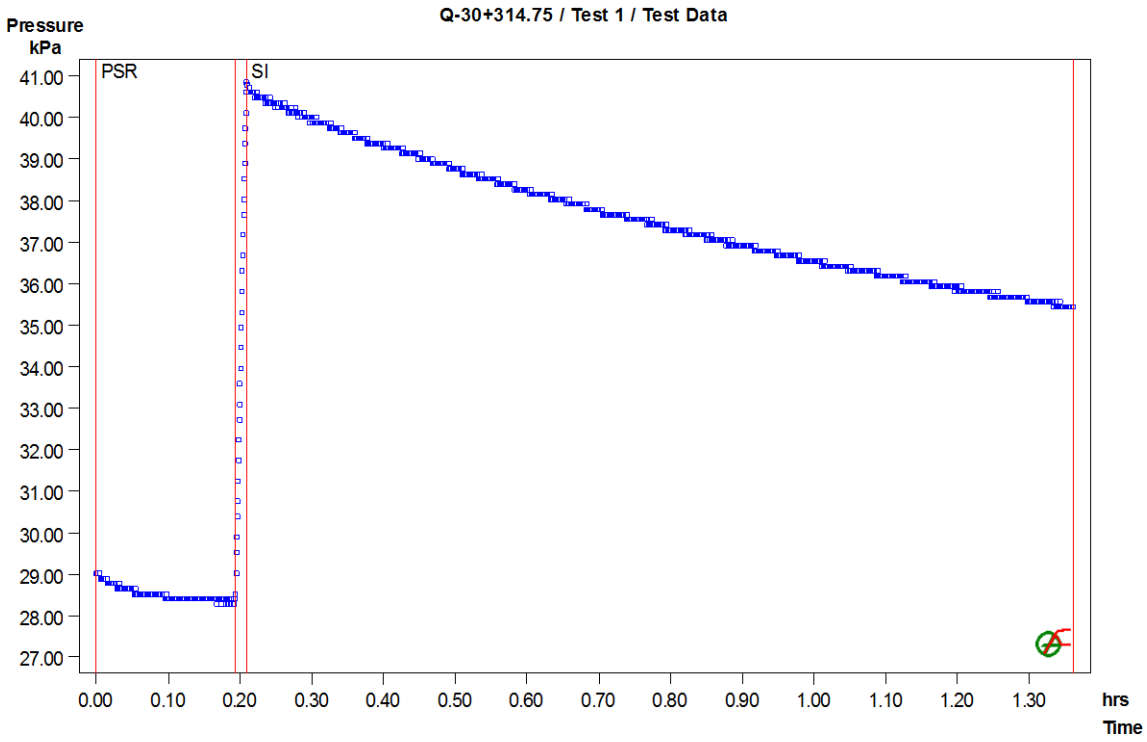


Figure 1: Pressure response and sequence definition

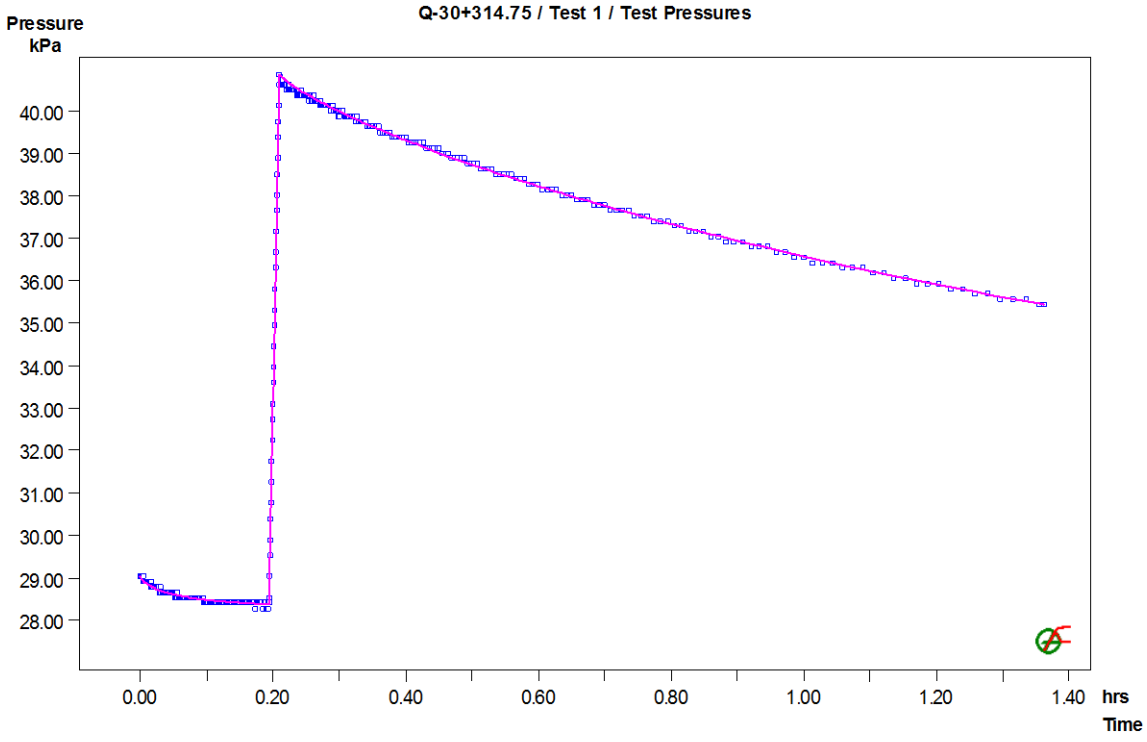


Figure 2: Pressure response and simulation: cartesian plot

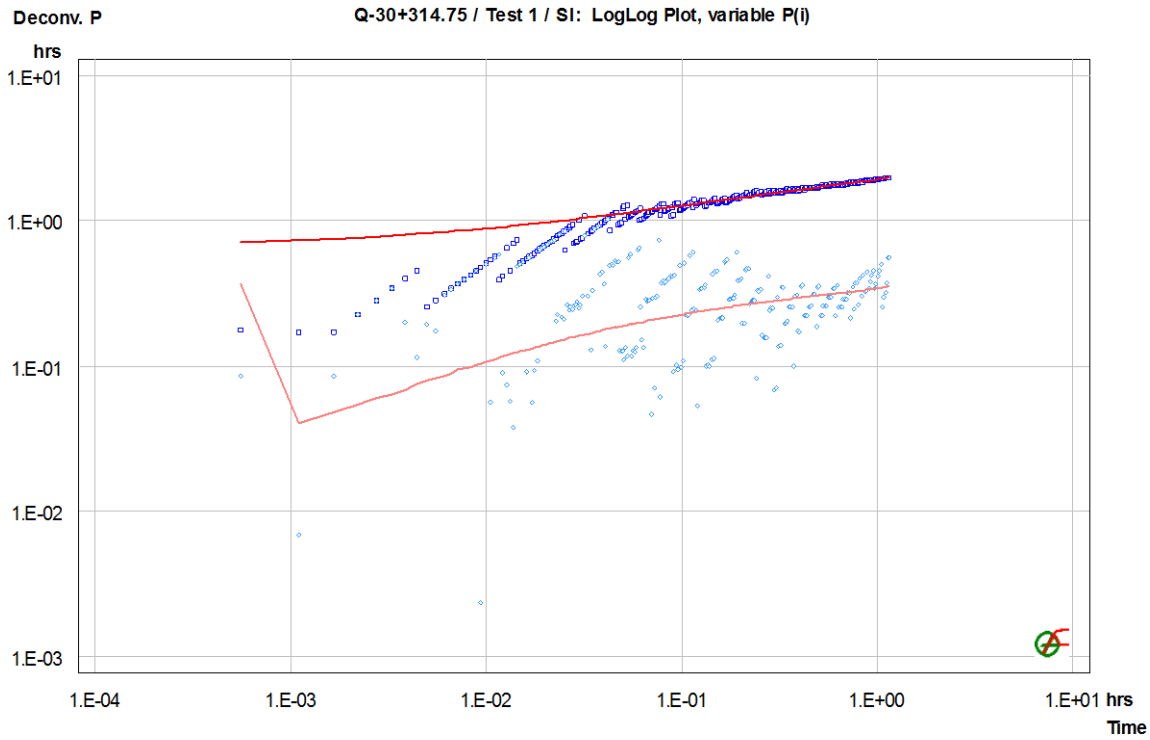


Figure 3: Deconvolved pressure response, derivative and simulation: Log-Log diagnostic plot, SI sequence

HYDROBENCH REPORT

Project	Meadowbank
Site	Bay Goose Dike
Source Well	Q-30+320.75
Test Name	Test 1
Test Date/Time	24/09/2011, 16:32
Interval	top: 3.60 m bottom: 8.50 m
Description	Falling head test
	Open hole, no packers
	Measured with pressure transducer
	Pressure response shows effective water column above transducer

Basic Data

Test Interval	4.90 m		
Porosity	0.10		
Well Radius	0.057 m	Tubing Radius	0.076 m
Inclination	0.0 deg		
Test Volume	50.366 l		
Well Type	Source		

Fluid Properties

Viscosity	0.001 Pa*s
Density	1000.0 kg/m³
Compressibility	2.0e-09 1/Pa

Sequence Definition

Name	Category	t(o) [hrs]	P(o) [kPa]	P(i) [kPa]	Rate [l/min]	C [m³/Pa]
PSR	Recovery	0.00000	8.73			1.9e-06
SI-Init	dP-Event	0.01778	8.61	-15.0 *		1.9e-06
SI	Slug	0.03278	23.57	8.6		1.9e-06

Analysis Results

Analysis "SI_Final"

Static Pressure: 8.39 kPa

Shell Parameters:

Name	Transmissivity [m²/s]	Storativity [-]	Radius [m]	Flow Dimension [-]
Shell 1	1.3e-05	2.0e-05	1.49	2.0
Shell 2	1.3e-06	2.0e-05	- -	2.0

Sequence Parameters:

Name	Wellbore Storage [m³/Pa]	Skin [-]
PSR	1.9e-06	0.0
SI-Init	1.9e-06	0.0
SI	1.9e-06	0.0

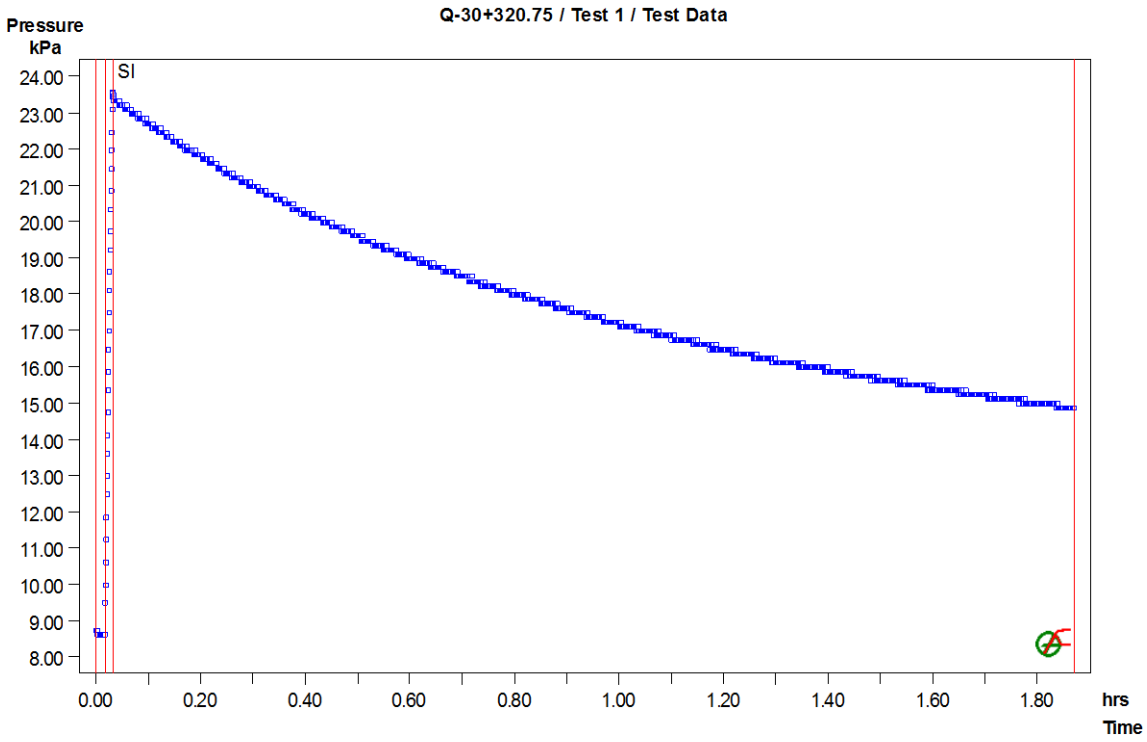


Figure 1: Pressure response and sequence definition

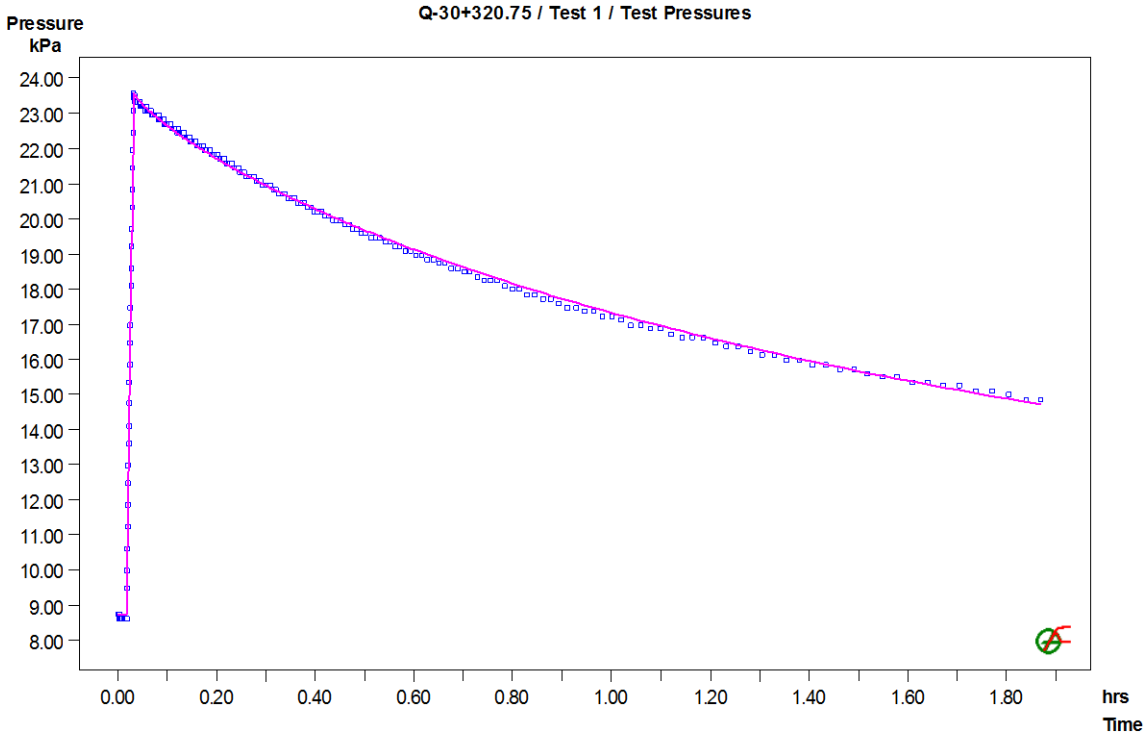


Figure 2: Pressure response and simulation: cartesian plot

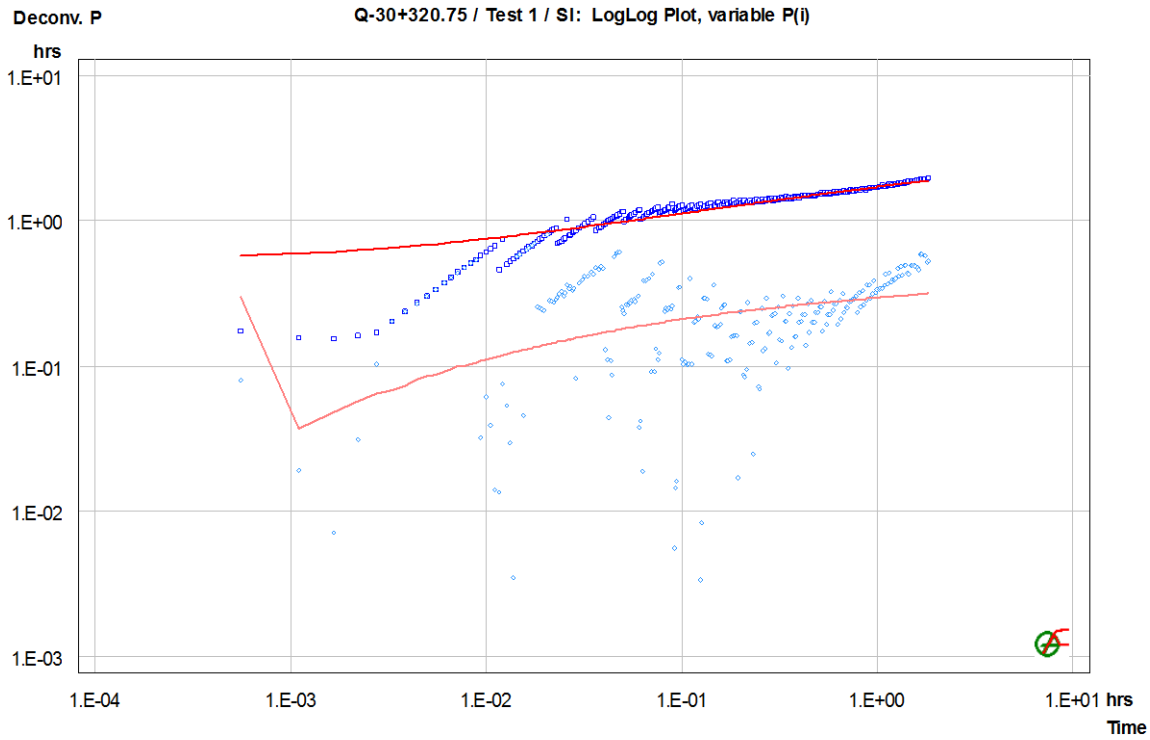


Figure 3: Deconvolved pressure response, derivative and simulation: Log-Log diagnostic plot, SI sequence

HYDROBENCH REPORT

Project	Meadowbank
Site	Bay Goose Dike
Source Well	Q-30+332.75
Test Name	Test 1
Test Date/Time	24/09/2011, 10:57
Interval	top: 3.45 m bottom: 9.50 m
Description	Falling head test
	Open hole, no packers
	Measured with pressure transducer
	Pressure response shows effective water column above transducer

Basic Data

Test Interval	6.05 m		
Porosity	0.10		
Well Radius	0.057 m	Tubing Radius	0.076 m
Inclination	0.0 deg		
Test Volume	61.753 l		
Well Type	Source		

Fluid Properties

Viscosity	0.001 Pa*s
Density	1000.0 kg/m³
Compressibility	2.0e-09 1/Pa

Sequence Definition

Name	Category	t(o) [hrs]	P(o) [kPa]	P(i) [kPa]	Rate [l/min]	C [m³/Pa]
PSR	Recovery	0.00000	46.61			1.9e-06
SI-Init	dP-Event	0.77556	43.31	-11.1 *		1.9e-06
SI	Slug	0.80111	54.42	43.3		1.9e-06

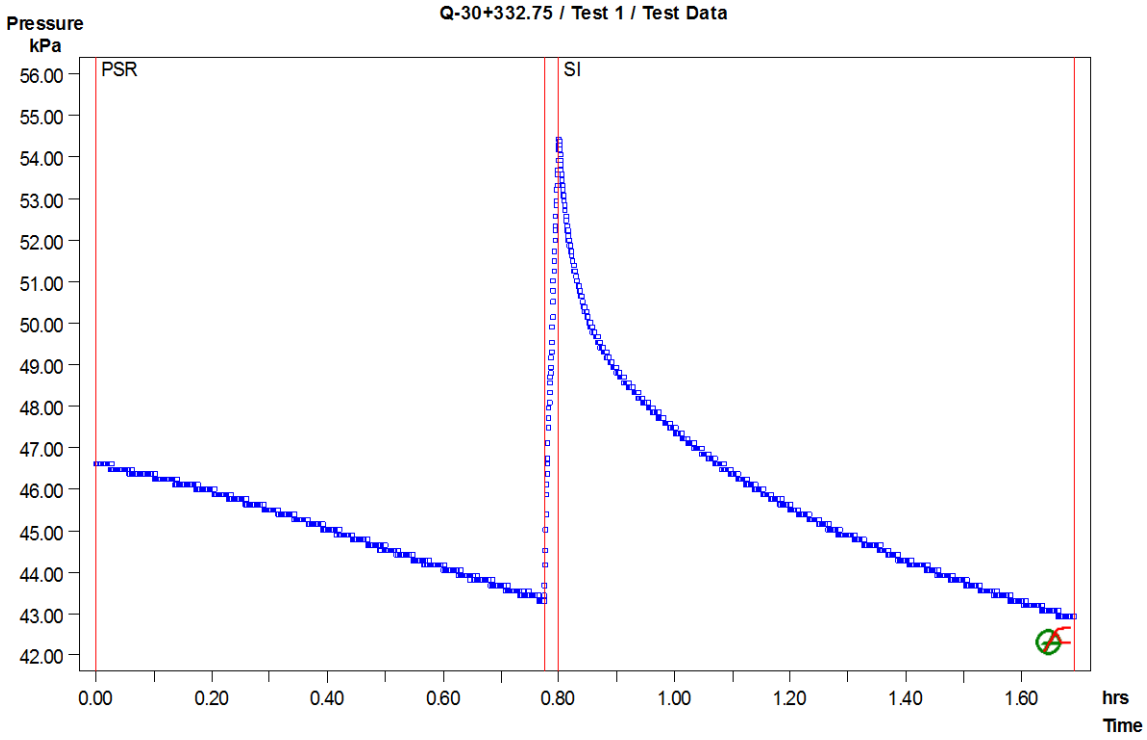


Figure 1: Pressure response and sequence definition

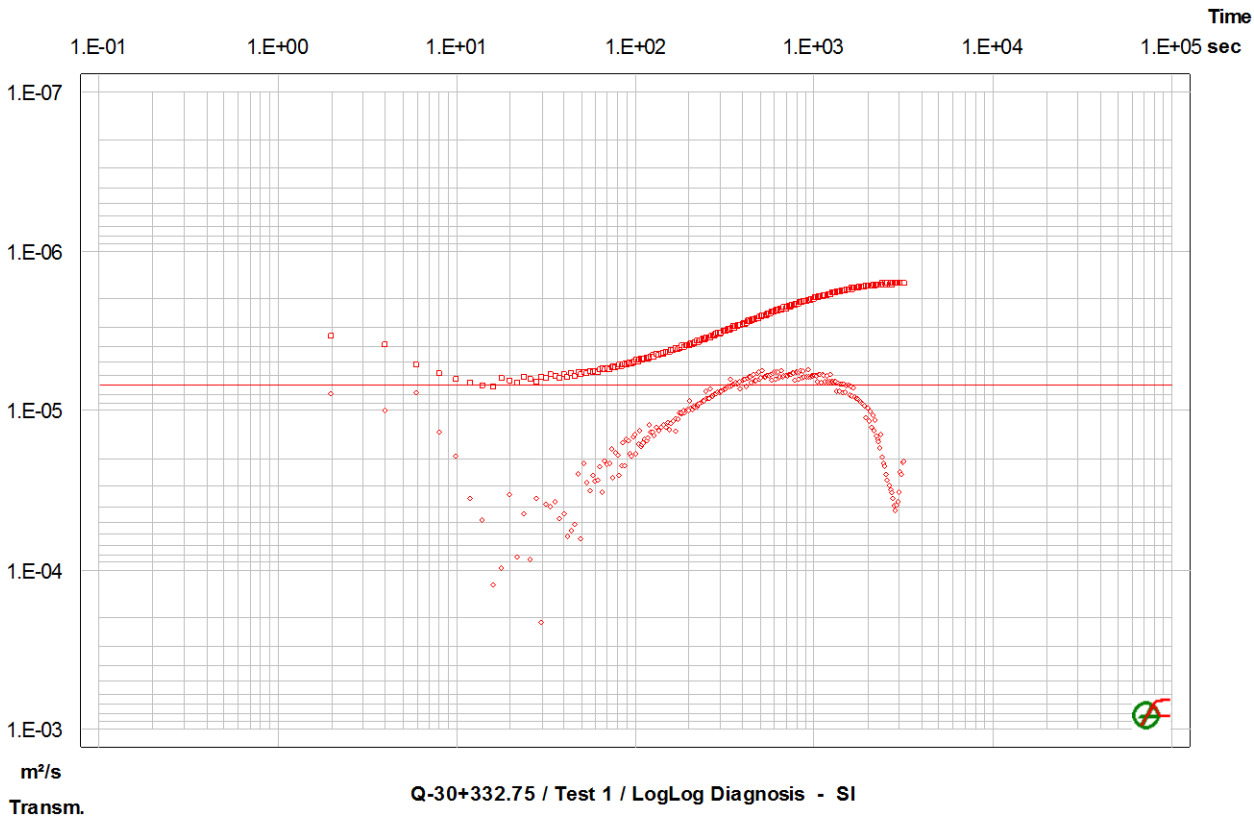


Figure 2: Transmissivity estimate: Transmissivity Normalized Plot, SI sequence, red horizontal line indicates estimated transmissivity of 7 x 10^{-06} m^2/s

HYDROBENCH REPORT

Project	Meadowbank
Site	Bay Goose Dike
Source Well	Q-30+338.75
Test Name	Test 1
Test Date/Time	23/09/2011, 11:34
Interval	top: 4.00 m bottom: 10.30 m
Description	Falling head test
	Open hole, no packers
	Measured with pressure transducer
	Pressure response shows effective water column above transducer

Basic Data

Test Interval	6.30 m		
Porosity	0.10		
Well Radius	0.057 m	Tubing Radius	0.076 m
Inclination	0.0 deg		
Test Volume	64.756 l		
Well Type	Source		

Fluid Properties

Viscosity	0.001 Pa*s
Density	1000.0 kg/m³
Compressibility	2.0e-09 1/Pa

Sequence Definition

Name	Category	t(o) [hrs]	P(o) [kPa]	P(i) [kPa]	Rate [l/min]	C [m³/Pa]
PSR	Recovery	0.00000	20.72			1.9e-06
SI-Init	dP-Event	0.78611	20.34	-36.6 *		1.9e-06
SI	Slug	0.83056	56.97	20.3		1.9e-06

Analysis Results

Analysis "SI_Final"

Static Pressure: 20.20 kPa

Shell Parameters:

Name	Transmissivity [m²/s]	Storativity [-]	Radius [m]	Flow Dimension [-]
Shell 1	9.3e-05	2.0e-05	2.77	2.0
Shell 2	4.8e-06	2.0e-05	33.52	2.0
Shell 3	8.1e-05	2.0e-05	- -	2.0

Sequence Parameters:

Name	Wellbore Storage [m³/Pa]	Skin [-]
PSR	1.8e-06	0.0
SI-Init	1.9e-06	0.0
SI	1.9e-06	0.0

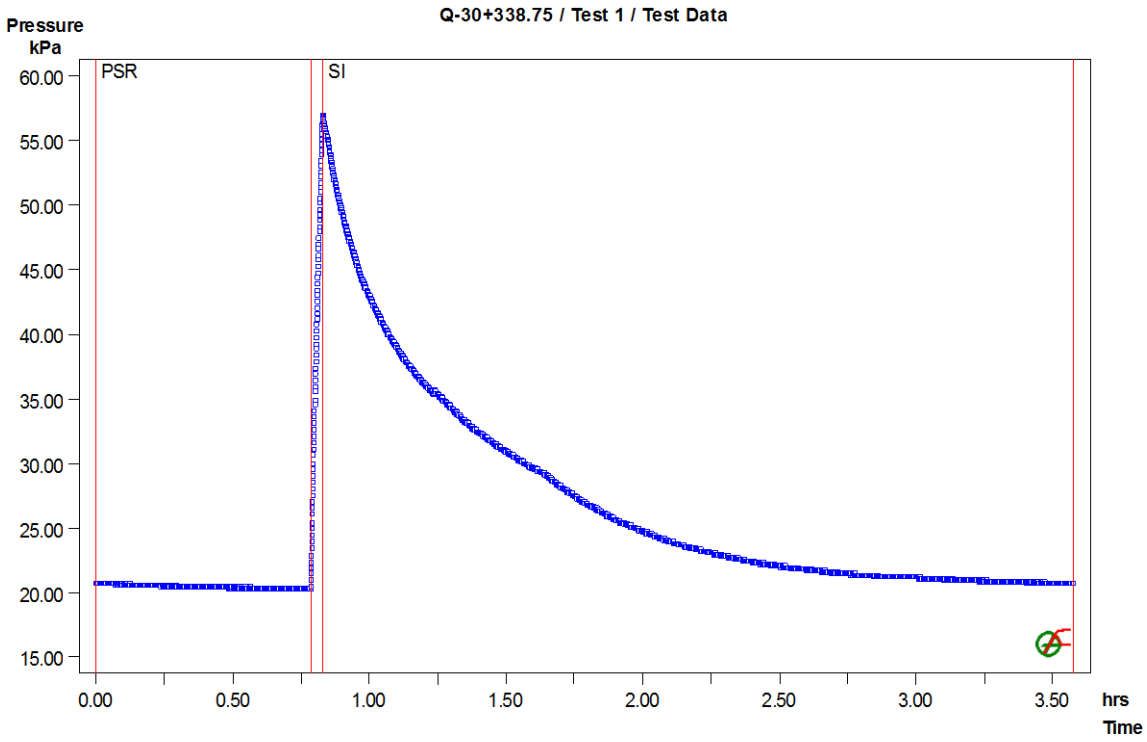


Figure 1: Pressure response and sequence definition

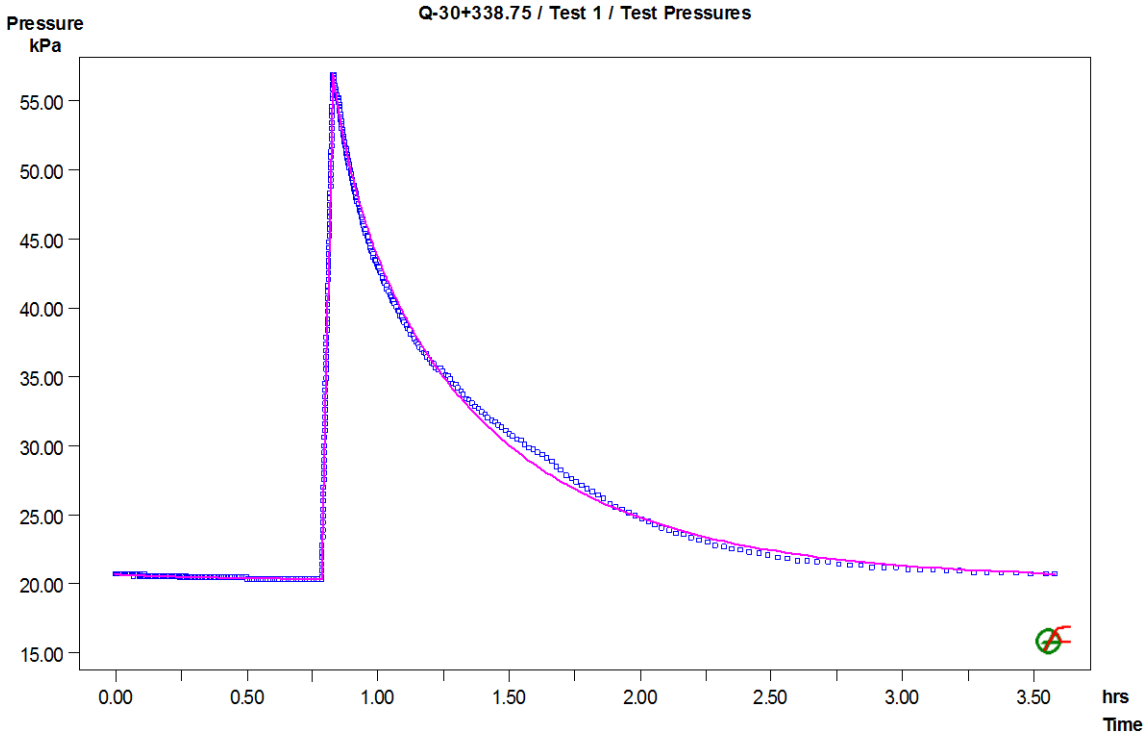


Figure 2: Pressure response and simulation: cartesian plot

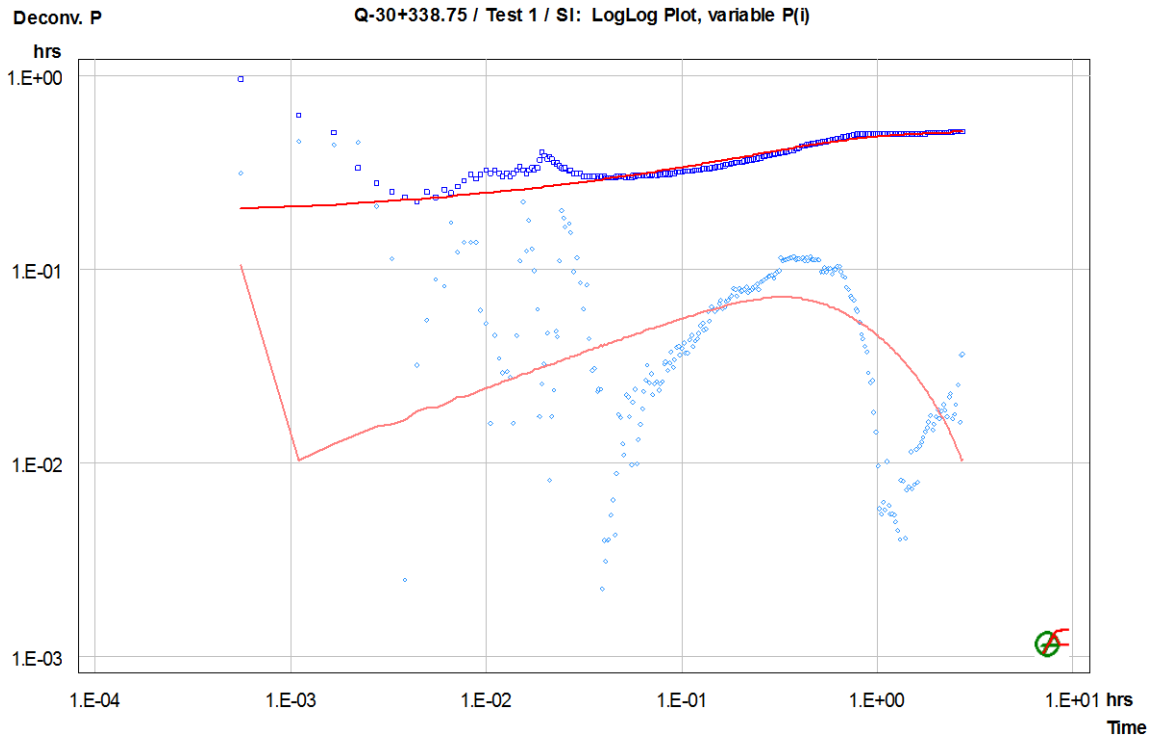


Figure 3: Deconvolved pressure response, derivative and simulation: Log-Log diagnostic plot, SI sequence

HYDROBENCH REPORT

Project	Meadowbank
Site	Bay Goose Dike
Source Well	Q-30+344.75
Test Name	Test 1
Test Date/Time	22/09/2011, 17:28
Interval	top: 4.57 m bottom: 11.50 m
Description	Falling head test
	Open hole, no packers
	Measured with pressure transducer
	Pressure response shows effective water column above transducer

Basic Data

Test Interval	6.93 m		
Porosity	0.10		
Well Radius	0.057 m	Tubing Radius	0.076 m
Inclination	0.0 deg		
Test Volume	71.232 l		
Well Type	Source		

Fluid Properties

Viscosity	0.001 Pa*s
Density	1000.0 kg/m³
Compressibility	2.0e-09 1/Pa

Sequence Definition

Name	Category	t(o) [hrs]	P(o) [kPa]	P(i) [kPa]	Rate [l/min]	C [m³/Pa]
PSR	Recovery	0.00000	38.52			1.9e-06
SI-Init	dP-Event	0.08167	38.03	-16.8 *		1.9e-06
SI	Slug	0.09722	54.79	38.0		1.9e-06

Analysis Results

Analysis "SI_Final"

Static Pressure: 37.47 kPa

Shell Parameters:

Name	Transmissivity [m²/s]	Storativity [-]	Radius [m]	Flow Dimension [-]
Shell 1	1.5e-03	2.0e-05	1.60	2.0
Shell 2	1.1e-06	2.0e-05	10.92	2.0
Shell 3	3.7e-07	2.0e-05	- -	2.0

Sequence Parameters:

Name	Wellbore Storage [m³/Pa]	Skin [-]
PSR	1.3e-08	0.0
SI-Init	1.9e-06	0.0
SI	1.9e-06	0.0

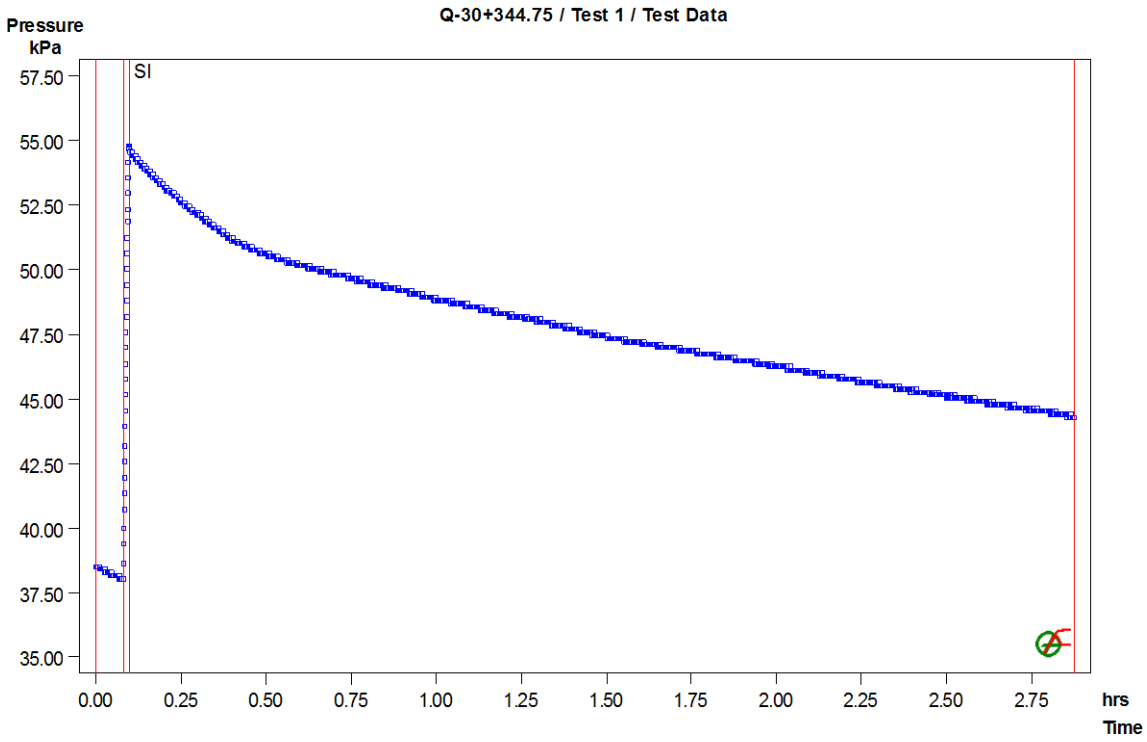


Figure 1: Pressure response and sequence definition

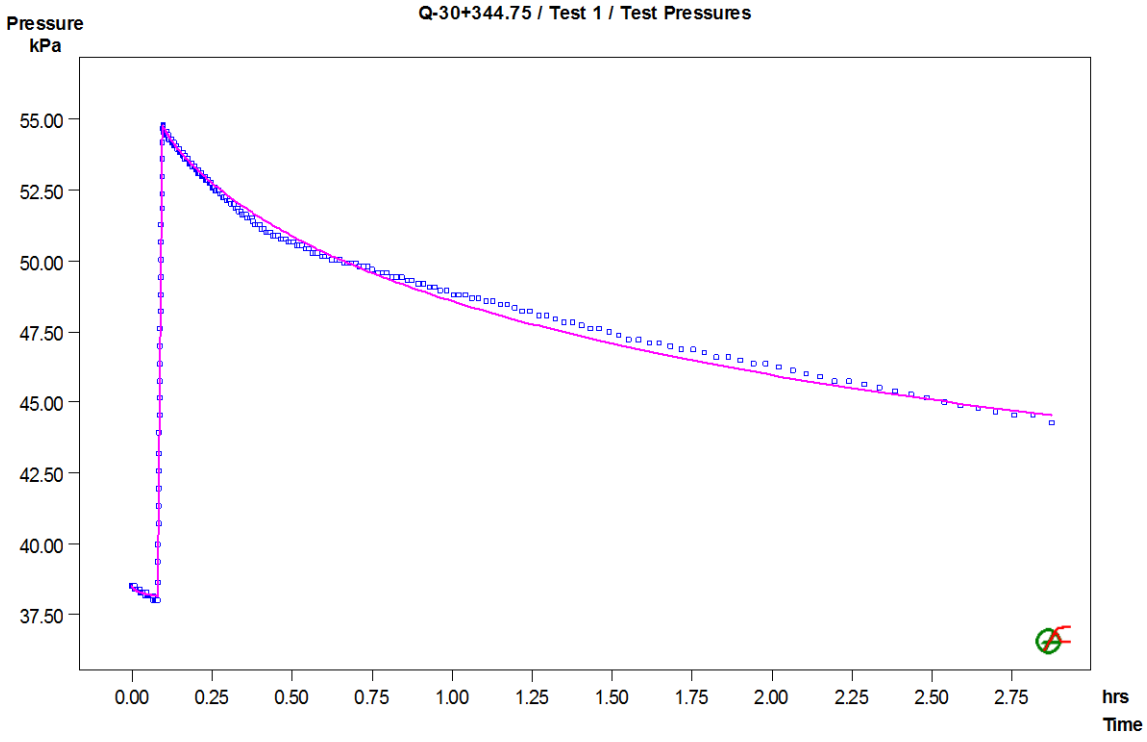


Figure 2: Pressure response and simulation: cartesian plot

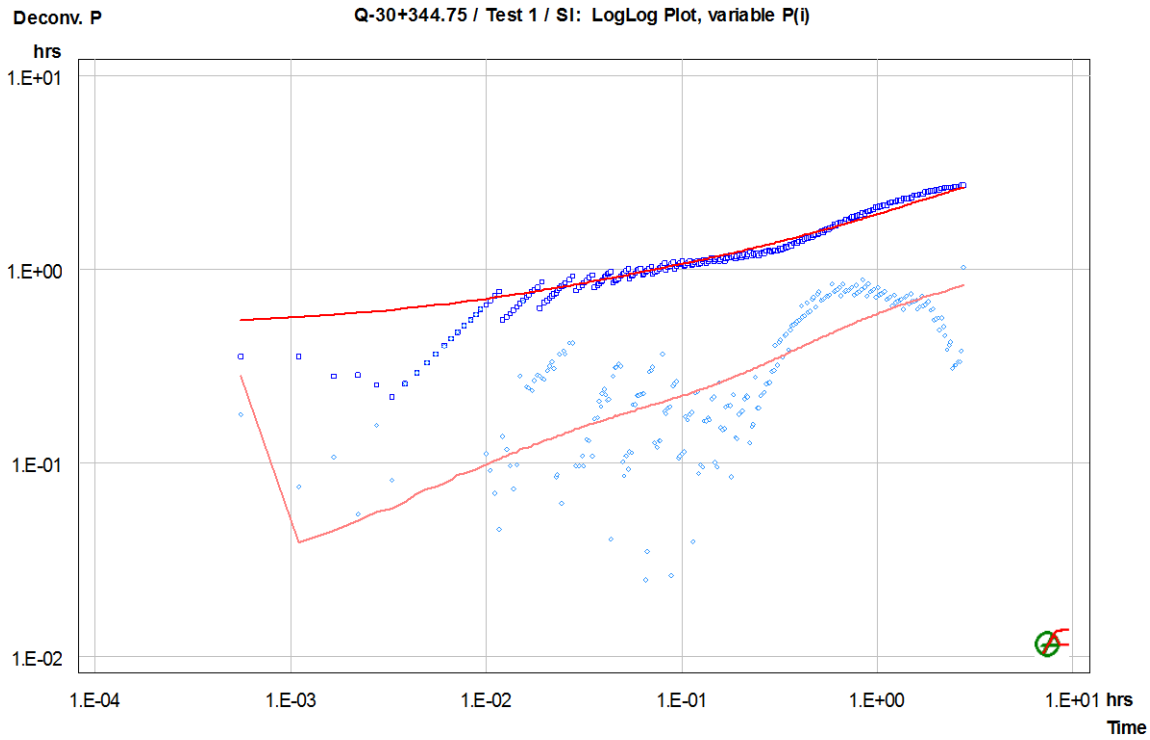


Figure 3: Deconvolved pressure response, derivative and simulation: Log-Log diagnostic plot, SI sequence

C3 – Weekly Reports

WEEKLY REPORT

DATE	08 August 2009	**PROJECT No.**	08-1428-0028; 08-1428-0029
TO	Gaston Blanchette and Eric Lamontagne, Gaston Blanchette Agnico-Eagle Mines Limited Paul Bedell, Fiona Esford, Glen Rutherford, Dan Walker	**Doc. No.**	**1010 Rev. 0**
FROM	Michel Julien	**EMAIL**	Michel_Julien@golder.com

WEEKLY REPORT FOR PERIOD FROM 21 JULY TO 2 AUGUST, 2009
MEADOWBANK GOLD PROJECT

This report has been modified to only present details related to the Bay Goose Dike, for the purpose of including the document in the As-Built report. Section 2.0 East Dike and 4.0 Tailings Storage Facility have been removed

Golder QA manager mobilized to site on July 14, 2009 and Golder QA field team mobilized to site on July 21st 2009. This weekly report summarizes Golder activities from July 21st to August 2nd 2009 related to the activities undertaken by AEM at Bay Goose. Please refer to accompanying photos for further details.

1.0 HEALTH AND SAFETY

A daily H&S meeting was held with all Golder personnel present on site.

Two field site inspections were completed by the QA manager: the first concerning the Golder office and laboratory and the other, concerning work at the East Dike. Please refer to inspection reports for further clarifications.

Job hazard assessments have also been completed on some tasks (e.g. construction of weir). The team needs to improve on that front.

Team has been instructed to follow carefully AEM's SOP. In particular, communication protocols, driving procedures, and Pre-Ops check-ins have been asked to be followed diligently. Team has been responding well on these aspects.

Two incidents were reported during this period and are described below.

1. During plastic casings installation on East Dike on August 2nd, a plastic casing, already installed, spontaneously popped out of the ground due to the flushing pressure used to clean a hole located about 1.5m aside. The plastic casing did not hurt anybody. Immediate change in drilling method was taken to safely install the remaining 33 plastic casings. It is worth mentioning that local damage to cutoff wall may have been incurred. *This incident has been reported internally as a near-miss*.
2. A Golder personnel was driving on the haul road, north of East Dike towards the south. On that haul road, three pit exit ramps are located on the west side. One of these exits could possibly be considered a blind corner. When the Golder personnel approached that particular exit, he did not see in advance a

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haul truck climbing the ramp. Golder driver did hesitate in giving the right of way to the haul truck instead of stopping. Upon instruction by his colleagues, he did stop within a safe distance from the haul truck to let it pass. The Golder driver may have lacked experience when he saw the haul truck. Golder has suggested to AEM that a sign saying "Haul Truck Exit" should be posted on the west side of this intersection to warn drivers travelling southbound of possible incoming haul trucks. *This incident has been reported internally as a near-miss.*

Hazard identification was reported on a daily basis in the field daily report, and during the morning meeting with AEM as required.

2.0 EAST DIKE

Removed

3.0 BAY GOOSE DIKE

During the reporting period, Bay Goose Dike construction proceeded fairly well without any major problems. The platform has been advancing well. No evidence of localized instability has been observed.

From our assessment, we are of the impression that works are at least 1 week behind schedule due to some delays with barge arrival and a more complex barge unloading process than anticipated.

AEM's strategy to reduce transport of materials is to advance the rockfill a certain distance ahead of FGL (say 200 m). This will allow the excavated rockfill to be dumped as rockfill for the advancing front. Care will have to be taken to use only 'clean' rockfill and not rockfill mixed with sediment or soils. Close monitoring will be required for this work on Golder's part.

Golder's key observations can be summarized as follows:

- Installation of turbidity barrier advanced; the installation was mainly completed on July 26th 2009.
- Turbidity barrier have been completed on July 27th.
- Golder has requested as-built information on installation of turbidity barriers.
- The turbidity barriers appear to have had a positive effect in reducing TSS and turbidity in the lake. Water located within the barriers, appears to be the most turbid. Turbidity does appear to be decreasing between the interior and the exterior barriers. Nevertheless, some turbidity could be seen in the lake both on the West and East sides from the shoreline.
- Golder understands that AEM has experienced some problems with some parts of the barrier. It is understood that a select zone of the installed barrier was found to be defective and a patch of about 150m had to be installed.
- There was some concern that turbidity could escape via the openings in the exterior turbidity barrier. Upon review, Golder recommended closing the openings of the exterior barriers to reduce the risks to the remainder of the lake.
- Overall, it is clear that the turbidity barrier system is behaving better than last year, however; they are not fully successful in containing TSS and turbid waters.
- From the color of the water, it appears that turbidity is influenced to a greater degree by the amount of fine particles in the rockfill. On certain occasions, remobilized bottom sediments were clearly visible (color brownish) while fine particles from rockfill are more greyish.
- It is understood that AEM has been taking aerial photos from the helicopters regularly to monitor the turbidity. Areas impacted by turbidity are readily visible on these photos. Golder has requested permission for access to some of these photos but permission has not been formally granted by AEM. It would be useful for as-built preparation that access be given to these data.
- Rockfill placement started on July 27th 2009 from the North abutment advancing south.

- As per the end of August 2nd night shift, the rockfill platform had advanced to about Sta. 30+348.
- From survey data, rockfill platform was slightly thinner than design width at some locations. Some remedial actions will be required locally to widen the platform.
- Location of rockfill platform appears to follow design alignment.
- After several placement trials and discussion between AEM and Golder, placement of the rockfill is now proceeding as a unique oblique front oriented West to East. The decision to revert to this approach was made to minimize difficulties for dozer operations. Proceeding as an advancing wedge was found to be more complicated for the operators, and complicated the logistics during dumping of the haul trucks. The selected placement method allows any soft sediment that might be encountered to be expelled eastward. Also, this method allows the dozer operator to better follow the floating markers and the painted back sights installed on the platform. It is also more efficient for haul truck traffic. As for stability, the natural lakebed surface is sloping down towards the east. As such, the rockfill should displace lakebed soil in an eastward direction.
- A meeting between AEM, Golder and FGL took place on July 30th 2009. Please refer to Construction Minutes issued on July 31st 2009 for more information.
- Oversized rockfill were observed to be placed along centerline in the water. Golder flagged this observation to AEM during the morning meeting with FGL. AEM has sent clear instructions to shovel operators to be more careful when loading the trucks. Sorting has to be done at the face instead of at the platform.
- In the early stages of rockfill dumping, rockfill was dumped almost directly in the water. This approach has been modified so haul trucks dump their loads on the platform. The dozer then pushes the larger particles into the water with slightly lifted blade so that fines that may be in the rockfill are kept on the on the platform as much as possible.
- On August 1st, rockfill started to reach deeper zones and advancement of the front started to decrease.
- Golder mentioned to AEM during August 2nd daily meeting about the higher risk of localized slope failures as dumping was proceeding in deeper zones. Golder mentioned that the trucks should not dump directly on the bumpers and should leave a distance of about 10 m to prevent trucks wheels to be too close to the advancing front. AEM indicated that they would modify its dumping approach in the deeper zone.
- Golder is also concerned about the amount and quality of stockpiled Core Backfill (0-3/4''). It is Golder's opinion that Core Backfill production may potentially induce some scheduling delays. It is important that Core Backfill production proceeds as fast as possible and be focussed at supplying the dike construction.
- Golder is also concerned that placement of the Core Backfill material in the stockpile could promote segregation. These concerns were raised to AEM and corrective actions have been implemented.

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4.0 TAILINGS STORAGE FACILITY

Removed

MJ/KD/FE/DWR

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WEEKLY REPORT

DATE	10 August 2009	**PROJECT NO.**	08-1428-0029 ; 08-1428-0028
TO	Gaston Blanchette and Eric Lamontagne Agnico-Eagle Mines Limited	**DOC. NO.**	1010 Rev. 0
CC	Michel Julien, Dan Walker, Paul Bedell, Glen Rutherford		
FROM	Fiona Esford	**EMAIL**	Fiona_Esford@golder.com

WEEKLY REPORT FOR PERIOD FROM AUGUST 3RD TO AUGUST 9TH , 2009
MEADOWBANK GOLD PROJECT

This report has been modified to only present details related to the Bay Goose Dike, for the purpose of including the document in the As-Built report. Section 3.0 East Dike and 5.0 Tailings Storage Facility have been removed

1.0 GENERAL

This weekly report summarizes Golder QA activities from August 3rd to August 9th 2009 related to the construction activities undertaken by AEM at Bay Goose Dike.

Golder personnel on site during this period were: Michel Julien, Karine Doucet, Emilie Lapointe, Fiona Esford, Yves Boulianne, and Rick Rippel. Fiona, Yves and Rick mobilized to site on August 4th and Michel demobilized.

Photographs from the work are appended to this memorandum for further details.

2.0 HEALTH AND SAFETY

Daily H&S meetings were held with all Golder personnel on site.

One field site inspection was completed by the field staff, concerning the work at Stormwater Dike. Please refer to inspection report for further clarifications.

A Job Hazard Assessment (JHA) was completed jointly between AEM, FGL, and Golder for work on the Bay Goose Dike. A JHA was also updated for weir flow monitoring (East Dike) and for the new task related to the CPT investigation program. JAH's were reviewed with new staff and to ensure they remain current, as necessary.

No incidents were reported during this period.

Hazard identification was reported on a daily basis in the field daily report, and during the morning meeting with AEM if needed.

3.0 EAST DIKE

Removed.

4.0 BAY GOOSE DIKE

Bay Goose Dike construction has proceeded with placement of the rockfill platform from Sta. 30+350 to approximately Sta. 30+415. Little advancement occurred on August 6th as a result of shift changes and on August 7th due to the non-availability of non-potential acid generating rockfill.

Organic material was stripped from the north abutment and rockfill has been placed in this area near Sta. 30+000 to 30+100.

No evidence of instability has been recorded. Trucks have been maintaining an adequate distance from the water as they dump. The dozer has been used to push rockfill into the lake. The rockfill platform has advanced through the deepest portion of the dike to be constructed in 2009.

Our key observations can be summarized as follows:

- The turbidity barriers appear to have had a positive effect in reducing TSS and turbidity within the lake, beyond the barriers. Within the barriers, water clearly appears the most turbid. Turbidity appears less between the first and second barrier. Nevertheless, some turbidity could be seen in the lake both on the West and East sides from the shoreline on August 3rd.
- Oversized rockfill was observed to have been placed mostly on the sides of the dike, although periodically, on August 5th and August 7th, larger particles were observed near the center portion of the dike. This was discussed with SNC Lavalin.

A meeting between Golder and FGL surveyors took place on August 7th to better communicate what Golder requires during the Bay Goose Dike construction and to get more information on their survey and bathymetry methodology.

A sample of till was collected from the till stockpile near the Bay Goose crusher pad. This sample will be used in conjunction with samples of bentonite and cement to perform a verification test on the mix design which will be proposed by Inquip (FGL) for the Cement Soil Bentonite cutoff wall.

Submittals required prior to the start of construction have now been received from FGL and are under review.

Revisions (Rev. 1) to some Issued for Construction drawings for the Bay Goose Dike were provided to AEM and FGL and were discussed with FGL. Revisions took into account the modifications discussed during the MDRB meetings on site in July. Golder is to provide revised quantities.

Golder agreed that the cutoff wall at the north abutment can consist of compacted till (as shown as an option for the Goose Island abutment) with the cutoff wall constructed into the till. AEM issued an email (August 9th) providing these details to FGL and it was discussed during the daily construction meeting.
Segregation of some 19 mm minus material in the stockpiles has been observed. AEM recognized this as an issue and is taking measures to ensure additional stockpiles are constructed in a manner to minimize segregation.

Construction is a minimum of one week or more behind schedule.

5.0 TAILINGS STORAGE FACILITY

Removed.

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Photograph 1: Rockfill placement at about Sta. 30+366.The dike is being advanced from the downstream (pit side) to the upstream to push the lakebed sediments away from the center of the dike - August 3rd 2009



Photograph 2: Oversize rockfill is being placed on the sides of the dike platform - August 4th 2009



Photograph 3: Turbidity appears to be contained within the double turbidity barriers - August 6th 2009



Photograph 4: Turbidity appears contained within the double turbidity barriers - August 7th 2009



Photograph 5: Stripping of organics from north abutment and placement of rockfill - August 9th 2009

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WEEKLY REPORT

DATE August 23, 2009 **PROJECT No.** 08-1428-0028; 08-1428-0029
Doc. No. 1010 Rev. 0

TO Gaston Blanchette and Eric Lamontagne
Agnico-Eagle Mines Limited Meadowbank Division

CC Fiona Esford and Michel Julien

FROM Paul Bedell & Dan Walker **EMAIL** Paul_Bedell@golder.com

BI-WEEKLY REPORT FOR PERIOD FROM AUGUST 10TH TO AUGUST 23RD, 2009
MEADOWBANK GOLD PROJECT

This report has been modified to only present details related to the Bay Goose Dike, for the purpose of including the document in the As-Built report. Section 3.0 East Dike and 5.0 Storm Water Dike have been removed.

1.0 GENERAL

This biweekly report summarizes quality assurance activities performed by Golder during the period from August 10th to August 23rd 2009 related to the activities at Bay-Goose Dike.

Golder personnel on site during this reporting period were as follows:

Table 1: List of Golder Personnel on site during the period of August 10 to 23 2009

Name	From	TO	Planned departure or status as of August 23, 2009
Paul Bedell	August 10	August 23	On site – August 26
Fiona Esford	August 10	August 11	Off site
Nicolas St-Onge	August 10	August 23	On site – August 27
Jeff Kwok	August 10	August 23	On site – August 27
Royd Bruegmann	August 10	August 23	On site – August 25
Émilie Lapointe	August 10	August 11	Off site
Karine Doucet	August 10	August 11	Off site
Rick Ripple	August 10	August 17	Off site
Yves Boulianne	August 10	August 19	Off site
Mathieu Gosselin	August 19	August 23	On site – Sept. 1st

Photographs of the work and laboratory test results from the reporting period are appended to this report.

2.0 HEALTH AND SAFETY

Daily H&S meetings were held with all Golder site personnel. Hazard identification was reported on a daily basis in the field daily report, and during the morning meeting with AEM if needed. Golder personnel working on Bay-Goose Dike attended the FGL Health & Safety toolbox meeting for the day shift.

The key H&S issues from the reporting period are:

- Golder employee and Contractor surveyor were approximately 10 m from a 385 excavator when hydraulic line along the boom broke. Due to strong winds at the time of the breakage, a mist of hydraulic fluid was blown towards the employees. Neither employee was injured but they had to clean their personal protective equipment.
- Haul truck speeding on Bay-Goose Dike.
- Lack of signage along the road at Stormwater Dike entrance and at North Portage Pit exit.
- Minor first aid (band aid) was required due to small metal splinter received from base of soil sieve.
- Driver of survey boat did not have visual or radio contact with the excavator operator before entering in his working area by his blind side. The operator almost hit the boat with his bucket when turning back to work.

3.0 EAST DIKE

Removed.

4.0 BAY-GOOSE DIKE

Bay-Goose Dike construction is proceeding well without any major technical issues. The rockfill platform is advancing with haul trucks dumping non-potentially acid generating rock close to the waterfront edge. The rock is then pushed to the south and into the water by a dozer. Some oversized rocks (>2m) were observed and Golder recommended that these be pushed outside the limits of the core trench excavation.

The construction of the rockfill platform advanced from Sta. 30+420 to 30+500 across the full dike width, and over a 15 m width on the upstream side up to Sta. 30+590 by August 16th. Progress of the rockfill platform reached Sta. 30+685 across the full dike width on Aug 23rd. Limited advancement was observed during periods from August 10th to August 16th and from August 19th to August 23rd due to the limited availability of non-potentially acid generating rockfill.

The excavation of the cut-off trench was advanced to the bedrock surface using an excavator equipped with a toothed bucket. The bedrock surface is cleaned with a bucket equipped with a blade. The excavation of the rockfill in the cut-off trench was at about Sta. 30+345 on August 16th and at Sta. 30+445 on August 23rd. Observations of bedrock surface are summarized in Table 2.

Table 2: Observation of bedrock during trench excavation

Station	Comment
30+230 to 233	Upstream side hard slightly irregular surface Downstream side possible ridge with hard surface, chatter
30+235 to 240	Downstream side irregular hard surface
30+245 to 250	Downstream side hard surface. Slightly fractured rust coloured rock fragments. Very irregular chatter surface, rise and fall of bucket (0.5 m±)
30+252 to 254	Upstream side hard irregular surface
30+263 to 269	Upstream side irregular sounding surface
30+280	Hard flat bedrock surface
30+285	Upstream side irregular surface, hard chatter when dragging
30+285 to 288	Downstream side hard irregular surface. Loud chatter noted
30+295	Downstream side hard bedrock surface
30+303	Upstream side irregular surface
30+305	Downstream side multiple hard chatter (4-5 bounces of bucket). Irregular bedrock surface
30+375 to 380	Bedrock has been reached. A lot of mud, cobbles and boulders excavated
30+410 to 415	Irregular surface approx. 9 m depth
30+415 to 418	Regular surface approx. 9 m depth
30+420	Smooth surface approx. 7 m depth
30+422 to 427	Sound bedrock
30+430	Surface shows a 1.5 m bump on upstream side toe at approx. 8 m depth
30+430 to 435	Slightly irregular 7 m to 8 m depth

Bathymetry surveys of the excavated area were performed by FGL. FGL was confident that the excavation was respecting design dimension. Golder performed spot checks of the bathymetry data; a summary is presented in Table 3.

Table 3: Bedrock Depth Verification

Station	Depth to Bedrock (from Golder weighted tape measurements)	Depth to Bedrock (from FGL bathymetry)
30+375	7.47 m	7.58 m
30+380	7.20 m	7.60 m
30+425	8.00 m	5.00 m

Based on Golder's observations and on bathymetry surveys, Golder approved the following excavated sections as having adequate dimension and adequate bedrock surfaces.

- Sta. 30+000 to 30+050 by August 13th
- Sta. 30+050 to 30+120 on August 15th
- Sta. 30+120 to 30+220 on August 18th
- Sta. 30+220 to 30+320 by August 22nd

AEM, FGL and Golder agreed on a method to backfill the north abutment trench. The trench was backfilled with till between Sta. 30+000 to 30+050 in 300 mm lifts, compacted with bucket up to final elevation, and covered with a 300 mm layer of 19 mm minus granular material. Rockfill was then placed.

The core backfill (19 mm minus) was placed by excavator extending 1 m to 3 m ahead of coarse filter (150 mm minus) wings, which were was placed with excavator bucket and pushed by a loader. Fine and coarse filters were placed in the trench between Sta. 30+050 to 30+100 by August 16th and reached Sta. 30+350 by August 23rd.

5.0 STORMWATER DIKE

Removed.

6.0 SAMPLING AND LABORATORY TESTING

In summary, the following laboratory works were performed during the reporting period:

Samples Collected:

- SA16 – BG081809-01, core backfill, Bay-Goose, Sta. 30+096
- SA17 – BG081909-01, core backfill, Bay-Goose, Sta. 30+120
- SA18 – BG081909-02, core backfill, Bay-Goose, CL Sta. 30+170
- SA19 – BG082109-01, core backfill, Bay-Goose, CL Sta. 30+229
- SA20 – BG082209-01, core backfill, Bay-Goose, CL Sta. 30+284

Samples tested:

For Gradation and Hydrometer

Removed

For Proctor

- SA19 – BG082109-01, core backfill, Bay-Goose, CL Sta. 30+229

Yours very truly,

GOLDER ASSOCIATES LTD.

Paul Bedell, M.E.Sc., P.Eng., (BC, NWT/NU)
Associate, Senior Geotechnical Engineer

Dan Walker, Ph.D., P.Eng., (BC, NWT/NU)
Associate, Project Manager

PMB/DRW/lw

Attachments:
Attachment A: Figure 1: East Dike Weir Flow Measurements
Attachment B: Weekly Report Photographs
Attachment C: Lab Testing Data

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Photograph 1: Bay-Goose Dike – Cleaning of the bedrock surface on the north abutment. This photograph was taken on August 12th 2009.



Photograph 2: Bay-Goose Dike – Till placement on the north abutment. This photograph was taken on August 14th 2009.



Photograph 3: Bay-Goose Dike – Placement of 19 mm minus and rockfill materials over till on north abutment. This photograph was taken on August 14th 2009.



Photograph 4: Bay-Goose Dike – Excavation of rockfill at Sta. 30+200. This photograph was taken on August 13th 2009.



Photograph 5: Bay-Goose Dike – Rockfill placement at Sta. 10+550. This photograph was taken on August 15th 2009.



Photograph 6: Bay-Goose Dike – Cleaning of bedrock surface at 10 m depth at Sta. 30+400. This photograph was taken on August 20th 2009.



Photograph 7: Bay-Goose Dike – Core backfill and coarse filter Sta. at 30+310. This photograph was taken on August 22nd 2009.



Photograph 8: Bay-Goose Dike – In-situ sampling of the core backfill (19 mm minus material) at Sta. 30+284. This photograph was taken on August 22nd 2009.

LABORATORY COMPACTION CHARACTERISTICS OF SOIL USING STANDARD EFFORT ASTM D698

Golder Associates

Project #:	08-1440-0028	Phase:	
Short Title:	Meadowbank Gold Project		
Tested by:	DE	Date:	August 31, 2009

Sample #: SA19
Source: Bay Goose Core Backfill 30+229 in place
Visual Description of Sample: -19mm Core Backfill
Date Sample Received: August 21, 2009

Compaction Test Results:

water content (%)	dry density (kg/m^3)	dry unit weight (kN/m^3)
2.9	2177	21.34
4.9	2228	21.85
6.9	2301	22.56
7.6	2300	22.55

Maximum dry density:	***2316***	***kg/m^3***
Corrected for oversize material:	***N/A***	***kg/m^3***
Maximum dry unit weight:	*22.71*	*kN/m^3*
Corrected for oversize material:	*N/A*	*kN/m^3*
Optimum water content:	***7.3***	***%***
Corrected for oversize material:	***N/A***	***%***

Test Summary:

Method used:	C		
Material used passing:	19.0 mm	sieve	
Preparation method:	Dry		
Rammer type:	Manual		

Oversize Correction Data (if applicable):

Oversize fraction:	0	%	
Bulk Specific Gravity	2.80	value:	assumed
Water content	1.5	value:	assumed

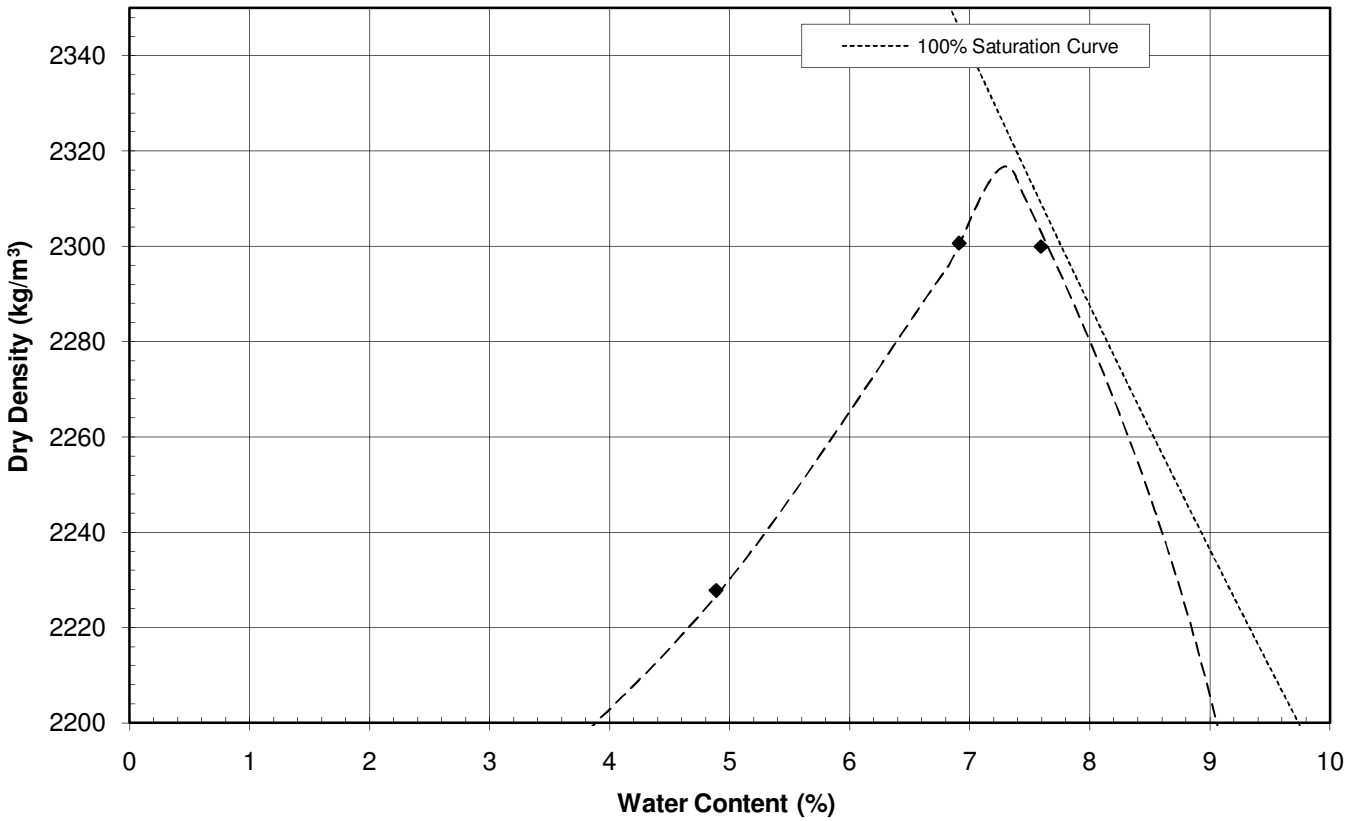
100% Saturation Curve Data:

Specific Gravity:	2.80	value:	assumed

Comments:

Water content of sample as received in lab: 7.7% %

Graphical Analysis - Uncorrected for Oversize Material



Reviewed By: _____

The testing services reported herein have been performed in accordance with the indicated recognized standard, unless noted otherwise. This report is for the sole use of the designated client. This report constitutes a testing service only and does not represent any results interpretation or opinion regarding specification compliance or material suitability. Engineering interpretation can be provided by Golder Associates Ltd. upon request.

WEEKLY REPORT

DATE	4 September, 2009	**PROJECT NO.**	08-1428-0029 ; 08-1428-0028
TO	Gaston Blanchette and Eric Lamontagne Agnico-Eagle Mines Limited	**DOC NO.**	Doc 1010 Rev. 0
CC			
FROM	Glen Rutherford, Fiona Esford	**EMAIL**	grutherford@golder.com

WEEKLY REPORT FOR PERIOD FROM 24 AUGUST TO 30 AUGUST, 2009
MEADOWBANK GOLD PROJECT

This report has been modified to only present details related to the Bay Goose Dike, for the purpose of including the document in the As-Built report. Section 2.0 East Dike and 4.0 Stormwater dike have been removed

This weekly report summarizes Golder QA activities from August 24th to August 30th 2009 related to the construction activities undertaken at Bay Goose Dike.

Golder personnel mainly on site during this period were: Glen Rutherford, Mathieu Gosselin, German Pizarro, Damian Edwards and Karine Doucet. Paul Bedell, Jeffrey Kwok and Nicolas St-Onges demobilized on August 24th and August 25th.

Photographs from the work are appended to this memorandum for further details as are laboratory test results.

1.0 HEALTH AND SAFETY

Daily H&S meetings were held with all Golder personnel working on the dike construction.

A Job Hazard Assessment (JHA) and Safe Work procedure was completed by FGL and Geopac concerning the dynamic compaction to be initiated on August 30th at Bay Goose Dike. This JHA was reviewed and signed by the Golder QA manager, who then passed on this information to the remainder of the Golder staff.

A near miss occurred during the day shift of August 25th as the Golder employee was getting out of the pontoon. As usual, the pontoon got stabilized to the shore with a weight. As the Golder employee was reaching the shore with one foot, the pontoon moved away from the shore. The Golder employee decided to stay on pontoon, but the surveyor, who was following too closely, blocked the Golder employee trying to step back in the boat. The Golder employee lost his balance, but only one foot went in the water because he was holding the ramp firmly. During H&S meeting, it was suggested to make sure the boat is stabilized prior getting in and out of the pontoon.

A second near miss occurred on August 28th on the main road in front of the warehouse. A flat-bed truck was parked on the right side of the main road. A fork lift, hidden behind the flat bed truck, was placing material, and was not moving during the placement. The Golder vehicle was driving on that main road on the right side and was caught by surprise when the fork lift backed up as the Golder vehicle was passing behind the lift. The operator of the fork lift stopped before hitting the Golder pick-up. One person was present on the left side of the road and may have indicated to the operator that a vehicle was coming. The next day, signs were placed on the right side of the area to indicate that this zone was a “loading zone” and to be vigilant when passing in the area.

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There was a miscommunication between Golder and the security department concerning the night shift check-in procedures. It should now be sorted out as the Golder night shift should call-in every 2h.

Hazard identification was reported on a daily basis in the field daily reports, and during the morning construction meeting with AEM and FGL, if needed.

2.0 EAST DIKE

Removed.

3.0 BAY GOOSE DIKE

3.1 Rockfill placement

Rockfill platform reached Goose Island on August 27th, but the rockfill however was not full width. The platform will continue to be extended to the final width with suitable rockfill excavated from the trench.

3.2 Trench excavation

During this week, excavation of the trench through rockfill started at Sta. 30+445 and finished at Sta. 30+630. Golder observations of bedrock surface are summarized in Table 1.

Table 1 Observation of bedrock surface during trench excavation

Chainage	Comments
30+352	Irregular bedrock surface
30+362	Hard bedrock sound at base, sediment observed (see Photograph 5)
30+388 to 391	Hard bedrock sound at base, upstream of centerline Hard bedrock sound at base
30+393	Hard bedrock sound at base with bump, downstream of centerline
30+400 to 405	Rock surface with rising surface upstream
30+411	Hard bedrock sound at base from upstream side
30+420 to 423	**Upstream of centerline** Rise and fall of bedrock on hard surface. **Centerline** From first bathymetry performed, it seems that there was a hill and Golder wanted to confirm if it was a boulder or something else. Couldn't reach from centerline because excavation went too far. Couldn't reach from side either. Tried to remove when Core Backfill reached 30+411 at surface and 30+420 at toe, but, while the bedrock was scratched the excavator couldn't feel any boulders with the lip bucket or with the ripper. It should be noted that significant volumes of silt sediment were excavated from this area. Bathymetry redone prior to and after the Core Backfill and was inconclusive due to the runout of the Core Backfill. **Downstream of centerline** Relatively smooth rock surface
30+430 to 435	**Centerline to downstream toe** Very hard bedrock sound at base. Bathymetry showed hole, but couldn't locate with 385 excavator. **Centerline to upstream toe** Hard sounding bedrock
30+445	Bedrock surface looked smooth and elevation increases
30+451 to 455	Irregular bedrock surface, higher zone towards the downstream toe (from centerline to downstream toe)
30+468	Smooth bedrock surface

30+477	Irregular bedrock surface from centerline to downstream toe Smooth bedrock surface from centerline to upstream toe
30+488 (490)	Excavation of a big bedrock block (2 m X 2 m X 3 m) along centerline, which created a hole with steep sides (east wall). Golder recommended to break off the sidewalls of this feature hole to obtain a smoother/flatter bedrock surface. At the time of this report, FGL has not chipped this wall. (See Photograph 6)
30+500 to 506	Smooth bedrock surface (about 4.3 m deep)
30+506 to 510	Smooth bedrock surface (about 4 m deep)
30+510 to 517	Smooth bedrock surface
30+517 to 525	Irregular bedrock surface (± 0.5m) with a rise at CL of over 1 m, chipping required
30+535 to 540	Smooth bedrock surface becoming rougher towards 30+540
30+555	Noted a 0.4m hole (step) at Centerline (2.9 to 3.3m below water level). Additional excavation required and possible chipping along centerline.
30+615	Continuous 0.5m step along profile, close to centerline. Need more information to see if it is a problem for cut-off wall construction.
30+570	Smooth bedrock surface

Bathymetry surveys of the excavated area were performed when FGL was confident that the excavation was respecting design dimension. Golder performed some spot checks of the bathymetry data and a summary is presented in Table 2.

Table 2. Bedrock Depth Verification

Zone	Depth to Bedrock (from Golder weighted tape measurements)	Depth to Bedrock (from FGL bathymetry)
30+415 to 418	7.3 to 7.7 m	7.5 to 8.0 m
30+420 to 440	7.3 to 7.6 m	7.0 to 7.5 m
30+465 to 470	6.2 to 6.3 m	5.0 to 5.5 m

Based on Golder's observations and on bathymetry surveys, Golder approved that the following excavated sections had adequate dimensions and adequate bedrock surfaces.

- Sta. 30+320 to 30+380 on August 25th 2009
- Sta. 30+380 to 30+400 on August 26th 2009
- Sta. 30+400 to 30+435 on August 30th 2009

Near the end of this reporting period, Golder became aware of discrepancies in the bedrock depth as excavated and the bathymetric profile presented by FGL. This anomaly has been investigated in more detail and presented in Section 3.4.

It has been determined that after some period of time (approximately ½ day) the excavation bottom may become covered with sediment and may provide inaccurate bedrock depth readings on both soundings and bathymetry.

3.3 Backfill Placement

Fine filter placement (19 mm minus material) was placed from Sta. 30+350 to 30+435. From periodic observation, Golder is confident that the filter placement did not generate too much segregation. Sounding after the placement of the filter was performed from Sta. 30+392 to Sta. 30+400 and from Sta. 30+405 to 30+420. Measurement confirmed that sufficient core backfill was placed along downstream slope, and up to the transition of rockfill and lakebed soils.

Some contamination of the core backfill stockpile was noted and Golder raised the concerns to FGL. Some cleaning of the stockpile was observed after this, but Golder also observed that some oversized particles were placed within the core backfill.

Core Backfill placement along with Coarse Filter placement continued from Sta. 30+350 to Sta. 30+411. Based on Golder personnel observations, the placement methodology seemed satisfactory to ensure presence of core backfill at bottom of trench.

3.4 Anomaly

AEM noted a discrepancy of bedrock depth between bathymetry data and investigation results between Sta. 30+320 and 30+380. In fact, from Sta. 30+350 to Sta. 30+380, the depth of excavated trench shown on bathymetry is often above the surveyed original lakebed layer. A drill rig was procured to check bedrock depth, with cased hole air-track drilling. On August 29th, two air-track drill holes were performed at Sta. 30+350, along centerline and at Sta. 30+355, 1.5m left of centerline. These holes encountered soft or loose sediments overlying bedrock. The bedrock generally correlated to the inferred bedrock surface, not the submitted bathymetry. On August 30, three more holes were advanced at Sta. 30+360, 30+365, and 30+370 on centerline with variable results. The hole at 30+360 was abandoned at a projected elevation just above the inferred bedrock surface due to malfunctioning of the hammer system. At 30+365, the hammer once again malfunctioned just above the inferred bedrock surface, however, they were able to push the hammer down to a solid surface, and after some repairs to the hammer, they were able to prove out bedrock. At 30+370, the hole observations were similar to 30+365, with the hammer malfunctioning and being pushed.

This program was then abandoned by AEM at the end of the dayshift with the intent to densify the area and then return with the drill rig for further investigations.

Based on the drilling observations, it appears as if a layer of coarse silt size sediments have been deposited on the bottom of the trench after the excavation. This sedimentation anomaly will be investigated further.

4.0 STORMWATER DIKE

Removed.

5.0 SAMPLING AND LABORATORY TESTING

In summary, at Bay Goose, the following sampling was performed:

- For Gradation
    - SA22– Core backfill from Bay Goose Dike 30+402 1m below water line
    - SA23 – Core backfill from Bay Goose Dike 30+230 densification platform
    - SA24 – Coarse filter from Bay Goose Dike 30+250 densification platform
- For Hydrometer
    - SA25 – Silt from Bay Goose Dike, stockpile at 30+420 of silt removed from trench bottom
    - SA26 – Silt from Bay Goose Dike, stockpile at 30+420 of silt removed from trench bottom
- For limits
    - SA25 – Silt from Bay Goose Dike, stockpile at 30+420 of silt removed from trench bottom
    - SA26 – Silt from Bay Goose Dike, stockpile at 30+420 of silt removed from trench bottom

Laboratory testing was performed also during that week and can be summarized as below:

- Gradation on:
    - SA22 – Core backfill from Bay Goose Dike 30+402 1m below water line
    - SA23 – Core backfill from Bay Goose Dike 30+230 densification platform
    - SA24 – Coarse filter from Bay Goose Dike 30+250 densification platform
- Hydrometer on:
    - TSF sample removed
    - SA26 – Silt from Bay Goose Dike, stockpile at 30+420 of silt removed from trench bottom
- Proctor
    - SA19 – Core Backfill from Bay Goose Dike 30+229

Reviewed results of the lab program to date have been attached to this report.



Photograph 1: Bay Goose Dike - Overview on August 24th, from North abutment, looking south



Photograph 2: Bay Goose Dike – Overview on August 29th, from North abutment, looking south. Note that Haul Truck is travelling on elevated platform created for the dynamic compaction.



Photograph 3: Bay Goose Dike – General photo of trench excavation. This photo was taken from downstream side looking east at Sta. 30+442



Photograph 4: Bay Goose Dike – Ripper installed on a CAT 385 to rip the bedrock bottom at Sta. 30+420 for bedrock surface assessment.



Photograph 5: Bay Goose Dike – Sediments excavated at Sta. 30+362



Photograph 6: Bay Goose Dike – Big block of bedrock excavated at bottom of trench at Sta. 30+490.



Photograph 7: Bay Goose Dike – Placement of Core Backfill and Coarse Filter at Sta. 30+372



Photograph 8: Bay Goose Dike – Core Backfill placement at Sta. 30+350, photo taken from Sta. 30+400 looking south



Photograph 9: Bay Goose Dike – Core Backfill stockpile prior to placement along downstream slope. Note oversize particles.

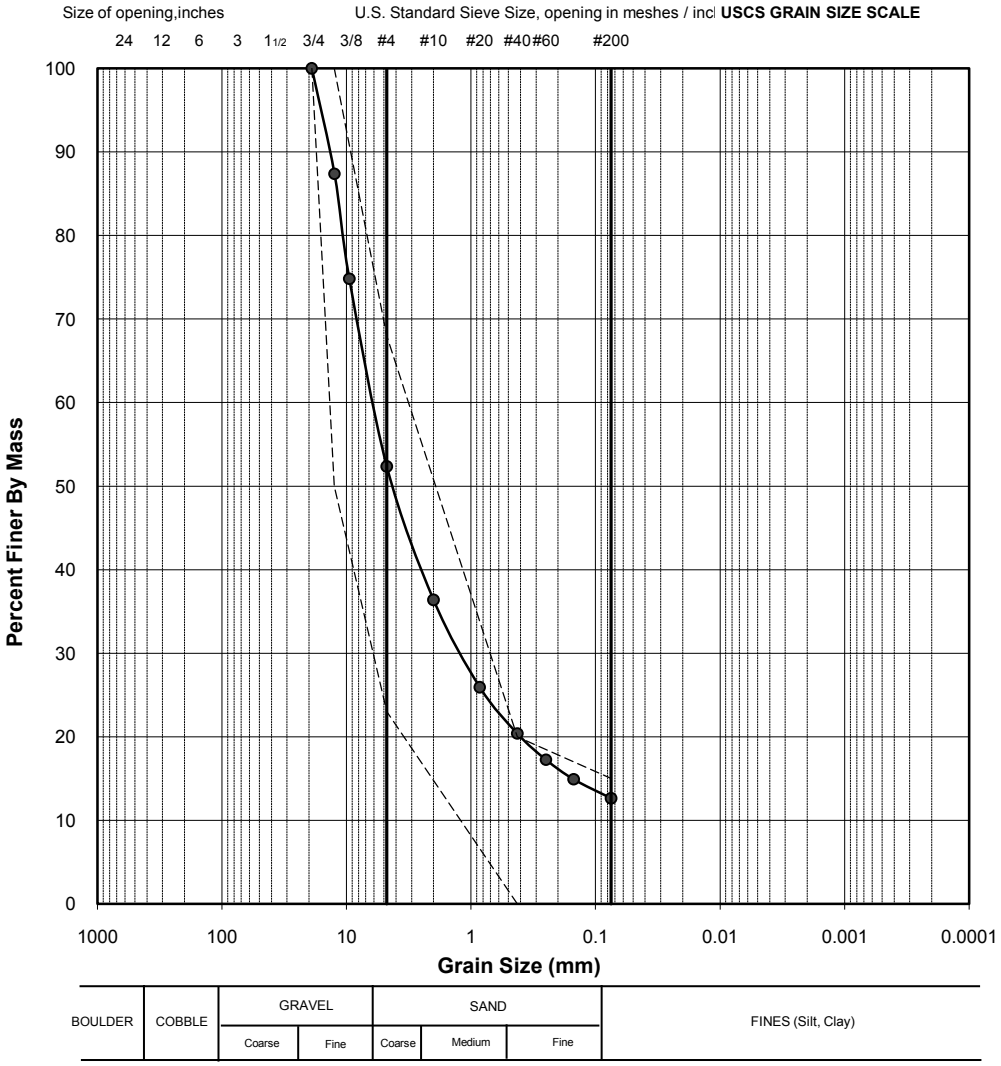
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	08-1428-0029	**Sample No.:**	**16**
Client:	AEM	**Field Label:**	BG-081809-01
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA-16
Remarks:	Water content = 5.7%	**Sampling Date:**	August 18, 2009
Bay Goose Dike STA 30+096, El. 134.0m (Approx.)		**Material Specification**	CORE BACKFILL
Centreline core trench		**Method:**	SPLIT, WASHED
		Date Tested:	August 19, 2009

Sieve Size (USS)	Sieve Size (mm)	Passing %
3.5"	87.5	100.0
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.0	100.0
1/2"	12.5	87.4
3/8"	9.5	74.8
#4	4.8	52.4
#10	2.0	36.4
#20	0.9	25.9
#40	0.4	20.4
#60	0.3	17.3
#100	0.2	14.9
#200	0.1	12.6



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

RB	August 19, 2009		
TESTED BY	DATE	CHECKED BY	DATE

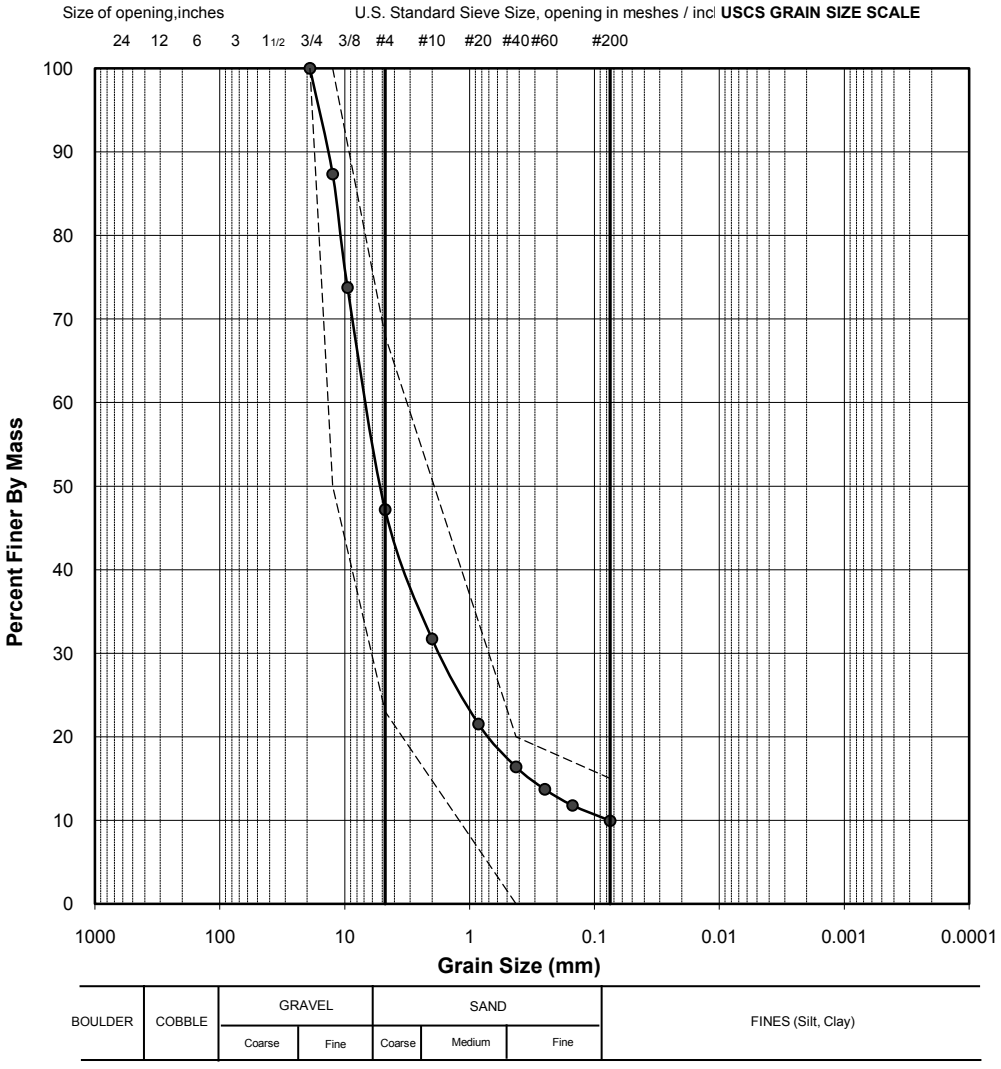
Golder Associates Ltd. - Burnaby Laboratory
4280 Still Creek Drive
Burnaby, B.C. Canada V5C 6C8

PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	08-1428-0029	**Sample No.:**	**17**
Client:	AEM	**Field Label:**	BG-081909-01
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA-17
Remarks:	Water content = not conducted	**Sampling Date:**	August 19, 2009
Bay Goose Dike STA 30+120, El. 134.0m (Approx.)		**Material Specification**	CORE BACKFILL
Centreline core trench		**Method:**	SPLIT, WASHED
		Date Tested:	August 19, 2009

Sieve Size (USS)	Sieve Size (mm)	Passing %
3.5"	87.5	100.0
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.0	100.0
1/2"	12.5	87.3
3/8"	9.5	73.8
#4	4.8	47.2
#10	2.0	31.7
#20	0.9	21.5
#40	0.4	16.4
#60	0.3	13.7
#100	0.2	11.8
#200	0.1	9.9



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

RB	August 19, 2009		
TESTED BY	DATE	CHECKED BY	DATE

E:\Lab Data\Gradations\SA-17.xlsx

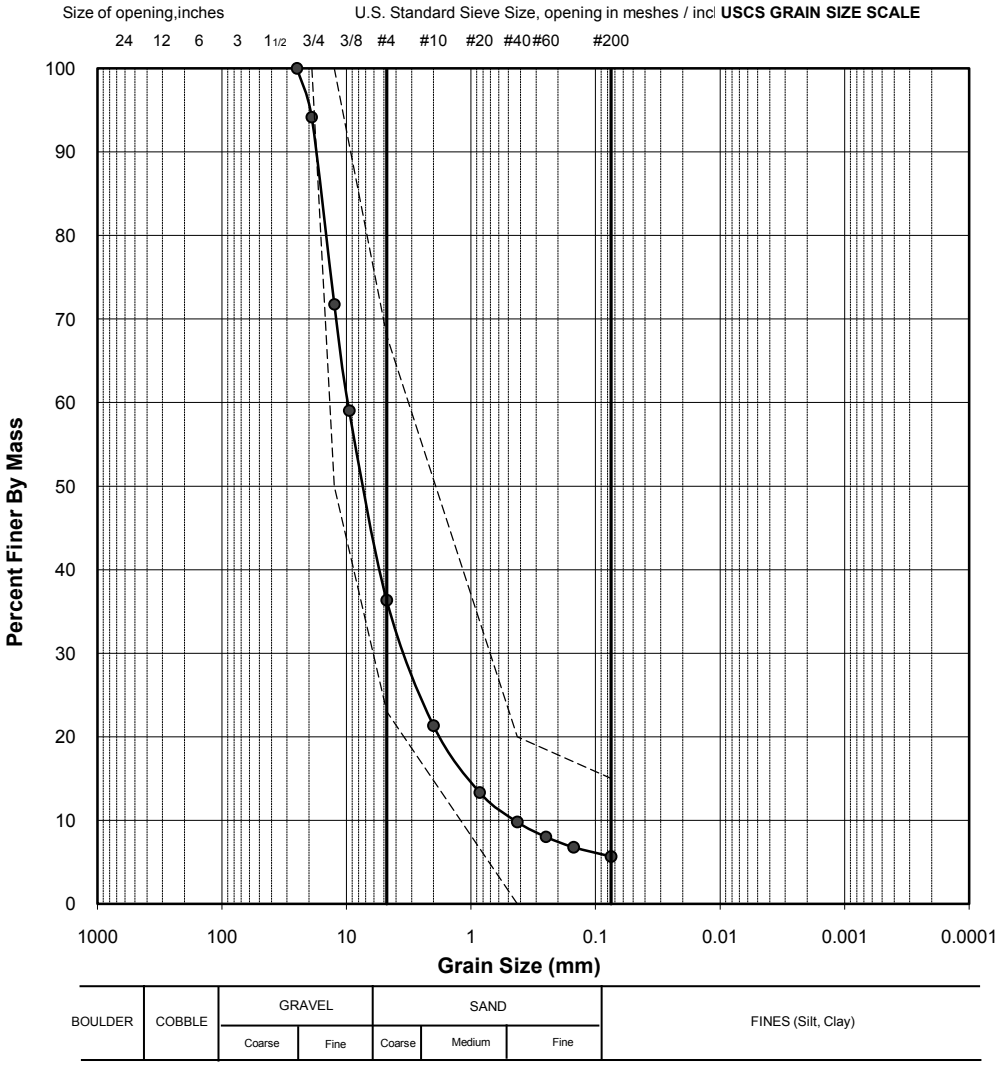
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Burnaby, B.C. Canada V5C 6C8

PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	08-1428-0029	**Sample No.:**	**18**
Client:	AEM	**Field Label:**	BG-081909-02
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA-18
Remarks:	Water content = not conducted	**Sampling Date:**	August 19, 2009
Bay Goose Dike STA 30+170, El. 133.0m (Approx.)		**Material Specification**	CORE BACKFILL
Centreline core trench		**Method:**	SPLIT, WASHED
		Date Tested:	August 21, 2009

Sieve Size (USS)	Sieve Size (mm)	Passing %
3.5"	87.5	100.0
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.0	94.2
1/2"	12.5	71.8
3/8"	9.5	59.0
#4	4.8	36.3
#10	2.0	21.3
#20	0.9	13.3
#40	0.4	9.8
#60	0.3	8.0
#100	0.2	6.8
#200	0.1	5.7



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TESTED BY	DATE	CHECKED BY	DATE
RB	August 21, 2009		

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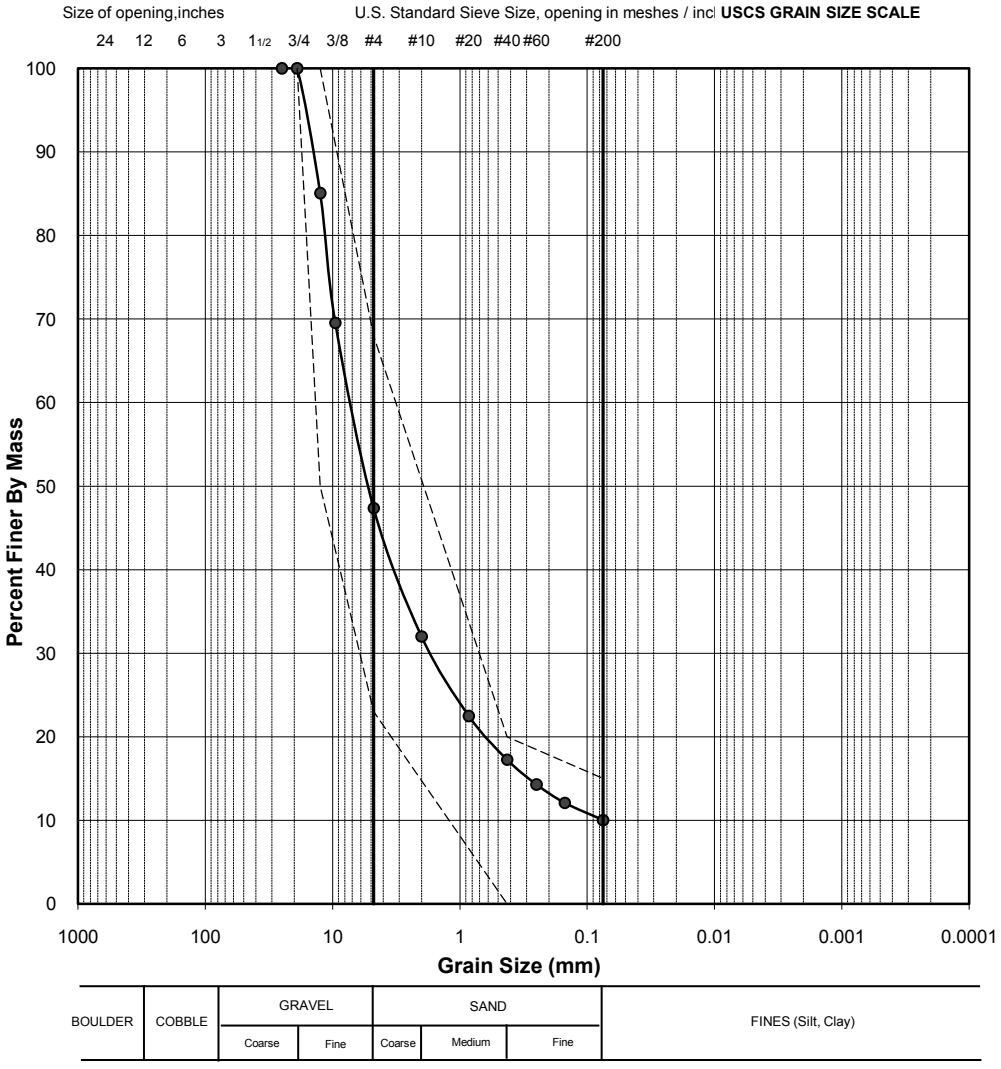
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	08-1428-0029	**Sample No.:**	**19**
Client:	AEM	**Field Label:**	BG-082109-01
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA-19
Remarks:	Water content = not conducted	**Sampling Date:**	August 21, 2009
Bay Goose Dike STA 30+229, El. 133.2m (Approx.)		**Material Specification**	CORE BACKFILL
Centreline core trench		**Method:**	SPLIT, WASHED
		Date Tested:	August 22, 2009

Sieve Size (USS)	Sieve Size (mm)	Passing %
3.5"	87.5	100.0
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.0	100.0
1/2"	12.5	85.1
3/8"	9.5	69.5
#4	4.8	47.3
#10	2.0	32.0
#20	0.9	22.5
#40	0.4	17.3
#60	0.3	14.3
#100	0.2	12.1
#200	0.1	10.0



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RB	August 22, 2009		
TESTED BY	DATE	CHECKED BY	DATE

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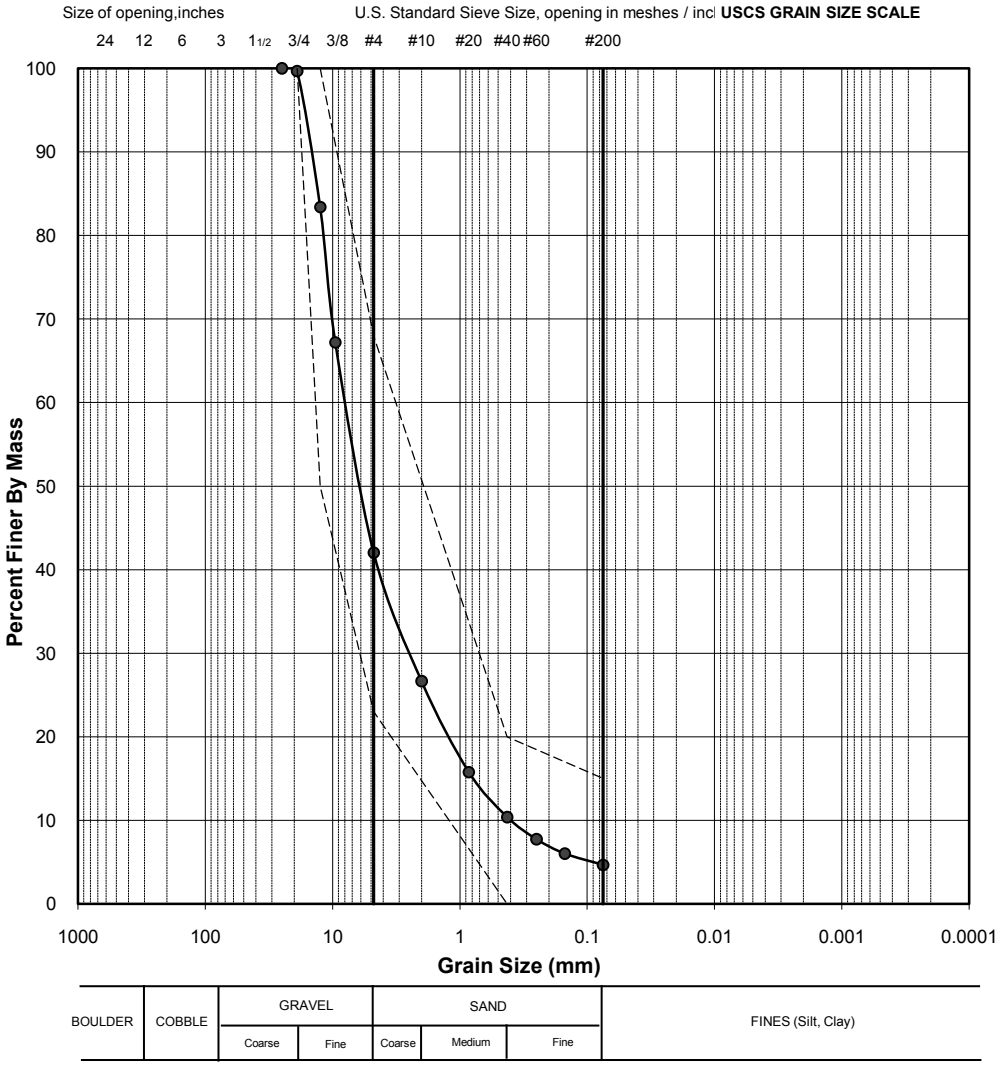
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	08-1428-0029	**Sample No.:**	**20**
Client:	AEM	**Field Label:**	BG-082209-01
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA-20
Remarks:	Water content = not conducted	**Sampling Date:**	August 22, 2009
Bay Goose Dike STA 30+284, El. 132.7m (Approx.)		**Material Specification**	CORE BACKFILL
Centreline core trench		**Method:**	SPLIT, WASHED
		Date Tested:	August 23, 2009

Sieve Size (USS)	(mm)	Passing %
3.5"	87.5	100.0
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.0	99.7
1/2"	12.5	83.4
3/8"	9.5	67.2
#4	4.8	42.0
#10	2.0	26.7
#20	0.9	15.8
#40	0.4	10.4
#60	0.3	7.7
#100	0.2	6.0
#200	0.1	4.7



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RB	August 23, 2009		
TESTED BY	DATE	CHECKED BY	DATE

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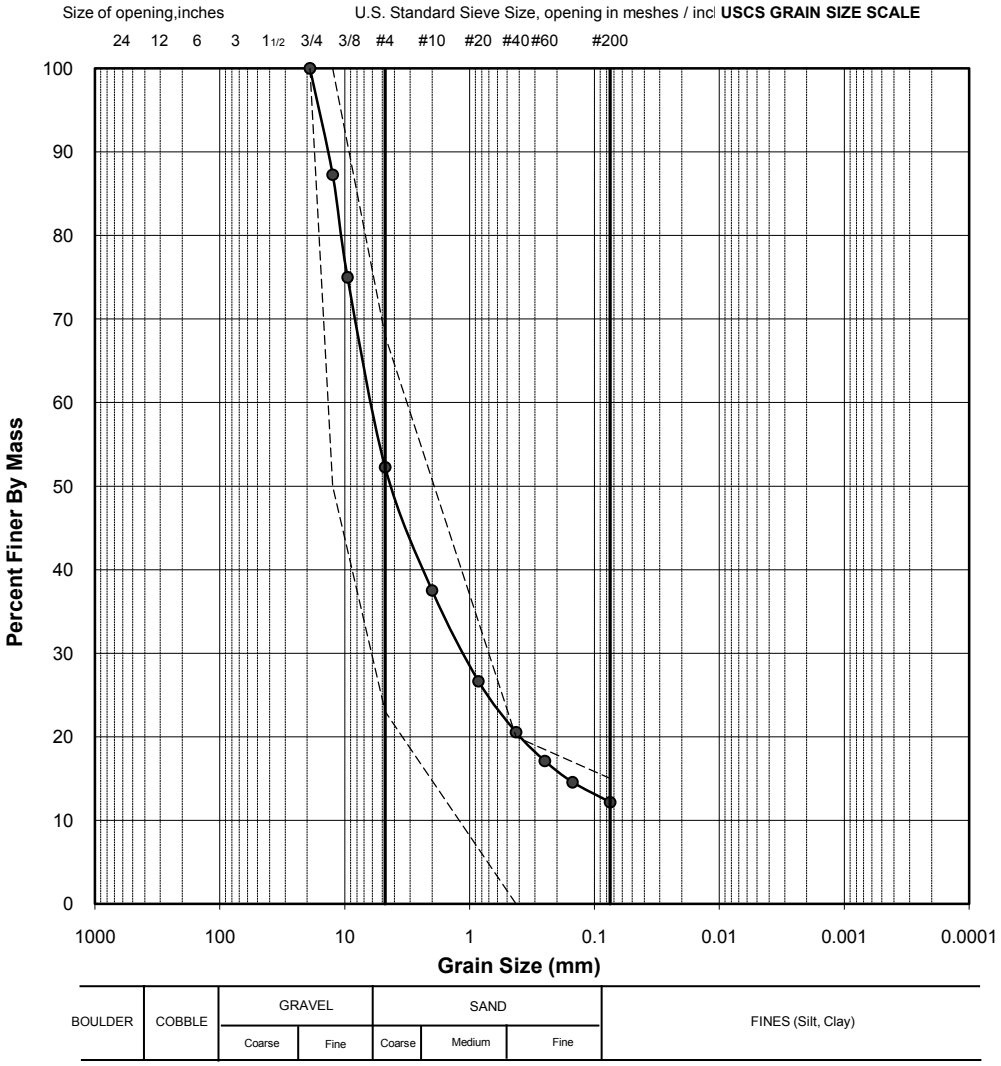
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	08-1428-0029	**Sample No.:**	**21**
Client:	AEM	**Field Label:**	BG-082409-01
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA-21
Remarks:	Water content = not conducted	**Sampling Date:**	August 24, 2009
Sa. Location:	Bay Goose Dike STA 30+355, at Stockpile, Pit Side	**Material Specification**	CORE BACKFILL
		Method:	SPLIT, WASHED
		Date Tested:	August 25, 2009

Sieve Size (USS)	Sieve Size (mm)	Passing %
3.5"	87.5	100.0
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.0	100.0
1/2"	12.5	87.3
3/8"	9.5	75.0
#4	4.8	52.3
#10	2.0	37.5
#20	0.9	26.6
#40	0.4	20.5
#60	0.3	17.1
#100	0.2	14.6
#200	0.1	12.2



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TESTED BY	DATE	CHECKED BY	DATE
RB	August 25, 2009		

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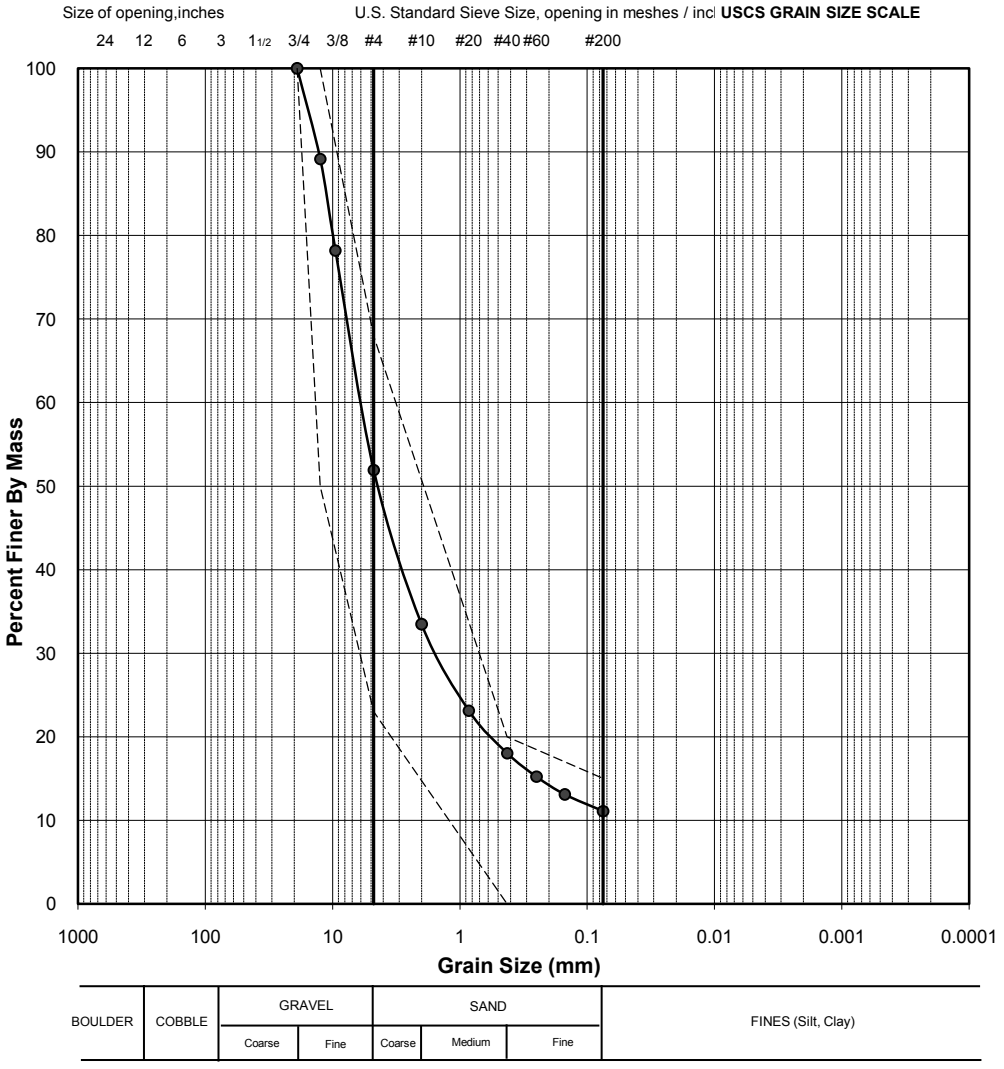
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	08-1428-0029	**Sample No.:**	**22**
Client:	AEM	**Field Label:**	BG 082709-01
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	22
Remarks:	Water content = 8.3%	**Sampling Date:**	August 27, 2009
Sa. Location:	Bay Goose core backfill 30+402	**Material Specification**	CORE BACKFILL
		Method:	COMBINED, WASHED
		Date Tested:	August 28, 2009

Sieve Size (USS)	Sieve Size (mm)	Passing %
3.5"	87.5	100.0
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.0	100.0
1/2"	12.5	89.1
3/8"	9.5	78.2
#4	4.8	51.9
#10	2.0	33.5
#20	0.9	23.1
#40	0.4	18.0
#60	0.3	15.2
#100	0.2	13.1
#200	0.1	11.1



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TESTED BY	DATE	CHECKED BY	DATE
DE	August 27, 2009		

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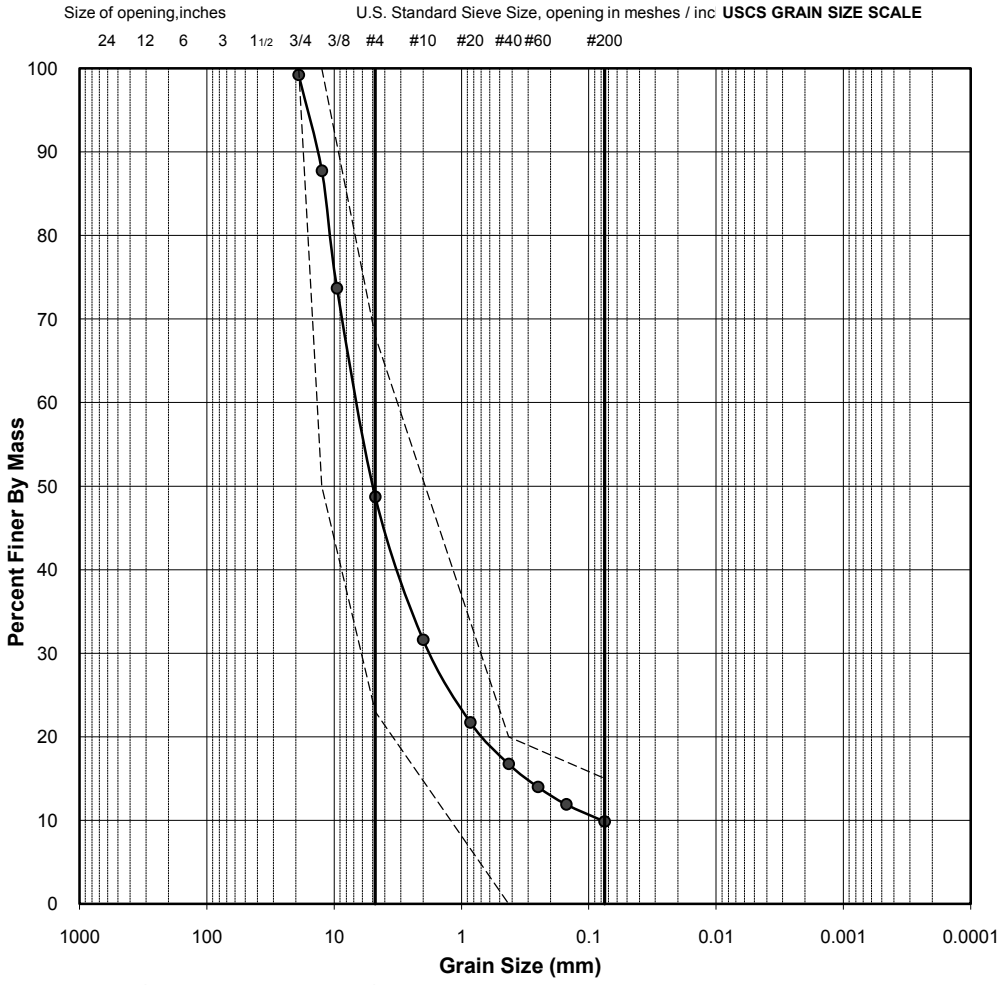
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	08-1428-0029	**Sample No.:**	**23**
Client:	AEM	**Field Label:**	BG 082909-01
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA23
Remarks:	Water content 2.1%	**Sampling Date:**	August 29, 2009
Sa. Location:	Bay Goose core backfill 30+230	**Material Specification**	CORE BACKFILL
		Method:	SPLIT, WASHED
		Date Tested:	August 29, 2009

Sieve Size (USS)	(mm)	Passing %
3.5"	87.5	100.0
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.0	99.2
1/2"	12.5	87.8
3/8"	9.5	73.7
#4	4.8	48.7
#10	2.0	31.6
#20	0.9	21.7
#40	0.4	16.7
#60	0.3	14.0
#100	0.2	11.9
#200	0.1	9.9



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TESTED BY	DATE	CHECKED BY	DATE
DE	August 20, 2009		

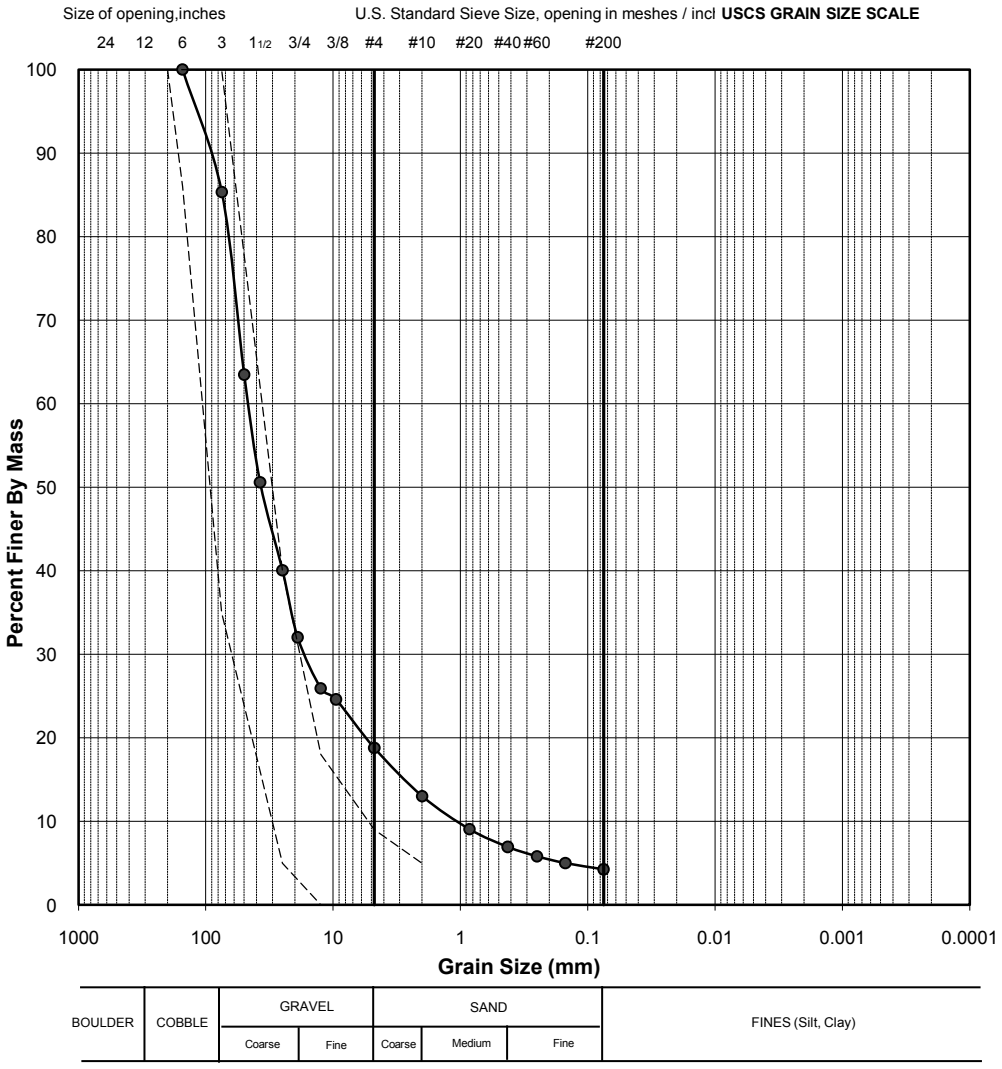
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	08-1428-0029	**Sample No.:**	**24**
Client:	AEM	**Field Label:**	BG083009-01
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA24
Remarks:	Water Content = 4.5%	**Sampling Date:**	August 30, 2009
Sa. Location:	Bay Goose 30+250	**Material Specification**	COARSE FILTER
Material split on 12.5mm sieve		**Method:**	SPLIT, WASHED
		Date Tested:	August 31, 2009

Sieve Size (USS)	Sieve Size (mm)	Passing %
8"	200.0	100.0
6"	152.4	100.0
3"	75.0	85.3
2"	50.0	63.5
1.5"	37.5	50.6
1"	25.0	40.1
3/4"	19.0	32.0
1/2"	12.5	25.9
3/8"	9.5	24.6
#4	4.8	18.8
#10	2.0	13.0
#20	0.9	9.1
#40	0.4	6.9
#60	0.3	5.8
#100	0.2	5.0
#200	0.1	4.3



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TESTED BY	DATE	CHECKED BY	DATE
DE	August 31, 2009		

WEEKLY REPORT

DATE September 20, 2009 **PROJECT NO.** 08-1428-0029

TO Gaston Blanchette and Eric Lamontagne, Agnico-Eagle Mines Limited **DOC NO.** Doc 1010 Rev. 0

CC Michel Julien, Dan Walker, Paul Bedell, Fiona Esford, Annie Beaulieu of Golder

FROM Glen Rutherford **EMAIL** grutherford@golder.com

WEEKLY REPORT FOR PERIOD FROM 31 AUGUST TO 6 SEPTEMBER, 2009
MEADOWBANK GOLD PROJECT

This weekly report summarizes Golder QA activities from August 31th to September 6th 2009 related to the construction activities undertaken by AEM at Stormwater Dike, Saddle Dam 1 and Bay Goose Dike.

Golder personnel mainly on site during this period were: Glen Rutherford, German Pizarro, Damian Edwards, Karine Doucet and Gerd Janssens. Fiona Esford mobilized to site on September 2nd 2009 to review the construction as the design engineer.

Photographs from the work are appended to this memorandum for further details.

1.0 HEALTH AND SAFETY

Daily H&S meetings were held with all Golder personnel working on the dike construction.

During this reporting period, the Golder site pickup got stuck twice (requiring a pull) and has been almost stuck numerous times. Apparently, the Golder pick up has a broken 4X4 system. This issue has been raised with FGL and they have indicated that the parts are on order and they may need some help from AEM in order to expedite the shipping of the parts.

The Bay Goose haul road was below water level in areas and very uneven. AEM has done some remedial work to mitigate the access issues but the road still is very uneven.

Radio communications between the dikes and the office have been very poor lately. Golder has requested of AEM and FGL that the site truck be supplied with a radio so that communications can be improved.

Hazard identification was reported on a daily basis in the field daily reports, and during the morning meeting with AEM if needed.

2.0 EAST DIKE

Golder continued to monitor seepage flow rates at the weir at least once per day. The flow seems stable between 8 and 11 L/s. On September 6th, the water level in South Cell was the same as the weir elevation. Therefore, no more readings can be taken from now until the water level in the south cell returns to below 127.7m.

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3.0 BAY GOOSE DIKE

3.1 Rockfill placement

Rockfill placement occurred, close to Goose Island, where rockfill platform wasn't wide enough. The platform extended to Sta. 30+885 and will not be constructed further this year. The platform will continue to extend to the final width with suitable rockfill excavated from the trench. AEM completed a rockfill pad on Goose Island for the Inquip slurry plant set-up.

3.2 Trench excavation

During this week, excavation of the trench through rockfill started at Sta. 30+630 and terminated on September 3rd to Sta. 30+820. Excavation stopped to allow an access to Goose Island pad. Golder observations of bedrock surface are summarized in Table 1.

Table 1. Observation of bedrock surface during trench excavation

Chainage	Comments
30+490	The near vertical face found at this location previously was chipped down to a flatter bottom profile along centerline on September 4th & 5th 2009.
30+520	Irregular bedrock surface.
30+550	Very irregular surface along centerline. Used chipper to reduce the irregularity of the bottom of the trench on September 6th 2009
30+555 to 570	A continuous 0.5 m bump along profile, close to centerline. Golder recommended chipping this section prior approval. Chipping was completed on September 6th.
30+610 to 615	Step along centerline, chipping completed September 6th
30+630	Irregular bedrock surface
30+665	Smooth bedrock surface along profile bottom but irregular across (0.5m step). Cutoff trench bottom seems adequate and no chipping is required in this section
30+672 to 680	Irregular bedrock surface sloping down
30+685	Irregular bedrock surface
30+695	D/S to CL: bedrock surface rough CL to U/S: bedrock surface smooth
30+697	Bedrock surface irregular along centerline
30+725	Steep step noted at centerline possibly filled with till, need to check this from the side
30+730	Bedrock surface smooth
30+732	Bedrock surface rough
30+733 to 736	Bedrock surface smooth, with some rough sections
30+745	Bedrock surface very irregular
30+750 to 765	Bedrock surface smooth, step towards 30+760
30+776 to 778	Bedrock surface seems smooth to rough. Need to recheck with lip bucket. May have a step.
30+784 to 786	Bedrock surface irregular with apparent small drops at 30+786
30+790 to 30+820	Surface smooth, however, Golder wants this area re-checked after several days in order to ensure that any frozen till has been removed from this area.

As of September 6th FGL informed Golder that from Sta. 30+620 to the end of the excavation has not had its final cleaning and more work will be necessary.

Bathymetric surveys of the excavated area were performed when FGL was confident that the excavation was respecting the design dimension. Golder performed some spot checks of the bathymetry data and a summary of this is presented in Table 2.

Table 2. Bathymetry and trench bottom spot checks with weighted tape/solid rod.

Zone	Golder Weighted Tape Value (m)	Bathymetry depth (m)
30+440	3.7 to 3.8	4.0
30+470	5.0	4.6-4.8
More soundings were taken on September 5th; however, the FGL surveyor has not yet provided the co-ordinates of the sounding locations.		

Based on Golder observations and on bathymetry surveys, Golder approved that the following excavated sections had adequate dimensions and presented adequate bedrock surfaces.

- Sta. 30+435 to 30+450 on August 31, 2009
- Sta. 30+455 to 30+470 on September 2, 2009
- Sta. 30+470 to 30+540 on September 5, 2009
- Sta. 30+540 to 30+620 on September 6, 2009

3.3 Backfill Placement

Fine filter placement (19mm minus material) was placed from Sta. 30+420 to 30+610. From regular observation, Golder was confident that the filter placement was conducted by the approved placement method. Sounding after the placement of the filter was performed at Sta. 30+430, between Sta. 30+480 to. 30+485, and from Sta. 30+530 to 610. Some intervals were missed due to extreme weather conditions; soundings cannot be performed in high wind conditions. Measurement confirmed that sufficient core backfill was placed along downstream slope, and up to the transition of rockfill and lakebed soils.

Core backfill placement along with Coarse Filter placement continued from Sta. 30+411 to Sta. 30+610. Based on Golder personnel observations, the placement methodology seemed satisfactory to ensure presence of core backfill at bottom of trench.

3.4 *Dynamic Compaction*

Core backfill, Coarse Filter and Rockfill were placed to raise the dike crest for dynamic compaction to about El. 136.1 m. The method of placement followed the dimensions provided in the dynamic compaction submittal from Geopac. The dynamic compaction started on August 29, 2009 and continues as the dynamic compaction pad is advanced.

3.5 *Anomaly*

As stated in the previous weekly report it is understood that the intent is to densify the area between 30+350 to 30+380 and then return with the drill rig for further investigations of the bottom condition and excavation depth.

4.0 STORMWATER DIKE

4.1 Foundation Preparation

No foundation preparation activities took place during this period.

4.2 Material Placement

4.2.1 Rockfill

A second lift of rockfill was advanced from Sta. 11+020 to Sta. 10+840 and from Sta. 10+660 to 10+560. The lift thickness was generally 2 m but it was observed to be over 3 m around Sta. 10+900. During placement a couple of boulders were observed to have rolled down slope to the toe of the dike.

AEM is maximizing the preparation of the upstream slope for liner placement. At the end of this period, rockfill was placed and the upstream face sloped to El. 140 m from Sta. 11+020 to Sta. 10+900 and to El. 132 m from Sta.10+900 to 10+380. Rockfill was only placed as a first layer, without specific elevation, from about Sta. 10+380 to Sta.10+205.

From about Sta. 10+800 to 10+660, the rockfill was being placed to reach elevation 140 m, but at El.132 m the 140 m lift was being place 10 m offset to leave some space for liner installation (up to El. 132 m in this region).

4.2.2 Coarse Bedding

After sloping to 3H:1V upstream rockfill slope, 150 mm minus material was placed with a CAT 330 for a thickness of about 0.5 m from Sta. 10+600 to Sta. 10+360. Once material placed two passes of dozer was performed to compact the layer. Compaction with dozer was satisfactory. As the end of this reporting period, Golder had not received survey information of the lift thickness from AEM.

4.2.3 Fine Bedding

After placement and track packing of 150 mm minus, a 0.5 m of 19 mm minus layer was placed with a CAT 330 and taped with the excavator bucket from Sta. 10+840 to Sta. 10+360. Two passes of dozer were performed after to level the 19 mm minus and to compact the layer. Golder recommends that this layer be compacted with 4 passes of a 10-ton smooth vibrating roller drum or other similar energy level compaction method.

As the end of this reporting period, Golder had not received survey confirmation of this placement thickness from AEM.

Golder observed oversize particles within and at the surface of the layer. Golder recommended to AEM to remove oversize particles. AEM has indicated that this will occur prior to liner placement.

4.3 Key-in Trench

During this period, the trench preparation included the following activities:

- Excavating fractured bedrock and chipping the exposed bedrock surface to an adequate elevation with a hydraulic breaker attached to excavator. The fractured bedrock was excavated/chipped from Sta. 10+390 to 10+565;
- Cleaning bedrock surface with excavator lip bucket;
- Placing till over bedrock surface to level; till placement has been completed from Sta. 10+980 to 10+900 and around Sta. 10+500;
- Removing oversize particles from surface; and
- Pumping ponded water.

To the end of this reporting period, the Key-in trench preparation is as follows:

- **From 11+020 to 10+910**: a 30 cm to 50 cm till layer has been placed and bucket packed on top of generally fractured bedrock. The bedrock was cleaned prior till placement. During till placement oversize particles were removed. No ponded water in the area.

- **From 10+910 to 10+900**: a 50 cm to 70 cm till layer was placed ad bucket packed after excavation of saturated till. The excavation was carried out to a drier till foundation. During till placement oversize particles were removed. No ponded water currently.
- **From 10+900 to 10+565**: in place firm to soft till. The surface is smooth and free of angular gravel and cobbles. Golder observed ponded water at Sta. 10+905 and from Sta. 10+835 to 10+775. The first area seems to come from groundwater inflow while the second area is a low point where surface water drains and accumulates. All surficial layers of 19 mm minus material in the key trench noted in the report for the last weekly reporting period have been excavated from the bottom of the trench (around Sta. 10+875 and 10+822).
- **From 10+565 to 10+495**: exposed bedrock, very irregular surface (up to 1m elevation difference). Bedrock surface is clean and not fractured. No ponded water. Additional work is required before this section is adequate for liner placement.
- **From 10+495 to 10+400**: thin layer of mixed till and fractured bedrock. Intermittent rock outcrops. Irregular surface. Angular and subrounded gravels and boulders on surface. No ponded water. Additional work is required before this section is adequate for liner placement.

4.4 General

Water from the north cell has been pumped to the south cell to lower the water level in north cell. The pump was stopped for a short period, but pumping resumed when the water level in the north cell started to rise again (most likely due to recent precipitation).

5.0 SAMPLING AND LABORATORY TESTING

In summary, at Bay Goose, the following sampling was performed:

- *For Gradation*
  - *SA29 – Coarse Filter 30+430 in place at CL on current CB face, 1.0m below WL*
  - *SA31 – Till from stockpile*
  - *SA32 – Core backfill 30+482 in place at CL on current CB face, 4.0m below WL*
  - *SA34 – Core backfill 30+485 densification pad*
- *For Hydrometer*
  - *SA39 – Sediment from bottom of trench 30+635*

Laboratory testing was performed also during that week and can be summarized as below:

- *Gradation on*
  - *SA24 – Coarse filter 30+250 in place*
  - *SA27 – Core backfill 30+431 in place on current CB face, 1.0m below WL*
- *Hydrometer on*
  - *SA25 – Sediment removed from trench 30+420*
  - *SA26 – Sediment removed from trench 30+420*

- *Proctor on*
    - *SA19 – Core backfill 30+229 in place*
- *Limits on*
    - *SA25 - Sediment removed from trench 30+420*
    - *SA26 - Sediment removed from trench 30+420*

In summary, Storm Water Dike, the following sampling was performed:

- *For Gradation*
    - *SA28 – Fine filter 10+460 bedding layer*
    - *SA35 – TILL from stockpile*
    - *SA36 – TILL in place at toe of filter 10+900*
    - *SA37 – TILL in place at toe of filter 10+470*
    - *SA38 – Fine filter in place 10+470*

Laboratory testing was performed also during that week and can be summarized as below:

- *Gradation on*
    - *SA28 - Fine filter 10+460 bedding layer*

Tested samples to be reviewed

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Photograph 1: Bay Goose Dike –Dynamic Compaction at Sta. 30+375. Photo taken September 2nd, 2009.



Photograph 2: Bay Goose Dike –Craters formed within the 19mm minus material of the central core from the Dynamic Compaction. Photo looking north from Sta. 30+230. Photo taken September 2nd, 2009.



Photograph 3: Bay Goose Dike – Open trench looking south from approximately Sta. 30+435. Photo taken September 3rd, 2009.



Photograph 4: Bay Goose Dike –Sediment at the bottom of the trench excavated prior to coarse backfill and coarse filter placement. Photo taken September 3rd, 2009.



Photograph 5: Bay Goose Dike –Sediment obtained from the bottom of the trench excavated prior to coarse backfill and coarse filter placement. Photo taken September 3rd, 2009.



Photograph 6: Bay Goose Dike –Confirmation of depth to bedrock by use of steel rods. Fiona Esford present during check. Photo taken looking east from sta. 30+450. Photo taken September 3rd, 2009.



Photograph 7: Bay Goose Dike – 19 mm coarse filter placement from centerline at Sta. 30+440. Photo taken September 3rd, 2009.



Photograph 8: Bay Goose Dike –Overview of three activities: dynamic compaction, core backfill placement to elevation 136.1 m, and hydraulic core backfill placement. Photo taken September 4th, 2009 looking north at sta. 30+450.



Photograph 9: Bay Goose Dike – Coarse backfill and coarse filter placement from centerline at approximately Sta. 30+470. Photo taken September 5th, 2009.



Photograph 10: Bay Goose Dike – Coarse backfill and coarse filter placement from centerline at approximately Sta. 30+500. Photo taken September 5th, 2009.



Photograph 11: Bay Goose Dike – Dynamic compaction platform at approximately Sta. 30+485. Photo taken September 5th, 2009.



Photograph 12: Bay Goose Dike – Investigation of trench bottom irregularities at Sta. 30+570 looking north from Sta. 30+600. Photo taken September 5th, 2009.



Photograph 13: Bay Goose Dike – Excavated sediment from the bottom of the trench at Sta. 30+615. Photo taken September 5th, 2009.



Photograph 14: Bay Goose Dike – Bathymetric survey at Sta. 30+560 following chipping. Photo taken September 6th, 2009.



Photograph 15: Bay Goose Dike – 345 Excavator with breaker attachment used to chip rock outcrops at the bottom of the trench. Excavator sitting on the upstream side the trench at Sta. 30+560. Photo taken September 6th, 2009.



Photograph 16: Bay Goose Dike – 345 Excavator with chipper attachment used to chip rock outcrops at the bottom of the trench. Excavator sitting on the upstream side the trench at Sta. 30+560. Photo taken September 6th, 2009.



Photograph 17: Bay Goose Dike – Dynamic compaction at Sta. 30+340 looking north. Photo taken September 6th, 2009.



Photograph 18: Bay Goose Dike – Filter placement at Sta. 30+550. Photo taken September 6th, 2009.



Photograph 19: Bay Goose Dike – Slurry Pond construction. Photo taken September 6th, 2009.



Photograph 20: Bay Goose Dike – Slurry Pond construction placement of bedding. Photo taken September 6th, 2009.



Photograph 1: Stormwater Dike – Second rockfill lift placement to Sta. 10+850. This photo was taken on September 1st



Photograph 2: Stormwater Dike – Second rockfill lift placement to Sta. 10+660. This photo was taken on September 6th

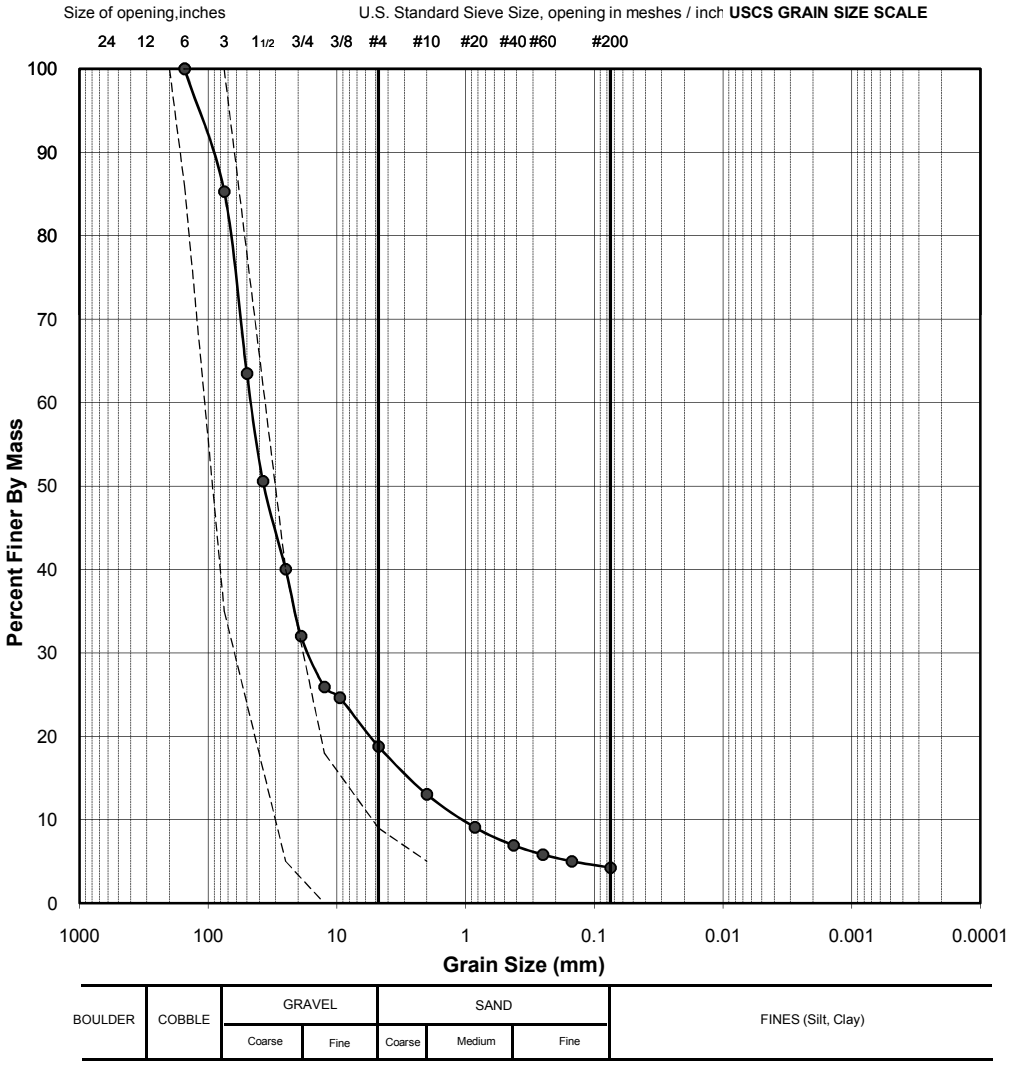
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	08-1428-0029 (5000)	**Sample No.:**	**24**
Client:	AEM	**Field Label:**	BG083009-01
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA24
Remarks:	Water Content = 4.5%	**Sampling Date:**	August 30, 2009
Sa. Location:	Bay Goose 30+250 in place	**Material Specification:**	COARSE FILTER
Material split on 12.5mm sieve		**Method:**	SPLIT, WASHED
		Date Tested:	August 31, 2009

Sieve Size (USS)	Sieve Size (mm)	Passing %
8"	200.0	100.0
6"	152.4	100.0
3"	75.0	85.3
2"	50.0	63.5
1.5"	37.5	50.6
1"	25.0	40.1
3/4"	19.0	32.0
1/2"	12.5	25.9
3/8"	9.5	24.6
#4	4.8	18.8
#10	2.0	13.0
#20	0.9	9.1
#40	0.4	6.9
#60	0.3	5.8
#100	0.2	5.0
#200	0.1	4.3



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DE	August 31, 2009		
TESTED BY	DATE	CHECKED BY	DATE

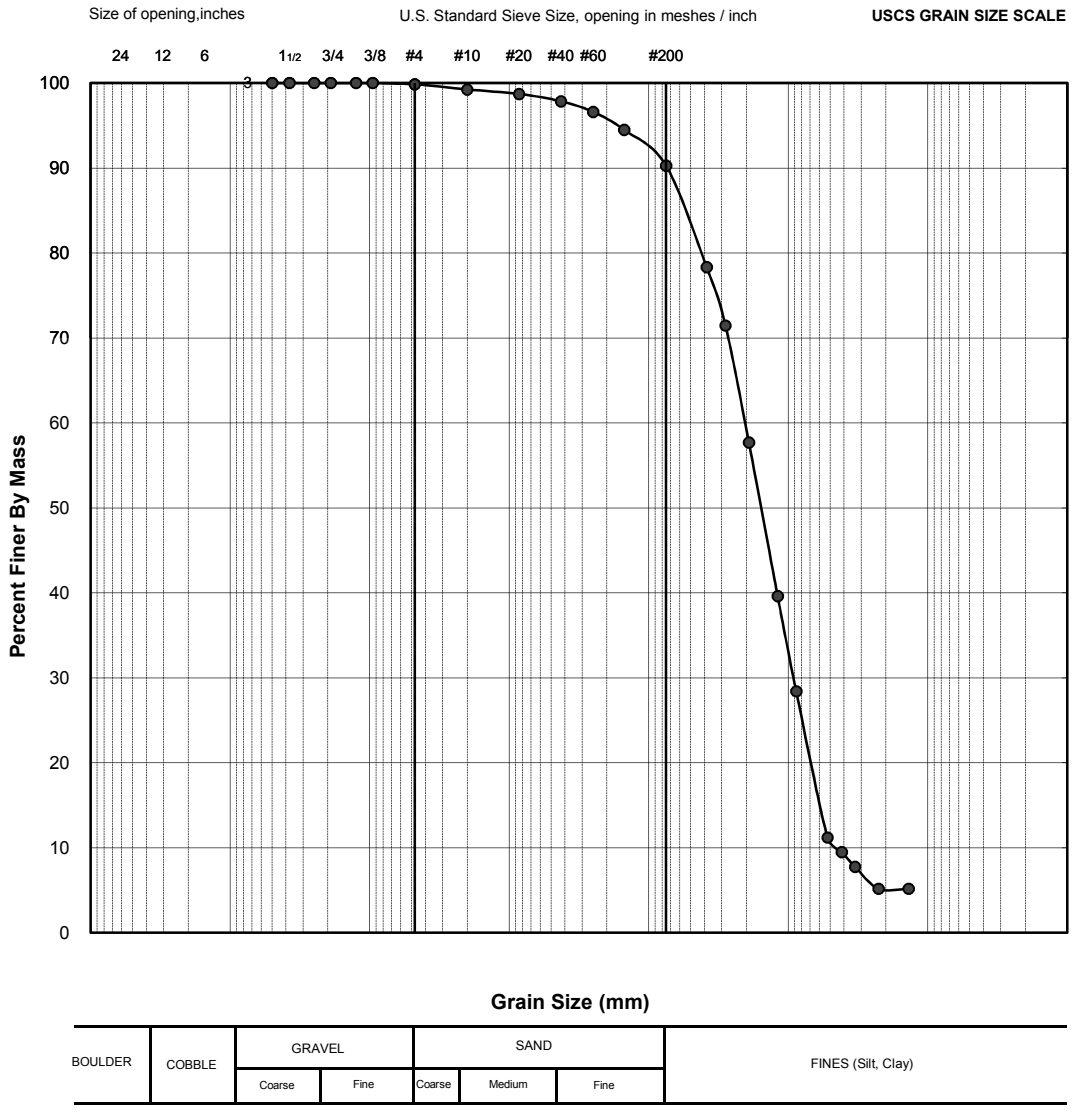
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM D 422-63 (2007)

Project No.:	08-1428-0029 (5000)	**Sample:**	**25**
Client:	AEM	**Field No.:**	BG083009-02
Project:	Meadowbank Gold Project	**Depth (m):**	N/A
Location:	Nunavut	**Lab ID No:**	SA25
Specific Gravity (assumed):	2.76	**Other Remarks:**	Sample collected from Bay Goose at 30+420 - material removed from base of trench
Date Sampled:	August 30, 2009		
Dispersion Method:	Stirring		
Dispersion Period (min):	960.00		

Sieve Size (USS)	Sieve Size (mm)	% Passing
3.5"	87.50	100.0
3"	75.00	100.0
2"	50.00	100.0
1.5"	37.50	100.0
1"	25.00	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	99.8
#10	2.00	99.2
#20	0.850	98.7
#40	0.425	97.8
#60	0.250	96.6
#100	0.150	94.5
#200	0.075	90.2
-	0.0384	78.3
-	0.0282	71.4
-	0.0191	57.7
-	0.0119	39.6
-	0.0088	28.4
-	0.0052	11.2
-	0.0041	9.5
-	0.0033	7.7
-	0.0023	5.2
-	0.0014	5.2



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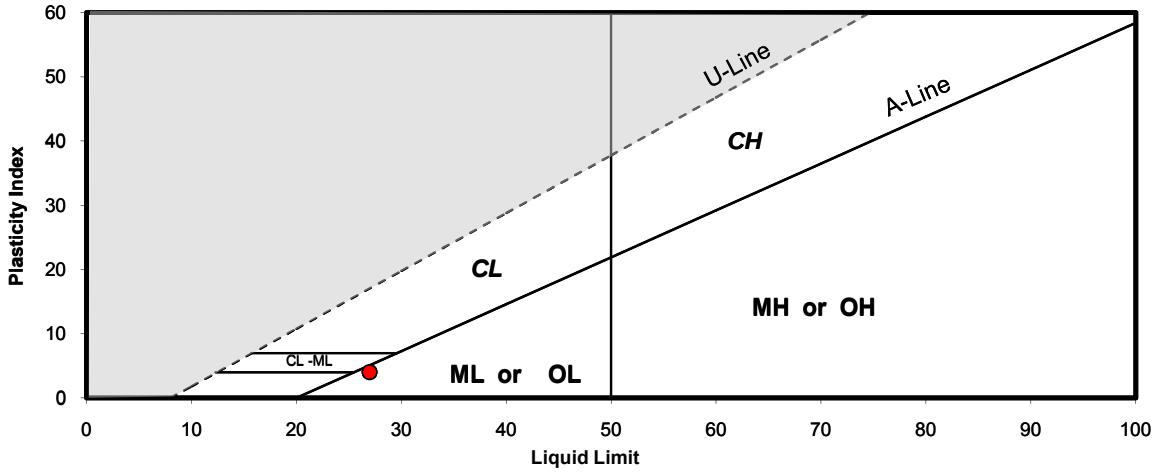
TESTED BY	DATE	CHECKED BY	DATE
DE	September 6, 2009		

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Liquid Limit, Plastic Limit and Plasticity Index of Soils

Reference: ASTM D 4318-05

Project No.:	08-1428-0029 (5000)	**Sample No.:**	**25**
Client:	AEM	**Field No.:**	BG083009-02
Project:	Meadowbank Gold Project	**Sa. Location**	BG sediment removed from trench
Location:	Nunavut	**Date Sampled:**	August 30, 2009
Method:	A-Multi Point	**Preparation Method:**	Air-Dried
Sample Description:	ML	**Classification Definition**	*Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity*





Test Summary		Remarks
Percent passing #40 Sieve (%)	**95.3**	Sediment material removed from bottom of trench at 30+420
Liquid Limit	**27**	
Plastic Limit	**23**	
Plasticity Index	**4**	
Natural water content (%)	**39**	
Liquidity Index	**4.0**	

** The test data given herein pertain to the sample provided only. This report constitutes a testing service only.*

TESTED BY	DATE	CHECKED BY	DATE
DE	September 3, 2009		

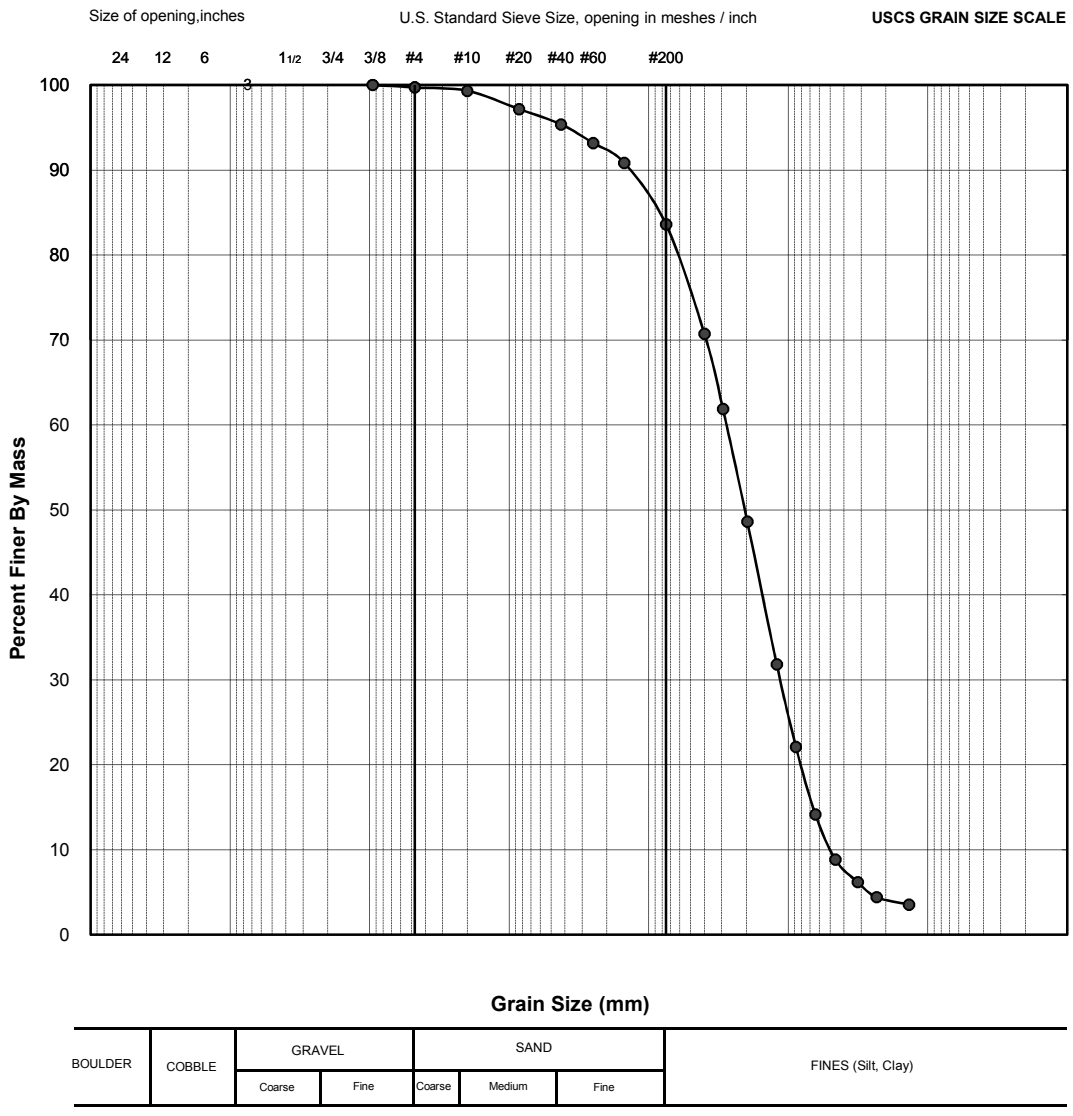
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM D 422-63 (2007)

Project No.:	08-1428-0029 (5000)	**Sample:**	**26**
Client:	AEM	**Field No.:**	BG083009-03
Project:	Meadowbank Gold	**Depth (m):**	N/A
Location:	Nunavut	**Lab ID No:**	SA26
Specific Gravity (assumed):	2.76	**Other Remarks:**	Sample collected from Bay Goose at 30+420 - Material removed from base of trench
Date Sampled:	July 26, 2009		
Dispersion Method:	Stirring		
Dispersion Period (min):	960.00		

Sieve Size (USS)	Sieve Size (mm)	% Passing
3.5"	87.50	100.0
3"	75.00	100.0
2"	50.00	100.0
1.5"	37.50	100.0
1"	25.00	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	99.7
#10	2.00	99.3
#20	0.850	97.1
#40	0.425	95.3
#60	0.250	93.2
#100	0.150	90.8
#200	0.075	83.6
-	0.0398	70.7
-	0.0293	61.9
-	0.0196	48.6
-	0.0121	31.8
-	0.0088	22.1
-	0.0064	14.1
-	0.0046	8.8
-	0.0032	6.2
-	0.0023	4.4
-	0.0014	3.5



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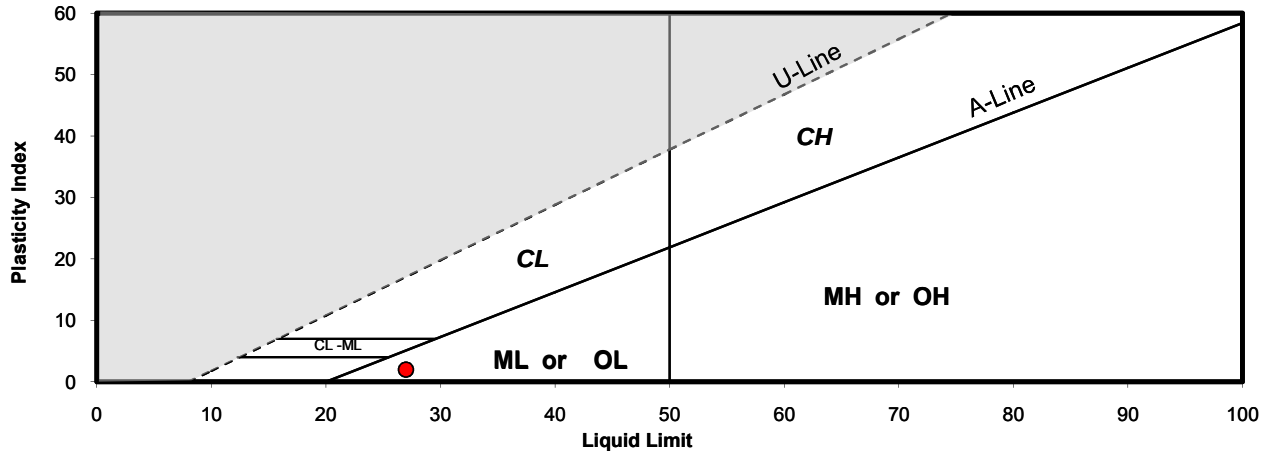
TESTED BY	DATE	CHECKED BY	DATE
DE	Sep 4-09		

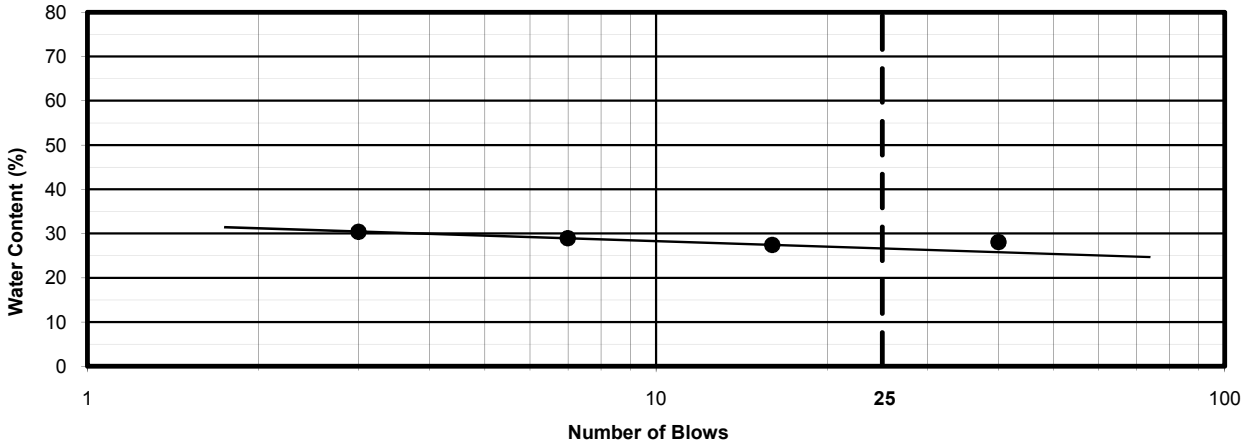
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Liquid Limit, Plastic Limit and Plasticity Index of Soils

Reference: ASTM D 4318-05

Project No.:	08-1428-0029 (5000)	**Sample No.:**	**26**
Client:	AEM	**Field No.:**	BG083009-01
Project:	Meadowbank Gold Project	**Sa. Location:**	BG sediment removed from trench
Location:	Nunavut	**Date Sampled:**	August 30, 2009
Method:	A-Multi Point	**Preparation Method:**	Air-Dried
Sample Description:	ML	**Classification Definition**	*Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity*





Test Summary		Remarks
Percent passing #40 Sieve (%)	**95.3**	Sediment material removed from bottom of trench at 30+420
Liquid Limit	**27**	
Plastic Limit	**25**	
Plasticity Index	**2**	
Natural water content (%)	**46**	
Liquidity Index	**10.5**	

** The test data given herein pertain to the sample provided only. This report constitutes a testing service only.*

DE	September 3, 2009		
TESTED BY	DATE	CHECKED BY	DATE

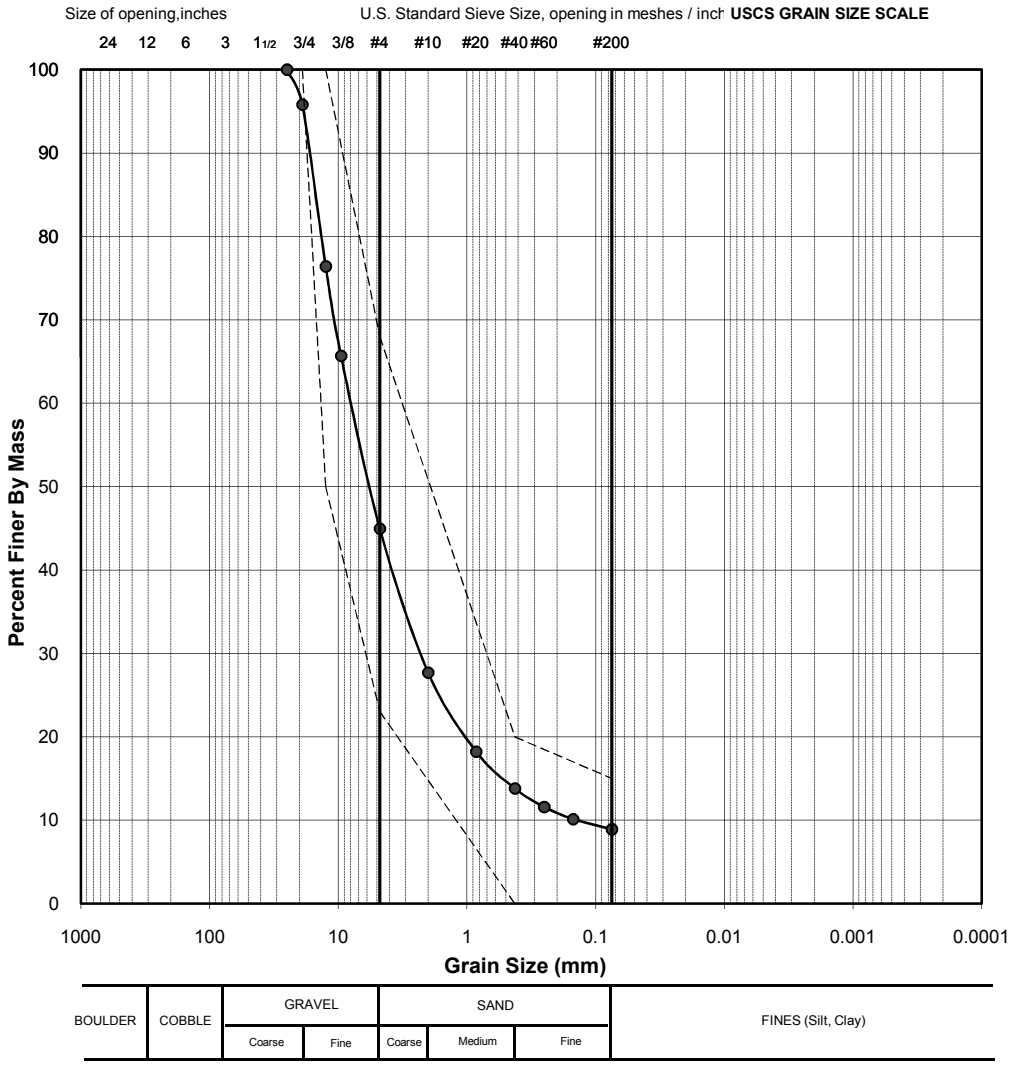
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	08-1428-0029 (5000)	**Sample No.:**	**27**
Client:	AEM	**Field Label:**	BG090309-01
Project:	Meadowbank Gold Project	**Depth (m):**	1.0m below WL
Location:	Nunavut	**Lab ID No:**	SA27
Remarks:	Water content 13.3%	**Date Sampled:**	September 3, 2009
Sa. Location:	Bay Goose 30+431 in place @ CL on current CB face	**Material Specification:**	CORE BACKFILL
		Method:	COMBINED, WASHED
		Date Tested:	September 5, 2009

Sieve Size (USS)	Sieve Size (mm)	Passing %
3.5"	87.5	100.0
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.0	95.8
1/2"	12.5	76.4
3/8"	9.5	65.7
#4	4.8	45.0
#10	2.0	27.7
#20	0.9	18.2
#40	0.4	13.8
#60	0.3	11.6
#100	0.2	10.1
#200	0.1	8.9



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TESTED BY	DATE	CHECKED BY	DATE
DE	September 5, 2009		

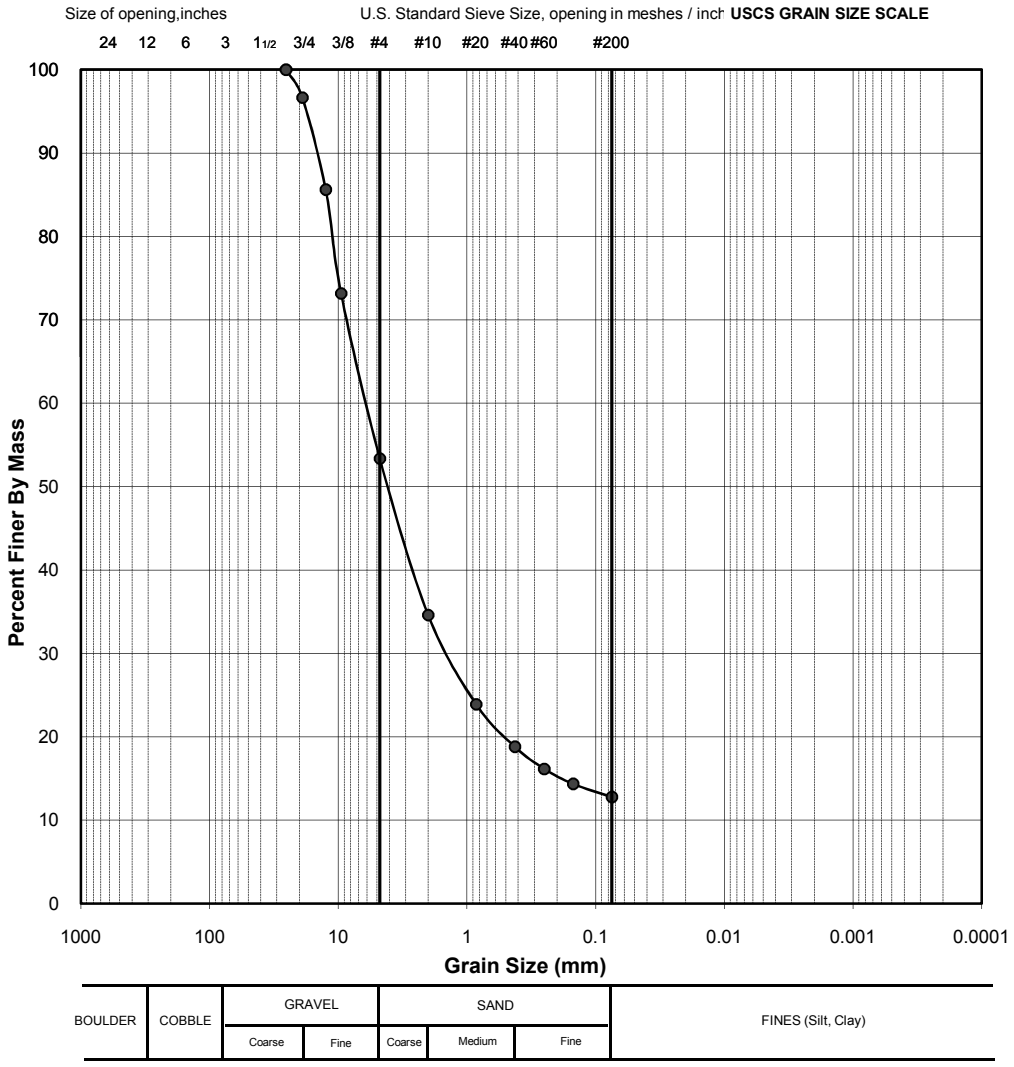
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	08-1428-0029 (5000)	**Sample No.:**	**28**
Client:	AEM	**Field Label:**	TSF090409-01
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA28
Remarks:	Water content 1.3%	**Date Sampled:**	September 4, 2009
Sa. Location:	TSF Station 10+460 Bedding Layer In Place	**Material Specification:**	TSF Fine Filter
		Method:	COMBINED, WASHED
		Date Tested:	September 5, 2009

Sieve Size (USS)	Sieve Size (mm)	Passing %
3.5"	87.5	100.0
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.0	96.7
1/2"	12.5	85.6
3/8"	9.5	73.2
#4	4.8	53.4
#10	2.0	34.6
#20	0.9	23.9
#40	0.4	18.8
#60	0.3	16.1
#100	0.2	14.3
#200	0.1	12.8



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TESTED BY	DATE	CHECKED BY	DATE
DE	September 5, 2009		

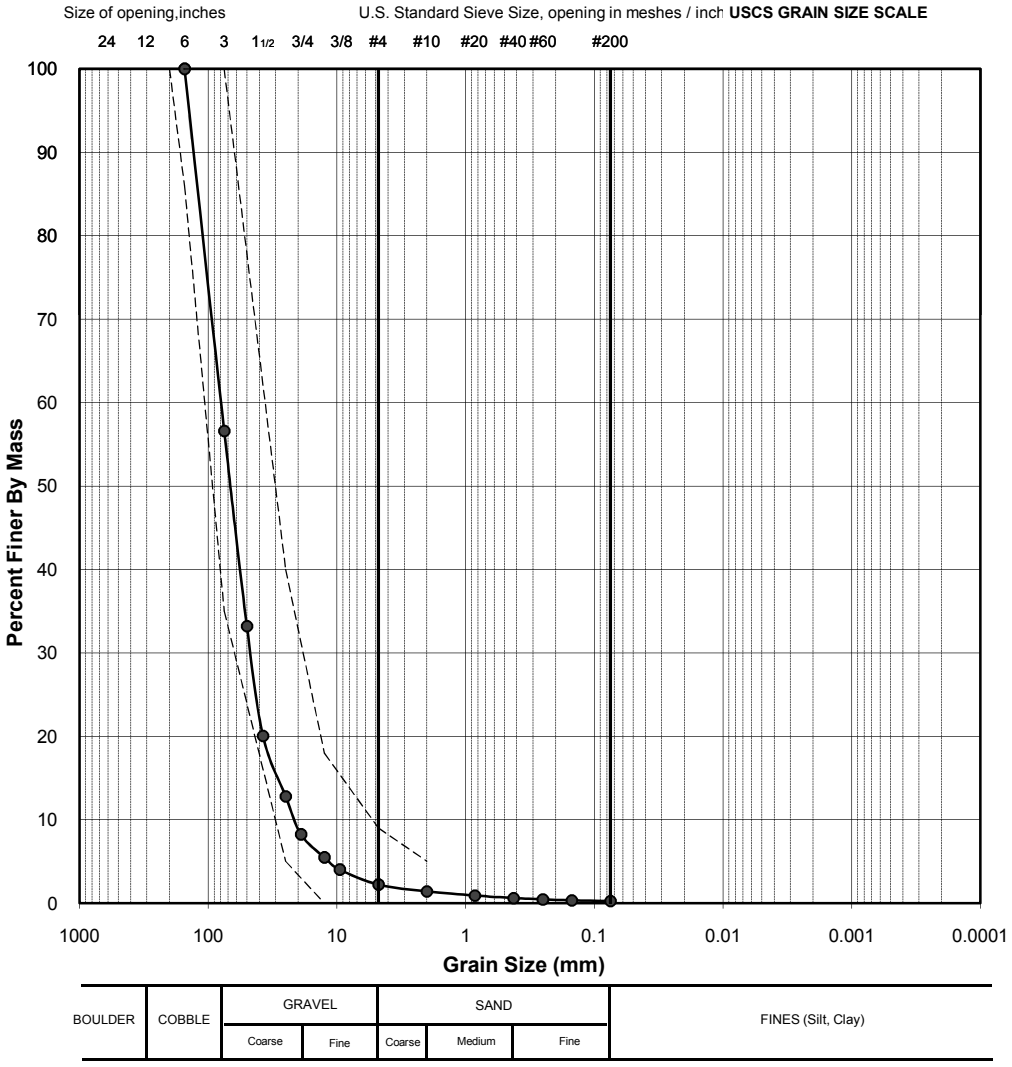
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	08-1428-0029 (5000)	**Sample No.:**	**29**
Client:	AEM	**Field Label:**	BG090309-02
Project:	Meadowbank Gold Project	**Depth (m):**	1.0m below WL
Location:	Nunavut	**Lab ID No:**	SA29
Remarks:	Water Content = 0.9%	**Date Sampled:**	September 3, 2009
Sa. Location:	Bay Goose 30+430 in place @ CL on current CB face	**Material Specification:**	COARSE FILTER
		Method:	SPLIT, WASHED
		Date Tested:	September 7, 2009

Sieve Size (USS)	(mm)	Passing %
8"	200.0	100.0
6"	152.4	100.0
3"	75.0	56.6
2"	50.0	33.2
1.5"	37.5	20.1
1"	25.0	12.8
3/4"	19.0	8.2
1/2"	12.5	5.5
3/8"	9.5	4.0
#4	4.8	2.2
#10	2.0	1.4
#20	0.9	0.9
#40	0.4	0.6
#60	0.3	0.4
#100	0.2	0.3
#200	0.1	0.3



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TESTED BY	DATE	CHECKED BY	DATE
DE	September 7, 2009		

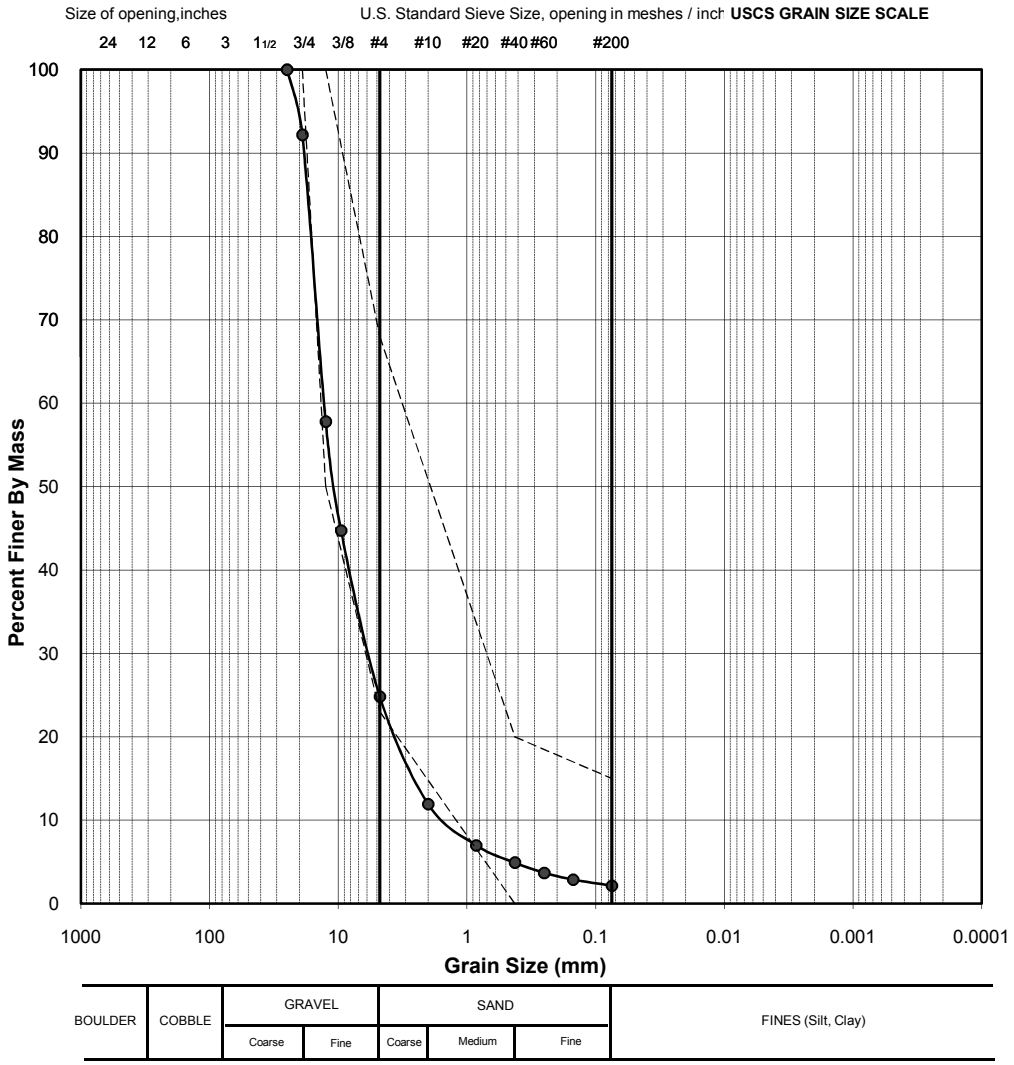
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	08-1428-0029 (5000)	**Sample No.:**	**32**
Client:	AEM	**Field Label:**	BG090409-01
Project:	Meadowbank Gold Project	**Depth (m):**	4.0 below WL
Location:	Nunavut	**Lab ID No:**	SA32
Remarks:	Water content 5.6%	**Date Sampled:**	September 4, 2009
Sa. Location:	Bay Goose 30+482 in place @ CL on current CB face	**Material Specification:**	CORE BACKFILL
		Method:	COMBINED, WASHED
		Date Tested:	September 7, 2009

Sieve Size (USS)	Sieve Size (mm)	Passing %
3.5"	87.5	100.0
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.0	92.2
1/2"	12.5	57.8
3/8"	9.5	44.7
#4	4.8	24.8
#10	2.0	11.9
#20	0.9	7.0
#40	0.4	4.9
#60	0.3	3.7
#100	0.2	2.9
#200	0.1	2.1



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DE	September 7, 2009		
TESTED BY	DATE	CHECKED BY	DATE

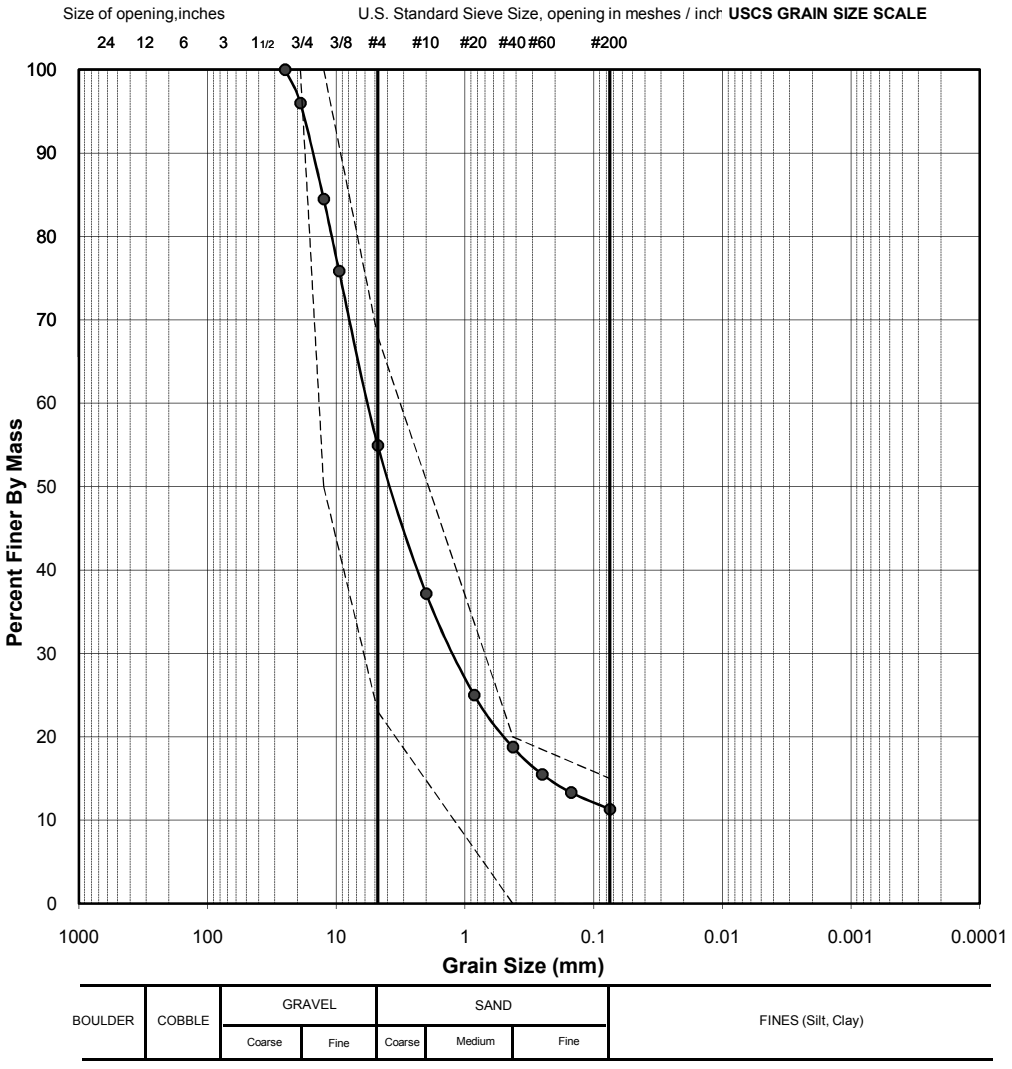
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	08-1428-0029 (5000)	**Sample No.:**	**34**
Client:	AEM	**Field Label:**	BG090609-01
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA34
Remarks:	Water content 15.0%	**Date Sampled:**	September 6, 2009
Sa. Location:	Bay Goose 30+485 in place densification pad pit side	**Material Specification:**	CORE BACKFILL
		Method:	COMBINED, WASHED
		Date Tested:	September 8, 2009

Sieve Size (USS)	Sieve Size (mm)	Passing %
3.5"	87.5	100.0
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.0	96.0
1/2"	12.5	84.5
3/8"	9.5	75.9
#4	4.8	55.0
#10	2.0	37.2
#20	0.9	25.0
#40	0.4	18.7
#60	0.3	15.5
#100	0.2	13.3
#200	0.1	11.3



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TESTED BY	DATE	CHECKED BY	DATE
DE	September 8, 2009		

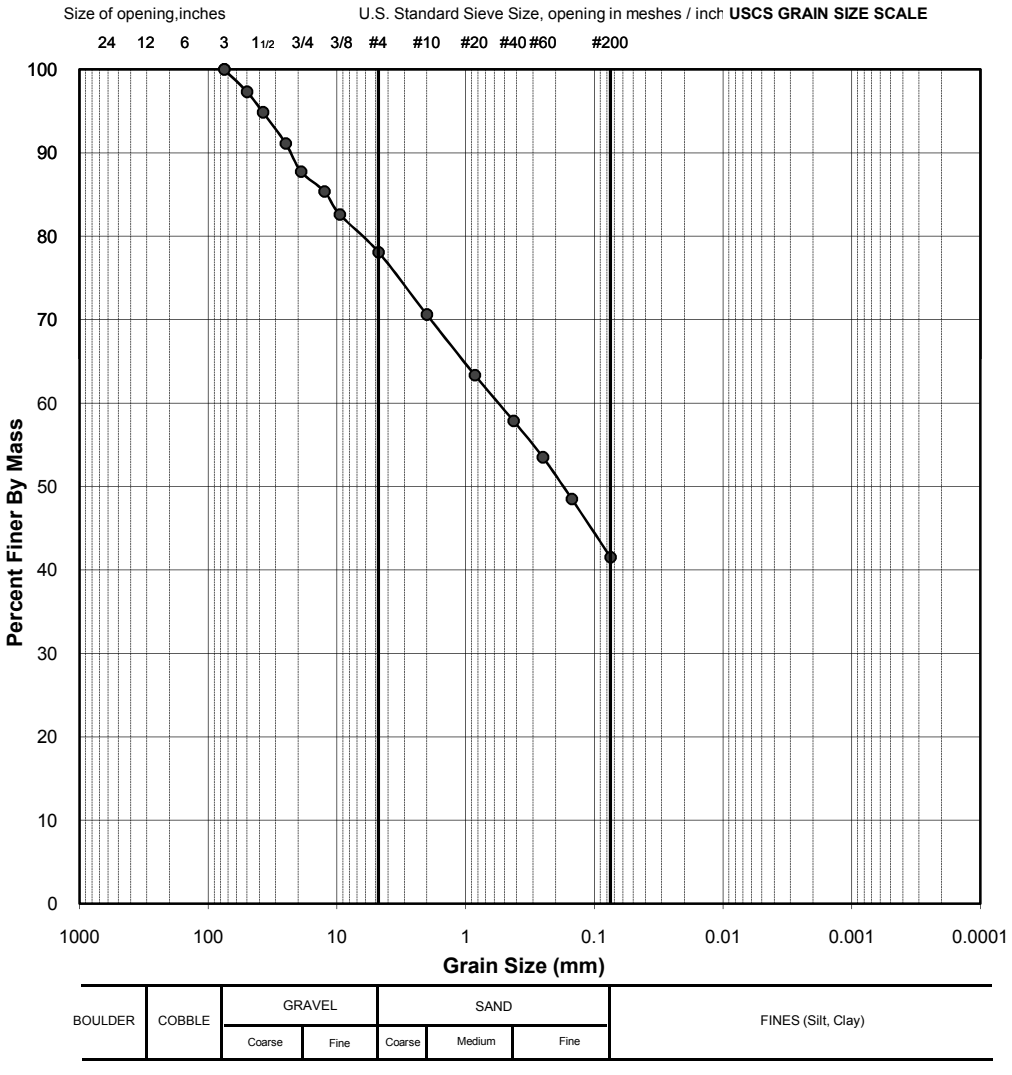
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	08-1428-0029 (5000)	**Sample No.:**	**35**
Client:	AEM	**Field Label:**	TSF090609-02
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA35
Remarks:	Water Content = 10.1%	**Date Sampled:**	September 6, 2009
Sa. Location:	TSF TILL stockpile	**Material Specification:**	TSF NATIVE BORROW
		Method:	SPLIT, WASHED
		Date Tested:	September 8, 2009

Sieve Size (USS)	Sieve Size (mm)	Passing %
6"	152.4	100.0
3"	75.0	100.0
2"	50.0	97.3
1.5"	37.5	94.9
1"	25.0	91.2
3/4"	19.0	87.8
1/2"	12.5	85.4
3/8"	9.5	82.6
#4	4.8	78.1
#10	2.0	70.6
#20	0.9	63.4
#40	0.4	57.9
#60	0.3	53.5
#100	0.2	48.5
#200	0.1	41.6



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DE	September 8, 2009		
TESTED BY	DATE	CHECKED BY	DATE

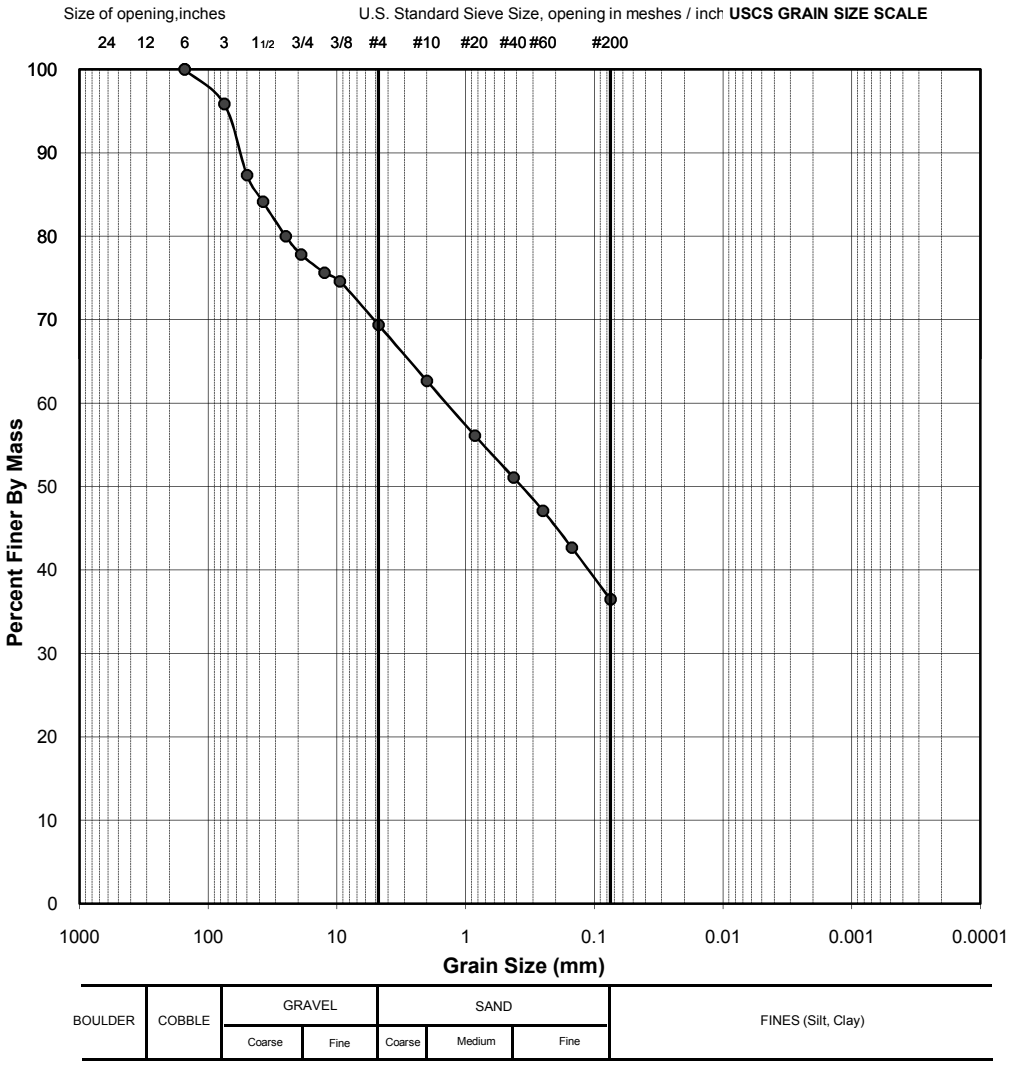
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	08-1428-0029 (5000)	**Sample No.:**	**36**
Client:	AEM	**Field Label:**	TSF090609-03
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA36
Remarks:	Water Content = 9.9%	**Date Sampled:**	September 6, 2009
Sa. Location:	TSF TILL in place at toe of fine filter 10+900	**Material Specification:**	TSF NATIVE BORROW
		Method:	SPLIT, WASHED
		Date Tested:	September 8, 2009

Sieve Size (USS)	Sieve Size (mm)	Passing %
6"	152.4	100.0
3"	75.0	95.8
2"	50.0	87.4
1.5"	37.5	84.2
1"	25.0	80.0
3/4"	19.0	77.8
1/2"	12.5	75.7
3/8"	9.5	74.6
#4	4.8	69.4
#10	2.0	62.7
#20	0.9	56.1
#40	0.4	51.1
#60	0.3	47.1
#100	0.2	42.7
#200	0.1	36.5



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

DE	September 8, 2009		
TESTED BY	DATE	CHECKED BY	DATE

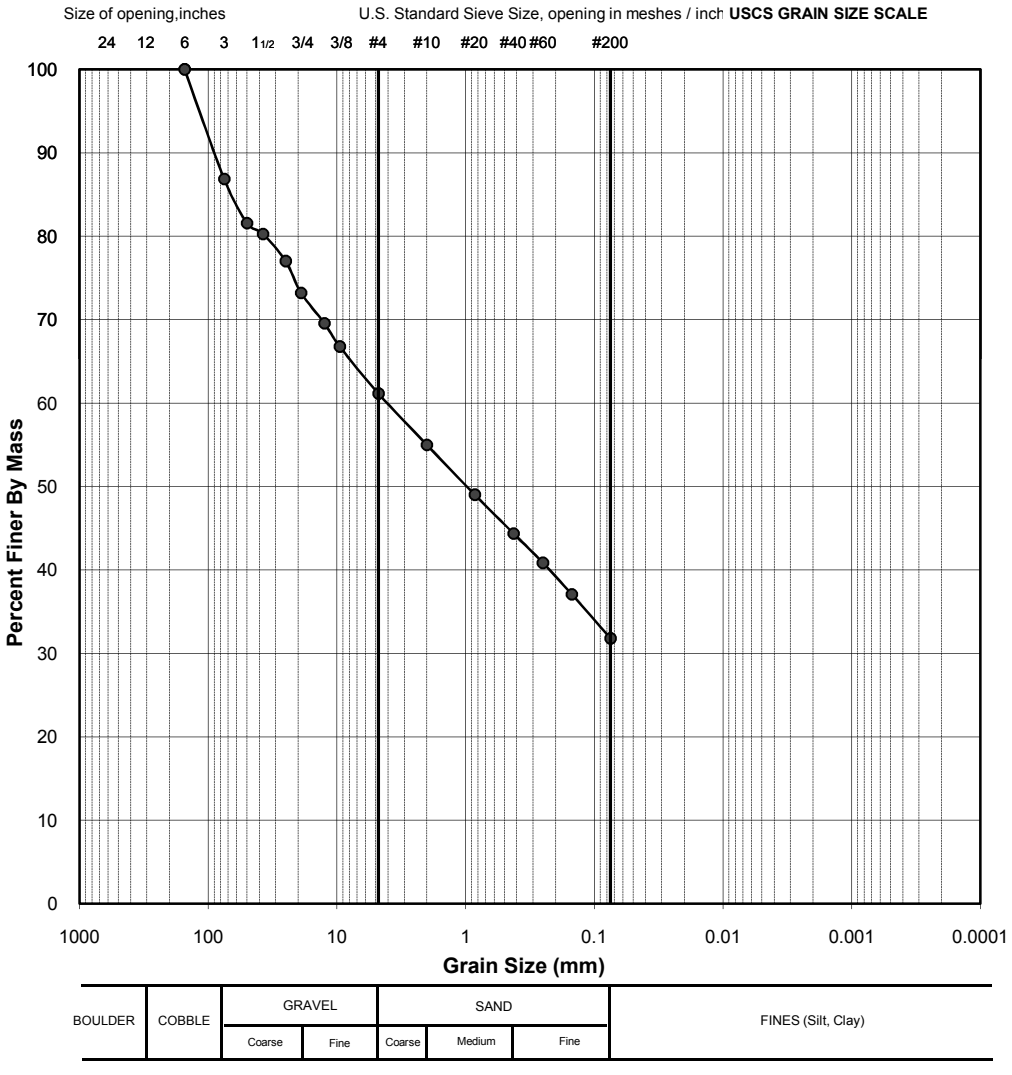
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	08-1428-0029 (5000)	**Sample No.:**	**37**
Client:	AEM	**Field Label:**	TSF090609-04
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA37
Remarks:	Water Content = 10.4%	**Date Sampled:**	September 6, 2009
Sa. Location:	TSF 10+470 in place from key trench	**Material Specification:**	TSF NATIVE BORROW
		Method:	SPLIT, WASHED
		Date Tested:	September 8, 2009

Sieve Size (USS)	Sieve Size (mm)	Passing %
6"	152.4	100.0
3"	75.0	86.9
2"	50.0	81.6
1.5"	37.5	80.3
1"	25.0	77.0
3/4"	19.0	73.2
1/2"	12.5	69.6
3/8"	9.5	66.8
#4	4.8	61.1
#10	2.0	55.0
#20	0.9	49.0
#40	0.4	44.4
#60	0.3	40.8
#100	0.2	37.1
#200	0.1	31.8



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DE	September 8, 2009		
TESTED BY	DATE	CHECKED BY	DATE

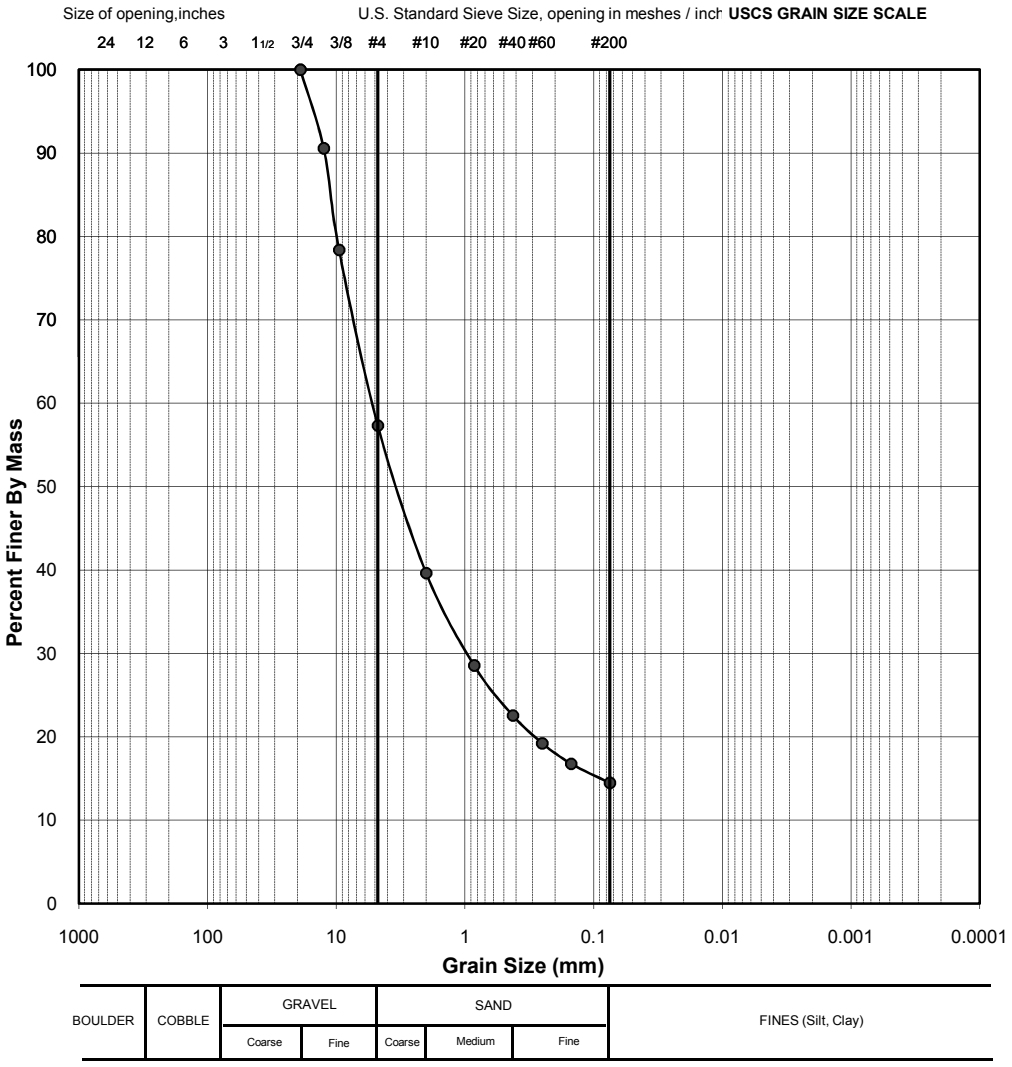
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	08-1428-0029 (5000)	**Sample No.:**	**38**
Client:	AEM	**Field Label:**	TSF090609-05
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA38
Remarks:	Water content 1.4%	**Date Sampled:**	September 6, 2009
Sa. Location:	TSF fine filter in place 10+470	**Material Specification:**	TSF Fine Filter
		Method:	COMBINED, WASHED
		Date Tested:	September 8, 2009

Sieve Size (USS)	Sieve Size (mm)	Passing %
3.5"	87.5	100.0
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.0	100.0
1/2"	12.5	90.5
3/8"	9.5	78.4
#4	4.8	57.3
#10	2.0	39.6
#20	0.9	28.5
#40	0.4	22.6
#60	0.3	19.2
#100	0.2	16.8
#200	0.1	14.4



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TESTED BY	DATE	CHECKED BY	DATE
DE	September 8, 2009		

WEEKLY REPORT

DATE September 18, 2009 **PROJECT No.** 09-1428-5007/2000
Doc. No. 1010 Rev.0

TO Gaston Blanchette and Eric Lamontagne
Agnico-Eagle Mines Limited Meadowbank Division

CC Fiona Esford and Michel Julien

FROM Paul Bedell and Dan Walker **EMAIL** Paul_Bedell@golder.com

WEEKLY REPORT FOR PERIOD FROM 7 SEPTEMBER TO 13 SEPTEMBER, 2009
MEADOWBANK GOLD PROJECT, NUNAVUT

This report has been modified to only present details related to the Bay Goose Dike, for the purpose of including the document in the As-Built report. Section 2.0 East Dike and 4.0 Stormwater dike have been removed.

This weekly report summarizes quality assurance activities performed by Golder over the period from September 7th to 13th 2009 related to the construction activities undertaken at Bay-Goose Dike.

Golder personnel on site during this reporting period were as follows:

Table 1: List of Golder Personnel on site during the period of September 7th to 13rd

Name	From	TO	Planned departure or status as of Sept. 13
Paul Bedell	September 8	September 13	On site – Sept.16
Glen Rutherford	September 7	September 9	Off site
Yves Boulianne	September 9	September 13	On site – Sept. 23
Fiona Esford	September 7	September 7	Off site
Nicolas St-Onge	September 8	September 13	On site – Sept. 23
Yves Boulianne	September 8	September 13	On site – Sept. 23
Jeffrey Kwok	September 8	September 13	On site – Sept. 22
German Pizzaro	September 7	September 9	Off site
Gerd Janssens	September 7	September 9	Off site
Mariam Ouangrawa	September 8	September 13	On site – Sept. 22
Karine Doucet	September 7	September 9	Off site
Damian Edwards	September 7	September 9	Off site

Photographs of the work completed and laboratory testing performed during the reporting period are attached to this report.

1.0 HEALTH AND SAFETY

Daily H&S meetings were held with all Golder personnel on site. All minutes from these meetings are recorded and stored in an appropriate binder located in the Golder office on site.

The key H&S issues from the reporting period are:

- Personal should dress accordingly for the rough weather conditions encountered on site (*e.g.,* cold, rain, snow, wind and mud on ground).
- The slurry trench preparation, excavation and backfilling have been initiated. A need has been identified for having a system in place in the event of field personnel falling into the slurry pits. The need for a lifeline and a life ring for the person performing the sounding of bedrock over slurry trench has also been raised and addressed by the Contractor.

Hazard identification was reported on a daily basis in the field daily reports, and during the morning meeting with AEM if needed.

2.0 EAST DIKE

Removed.

3.0 BAY-GOOSE DIKE

3.1 Rockfill Placement

Rockfill placement occurred to extend the platform width in the area of Sta. 30+885 using suitable rockfill excavated from the trench.

3.2 Trench Excavation and Clean-up

During the reporting period, excavation of the trench through rockfill was completed for the portion of the dike that will be constructed in 2009. Excavation started at Sta. 30+820 and finished at Sta. 30+860.

Final cleaning of the trench started back from Sta. 30+620 and was performed up to the end of the trench. Sediments (mud) and rockfill were removed in several passes. Based on periodic spot checks, Golder is satisfied that the excavation to bedrock has been achieved and appropriately cleaned.

Golder observations of bedrock surface during excavation and clean-up are summarized in Table 2.

Table 2: Observation of Bedrock Surface during Trench Excavation and Clean-Up

Station	Comments
30+780 to 790	Sharp edges identified during final clean-up. Smoothing requested and performed on Sep. 10th 2009.
30+800	Golder observed till left at bottom of the trench on Sep 7-8th night shift and requested to confirm clean up.
30+808 to 815	Sharp edges identified during final clean-up and requested to be smoothed.
30+830 to 30+860	Excavation was restarted and completed on Sep 7-8th night shift. Golder confirmed excavation reached bedrock.

Station	Comments
30+835	Irregular bedrock surface
30+845	Smooth bedrock surface
30+840 to 850	Irregular (edgy) bedrock surface.
30+850	Smooth bedrock surface

On September 8th, Golder observed that trench excavation became narrower around Sta. 30+800, presumably to follow abutment design. The situation was addressed and corrected on September 9th, as abutment design is not to be followed above water level (*i.e.* above El. 133.7 m at Sta. 30+900). Cleaning and re-profiling of the trench was performed from Sta. 30+800 to 30+860.

Bathymetry surveys of the excavated area were performed when FGL was confident that the excavation was respecting design dimension. Golder performed spot checks of the bathymetry data as summarized in Table 3. Manual sounding was difficult to impossible at times due to weather conditions (high winds).

Table 3: Bathymetry and Trench Bottom Spot Checks with Weighted Tape/Solid Rod

Station	Golder sounding	Bathymetry
30+660 to 685	3.72 to 4.43 m	Not available
30+730	5.0 m	5.0 m
30+753	4.5 m	4.6 m
30+772	3.4 m	3.75

Based on Golder's observations and bathymetry surveys, Golder approved that the following excavated sections had adequate dimensions and adequately prepared bedrock surfaces:

- Sta. 30+620 to 30+660 on September 8th, 2009;
- Sta. 30+665 to 30+705 on September 9th, 2009;
- Sta. 30+700 to 30+775 on September 10th, 2009; and
- Sta. 30+775 to 30+800 on September 12th, 2009.

3.3 Backfill Placement

The bottom of the trench was cleaned with an excavator prior to placing filters between Sta. 30+610 and 30+835. Fine filter placement (19 mm minus material) was placed from Sta. 30+610 to 30+835. From regular observation, Golder is satisfied that the filter placement was conducted by the approved placement method.

Bathymetric survey after the fine filter placement on the downstream toe was performed from Sta. 30+610 to 30+740. Sounding after the placement was conducted between Sta. 30+660 and 30+700 and surface elevation appeared to be 0.3 m to 1 m greater than expected. Additional sounding was also performed at every 5 m from Sta. 30+720 to 30+740 which demonstrated a lack of filter. Additional filter material was added from Sta. 30+735 to 30+740 on Sept. 10-11th to the satisfaction of Golder. The section Sta. 30+740 to 30+835 could not be surveyed due to equipment (battery) failure, and weather conditions (high winds) did not allow manual sounding. Therefore, filter thickness for this section was approved based on graduated bucket observations.

Measurements confirmed that sufficient core backfill was placed along the downstream slope and up to the transition of rockfill and lakebed soils. Golder observed that the surveyor periodically checked core backfill crest alignment and dimensions.

Airtrack drilling was conducted in core backfill and four holes were drilled and supervised as summarized the following table.

Table 4: Airtrack Drill Holes in Core Backfill

Station	Comments
30+362.5	Drilled
30+367.5	Status unknown on Sept 11th
30+372.5	Status unknown on Sept 11th
30+377.5	Status unknown on Sept 11th

3.4 Dynamic Compaction

Core backfill, coarse filter and rockfill were placed from Sta. 30+490 to 30+753 to raise the dike crest for dynamic compaction to about El. 136.1 m. The method of placement initially followed the dimensions provided in the original dynamic compaction submittal from Geopac.

On September 8th, Geopac issued a proposal for compacting at depth without full lateral support at the top. AEM approved the methodology proposed and informed Golder accordingly. While not in disagreement with the methodology, Golder considers that the approval of such a change in the process should have been discussed with the Golder QA Manager before being approved by AEM.

Dynamic compaction has continued and closely followed the advancement of the dynamic compaction pad. Compaction craters/holes were backfilled as work progressed.

3.5 Slurry Trench Preparation

3.5.1 Slurry pits and Soil-Bentonite Mixing

Set-up for the bentonite mixing area has been ongoing. Liner was placed at the bottom of the slurry pits on September 7th and bentonite was delivered to site on September 8th. Boulders and particle sizes larger than specification requirements were observed in the slurry pond; Golder requested that these be removed.

The West slurry pond was full on September 10th and the East slurry pond on the 11th. No leaks were observed from the slurry ponds during this reporting period.

The slurry piping system was put in place on the downstream side of the crest, from Goose Island to north abutment on September 10th. Two leaks in the pipelines were identified and repaired on September 11th. At AEM's request, liner was placed on the platform on Sep 11th and down to the bottom of the berm on Sep 12th in order to avoid bentonite spilling into the lake in the event of pipeline leakage.

Soil-bentonite mixing continued. Hauling of the soil-bentonite mix onto the Bay-Goose Dike started on September 11th. Golder observed loss of fine particles due to high winds during hauling.

Golder observed that mixing pad dimensions were not always respected and requested FGL to measure dimensions before mixing in order to achieve appropriate concentration of constituents.



Photograph 2: Bay-Goose Dike – Densification platform preparation with core and coarse backfill and rockfill side support at Sta. 30+590. This photograph was taken on September 8th 2009.



Photograph 3: Bay-Goose Dike – Till screening (right) and mixing powder bentonite with till (left). This photograph was taken on September 10th 2009.



Photograph 4: Bay-Goose Dike – Bathymetry survey between Sta. 30+800 to 30+860. This photograph was taken on September 12th 2009.



Photograph 5: Bay-Goose Dike – Pouring of slurry by excavator into till while mixing it with dozer at Sta. 30+075. This photograph was taken on September 12th 2009.



Photograph 6: Bay-Goose Dike – Trench cleaning with bucket full of mud from downstream side at Sta. 30+790. This photograph was taken on September 13th 2009.

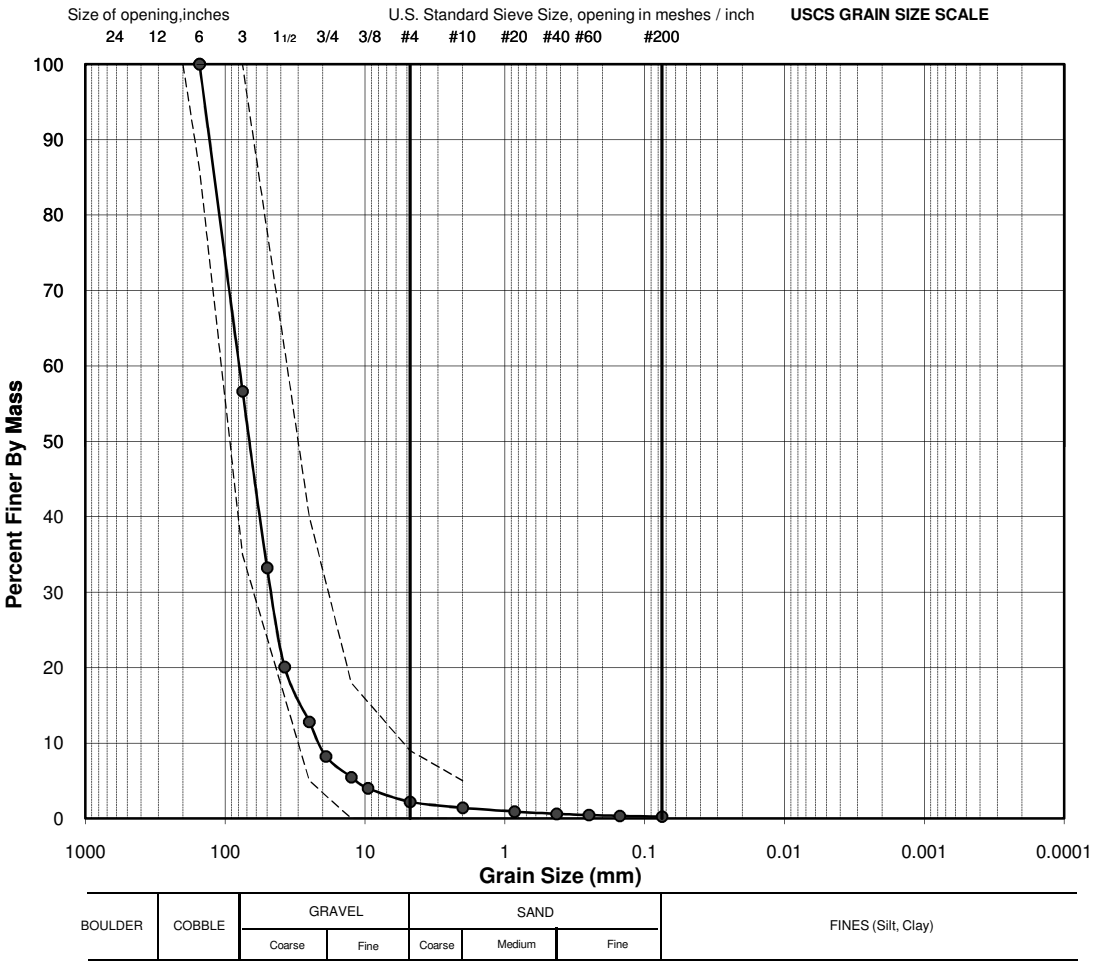
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	08-1428-0029	**Sample No.:**	**29**
Client:	AEM	**Field Label:**	BG090309-02
Project:	Meadowbank Gold Project	**Depth (m):**	1.0m below WL
Location:	Nunavut	**Lab ID No:**	SA29
Remarks:	Water Content = 0.9%	**Date Sampled:**	September 3, 2009
Sa. Location:	Bay Goose 30+430 in place @ CL on current CB face	**Material Specification:**	COARSE FILTER
		Method:	SPLIT, WASHED
		Date Tested:	September 7, 2009

Sieve Size (USS)	Sieve Size (mm)	Passing %
8"	200.0	100.0
6"	152.4	100.0
3"	75.0	56.6
2"	50.0	33.2
1.5"	37.5	20.1
1"	25.0	12.8
3/4"	19.0	8.2
1/2"	12.5	5.5
3/8"	9.5	4.0
#4	4.8	2.2
#10	2.0	1.4
#20	0.9	0.9
#40	0.4	0.6
#60	0.3	0.4
#100	0.2	0.3
#200	0.1	0.3



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TESTED BY	DATE	CHECKED BY	DATE
DE	September 7, 2009		

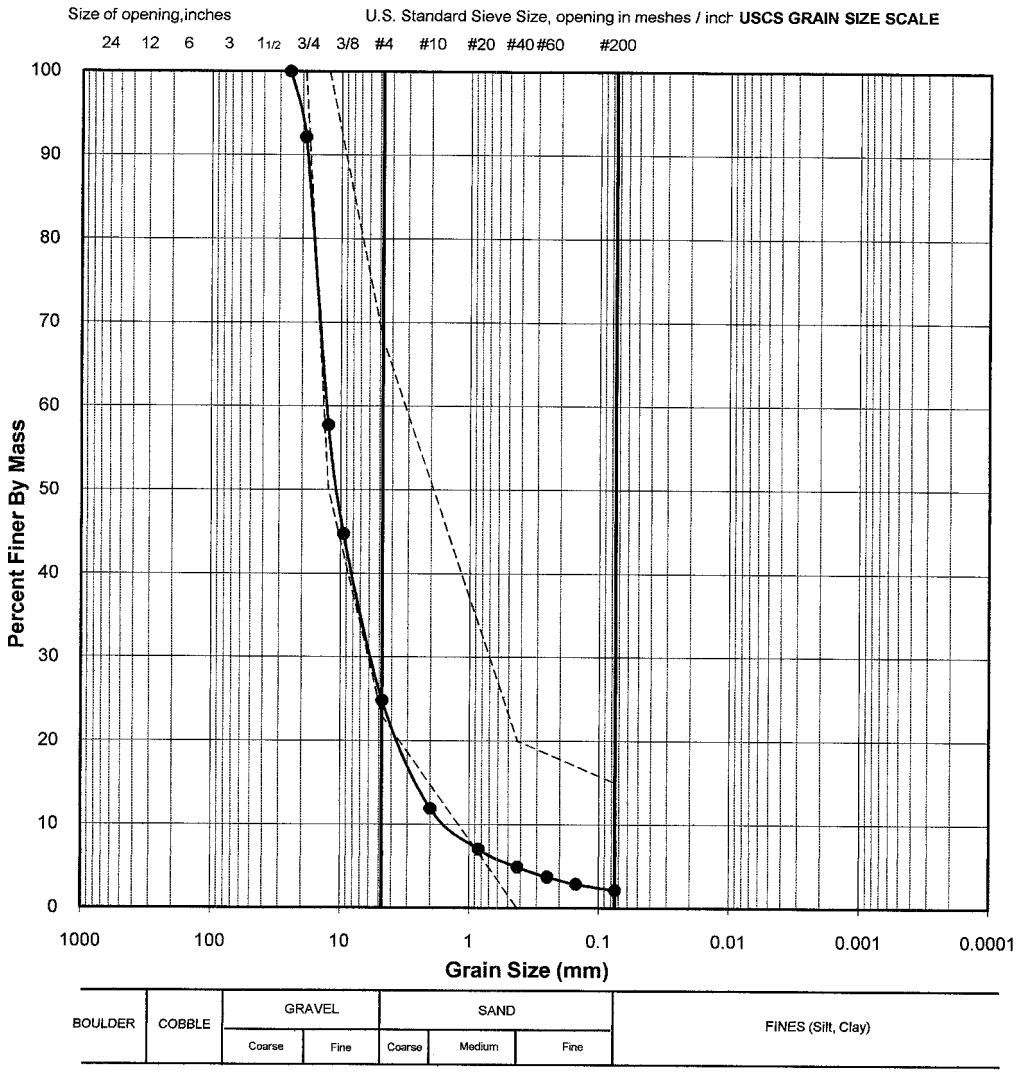
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PARTICLE SIZE ANALYSIS OF SOILS

Reference: ASTM C136-06 & C117-04

Project No.:	08-1428-0029	**Sample No.:**	**32**
Client:	AEM	**Field Label:**	BG090409-01
Project:	Meadowbank Gold Project	**Depth (m):**	4.0 below WL
Location:	Nunavut	**Lab ID No:**	SA32
Remarks:	Water content 5.6%	**Date Sampled:**	September 4, 2009
Sa. Location:	Bay Goose 30+482 in place @ CL on current CB face	**Material Specification:**	CORE BACKFILL
		Method:	COMBINED, WASHED
		Date Tested:	September 7, 2009

Sieve Size (USS)	Sieve Size (mm)	Passing %
3.5"	87.5	100.0
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.0	92.2
1/2"	12.5	57.8
3/8"	9.5	44.7
#4	4.8	24.8
#10	2.0	11.9
#20	0.9	7.0
#40	0.4	4.9
#60	0.3	3.7
#100	0.2	2.9
#200	0.1	2.1



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DE	September 7, 2009		Sept 30/09
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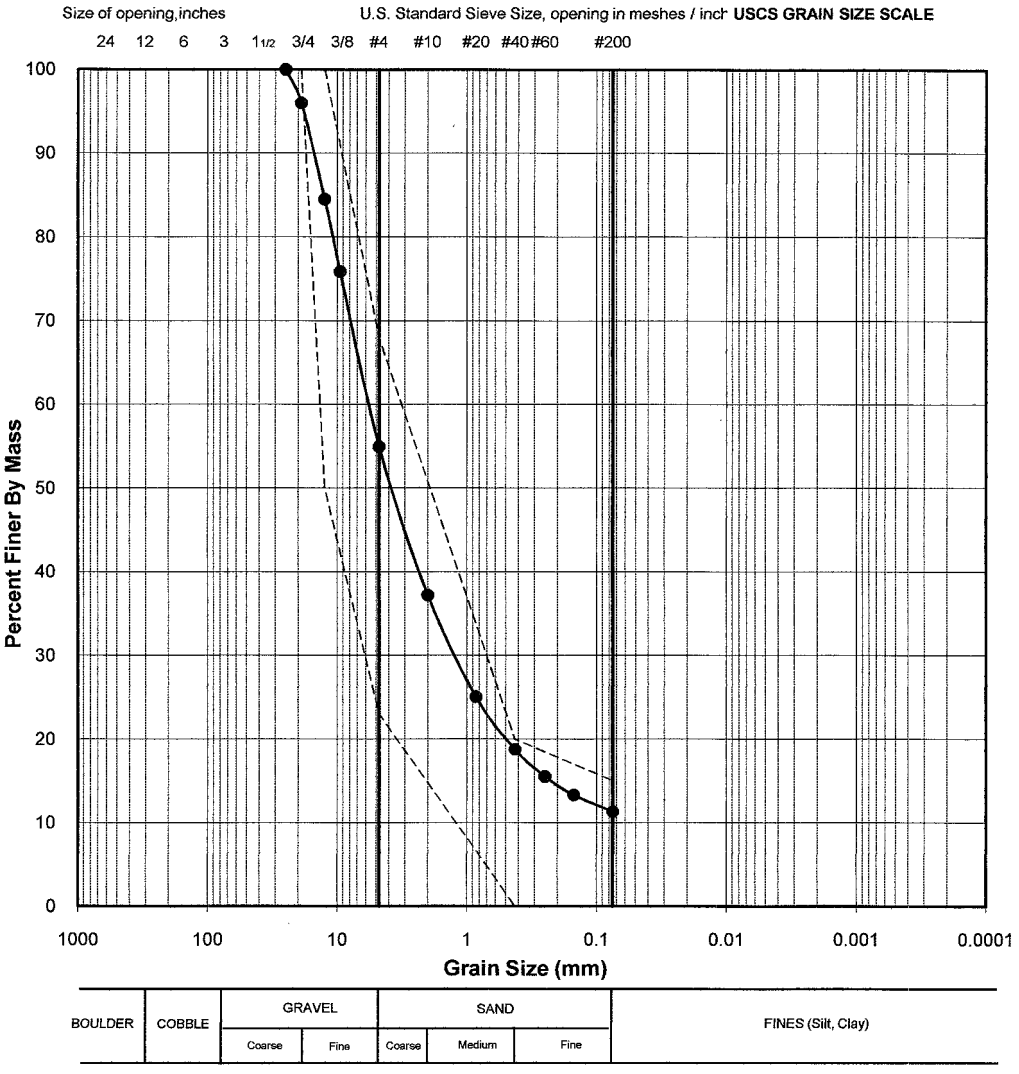
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	08-1428-0029	**Sample No.:**	**34**
Client:	AEM	**Field Label:**	BG090609-01
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA34
Remarks:	Water content 15.0%	**Date Sampled:**	September 6, 2009
Sa. Location:	Bay Goose 30+485 in place densification pad pit side	**Material Specification:**	CORE BACKFILL
		Method:	COMBINED, WASHED
		Date Tested:	September 8, 2009

Sieve Size (USS)	Sieve Size (mm)	Passing %
3.5"	87.5	100.0
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.0	96.0
1/2"	12.5	84.5
3/8"	9.5	75.9
#4	4.8	55.0
#10	2.0	37.2
#20	0.9	25.0
#40	0.4	18.7
#60	0.3	15.5
#100	0.2	13.3
#200	0.1	11.3



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DE	September 8, 2009		Sept 30/09
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PARTICLE SIZE ANALYSIS OF SOILS

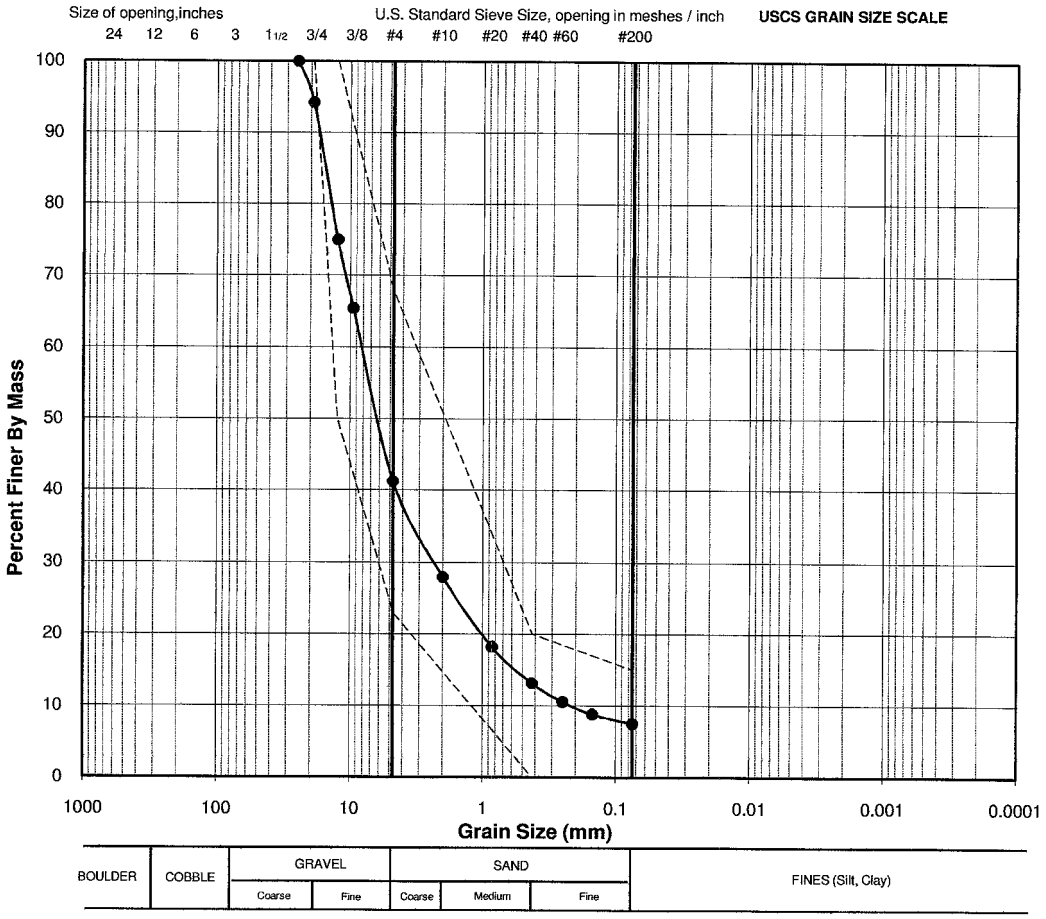
Reference
ASTM C136-06 & C117-04

Project No.:	08-1428-0029 (5000)	**Sample No.:**	**50**
Client:	AEM	**Field Label:**	BG-090809-11
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA-50

Remarks:
Bay Goose Dike STA 30+550, Densification platform
Centreline core trench

Sampling Date:	September 8, 2009
Material Specification:	CORE BACKFILL
Method:	SPLIT, WASHED
Date Tested:	September 10, 2009

Sieve Size (USS)	Sieve Size (mm)	Passing %
3.5"	87.5	100.0
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.0	94.2
1/2"	12.5	74.9
3/8"	9.5	65.5
#4	4.8	41.2
#10	2.0	28.0
#20	0.9	18.2
#40	0.4	13.2
#60	0.3	10.6
#100	0.2	8.8
#200	0.1	7.5



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OM	September 10, 2009	MR	Sept 30/09
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PARTICLE SIZE ANALYSIS OF SOILS

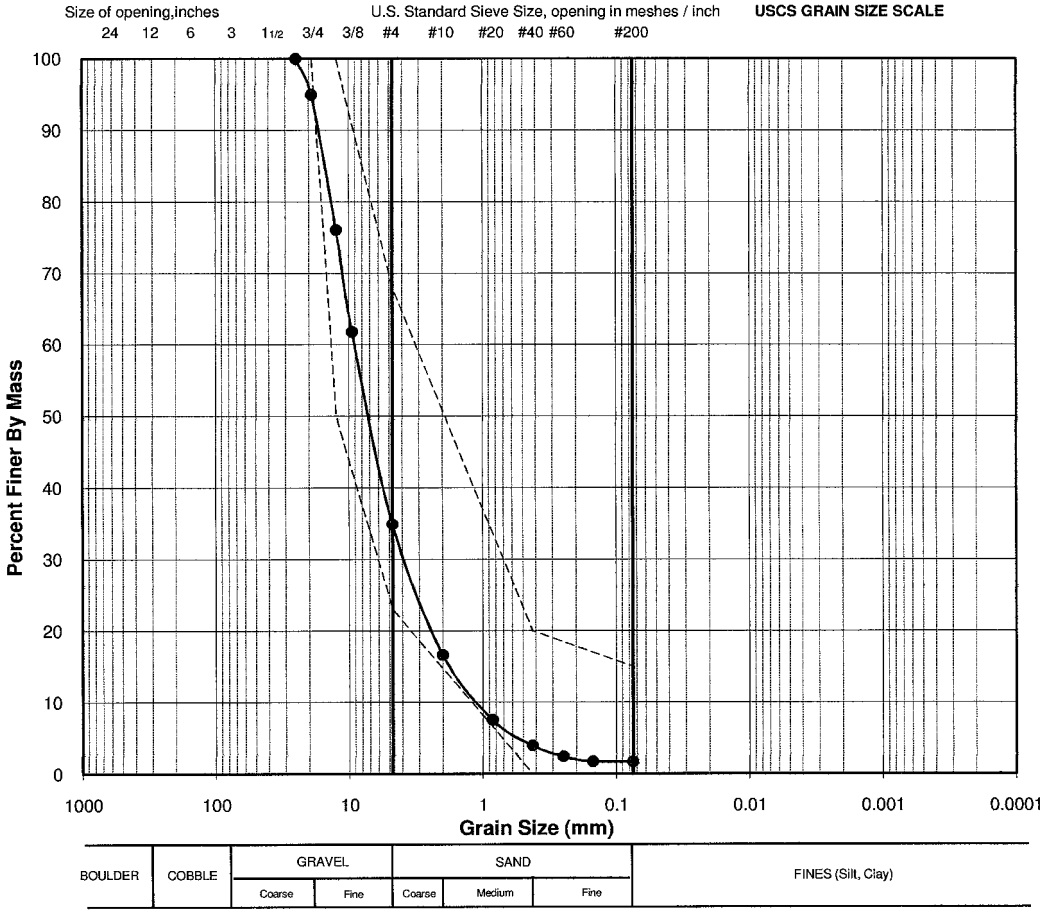
Reference
ASTM C136-06 & C117-04

Project No.:	08-1428-0029 (5000)	**Sample No.:**	**51**
Client:	AEM	**Field Label:**	BG-082209-12
Project:	Meadowbank Gold Project	**Depth (m):**	3 m below water level
Location:	Nunavut	**Lab ID No:**	SA-51

Remarks:
Bay Goose Dike STA 30+605, El. 131.7m (Approx.)
Centreline core trench

Sampling Date:	September 8, 2009
Material Specification:	CORE BACKFILL
Method:	SPLIT, WASHED
Date Tested:	September 13, 2009

Sieve Size (USS)	Sieve Size (mm)	Passing %
3.5"	87.5	100.0
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.0	95.0
1/2"	12.5	76.1
3/8"	9.5	61.8
#4	4.8	34.9
#10	2.0	16.7
#20	0.9	7.6
#40	0.4	4.0
#60	0.3	2.4
#100	0.2	1.7
#200	0.1	1.7



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

OM	September 13, 2009		Sept 30/09
TESTED BY	DATE	CHECKED BY	DATE

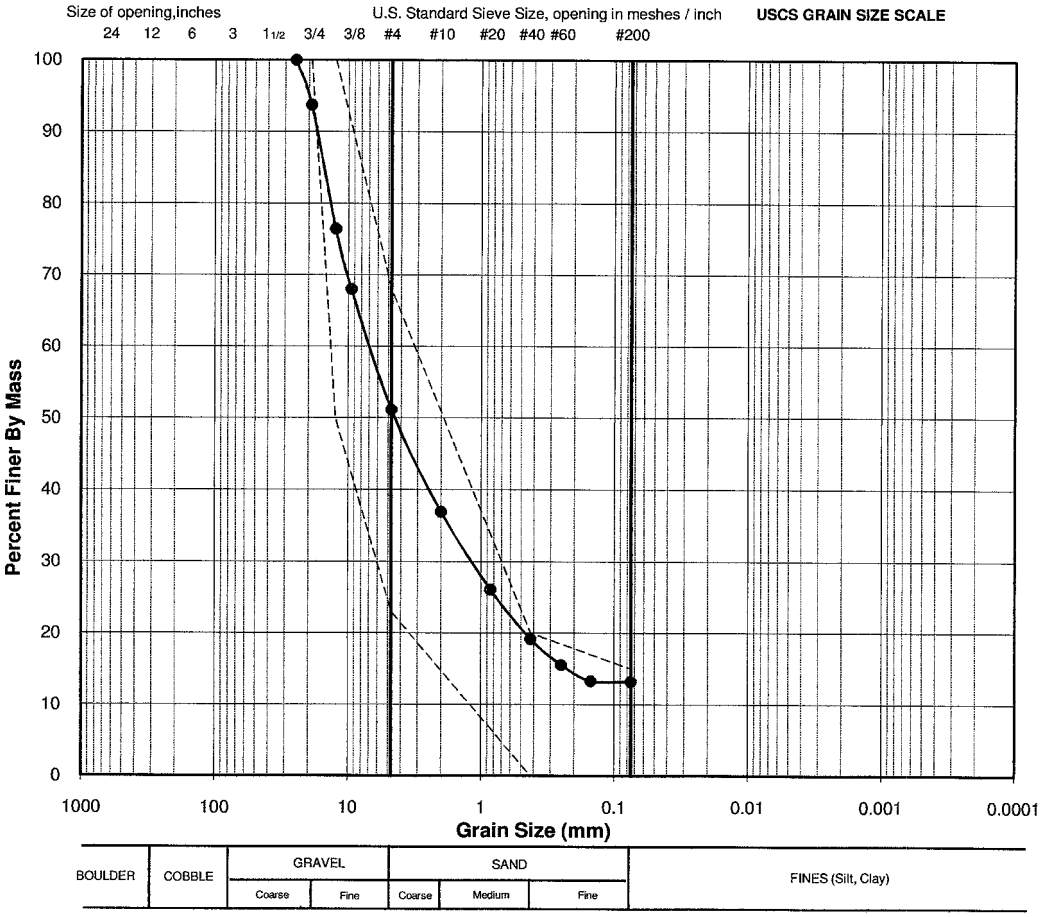
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	08-1428-0029 (5000)	**Sample No.:**	**54**
Client:	AEM	**Field Label:**	BG-091009-13
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA-54
Remarks:	Water content = 2.0%	**Sampling Date:**	September 10, 2009
Bay Goose Dike STA 30+650, Densification platform		**Material Specification:**	CORE BACKFILL
		Method:	SPLIT, WASHED
		Date Tested:	September 12, 2009

Sieve Size (USS)	Sieve Size (mm)	Passing %
3.5"	87.5	100.0
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.0	93.8
1/2"	12.5	76.4
3/8"	9.5	68.0
#4	4.8	51.2
#10	2.0	36.9
#20	0.9	26.1
#40	0.4	19.2
#60	0.3	15.6
#100	0.2	13.3
#200	0.1	13.2



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

OM	September 12, 2009		Sept 30/09
TESTED BY	DATE	CHECKED BY	DATE

WEEKLY REPORT

DATE September 27, 2009 **PROJECT No.** 09-1428-5007
Doc. No. 1010 Rev. 0

TO Eric Lamontagne and Gaston Blanchette
Agnico-Eagle Mines Limited Meadowbank Division

CC Paul Bedell, Fiona Esford and Annie Beaulieu

FROM Dan Walker and Michel Julien **EMAIL** mjulien@golder.com

BI-WEEKLY REPORT FOR PERIOD FROM SEPTEMBER 14TH TO SEPTEMBER 27TH, 2009
MEADOWBANK GOLD PROJECT

This report has been modified to only present details related to the Bay Goose Dike, for the purpose of including the document in the As-Built report. Section 2.0 East Dike, 4.0 Stormwater Dike, 5.0 Saddle Dam 1 and 6.0 Borrow Search have been removed

This weekly report summarizes Golder QA activities from September 14 to 27, 2009 related to the construction activities undertaken at Bay Goose Dike.

It was a very productive two weeks at Bay Goose. The works on the cut-off wall were completed on time.

Golder personnel on site during this reporting period were as follows:

Table 1: List of Golder Personnel on site during the period of September 14th to 27th

Name	From	To	Planned departure or status as of Sept. 27
Paul Bedell	September 14	September 16	Out of site
Michel Julien	September 15	September 27	On site - September 29
Dan Walker	September 16	September 22	Out of site
Fiona Esford	September 22	September 27	On site - September 28
Nicolas St-Onge	September 14	September 23	Out of site
Yves Boulianne	September 14	September 23	Out of site
Jeff Kwok	September 14	September 22	Out of site
Charles Harrison – LPT	September 21	September 21	Out of site
James Jin – LPT	September 15	September 21	Out of site
Mariam Ouangrawa	September 14	September 22	Out of site
Mathieu Gosselin	September 21	September 27	October 5
Émilie Lapointe	September 22	September 27	On site - September 28
Karine Doucet	September 22	September 27	On site - October 8
Damian Edwards	September 22	September 27	On site - October 5

Photographs of the work completed during the reporting period are appended to this memorandum for further reference, as are the laboratory test results from the reporting period.

1.0 HEALTH AND SAFETY

Daily H&S meetings were held with all Golder personnel working on the dike construction. All minutes from these meetings are recorded and stored in an appropriate binder located in the Golder office on site.

The key H&S issues from the reporting period are:

- Vehicle access and condition continues to be a problem. Golder staff had to spend time outside in extreme weather conditions without a pick-up truck for shelter. Also, when a pick-up was provided, it was found to be unreliable with recurrent electrical problems. The issue of access to reliable transportation has remained a concern throughout this project and needs to be addressed.
- The liner on the TSF dikes was found to be slippery with changing weather conditions. A reminder to exercise caution when walking on the liner was provided to Golder field staff during the daily tool box meetings.
- On September 24 and September 25, weather deteriorated significantly. High winds were experienced with gusts up to 100 km/hr and rapidly decreasing air temperatures. The high winds resulted in damage to several infrastructures on site, and represented a health and safety hazard for certain tasks. Golder recommended to AEM that certain works be stopped including any work on the liners. Sections of liner that were not adequately secured had to be secured rapidly. Special safety measures also had to be implemented in the vicinity of the slurry trench
- In general, FGL staff and foreman failed to provide adequate support to Inquip during night shift. This lack of FGL personnel forced Inquip to take measurements of trench depth themselves, and in several cases, with the support of the Golder night shift on site. It is understood that on occasion the measurements may have been completed without the field staff being properly secured with a rope and harness. The Golder staff member was reminded that he should not be assisting with the measurements simply on the basis of helping to compensate for lack of FGL field staff; and particularly if not adequately secured. This concern was also raised at a construction meeting with AEM, FGL, Inquip and Golder. As discussed during these meetings, FGL will need to provide more serious and consistent support to Inquip in 2010.
- Road conditions in general deteriorated greatly this week because of weather conditions; particularly around the Bay Goose Dike and FGL crusher. Improvement to the road was required. In addition, Golder informed AEM of a serious blind spot in the road at the toe of Stormwater Dike toward the exit. There is 90 degree turn at this location which is problematic and requires a stop sign to be placed.
- On September 23, a condition was identified between Station 30+590 and about 30+630 on Bay Goose Dike where Golder felt inappropriate confinement of the core backfill existed. Golder was concerned of potential localized instability and sudden wall collapse upon SB placement. No rockfill had been placed to support the walls of the trench excavation and the trench limits were within 4 m of the crest of slope toward the transportation platform on the lake side of the dike (note the slope had about a height of 3 m locally). Golder recommended works be stopped until additional rockfill material be placed to provide lateral confinement of the slope. While the works were not stopped, AEM quickly mobilized rockfill to provide lateral confinement.

2.0 EAST DIKE

Removed.

3.0 BAY GOOSE DIKE

3.1 LPT Program

The drilling and in-situ testing program on the Bay Goose Dike at Meadowbank was completed. A total of six boreholes (see below for details) were completed over three days (Sept 19 to 21, 2009). Large Penetration Tests (LPT) was conducted in each of the boreholes. The purpose of the LPTs was to determine the relative in-situ density of the dike soils and collect soil samples for gradation testing.

Energy calibration measurements were conducted for each LPT test. The measurements of the hammer energy transferred to the drill rod and sampler by the hammer will be used to correlate the LPT blow counts to Standard Penetration Test (SPT) $(N)_{60}$ values.

A summary of the borehole locations and LPT blow counts is given below:

Table 2: Summary results of LPT program draft

Borehole	Stn	Depth (m)	LPT (blows/0.3 m)
BH09-01	30+431.3	3.05 to 3.65	4
BH09-02	30+440	3.35 to 3.65 6.1 to 6.7	30 11
BH09-02	30+440	9.1 to 9.45	7
BH09-03	30+550	3.35 to 3.95	20
BH09-04	30+550	3.35 to 3.95 5.8 to 6.4	24 13
BH09-05	30+560	3.35 to 3.95	26
BH09-05	30+560	6.25 to 6.55	11*
BH09-06	30+570	3.35 to 3.95	23

*LPT blow count for 0.15 m only due to refusal on bedrock.

The LPT blow counts in the above table are uncorrected. Further analysis is required to correlate the LPT blow counts to equivalent SPT $(N)_{60}$ values and to correct for overburden pressures. The LPT blow counts in the above table should be used only for preliminary planning as the blow counts will be adjusted up or down according to the outcome of the analysis. A final report will be prepared once the analysis of the LPT blow counts is completed.

3.2 Trench Excavation and Backfill

Excavation of the trench through rockfill resumed from Sta. 30+860 to Sta. 30+870 on September 15, 2009. Golder was satisfied with the excavation. Golder was present when FGL checked the edges between Sta. 30+847 to 30+853. The same day, backfill of material resumed from station 30+835. Measurement confirmed that sufficient core backfill was placed along the downstream slope, up to the transition of the rockfill and lakebed. Core backfill and coarse filter wings placement was conducted by the approved placement method.

3.3 Slurry Trench Excavation

Slurry trench excavation proceeded well during the reporting period.

Bedrock was approved from station 30+148 to cut-off end for 2009 at station 30+864. The following observations were made during this period:

Table 3: Slurry Trench Depth Soundings and Observations

Chainage	Depth Ranges	Comments
30+148 to 30+198	7.5 to 9.0 m	Bedrock surface at bottom of trench fairly smooth
30+202 to 30+250	7.2 to 8.4 m	Bedrock, depression at about station 30+226
30+250 to 30+294	7.2 to 8.0 m	Bedrock relatively smooth
30+294 to 30+340	7.0 to 8.9 m	Bedrock, small depression observed from 30+302 to 30+305 and removed a dozen of boulders (diameter varied from 0.1 to 0.25 m). Removed also boulders between stations 30+318 and 30+320 While removing steel beam used for CSB placement, a lifting strap broke and the steel beam fell across the trench at 30+308. Some 19-mm minus material may have collapsed onto the soil bentonite material in this area.
30+340 to 30+354	8.4 to 10.0 m	Bedrock surface relatively smooth with some irregular steps/lip
30+354 to 30+376	9.7 to 12.4 m	Bedrock
30+376 to 30+394	11.7 to 13.4 m	Bedrock Between stations 30+376 and 30+380, removed large boulders and rock fragment, up to 0.3m in diameter At station 30+384, removed boulders Between stations 30+386 and 30+392, bedrock surface relatively smooth
30+394 to 30+414	10.8 to 12.2 m	Bedrock, vertical drop observed between stations 30+406 and 30+408. Bedrock surface irregular from station 30+380 to 30+400
30+414 to 30+434	11.0 to 12.8 m	Bedrock irregular and rises upwards to station 30+425, then becomes smooth and undulates
30+440 to 30+454	8.8 to 10.8 m	Bedrock
30+464 to 30+468	7.9 to 8.5 m	Bedrock smooth and constant rise of bedrock surface, some boulders excavated at the bottom, no sediment observed
30+468 to 30+480	7.2 to 7.9 m	Bedrock smooth, slightly undulating, some boulder, some till excavated.
30+482 to 30+520	6.5 to 7.9 m	Bedrock undulating with irregular ledges locally
30+528 to 30+538	6.1 to 6.8 m	Bedrock undulating and irregular – drop of 1.0 m at 30+535
30+538 to 30+546	5.4 to 6.1 m	Bedrock – some cobbles and boulders excavated.
30+546 to 30+556	5.0 to 6.8 m	Bedrock irregular with steep drop of 1.0 m at 30+553 to 30+555
30+556 to 30+578	5.0 to 6.9 m	Bedrock undulating and smooth
30+578 to 30+624	5.6 to 7.1 m	Bedrock

Chainage	Depth Ranges	Comments
30+630 to 30+656	6.4 to 7.1 m	Bedrock
30+658 to 30+674	6.1 to 6.9 m	Bedrock
30+676 to 30+720	6.3 to 8.7 m	A deeper section was encountered between stations 30+714 and 30+718. Backfill was excavated in this section. The bedrock was mostly smooth except for sections between stations 30+690 and 30+698 where the bedrock was very rough with frequent ledges.
30+720 to 30+768	6.6 to 8.5 m	Bedrock
30+768 to 30+818	5.3 to 7.8 m	Most of the bedrock was smooth but a deeper section between stations 30+798 and 30+800 was noted. Also rough ledges were noted between stations 30+810 and 30+818.
30+818 to 30+846	5.2 to 5.9 m	Bedrock surface was undulating between station 30+818 and 30+826 and climbing upwards afterward. Excavation pattern changed at 30+850 to construct the plug
30+846 to 30+860	5.2 to 5.6 m	Bedrock

3.4 Soil Bentonite (SB) and Cement Soil Bentonite Preparation and Placement

The following tables summarize the results of the slurry, SB and CSB preparation.

Table 4: Summary of Slury Testing

Date	Station	Golder Present	Density (kg/m^3)	Marsh Cone (sec)
September 14	30+130	yes	1180	52
September 14	30+164	yes	1090	49
September 14	30+180	yes	N/A	N/A
September 14	30+200	yes	N/A	N/A
September 15	Pond	yes	N/A	43
September 15	30+170	yes	1159	48
September 15	30+270	yes	N/A	N/A
September 15	30+300	yes	N/A	N/A
September 16	In trench	yes	Within specs	Within specs
September 19	30+360	yes	1060	50
September 19	30+364	yes	N/A	N/A
September 19	30+380	yes	N/A	N/A
September 19	30+400	yes	N/A	N/A
September 20	Pond	yes	1060	42
September 21	30+450	yes	1160	47
September 21	30+460	yes	1160	41
September 21	Pond	yes	1050	41
September 21	30+480	yes	N/A	N/A
September 22	Pond	yes	1060	41
September 22	30+510	yes	1220	49
September 22	Pond	yes	1060	47
September 22	30+550	yes	1060	47

Date	Station	Golder Present	Density (kg/m^3)	Marsh Cone (sec)
September 23	30+620	yes	N/A	N/A
September 23	30+640	yes	N/A	N/A
September 23	30+690	yes	1160	69
September 23	30+700	yes	1100	46
September 24	30+730	yes	N/A	N/A
September 24	30+760	yes	1180	51
September 24	30+780	yes	1180	53

Table 5: Summary of SB and CSB Testing

Date	Station	Golder present	SB or CSB	Density (kg/m^3)	Slump (mm)	Grout density (kg/m^3)
September 14	30+088	yes	SB	N/A	120	N/A
September 14	30+106	yes	SB	N/A	100	N/A
September 14	30+130	yes	SB	N/A	N/A	N/A
September 14	30+142	yes	SB	N/A	N/A	N/A
September 15	30+180	yes	SB	N/A	N/A	N/A
September 18	30+228	yes	CSB	N/A	110	N/A
September 18	30+232	yes	CSB	N/A	50	N/A
September 18	30+266	yes	CSB	N/A	153	N/A
September 19	30+312	yes	CSB	N/A	178	N/A
September 20	30+400	yes	CSB	2160	178	1260
September 21	30+384	yes	CSB	2005	188	N/A
September 21	30+394	yes	CSB	N/A	188	1240
September 22	30+455	yes	SB	2105	N/A	N/A
September 22	30+465	yes	SB	2500	63	N/A
September 23	30+560	yes	SB	N/A	N/A	N/A
September 23	30+590	yes	SB	N/A	N/A	N/A
September 23	30+600	yes	SB	N/A	N/A	N/A
September 24	30+650	yes	SB	N/A	N/A	N/A
September 24	30+665	yes	SB	N/A	N/A	N/A
September 24	30+680	yes	SB	2150	90	N/A
September 25	30+750	yes	SB	N/A	75	N/A
September 25	30+770	yes	SB	N/A	115	N/A
September 26	30+794 to 30+864	yes	CSB	N/A	151 to 176	N/A

3.4.1 Preparation of CSB

Preparation of CSB was done in three main steps:

- Preparation of the cement mix in a mixer and transportation of the cement in a tub to be mixed with SB;
- Preparation of SB using standard approach with the dozer and slurry mix; and
- Digging of the SB mix with the excavator bucket and placement in the tub with the cement. This process is done in a way to allow good mixing of the SB with the cement preparation. Mixing was done using the bucket of the excavator.

3.4.2 Placement of SB and CSB

Mixing of the till and the bentonite slurry was completed using a dozer moving back and forth over the material with a slightly lifted blade allowing for blocks or boulders that may be present within the till to fall out on the platform. The SB, once mixed, was pushed into the trench using the dozer.

With respect to the CSB, placement was done using the bucket of the excavator directly dumping the material from the mixing tub into the trench. This method did not allow the same degree of screening for the oversized particles as was achieved with the SB mixing and placement method.

3.4.3 Transition Between SB to CSB in Deep Section

A great deal of discussion took place on how to best achieve the transition between SB to CSB. Three options were proposed by the Contractor for the placement of CSB:

- Option A: leave a plug in the deep section, backfill with SB and come back at a later date to excavate and replace with the plug and SB with CSB – this option was subsequently discarded by Golder and AEM because of the risks associated with the excavation of SB.
- Option B: place CSB using the same approach used for SB resulting in complete backfilling of the trench and a full slope of CSB resting on SB - the so-called full depth CSB approach.
- Option C: placement with a tremmie per the specifications up to 128.1m.

The Contractor initially preferred Option A, but Golder was concerned with the excavation side slope proposed by the Contractor (1.5H:1V) and with the need to excavate SB material prior to placement of CSB. The Contractor had used an excavation side slope of 1.5H:1V when proposing this option and admitted that the slope could be much flatter resulting in greater excavation volumes. With respect to the concern of excavating SB material, the Contractor proposed to delay the re-excavation for as long as possible, including in to next year, to allow consolidation of SB to take place. Ultimately this option was discarded by Golder and AEM because of the inherent risks with the excavation volume and SB integrity.

For Option B, it was initially proposed that a beam be installed in the trench to prevent the flow of SB into the deepest section of the trench and to provide a backing for CSB placement. The Contractor and Golder expressed concern that the beam in cantilever may result in cracking of the SB and in the development of a void

in the wall when the beam was extracted. The Contractor was of the opinion that this option was feasible but removal of the beam would be difficult and may represent a potential hazard to workers.

With respect to Option C, the Contractor considered that its team on site had sufficient experience to complete the works but was concerned that a crane located too close to the trench may overload the wall. Therefore, they requested a crane, ideally on tracks, that was sufficiently robust so it could stay away from the trench.

Given the above, Golder recommended to AEM on September 18 to proceed with Option C per the specifications. AEM decided on September 18 to proceed with Option B but with a modified CSB mix using 6% cement rather than 8% in order to reduce cement requirements and complete the deep section as quickly as possible. Golder accepted the proposed reduction in cement content. Subsequent UCS testing of the CSB indicated that the design specifications for the CSB mixture were achieved. In an e-mail to the Contractor and AEM on September 24, Golder asked whether there is the potential for a gap or cold joint to form between the SB and CSB, particularly when CSB rests on SB as SB consolidates, and whether such a gap could provide a potential window for flow or promote cracking in the CSB by lack of support as time passes. The Contractor acknowledged that this may be a concern. It is understood that the Contractor intends to prepare a formal memorandum on this issue in the coming months, and may recommend that a SB patch be constructed on the lake side in the zone of the SB/CSB contact to minimize any risks next year. It is further understood that the Contractor thinks the CSB construction could be done differently next year, ideally prior to the SB placement, and will provide further comments on this aspect.

3.4.4 Use of the Beam and Placement of CSB over SB

As indicated above, it was initially proposed that a beam be installed in the trench to prevent the flow of SB into the deepest section of the trench and to provide a backing for CSB placement. Early on, in the process of manipulating the beam, serious near-misses occurred. In one instance, a strap being used with a loader to lift the beam broke and the beam fell on the trench. The beam did not fall on any workers or equipment; however, this could have been a real possibility had the beam been lifted in a slightly different orientation. Golder brought this to the attention of AEM and recommended that an incident report be completed.

After the above described incident, AEM and the Contractor decided not to use the beam and allow CSB to flow freely on SB. Due to difficulties in discriminating between SB and CSB in the field with this approach, it was agreed that over-excavation of the slurry trench backfill material would be completed until there was a certain level of assurance that CSB had reached the toe of the excavation. Surveying indicated that the slope of the advancing CSB was steeper than that for SB and tended to be more irregular (nodulations were observed in particular at the end of the CSB placement). Nevertheless, a simple criterion was adopted to determine whether CSB or SB was excavated at the toe of the excavation based on the temperature of the material. Specifically, the excavated CSB mix could be observed to be steaming due to the hydration of the cement.

In our opinion, the selected CSB placement method allowed the CSB to successfully cover the SB and to migrate in the deepest parts of the cut-off trench.

3.4.5 Cement Addition to Slurry

Golder understands in general, that adding cement to the slurry caused operational problems for the Contractor. Specifically, the CSB slurry became very thick locally and was considered essentially ‘contaminated” with

cement. These thick accumulations tended to plug their pumps. In the last few days of the works, the Contractor had to spend a lot of time and effort to clean the slurry and to keep it thin enough to be pumped.

3.4.6 Turning Points

Turning points were completed effectively and rapidly by overshooting the trench by about 1.0 m in both directions. Cleaning of the turn was done with 2 series of 2 passes of the excavator bucket to make sure that no material was left at the bottom of the excavation. This technique, while very quick, has some issues:

- It appears that overshooting of the trench excavation tends to result in a break in the slope of the advancing SB/CSB material as it gets blocked in the constriction – ketchup bottle effect. Some undulations were observed in the survey of the CSB slope that were locally about 4.0 m in height and were moving as additional material was placed.
- The overshooting of the trench excavation appears to have caused a thinning of the core backfill particularly on the surface. Care should be exerted in the future to ensure that the excavation is not extended too much so as to avoid the risk of contact between the SB/CSB slurry and the coarse filter.

Despite these issues, it appears that this technique is working well.

3.4.7 Criteria to Resume CSB placement

To facilitate operations in the field, a protocol to define the completion of the CSB placement in the deep section was prepared.

According to the specifications, SB had to be replaced by CSB if bedrock was at or below 127.6 m elevation. To prevent frequent switches from SB to CSB due to undulations in the bedrock profile nearer to the end of the deep trench section, the following protocol was developed by Golder and was presented at a construction meeting:

- Cut-off wall excavation is approaching the anticipated extent of CSB placement (approximately station 30+462) based on inferred bedrock and bathymetry survey. As a contingency, if it should be found that the excavated bedrock elevation drops below design criteria 127.6 m for CSB placement, CSB placement would resume if the approved bedrock surface is more than 0.5 m below the design specification of 127.6 m (*i.e.* elevation 127.1 m) over a continuous length of 6 m or more of approved excavated bedrock.

As discussed on site, Golder anticipated that bedrock would remain above elevation 127.6 m beyond station 30+462 m for the remainder of the north section cut-off trench to be excavated, and the above was provided as a simple contingency in advance to facilitate decision making in the field. In the end, the excavated bedrock elevation met expectations and the revised protocol was not required.

3.4.8 Completion of the Cut-off Wall for 2009

The cut-off wall was completed on Saturday September 26 to station 30+864. For the completion, the Contractor suggested three alternate methods to complete the cut-off for 2009 instead of proceeding with the method proposed by Golder in its Document No.1107, Rev. 0. Specifically, the Contractor felt that excavating in the CSB would be difficult and could damage the wall. Golder felt that the Contractor's concerns were valid and recommended to AEM that the Contractor proceed with the second option, which involved the construction of a patch in 2010.

On September 25, AEM instructed the Contractor to proceed as per Golder Document No.1107, Rev.0 forwarded to the Contractor on September 13, 2009, with the exception that the cement content in the CSB mix should be approximately 2% to 3%.

4.0 STORMWATER DIKE

Removed.

5.0 SADDLE DAM 1

Removed.

6.0 BORROW SEARCH

Removed.

7.0 SAMPLING AND LABORATORY TESTING

In summary, the following laboratory works were performed during the reporting period:

Samples Collected:

- BG091409-01, soil/bentonite, Bay Goose 30+416;
- BG092009-01, cement/soil/bentonite, Bay Goose, 30+342 (4 cylinders);
- BG092009-02, 00 cement/soil/bentonite, Bay Goose, 30+365 (4 cylinders);
- BG092109-01, cement/soil/bentonite, Bay Goose 30+390 (4 cylinders); and
- Liner sample removed.

These fives samples above are mentioned in the daily reports but didn't received SA laboratory sample No.

- SA59 - BG091409-18, soil/bentonite, Bay Goose 30+096;
- SA60 - BG091409-02, till dedicated to SB, Bay Goose;
- SA61 - BG091509-01, core backfill fine sediment, Bay Goose, on CL 7.5m deep, 30+319;
- SA62 - BG091609-01, till dedicated to SB, Bay Goose, 30+352;
- SA63 - BG091609-02, till dedicated to SB, Bay Goose;
- SA64 - BG091609-03, bottom sediment from final excavation, Bay Goose, 30+356;
- SA65 - BG091809-01, till dedicated to CSB, Bay Goose, 638814-7214762;
- SA66 - BG091909-01, cement/soil/bentonite, Bay Goose, 30+354 (4 cylinders);
- SA67 - BH sample Bay Goose, BH2 Bay Goose 30+440 3.4-6.1m;
- SA68 - BH sample Bay Goose, BH2 Bay Goose 30+440 6.1-6.7m;
- SA69 - BH sample Bay Goose, BH2 Bay Goose 30+440 9.2-9.6m;
- SA70 - BG091909-01, till lake bed sediment from final excavation, Bay Goose, 11m deep, 30+378;
- Stormwater samples list removed
- SA77 - BH5092009-01, BH5 Bay Goose 30+570 6.4 – 6.6m;

- SA78 - BH3092009-02, BH3 Bay Goose 30+550 2.4 – 4.0m;
- SA79 - BH4092009-03, BH4 Bay Goose 30+560 11-13';
- Stormwater samples list removed;
- SA82 - BH6092009-05, BH6 sample Bay Goose CL 30+580 11-13';
- SA83 - BH3092009-04, BH3 sample Bay Goose CL 30+570 11-13';
- SA84 - BG092409-01, soil/bentonite, Bay Goose 30+640;
- SA85 - BG092409-02, soil/bentonite, Bay Goose 30+665;
- SA86 - BG092409-03, soil/bentonite, Bay Goose 30+680 (4 Cylinders);
- SA87 - BG092509-01, soil/bentonite, Bay Goose 30+770 (4 cylinders); and
- SA88 - BG092609-01, cement/soil/bentonite, Bay Goose 30+810 (4 cylinders).

Test Pit Samples Collected:

- Samples list removed.

Samples tested:

For Gradation:

- SA39 - BG090609-06, bottom trench, Bay Goose, 30+365;
- East Dike samples tested removed;
- SA55 - BG091009-14, core backfill, Bay Goose, 30+284;
- SA56 - BG091209-15, core backfill, Bay Goose, 30+766;
- SA57 - BG091209-16, core backfill, Bay Goose, 30+728;
- SA58 - BG091209-17, soil/bentonite, Bay Goose, 30+064 5.0m offset West;
- SA60 - BG091209-19, till without bentonite, Bay Goose;
- SA61 - BG091209-20, soil/bentonite, Bay Goose;
- SA62 - BG091209-21, sediment from bottom of Bay Goose core trench, 30+352;
- SA63 - BG091209-22, till dedicated to CSB, Bay Goose;
- SA64 - BG091209-23, sediment from bottom of Bay Goose core trench, 30+356;
- SA65 - BG091209-24, till dedicated to CSB, Bay Goose 638814-7214762;
- SA67 - BH sample Bay Goose, BH2 Bay Goose 30+440 3.4-6.1m;

- SA68 - BH sample Bay Goose, BH2 Bay Goose 30+440 6.1-6.7m;
- SA69 - BH sample Bay Goose, BH2 Bay Goose 30+440 9.2-9.6m;
- Stormwater Dike samples tested removed;
- SA78 - BH3092009-02, BH3 Bay Goose 30+550 2.4 – 4.0m;
- Stormwater Dike samples tested removed;
- SA82 - BH sample, Bay Goose CL 30+580 11-13'; and
- SA83 - BH sample, Bay Goose CL 30+570 11-13'.

For Permeability:

- SA58 - BG091209-17, soil/bentonite, Bay Goose, 30+064 5.0m offset West; and
- SA59 - BG091409-18, soil/bentonite, Bay Goose 30+096.

Those two samples have been tested for permeability with a falling head method. Difficulties in the set up led to inaccurate results. However, the significantly reduced flows observed during the test indicate that soil-bentonite mix is appropriate for construction for the Bay-Goose low permeability cut-off wall

Yours very truly,

GOLDER ASSOCIATES LTD.

Dan Walker, Ph.D., P.Eng. (BC, NWT/NU)
Associate, Project Manager

Michel Julien, Ph.D., P.Eng. (QC)
Principal, Project Director

Attachments: Attachment A – Borrow Test Pit Location
Attachment B – Test Pit Summary
Attachment C – Weekly Report Photographs for September 14 – 27, 2009
Attachment D – Lab DataAB/MG/DRW/MRJ/lw

o:\active_2009\1428\09-1428-5007 meadowbank 2009 dike construction\bay goose dike\as-built report and appendixes\rev 0\app c - 29nov_12\weekly and byweekly word\2009\7.doc 1010 270909 bi-weekly report for september 14 to september 27 - rev 0 edited.doc



Photograph 1: Bay-Goose Dike – Dynamics compaction of densification platform at 10+860. This photo was taken on September 16, 2009.



Photograph 2: Bay-Goose Dike – Beam fell across trench at station 30+308 after a strap broke. This photo was taken on September 18, 2009.



Photograph 3: Bay-Goose Dike – Boulders and rockfill removed below core backfill at station 30+385. This photo was taken on September 19, 2009.



Photograph 4: Bay-Goose Dike – Preparation of a batch of CSB - mixing of SB with cement prepared.



Photograph 5: Bay-Goose Dike – Excavation of the trench in the deep section near station 30+430.



Photograph 6: Bay-Goose Dike – Narrowing of the embankment on lake side was found by Golder to be too thin to allow proper lateral confinement of cut-off wall - emergency placement of rockfill recommended.



Photograph 7: Bay-Goose Dike – Rockfill was added on September 23 to provide lateral confinement of cut-off and to minimize risk of breaching or loss of confinement.



Photograph 8: Bay-Goose Dike – View of a turn. The two segments are overshot by about 1.0 m - cleaning is done by two series of passes to make sure no material is left on the bottom.



Photograph 9: Bay-Goose Dike – Measurement of the slope of SB and CSB and bottom of excavation - distance from the hole and measurement always completed on same side.



Photograph 10: Bay- Goose Dike – Major storm of September 24 - Turbidity barriers were lifted by the wind.



Photograph 11: Bay-Goose Dike – Trench Completion of the cut-off wall with CSB over last 10 m.



Photograph 12: Bay-Goose Dike – Entire set-up to allow the LPT program to proceed. This photo was taken on September 20, 2009.



Photograph 13: Bay-Goose Dike – In-situ slurry density testing. This photo was taken on September 21, 2009.



Photograph 14: Bay-Goose Dike – In-situ slurry marsh cone testing observed at station 30+510. This photo was taken on September 22, 2009.



Photograph 15: Bay-Goose Dike – CSB slump of 157mm at station 30+830. This photo was taken on September 26, 2009.

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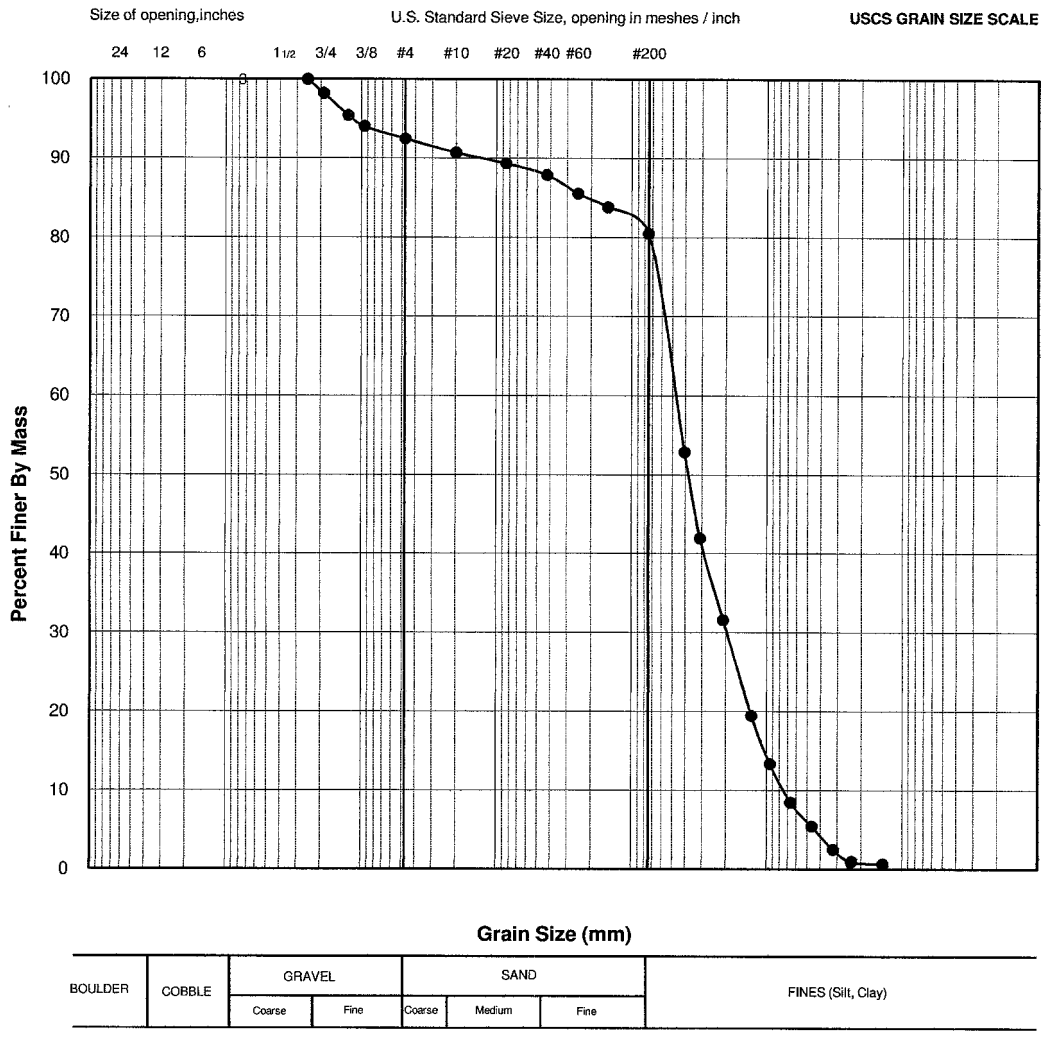
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM D 422-63 (2007)

Project No.:	08-1428-0029 (5000)	**Sample:**	**39**
Client:	AEM	**Field No.:**	BG090609-06
Project:	Meadowbank Gold Project	**Depth (m):**	Trench bottom 30 +365
Location:	Nunavut	**Lab ID No:**	SA39
Specific Gravity (assumed):	2.70	**Other**	Sediment removed from bottom of trench
Date Sampled:	Sept 7, 2009	**Remarks:**	at Bay Goose 30+365
Dispersion Method:	Stirring		**+#200 due to contamination**
Dispersion Period (min):	960.00		**from core backfill**

Sieve Size (USS)	Sieve Size (mm)	% Passing
3.5"	87.50	100.0
3"	75.00	100.0
2"	50.00	100.0
1.5"	37.50	100.0
1"	25.00	100.0
3/4"	19.00	98.2
1/2"	12.50	95.4
3/8"	9.50	94.0
#4	4.75	92.5
#10	2.00	90.7
#20	0.850	89.4
#40	0.425	87.9
#60	0.250	85.6
#100	0.150	83.9
#200	0.075	80.5
-	0.0406	52.9
-	0.0310	41.9
-	0.0209	31.6
-	0.0129	19.4
-	0.0094	13.4
-	0.0066	8.5
-	0.0046	5.5
-	0.0032	2.4
-	0.0024	0.9
-	0.0014	0.6



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OM	Sep 16-09		Sept 30/09
TESTED BY	DATE	CHECKED BY	DATE

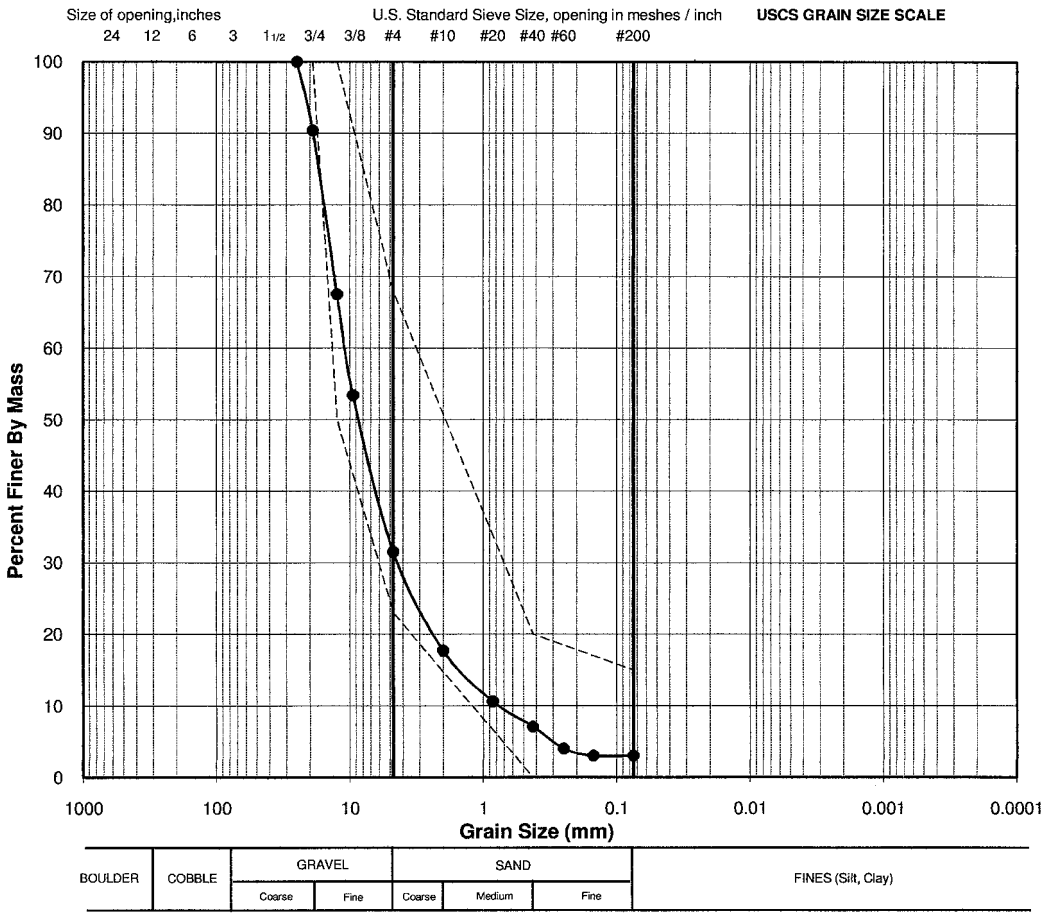
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	08-1428-0029 (5000)	**Sample No.:**	**55**
Client:	AEM	**Field Label:**	BG-091009-14
Project:	Meadowbank Gold Project	**Depth (m):**	Core crest Elev.131.7
Location:	Nunavut	**Lab ID No:**	SA-55
Remarks:		**Sampling Date:**	September 10, 2009
Bay Goose Dike STA 30+284, El. 132.7m (Approx.)		**Material Specification:**	CORE BACKFILL
Centreline core trench		**Method:**	SPLIT, WASHED
		Date Tested:	September 15, 2009

Sieve Size (USS)	(mm)	Passing %
3.5"	87.5	100.0
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.0	90.4
1/2"	12.5	67.5
3/8"	9.5	53.5
#4	4.8	31.5
#10	2.0	17.7
#20	0.9	10.6
#40	0.4	7.1
#60	0.3	4.0
#100	0.2	3.0
#200	0.1	3.0



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OM	September 15, 2009		Sept 30/09
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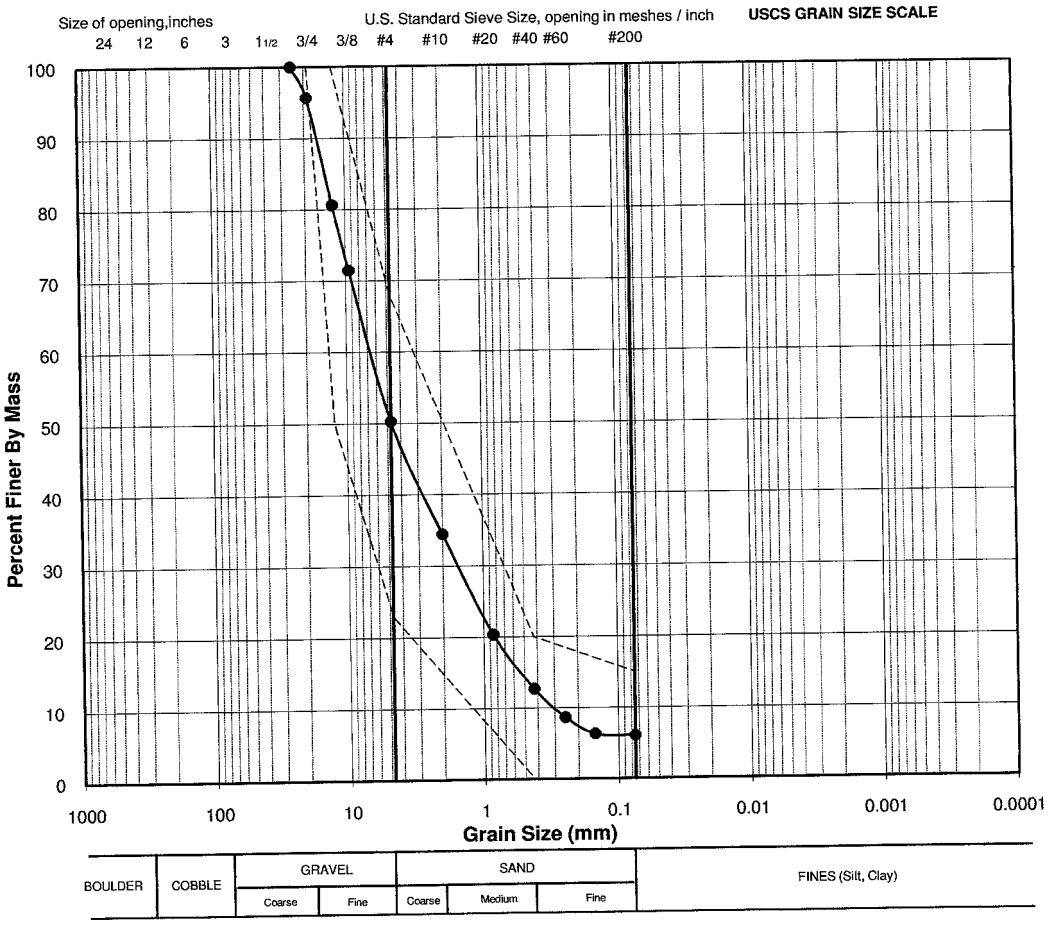
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PARTICLE SIZE ANALYSIS OF SOILS

Reference: ASTM C136-06 & C117-04

Project No.:	08-1428-0029 (5000)	**Sample No.:**	**56**
Client:	AEM	**Field Label:**	BG-091209-15
Project:	Meadowbank Gold Project	**Depth (m):**	2.0m below WL
Location:	Nunavut	**Lab ID No:**	SA-56
Remarks:	Water content = 13.4%	**Sampling Date:**	September 12, 2009
Bay Goose Dike STA 30+766 in place from CL		**Material Specification:**	CORE BACKFILL
		Method:	SPLIT, WASHED
		Date Tested:	September 16, 2009

Sieve Size (USS)	Sieve Size (mm)	Passing %
3.5"	87.5	100.0
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.0	95.7
1/2"	12.5	80.7
3/8"	9.5	71.5
#4	4.8	50.3
#10	2.0	34.5
#20	0.9	20.4
#40	0.4	12.7
#60	0.3	8.7
#100	0.2	6.3
#200	0.1	6.1



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OM	September 16, 2009	DR	Sept 30/09
TESTED BY	DATE	CHECKED BY	DATE

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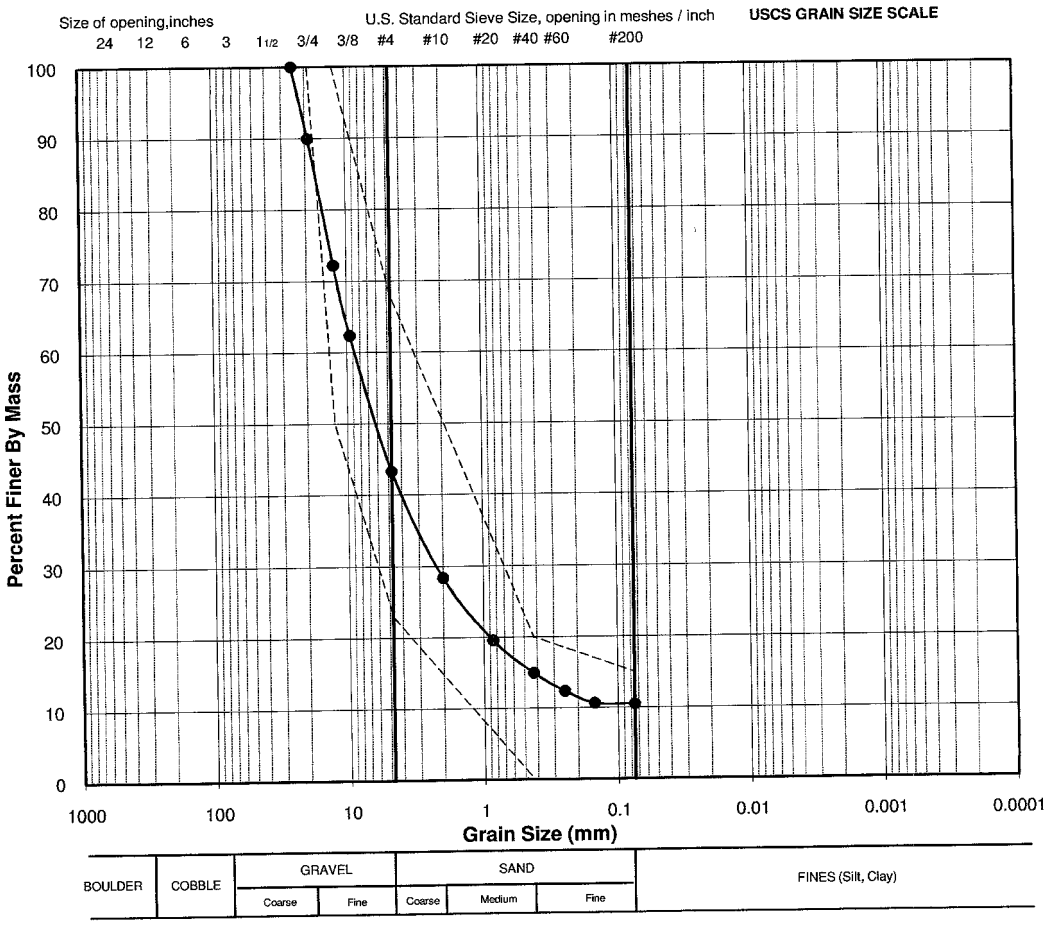
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	08-1428-0029 (5000)	**Sample No.:**	**57**
Client:	AEM	**Field Label:**	BG-091209-16
Project:	Meadowbank Gold Project	**Depth (m):**	N/A
Location:	Nunavut	**Lab ID No:**	SA-57
Remarks:	Water content = 1.6%	**Sampling Date:**	September 12, 2009
	Bay Goose Dike STA 30+728, CL Densification platform	**Material Specification:**	CORE BACKFILL
	Centreline core trench	**Method:**	SPLIT, WASHED
		Date Tested:	September 14, 2009

Sieve Size (USS)	(mm)	Passing %
3.5"	87.5	100.0
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.0	90.0
1/2"	12.5	72.2
3/8"	9.5	62.4
#4	4.8	43.3
#10	2.0	28.4
#20	0.9	19.6
#40	0.4	15.0
#60	0.3	12.4
#100	0.2	10.7
#200	0.1	10.5



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OM	September 14, 2009		Sept 30/09
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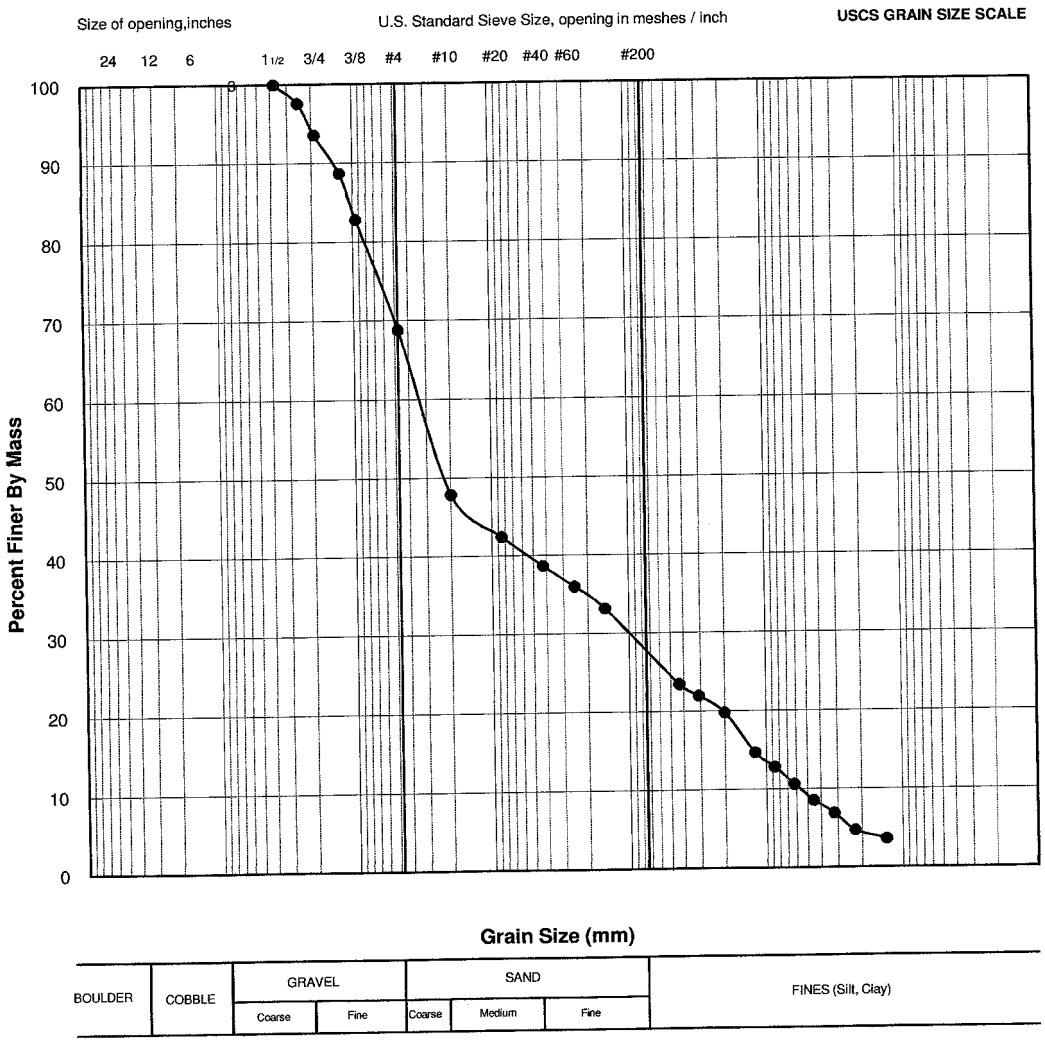
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PARTICLE SIZE ANALYSIS OF SOILS

Reference: ASTM D 422-63 (2007)

Project No.:	08-1428-0028 (5000)	**Sample:**	**58**
Client:	AEM	**Field No.:**	BG091209-17
Project:	Meadowbank Gold	**Depth (m):**	N/A
Location:	Nunavut	**Lab ID No:**	SA58
Specific Gravity (assumed):	2.70	**Other Remarks:**	Soil/Bentonite (SB) 30 +064, 5.0 m offset West
Date Sampled:	Sept 15, 2009		
Dispersion Method:	Stirring		
Dispersion Period (min):	960.00		

Sieve Size (USS)	Sieve Size (mm)	% Passing
3.5"	87.50	100.0
3"	75.00	100.0
2"	50.00	100.0
1.5"	37.50	100.0
1"	25.00	97.6
3/4"	19.00	93.6
1/2"	12.50	88.7
3/8"	9.50	82.8
#4	4.75	68.8
#10	2.00	47.8
#20	0.850	42.4
#40	0.425	38.7
#60	0.250	36.0
#100	0.150	33.2
-	0.0432	23.5
-	0.0310	22.0
-	0.0201	19.8
-	0.0121	14.7
-	0.0087	12.8
-	0.0063	10.6
-	0.0045	8.6
-	0.0032	7.0
-	0.0022	4.8
-	0.0013	3.7



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TESTED BY	DATE	CHECKED BY	DATE
OM	September 17, 2009		Sept 30/09

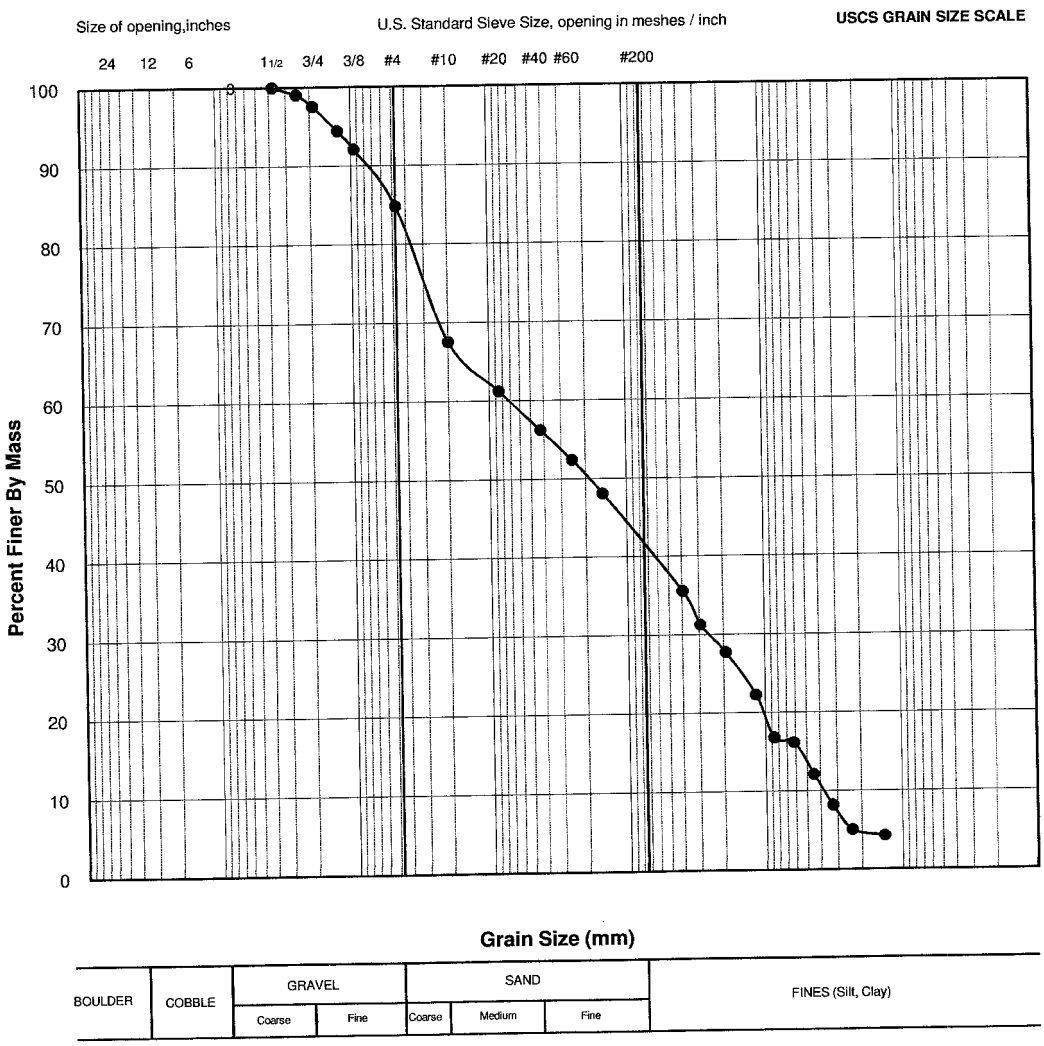
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PARTICLE SIZE ANALYSIS OF SOILS

Reference: ASTM D 422-63 (2007)

Project No.:	08-1428-0028	**Sample:**	**60**
Client:	AEM	**Field No.:**	BG091209-19
Project:	Meadowbank Gold	**Depth (m):**	N/A
Location:	Nunavut	**Lab ID No:**	SA60
Specific Gravity (assumed):	2.73	**Other**	Till without bentonite
Date Sampled:	Sept 18, 2009	**Remarks:**	
Dispersion Method:	Stirring		
Dispersion Period (min):	960.00		

Sieve Size (USS)	Sieve Size (mm)	% Passing
3.5"	87.50	100.0
3"	75.00	100.0
2"	50.00	100.0
1.5"	37.50	100.0
1"	25.00	99.0
3/4"	19.00	97.6
1/2"	12.50	94.5
3/8"	9.50	92.1
#4	4.75	84.9
#10	2.00	67.6
#20	0.850	61.2
#40	0.425	56.2
#60	0.250	52.4
#100	0.150	48.1
-	0.0395	35.6
-	0.0295	31.3
-	0.0194	27.8
-	0.0117	22.3
-	0.0087	16.8
-	0.0062	16.2
-	0.0045	12.1
-	0.0032	8.2
-	0.0024	5.1
-	0.0014	4.3



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OM	Sep 18-09		Sept 30/09
TESTED BY	DATE	CHECKED BY	DATE

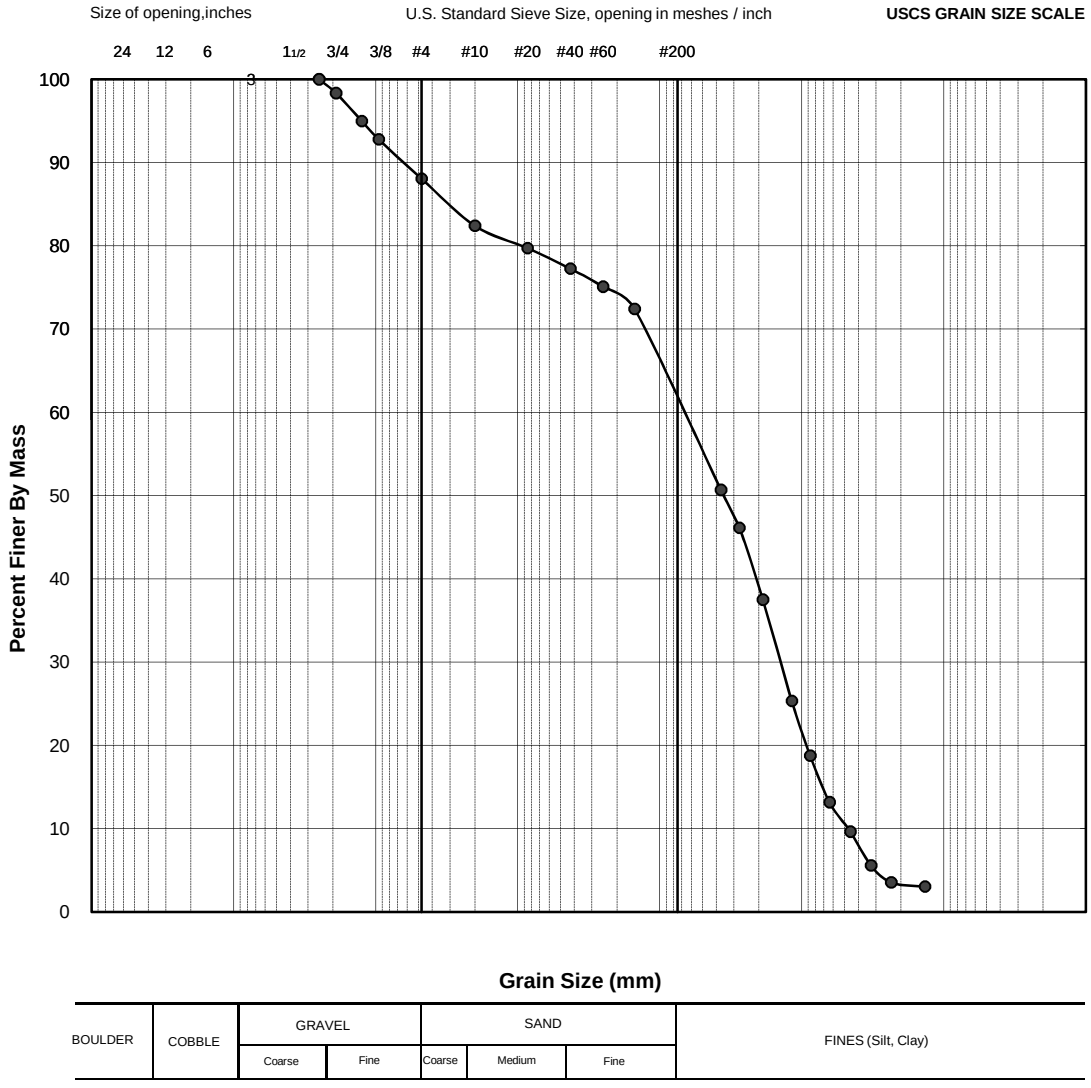
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM D 422-63 (2007)

Project No.:	08-1428-0028	**Sample:**	**61**
Client:	AEM	**Field No.:**	BG091509-20
Project:	Meadowbank Gold	**Depth (m):**	N/A
Location:	Nunavut	**Lab ID No:**	SA61
Specific Gravity (assumed):	2.73	**Other**	Core backfill fine sediment
Date Sampled:	Sept 16, 2009	**Remarks:**	
Dispersion Method:	Stirring		
Dispersion Period (min):	960.00		

Sieve Size (USS)	Sieve Size (mm)	% Passing
3.5"	87.50	100.0
3"	75.00	100.0
2"	50.00	100.0
1.5"	37.50	100.0
1"	25.00	100.0
3/4"	19.00	98.3
1/2"	12.50	95.0
3/8"	9.50	92.8
#4	4.75	88.1
#10	2.00	82.4
#20	0.850	79.7
#40	0.425	77.3
#60	0.250	75.1
#100	0.150	72.4
-	0.0370	50.7
-	0.0274	46.1
-	0.0187	37.5
-	0.0117	25.3
-	0.0087	18.8
-	0.0064	13.2
-	0.0045	9.6
-	0.0032	5.6
-	0.0023	3.5
-	0.0014	3.0



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OM	Sep 16-09		

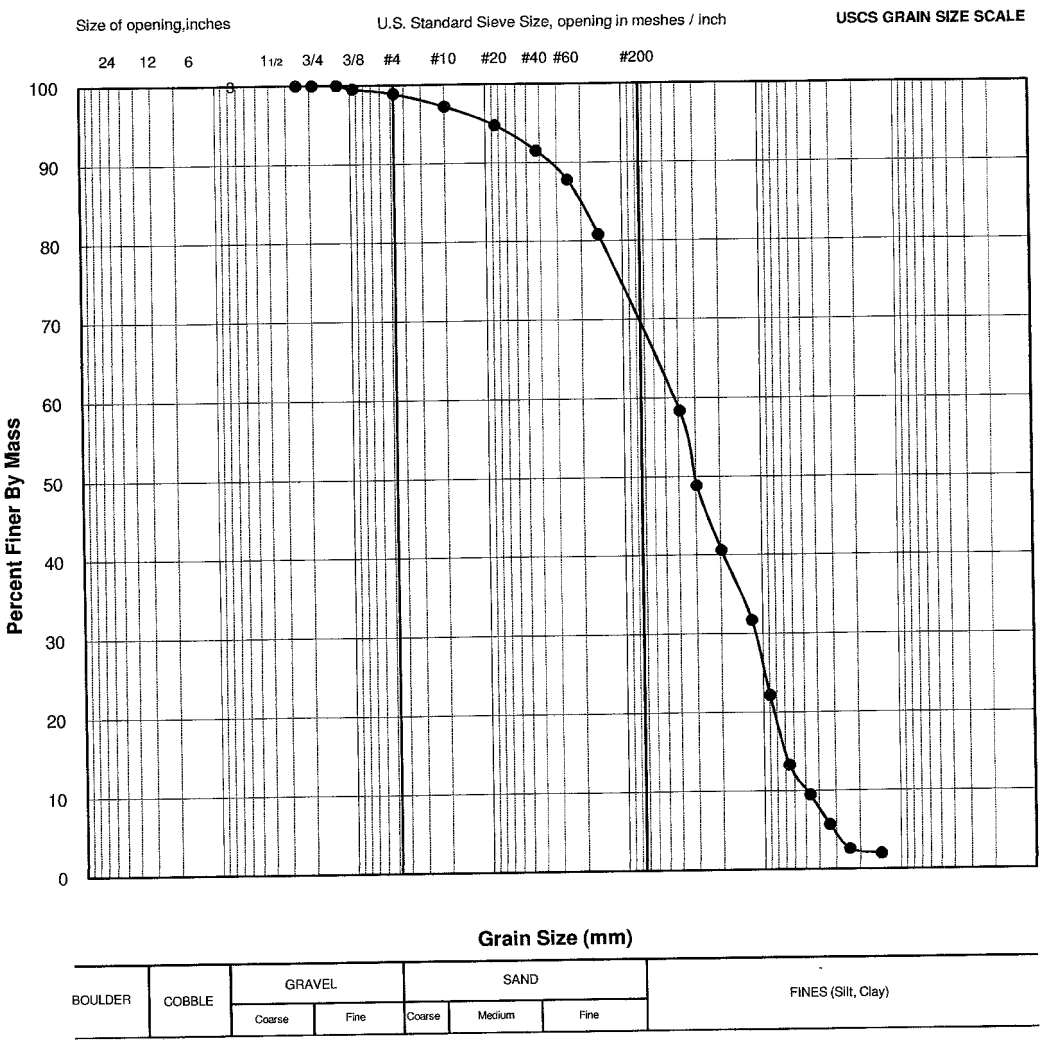
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PARTICLE SIZE ANALYSIS OF SOILS

Reference: ASTM D 422-63 (2007)

Project No.:	08-1428-0028	**Sample:**	**62**
Client:	AEM	**Field No.:**	BG091209-21
Project:	Meadowbank Gold	**Depth (m):**	N/A
Location:	Nunavut	**Lab ID No:**	SA62
Specific Gravity (assumed):	2.73	**Other Remarks:**	Sediments from bottom of Bay goose core trench 30+352
Date Sampled:	Sept 18, 2009		
Dispersion Method:	Stirring		**+#200 material due to contamination from core backfill**
Dispersion Period (min):	960.00		

Sieve Size (USS)	Sieve Size (mm)	% Passing
3.5"	87.50	100.0
3"	75.00	100.0
2"	50.00	100.0
1.5"	37.50	100.0
1"	25.00	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	99.5
#4	4.75	98.9
#10	2.00	97.2
#20	0.850	94.8
#40	0.425	91.6
#60	0.250	87.8
#100	0.150	80.9
-	0.0390	58.4
-	0.0296	48.9
-	0.0198	40.6
-	0.0120	31.7
-	0.0090	22.2
-	0.0065	13.3
-	0.0046	9.5
-	0.0033	5.7
-	0.0024	2.5
-	0.0014	1.9



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OM	Sep 18-09		Sept 30/09

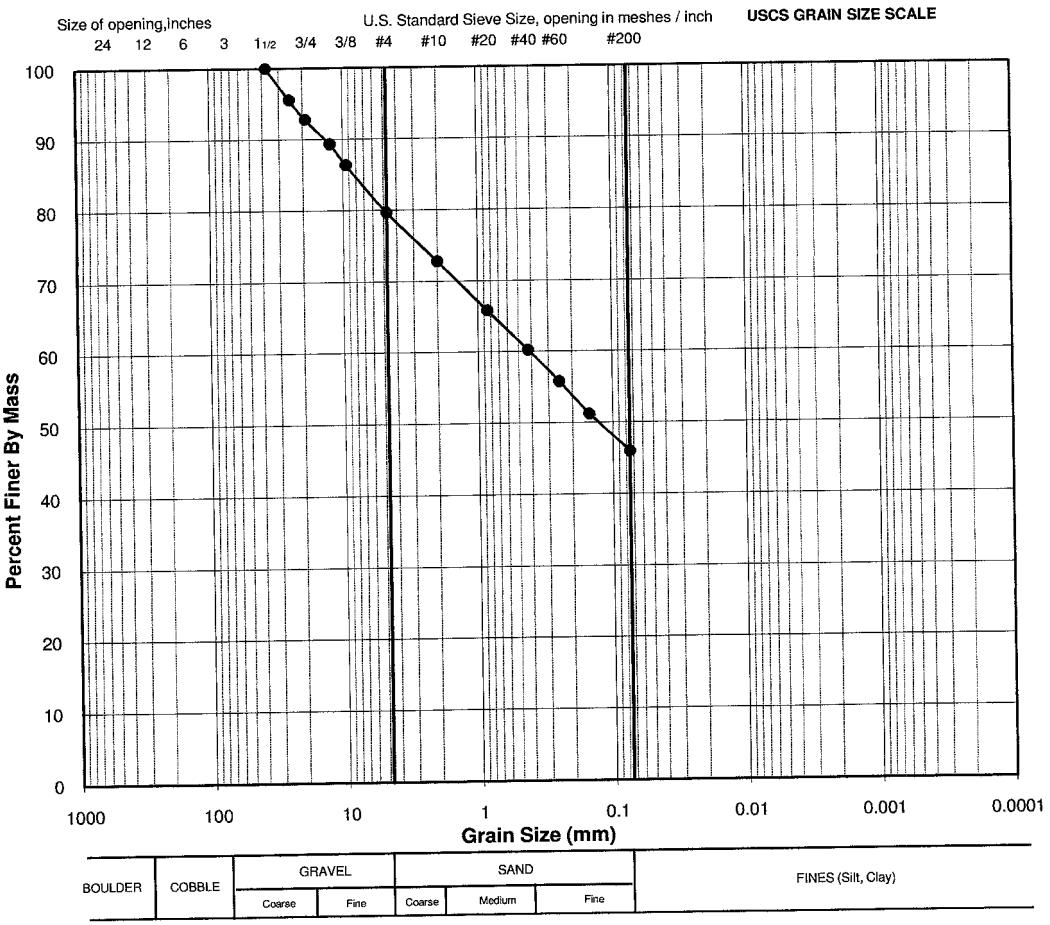
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PARTICLE SIZE ANALYSIS OF SOILS

Reference: ASTM C136-06 & C117-04

Project No.:	08-1428-0029 (5000)	**Sample No.:**	**63**
Client:	AEM	**Field Label:**	BG-091209-22
Project:	Meadowbank Gold Project	**Depth (m):**	N/A
Location:	Nunavut	**Lab ID No:**	SA-63
Remarks:	Water content = 10.4%	**Sampling Date:**	September 12, 2009
Bay Goose Dike Till dedicated to CSB		**Material Specification:**	Till
		Method:	SPLIT, WASHED
		Date Tested:	September 17, 2009

Sieve Size (USS)	Sieve Size (mm)	Passing %
3.5"	87.5	100.0
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	95.6
3/4"	19.0	92.8
1/2"	12.5	89.3
3/8"	9.5	86.4
#4	4.8	79.7
#10	2.0	72.8
#20	0.9	65.9
#40	0.4	60.2
#60	0.3	55.8
#100	0.2	51.2
#200	0.1	46.0



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OM	September 17, 2009		Sept 30/09
TESTED BY	DATE	CHECKED BY	DATE

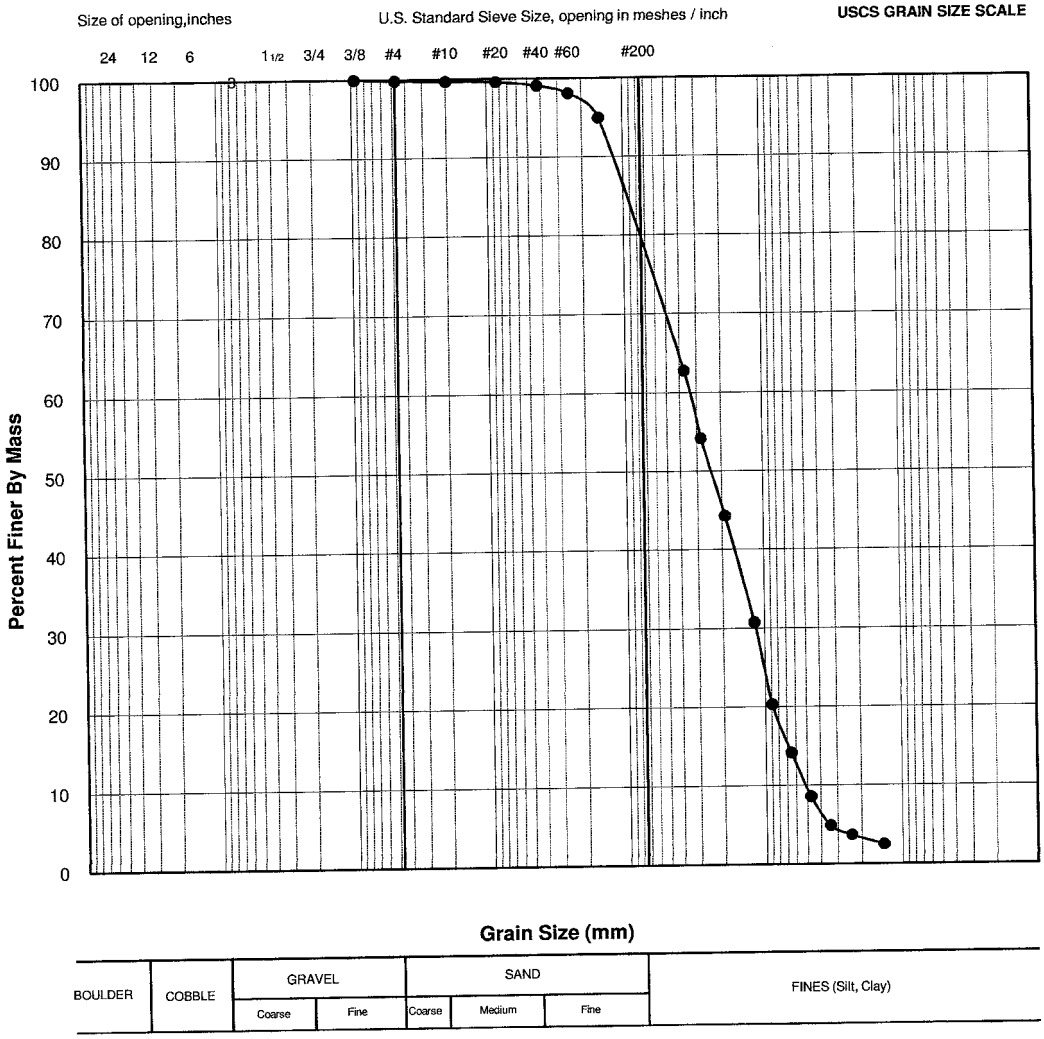
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PARTICLE SIZE ANALYSIS OF SOILS

Reference: ASTM D 422-63 (2007)

Project No.:	08-1428-0028	**Sample:**	**64**
Client:	AEM	**Field No.:**	BG091209-23
Project:	Meadowbank Gold	**Depth (m):**	N/A
Location:	Nunavut	**Lab ID No:**	SA64
Specific Gravity (assumed):	2.73	**Other Remarks:**	Sediment from bottom of Bay Goose core trench
Date Sampled:	Sept 20, 2009		30+356.
Dispersion Method:	Stirring		
Dispersion Period (min):	960.00		

Sieve Size (USS)	Sieve Size (mm)	% Passing
3.5"	87.50	100.0
3"	75.00	100.0
2"	50.00	100.0
1.5"	37.50	100.0
1"	25.00	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	99.8
#10	2.00	99.7
#20	0.850	99.6
#40	0.425	99.1
#60	0.250	98.1
#100	0.150	95.0
-	0.0370	62.8
-	0.0282	54.2
-	0.0191	44.3
-	0.0119	30.8
-	0.0089	20.3
-	0.0065	14.2
-	0.0047	8.6
-	0.0034	4.9
-	0.0024	3.7
-	0.0014	2.5



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OM	Sep 20-09		Sept 30/09

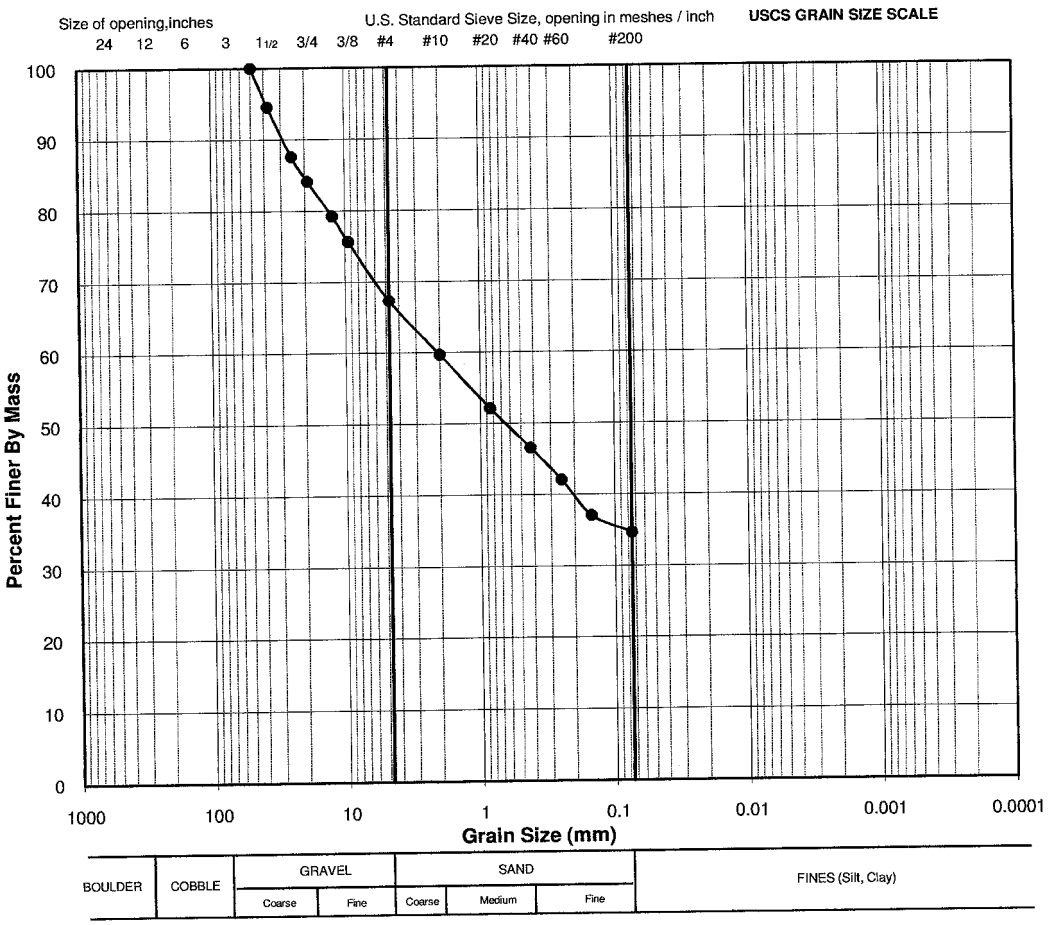
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	08-1428-0029 (5000)	**Sample No.:**	**65**
Client:	AEM	**Field Label:**	BG-091209-24
Project:	Meadowbank Gold Project	**Depth (m):**	N/A
Location:	Nunavut	**Lab ID No:**	SA-65
Remarks:		**Sampling Date:**	September 18, 2009
Bay Goose Dike 638814 E, 7214762 N		**Material Specification:**	Till dedicated to CSB
		Method:	SPLIT, WASHED
		Date Tested:	September 20, 2009

Sieve Size (USS)	Sieve Size (mm)	Passing %
3.5"	87.5	100.0
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	94.6
1"	25.0	87.6
3/4"	19.0	84.1
1/2"	12.5	79.3
3/8"	9.5	75.7
#4	4.8	67.3
#10	2.0	59.7
#20	0.9	52.2
#40	0.4	46.6
#60	0.3	42.1
#100	0.2	37.1
#200	0.1	34.7



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

OM	September 20, 2009		Sept 30/09
TESTED BY	DATE	CHECKED BY	DATE

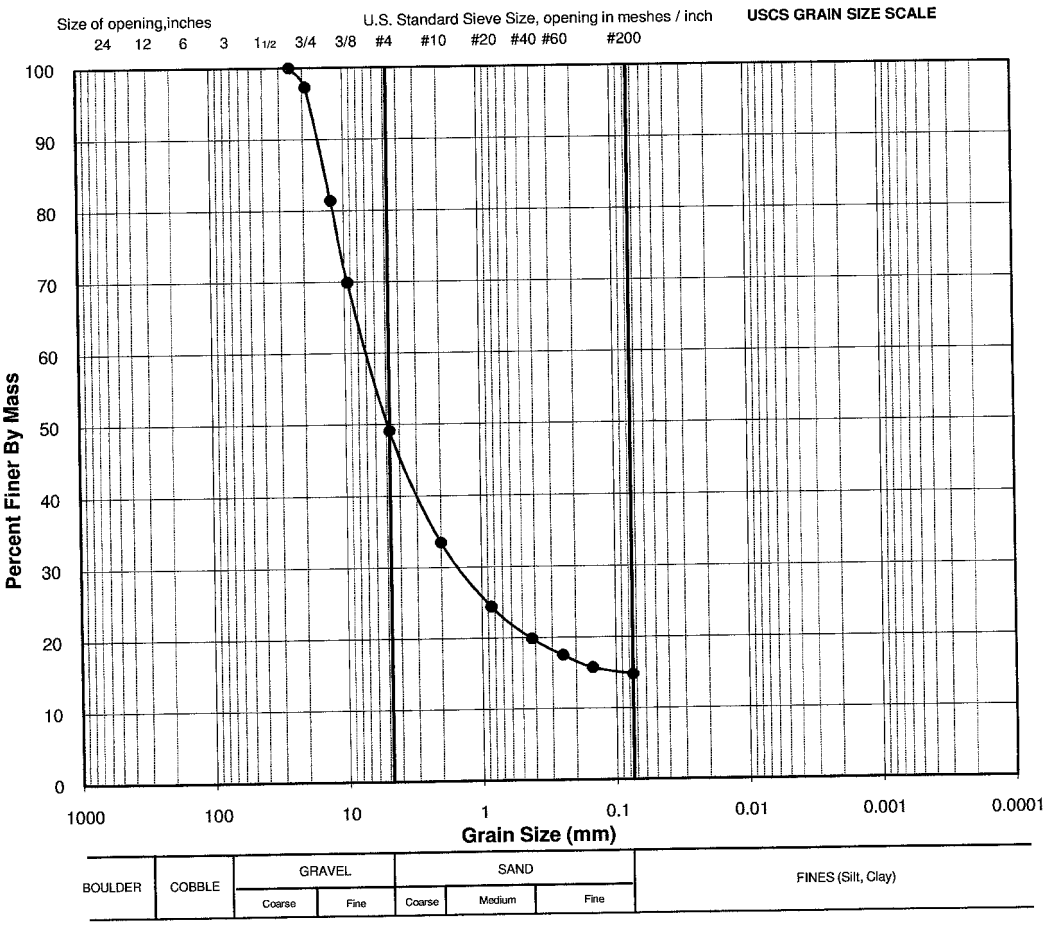
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PARTICLE SIZE ANALYSIS OF SOILS

Reference: ASTM C136-06 & C117-04

Project No.:	08-1428-0029 (5000)	**Sample No.:**	**67**
Client:	AEM	**Field Label:**	BH2 30 +440
Project:	Meadowbank Gold Project	**Depth (m):**	3.4 to 6.1m
Location:	Nunavut	**Lab ID No:**	SA-67
Remarks:	Water content = 1.6%	**Sampling Date:**	September 19, 2009
Bore hole sample, Bay Goose Dike STA 30+728		**Material Specification:**	CORE BACKFILL
CL Densification platform		**Method:**	SPLIT, WASHED
		Date Tested:	September 20, 2009

Sieve Size (USS)	Sieve Size (mm)	Passing %
3.5"	87.5	100.0
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.0	97.3
1/2"	12.5	81.4
3/8"	9.5	69.9
#4	4.8	49.1
#10	2.0	33.5
#20	0.9	24.4
#40	0.4	19.9
#60	0.3	17.5
#100	0.2	15.7
#200	0.1	14.8



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OM	September 20, 2009		Sept 30/09
TESTED BY	DATE	CHECKED BY	DATE

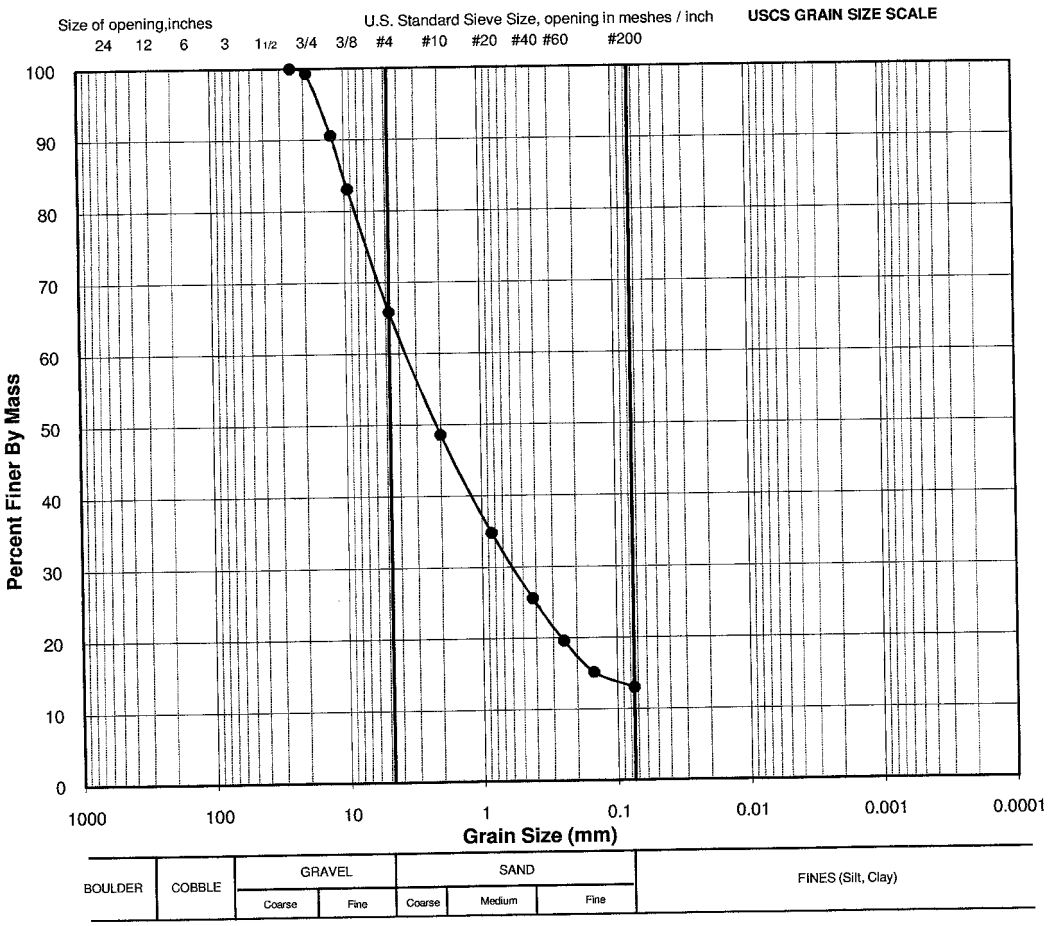
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PARTICLE SIZE ANALYSIS OF SOILS

Reference: ASTM C136-06 & C117-04

Project No.:	08-1428-0029 (5000)	**Sample No.:**	**68**
Client:	AEM	**Field Label:**	BH2 30 +440
Project:	Meadowbank Gold Project	**Depth (m):**	6.1 - 6.7m
Location:	Nunavut	**Lab ID No:**	SA-68
Remarks:	Water content = 1.6%	**Sampling Date:**	September 19, 2009
Bore hole sample, Bay Goose Dike 30+440		**Material Specification:**	N/A
		Method:	SPLIT, WASHED
		Date Tested:	September 21, 2009

Sieve Size (USS)	Sieve Size (mm)	Passing %
3.5"	87.5	100.0
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.0	99.3
1/2"	12.5	90.6
3/8"	9.5	83.1
#4	4.8	65.9
#10	2.0	48.6
#20	0.9	34.8
#40	0.4	25.6
#60	0.3	19.6
#100	0.2	15.2
#200	0.1	13.0



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OM	September 21, 2009		Sept 30/09
TESTED BY	DATE	CHECKED BY	DATE

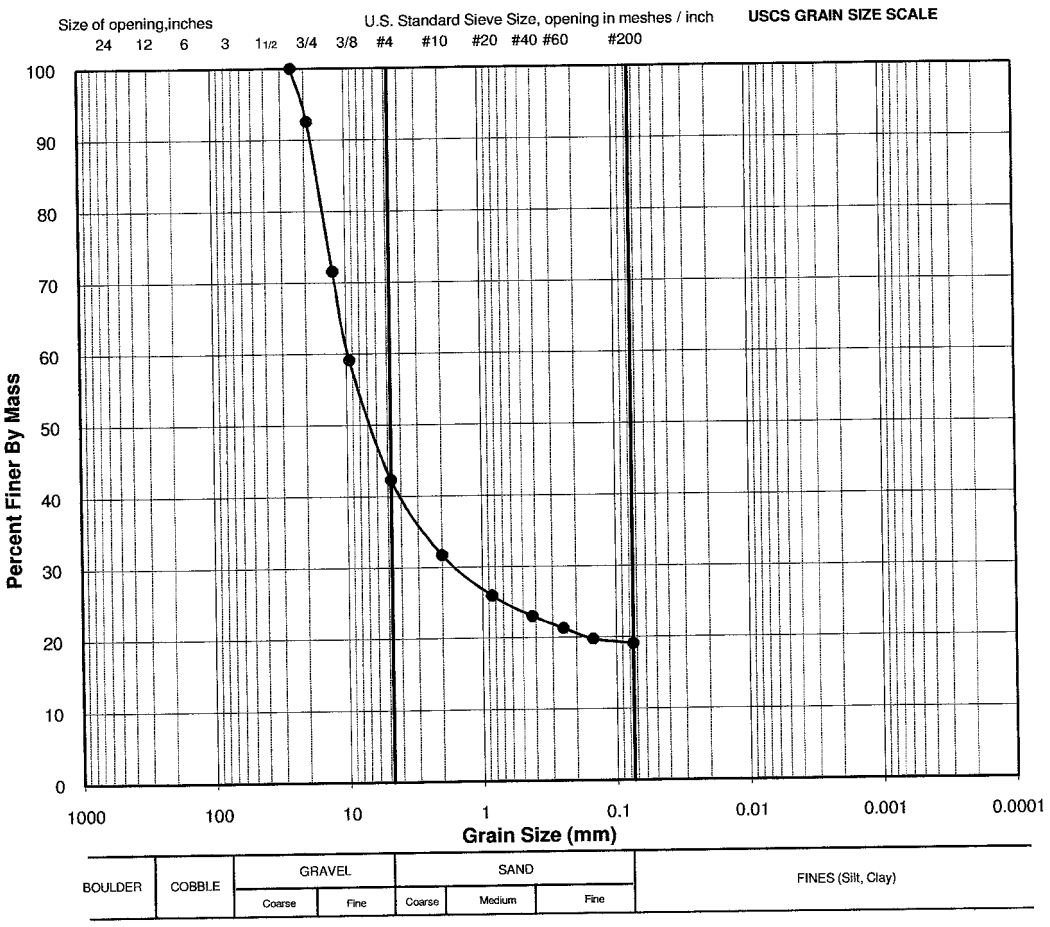
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PARTICLE SIZE ANALYSIS OF SOILS

Reference: ASTM C136-06 & C117-04

Project No.:	08-1428-0029 (5000)	**Sample No.:**	**69**
Client:	AEM	**Field Label:**	BH2 30 +440
Project:	Meadowbank Gold Project	**Depth (m):**	9.2 - 9.6m
Location:	Nunavut	**Lab ID No:**	SA-69
Remarks:		**Sampling Date:**	September 19, 2009
Bore hole sample, Bay Goose 30+440		**Material Specification:**	N/A
		Method:	SPLIT, WASHED
		Date Tested:	September 20, 2009

Sieve Size (USS)	Sieve Size (mm)	Passing %
3.5"	87.5	100.0
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.0	92.6
1/2"	12.5	71.6
3/8"	9.5	59.2
#4	4.8	42.3
#10	2.0	31.7
#20	0.9	25.9
#40	0.4	23.0
#60	0.3	21.3
#100	0.2	19.8
#200	0.1	19.1



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OM	September 20, 2009		Sept 30/09
TESTED BY	DATE	CHECKED BY	DATE

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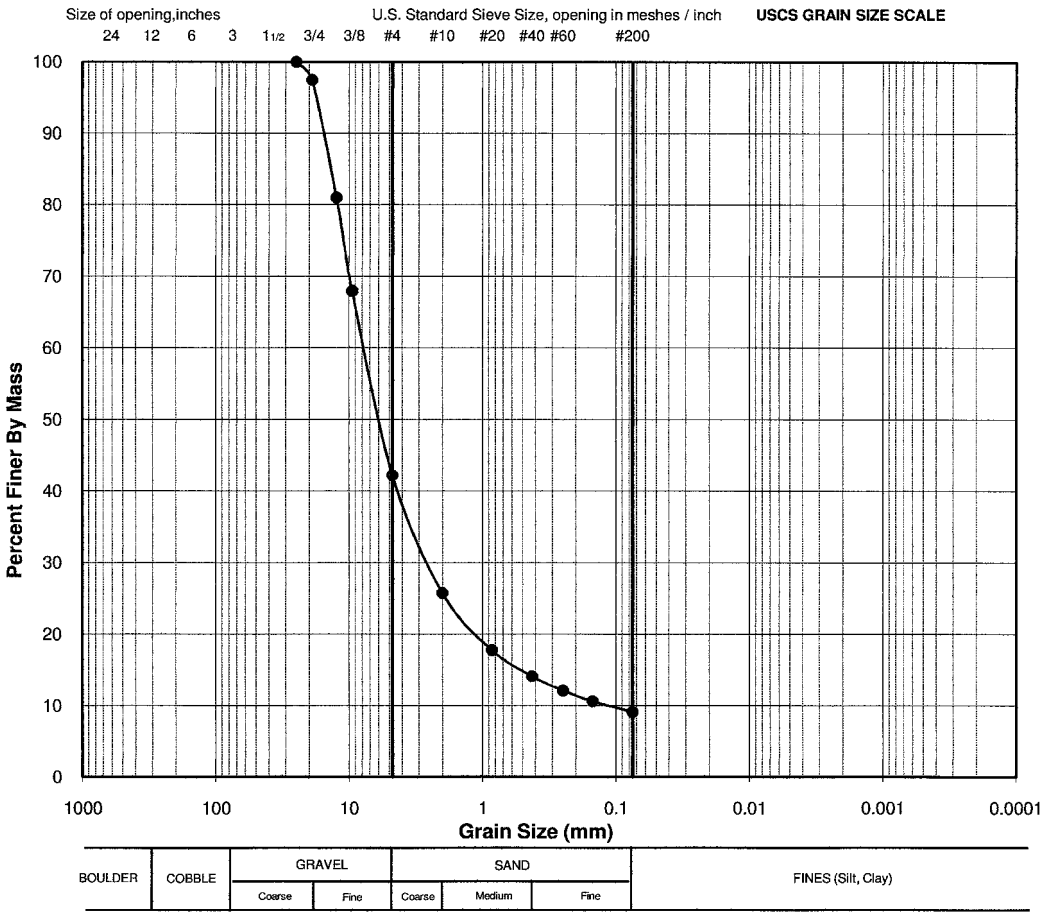
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	08-1428-0029 (5000)	**Sample No.:**	**78**
Client:	AEM	**Field Label:**	BH3 092009-02
Project:	Meadowbank Gold Project	**Depth (m):**	2.4 - 4.0m
Location:	Nunavut	**Lab ID No:**	SA78
Remarks:		**Date Sampled:**	September 20, 2009
Sa. Location:	BH3 - Bay Goose 30+550 2.4 - 4.0m	**Material Specification:**	BORE HOLE SAMPLE
		Method:	COMBINED, WASHED
		Date Tested:	September 23, 2009

Sieve Size (USS)	Sieve Size (mm)	Passing %
3.5"	87.5	100.0
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.0	97.4
1/2"	12.5	81.0
3/8"	9.5	67.9
#4	4.8	42.2
#10	2.0	25.7
#20	0.9	17.8
#40	0.4	14.1
#60	0.3	12.1
#100	0.2	10.6
#200	0.1	9.1



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

DE	September 23, 2009		Sept 30/09
TESTED BY	DATE	CHECKED BY	DATE

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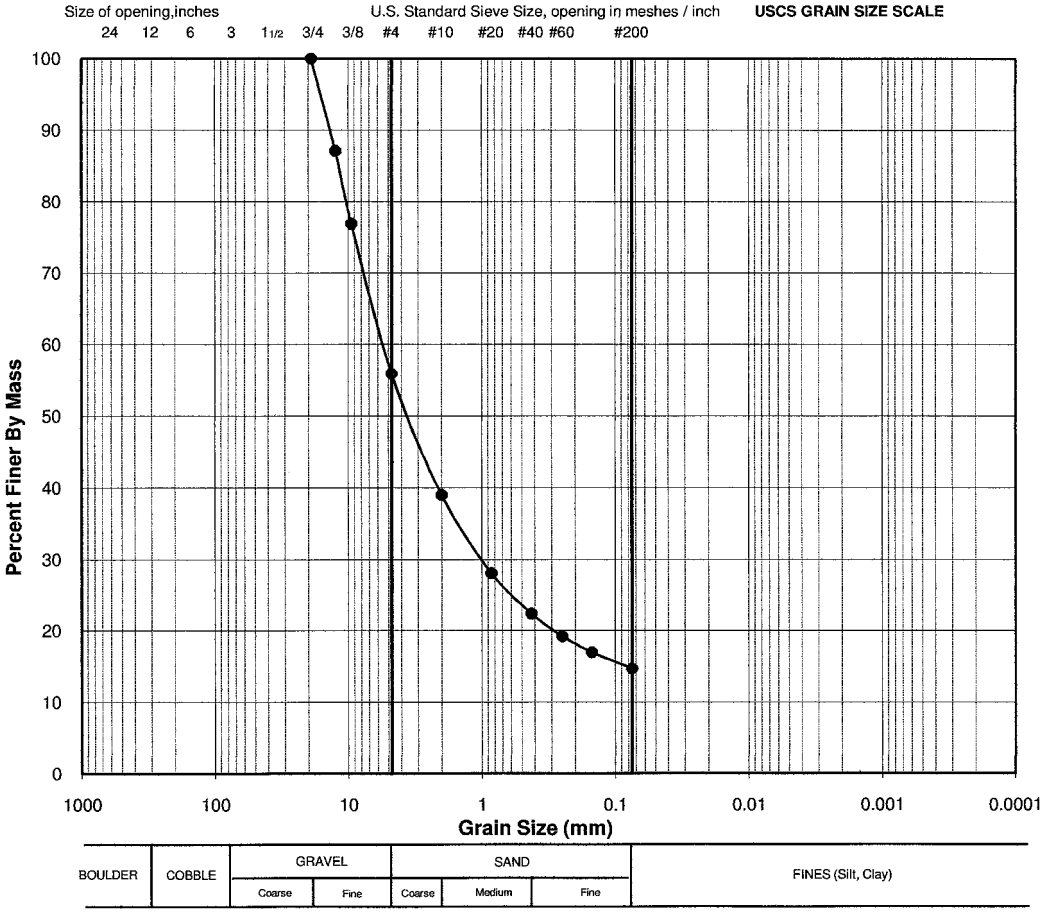
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	08-1428-0029 (5000)	**Sample No.:**	**82**
Client:	AEM	**Field Label:**	BH 092009-05
Project:	Meadowbank Gold Project	**Depth (m):**	3.4 - 4.0m
Location:	Nunavut	**Lab ID No:**	SA82
Remarks:		**Date Sampled:**	September 20, 2009
Sa. Location:	BH Sample, Bay Goose 30+580 3.4 - 4.0m	**Material Specification:**	BORE HOLE SAMPLE
		Method:	COMBINED, WASHED
		Date Tested:	September 26, 2009

Sieve Size (USS)	Sieve Size (mm)	Passing %
3.5"	87.5	100.0
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.0	100.0
1/2"	12.5	87.2
3/8"	9.5	76.9
#4	4.8	56.0
#10	2.0	39.0
#20	0.9	28.1
#40	0.4	22.3
#60	0.3	19.2
#100	0.2	16.9
#200	0.1	14.7



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

DE	September 26, 2009	DCR	Sept 30/09
TESTED BY	DATE	CHECKED BY	DATE

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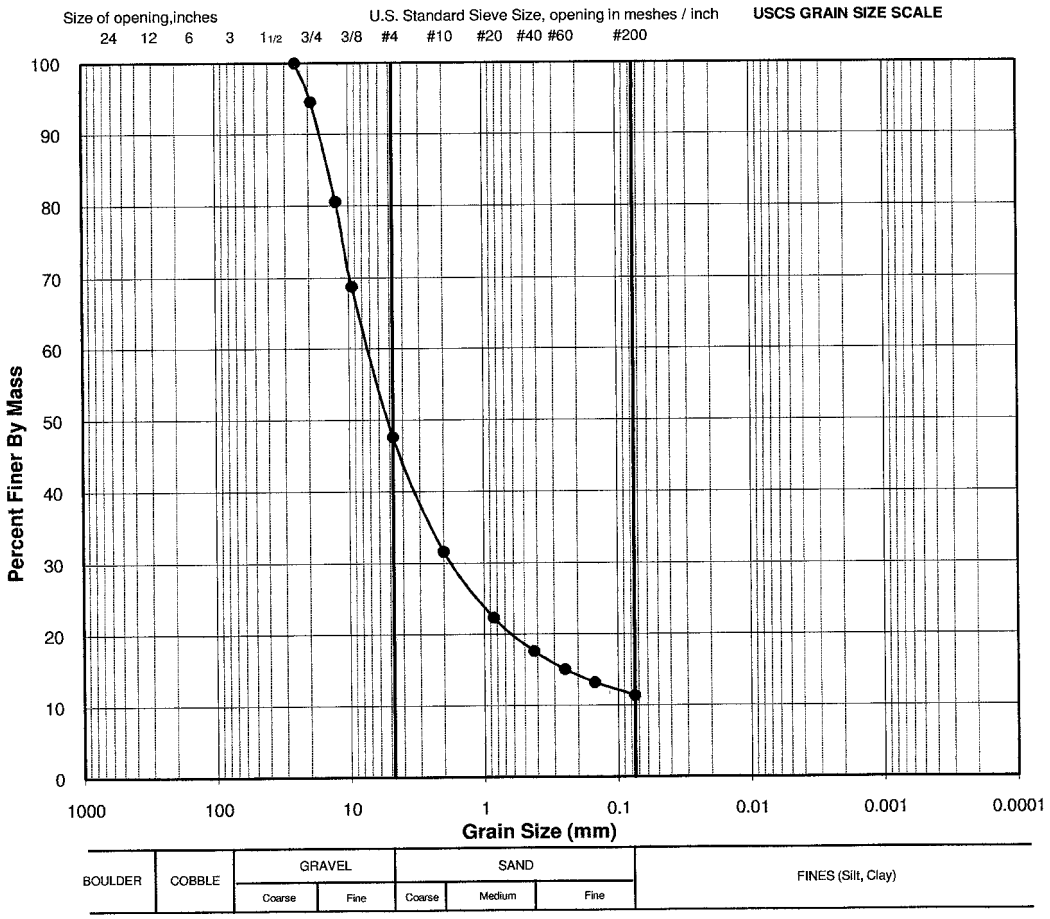
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	08-1428-0029 (5000)	**Sample No.:**	**83**
Client:	AEM	**Field Label:**	BH3 092009-04
Project:	Meadowbank Gold Project	**Depth (m):**	3.4 - 4.0m
Location:	Nunavut	**Lab ID No:**	SA83
Remarks:		**Date Sampled:**	September 20, 2009
Sa. Location:	BH3 - Bay Goose 30+570, 3.4 - 4.0m	**Material Specification:**	BORE HOLE SAMPLE
		Method:	COMBINED, WASHED
		Date Tested:	September 26, 2009

Sieve Size (USS)	Sieve Size (mm)	Passing %
3.5"	87.5	100.0
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.0	94.5
1/2"	12.5	80.6
3/8"	9.5	68.8
#4	4.8	47.6
#10	2.0	31.6
#20	0.9	22.3
#40	0.4	17.6
#60	0.3	15.0
#100	0.2	13.2
#200	0.1	11.4



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

DE	September 26, 2009		Sept 30/09
TESTED BY	DATE	CHECKED BY	DATE

TECHNICAL MEMORANDUM

DATE August 02, 2010 **PROJECT No.** 09-1428-5007
Doc. 1010 Rev 0

TO Gaston Blanchette and Yohan Jalbert
Agnico-Eagle Mines Limited Meadowbank Division

CC Dan Walker, Michel Julien, Annie Beaulieu, Paul Bedell, Grant Bonin, Fiona Esford

FROM Yves Boulianne **EMAIL** Yves_Boulianne@golder.com

WEEKLY REPORT FOR PERIOD FROM JULY 21 TO 25, 2010
MEADOWBANK GOLD PROJECT

This report has been modified to only present details related to the Bay Goose Dike, for the purpose of including the document in the As-Built report. Section 3.0 East Dike - Weir Monitoring and 4.0 Borrow Source have been removed

Golder QA manager mobilized to site on July 21, 2010, as did the QA field team. This weekly report summarizes Golder QA activities from July 21 to 25, 2010 related to the construction activities undertaken by FGL for AEM at Bay Goose Dike.

Progress during last week at Bay Goose Dike consisted of rockfill platform advancement and the start of the large excavation.

Photographs showing work progress related to construction of the Bay Goose during this period are included with this weekly report.

Golder personnel on site during this period are summarized in Table 1.

Table 1: Golder personnel on site

Name	Period on site
Yves Boulianne	July 21 through August 4
Lynn Wilson	July 21 through July 28
Reanna Roberts	July 21 through August 3
Damian Edwards	July 21 through August 4

1.0 HEALTH AND SAFETY

Daily H&S meetings were held with all Golder personnel. Minutes from these meetings are recorded and stored in Golder's office on site. The key H&S elements for the reporting period are as follows:

- Work procedure, only walk in areas where works are taking place with proper PPE;

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- Avoid walking along or standing on the lakeside causeway edges;
- Causeway traffic congestion, staff reminded to yield as haul trucks have the right of way.
- Speed limit on the AWPAR and radio communication while travelling in convoy.
- Driving in the pit, announce yourself, keep safe distance, use vehicle lights and slow down,
- Watch your footing along the dike, keep hands out of pockets and keep bug repellent at hand.

Health and safety concerns were also discussed with AEM personnel during the daily construction meetings.

2.0 BAY-GOOSE DIKE

2.1 Description of Activities

As of July 25, 2010, the following construction activities were observed:

- Rockfill platform advancement (31+475),
- Start of the first front of trench excavation at 30+915, was at 31+055 at the end of the week.

2.2 Summary of main discussion in construction meeting

The first construction meeting for this 2010 construction season was held on Saturday July 24, 2010. The purpose of this meeting was mainly to discuss about the foundation and backfill approval procedure. The daily construction meeting of Sunday July 25 was call off due to the start of the work that day. The memorandum submitted by Golder, FOUNDATION AND BACKFILL APPROVAL PROCEDURES DURING INITIAL TRENCH EXCAVATION (ON ROCK AND ON SOIL) DURING CONSTRUCTION OF BAY-GOOSE DIKE - SOUTH PORTION MEADOWBANK GOLD PROJECT, NUNAVUT, was reviewed step by step by Yves Boulianne. The following topics were highlighted during the discussion;

- QA field personal have the power to allow the advancement of the trench excavation after being satisfied with the bottom trench cleaning.
- Only Golder QA manager can approve backfill advancement, approval to be transmitted to FGL Representative Guy Morissette (or approved equivalent) only. AEM must have a copy of the approved package immediately, not a day later.
- If corrections are needed on a package submitted, after being corrected to the satisfaction of the QA team, another bathymetry is needed on the corrected area only. The new data set on the corrected area must not be merged to the initial package, but given on a separate file to easily track changes on specific areas.
- It is understood that manual probing will be performed every 5.0 m at the center line, those data will be used for QA the data quality of the bathymetric survey.

In addition to foundation approval, the following subjects were discussed during this first meeting;

- FGL is in discussion with Inquip to potentially start the CSB from 31+700, heading to south abutment.

- AEM (G.B.) is concerned that cement quantity have been under-estimated. AEM decided to proceed to order more cement anyway.

2.3 Summary of QC/QA activities and test results

The QA activities start officially on the July 22, 2010. At this date, the only activity was rockfill placement. The front advancement was around station 31+455 at the end of this reported week. The observations made where mainly positive; well graded material, only one oversize rock placed in the center line was observed, haul truck were dumping on the platform. A D9 dozer is pushing material in the lake. A good angle of the front to move the soft material out of the dike appears to be promoted. Also, the haul truck circulation path was moving all the time (good for platform compaction).

Turbidity barrier were in place and look effective. No damage has been observed so far. Turbidity of water inside and outside the barrier was very contrasted.

A site walk along the Bay Goose dike causeway road constructed during the cold weather revealed sinkholes where ice trapped in the rockfill likely melted. Holes varied in size with a radius of 1.0 to 4.0 m and a depth of 0.3 to 1.0 m. Additional fill was placed on surface of dike from north end (30+850) to about 31+500, which would have covered sinkholes north of those we noticed, more material will be placed along the causeway in the next following to fill up the sinkhole.

On Sunday July 25, 2010, the trench excavation activity started with two excavators on the dike at station 30+960 approximately. One was heading north and the other was heading south. The section between station 30+860 (end of cut off wall in 2009) to 30+915 was not excavated due to the presence of the haul road, this section will be completed later when the road will be moved. The trench excavation is on land (Goose Island) from 30+915 to 31+000, all organic matter and broken rock were removed and all the soils that could be removed with a long teeth bucket were cleaned. Fractured bedrock was observed between 30+970 to 985, the joints were generally oriented north-south. At the end of the night shift Sunday, the excavation front was at around 31+065. The use of the hydraulic hammer was necessary at the following station; 31+035, 041, 050 and 057 to 059. All those areas of concern were cleaned to the satisfaction of the QA field supervisor.

2.4 Summary of problems and their resolutions

N/A

3.0 EAST DIKE - WEIR MONITORING

Removed.

4.0 BORROW SOURCE

Removed.

5.0 SAMPLING AND LABORATORY TESTING

The activity in the laboratory will start in next week.

6.0 PHOTOGRAPHS



Photograph 1: Rockfill placement in water at Stn 31+200 looking NW.



Photograph 2: Berm at advancing front, Stn 31+200 looking NW.



Figure 3: Turbidity barrier at Stn 31+350 looking NE.



Photograph 4: Advancing face of rockfill placement looking up chainage at Stn 31+450 looking NE.



Photograph 5: Advancing face at Stn 31+460 looking NE.



Figure 6: Along excavation at Stn 30+900 looking S.

YB/LW/RM/MJ

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TECHNICAL MEMORANDUM

DATE August 15, 2010 **PROJECT No.** 09-1428-5007
Doc. 1010 Rev 0

TO Gaston Blanchette and Yohan Jalbert
Agnico-Eagle Mines Limited Meadowbank Division

CC Dan Walker, Michel Julien, Annie Beaulieu, Paul Bedell, Grant Bonin, Fiona Esford

FROM Grant Burns **EMAIL** Grant_Burns@golder.com

WEEKLY REPORT FOR PERIOD FROM JULY 26 TO AUGUST 1, 2010
MEADOWBANK GOLD PROJECT

This report has been modified to only present details related to the Bay Goose Dike, for the purpose of including the document in the As-Built report. Section 3.0 Tailings Storage Facility and 4.0 East Dike - Weir Monitoring have been removed

This weekly report summarizes Golder QA activities from July 26th to August 1st, 2010 related to the construction activities undertaken by FGL for AEM at Bay-Goose Dike.

Progress during this period at Bay-Goose Dike consisted of rockfill platform advancement, trench excavation, core backfill advancement, and densification platform placement.

Photographs showing work progress related to construction of the Bay-Goose dike during this period are included with this weekly report.

Golder personnel on site during this period are summarized in Table 1.

Table 1: Golder personnel on site

Name	Mobilize	Demobilize
Yves Boulianne	July 21	August 4
Michel Julien	July 23	August 6
Damian Edwards	July 21	August 4
Mariam Ouangrawa	July 28	August 10
Ryan Mason	July 28	August 18
Reanna Roberts	July 21	August 3
Lynn Wilson	July 21	July 28

1.0 HEALTH AND SAFETY

Daily H&S meetings were held with all Golder personnel. Minutes from these meetings are recorded and stored in Golder's office on site. The key H&S elements for the reporting period are as follows:

- Confirm pick-up trucks have required safety equipment including buggy whips and fill out a truck inspection form each day.
- Road conditions are varied and obstacles such as dust, large rocks, ruts and muddy patches may not be easily seen. Heavy traffic noted between TSF and Bay-Goose. The connector road between SD2 and SWD is blind as it approaches the SWD in either direction. Driving to the TSF requires driving past the crusher and dust can obstruct visibility. Drive with caution.
- Take extra care when new equipment operators arrive on site as they may not be aware of Golder staff's usual working areas.
- Tinted safety glasses increase visibility on sunny days. Extra sunscreen is available in the Golder field office.
- Noise from heavy equipment is an ongoing hazard – wear appropriate hearing protection.
- Slips, trips and falls are an ongoing hazard; tread carefully around the dike.
- Haul trucks have limited visibility pulling in and out of the trench backfill area; be wary of changing traffic patterns. Haul trucks have also been observed using the upstream side of the dike - this area is supposed to be reserved for light vehicles and foot traffic only.
- During nightshift flood lights on the dike partially obscure haul truck headlights: take extra caution when driving toward the lights;
- Work site is congested: maintain good communication with equipment operators, stay on the 'door side' of excavation equipment, keep heads up and yield right of way to larger equipment.
- Use proper lifting techniques when filling and moving soil sample bags.
- CAT385C-Longarm excavator is being used to move the dewatering pump and pipes. Keep well away from the area when this work is taking place.
- When working on the boat: wear a PFD, keep behind the railing, be cautions when passing under the survey ropes and stay opposite the surveyor when possible.

Health and safety concerns were also discussed with AEM personnel during the daily construction meetings.

2.0 BAY-GOOSE DIKE

2.1 Description of Activities

As of end of shift on Sunday August 1st, 2010, the following construction activities were observed:

- Rockfill (aka muck) platform advancement to Station 31+580 m.
- Trench excavation approximately from Station 31+055 to 31+418 m and from Station 31+690 to 31+712 m for the first and second fronts, respectively.
- Crest of core backfill and wing placement to about Station 31+170 m (i.e. first front).

- Densification platform advance to approximately Station 31+055 m.

2.2 Summary of main discussion in construction meeting

Construction meetings were held daily during the current reporting period, attended by Yves Boulianne July 26th to August 1st, by Michel Julien on July 31st and 30th. The following items are summarized from available meeting minutes July 26th to August 1st.

- Channel 4FGL added to the radios. All workers (AEM, FGL and Golder) are to switch from channel 14/OP to the dike channel when travelling to/from and working on the dike. AEM will assume responsibility for relaying emergency 'Code 1' calls onto this channel;
- Barge shipment of bentonite has arrived. FGL will arrange transportation of the materials to the dike via flatbed truck. Quantities of soil bentonite must be followed closely during the 2010 construction season;
- Before corebackfill placement commenced a pump was placed in the trench in order to remove fine materials from the trench floor. FGL is in charge of managing the pump. The pump will not be used during lunch and dinner in order to stay within the capacity of the water treatment equipment. Where possible the length of the excavation should be kept short in order to minimize sedimentation;
- Bathymetry will be carried out to measure the depth of sediments. The long stick, bathymetry and weighted tape all give different depths to sedimentation – when in doubt about the thickness, attempt to remove sediments. Golder requested regular manual soundings of sediment thickness.
- Large cobbles and boulders will be removed from the till on the mixing pad, after bentonite is added, with a standard bucket not a comb bucket;
- The TRAMAC should be used to removed obstructions as they are encountered, as it is often difficult to access the trench floor from the side;
- Golder requested an estimate of the quantity of NPAG and PAG material available. Yves Jalbert (AEM) will check with Julie Belanger (AEM). Second crusher added to the North Portage Pit to produce 150 mm c.s.;
- Golder requested turbidity barrier coordinates, and copies of previous QC testing on borrow till and processed material from the crusher. In addition, Golder requested an as-built survey of the TSF-SWD rockfill and filter materials as well as any QC testing carried out on the TSF-SWD materials. AEM will forward this information to Golder as soon as possible;
- When advancing corebackfill the core should be 1-2 metres ahead of the upstream wing and 3-4 metres ahead of the downstream wing in order to ensure a minimum of 1:1 slope ratio on the downstream (pit) side.
- FGL raised a concern about reworking the deeper portions of the excavation: there is not much flexibility to go deeper than the design depth. Michel Julien commented there are many boreholes at the south end of the dike and the competent layer has been well-identified.

- TSF-SD2 north abutment is being cleaned, work will continue on the SWD slope. Drilling carried out along the toe of the trench, soft material has been removed. AEM-Thomas Lepine will forwarded copies of projected hole locations to Golder-Michel Julien for review.
- Work began advancing from 2 fronts. A design plan must be made for the 90-degree corner in order to accommodate traffic through the bend in the dike.

2.3 Summary of QC/QA activities and test results

At the end of the night shift Sunday August 1st, two excavation fronts were underway at around station 31+418 and 31+712 m for the first and second fronts, respectively. For the current reporting period construction work included platform advancement, trench excavation, manual soundings for sedimentation thickness, and backfilling with approved materials. Causeway advancement was also carried out.

Excavation and backfilling works were, in general, completed quickly due to the shallow depth below waterline along the alignment. Manual soundings were carried out, observed and recorded by QA inspectors. Hydraulic hammer (Tramac) was necessary at the following stations; 31+228 to 31+230, 31+247, 31+256 to 31+257, 31+292 to 31+293, 31+318 to 31+320, 31+338 to 31+342, 31+344, 31+348, 31+354, 31+665. All those areas of concern were cleaned to the satisfaction of the QA field supervisor.

Air-track drilling commenced at SD2 along the proposed dam footprint to estimate thickness of overburden and depth to bedrock. Results will be discussed and presented in the following weekly report.

2.4 Summary of problems and their resolutions

- To obtain measurements of the sedimentation thickness a PVC pipe taped together with a measuring tape attached along the PVC pipe was used. A plumb (U-bolt) is attached to the measuring tape. The probe is intended to pass through the sediments to retrieve a reading to bedrock depth from trench water elevation (133.7 m). The plumb is intended to be light enough stop at the top of the sediments and the difference between the bedrock and plumb the sediment thickness. The plumb will only be used along centreline.
- Difficulty in tracking areas that have been cleaned of sedimentation after requested. It was decided to implement a spreadsheet to track these requests and their subsequent completion.
- Difficulty with bathymetric readings so switch to manual soundings with GPS unit and checking with tape by Golder QA inspectors.

3.0 TAILINGS STORAGE FACILITY

Removed.

4.0 EAST DIKE - WEIR MONITORING

Removed.

5.0 SAMPLING AND LABORATORY TESTING

Removed.

6.0 PHOTOGRAPHS



Photograph 1: Advancing face of rockfill platform at STA 31+460 m



Photograph 2: Overview of trench excavation near STA 31+180 m



Photograph 3: Tramac bedrock chipping at STA 31+247 m



Photograph 4: Silt recovered from base of excavation at STA 31+120 m



Photograph 5: Start of silt cleanup at STA 31+092 m



Photograph 6: Showing fine filter placement at about STA 31+055 m



Photograph 7: View of Core Backfill Placement at STA 31+035 m

GB/RM/JKH

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TECHNICAL MEMORANDUM

DATE August 02, 2010 **PROJECT No.** 09-1428-5007
Doc. 1010 Rev 0

TO Gaston Blanchette and Yohan Jalbert
Agnico-Eagle Mines Limited Meadowbank Division

CC Dan Walker, Michel Julien, Annie Beaulieu, Paul Bedell, Grant Bonin, Fiona Esford

FROM Grant Burns **EMAIL** Grant_Burns@golder.com

WEEKLY REPORT FOR PERIOD FROM AUGUST 2 TO AUGUST 8, 2010
MEADOWBANK GOLD PROJECT

This report has been modified to only present details related to the Bay Goose Dike, for the purpose of including the document in the As-Built report. Section 3.0 Tailings Storage Facility, 4.0 East Dike - Weir Monitoring and 5.0 Borrow Source have been removed

Golder QA managers mobilized/demobilized on August 4, 2010. This weekly report summarizes Golder QA activities from August 2 to 8, 2010 related to the construction activities undertaken by FGL for AEM at Bay-Goose Dike.

Progress during this period at Bay-Goose Dike consisted of rockfill platform advancement, trench excavation, core backfill advancement, and densification platform placement.

Photographs showing work progress related to construction of the Bay-Goose during this period are included with this weekly report.

Golder personnel on site during this period are summarized in Table 1.

Table 1: Golder personnel on site

Name	Mobilize	Demobilize
Yves Boulianne	July 21	August 4
Michel Julien	July 23	August 6
Damian Edwards	July 21	August 4
Grant Burns	August 4	August 18
Fernando Ascencio	August 3	August 16
Kelly Hood	August 4	August 18
Mariam Ouangrawa	July 28	August 10
Jean Francois Turpin	August 4	August 31
Ryan Mason	July 28	August 18
Reanna Roberts	July 21	August 3
Ryan Preston	August 4	August 31

1.0 HEALTH AND SAFETY

Daily H&S meetings were held with all Golder personnel. Minutes from these meetings are recorded and stored in Golder's office on site. The key H&S elements for the reporting period are as follows:

- Work procedure, only walk in areas where works are taking place with proper PPE;
- Personnel on dike for duration of shift must wear a PFD. Temporary/Visiting staff must stay 3m away from edge if not wearing a PFD.
- Avoid walking along or standing on the lakeside causeway edges;
- Causeway traffic congestion, staff reminded to yield as haul trucks have the right of way;
- Haul traffic is now on both sides of North Bay Goose Dike, and now accessing dike from south/west abutment where there is only one lane;
- The weather is changing, high winds have been observed. Be careful of flying construction materials, dust, and losing balance from gusts. Wear clothing appropriate to the weather;
- Watch your footing along the dike, keep hands out of pockets and keep bug repellent at hand;
- On the dike, field staff should select their parking spot and observation post carefully, keeping in mind that construction equipment may be mobilized at any time;
- Only the operator is permitted aboard excavators, staff are reminded to stay well away from excavators and buckets while in operation;

Health and safety concerns were also discussed with AEM personnel during the daily construction meetings.

2.0 BAY-GOOSE DIKE

2.1 Description of Activities

As of August 8, 2010, the following construction activities were observed:

- Rockfill platform advancement from approximately 31+580 m to 31+640 m, and 31+640 m to 31+910 m, for the first and second fronts, respectively.
- Trench excavation from approximately 31+418 m to 31+600 m, and from 31+712 to 31+825 m, for the first and second fronts, respectively.
- Crest of core backfill and wing placement to 31+508 m, and from approximately 31+660 m to 31+764 m, for the first and second fronts, respectively.
- Core (19 mm minus) and downstream (150 mm minus) materials for the densification platform advance from approximately 30+915 m to 31+377 m; however, upstream (600 mm minus) material only placed to approximately 31+180 m.

2.2 Summary of main discussion in construction meeting

Construction meetings were held daily during the current reporting period, attended by Yves Boulianne August 2-4, by Michel Julien August 2-6, and by Grant Burns August 5-8. The following items are summarized from available meeting minutes August 2, 3, and 4.

- FGL to provide Golder with slope of as-built core backfill
- Rockfill Platform closed at 31+640 August 3.
- FGL to survey till quantity at mixing pad
- Gaston Blanchette (GB) wants to see the densification platform done in 2 lifts to save core backfill
- After trench excavation about 0.2m of silt was measured with manual probing. Four days later, manual probing at same location showed 1.0m of silt. Even after packages are approved, FGL is instructed to show Golder staff spot checks for silt deposition with excavator and clean at direction of Golder staff.
- Core backfill advancement. Operators are instructed not to advance material types in a random pattern, follow approved method.
- Need more core backfill slope measurements, FGL provided one at 31+175 showing 2.3:1 upstream and 1.5:1 downstream.
- Excavator and cleaning bucket to rework the edge of 140m bench at SD2 before installing liner.
- New Boreholes at 31+560, 31+570, and 31+580 on CL of Bay-Goose Dike are requested, AEM may have drills available this week but if not, they can be done over core backfill.
- Compaction is required along Channel 3. When less than 12m depth (124 m el.), vibro-densification is required, but FGL requests to use dynamic overcompaction. Golder and AEM agree, however, Geopac must also agree on this method of compaction. If more than 12 m depth (124 m el.) AEM suggests a 1m densification platform, and have a loader available to fill up the hole before the weight of dynamic compactor hits the water.
- Soft materials continue to be cleaned in front of core backfilling.

2.3 Summary of QC/QA activities and test results

At the end of the night shift Sunday August 8, the excavation fronts were around station 31+600 and 31+825 m for the first and second fronts, respectively. Thus, by end of night shift on Sunday the first front was within Channel 3 and second front within Channel 2. The bedrock to competent soils transition was observed at about station 31+575 and 31+825 m for the first and second fronts, respectively. Competent soils were observed about 0.5 m beyond the initial estimated excavation target depth within both Channel 2 and 3 by the end of Sunday nights shift. Approval packages were requested in shorter segments so that appropriate cleaning of the accumulating silty sediments in front of the advancing backfilling fronts could be done prior to core backfilling. The use of the hydraulic hammer (Tramac) was necessary at the following stations; 31+348, 354, 356, 387, 400 to 402, 558, 567, 571, and 665 to 671 m. All those areas of concern were cleaned to the satisfaction of the QA field supervisor. Hydraulic hammer unable to reach following stations: 31+813 and 31+818 m, due to the excavator arm not reaching the base of the trench.

On Wednesday August 10, 2010, the 1st front encountered core backfill from the beginning of the 2nd front at about station 31+660 m. Over excavation from station 31+660 m to about 31+665 m was carried out to ensure continuity of core backfill between the two construction fronts.

Although the turbidity barriers were in place strong winds between August 3rd and 5th caused some damage to localized portions of the barrier allowing suspended sediments (TSS) to enter the main lake. As such, turbidity of water inside and outside the barrier was not very contrasted. Furthermore, the strong winds also transported fines created from construction along the dike platform alignment to the adjacent water body both upstream and downstream of the alignment further contributing to the increased TSS present in the lake.

Air-track drilling was carried out at SD2 along the proposed dam footprint to estimate thickness of overburden and depth to bedrock. Samples were collected of the overburden, and moisture contents indicated ice-rich materials. Depth to bedrock averaged about 1.7 m with localized depths to 3 m, below existing ground elevation at the time of drilling.

Both PAG and NPAG were collected at the SANA crusher from stockpiles 1, 2, 3, and 4 for analysis, and all were within the anticipated criteria envelope. Five samples of in-situ 19 mm minus core backfill were collected for analysis, all of which were within the criteria envelope. Two samples of native borrow were also collected; one within the acceptable criteria envelope and one with the curve lying the above the acceptable criteria envelope. The unacceptable sample was retested to confirm the results. Two samples of competent soils within Channel 3 were collected at stations 31+588 and 31+590 m.

2.4 Summary of problems and their resolutions

The excavated surface between about station 31+720 to 31+875 m was observed to be approximately 3 to 4 m above the anticipated target elevation. At station 31+740 m extensive ‘probing’ with the 1250 Komatsu excavator bucket was carried below water line to inspected for the occurrence of boulders that were indicated at a similar elevation on the borehole log at this station. After visual and audio observations and review of the field notes both at station 31+740 m and between stations 31+720 and 31+875 m it was determined that trench base, and overall bedrock surface of the region, is likely undulating bedrock surface and reason for the difference between estimated and actual target depth.

No other changes to-date that resulted in changes of the design.

3.0 TAILINGS STORAGE FACILITY

Removed.

4.0 EAST DIKE - WEIR MONITORING

Removed.

5.0 BORROW SOURCE

N/A

6.0 SAMPLING AND LABORATORY TESTING

Summary of the weekly Laboratory activities from July 29 to August 8, 2010:

Bay-Goose Dike : Sieve and moisture content results

- **PAG and NPAG at SANA crusher**
  SA 200: PAG Stockpile 4
  SA 2001: NPAG Stockpile 2
  SA 2002: NPAG Stockpile 1
  SA 2003: PAG Stockpile 3

- **CORE BACKFILL**
  SA 204: under water (in situ)
  SA 206: under water (in situ)
  SA 249: under water STN 31 +169
  SA 251: under water STN 31 +685
  SA 252: under water STN 31 +333

- **NATIVE BORROW: TILL**
  SA 205:
  SA 209:

- **COMPETENT SOILS (till-like) ALONG ALIGNMENT**
  SA 250: STN 31 +169
  SA 254: STN 31 +588
  SA 255: STN 31 +590

Bay-Goose Dike : Hydrometer

- **SEDIMENTATION IN THE TRENCH UNDER WATER**
  SA 207: Silty soil, sedimentation in the trench STN 31+115

Saddle Dam 2: Drilling sampling

Removed

7.0 PHOTOGRAPHS



Photograph 1: Trench excavation at 7m depth at 31+350.



Photograph 2: Tramac chipping attachment at 31+750 unable to reach.



Photograph 3: Manual rod survey instead of bathymetry.



Photograph 4: Cleaning sediment deposition from base of excavation.



Photograph 5: Coarse filter removed for wet sample at 31+372 shows sedimentation at trench bottom while trench was open.



Photograph 6: Placement of core backfill material as filter at toe of downstream slope in excavation at 31+720.



Photograph 7: Placement of core backfill at 31+390. Note dry bucket.



Photograph 8: Densification Platform Placement at 31+230.

GB/RM

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TECHNICAL MEMORANDUM

DATE August 20, 2010 **PROJECT No.** 09-1428-5007
Doc. 1010 Rev 0

TO Gaston Blanchette and Yohan Jalbert
Agnico-Eagle Mines Limited Meadowbank Division

CC Dan Walker, Michel Julien, Annie Beaulieu, Paul Bedell, Grant Bonin, Fiona Esford

FROM Grant Burns **EMAIL** Grant_Burns@golder.com

WEEKLY REPORT FOR PERIOD FROM AUGUST 9 TO AUGUST 15, 2010
MEADOWBANK GOLD PROJECT, NUNAVUT

This report has been modified to only present details related to the Bay Goose Dike, for the purpose of including the document in the As-Built report. Section 3.0 Tailings Storage Facility and 4.0 East Dike - Weir Monitoring have been removed

This weekly report summarizes Golder QA activities from August 9 to 15, 2010 related to the construction activities undertaken by FGL for AEM at Bay-Goose Dike.

Progress during this period at Bay-Goose Dike consisted of rockfill platform advancement, trench excavation, core backfill advancement, and densification platform placement and commencement of densification by GeoPac.

Photographs showing work progress related to construction of the Bay-Goose during this period are included with this weekly report.

Golder personnel on site during this period are summarized in Table 1.

Table 1: Golder personnel on site

Name	Mobilize	Demobilize
Grant Burns	August 4	August 18
Fernando Ascencio	August 3	August 16
Kelly Hood	August 4	August 16
Mariam Ouangrawa	July 28	August 10
Jean Francois Turpin	August 4	August 31
Ryan Mason	July 28	August 18
Dieudonne Barahebura	August 11	August 25
Ryan Preston	August 4	August 31

1.0 HEALTH AND SAFETY

Daily H&S meetings were held with all Golder personnel. Minutes from these meetings are recorded and stored in Golder's office on site. The key H&S elements for the reporting period are as follows:

- Weather is continuing to get colder so dress appropriately;
- No berm on pit side while placing rockfill along causeway from about 31+930 to FGL Island;
- Periodically clean truck headlights when they become covered in mud;
- Strong winds are blowing dust around throughout the site, need to close eyes to keep dust out (use of bandana over mouth useful);
- Windshield washer fluid required, but none onsite from AEM. Able to get some from FGL;
- Emergency shelter in poor weather – use truck. Truck should always have a minimum of ½ tank of fuel;
- Remember 3 points of contact when getting into trucks;
- Truck is difficult to see at night, leave lights on when parked in a potentially active area to ensure it is visible to other operators;
- Parking locations on the dike change regularly so be aware of changing conditions;
- South Camp Dike road is very bumpy and conditions change daily, drive slowly;
- Remember to make eye contact with other drivers/operators always, driving or walking or standing;
- Remember to stay away from, and do not walk or drive beneath, the excavator bucket;
- Difficult visibility during sunrise/ sunset while driving or working on dike, be aware;
- Staff are reminded that only the operator is permitted aboard the excavators, including the Komatsu 1250;
- For samples from trench, have the operator dump them from the bucket to inspect from a safe distance;
- Blind hill at South Camp Dike brought to AEM's attention;
- FGL haul trucks have been overfilled and are spilling rocks from the sides on to roads causing dangerous driving conditions, they must be loaded properly;
- Stop signs around the mine have been run over or blown over from strong winds, if noticed, please report to AEM for repair; and
- Traffic pattern will change near Goose Island and 2009-2010 tie-in - traffic must cross the densification platform in this area.

Health and safety concerns were also discussed with AEM personnel during the daily construction meetings.

2.0 BAY-GOOSE DIKE

2.1 Description of Activities

As of August 15, 2010, the following construction activities were observed:

- Rockfill platform advancement from approximately 31+910 to 31+930 m.
- Trench excavation from approximately 31+600 m to 31+666 m, and from 31+825 to 31+866 m, for the first and second fronts, respectively. Work on the first front was completed.
- Crest of core backfill and wing placement from approximately 31+508 to 31+666 m, and from approximately 31+660 m to 31+820 m, for the first and second fronts, respectively. Work on the first front was completed.
- Core backfill (19 mm minus) and downstream (150 mm minus) materials for the densification platform advance from approximately 30+377 m to 31+780 m; however, upstream (600 mm minus) material only placed to approximately 31+775 m.

2.2 Summary of main discussion in construction meeting

Construction meetings were held daily during the current reporting period, attended by Grant Burns and Ryan Mason. The following items are summarized from available meeting minutes:

- Mine inspector anticipated to arrive week of August 16th, Golder staff should have the appropriate training (*i.e*. QA Manager needs Level 1 supervisor certificate).

SD1:

- No equipment working now, to resume around August 17th.

SD2:

- Stripping to bedrock is anticipated upstream side of liner as ice-rich overburden material thickness extends to bedrock;
- Equipment, when available, will be prioritized to work on SD2;
- Low point needs to be flattened out for the liner to work (presently dish shaped); and
- AEM will provide Golder with as built coordinates of recent (Aug 1st to 4th) SD2 air-track drilling.

SWD:

- Blasting resulted in a small hole that is to be repaired.

Bay-Goose Dike:

- Golder to provide AEM draft version of lab work to-date;
- FGL to provide AEM a complete longitudinal profile of the centerline;
- While working at depth within Channels 1, 2, & 3, it may be necessary to dig a platform below water level, at the excavation front, for the excavator to work from a lower point and excavated to competent material. Either modified 345 or Komatsu 1250 can work in this manner;
- Komatsu 1250 shovel hydraulic cylinder has blown several times and FGL will try to repair with spare equipment from the 345. Downtime was intermittent (twice) during the current reporting period for about 6-12 hours;

- The D9 dozer and NPAG rockfill are not available to advance the platform, but FGL says they are not yet being delayed by this due to the slow advancing excavation front through Channel 2;
- First work front will be completed, to point where second work front began (around STA. 31+600 m) on Aug 10/11th. Some 19 mm minus core backfill will be sacrificed to ensure a continuous core, but this volume should be minimized. About 5 m of the core backfill was sacrificed;
- AEM pointed out that it is too much reworking to do a second pass to increase trench bottom width after excavation has advanced. Trench width must be established and not revisited after excavation. See dike review board meeting presentation and construction meeting notes with Golder (*i.e.* 7 vs. 9 m d/s trench width);
- FGL is requested to gather more survey data points (soundings) around the deep area (channels), which will provide a more accurate profile of the trench bottom (and for as-built). Specifically, an additional line of survey points to be collected between centreline and the downstream 5 m off-set or two survey lines between centreline and 7 m off-set;
- Core backfill closed from 2 fronts in work front 1, only one trench remains (work front 2). Additional cleaning to remove any silt accumulation was done in this area and verification measurements taken to determine if silt was present.
- Centreline has been adjusted 0.5 m upstream due to hard rock points along the centreline between STA. 31+812 to 31+820 m. Will blend back to the original centerline over about 10 m where appropriate (i.e. 31+825 to 31+835). Centreline back to design location at Sta. 31+845;
- At about STA. 31+600 m AEM observed the core backfill 30 m ahead of the wing walls. FGL has been advised that this is not to be repeated due to the expense of producing 19 mm minus;
- A liner will be placed along the existing rockfill causeway, on the pit side, between about STA. 31+950 to 32+100 m that will be covered with 19 mm minus prior to further advancement of the remaining rockfill platform to help reduce TSS migration into the upstream lake environment;
- The pump within the excavation trench must remain operating during backfilling, and at least a few hours following cessation of backfilling.

2009/2010 (Tie-in)

- Tundra has been stripped down to frozen soil to prepare base of pit side of platform around 30+900.
- Stripped tundra has been filled with rockfill (muck)
- 2009/2010 tie in work will begin on August 12. Current drawings will be followed.
- FGL Operators will be instructed to work down chainage excavating roughly 2 buckets wide 3-4m down chainage from the toe of the cement poor 2009 CSB bulkhead. It was reminded that the excavation should not extend too far into the bulkhead as the SB behind the CSB could still be liquid enough to flow if unconfined;
- The slope of this excavation front should be 1:1 or steeper dictated by stability. The trench should be isolated from the up chainage excavation to ensure water does not flow in (this portion is frozen);

- Hydraulic hammer (Tramac) will chip frozen 19 mm minus core backfill material, which will be excavated and replaced by similar dry material; and
- AEM wants to confirm that the presently frozen 19 mm minus from 2009 construction was placed on an approved foundation to minimize the unnecessary removal and replacement of 19 mm minus.

Densification

- Densification platform height will be about 1 m from about STA. 31+550 to 31+650 m to enable over compaction through Channel 3. GeoPac will start at around STA. 31+650 m and begin compacting; and
- GeoPac is anticipated to begin work on August 15th. All unrelated staff are reminded to stay back a minimum of 150 m distance from dynamic compaction while in progress (*i.e.* day shift).

Slurry Trench

- AEM to provide Inquip with grain size curves for slurry trench;
- Golder took samples of till-like soils prior to being mixed with bentonite; however AEM has already mixed all the prepared till-like soils with bentonite to be used for the slurry trench. AEM to provide Golder with testing they have previously carried out on the till-like material prior to bentonite mixing; and
- Inquip will begin with CSB tremie placement at around 31+650 working down chainage through Channel 3, followed by SB.

2.3 Summary of QC/QA activities and test results

At the end of the night shift Sunday August 15th, there was only a single excavation front at about STA. 31+857m (*i.e.* the second front). Thus, by end of night shift on Sunday the second front was within Channel 2 on competent soils. The average depth of excavation continued to be about 0.5 m beyond the initial estimated target depth. Approval packages were requested in shorter segments to reduce the accumulating silty sediments in front of the advancing backfilling front which can not be cleaned due the depth and geometry of the excavation front and 1250 Komatsu excavator long arm. The use of the hydraulic hammer (Tramac) was not necessary from about STA. 31+828 m to current excavation front stationing as competent soils overlie the bedrock. Although hydraulic hammer requested at 31+825 m (transition from bedrock to competent soil) the hammer was unable to reach the base of the trench (about 13 m below waterline).

On Wednesday August 10, 2010, the 1st front encountered core backfill from the beginning of the 2nd front at about station 31+660 m. Over excavation from Station 31+660 to about 31+665 m was carried out to ensure continuity of core backfill between the two construction fronts.

Six samples of in-situ 19 mm minus core backfill were collected for analysis, all of which were within the criteria envelope. Two samples of coarse filter (150 mm minus) were also collected; one within the acceptable criteria envelope and one with the curve lying slightly above the acceptable criteria envelope. Two samples of competent soils were collected at Station 31+600 within Channel 2.

2.4 Summary of problems and their resolutions

Upon receipt of an approval package for Station 31+805 to 31+820 m, which is the approximate beginning of the east side of Channel 2, it was observed that only a single point (sounding) was taken along centreline at 31+820 m (*i.e.* no points taken upstream or downstream) to create the cross-section. Furthermore, for the same approval package between centreline and 5 m downstream additional survey points are required to aid in the interpretation of the shape of the trench bottom. It was decided with FGL that additional survey points are to be collected between centreline and 5 m downstream to aid in the interpretation, and will continue through the deep sections (*i.e.* Channels 1, 2, and 3).

After the request additional survey points were taken, a revised package was provided for 31+805 to 31+820 m; however, these additional points were not collected as discussed above. From the provided cross-sections in the revised package and review of the QA inspectors field notes a drop/sharp point was present <0.5m downstream of centreline between about Station 31+815 to 31+820 m. To facilitate night shift work, a shift of the centreline by 0.5 m upstream was requested with 'blending' to begin at about Station 31+812 m and the full extend of 0.5 m upstream of centreline adjustment to be reached by Station 31+815 m. Blending back onto the original alignment will be decided when appropriate, but will avoid sharp transition.

Additional filter placement was required between Stations 31+575 to 31+610 m on the downstream side of the trench prior to advancement of main core backfill.

No other changes to-date that resulted in changes of the design.

3.0 TAILINGS STORAGE FACILITY

Removed.

4.0 EAST DIKE - WEIR MONITORING

Removed

5.0 SAMPLING AND LABORATORY TESTING

Summary of the weekly laboratory activities from August 9th to August 15th, 2010:

BAY-GOOSE DIKE: Sieve and moisture content results

- **CORE BACKFILL**

  SA 253: underwater STN 31+341 m
  SA 258: underwater STN 31+411 m
  SA 261: underwater STN 31+600 m
  SA 262: underwater STN 31+446 m
  SA 258: underwater STN 31+764 m
  SA 265: underwater STN 31+520 m

- **COARSE FILTER**

  SA 256: underwater STN 31+360 m

SA 268: underwater STN 31+804 m

- **COMPETENT SOILS (till-like) ALONG ALIGNMENT**

  SA 259 & 266: STN 31+600 m

TSF:

- No testing carried out during the current reporting period.

6.0 PHOTOGRAPHS



Photograph 1: Second front taken on August 9, 2010.



Photograph 2: Excavation at 31+835 taken on August 9, 2010.



Photograph 3: Alignment for placement densification platform at 31+450 on August 9, 2010.



Photograph 4: Surveying trench depths at 31+818 on August 10, 2010.



Photograph 5: Looking north at toe of tie-in between cutoff wall constructed in 2009 and preparation for 2010 cutoff wall construction at 30+845 on August 12, 2010.



Photograph 6: Dynamic compaction at 31+650 looking west on August 15, 2010.



Photograph 7: Trench excavation at 31+855 taken on August 15, 2010.



Photograph 8: Removal of oversized pieces on u/s side of densification platform on August 15, 2010. To be replaced with coarse filter material.

GB/RM/LW/FE

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TECHNICAL MEMORANDUM

DATE September 9, 2010 **PROJECT No.** 09-1428-5007
Doc. 1010 Rev 0

TO Gaston Blanchette, Yohan Jalbert, Eric Lamontange
Agnico-Eagle Mines Limited Meadowbank Division

CC Dan Walker, Michel Julien, Annie Beaulieu, Paul Bedell, Grant Burns and Yves Boulianne

FROM Fiona Esford, Dan Walker **EMAIL** Fiona_Esford@golder.com

BI-WEEKLY REPORT FOR PERIOD FROM AUGUST 16 TO AUGUST 29, 2010
MEADOWBANK GOLD PROJECT, NUNAVUT

This report has been modified to only present details related to the Bay Goose Dike, for the purpose of including the document in the As-Built report. Section 3.0 Tailings Storage Facility and 4.0 East Dike - Weir Monitoring have been removed

This bi-weekly report summarizes Golder QA activities from August 16th to 29th, 2010 related to the construction activities at Bay-Goose Dike.

Progress during this period at Bay-Goose Dike consisted of rockfill platform advancement, initial trench excavation, subsequent backfilling of the trench with granular materials, placement of the densification platform, dynamic compaction, and commencement of cut-off trench construction.

Photographs showing work progress related to construction of the Bay-Goose during this period are included with this bi-weekly report.

Golder personnel on site during this period are summarized in Table 1.

Table 1: Golder personnel on site

Name	Mobilize	Demobilize
Grant Burns	August 4	August 18
Ryan Mason	July 28	August 18
Paul Bedell	August 16	August 18
Fiona Esford	August 17	August 29
Lynn Wilson	August 17	August 30
Damian Edwards	August 20	September 6
Reanna Roberts	August 20	August 31
Mariam Ouangrawa	August 23	September 1
Jean Francois Turpin	August 4	August 23
Dieudonne Barahebura	August 11	August 25
Ryan Preston	August 4	August 31

Name	Mobilize	Demobilize
Gabriel Pilon	August 24	September 6

1.0 HEALTH AND SAFETY

Daily H&S meetings were held with all Golder personnel. Minutes from these meetings are recorded and stored in Golder's office on site. The key H&S elements for the reporting period are as follows:

- JHA for the cut-off trench was completed on August 23, 2010 by Golder personnel;
- JHA for the cut-off trench, in coordination with Inquip and FGL, was completed on August 28, 2010;
- Incident involving a fox bite followed by removal of employee off-site for treatment;
- AEM has adoped new regulations as to who is permitted to drive through the pit. Golder staff should not be driving through the pit;
- Site roads change frequently therefore drive with caution;
- Code 1 - excavator accident;
- Work around heavy equipment;
- Weather is continuing to get colder so dress appropriately;
- Periodically clean truck headlights when they become covered in mud and dust;
- Be aware of reduced visibility as a result of strong winds and vehicle movement that generate a significant amount of dust;
- Stability of sidewalls of cutoff trench in Channel 3 where trench partially collapsed – stay back;
- Parking locations near cutoff trench;
- Ensure windshield fluid is regularly checked and refilled in all vehicles;
- Truck is difficult to see at night, leave lights on when parked in a potentially active areas to ensure it is visible to other operators;
- South Camp Dike road is very bumpy and conditions change daily, drive slowly;
- Remember to make eye contact with other drivers/operators when driving or walking or standing; and
- Stop signs around the mine have been run over or blown over from strong winds; if noticed, please report to AEM for repair.

Health and safety concerns were also discussed with AEM personnel during the daily construction meetings.

2.0 BAY-GOOSE DIKE

2.1 Description of Activities

As of August 29, 2010, the following construction activities were observed:

- Rockfill platform advancement from approximately 31+930 to completion at the south abutment;
- Initial trench excavation and approval from approximately 31+866 to 32+000, with excavation to approximately 32+018 unapproved pending the removal of the 385 excavator from the trench and re-initiation of excavation work;
- Backfilling of initial trench with core backfill and wings with coarse filter and fine rockfill from 31+820 to approximately 31+982;
- Construction of the densification platform to approximately 31+820. In Channel 3, the densification platform was constructed in two lifts. Initially about 1 m of the platform was placed. Dynamic compaction was performed, followed by placement of the upper meter of the platform. Initially, too coarse of material was placed along the upstream side of the platform. This material was removed and replaced with the appropriate coarse filter material. Continued placement of the densification platform will occur in Channel 1 and Channel 2, following completion of vibro-densification;
- Widening of the core backfill portion of the densification in areas planned for vibro-densification, by excavation of coarse filter and fine rockfill from the sides and replacement with core backfill to provide a zone of core backfill a minimum of 7 m wide;
- Dynamic compaction began at the south end of Channel 3 and proceeded northward to the tie-in with the 2009 portion of the dike. Problems were reported with the densification between Sta. 31+020 and 31+080. A test pit was excavated and samples taken to assess the grain size distribution of the core backfill material in this area. Test results showed all three samples met the design specification for core backfill material; and
- Cutoff trench excavation began at 31+628 to 31+604. Slumping in of the trench was observed and further excavation in this area was halted. Densification in this area appears to have been inadequate and additional densification (vibro-densification) will be performed. Planning related to the removal of the bentonite-slurry, backfilling of the trench and vibro-densification is underway. A CSB plug was constructed approximately between 31+572 and 31+548 (at dike crest). Then cutoff wall construction resumed at 31+560 and progressed northward to 31+154. This portion of the cutoff wall is being constructed with soil-bentonite.

2.2 Summary of Construction Meeting Discussions

Construction meetings were held daily during the current reporting period, attended by Fiona Esford. The following items are summarized from available meeting minutes:

- Mine inspector anticipated to arrive week of August 22nd.

Bay-Goose Dike:

- Golder to provide AEM draft version of lab work to-date, and in particular core backfill test results and till samples from base of excavation - provided;
- FGL to provide AEM a complete longitudinal profile of the centerline – provided;
- FGL provided an excel table with the depth of excavation every 2.5 m along centreline;
- Air track drilling of three additional boreholes to try and better delineate the bedrock profile between 31+540 and 31+580 were to be drilled, however due to schedule constraints for the drill rig and the initiation of cutoff wall trench excavation, AEM elected not to drill these holes;
- Geopac require a zone of core backfill a minimum of 7 m wide in areas where vibro-densification is to be performed;
- Komatsu 1250 shovel hydraulic cylinder broke and will take several days to a week to get a replacement. Repairs have been completed;
- Throughout Channel 2, FGL are unable to remove any silt that may accumulate at the base of the excavation prior to backfilling as the base is beyond the reach of any of their equipment. Therefore measurements of silt accumulation are required prior to backfilling;
- Due to the breakdown of the Komatsu 1250, the base of the initial trench founded on bedrock between Channel 2 and Channel 1 is also beyond the reach of available equipment, and therefore no silt accumulation can be removed. Measurements of any silt that does accumulate are to be taken. The distance between the excavation front and backfilling front are to be minimized to reduce silt accumulation as much as possible;
- The accident that resulted in the CAT 385 long reach excavator being submerged within the excavation at approximately 32+018 resulted in a stoppage of work. An investigation was conducted with involvement by the Nunavut mine's inspector. Employees of AEM, FGL, and Golder were interviewed. Detailed assessment of the condition and position of the excavator was undertaken as part of the planning and preparation for its removal. This work is ongoing.

Densification

- Material not meeting specifications was placed on upstream side of the densification platform (too coarse). This material was removed and replaced by coarse filter;
- Geopac work plan was requested – planned densification pattern for both dynamic and vibro were submitted;
- Geopac daily reports of densification work were requested – still outstanding;
- Geopac reported problems with their ability to compact the area between 31+020 and 31+080. Golder was requested to provide particle size distribution results for samples obtained prior to densification. This was provided. Additionally a test pit was dug along centreline at 31+050 with representatives of FGL, AEM, and Golder present. Samples of core backfill material were obtained from depths of 1 m, 2 m, and 3m below the densification platform (approximately elevation 136 m). Analysis was performed by Golder and all test results were within the design specification for the material. Results were provided to AEM and Golder.

Slurry Trench

- Work plan requested from Inquip and was received on August 22, 2010;
- Excavation of the slurry trench commenced on August 23, 2010 during day shift at about 31+628;
- AEM is to provide Golder with particle size analyses from the till / till-like soil, prior to being mixed with bentonite for use in cutoff wall construction – still outstanding;
- Initial cutoff wall construction plan was modified such that no tremie would be used to place CSB in Channel 3. Instead, the trench excavation was to begin at about 31+628 (small island outcrop) progressing northward, with backfilling of the trench with CSB to begin once the lowest point in Channel 3 had been reached and the bedrock surface elevation began to rise (estimated to be 31+585), and would continue until the bedrock elevation was above elevation 128 m (approximately 31+570) at which point SB backfill material would be placed;
- Cutoff trench through Channel 3 would be extended as far as possible, with the goal being to extend it to bedrock, thereby eliminating the need to jet grout this portion;
- During night shift of August 23, 2010 it was observed by the operator that the core backfill material at depth felt “looser” than anticipated. Further it was noted that that the lower portion of the cutoff trench began collapsing between 31+610 and 31+604. Work was halted;
- It is anticipated that densification in Channel 3 partial cutoff zone was insufficient. Several theories were discussed including the fact that soil left below the base of the excavation may have resulted in dissipation of more energy as it is not as firm as bedrock, resulting in a lower level of compaction of the core backfill at depth. Golder was requested to provide particle size distribution results for both core backfill and samples of the soil left at the base of the excavation to AEM/FGL. Results of the core backfill samples obtained from this zone were provided and were within specification. It was determined that all areas where soil has been left below the base of the initial trench (partial cutoff sections) will be densified using a combination of vibro-densification followed by dynamic compaction;
- Discussions between FGL and their subcontractors (Geopac and Inquip) were being conducted and plans are underway as to how to proceed with backfilling and then using vibro-densification in the area of the collapsed trench. Discussions included if widening the trench should be conducted, what impact the bentonite slurry would have on the ability to densify the backfilled material;
- A CSB plug was planned to be installed between 31+572 and 31+548 (at dike crest) to allow cutoff trench excavation to resume and progress northward and then allow the southern part of the cutoff trench to be connected. The CSB plug would be constructed using the 6% mix design. This was conducted and cutoff trench work progressed northward after allowing the plug to set for about 36 hours;
- Health and safety related to all cutoff trench activities were discussed and reviewed in particular those related to the handling of bentonite; and
- Appropriate material handling, measuring, and general usage was emphasised by AEM to FGL.

2.3 Summary of QC/QA Activities and Test Results

Golder staff observed excavation of the initial trench and approved the foundation as either competent till material for the partial cutoff areas (Channel 2), or as bedrock. Confirmation measurements of the depth of excavation and silt accumulation were collected. Backfill operations were observed.

Samples of backfill material were collected and analyzed. Periodic samples of till material from the base of the initial trench excavation in Channel 2 were collected and analyzed. A total of 11 till, 14 core backfill, 4 coarse filter, and 1 till plus bentonite samples were collected and analyzed.

Golder staff observed excavation of the cutoff trench, recorded depth of excavation data, observed materials excavated through and bedrock encountered. Testing of the slurry, CSB backfill and SB backfill were observed.

2.4 Summary of Problems and Their Resolutions

The following problems or potential problems developed over this period and the status or resolution of each are summarized below:

1. Densification platform material problems - too coarse of rockfill placed along the upstream side of the core backfill. This material was removed and replaced with coarse filter prior to dynamic compaction.
2. Initial trench base excavation depth – uncertainty. An error in the survey rod length used to survey the trench excavation depth was found (0.85 m correction required). Specific interval where correction is required is not known, but estimated to be approximately between 31+810 and 31+864. Notes are being reviewed, but observation of depths during cutoff trench excavation to help determine corrections will be required.
3. Silt accumulation at the base of the initial trench – at depths where cleaning was not possible. Approval packages were produced in short intervals to facilitate minimizing the separation between excavation and backfill fronts. In Channel 2, a partial cutoff area, records of the depth of silt accumulation have been collected. This data will be used in combination with other data collected during cutoff wall construction to determine the starting elevation for jet grouting. In the area between Channel 2 and Channel 1 (where the initial trench excavation was founded on bedrock) – silt accumulation data is being compiled for future discussions. No determination on whether remediation is required has been made, nor if it is required, what is to be done.
4. Inability to construct cutoff wall through Channel 3 (about 31+580 to 31+610) – assumed inadequate densification. All partial cutoff areas, where the base of the initial excavation is not extended to bedrock, densification is to be conducted using a combination of vibro-densification followed by dynamic compaction.
5. Collapsed cutoff trench in Channel 3 – discussions and planning are ongoing.
6. Initiation point for cutoff wall construction (following collapse). A CSB plug has been constructed to allow cutoff wall construction to begin and to provide a stable point to connect the cutoff walls.
7. Difficulty densifying core backfill between 31+020 to 31+080 – samples of core backfill collected from the zone show the material meets the specification for particle size distribution. Pending resolution.

8. Submerged excavator – investigation ongoing and planning and preparation for its removal are also ongoing.
9. Excavation of initial trench through Channel 1 – pending removal of excavator and reassessment by FGL of their construction methodology and schedule.

3.0 TAILINGS STORAGE FACILITY (TSF)

Removed.

4.0 EAST DIKE - WEIR MONITORING

Removed.

5.0 SAMPLING AND LABORATORY TESTING

Summary of the weekly laboratory activities from August 16th to August 29th, 2010:

BAY-GOOSE DIKE:

Sieve and moisture content results for core backfill material:

LAB ID	Date Sampled	Date Analyzed	LOCATION
SA 270	August 10	August 16	under water : 31+793
SA 273	August 16	August 21	under water 2-3 m: 31+825
SA 280	August 20	August 22	under water 15 m deep: 31+866
SA 283	August 21	August 23	under water 1.5 m deep: 31+867
SA 285	August 22	August 24	under water 1.0 m deep: 31+887
SA 286	August 22	August 24	under water 4.0 m deep: 31+898
SA 288	August 23	August 25	under water 4.0 m deep: 31+920
SA 290	August 24	August 25	under water : 31+940
SA 292	August 24	August 26	Stockpile: 31+940
SA 293	August 24	August 27	Densification platform 31+795
SA 294	August 25	August 27	under water: 4.0 m deep 31+975
SA 298	August 28	August 29	1.0 m below el. 136m; Ch. 31+050
SA 299	August 28	August 29	2.0 m below el. 136m; Ch. 31+050
SA 300	August 28	August 29	3.0 m below el. 136m; Ch. 31+050

Sieve results for coarse filter material:

LAB ID	Date Sampled	Date Analyzed	LOCATION
SA 276	August 17	August 18	31+835
SA 287	August 22	August 25	under water 3 m depth: 31+897
SA 291	August 24	August 27	under water : 31+935
SA 295	August 25	August 28	Dry densification platform: 31+795

Sieve (select hydrometer) and moisture content results for material collected from near the base of the initial trench excavation:

LAB ID	Date Sampled	Date Analyzed	LOCATION
SA 263	August 7	August 19	Ch. 31+600 to 31+603, near base
SA 267	August 12	August 12	Ch. 31+831 to 31+833
SA 269	August 12	August 21	Ch. 31+839
SA 271	August 15	August 21	Ch. 31+855
SA 272	August 16	August 19	Ch. 31+863
SA 274	August 17	August 20	Ch. 31+873
SA 275	August 12	August 24	Ch. 30+860
SA 277	August 18	August 24	Ch. 31+883
SA 278	August 19	August 25	Ch. 31+893
SA 281	August 20	August 26	Ch. 31+907
SA 284	August 9	August 21	Ch. 31+825

A single sample of till mixed with bentonite for use in cutoff wall construction (CSB or SB backfill), was taken and a sieve and hydrometer analysis was performed.

LAB ID	Date Sampled	Date Analyzed	LOCATION
SA 289	August 24	August 26	Stockpile of till + bentonite mix for CSB at Ch. 31+610

TSF:

Removed.

6.0 PHOTOGRAPHS – BAY GOOSE DIKE



Photograph 1: August 18th, 2010. Stn 31+580 looking south towards 31+600 at craters along centreline created as a result of dynamic compaction.



Photograph 2: August 19th, 2010. Stn 31+855. Placement of coarse filter and core backfill material.



Photograph 3: August 21st, 2010. Fine rockfill backfill material being placed on upstream side of the core backfill.



Photograph 4: August 21st 2010. Boulder excavated from upstream side of the centreline.



Photograph 5: August 23rd, 2010. Surveying using sounding rod and dip tape to measure sediment thickness deposited in base of excavation, near Sta. 31+985 looking south. Backfilling of trench with core backfill and coarse filter on downstream side.



Photograph 6: August 23rd, 2010. Dike progress, rockfill platform placement nearing south abutment, initial trench excavation near Sta. 32+000, and dynamic compaction ongoing.



Photograph 7: August 23rd, 2010. Rockfill platform placement nearing south abutment. Initial trench excavation Sta. 31+990.



Photograph 8: August 23rd, 2010. Looking from south abutment northward at turbidity barriers in Third Portage Lake.



Photograph 9: August 23rd, 2010. Taken at Sta. 31+820 looking at excavation to increase width of core backfill for vibro-densification between Sta. 31+805 and 31+860.



Photograph 10: August 24th 2010. Looking south from 31+955. Excavation of trench at Stn. 32+000.



Photograph 11: August 25th, 2010. Trench excavation at Stn 32+007 looking south.



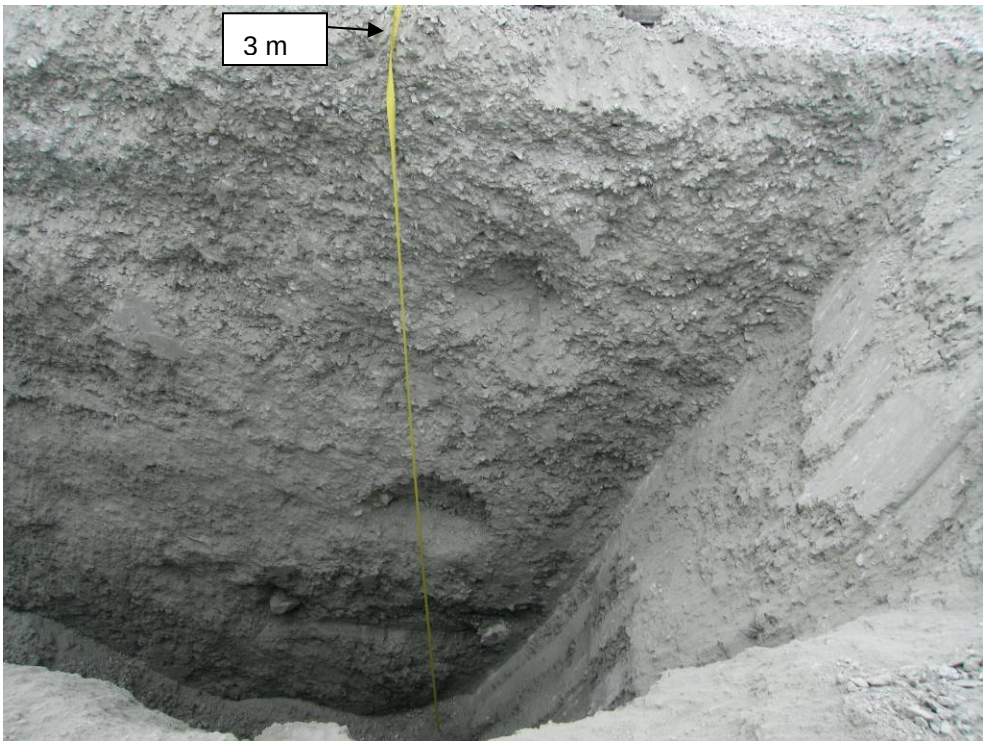
Photograph 12: August 23rd 2010. Slurry trench prior to slurry infill near 31+628.



Photograph 13: August 23rd, 2010. Infilling of slurry trench, beginning at 31+628.



Photograph 14: August 23rd, 2010. Excavation of cutoff trench filled with slurry. Note survey markers in place and till stockpiled in preparation for SB/CSB mixing of backfill material.



Photograph 15: August 28th, 2010. Following dynamic compaction, a test pit was excavated at Stn. 31+050 to 3 m below dike crest (136 m) to obtain samples of the core backfill material to compare to the specification, in zone reported to have problems being densified (31+020 to 31+080).

7.0 PHOTOGRAPHS – TAILINGS STORAGE FACILITY

Removed.

8.0 PHOTOGRAPHS – EAST DIKE

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LW/FE/DRW

LABORATORY TEST RESULTS

CORE BACKFILL
COARSE FILTER
TILL (BASE OF EXCAVATION)
TILL + BENTONITE (FOR CSB/SB)

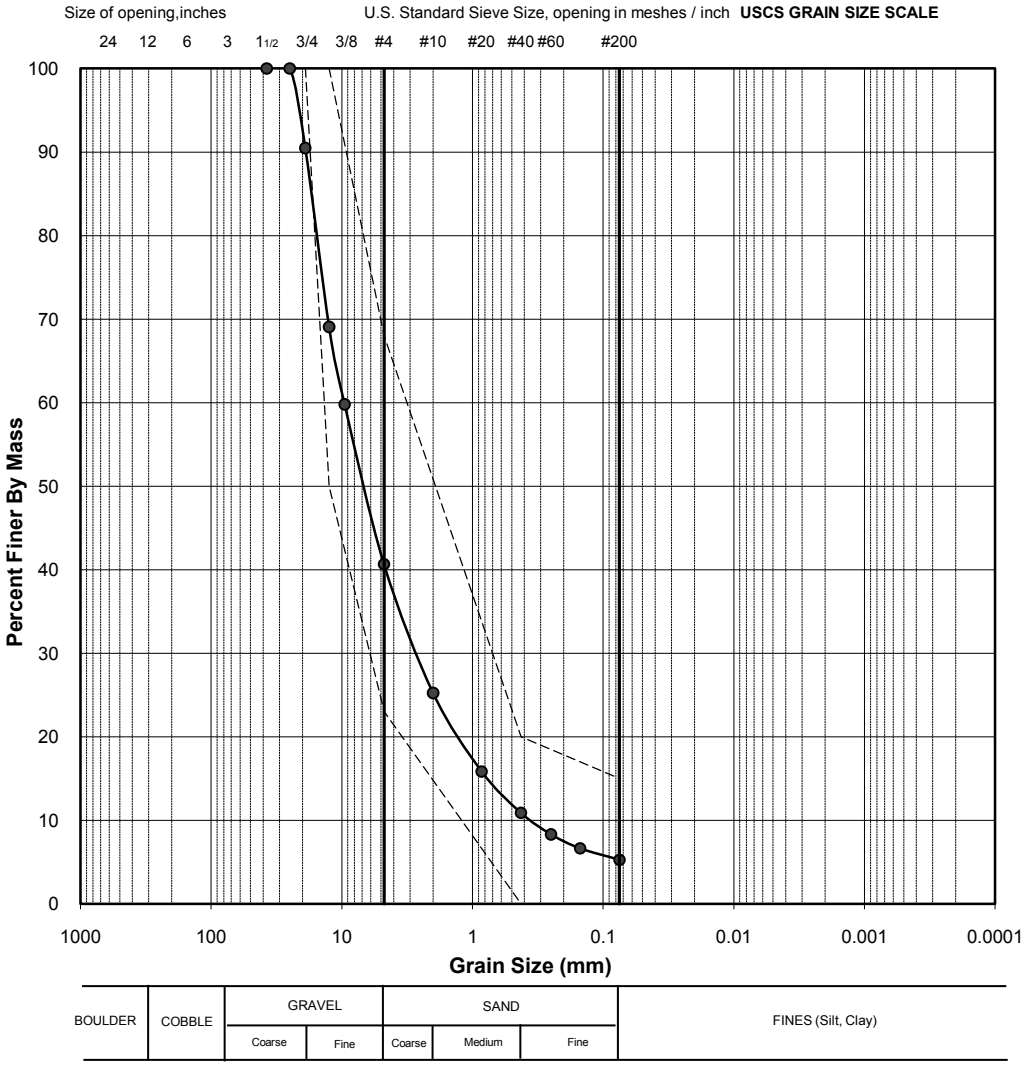
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**270**
Client:	AEM	**Field Label:**	BG081010
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA 270
Remarks:	under water	**Date Sampled:**	August 10, 2010
Sa. Location:	Ch.31+793	**Material Specification:**	CORE BACKFILL
		Method:	COMBINED, WASHED
		Date Tested:	August 16, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
3.5"	87.5	100.0
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.0	90.5
1/2"	12.5	69.1
3/8"	9.5	59.8
#4	4.75	40.6
#10	2.00	25.2
#20	0.850	15.8
#40	0.425	10.9
#60	0.250	8.3
#100	0.150	6.6
#200	0.075	5.3



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

Dieudonne BARAHEBURA	August 16, 2010		
TESTED BY	DATE	CHECKED BY	DATE

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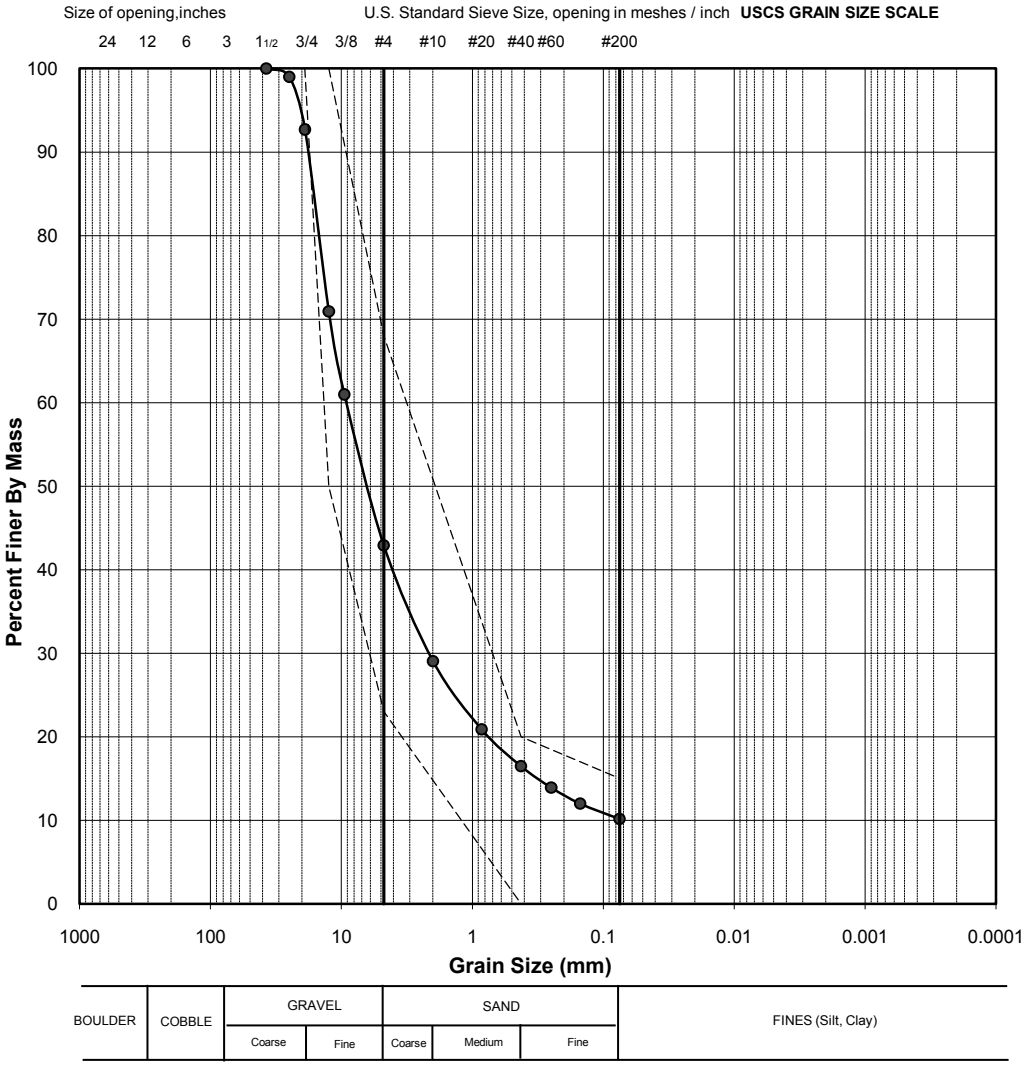
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**273**
Client:	AEM	**Field Label:**	BG081610-2
Project:	Meadowbank Gold Project	**Depth (m):**	2-3
Location:	Nunavut	**Lab ID No:**	SA 273
Remarks:	under water	**Date Sampled:**	August 16, 2010
Sa. Location:	Ch.31+825	**Material Specification:**	CORE BACKFILL
		Method:	COMBINED, WASHED
		Date Tested:	August 21, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
3.5"	87.5	100.0
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	99.0
3/4"	19.0	92.7
1/2"	12.5	70.9
3/8"	9.5	61.0
#4	4.75	42.9
#10	2.00	29.1
#20	0.850	20.9
#40	0.425	16.5
#60	0.250	13.9
#100	0.150	12.0
#200	0.075	10.2



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Dieudonne BARAHEBURA	August 21, 2010		
TESTED BY	DATE	CHECKED BY	DATE

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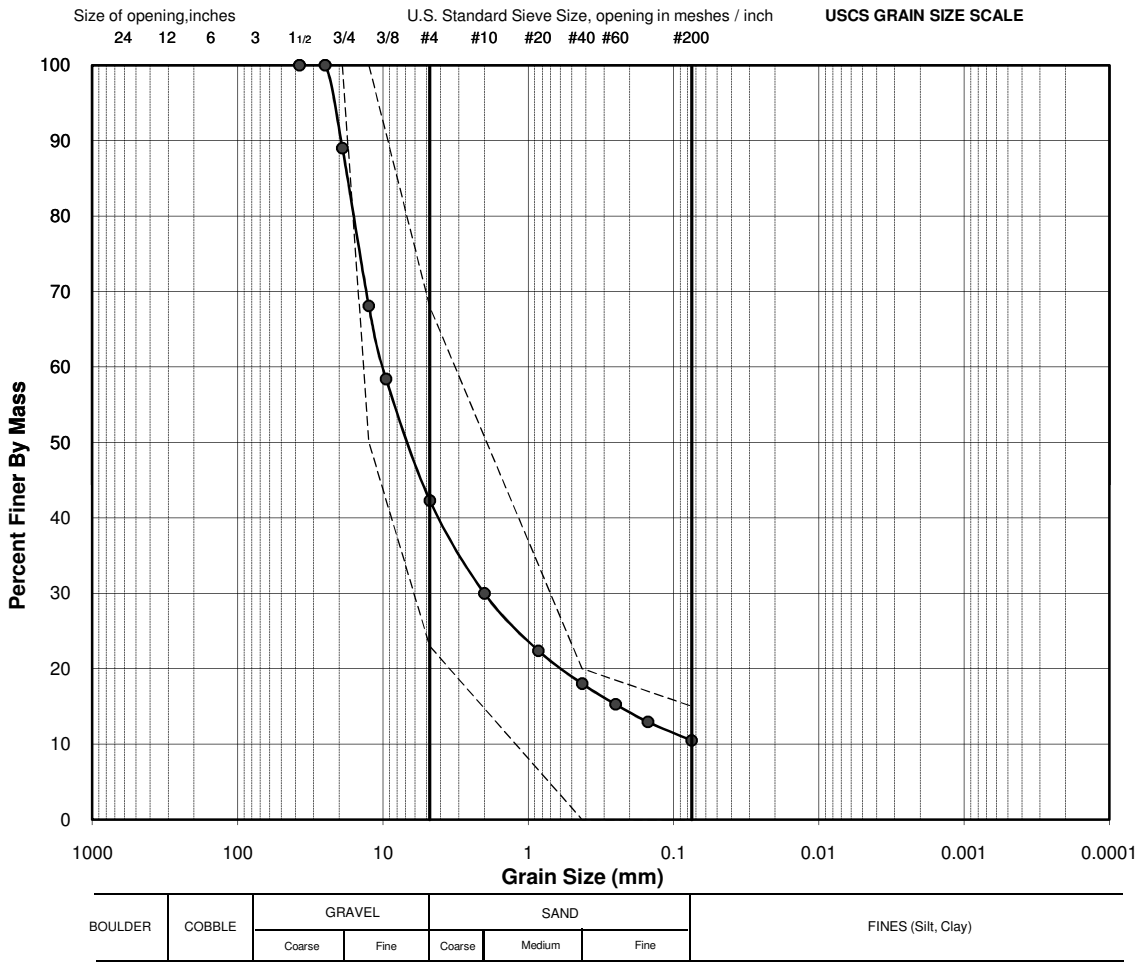
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**280**
Client:	AEM	**Field Label:**	BG082010
Project:	Meadowbank Gold Project	**Depth (m):**	1.5
Location:	Nunavut	**Lab ID No:**	SA 280
Remarks:	underwater	**Date Sampled:**	August 20, 2010
Sa. Location:	Ch.31+866	**Material Specification:**	CORE BACKFILL
		Method:	COMBINED, WASHED
		Date Tested:	August 22, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
3.5"	87.5	100.0
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.0	89.0
1/2"	12.5	68.1
3/8"	9.5	58.4
#4	4.75	42.3
#10	2.00	30.0
#20	0.850	22.4
#40	0.425	18.0
#60	0.250	15.3
#100	0.150	12.9
#200	0.075	10.5



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

Dieudonne BARAHEBURA	August 22, 2010		
TESTED BY	DATE	CHECKED BY	DATE

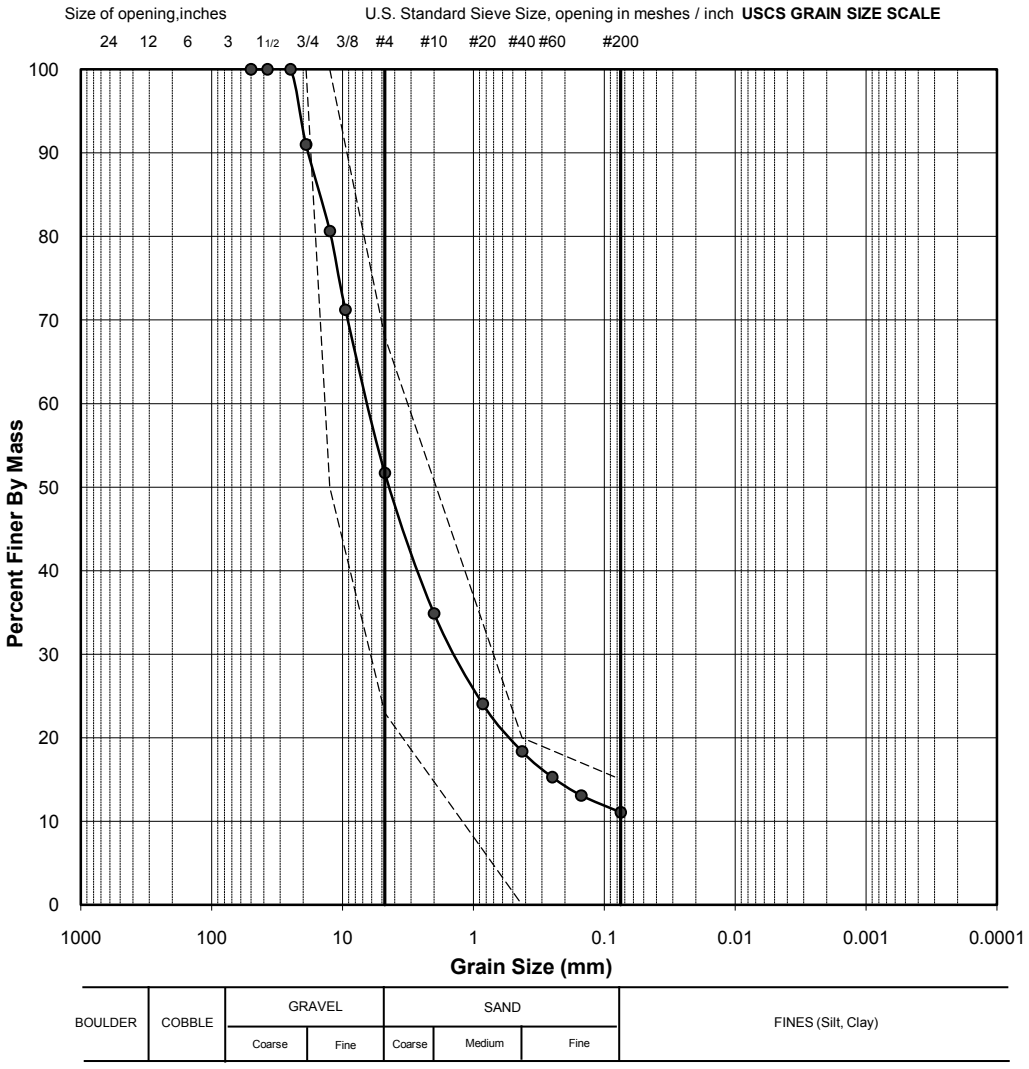
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**283**
Client:	AEM	**Field Label:**	BG082110-2
Project:	Meadowbank Gold Project	**Depth (m):**	1.5
Location:	Nunavut	**Lab ID No:**	SA 283
Remarks:	under water	**Date Sampled:**	August 21, 2010
Sa. Location:	Ch.31 +881	**Material Specification:**	CORE BACKFILL
		Method:	COMBINED, WASHED
		Date Tested:	August 24, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
8"	200.0	100.0
6"	152.4	100.0
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.0	91.0
1/2"	12.5	80.6
3/8"	9.5	71.2
#4	4.750	51.7
#10	2.000	34.9
#20	0.850	24.1
#40	0.425	18.4
#60	0.250	15.3
#100	0.150	13.1
#200	0.075	11.1



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

TESTED BY	DATE	CHECKED BY	DATE
MO	August 24, 2010		

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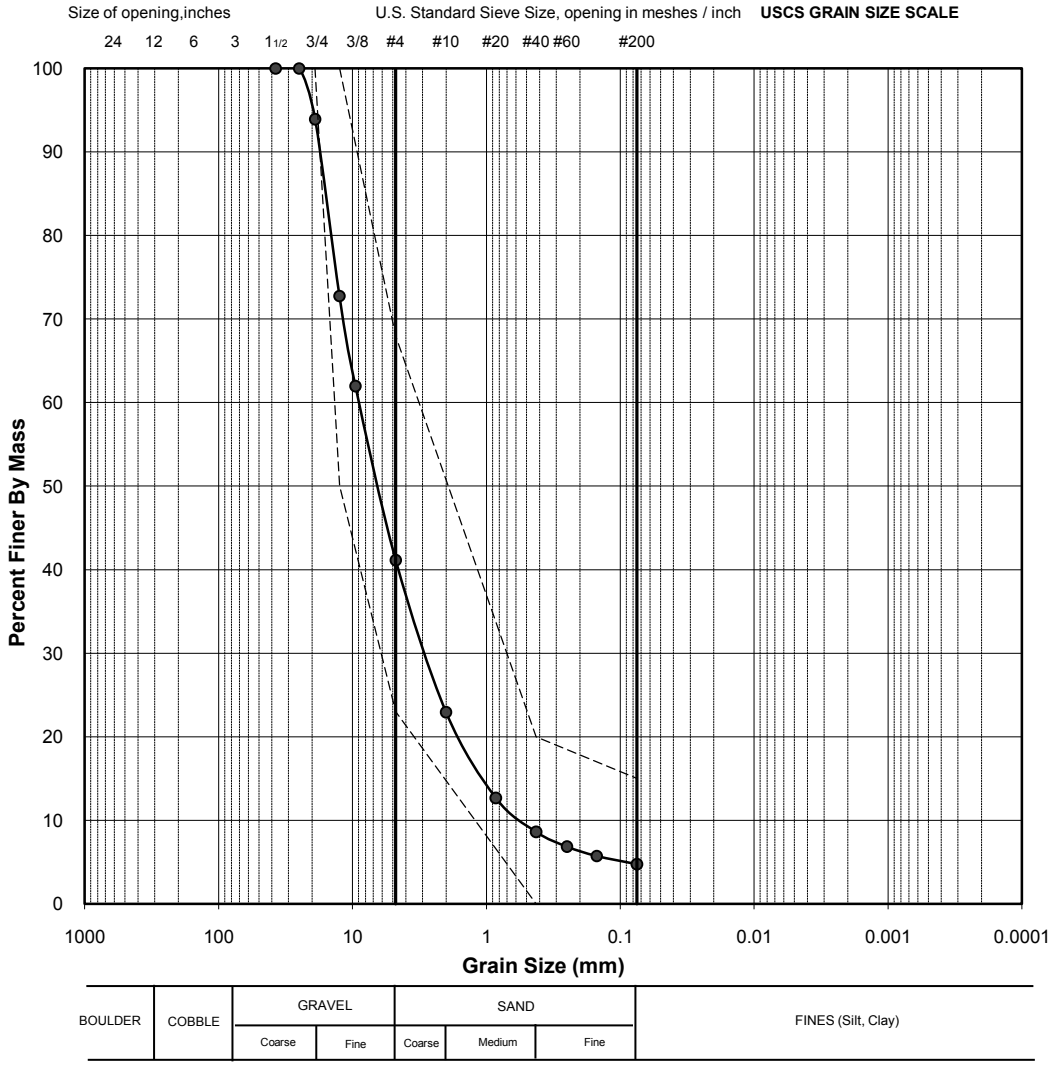
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PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**285**
Client:	AEM	**Field Label:**	BG082110-3
Project:	Meadowbank Gold Project	**Depth (m):**	1
Location:	Nunavut	**Lab ID No:**	SA 285
Remarks:	underwater	**Date Sampled:**	August 21, 2010
Sa. Location:	Ch.31+887	**Material Specification:**	CORE BACKFILL
		Method:	COMBINED, WASHED
		Date Tested:	August 22, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
3.5"	87.5	100.0
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.0	93.9
1/2"	12.5	72.7
3/8"	9.5	62.0
#4	4.75	41.1
#10	2.00	22.9
#20	0.850	12.7
#40	0.425	8.6
#60	0.250	6.8
#100	0.150	5.7
#200	0.075	4.7



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

Dieudonne BARAHEBURA	August 22, 2010		
TESTED BY	DATE	CHECKED BY	DATE

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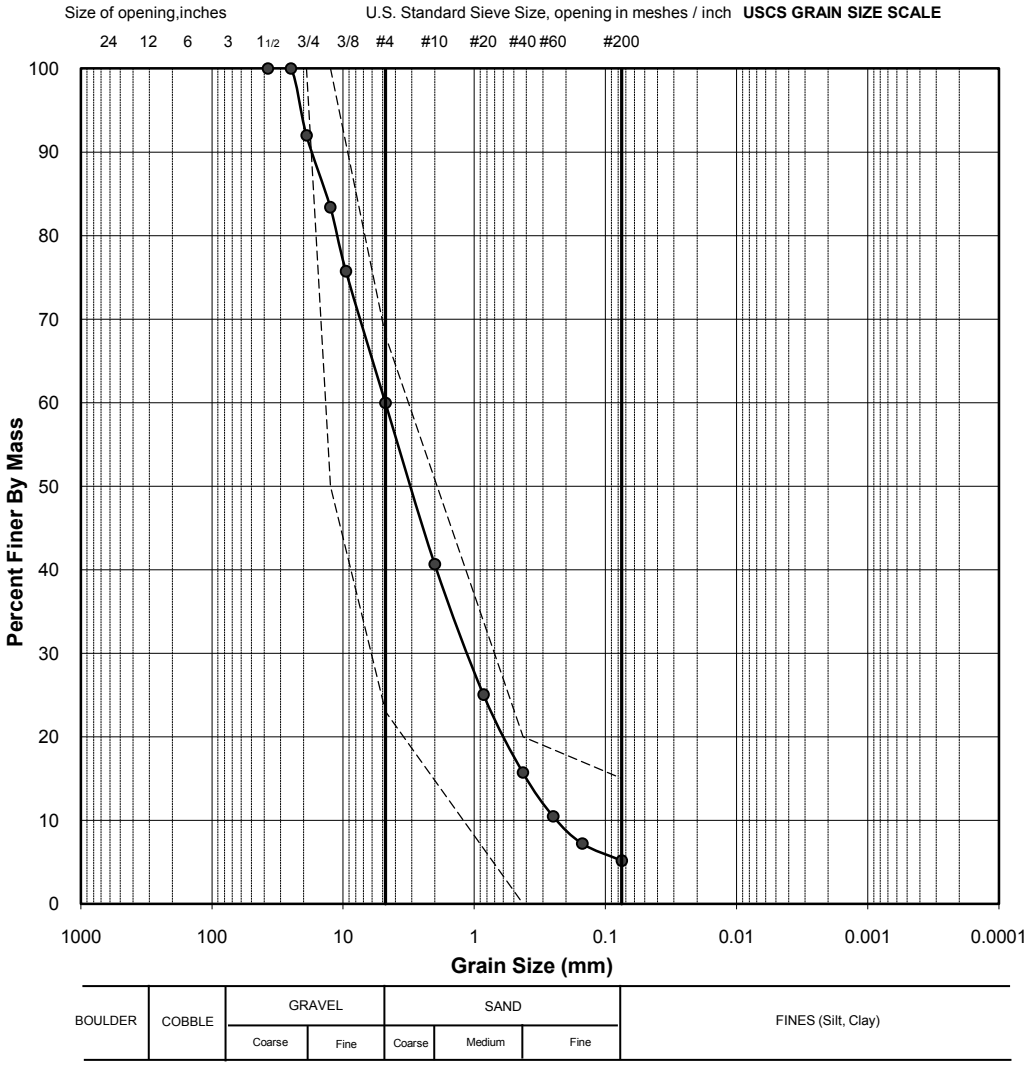
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4280 Still Creek Drive
Burnaby, B.C. Canada V5C 6C8

PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**286**
Client:	AEM	**Field Label:**	BG082210-1
Project:	Meadowbank Gold Project	**Depth (m):**	4
Location:	Nunavut	**Lab ID No:**	SA 286
Remarks:	under water	**Date Sampled:**	August 22, 2010
Sa. Location:	Ch.31+898	**Material Specification:**	CORE BACKFILL
		Method:	COMBINED, WASHED
		Date Tested:	August 22, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
3.5"	87.5	100.0
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.0	92.0
1/2"	12.5	83.4
3/8"	9.5	75.7
#4	4.75	60.0
#10	2.00	40.7
#20	0.850	25.0
#40	0.425	15.7
#60	0.250	10.5
#100	0.150	7.2
#200	0.075	5.2



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

Dieudonne BARAHEBURA	August 22, 2010		
TESTED BY	DATE	CHECKED BY	DATE

C:\Documents and Settings\diavik\Desktop\Meadowbank-2010\Weekly Lab Data 23 August to 29 August\SA 286

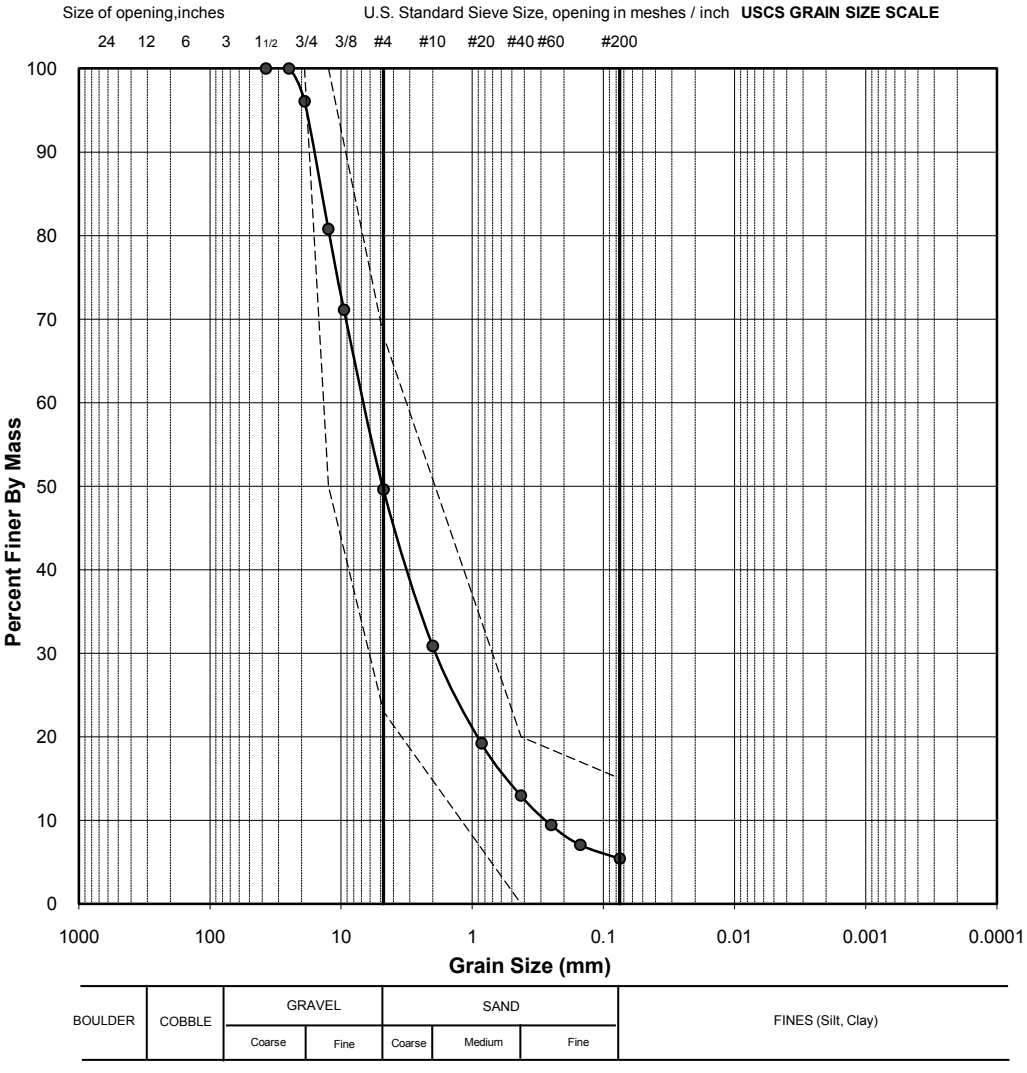
Golder Associates Ltd. - Burnaby Laboratory
4280 Still Creek Drive
Burnaby, B.C. Canada V5C 6C8

PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**288**
Client:	AEM	**Field Label:**	BG082310
Project:	Meadowbank Gold Project	**Depth (m):**	4
Location:	Nunavut	**Lab ID No:**	SA 288
Remarks:	under water	**Date Sampled:**	August 23, 2010
Sa. Location:	Ch.31+920	**Material Specification:**	CORE BACKFILL
		Method:	COMBINED, WASHED
		Date Tested:	August 25, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
3.5"	87.5	100.0
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.0	96.1
1/2"	12.5	80.8
3/8"	9.5	71.1
#4	4.75	49.6
#10	2.00	30.9
#20	0.850	19.2
#40	0.425	13.0
#60	0.250	9.4
#100	0.150	7.1
#200	0.075	5.4



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

Dieudonne BARAHEBURA	August 25, 2010		
TESTED BY	DATE	CHECKED BY	DATE

C:\Documents and Settings\diavik\Desktop\Meadowbank-2010\Weekly Lab Data 23 August to 29 August\SA 288

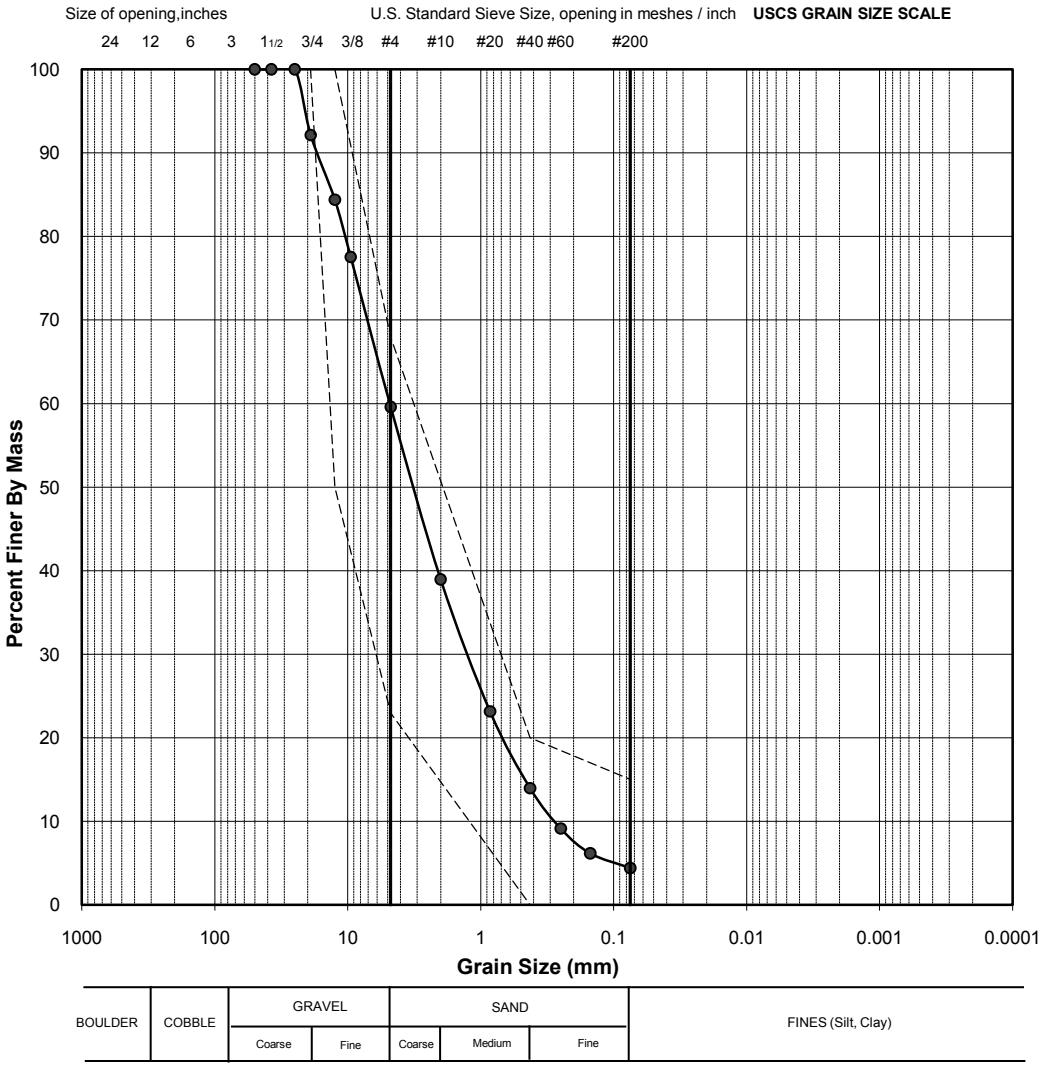
Golder Associates Ltd. - Burnaby Laboratory
4280 Still Creek Drive
Burnaby, B.C. Canada V5C 6C8

PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**290**
Client:	AEM	**Field Label:**	BG082410-2
Project:	Meadowbank Gold Project	**Depth (m):**	4
Location:	Nunavut	**Lab ID No:**	SA 290
Remarks:	under water	**Date Sampled:**	August 24, 2010
Sa. Location:	Ch.31 +940	**Material Specification:**	CORE BACKFILL
		Method:	COMBINED, WASHED
		Date Tested:	August 25, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
8"	200.0	100.0
6"	152.4	100.0
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.0	92.1
1/2"	12.5	84.4
3/8"	9.5	77.5
#4	4.750	59.6
#10	2.000	39.0
#20	0.850	23.1
#40	0.425	14.0
#60	0.250	9.1
#100	0.150	6.2
#200	0.075	4.4



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

TESTED BY	DATE	CHECKED BY	DATE
MO	August 25, 2010		

C:\Documents and Settings\dlavik\Desktop\Meadowbank-2010\Weekly Lab Data 23 August to 29 August\SA 290

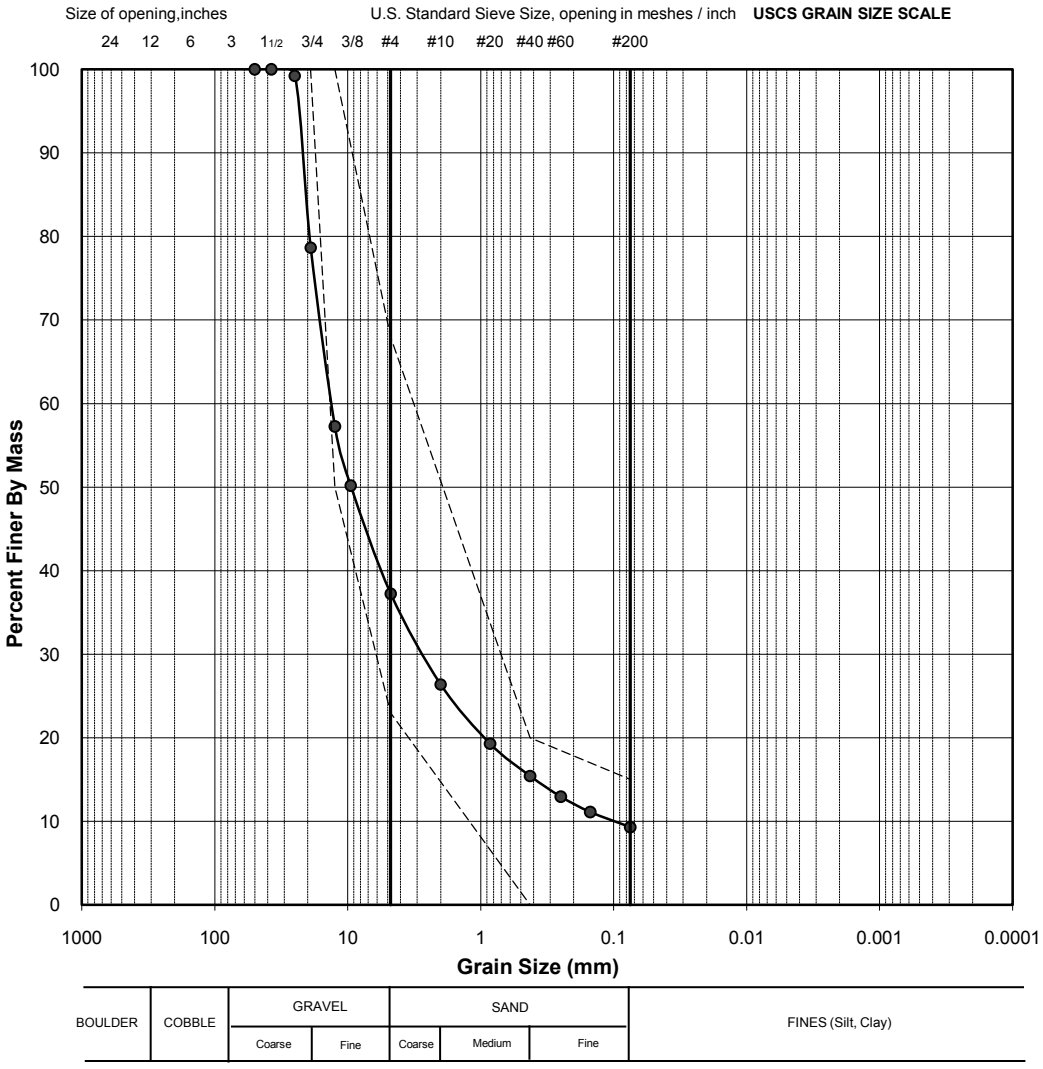
Golder Associates Ltd. - Burnaby Laboratory
4280 Still Creek Drive
Burnaby, B.C. Canada V5C 6C8

PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**292**
Client:	AEM	**Field Label:**	BG082410-4
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA 292
Remarks:	Water Content = 1.4%	**Date Sampled:**	August 24, 2010
Sa. Location:	Ch.31+940 (Dry densification platform)	**Material Specification:**	CORE BACKFILL
		Method:	COMBINED, WASHED
		Date Tested:	August 26, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
8"	200.0	100.0
6"	152.4	100.0
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	99.2
3/4"	19.0	78.7
1/2"	12.5	57.3
3/8"	9.5	50.2
#4	4.750	37.2
#10	2.000	26.4
#20	0.850	19.3
#40	0.425	15.4
#60	0.250	13.0
#100	0.150	11.1
#200	0.075	9.3



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

TESTED BY	DATE	CHECKED BY	DATE
MO	August 26, 2010		

C:\Documents and Settings\dlavik\Desktop\Meadowbank-2010\Weekly Lab Data 23 August to 29 August\SA 292

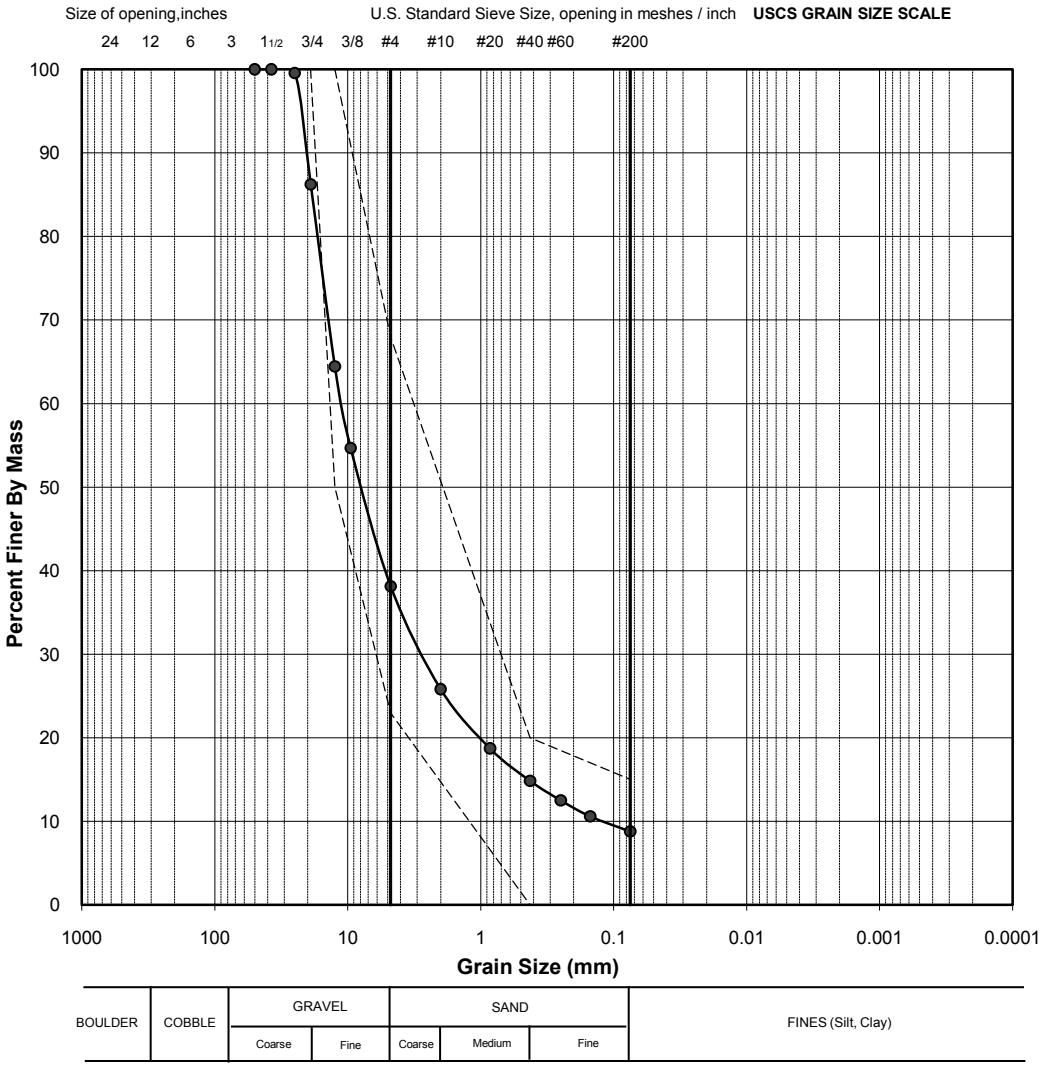
Golder Associates Ltd. - Burnaby Laboratory
4280 Still Creek Drive
Burnaby, B.C. Canada V5C 6C8

PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**293**
Client:	AEM	**Field Label:**	BG082510-1
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA 293
Remarks:	Water Content = 1.1%	**Date Sampled:**	August 25, 2010
Sa. Location:	Ch.31 +795 (Dry densification platform)	**Material Specification:**	CORE BACKFILL
		Method:	COMBINED, WASHED
		Date Tested:	August 27, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
8"	200.0	100.0
6"	152.4	100.0
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	99.6
3/4"	19.0	86.2
1/2"	12.5	64.4
3/8"	9.5	54.7
#4	4.750	38.1
#10	2.000	25.8
#20	0.850	18.7
#40	0.425	14.8
#60	0.250	12.5
#100	0.150	10.6
#200	0.075	8.8



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

TESTED BY	DATE	CHECKED BY	DATE
MO	August 27, 2010		

C:\Documents and Settings\dlavik\Desktop\Meadowbank-2010\Weekly Lab Data 23 August to 29 August\SA 293

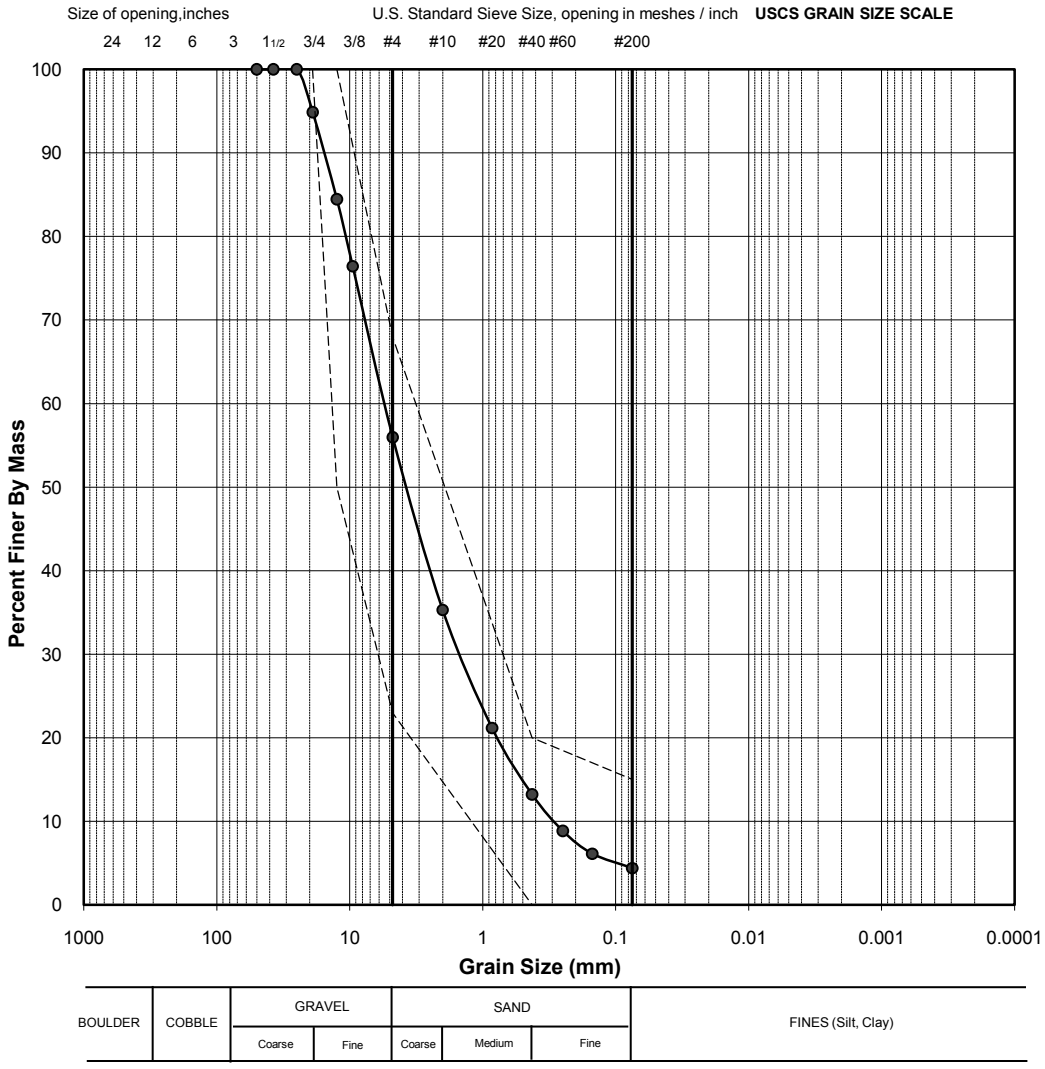
Golder Associates Ltd. - Burnaby Laboratory
4280 Still Creek Drive
Burnaby, B.C. Canada V5C 6C8

PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**294**
Client:	AEM	**Field Label:**	BG082510-2
Project:	Meadowbank Gold Project	**Depth (m):**	4
Location:	Nunavut	**Lab ID No:**	SA 294
Remarks:	under water	**Date Sampled:**	August 25, 2010
Sa. Location:	Ch.31 +795	**Material Specification:**	CORE BACKFILL
		Method:	COMBINED, WASHED
		Date Tested:	August 27, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
8"	200.0	100.0
6"	152.4	100.0
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.0	94.9
1/2"	12.5	84.5
3/8"	9.5	76.4
#4	4.750	56.0
#10	2.000	35.3
#20	0.850	21.2
#40	0.425	13.2
#60	0.250	8.9
#100	0.150	6.1
#200	0.075	4.4



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

TESTED BY	DATE	CHECKED BY	DATE
MO	August 27, 2010		

C:\Documents and Settings\dlavik\Desktop\Meadowbank-2010\Weekly Lab Data 23 August to 29 August\SA 294

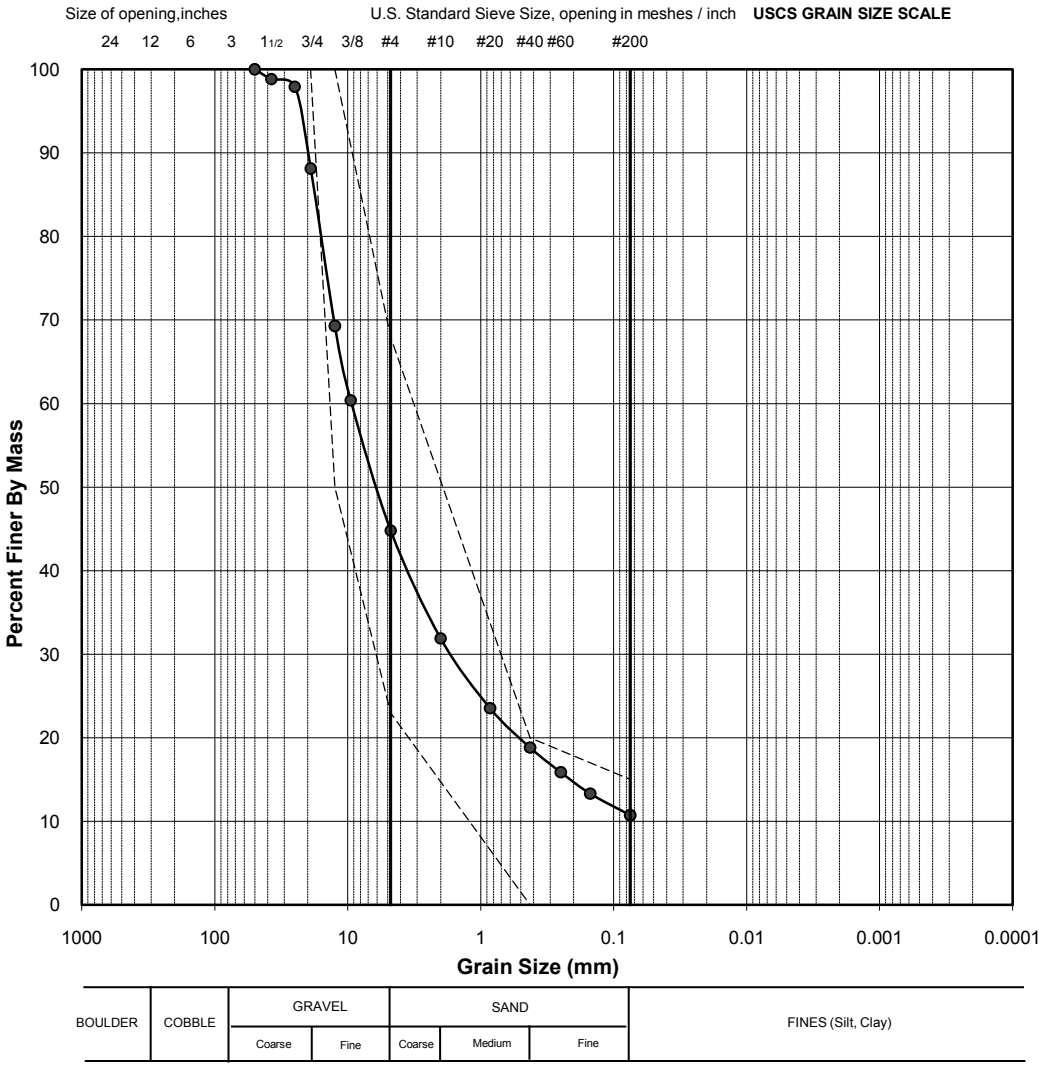
Golder Associates Ltd. - Burnaby Laboratory
4280 Still Creek Drive
Burnaby, B.C. Canada V5C 6C8

PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**298**
Client:	AEM	**Field Label:**	BG082510-1
Project:	Meadowbank Gold Project	**Depth (m):**	1
Location:	Nunavut	**Lab ID No:**	SA 298
Remarks:	Water Content = 1.4%	**Date Sampled:**	August 28, 2010
Sa. Location:	Ch.31 +050 (1m below elevation 136m)	**Material Specification:**	CORE BACKFILL (After density)
		Method:	COMBINED, WASHED
		Date Tested:	August 29, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
8"	200.0	100.0
6"	152.4	100.0
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	98.8
1"	25.0	97.9
3/4"	19.0	88.1
1/2"	12.5	69.3
3/8"	9.5	60.4
#4	4.750	44.8
#10	2.000	31.9
#20	0.850	23.5
#40	0.425	18.8
#60	0.250	15.9
#100	0.150	13.3
#200	0.075	10.7



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

TESTED BY	DATE	CHECKED BY	DATE
MO	August 29, 2010		

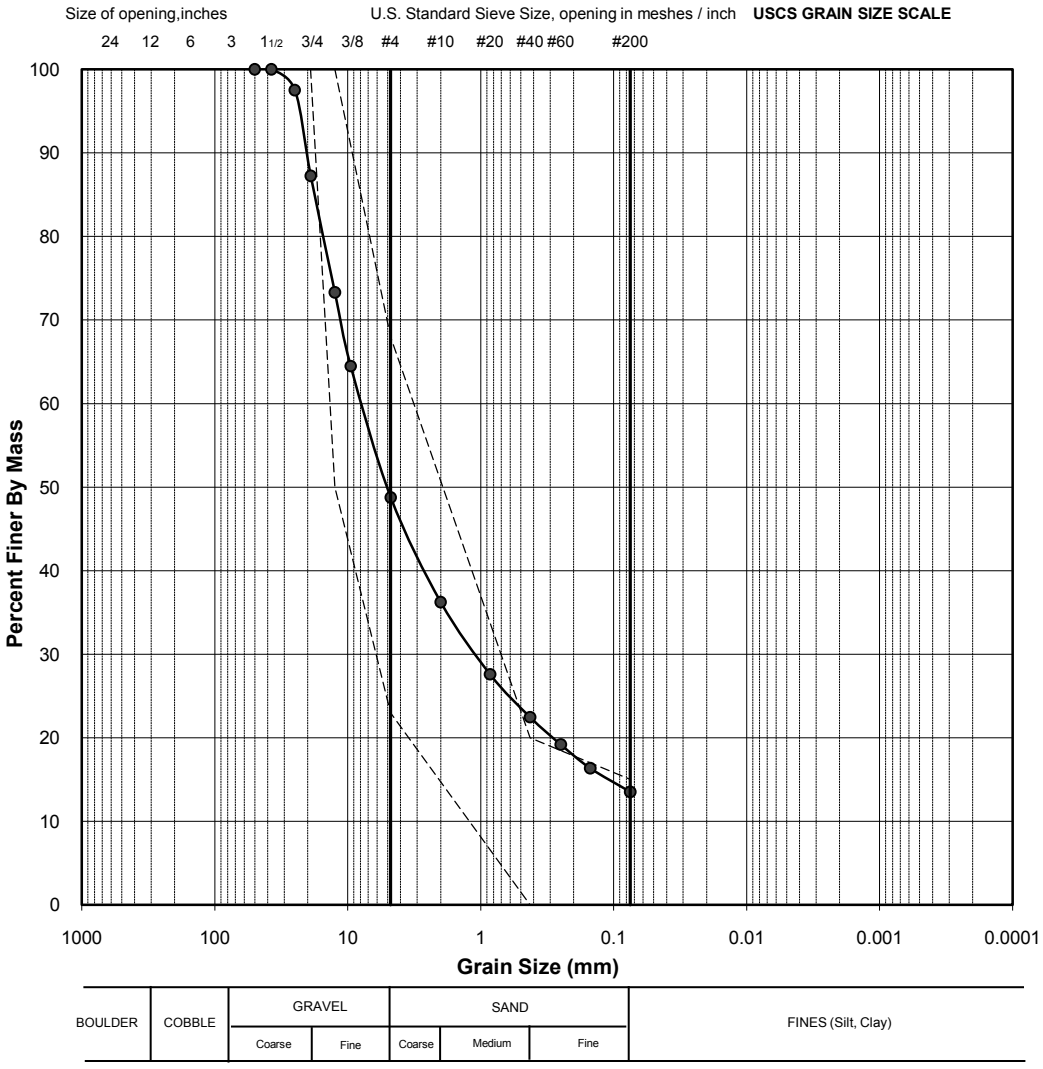
Golder Associates Ltd. - Burnaby Laboratory
4280 Still Creek Drive
Burnaby, B.C. Canada V5C 6C8

PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**299**
Client:	AEM	**Field Label:**	BG082510-2
Project:	Meadowbank Gold Project	**Depth (m):**	2
Location:	Nunavut	**Lab ID No:**	SA 299
Remarks:	Water Content = 1.8%	**Date Sampled:**	August 28, 2010
Sa. Location:	Ch.31 +050 (2m below elevation 136m)	**Material Specification:**	CORE BACKFILL (After density)
		Method:	COMBINED, WASHED
		Date Tested:	August 29, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
8"	200.0	100.0
6"	152.4	100.0
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	97.5
3/4"	19.0	87.3
1/2"	12.5	73.3
3/8"	9.5	64.5
#4	4.750	48.8
#10	2.000	36.2
#20	0.850	27.6
#40	0.425	22.5
#60	0.250	19.2
#100	0.150	16.3
#200	0.075	13.5



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

TESTED BY	DATE	CHECKED BY	DATE
MO	August 29, 2010		

C:\Documents and Settings\dlavik\Desktop\Meadowbank-2010\Weekly Lab Data 23 August to 29 August\SA 299

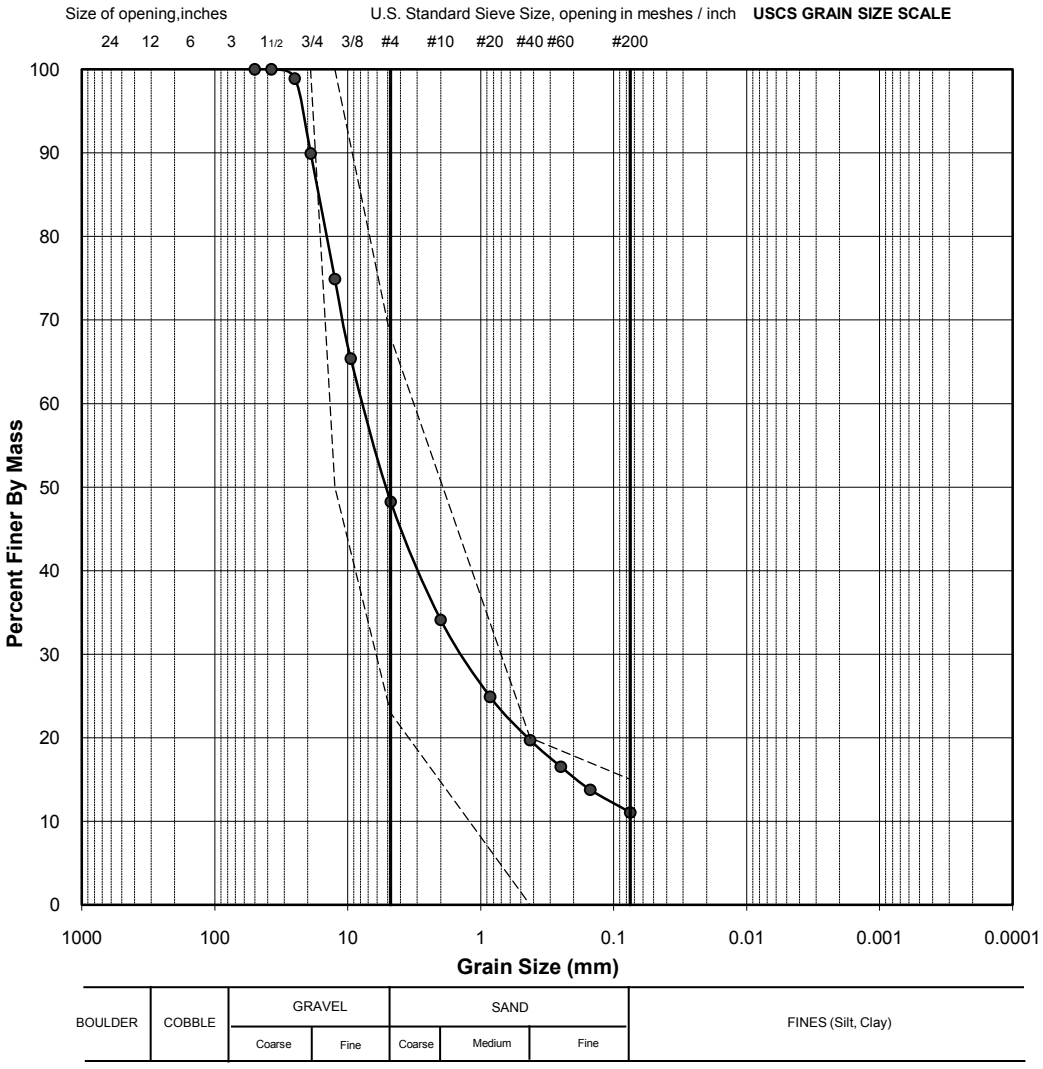
Golder Associates Ltd. - Burnaby Laboratory
4280 Still Creek Drive
Burnaby, B.C. Canada V5C 6C8

PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**300**
Client:	AEM	**Field Label:**	BG082510-3
Project:	Meadowbank Gold Project	**Depth (m):**	3
Location:	Nunavut	**Lab ID No:**	SA 300
Remarks:	Water Content = 6.7%	**Date Sampled:**	August 28, 2010
Sa. Location:	Ch.31 +050 (3m below elevation 136m)	**Material Specification:**	CORE BACKFILL (After density)
		Method:	COMBINED, WASHED
		Date Tested:	August 29, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
8"	200.0	100.0
6"	152.4	100.0
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	98.9
3/4"	19.0	89.9
1/2"	12.5	74.9
3/8"	9.5	65.4
#4	4.750	48.2
#10	2.000	34.1
#20	0.850	24.9
#40	0.425	19.7
#60	0.250	16.5
#100	0.150	13.8
#200	0.075	11.1



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

TESTED BY	DATE	CHECKED BY	DATE
MO	August 29, 2010		

C:\Documents and Settings\dlavik\Desktop\Meadowbank-2010\Weekly Lab Data 23 August to 29 August\SA 300

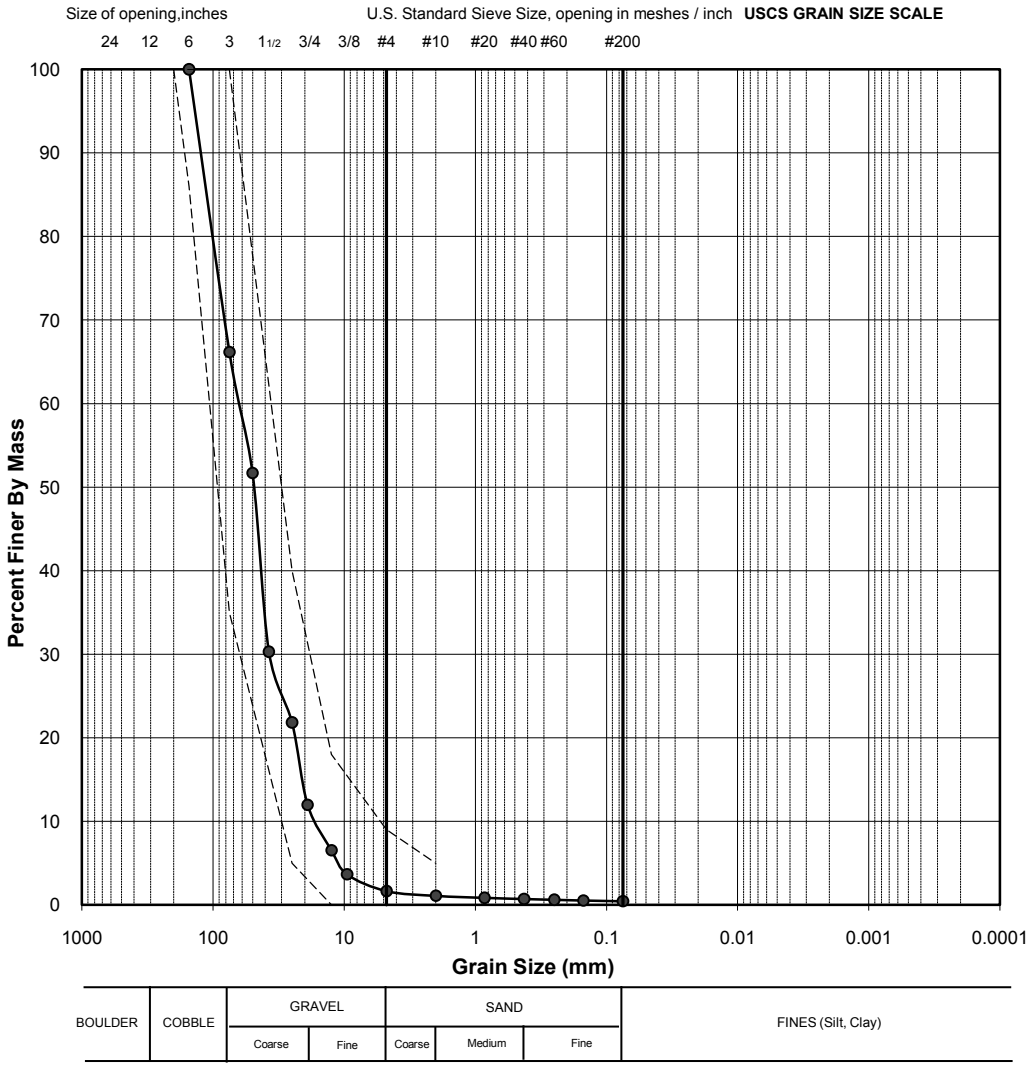
Golder Associates Ltd. - Burnaby Laboratory
4280 Still Creek Drive
Burnaby, B.C. Canada V5C 6C8

PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**276**
Client:	AEM	**Field Label:**	BG081710-2
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA 276
Remarks:		**Date Sampled:**	August 17, 2010
Sa. Location:	Ch.31 +835	**Material Specification:**	COARSE FILTER
		Method:	COMBINED, WASHED
		Date Tested:	August 19, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
8"	200.0	100.0
6"	152.4	100.0
3"	75.0	66.2
2"	50.0	51.7
1.5"	37.5	30.3
1"	25.0	21.8
3/4"	19.0	12.0
1/2"	12.5	6.5
3/8"	9.5	3.7
#4	4.75	1.7
#10	2.00	1.1
#20	0.85	0.8
#40	0.43	0.7
#60	0.25	0.6
#100	0.15	0.5
#200	0.08	0.4



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

Dieudonné BARAHEBURA	August 19, 2010		
TESTED BY	DATE	CHECKED BY	DATE

C:\Documents and Settings\dlavik\Desktop\Meadowbank-2010\Weekly Lab Data 16 August to 22 August\Sieves\SA 276

Golder Associates Ltd. - Kelowna Laboratory
1755 Springfield Road
Kelowna, B.C. Canada V1Y 5V5

PARTICLE SIZE ANALYSIS OF SOILS

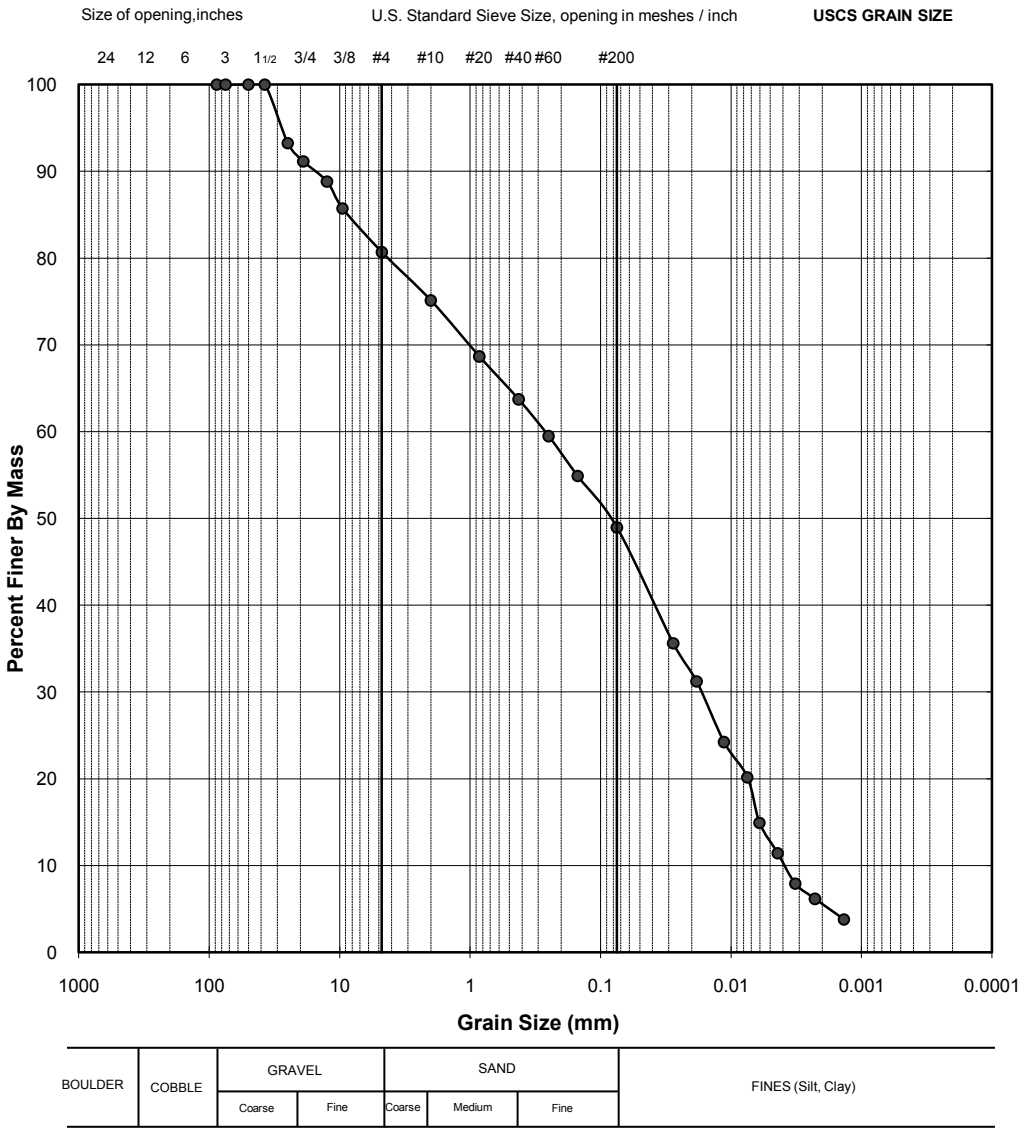
Reference
ASTM D 422-63 (2007)

Project No.:	09-1428-5007 (2000)	**Sample No:**	**282**
Client:	AEM	**Field Label.:**	BG082010-2
Project:	Meadowbank Gold Project	**Depth (m):**	10
Location:	Nunavut	**Lab ID No:**	SA 282

Specific Gravity (assumed):	2.70	**Other**	Ch.31+923
Date sampled:	August 20 2010	**Remarks:**	Native borrow, TILL. Water content = 18.1 %

Dispersion Method:	Stirring
Dispersion Period (min):	5.00

Sieve Size (USS)	Sieve Size (mm)	% Passing
3.5"	87.50	100.0
3"	75.00	100.0
2"	50.00	100.0
1.5"	37.50	100.0
1"	25.00	93.2
3/4"	19.00	91.1
1/2"	12.50	88.8
3/8"	9.50	85.7
#4	4.75	80.7
#10	2.00	75.1
#20	0.850	68.7
#40	0.425	63.7
#60	0.250	59.5
#100	0.150	54.9
#200	0.075	49.0
-	0.0277	35.6
-	0.0184	31.2
-	0.0113	24.2
-	0.0075	20.2
-	0.0061	14.9
-	0.0044	11.4
-	0.0032	7.9
-	0.0023	6.2
-	0.0014	3.8



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

TESTED BY	DATE	CHECKED BY	DATE
MO	August 29,2010		

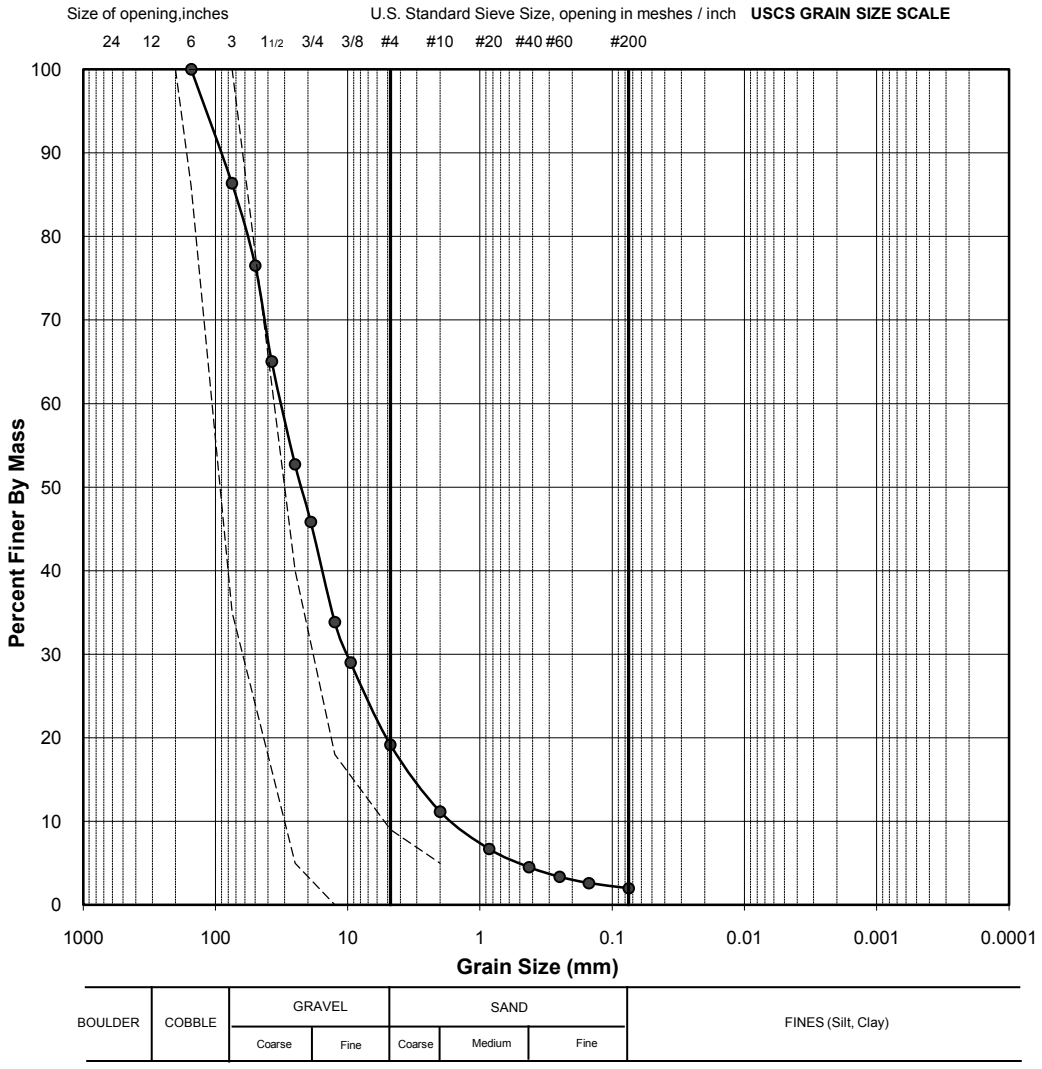
Golder Associates Ltd. - Burnaby Laboratory
4280 Still Creek Drive
Burnaby, B.C. Canada V5C 6C8

PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**291**
Client:	AEM	**Field Label:**	BG082410-3
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA 291
Remarks:		**Date Sampled:**	August 24, 2010
Sa. Location:	Ch.31+935	**Material Specification:**	COARSE FILTER
		Method:	COMBINED, WASHED
		Date Tested:	August 26, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
8"	200.0	100.0
6"	152.4	100.0
3"	75.0	86.4
2"	50.0	76.5
1.5"	37.5	65.0
1"	25.0	52.7
3/4"	19.0	45.8
1/2"	12.5	33.8
3/8"	9.500	29.0
#4	4.750	19.2
#10	2.000	11.2
#20	0.850	6.7
#40	0.425	4.5
#60	0.250	3.4
#100	0.150	2.6
#200	0.075	2.0



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

TESTED BY	DATE	CHECKED BY	DATE
M.O	August 26, 2010		

C:\Documents and Settings\dlavik\Desktop\Meadowbank-2010\Weekly Lab Data 23 August to 29 August\SA 291

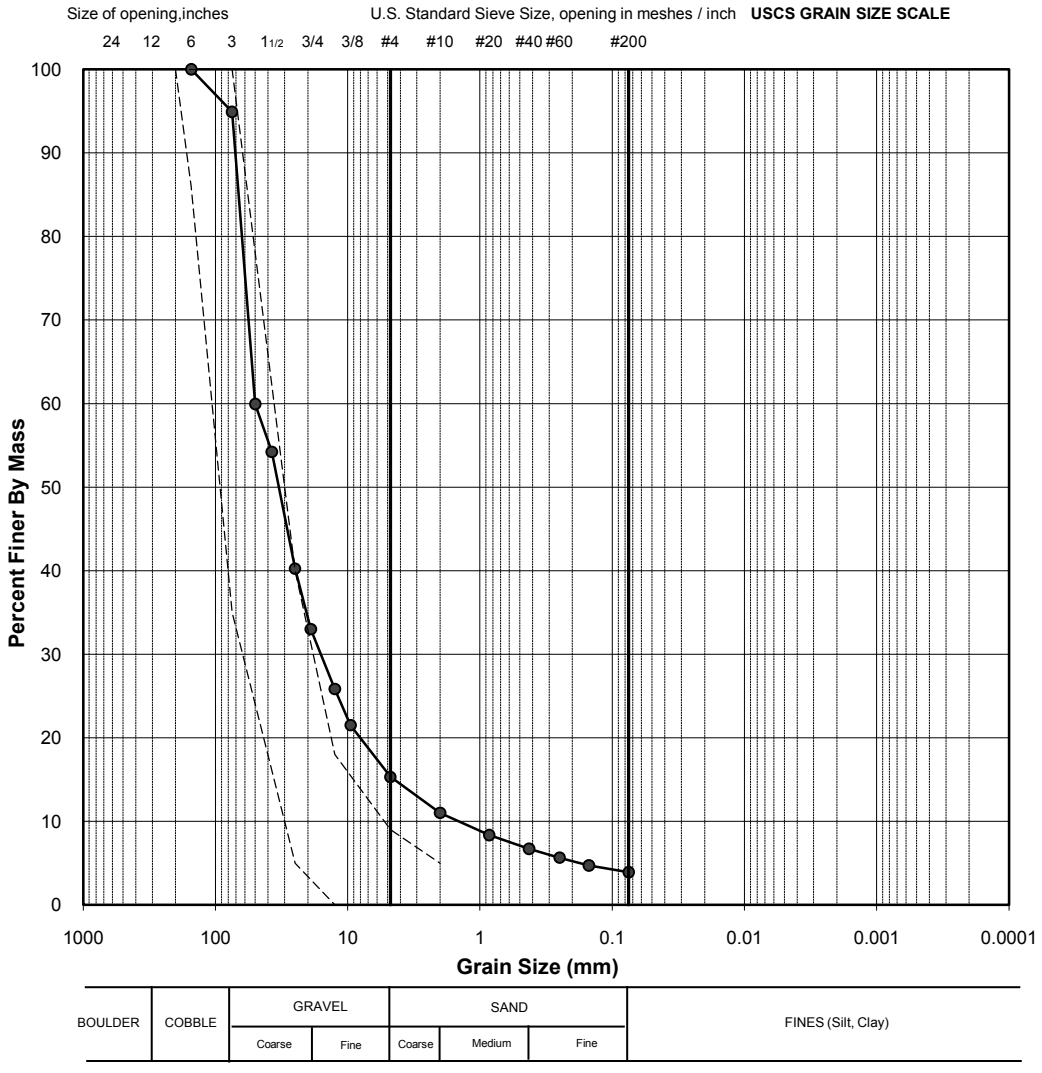
Golder Associates Ltd. - Burnaby Laboratory
4280 Still Creek Drive
Burnaby, B.C. Canada V5C 6C8

PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**295**
Client:	AEM	**Field Label:**	BG082410
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA 295
Remarks:	Water Content = NA	**Date Sampled:**	August 25, 2010
Sa. Location:	Ch.31+795 (Dry densification platform)	**Material Specification:**	COARSE FILTER
		Method:	COMBINED, WASHED
		Date Tested:	August 27, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
8"	200.0	100.0
6"	152.4	100.0
3"	75.0	94.9
2"	50.0	59.9
1.5"	37.5	54.2
1"	25.0	40.2
3/4"	19.0	33.0
1/2"	12.5	25.8
3/8"	9.500	21.5
#4	4.750	15.3
#10	2.000	11.0
#20	0.850	8.4
#40	0.425	6.7
#60	0.250	5.6
#100	0.150	4.7
#200	0.075	3.9



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

TESTED BY	DATE	CHECKED BY	DATE
M.O	August 27, 2010		

C:\Documents and Settings\dlavik\Desktop\Meadowbank-2010\Weekly Lab Data 23 August to 29 August\SA 295

Golder Associates Ltd. - Kelowna Laboratory
1755 Springfield Road
Kelowna, B.C. Canada V1Y 5V5

PARTICLE SIZE ANALYSIS OF SOILS

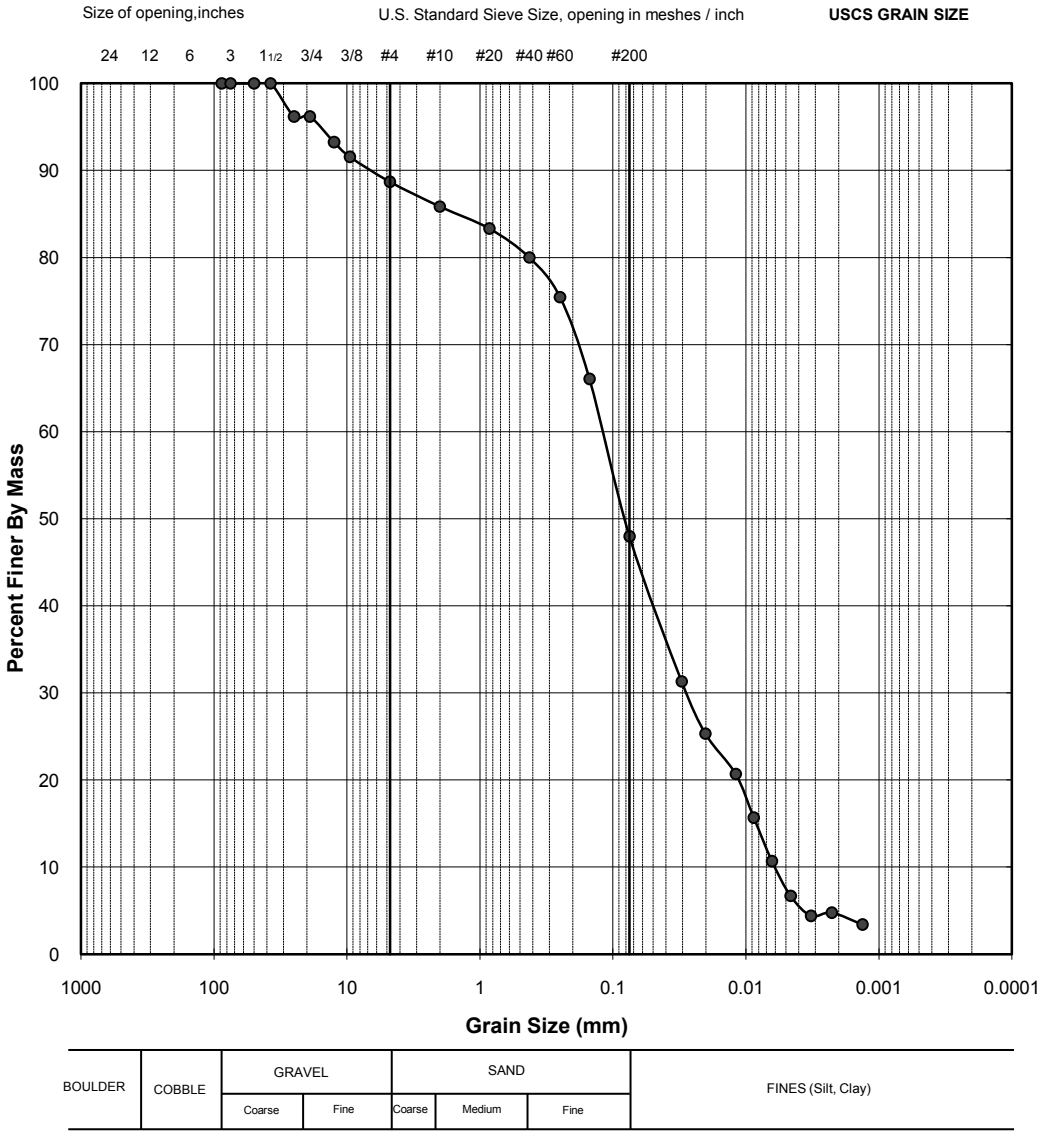
Reference
ASTM D 422-63 (2007)

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**263**
Client:	AEM	**Field label**	BG080810-2
Project:	Meadowbank Gold Project	**Depth (m):**	9
Location:	Nunavut	**Lab ID No:**	SA 263

Specific Gravity (assumed):	2.70	**Other**	Silty Clay Ch.31 +600 to 31+603
Date sampled:	August 7, 2010	**Remarks:**	Water content: 17.15%

Dispersion Method:	Stirring
Dispersion Period (min):	5.00

Sieve Size (USS)	Sieve Size (mm)	% Passing
3.5"	87.50	100.0
3"	75.00	100.0
2"	50.00	100.0
1.5"	37.50	100.0
1"	25.00	96.2
3/4"	19.00	96.2
1/2"	12.50	93.2
3/8"	9.50	91.6
#4	4.75	88.7
#10	2.00	85.9
#20	0.850	83.3
#40	0.425	80.0
#60	0.250	75.4
#100	0.150	66.1
#200	0.075	48.0
-	0.0304	31.3
-	0.0202	25.3
-	0.0119	20.7
-	0.0087	15.7
-	0.0064	10.7
-	0.0046	6.7
-	0.0032	4.4
-	0.0023	4.8
-	0.0013	3.4



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

TESTED BY	DATE	CHECKED BY	DATE
B.Dieudonné	Aug.21, 2010		

C:\Documents and Settings\diavik\Desktop\Meadowbank-2010\Weekly Lab Data 16 August to 22 August\Hydrometer\File

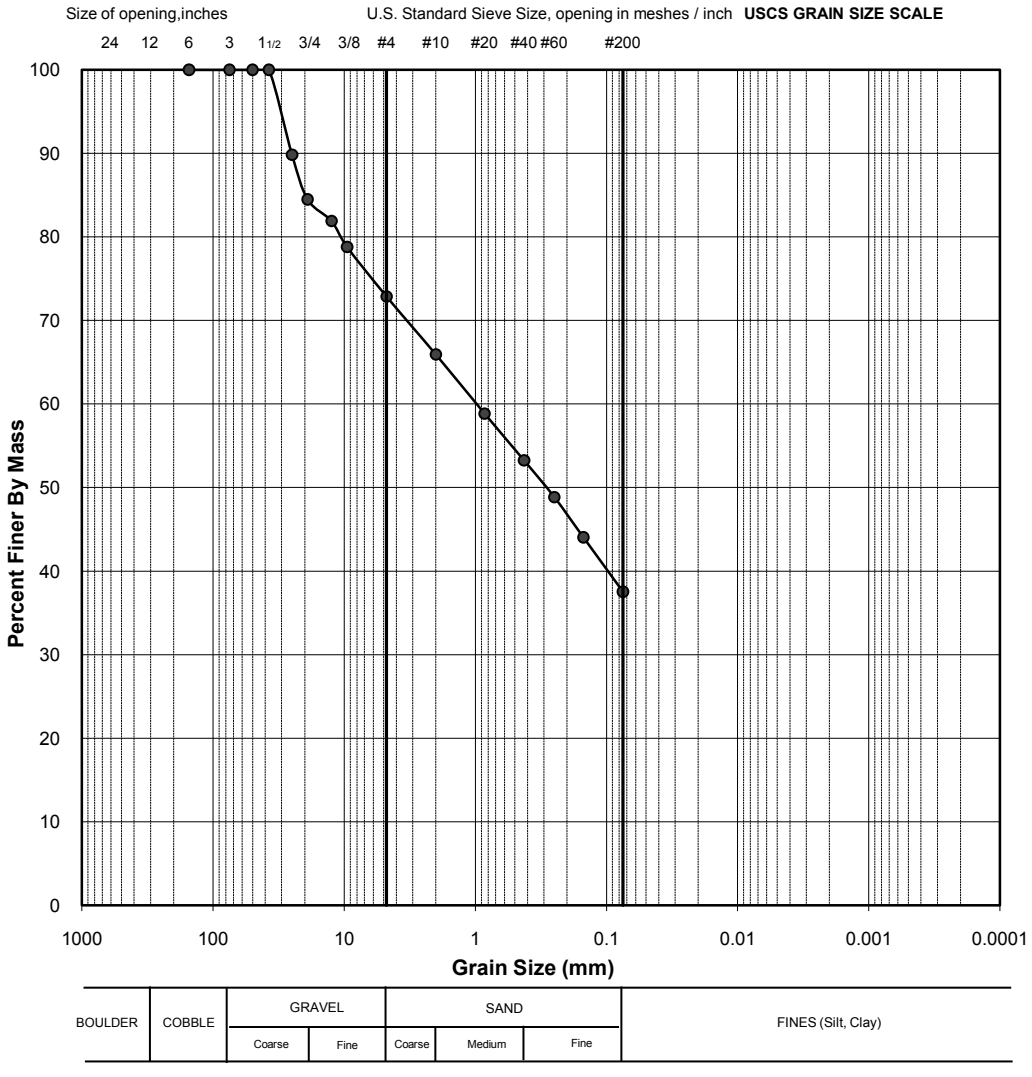
Golder Associates Ltd. - Burnaby Laboratory
4280 Still Creek Drive
Burnaby, B.C. Canada V5C 6C8

PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**267**
Client:	AEM	**Field Label:**	BG081210-1
Project:	Meadowbank Gold Project	**Depth (m):**	12
Location:	Nunavut	**Lab ID No:**	SA 267
Remarks:	water content: 10.1%	**Date Sampled:**	August 12, 2010
Sa. Location:	Ch.31+833	**Material Specification:**	
		Method:	COMBINED, WASHED
		Date Tested:	August 12, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
6"	152.4	100.0
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	89.8
3/4"	19.0	84.5
1/2"	12.5	81.9
3/8"	9.5	78.8
#4	4.750	72.9
#10	2.000	65.9
#20	0.850	58.8
#40	0.425	53.2
#60	0.250	48.9
#100	0.150	44.0
#200	0.075	37.5



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

B.Dieudonné	August 12, 2010		
TESTED BY	DATE	CHECKED BY	DATE

C:\Documents and Settings\diavik\Desktop\Meadowbank-2010\Weekly Lab Data 16 August to 22 August\Sieves\Excel\SA 267

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Canada V1Y 5V5

PARTICLE SIZE ANALYSIS OF SOILS

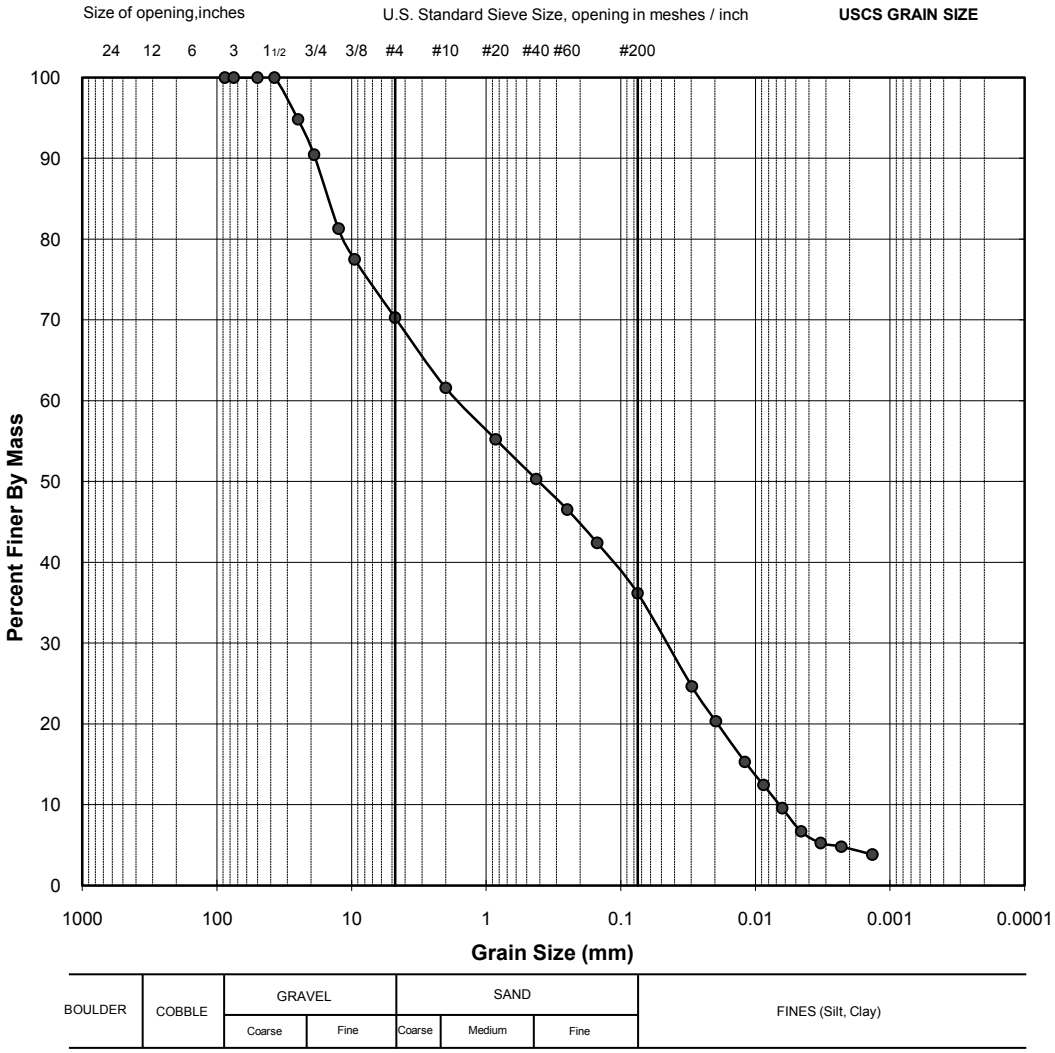
Reference
ASTM D 422-63 (2007)

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**269**
Client:	AEM	**Field Label**	BG081210-2
Project:	Meadowbank Gold Project	**Depth (m):**	12.5
Location:	Nanavut	**Lab ID No:**	SA 269

Specific Gravity (assumed):	2.70	**Other**	Ch.31+839
Date sampled:	August 12, 2010	**Remarks:**	Till, Water content: 9.5%

Dispersion Method:	Stirring
Dispersion Period (min):	5.00

Sieve Size (USS)	Sieve Size (mm)	% Passing
3.5"	87.50	100.0
3"	75.00	100.0
2"	50.00	100.0
1.5"	37.50	100.0
1"	25.00	94.8
3/4"	19.00	90.5
1/2"	12.50	81.3
3/8"	9.50	77.5
#4	4.75	70.3
#10	2.00	61.6
#20	0.850	55.2
#40	0.425	50.3
#60	0.250	46.5
#100	0.150	42.4
#200	0.075	36.2
-	0.0297	24.6
-	0.0197	20.3
-	0.0120	15.3
-	0.0087	12.4
-	0.0063	9.6
-	0.0046	6.7
-	0.0033	5.3
-	0.0023	4.8
-	0.0014	3.8



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

TESTED BY	DATE	CHECKED BY	DATE
B.Dieudonné	Aug.21, 2010		

C:\Documents and Settings\diavik\Desktop\Meadowbank-2010\Weekly Lab Data 16 August to 22 August\Hydrometer\File

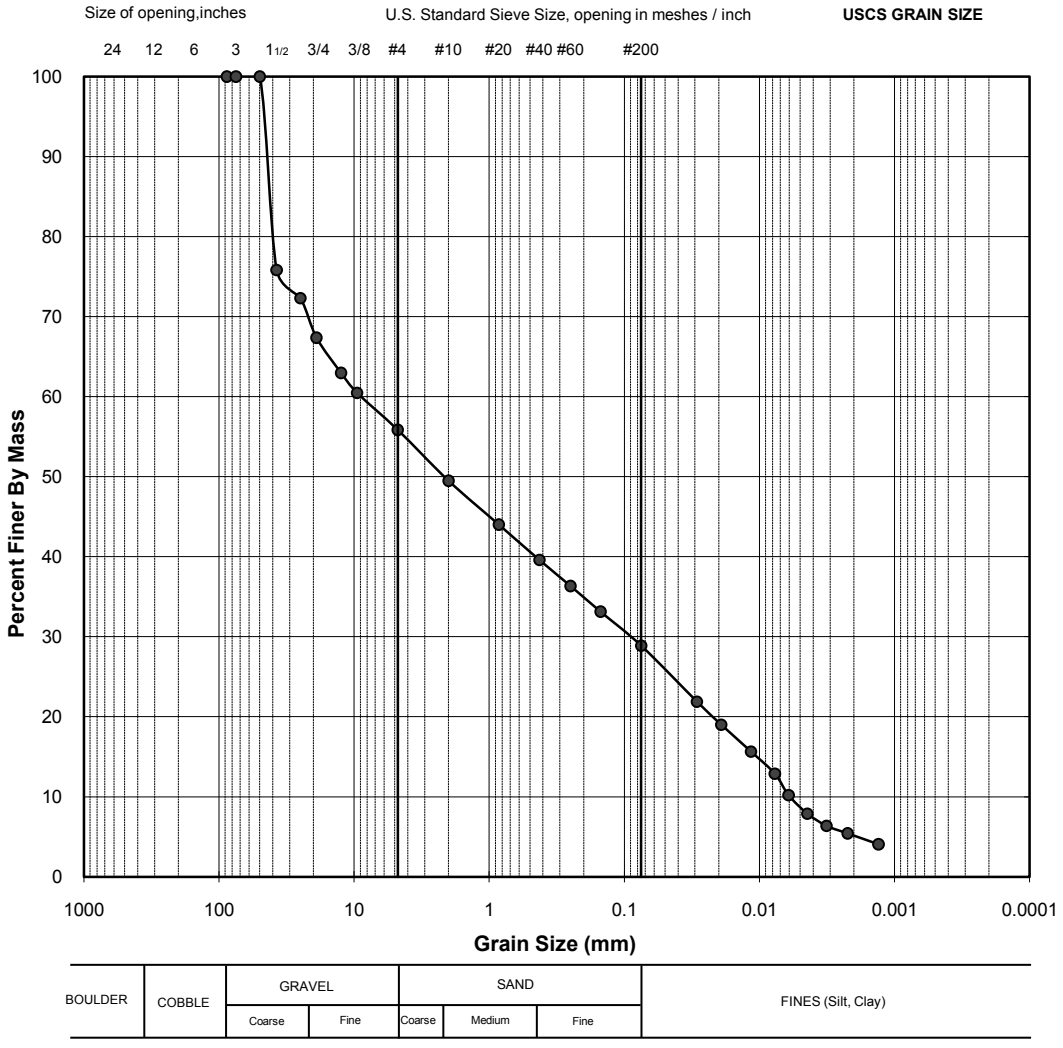
Golder Associates Ltd. - Kelowna Laboratory
1755 Springfield Road
Kelowna, B.C.
Canada V1Y 5V5

PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM D 422-63 (2007)

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**271**
Client:	AEM	**Field Label**	BG081510
Project:	Meadowbank Gold Project	**Depth (m):**	14
Location:	Nunavut	**Lab ID No:**	SA 271
Specific Gravity (assumed):	2.70	**Other**	Ch.31+855
Date sampled:	August 15, 2010	**Remarks:**	Till, water content: 10.4%
Dispersion Method:	Stirring		
Dispersion Period (min):	5.00		

Sieve Size (USS)	Sieve Size (mm)	% Passing
3.5"	87.50	100.0
3"	75.00	100.0
2"	50.00	100.0
1.5"	37.50	75.8
1"	25.00	72.3
3/4"	19.00	67.4
1/2"	12.50	63.0
3/8"	9.50	60.5
#4	4.75	55.8
#10	2.00	49.5
#20	0.850	44.0
#40	0.425	39.6
#60	0.250	36.3
#100	0.150	33.1
#200	0.075	28.9
-	0.0290	21.9
-	0.0192	19.0
-	0.0115	15.6
-	0.0077	12.9
-	0.0061	10.2
-	0.0044	7.9
-	0.0032	6.4
-	0.0022	5.4
-	0.0013	4.1



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

TESTED BY	DATE	CHECKED BY	DATE
B.Dieudonné	Aug.21, 2010		

C:\Documents and Settings\diavik\Desktop\Meadowbank-2010\Weekly Lab Data 16 August to 22 August\Hydrometer\File

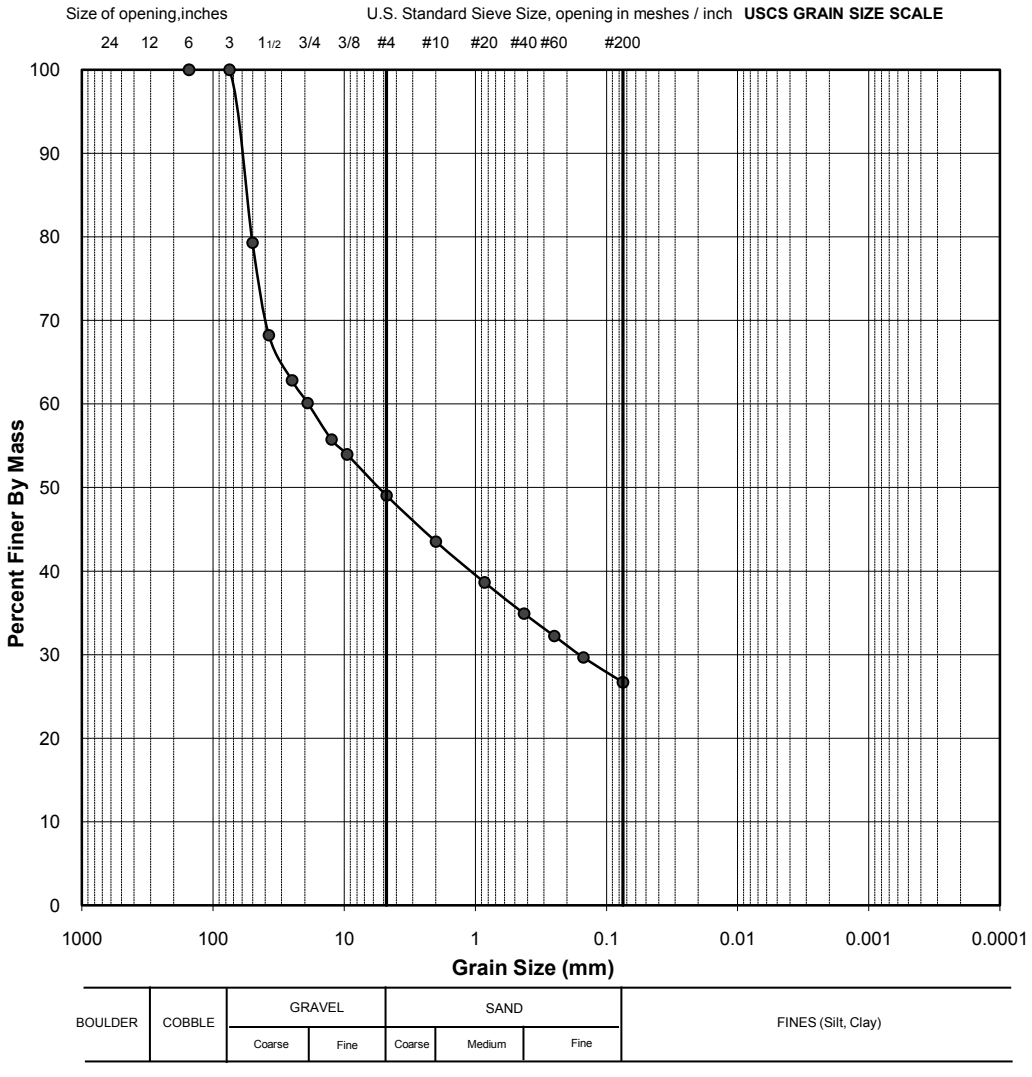
Golder Associates Ltd. - Burnaby Laboratory
4280 Still Creek Drive
Burnaby, B.C. Canada V5C 6C8

PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**272**
Client:	AEM	**Field Label:**	BG081610-1
Project:	Meadowbank Gold Project	**Depth (m):**	14
Location:	Nunavut	**Lab ID No:**	SA 272
Remarks:	water content: 12.5%	**Date Sampled:**	August 16, 2010
Sa. Location:	Ch.31+863	**Material Specification:**	
		Method:	COMBINED, WASHED
		Date Tested:	August 19, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
6"	152.4	100.0
3"	75.0	100.0
2"	50.0	79.3
1.5"	37.5	68.2
1"	25.0	62.8
3/4"	19.0	60.1
1/2"	12.5	55.7
3/8"	9.5	54.0
#4	4.75	49.0
#10	2.00	43.5
#20	0.850	38.6
#40	0.425	34.9
#60	0.250	32.2
#100	0.150	29.7
#200	0.075	26.7



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

B.Dieudonné	August 19, 2010		
TESTED BY	DATE	CHECKED BY	DATE

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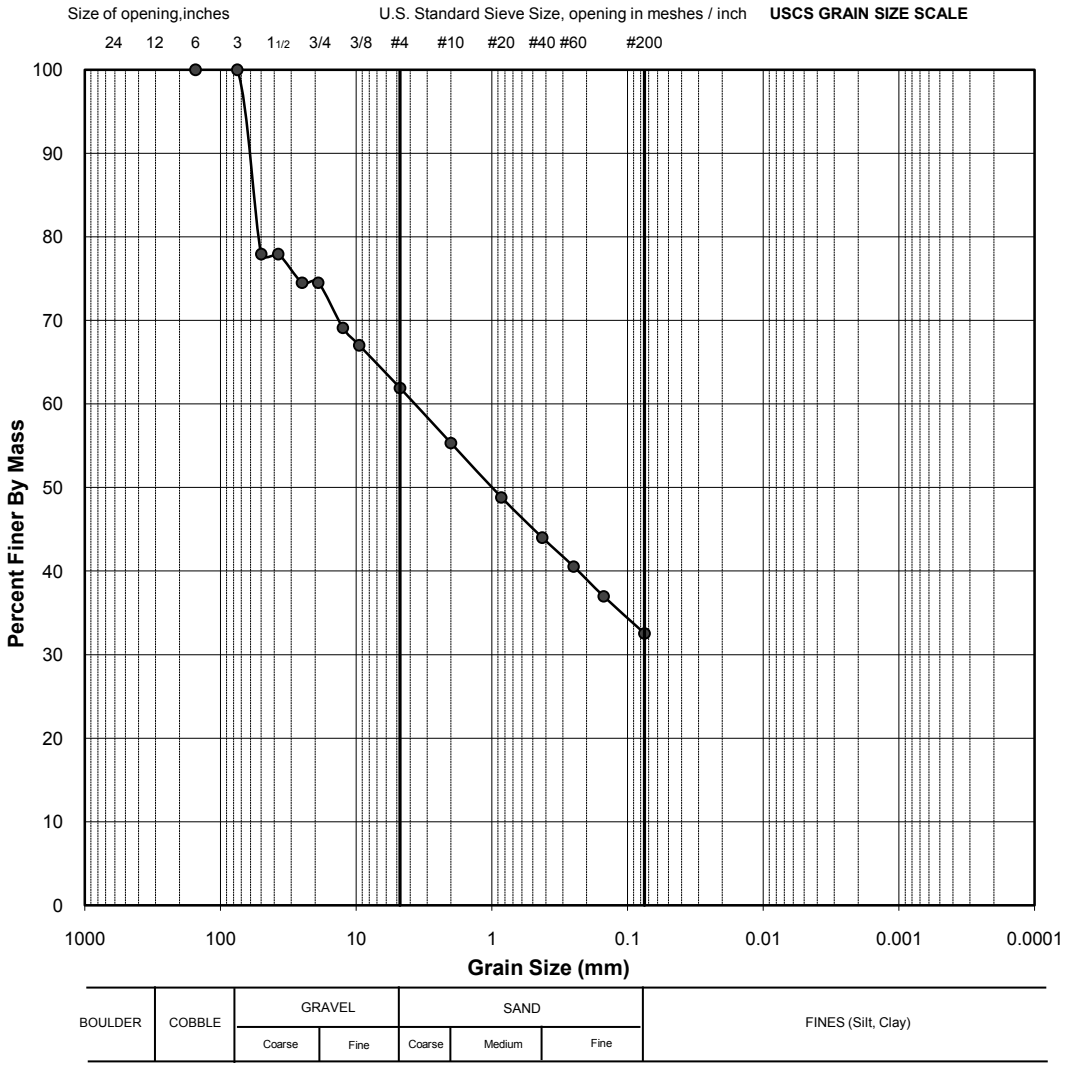
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Burnaby, B.C. Canada V5C 6C8

PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**274**
Client:	AEM	**Field Label:**	BG081710-1
Project:	Meadowbank Gold Project	**Depth (m):**	13.0
Location:	Nunavut	**Lab ID No:**	SA 274
Remarks:	Water Content = 10.4%	**Date Sampled:**	August 17, 2010
Sa. Location:	Ch.31+873	**Material Specification:**	
		Method:	COMBINED, WASHED
		Date Tested:	August 20, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
6"	152.4	100.0
3"	75.0	100.0
2"	50.0	77.9
1.5"	37.5	77.9
1"	25.0	74.5
3/4"	19.0	74.5
1/2"	12.5	69.1
3/8"	9.5	67.0
#4	4.75	61.9
#10	2.00	55.3
#20	0.850	48.8
#40	0.425	44.0
#60	0.250	40.5
#100	0.150	37.0
#200	0.075	32.5



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

B.Dieudonné	August 20, 2010		
TESTED BY	DATE	CHECKED BY	DATE

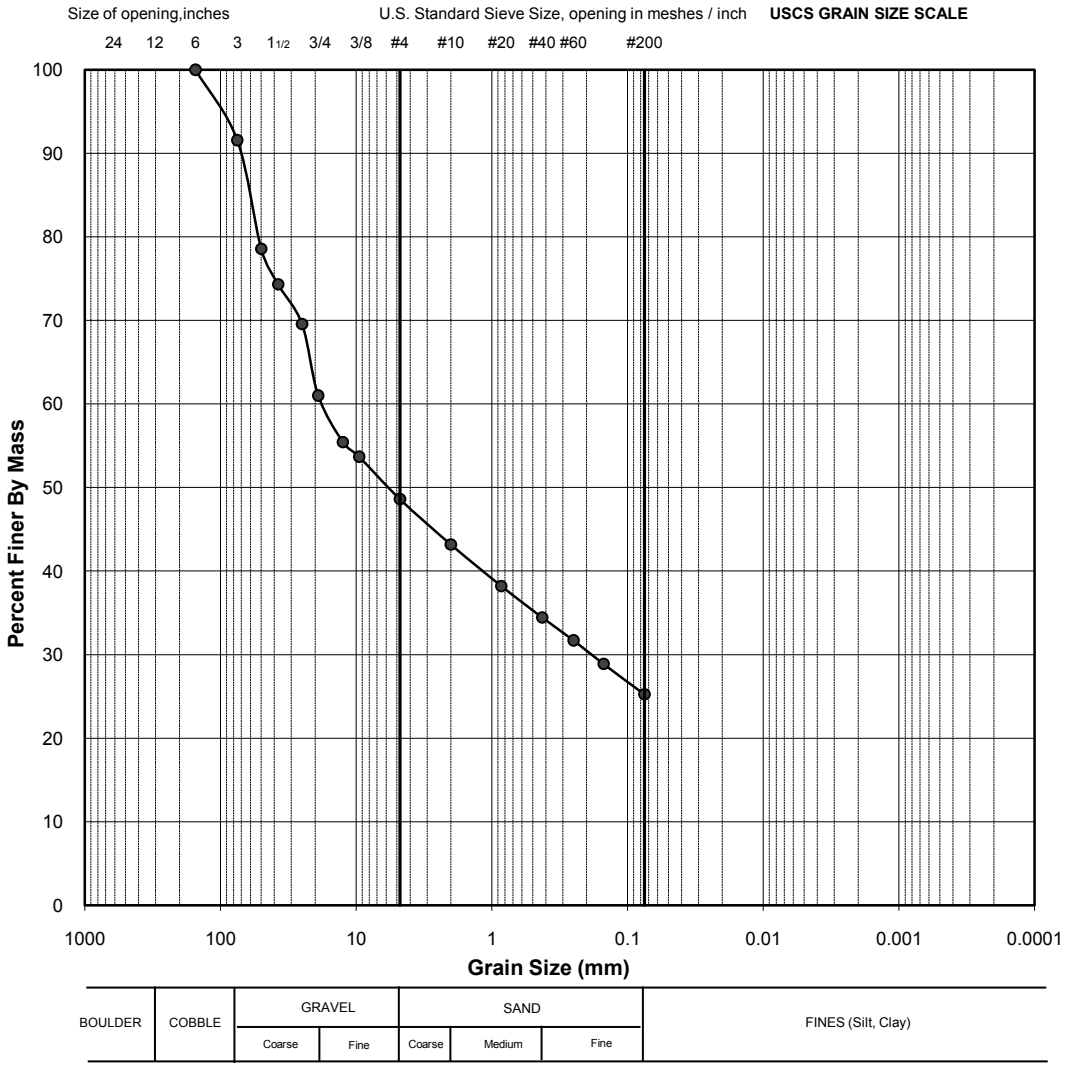
Golder Associates Ltd. - Burnaby Laboratory
4280 Still Creek Drive
Burnaby, B.C. Canada V5C 6C8

PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**274**
Client:	AEM	**Field Label:**	BG081710-1
Project:	Meadowbank Gold Project	**Depth (m):**	13.0
Location:	Nunavut	**Lab ID No:**	SA 274
Remarks:	Water Content = 10.4%	**Date Sampled:**	August 17, 2010
Sa. Location:	Ch.31+873	**Material Specification:**	
		Method:	COMBINED, WASHED
		Date Tested:	September 1, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
6"	152.4	100.0
3"	75.0	91.6
2"	50.0	78.6
1.5"	37.5	74.3
1"	25.0	69.6
3/4"	19.0	61.0
1/2"	12.5	55.4
3/8"	9.5	53.7
#4	4.75	48.6
#10	2.00	43.2
#20	0.850	38.2
#40	0.425	34.4
#60	0.250	31.7
#100	0.150	28.9
#200	0.075	25.2



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

TESTED BY	DATE	CHECKED BY	DATE
MO	September 1, 2010		

C:\Documents and Settings\diavik\Desktop\Meadowbank-2010\Weekly Lab Data 16 August to 22 August\Sieves\Excel\SA 274-bis

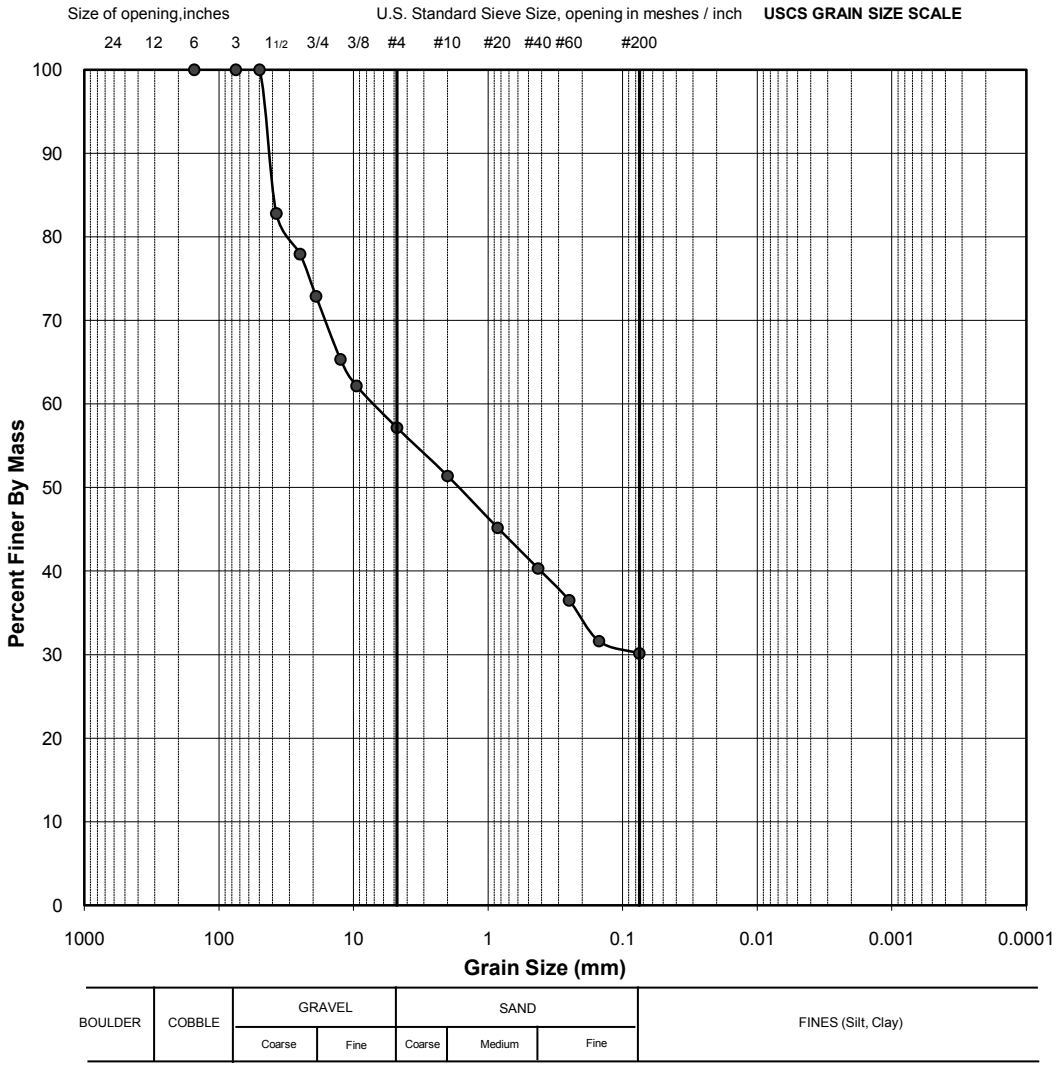
Golder Associates Ltd. - Burnaby Laboratory
4280 Still Creek Drive
Burnaby, B.C. Canada V5C 6C8

PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**275**
Client:	AEM	**Field Label:**	BG081210-3
Project:	Meadowbank Gold Project	**Depth (m):**	2-3
Location:	Nunavut	**Lab ID No:**	SA 275
Remarks:	Water Content = 10.4%	**Date Sampled:**	August 12, 2010
Sa. Location:	Ch.30+860	**Material Specification:**	
		Method:	COMBINED, WASHED
		Date Tested:	August 24, 2010

Sieve Size (USS)	(mm)	Passing %
6"	152.4	100.0
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	82.8
1"	25.0	77.9
3/4"	19.0	72.9
1/2"	12.5	65.3
3/8"	9.5	62.2
#4	4.75	57.1
#10	2.00	51.4
#20	0.850	45.2
#40	0.425	40.3
#60	0.250	36.5
#100	0.150	31.6
#200	0.075	30.1



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

B.Dieudonné	August 24, 2010		
TESTED BY	DATE	CHECKED BY	DATE

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PARTICLE SIZE ANALYSIS OF SOILS

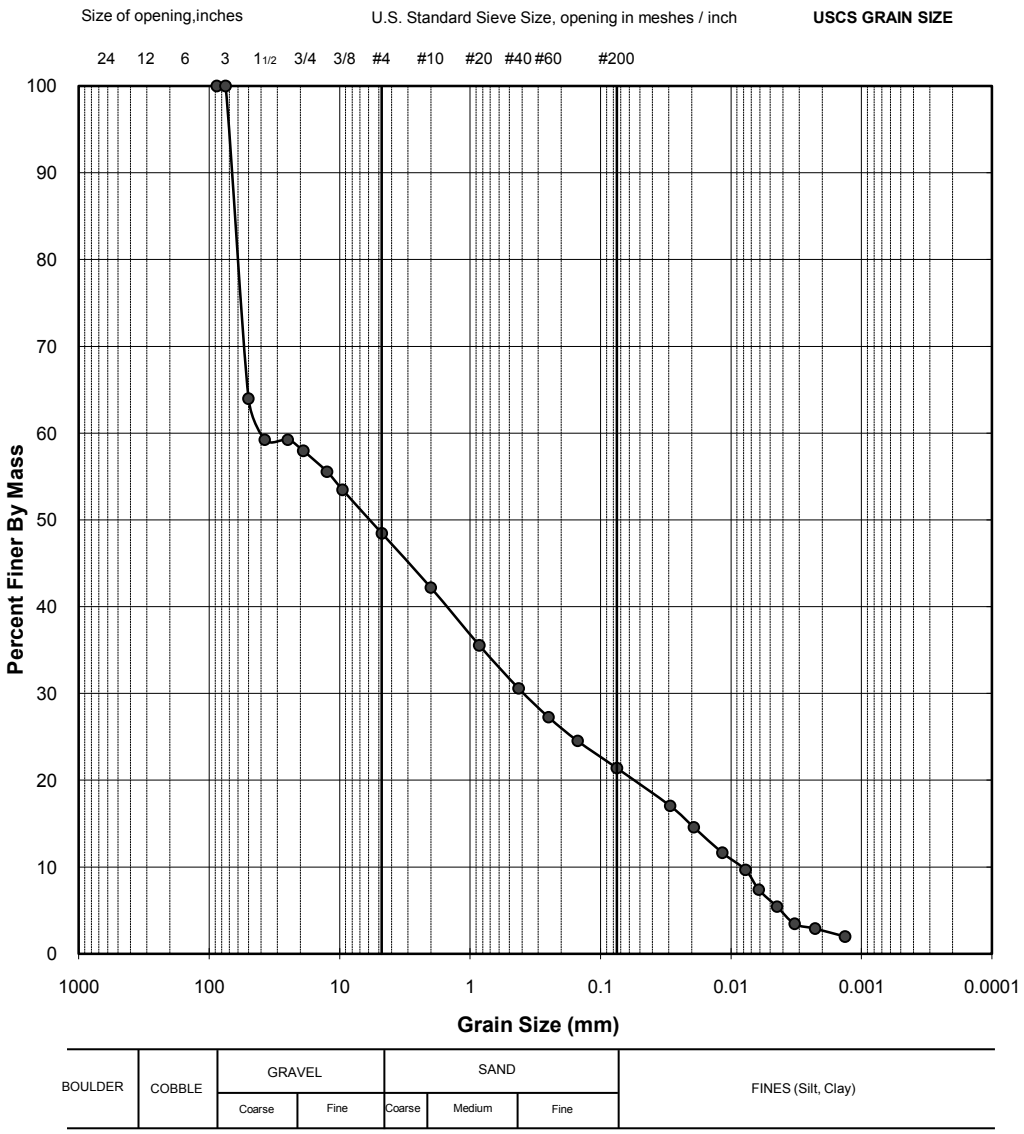
Reference
ASTM D 422-63 (2007)

Project No.:	09-1428-5007 (2000)	**Sample No:**	**277**
Client:	AEM	**Field Label.:**	BG081810
Project:	Meadowbank Gold Project	**Depth (m):**	13
Location:	Nunavut	**Lab ID No:**	SA 277

Specific Gravity (assumed): 2.70
Date sampled: August 18, 2010
Other Ch.31+883
Remarks: Water content = 10.8 %

Dispersion Method: Stirring
Dispersion Period (min): 5.00

Sieve Size (USS)	Sieve Size (mm)	% Passing
3.5"	87.50	100.0
3"	75.00	100.0
2"	50.00	64.0
1.5"	37.50	59.2
1"	25.00	59.2
3/4"	19.00	58.0
1/2"	12.50	55.6
3/8"	9.50	53.5
#4	4.75	48.5
#10	2.00	42.2
#20	0.850	35.5
#40	0.425	30.6
#60	0.250	27.3
#100	0.150	24.5
#200	0.075	21.4
-	0.0293	17.0
-	0.0193	14.6
-	0.0117	11.6
-	0.0077	9.7
-	0.0061	7.4
-	0.0044	5.4
-	0.0033	3.5
-	0.0023	2.9
-	0.0013	2.0



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

TESTED BY	DATE	CHECKED BY	DATE
B.Dieudonné	Aug.24, 2010		

C:\Documents and Settings\diavik\Desktop\Meadowbank-2010\Weekly Lab Data 23 August to 29 August\File

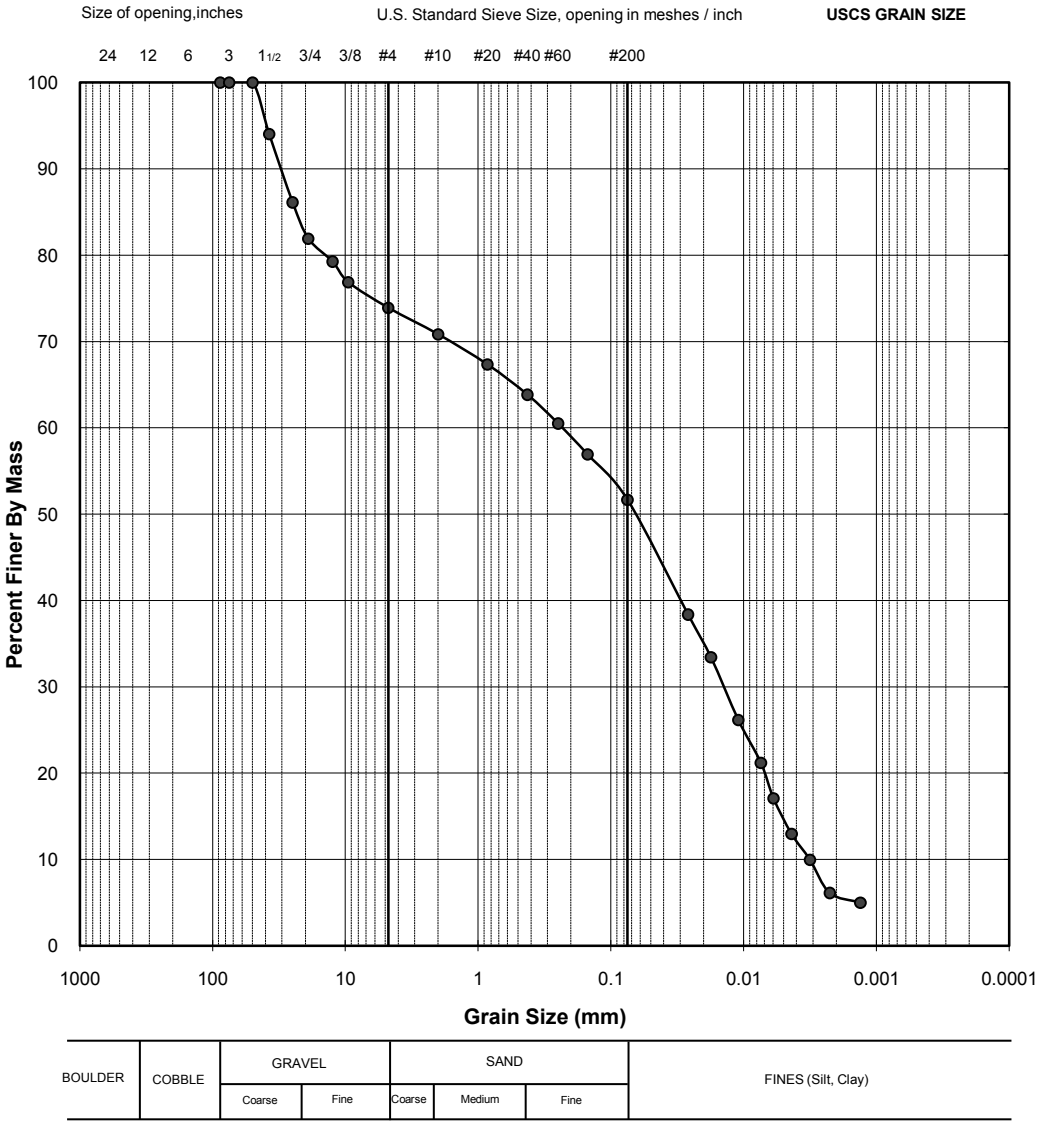
Golder Associates Ltd. - Kelowna Laboratory
1755 Springfield Road
Kelowna, B.C. Canada V1Y 5V5

PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM D 422-63 (2007)

Project No.:	09-1428-5007 (2000)	**Sample No:**	**278**
Client:	AEM	**Field Label**	BG081910-1
Project:	Meadowbank Gold Project	**Depth (m):**	13
Location:	Nunavut	**Lab ID No:**	SA 278
Specific Gravity (assumed):	2.70	**Other**	Ch.31+893, Till, Water content: 17.5%
Date sampled:	August 19 2010	**Remarks:**	
Dispersion Method:	Stirring		
Dispersion Period (min):	5.00		

Sieve Size (USS)	Sieve Size (mm)	% Passing
3.5"	87.50	100.0
3"	75.00	100.0
2"	50.00	100.0
1.5"	37.50	94.0
1"	25.00	86.1
3/4"	19.00	81.9
1/2"	12.50	79.3
3/8"	9.50	76.9
#4	4.75	73.9
#10	2.00	70.8
#20	0.850	67.3
#40	0.425	63.8
#60	0.250	60.5
#100	0.150	56.9
#200	0.075	51.7
-	0.0262	38.4
-	0.0176	33.4
-	0.0110	26.1
-	0.0074	21.2
-	0.0060	17.1
-	0.0044	12.9
-	0.0032	9.9
-	0.0022	6.1
-	0.0013	5.0



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

TESTED BY	DATE	CHECKED BY	DATE
DB	August 25,10		

Golder Associates Ltd. - Kelowna Laboratory
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PARTICLE SIZE ANALYSIS OF SOILS

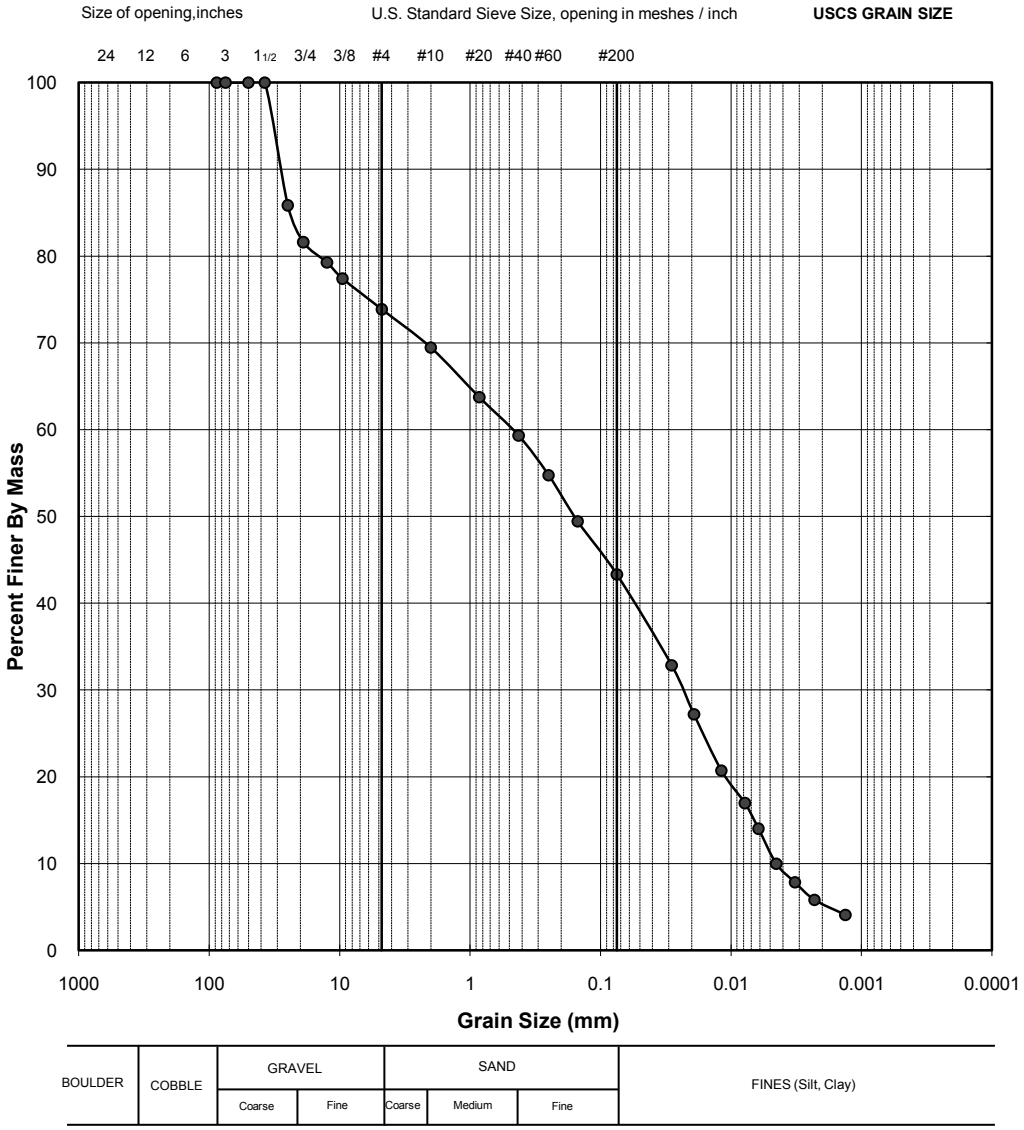
Reference
ASTM D 422-63 (2007)

Project No.:	09-1428-5007 (2000)	**Sample No:**	**281**
Client:	AEM	**Field Label.:**	BG082010-2
Project:	Meadowbank Gold Project	**Depth (m):**	12
Location:	Nunavut	**Lab ID No:**	SA 281

Specific Gravity (assumed):	2.70	**Other**	Ch.31+907
Date sampled:	August 20 2010	**Remarks:**	Water content = 17 %

Dispersion Method:	Stirring
Dispersion Period (min):	5.00

Sieve Size (USS)	Sieve Size (mm)	% Passing
3.5"	87.50	100.0
3"	75.00	100.0
2"	50.00	100.0
1.5"	37.50	100.0
1"	25.00	85.8
3/4"	19.00	81.6
1/2"	12.50	79.3
3/8"	9.50	77.4
#4	4.75	73.9
#10	2.00	69.4
#20	0.850	63.7
#40	0.425	59.3
#60	0.250	54.7
#100	0.150	49.4
#200	0.075	43.3
-	0.0285	32.8
-	0.0192	27.2
-	0.0119	20.7
-	0.0078	17.0
-	0.0062	14.0
-	0.0045	10.0
-	0.0032	7.8
-	0.0023	5.8
-	0.0013	4.1



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

TESTED BY	DATE	CHECKED BY	DATE
MO	Aug.26, 2010		

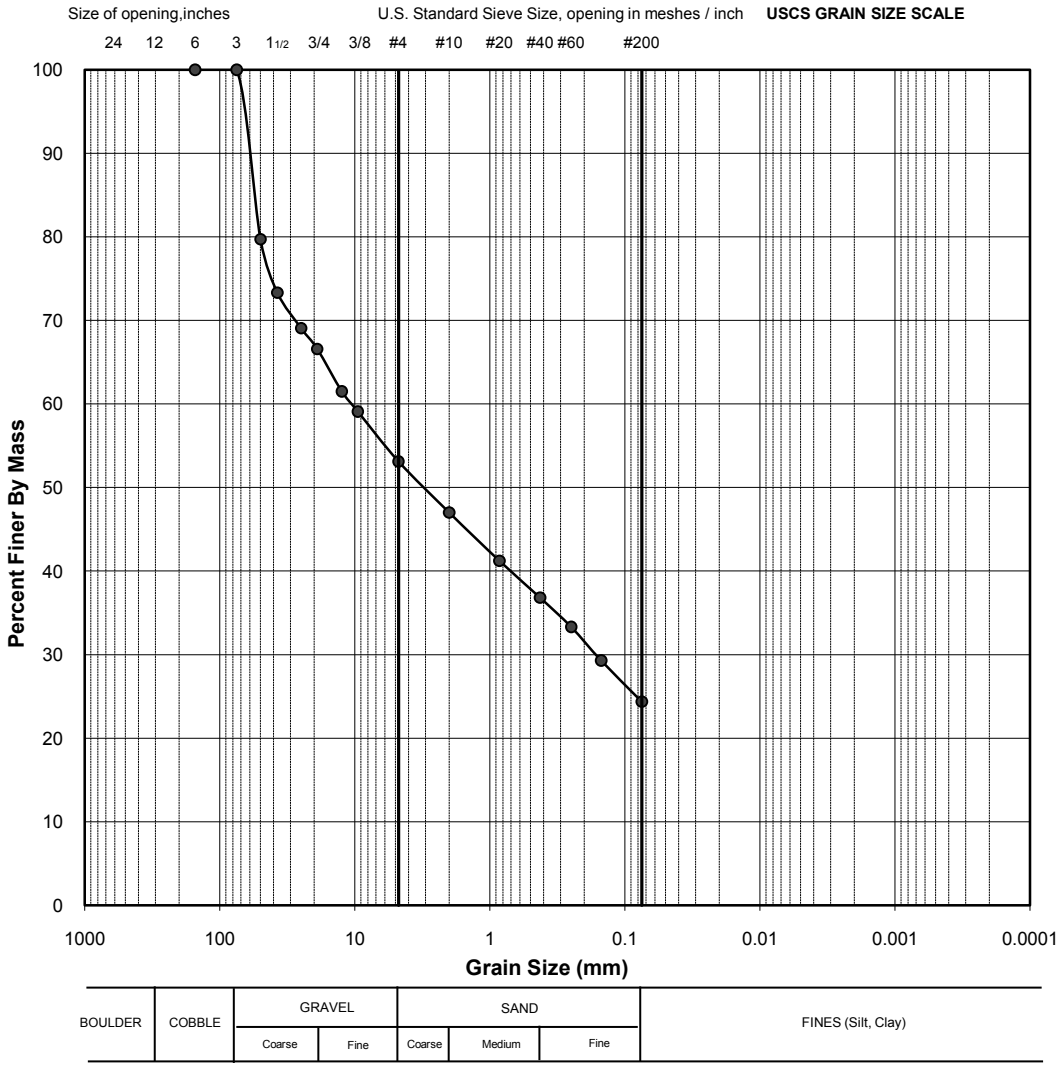
Golder Associates Ltd. - Burnaby Laboratory
4280 Still Creek Drive
Burnaby, B.C. Canada V5C 6C8

PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**284**
Client:	AEM	**Field Label:**	BG080910
Project:	Meadowbank Gold Project	**Depth (m):**	10
Location:	Nunavut	**Lab ID No:**	SA 284
Remarks:	Water Content = 9.9%	**Date Sampled:**	August 09, 2010
Sa. Location:	Ch.31+825	**Material Specification:**	
		Method:	COMBINED, WASHED
		Date Tested:	August 21, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
6"	152.4	100.0
3"	75.0	100.0
2"	50.0	79.7
1.5"	37.5	73.3
1"	25.0	69.1
3/4"	19.0	66.6
1/2"	12.5	61.5
3/8"	9.5	59.1
#4	4.75	53.1
#10	2.00	47.0
#20	0.850	41.2
#40	0.425	36.8
#60	0.250	33.3
#100	0.150	29.3
#200	0.075	24.4



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

B.Dieudonné	August 21, 2010		
TESTED BY	DATE	CHECKED BY	DATE

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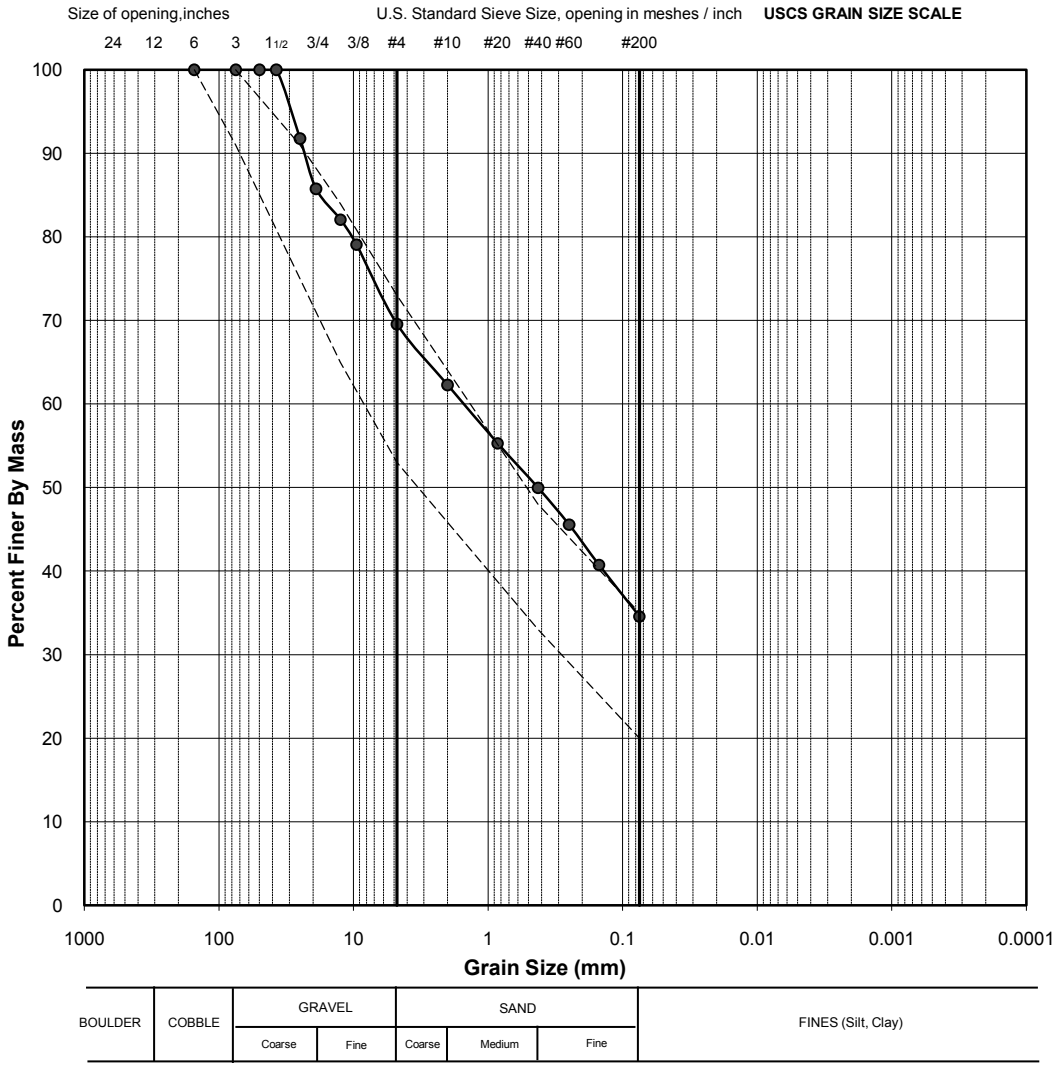
Golder Associates Ltd. - Burnaby Laboratory
4280 Still Creek Drive
Burnaby, B.C. Canada V5C 6C8

PARTICLE SIZE ANALYSIS OF SOILS

Reference
ASTM C136-06 & C117-04

Project No.:	09-1428-5007 (2000)	**Sample No.:**	**289**
Client:	AEM	**Field Label:**	BG082410-1
Project:	Meadowbank Gold Project	**Depth (m):**	NA
Location:	Nunavut	**Lab ID No:**	SA 289
Remarks:	water content = 5.3%	**Date Sampled:**	August 24, 2010
Sa. Location:	Stockpile at Ch.31+610	**Material Specification:**	NATIVE BORROW (Till for CSB)
		Method:	COMBINED, WASHED
		Date Tested:	August 26, 2010

Sieve Size (USS)	Sieve Size (mm)	Passing %
6"	152.4	100.0
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	91.8
3/4"	19.0	85.8
1/2"	12.5	82.1
3/8"	9.5	79.1
#4	4.75	69.5
#10	2.00	62.3
#20	0.850	55.3
#40	0.425	50.0
#60	0.250	45.5
#100	0.150	40.7
#200	0.075	34.6



** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

MO	August 26, 2010		
TESTED BY	DATE	CHECKED BY	DATE

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TECHNICAL MEMORANDUM

DATE September 9, 2010 **PROJECT No.** 09-1428-5007
Doc. 1010 Rev 0

TO Gaston Blanchette and Yohan Jalbert
Agnico-Eagle Mines Limited Meadowbank Division

CC Dan Walker, Michel Julien, Annie Beaulieu, Paul Bedell, Grant Bonin, Fiona Esford

FROM Grant Burns **EMAIL** Grant_Burns@golder.com

WEEKLY REPORT FOR PERIOD FROM AUGUST 30 TO SEPTEMBER 5, 2010
MEADOWBANK GOLD PROJECT, NUNAVUT

This report has been modified to only present details related to the Bay Goose Dike, for the purpose of including the document in the As-Built report. Section 3.0 Tailings Storage Facility and 4.0 East Dike - Weir Monitoring have been removed

This weekly report summarizes Golder QA activities from August 30 to September 5, 2010 related to the construction activities undertaken by FGL for AEM at Bay-Goose Dike.

Progress during this period at Bay-Goose Dike consisted of both dynamic and vibro-densification by GeoPac and cut-off wall (slurry trench) works by Inquip.

Photographs showing work progress related to construction activities at Bay-Goose are included with this weekly report.

Golder personnel on site during this period are summarized in Table 1.

Table 1: Golder personnel on site

Name	Mobilize	Demobilize
Grant Burns	September 2	September 14
Annie Beaulieu	August 30	September 7
Denis Vachon	August 23	September 2
Kelly Hood	August 30	September 13
Mariam Ouangrawa	July 28	September 1
Reanna Roberts	August 20	August 31
Damien Edwards	August 20	September 6
Gabriel Pilon	August 24	September 6
Ryan Preston	August 4	August 31
Lynn Wilson	August 17	August 30
Jeff Fleming	August 31	September 3
J.F. Rivest	September 3	September 14

1.0 HEALTH AND SAFETY

Daily H&S meetings were held with all Golder personnel. Minutes from these meetings are recorded and stored in Golder's office on site. The key H&S elements for the reporting period are as follows:

- Weather is very sunny and warm for the season but getting cold at night. Use sunscreen and dress appropriately;
- Heavy equipment and light vehicles are blowing dust around throughout the site, Need to close eyes or look on opposite direction to avoid dust. Use of bandana or jacket neck over mouth useful;
- Remember to conduct vehicle inspection at start of each shift and check and initial the previous inspection report when using a truck that has been inspected by somebody else (anytime of day).
- Pick-up lights, windows and mirrors get dirty fast, so clean at the beginning of each shift for better visibility;
- Speed limit on Bay-Goose Dike has been revised to 15 km/h, road signage will be installed;
- Drivers are reminded to slow down while driving on Stormwater Dam, especially in the area where the liner installation crew is working;
- South Camp Dike road is very bumpy and dusty, drive slowly;
- Remember to park more than 3 m away from the slurry trench while at Bay-Goose Dike;
- Lots of congestion on Stormwater Dam due to heavy equipment traveling to Saddle Dams 1 and 2. Pick-up trucks are to be parked on the upstream side only. Golder staff reminded staff to pay attention and avoid using pick-up trucks for short distances. Park in a safe place (dike extremities) and walk in safe areas;
- Haul traffic direction changes regularly. Be aware;
- Fresh liner seams can be slippery when still warm. Be aware and watch footing;
- Staff are reminded that only the operator is permitted aboard the excavators. GPS readings (Komatsu 1250) are to be communicated by radio.
- Remember to wear life vest when standing less then 3 m to the main exaction and the slurry trench;
- Safety perimeter installed around vibro-dynamic compaction activities. Be aware and respect distance;

Completed portion of the cutoff wall will remain open until early October. Area identified with stakes to avoid driving on or close to the trench. Be aware.

Health and safety concerns were also discussed with AEM personnel during the daily construction meetings.

2.0 BAY-GOOSE DIKE

2.1 Description of Activities

As of end of September 5, 2010 night shift the following construction activities were observed:

- Cutoff wall (slurry trench) continuation from previous week, from about STN 31+242 to 30+853 m;

- Cutoff wall connection at 2009 CSB plug completed at about STN 30+853 m;
- New cutoff wall advancement from STN 31+644 to 31+708 m;
- Excavation and backfilling with CSB between about STN 31+784 to 31+806 m (2nd Plug)
- Backfilling with 19 mm minus between about STN 31+585 to 31+640 m (previously collapsed trench);
- Dynamic compaction between about STN 31+700 to 31+800 m; and
- Vibro-compaction to about STN 31+886 m (commencement not observed).

2.2 Summary of main discussion in construction meeting

Construction meetings were held daily during the current reporting period, attended by Annie Beaulieu (August 31st to Sept 5th) and Grant Burns (Sept 3rd to 5th). The following items are summarized from available meeting minutes:

SD1:

- Removed.

SD2:

- Removed.

SWD:

- Removed.

Bay-Goose Dike:

- Excavation, slurry trench and SB backfilling progressing toward Bay Goose Island;
- AEM requested Golder to contact a bathymetric surveyor, to survey the main excavation following the excavator incident; and
- FGL confirmed that variance in elevation are due to errors in the bathymetric survey and that the values will be reviewed.

Densification

- Vibro-compaction started August 30th and is on going upchainage. Vibro and dynamic is performed at Channel 2 with vibro to be carried out at channel 3; and
- Samples from crushed stone used to backfill vibro-compaction has been requested for gradation.

Slurry Trench (Cut-off Wall)

- Till piles adjacent to the open slurry trench are not recommended, however, if deemed necessary till placement should at minimum a projection of 1H:1V slope from the toe of either the up or downstream

trench toe Alternatively, till placement may be placed behind the advancing cutoff wall excavation front. This issue was discussed with Inquip;

- Cut-off to the 2009-2010 plug was completed on Sept 2nd. A second plug (CSB) will be built between 31+795 and 31+806 and will have the same design as the previous one;
- Slurry excavation will begin after the second plug (CSB) is completed;
- No cap will be installed over the cut-off wall, SB slurry will remain uncovered until some time in early October; and
- Excavation tests to be conducted in the area where the trench collapsed.

2.3 Summary of QC/QA activities and test results

At the end of the night shift Sunday September 5th, the cutoff wall had been completed between about STN 30+853 to 31+560 m and STN 31+644 to 31+806 m. While the majority of the cutoff wall was constructed using soil bentonite (SB), two zones (i.e. plugs) were constructed using cement soil bentonite (CSB): STN 31+548 to STN 31+572, and about STN 31+784 to 31+806 m. The 2010 cutoff wall connected with the 2009 CSB plug at about STN 30+853 m.

Density and Marsh funnel testing were carried out at both the slurry pond and trench with the density of the slurry trench always greater than that of the pond and funnel results averaging around 40 to 45 seconds. Slump testing of the SB and CSB were also carried out, with slump results ranging between 50 to 150 mm. An exception was a single CSB slump test carried out at the location of the 2nd plug where the slump was recorded to be 200 mm.

Between approximately STN 31+700 to 31+800 m dynamic compaction was carried out with vibro compaction in front of the advancing densification platform.

No excavation works were carried out at the 2nd front due to the submerged excavator which had not yet been removed during the period of this weekly report.

At request of FGL, provided Daily Inspection Reports for the first excavation front between STN 31+575 to 31+610 m.

2.4 Summary of problems and their resolutions

Following the incident of the submerged excavator that occurred on the evening of August 25th, 2010 while excavating the main trench around STN32+020, Golder was requested to conduct a bathymetric survey of the open excavation. Jeff Fleming, geophysicist from Golder Mississauga, mobilized to site on Tuesday August 31st. An initial survey was carried out the same afternoon using an aluminum boat pulled by ropes on each side of the excavation. Data were then processed and provided to AEM (Gaston) for review. A second survey was conducted with the same equipment on Wednesday, September 1st to acquire a better density of measurements. Manual soundings were also performed by AEM personnel and readings were provided to Golder to merge with the previous two sonar surveys and re-interpret (regrid) the data. Cross-Sections and profiles were extracted from the interpreted surface and the results were provided to AEM both as reading points and interpreted grid data. Reading points were also provided to FGL. On Thursday, September 2nd a sidescan was delivered to site. Golder conducted a survey around the submerged excavator in order to get an image of its current position.

Interpreted cross-section and profile were produced, but due to the shallow water depth the image was not clear enough to provide useful information.

Bathymetric surveys and other activities on the Bay-Goose Dike raised some questions about surveyed data. Bathymetric elevations from STN 31+030 to 31+110 m were confirmed incorrect. This package corresponds to an area where no manual soundings (weighted tap) were conducted. A revised package will be provided by FGL surveyors who will be using the Komatsu 1250 GPS readings from the cutoff trench excavation as a reference. Previous issues with the handheld GPS pole (Trimble) elevation reference were also discussed with FGL. Survey measurements between STN 31+832 to 31+840 m were confirmed correct according to FGL records, while STN 31+842 to 31+855 m were 'over' measured by 0.85 m; however, this has been corrected. Golder and FGL bathymetric surveys from the main excavation where the excavator was submerged were superimposed (using the computer software Surfer) to confirm similar locations. Chainage was also compared and reference points were confirmed similar.

A partial collapse of the cutoff wall trench occurred between about STN 31+585 to 31+640 m prior to the current reporting period. This trench was backfilled with saturated 19 mm minus (core backfill) material to prevent bridging.

3.0 TAILINGS STORAGE FACILITY

Removed.

4.0 EAST DIKE - WEIR MONITORING

Removed.

5.0 SAMPLING AND LABORATORY TESTING

Summary of the weekly laboratory activities from August 30th to September 5th, 2010:

BAY-GOOSE DIKE:

- **TILL**

  SA 274: STN 31+873 m (Sieve re-testing)

TSF:

Removed

6.0 PHOTOGRAPHS



Photograph 1: Bay Goose – Erosion from blowout of pipe at STN 31+152 on August 30, 2010



Photograph 2: Bay Goose – Vibro compaction on September 1, 2010



Photograph 3: Bay Goose – Cut-off wall looking from 31+060 to31+035 on September 1, 2010

GB/AB/AD

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TECHNICAL MEMORANDUM

DATE September 15, 2010 **PROJECT No.** 09-1428-5007
Doc. 1010 Rev 0

TO Gaston Blanchette and Yohan Jalbert
Agnico-Eagle Mines Limited Meadowbank Division

CC Dan Walker, Michel Julien, Annie Beaulieu, Paul Bedell, Grant Bonin, Fiona Esford

FROM Grant Burns **EMAIL** Grant_Burns@golder.com

WEEKLY REPORT FOR PERIOD FROM SEPTEMBER 6 TO 12, 2010
MEADOWBANK GOLD PROJECT, NUNAVUT

This report has been modified to only present details related to the Bay Goose Dike, for the purpose of including the document in the As-Built report. Section 3.0 Tailings Storage Facility and 4.0 East Dike - Weir Monitoring have been removed

This weekly report summarizes Golder QA activities from September 6 to September 12, 2010 related to the construction activities undertaken by FGL for AEM at Bay-Goose Dike.

Progress during this period at Bay-Goose Dike consisted of both dynamic and vibro-densification by GeoPac and cut-off wall (slurry trench) works by Inquip. Both contractors demobilized from site on September 8th, 2010 with anticipated return dates of September 15th and 14th, respectively.

Photographs showing work progress related to construction activities at both Bay-Goose during this period are included with this weekly report.

Golder personnel on site during this period are summarized in Table 1.

Table 1: Golder personnel on site

Name	Mobilize	Demobilize
Fernando Ascencio	September 6	September 20
Dieudonné Barahebura	September 6	September 20
Grant Burns	September 2	September 14
Annie Beaulieu	August 30	September 7
Andrée Drolet	September 6	September 20
Damien Edwards	August 20	September 6
Kelly Hood	August 30	September 13
Gabriel Pilon	August 24	September 6
J.F. Rivest	September 3	September 14

1.0 HEALTH AND SAFETY

Daily H&S meetings were held with all Golder personnel. Minutes from these meetings are recorded and stored in Golder's office on site. The key H&S elements for the reporting period are as follows:

- Weather is changing and temperature is getting colder at night. Dress appropriately, wear winter gear;
- Heavy equipment and light vehicles are blowing dust around throughout the site. Need to close eyes or look in opposite direction to avoid dust. Use of bandana or jacket neck over mouth useful;
- Pick-up lights, windows and mirrors get dirty fast, so clean at the beginning of each shift for better visibility;
- Lots of haul traffic on Stormwater Dike. Pick-up trucks are to be parked on the upstream side only. Pay attention for traffic direction and park in a safe place (dike extremities) and walk in safe areas;
- Submerge excavator is being hauled out of the excavation, stay away from the area and be careful when driving close to the area;
- Haul traffic patterns changes regularly adjacent to the slurry trench. Be aware and choose parking carefully;
- Material is loose in the excavator muck pile and it makes it dangerous to lose footing or sink in. Walk carefully when inspecting soil samples and avoid stepping in soft soils.
- Depressions filed with mud are present at Bay-Goose. Walk around;
- Boulders can be present on the East Dike road and other haul roads. Be careful when driving especially at night;
- Activity is increasing at the connection of Bay-Goose Dike and FGL Island and the area can be congested. Watch for traffic and communicate with operators;
- Work resumed at the main excavation, therefore, remember to wear life vest when standing less then 3 m to the main excavation; and
- FLHA for liner installation was completed.

Completed portion of the cutoff wall will remain open until early October. Area identified with stakes to avoid driving on or close to the trench. Be aware.

Health and safety concerns were also discussed with AEM personnel during the daily construction meetings.

2.0 BAY-GOOSE DIKE

2.1 Description of Activities

As of end of September 12, 2010 night shift the following construction activities were observed:

- Cutoff wall (slurry trench) continuation from previous week, from about STN 31+708 to 31+794 m;
- Advancement of the core backfill from about STN 31+987 to 32+059 m;
- Dynamic compaction between about STN 31+800 to 31+900 m; and
- Vibro-compaction from about STN 31+886 to 31+930 m.

2.2 Summary of main discussion in construction meeting

Construction meetings were held daily during the current reporting period, attended by Annie Beaulieu and Grant Burns (Sept 6th and 7th), Andrée Drolet and Grant Burns (Sept 8rd to 11th) and by Grant Burns (Sept 12th). The following items are summarized from available meeting minutes:

SD1:

- Removed.

SD2:

- Removed.

SWD:

- Removed.

Bay-Goose Dike:

- Excavator removed from excavation on September 5th;
- Survey of siltation and silt cleaning done before excavation resumed;
- Maximum trench width to be 10 meters rather than 12 due to schedule constraints;
- Maybe over cleaning near toe of excavation front as platform rock will likely always be found as we are adjacent to toe;
- Bedrock surface getting very steep, time to start level off and continue with bedrock/till transition;
- Till (only) reached on Sept 9th/10th and excavation is on going;
- Stripping has begun at embankment (FGL island) down to permafrost; and
- New schedule provided by FGL states the following completion dates: Excavation - Sept 22nd; Cut-off Wall – Oct 9th; and Densification Sept 29th.

Densification

- Geopac demobilized on Sept 8th and will return on Sept 15th.

Slurry Trench (Cut-off Wall)

- Bentonite in lake is an environmental concern, leaks from slurry pond and slurry pipes;
- Plug #2 (approx. STN 31+794 m) reached on Sept 7th; and
- Inquip demobilized on Sept 8th and will return on Sept 14th.

2.3 Summary of QC/QA activities and test results

At the end of the night shift Sunday September 12th, the cutoff wall had been completed between about STN 31+644 to 31+794 m. Density and Marsh funnel testing were carried out at both the slurry pond and trench with the density of the slurry trench always greater than that of the pond and funnel results averaging around 40 to 45 seconds. Slump testing of the SB and CSB were also carried out, with slump results ranging between 50 to 150 mm. Between approximately STN 31+800 to 31+930 m dynamic compaction was carried out with vibro-compaction in front of the advancing densification platform. Both Inquip and GeoPac demobilized off of site on September 8th, with anticipated return dates of September 14th and 15th, respectively.

Work resumed at the main excavation front on September 7th, 2010 and the approved excavation has advanced from about STN 32+003 to 32+080 m. Silt soundings were taken every 5 m between about STN 32+020 to 32+070 m with recorded accumulations between 0.1 to 1.9 m thick. FGL collected bathymetry between STN 31+992 to 32+005 m with a recorded silt thickness of about 2 m. The chainage between about STN 32+003 and 32+005 m was cleaned of the silt prior to the core backfill placement.

2.4 Summary of problems and their resolutions

The excavator that became submerged on the evening of August 25th, 2010 while excavating the main trench at around STN 32+020 was removed on the afternoon ofSeptember 6th, 2010.

Discussions regarding the use of bentonite-enhanced granular fill at Saddle Dam 2. This material is to be placed as treatment over bedrock surface discontinuities. Its placement is to be limited to the dimensions shown on the drawings; however, field conditions will dictate the actual extents and dimensions required to enable proper placement. The use of the bentonite-enhanced granular fill is not intended to be used as a "bulk fill" material; for example, the infilling of depressions or large zones within the upstream cut off can be used to facilitate(?)

During the construction of the cut off wall the use of soil bentonite (SB) was extended to STN 31+803 m, where as, drawings indicated CSB to start at about STN 31+690 m (drawing 4300-26). As the actual approved foundation elevation was 1 to 4 m higher than anticipated and founded on bedrock (i.e. similar to cutoff wall construction between about STN 30+856 to 31+540m) it was decided to extend the SB.

While survey data points were collected along sections of both sides of the constructed cut-off trench, there are sections where data points have only been collected on the upstream side of the trench or not collected at all. It has been requested that the centreline GPS points collected during excavation from the shovel be plotted in the absence of crest of trench survey data points. Also, FGL provided a correction to GPS data points collected along centreline every two meters between STN 31+000 to 31+108 m.

3.0 TAILINGS STORAGE FACILITY

Removed.

4.0 EAST DIKE - WEIR MONITORING

Removed.

5.0 SAMPLING AND LABORATORY TESTING

Summary of the weekly laboratory activities from September 6th to 12th, 2010:

BAY-GOOSE DIKE :

- **CORE BACKFILL** (Sieve and moisture)

  SA303 : STN 31+860
  SA307 : STN 31+990
  SA318 : STN 32+018

- **COARSE FILTER** (sieve and moisture)
  SA309: STN 31+988

- **SB BACKFILL SHIPPED TO BURNABY** (Sieve and permeability)

  SA302 : STN 31+884
  SA314 : STN 31+668
  SA316 : STN 31+424
  SA317 : STN 31+668
  SA315 : STN 31+532 (to be shipped next week)

- **TILL** (sieve, moisture and hydrometer)

  SA308 : STN 32+032
  SA310 : STN 32+029
  SA311 : STN 32+048
  SA312 : STN 32+031.5
  SA313 : STN 32+037
  SA320 : STN 32+060

TSF:

Removed

STOCK PILE:

- **TILL** (sieve, moisture and hydrometer)

  SA305
  SA319

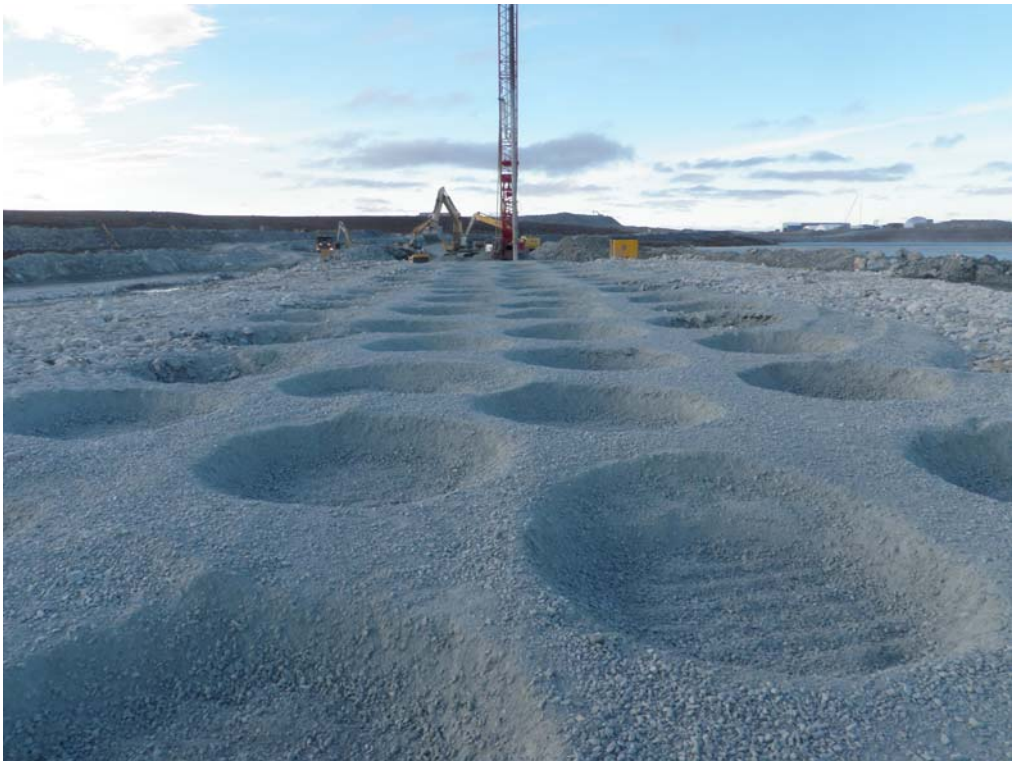
6.0 PHOTOGRAPHS



Photograph 1: Backsloping of CSB plug on Sept. 7, 2010



Photograph 2: Excavation STN 32+032 - Competent till at 8 m below water level from U/S side



Photograph 3: Densification platform after Geopac work from STN 31+845 to 31+930 on Sept 7, 2010.

GB/AD

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TECHNICAL MEMORANDUM

DATE October 22, 2010 **PROJECT No.** 09-1428-5007
Doc. 1010 Rev 0

TO Gaston Blanchette and Yohan Jalbert
Agnico-Eagle Mines Limited Meadowbank Division

CC Dan Walker, Michel Julien, Annie Beaulieu, Paul Bedell, Grant Bonin, Fiona Esford, Grant Burns

FROM Yves Boulianne **EMAIL** Yves_Boulianne@golder.com

BI-WEEKLY REPORT FOR PERIOD FROM SEPTEMBER 13 TO 27, 2010
MEADOWBANK GOLD PROJECT, NUNAVUT

This report has been modified to only present details related to the Bay Goose Dike, for the purpose of including the document in the As-Built report. Section 3.0 Tailings Storage Facility and 4.0 East Dike - Weir Monitoring have been removed. It is noted that the Bay Goose construction works finalized at this report period. Casing installation, grouting of the bedrock, and jet grouting activities were reported in the casing and grouting daily reports.

This bi-weekly report summarizes Golder QA activities from September 13 to September 27, 2010 related to the construction activities at Bay-Goose Dike.

Progress at Bay-Goose Dike during this period consisted of both dynamic and vibro-densification by GeoPac and cut-off wall (slurry trench) works by Inquip. Both of these subcontractors demobilized from site on September 8, 2010 and returned September 15. Additional activities at Bay-Goose Dike included initial trench excavation and backfilling, south abutment preparation and material placement, and placement of the densification platform.

Photographs showing work progress related to construction activities at Bay-Goose during this period are included with this bi-weekly report.

Golder personnel on site during this period are summarized in Table 1.

Table 1: Golder Personnel on Site

Name	Mobilize	Demobilize
Kelly Hood	August 30	September 13
Jean-Francois Rivest	September 3	September 14
Grant Burns	September 2	September 14
Andree Drolet	September 6	September 20
Dieudonne Barahebura	September 6	September 20
Fernando Ascencio	September 6	September 20
Yves Boulianne	September 13	September 29

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Name	Mobilize	Demobilize
Damian Edwards	September 13	September 28
Reanna Roberts	September 13	September 28
Fiona Esford	September 13	September 20
Cam Clayton	September 13	September 17
Lynn Wilson	September 20	October 5
Mariam Ouangrawa	September 20	October 4
Patrick Gince	September 20	September 27
Dan Walker	September 27	September 29
Michel Julien	September 27	September 29

1.0 HEALTH AND SAFETY

Daily H&S meetings were held with all Golder personnel. Minutes from these meetings are recorded and stored in Golder's office on site. The key H&S elements for the reporting period are as follows:

- Weather is changing and temperature is getting colder at night. Dress appropriately, wear winter and rain gear;
- New Golder staff coming on site. Give appropriate update on H&S, recent changes *etc*;
- Ensure new arrivals have taken SOP Surface and Mine Driver training and undergo driver re-orientation with QA Manager before operating light vehicles;
- Pick-up lights, windows and mirrors get dirty fast, so clean at the beginning of each shift for better visibility;
- Dike access worsening, must enter on lakeside and exit on pit side;
- Congested area around Bay-Goose cut-off trench. Good communication with FGL and operators is very important;
- Dust present in the lab. Be sure to wear dust mask;
- Liner installation is underway at TSF; make sure to take caution and watch your footing. Keep additional distance during windy weather conditions as liner may flip during placement;
- Congestion on Stormwater Dike. Park in safe place and be cautious and aware of traffic;
- Drive slowly along roads and use 4X4 in muddy conditions. Drying mud is making roads rougher to drive on;
- Staff to get adequate rest and take a break during day when spending time on both day and night shifts;
- Wiring issue in Golder pickup truck, will take to FGL when problem occurs again so they can see it as it is happening;
- Liner at TSF was wet and icy, take caution and avoid the smooth seam areas when walking on or near it;
- Icy ground conditions, be careful when walking outside or getting in/out of vehicles. Don't rush; and

- Driving in snow on AWPAR Friday evening from Baker Lake, roads were very slippery just before approaching Meadowbank gatehouse.

Health and safety concerns were also discussed with AEM personnel during the daily construction meetings.

2.0 BAY-GOOSE DIKE

2.1 Description of activity

From September 13 to end of September 27, 2010 day shift, the following construction activities were observed:

- Initial trench excavation and approval completed on September 14, 2010 from approximately 32+092 to 32+162. No soundings for silt accumulation were performed by FGL in this section; we have been told that the core backfilling front was too close to the initial trench excavation front and excavation was not halted to permit access for taking the readings. It was too dangerous to take readings while excavation was actively occurring. No oversize boulders were encountered or left in place.
- On South abutment, above the water line, topsoil and organic material was stripped and then the area was cover by approximately 0.3 m of 19 mm crushed stone in order to limit the thawing of the frozen ice-rich ground;
- Backfilling of initial trench with core backfill, and wings with coarse filter and fine rockfill from approximately 32+069 to 32+162; this activity was completed on September 14, 2010;
- Completion of the vibro-densification in Channel 1 (September 21, 2010) and Channel 3 (September 23, 2010). Prior to performing the vibro-densification in Channel 3, the core backfill was loosened by a 345 excavator digging through the densification platform to a depth of 5.0 to 6.0 m beneath the densification platform. Golder was on site to observe if any fine rockfill or coarse filter fell into the trench. Some material did fall into the trench, but it was removed;
- Construction of the densification platform between 31+900 and 32+162. The densification platform was built in one lift and was completed on September 24, 2010.
- Dynamic compaction between approximately 31+575 and 31+610 was completed on September 25, 2010 and 31+900 to 32+162 was completed on September 24, 2010;
- Cut-off wall (slurry trench) was completed from 31+558.5 to 31+642 (Channel 3) on September 27, 2010 and 31+802 to 32+162 on September 24, 2010 (Channel 1 and 2). During placement of the CSB material in the slurry trench, the placement had to be stopped or temporarily halted on several occasions due to the proximity of the excavation front. However, placement of CSB resumed within the specified 24 hour delay permitted in the specifications. See the attached sketch for the location/station of CSB Plug #1 and CSB Plug #2, SB and CSB backfill, bedrock and Channels with till left at the bottom of the cut-off wall. It is important to note that this sketch is a diagram of observations made while doing the cut-off wall; the purpose is not to define the area to be jet grouted.

2.2 Summary of main discussion in construction meeting about Bay Goose

Construction meetings were held daily during the current reporting period and were attended by Grant Burns (Sept 13th and 14th) and by Yves Boulianne (Sept 14th through Sept 27th). The following items are summarized from meeting minutes:

- Golder has made frequent requests for daily reports from Inquip and Geopac. To date, this information has not been received;

Initial Excavation

- Frozen ice rich soils were encountered close to south abutment; discussion between AEM and Golder lead to the ice rich material being left in place;

Densification

- Geopac is planning to resume the vibro-densification in Channel 1 before beginning vibro-densification in Channel 3 due to concerns of potentially damaging vibro-densification equipment when work is performed in Channel 3, as the core backfill was previously compacted by the dynamic compaction;
- Discussions between FGL and their sub-contractors (Geopac and Inquip) were conducted as how to proceed with the vibro-densification and cut-off wall excavation in Channel 3. The plan consisted of the excavation of the already compacted core backfill in order to loosen the material to around 5 to 6 m below the densification platform. The trench would then be re-backfilled with core backfill, and vibro-densification would be performed followed by dynamic compaction. In case of another collapse, Inquip suggested to stop digging too deep, fill up with CSB and fix the area with jet grouting.

Cut-off wall

- When the cut-off wall excavation resumed at 31+802, an approximate 2.0 m thick zone of soft material was observed at the bottom of the trench, 1 hour after the area had been cleaned. Inquip believed that this maybe due to a chemical reaction between the bentonite in the slurry and the cement in the CSB Plug #2. The same observation was observed when FGL cut the Plug #1 later in the week but not as much soft material was observed;
- As soon as CSB placement is initiated within the trench, it is required that the CSB be continuously poured in less than 24 hours to minimize the formation of cold joints;
- One batch of CSB should be around 27-30 cu.m and is made with 8 full buckets of till + 1500 kg of cement + slurry until the volume reaches the marked level in the tub;
- As per AEM, the end of the CSB will be when it's toe reaches 32+090;
- Bottom of the CSB at the end of Channel 1 must be at elevation 128.0m as per the design drawing;
- Golder observed many oversized particles in the till stockpile along the dike; the particles have to be removed prior to the CSB/SB being put into the trench;
- Slurry level in the pond is getting low. Slurry should hydrate for 24 hours in the pond prior to being pumped into the cut-off wall trench. It is understood that AEM wants as little slurry as possible in the pond at the end of the construction therefore AEM has decided to allow slurry that is not fully hydrated to be used in cut-off wall construction.

Grouting

- Inquip expressed their concern about drilling into the CSB; many cases in the literature lead to fracturing of the wall. Inquip suggested testing the hole with water (and monitor the flow) prior to going into the till , if any. AEM said that they will test it with grout at the end of the jet grouting work for each hole;
- Actual plan for jet grouting casing installation is at 0.4 m offset from center line on lake side each 1.22m (4 feet). Prior to the issuing of this bi-weekly report the offset changed to 0.25m ; and
- The grouting platform is built with coarse filter only; no core backfill is covering the wall. It is understood that TCG had requested the removal of core backfill in order to facilitate the casing installation.

2.3 Summary of QC/QA Activities and Test Results

Golder staff observed excavation of the initial trench and approved the foundation as either competent till material for the partial cut-off areas (Channel 2 and Channel 1), or as bedrock. Confirmation measurements of the depth of excavation and silt accumulation were collected and analyzed.

Samples of backfill material were collected and analyzed. Periodic samples of till material from the base of the initial trench and the cut-off excavation were collected and analyzed.

Golder staff observed excavation of the cut-off trench, recorded depth of excavation data, observed excavated materials and bedrock encountered, and placement of backfill material.

Testing of the slurry, CSB backfill and SB backfill were observed and typically tested at each start of shift. In general, the results met the specification. On September 14, the Marsh testing of the slurry in the trench was higher than specified. The slurry was taken close to Plug #2, from Inquip's comments, it is understood that it is due to the chemical reaction with the calcium in the plug and the bentonite. Slump of the CSB also did not meet the specified value on several occasions, namely September 17, 18, 19, 20, 21 and 26, by about 5 to 10 mm under the requirement and one slump was 25 mm under the minimum specified value. For all the days where CSB slump was under the requirement, it was only for the day shift or night shift, never twice in one day. We understand that the mix was adjusted by Inquip after testing, to get a more viscous CSB.

For more details about the QA material laboratory testing results, see Section 5.0.

3.0 TAILINGS STORAGE FACILITY

Removed.

4.0 EAST DIKE - WEIR MONITORING

Removed.

5.0 SAMPLING AND LABORATORY TESTING

A summary of laboratory activities completed since the start of 2010 QA Construction is provided below. For additional details please refer to field memo "Doc 1114 101001 MFD Dike QA Lab Data Analysis - Rev 0.pdf" that was forwarded by email on October 2, 2010.

SD1, SD2 and SWD samples removed from table

LAB ID	DATE SAMPLED	STRUCTURE	MATERIAL TYPE	LOCATION	SPECIFICATION
SA200	July 28	BG	19mm crushed stone	PAG Stockpile 4	in
SA201	July 28	BG	19mm crushed stone	NPAG stockpile 2	in
SA202	July 28	BG	19mm crushed stone	NPAG stockpile 1	in
SA203	July 28	BG	19mm crushed stone	PAG Stockpile 3	in
SA204	July 29	BG	Core backfill	31+030, below water	in
SA206	July 29	BG	Core backfill	31+052, below water	in
SA249	August 2	BG	Core backfill	31+189, below water	in
SA258	August 7	BG	Core backfill	31+411, below water	in
SA251	August 4	BG	Core backfill	31+685, below water	in
SA252	August 5	BG	Core backfill	31+333, below water	in
SA253	August 9	BG	Core backfill	31+341, below water	in
SA261	August 7	BG	Core backfill	31+600, below water	in
SA262	August 7	BG	Core backfill	31+446, below water	in
SA264	August 8	BG	Core backfill	31+764, below water	in
SA265	August 9	BG	Core backfill	31+520, below water	out
SA270	August 10	BG	Core backfill	31+793, below water	in
SA273	August 16	BG	Core backfill	31+825, below water	in
SA279	August 19	BG	Core backfill	31+860, below water	in

LAB ID	DATE SAMPLED	STRUCTURE	MATERIAL TYPE	LOCATION	SPECIFICATION
SA280	August 22	BG	Core backfill	31+866, below water	in
SA283	August 21	BG	Core backfill	31+881, below water	in
SA285	August 21	BG	Core backfill	31+887, 1.0m below water	in
SA286	August 22	BG	Core backfill	31+898, 4.0m below water	in
SA288	August 23	BG	Core backfill	31+920, 4.0m below water	in
SA290	August 24	BG	Core backfill	31+940, below water	in
SA292	August 24	BG	Core backfill	31+940, densification platform	in
SA293	August 25	BG	Core backfill	31+795, densification platform	in
SA294	August 25	BG	Core backfill	31+795, 4.0m below water	in
SA298	August 28	BG	Core backfill	31+050, 1.0m below 136.0, after densification	in
SA299	August 28	BG	Core backfill	31+050, 2.0m below 136.0, after densification	in
SA342	September 18	BG	Core backfill	32+010 for Vibro-compaction	in
SA300	August 28	BG	Core backfill	31+050, 3.0m below 136.0, after densification	in
SA303	September 01	BG	Core backfill	32+860 for Vibro-compaction	in
SA307	September 08	BG	Core backfill	31+990, 1.0m below water	in
SA318	September 11	BG	Core backfill	32+028, below water	in
SA323	September 15	BG	Core backfill	32+067, below water	in
SA330	September 14	BG	Core backfill	32+085, below water	in
SA256	August 6	BG	Coarse filter	31+372	in
SA268	August 11	BG	Coarse filter	31+804, below water	out
SA276	August 17	BG	Coarse filter	31+835, below water	in

LAB ID	DATE SAMPLED	STRUCTURE	MATERIAL TYPE	LOCATION	SPECIFICATION
SA287	August 22	BG	Coarse filter	31+897, 3.0m below water	in
SA291	August 24	BG	Coarse filter	31+945, below water	out
SA295	August 25	BG	Coarse filter	31+795, densification platform	out
SA309	September 09	BG	Coarse filter	31+988, below water	in
SA344	September XX	BG	Coarse filter	31+565, cap of cut-off wall over densification platform	out
SA205	July 29.	BG	Till	Native borrow pit	in
SA289	August 24	BG	Till	Stockpile at 31+610	out
SA319	September 11	----	Till	Stockpile close to Portage Pit	----
SA207	July 30	BG	Soft sediment	31+115, from bottom of initial trench	----
SA208	July 30	BG	Soft sediment	31+115, from bottom of initial trench	----
SA209	August 01	BG	Till	31+699, from trench bottom	----
SA250	August 02	BG	Till	31+438, from trench bottom	----
SA254	August 06	BG	Till	31+588, from initial trench bottom	----
SA255	August 06	BG	Till	31+590, from initial trench bottom	----
SA257	August 06	BG	Soft sediment	31+585, from trench bottom	----
SA259	August 07	BG	Till	31+600, from initial trench bottom	----
SA260	August 07	BG	Silty sand	31+600, from initial trench bottom, about 6-7m below water level	----
SA266	August 08	BG	Till	31+607, from initial trench bottom, about 9.0m below water	----
SA267	August 12	BG	Till	31+833, from initial trench bottom, about 12.0m below water	----

LAB ID	DATE SAMPLED	STRUCTURE	MATERIAL TYPE	LOCATION	SPECIFICATION
SA269	August 12	BG	Till	31+839, from initial trench bottom, about 12.0m below water	----
SA271	August 15	BG	Till	31+855, from initial trench bottom, about 14.0m below water	----
SA272	August 16	BG	Till	31+863, from initial trench bottom, about 14.0m below water	----
SA274	August 17	BG	Till	31+873, from initial trench bottom, about 13.0m below water	----
SA275	August 12	BG	Till	31+860, from initial trench bottom, about 3.0m below water	----
SA277	August 18	BG	Till	31+883, from initial trench bottom, below water	----
SA278	August 19	BG	Till	31+893, from initial trench bottom, about 13.0m below water	----
SA281	August 20	BG	Till	31+907, from initial trench bottom, about 12.0m below water	----
SA282	August 20	BG	Till	31+923, from initial trench bottom, about 10.0m below water	----
SA284	August 09	BG	Till	31+825, from initial trench bottom, about 10.0m below water	----
SA305	September 07	----	Till	From native borrow source	----
SA308	September 09	BG	Till	32+032, from initial trench bottom, about 8.0m below water	----
SA310	September 09	BG	Till	32+029, from initial trench bottom, about 8.0m below water	----

LAB ID	DATE SAMPLED	STRUCTURE	MATERIAL TYPE	LOCATION	SPECIFICATION
SA311	September 10	BG	Till	32+048, from initial trench bottom, about .0m below water	----
SA312	September 10	BG	Till	32+031, from initial trench bottom, about 10.0m below water	----
SA313	September 10	BG	Till	32+037, from initial trench bottom, about 8.0m below water	----
SA320	September 11	BG	Till	32+060, from initial trench bottom, about 8.0m below water	----
SA324	September 13	BG	Till	32+082, from initial trench bottom, about 8.0m below water	----
SA348	September 22	BG	Till	32+080, from cut-off trench bottom	----

6.0 PHOTOGRAPHS



Photograph 1: BG - Excavation of initial trench near South abutment on September 13, 2010.



Photograph 2: BG - Placement of side fine filter, core backfill and coarse filter and fine rockfill wings on September 14, 2010.



Photograph 3:BG - South abutment above the water showing frozen and ice rich till on September 14, 2010.



Photograph 4: BG – Placement of CSB into the cut-off wall at station 31+900 on September 20, 2010.



Photograph 5: BG – Excavation to Loosen the core backfill prior of re-compaction on September 21, 2010



Photograph 6: BG – Removal of silt and sand from the bentonite slurry at the south abutment on September 23, 2010.

YB/AD/LW/FE/DW

Attach to this report:

1) Sketch for the location/station of CSB Plug #1 and CSB Plug #2, SB and CSB backfill, bedrock and Channels with till left at the bottom of the cut-off wall.

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Golder Associates

SUBJECT Roc Vs till Vs SB Vs CSB - Draft		
Job No. 09-1428-5007	Made by V. Boulianne Reviewed	Date Oct. 8, 2010 Sheet 1 of 1

