

# EBA Engineering Consultants Ltd.

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Creating and Delivering Better Solutions

April 29, 2004

EBA File: 1200076

Access Consulting Group  
204D Strickland Street  
Whitehorse, YT. Y1A 2J8

Attention: Mr. Rob McIntyre, R.E.T.  
President

**Subject: Treatment Pond Construction Inspection**  
**Galkeno 300 Adit – near Keno City, Yukon**

As requested, this letter provides a summary of the inspection services provided by EBA Engineering Consultants Ltd. (EBA) during the construction of the water treatment pond for Galkeno 300 Adit discharge water.

The purpose of the inspections was to record observations made, ensure that the design of the treatment pond was adhered to, and that any changes in design were recorded.

Included with this summary are the Field Inspection Reports, “as-built” drawings, and selected photos, taken by both EBA and the contractor, showing the treatment pond in various stages of construction.

## **SITE INSPECTIONS**

Mr. James Buyck completed two-site inspections, once during the excavation of the treatment pond, and another shortly after the placement of the geotextile and Enviro-liner.

### **Excavation**

The inspection of the treatment pond excavation was completed on February 26 & 27, 2004. The treatment pond was excavated with two Cat 235 tracked excavators, one equipped with a ripper shank and the other with a frost bucket. The treatment pond area had already been hoarded and heated to remove some of the seasonal frost to assist in the excavation. The excavation was inspected during and after completion and found to be very clean, free of sharp rocks or objects that may damage the liner once installed. The overall dimensions were consistent with the proposed design and the pond was constructed square and symmetrical. During the excavation it was noticed the seasonal frost had penetrated to a depth of approximately 1.8 m, and the base of the excavation was found to be relatively unfrozen.

### **Liner Placement**

The second inspection trip was completed on March 9, 2004, during the placement of the Enviro-liner. Both the inlet and discharge pipes were already installed, along with the placement of the geotextile and Enviro-liner when Mr. Buyck arrived on site. The overall construction of the treatment pond and installation of the inlet and discharge pipes were constructed to design with

1200076\_Inspection\_Final

the exception of the method of securing the liner around the edge of the treatment pond. The proposed key trench to be used to secure the geotextile and Enviro-liner around the edge of the treatment pond was abandoned as excavating the still frozen ground was not possible without first heating and hoarding, which turned out to be a slow and lengthy process when first used to thaw the ground for the treatment pond.

Instead, the liner and geotextile were pinned down with 2x4 studs nailed into the ground with 200 mm spikes. The overlap was then folded over itself and covered with a 300 mm high by 1000 mm wide "berm" constructed of material excavated from the treatment pond.

## SUMMARY AND CONCLUSIONS

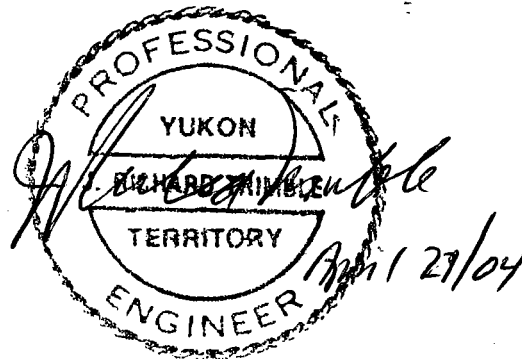
In summary, the construction of the Galkeno 300 Water Treatment Pond was completed in general accordance with EBA's original design intent. Photos taken by EBA during the two site inspections, along with photos taken by the contractor during various stages of construction are included on the CD attached to this letter.

We trust that you will find this report satisfactory for your purposes. If you have any questions, or require additional information, please contact the undersigned.

Yours truly,  
EBA Engineering Consultants Ltd.

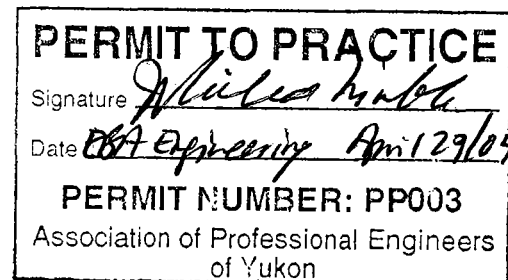


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J. Richard Trimble, P.Eng.  
Project Director, Yukon Region  
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Attachments: "As-builts" – Figures 1 and 2 (2 pages)  
Daily Field Reports (3 pages)  
CD (.pdf version of this letter, and 79 photos)





APPROX. LOCATION OF EXISTING PIPELINE

CREST OF WASTE ROCK DUMP

POND  
20 m x 30 m

CALUMET DRIVE

NEW PIPELINE  
(315 mm dia.)

LIME  
PLANT

QUONSET HUT  
18 m x 13 m



SCALE 1 : 500

SEE FIGURE 2 FOR PLAN & CROSS SECTION DETAILS

GALKENO 300 ADIT



**EBA Engineering Consultants Ltd.**

PROJECT

NEW WATER TREATMENT POND  
GALKENO 300 ADIT - GALENA HILL, YUKON

CLIENT

ACCESS CONSULTING GROUP

TITLE

TREATMENT POND LOCATION  
& LAYOUT ASBUILT

DATE APRIL 2004

DWN. JSB

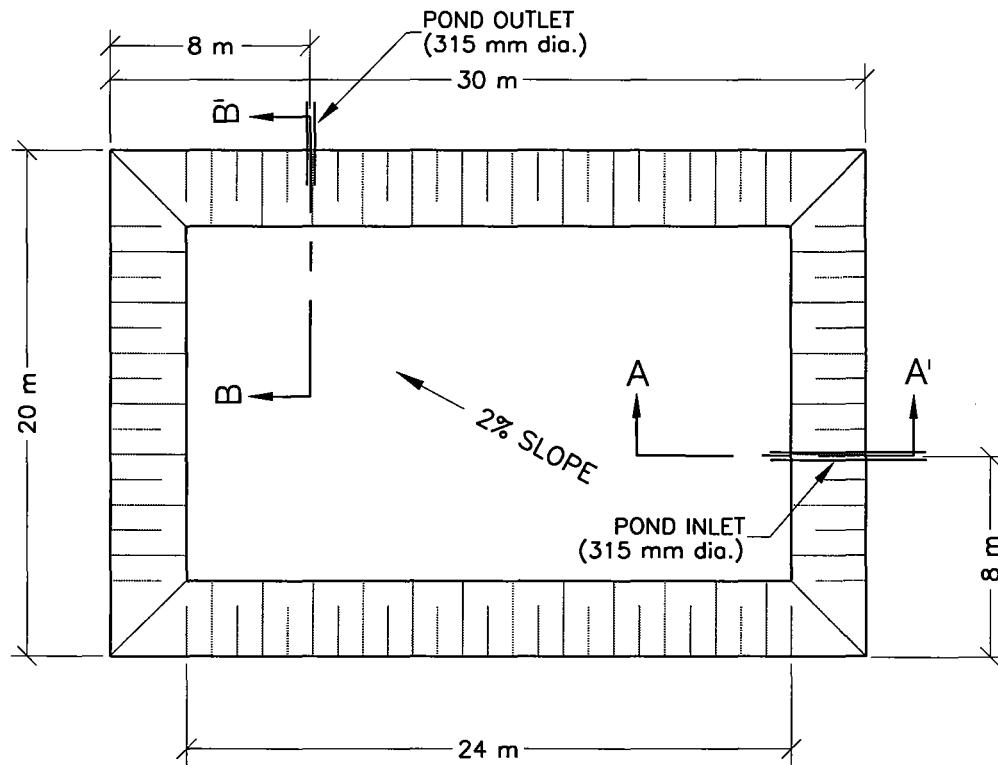
CHKD. JRT

FILE NO.

1200076

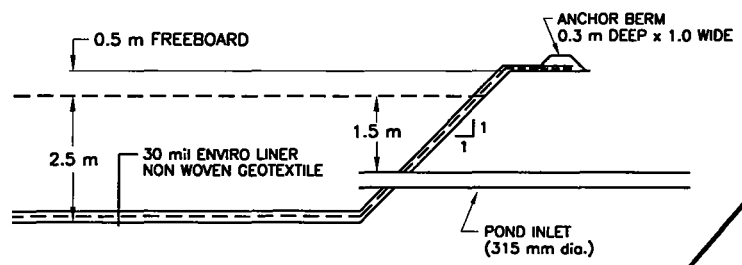
DRWG.

FIGURE 1

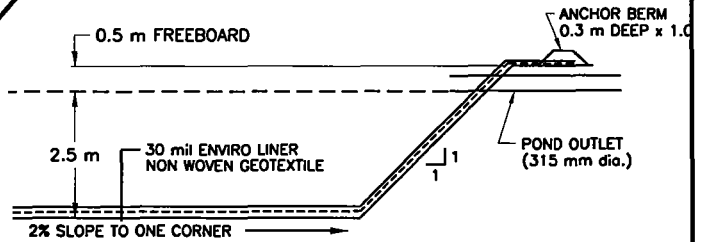


**TYPICAL PLAN**  
SCALE 1 : 300

NOTES: POND VOLUME AT 1:1 SLOPE WITH 0.5 m FREEBOARD  
= 1,778 m<sup>3</sup>  
= 1 DAY STORAGE AT 13 L/s FLOW



**SECTION A-A'**  
SCALE 1 : 150



**SECTION B-B'**  
SCALE 1 : 150

			PROJECT NEW WATER TREATMENT POND GALKENO 300 ADIT - GALENA HILL, YUKON						
CLIENT ACCESS CONSULTING GROUP			TITLE PLAN AND CROSS-SECTIONS ASBUILT						
DATE	APRIL 2004	DWN.	JSB	CHKD.	JRT	FILE NO.	1200076	DRWG.	FIGURE 2



EBA ENGINEERING CONSULTANTS LTD.  
DAILY FIELD REPORT

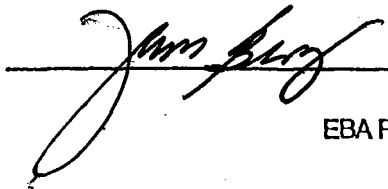
DATE: FEB. 27/04  
WEATHER: SUNNY - some cloud

OPERATIONAL:  
DOWN TIME:

EBA PERSONNEL	DRAILING CONTRACTOR PERSONNEL	OTHERS
1 J. BLYCK	1 D. BLYCK	1
2	2 5 WORKERS	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7

SIGNIFICANT EVENTS	
TIME	
9:30	JSA ON SITE; CONTRACTOR CLOSE TO FINAL EXCAVATION
10:00	BEGIN CLEAN-UP OF SIDE SLOPES; CONTRACTOR WILL FINISH SIDE SLOPES THEN BEGIN SETTING UP SNOW REMOVAL OVER PIPE LOCATION THEN SET UP HEATING & HOARDING. LINER WILL NOT BE PLACED UNTIL PIPE IS IN PLACE.
12:00-12:30	LUNCH
2:00-2:15	ONE EXCAVATOR CLEANING UP SIDE SLOPES
3:15-4:30	BEGIN CLEARING SNOW FROM ADIT TOWARDS POND TO SET UP HEATING & HOARDING.
5:00	PHOTOGRAPHS TAKEN THROUGHOUT VARIOUS STAGES OF ON-SITE WORK.
5:30	JSA DEPART SITE

SIGNED:



EBA PROJECT NUMBER: 12400032.  
1200076

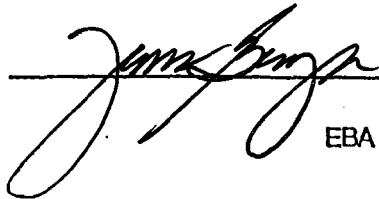
EBA ENGINEERING CONSULTANTS LTD.  
DAILY FIELD REPORT

DATE: MARCH 9, 2004  
WEATHER: Cloudy -10°C

OPERATIONAL:  
DOWN TIME:

EBA PERSONNEL	DRILLING PERSONNEL	OTHERS
1 J. BUUCH	1 <del>EM</del>	1 BOB MCINTYRE (ACCESS)
2	2 OPERATORS	2
3	3 4 LABOURERS	3
4	4	4
5	5	5
6	6	6
7	7	7

SIGNIFICANT EVENTS	
TIME	
2:30	JBB ON-SITE.
	CONTRACTOR HAD COMPLETED PLACEMENT OF LINER. "BOOTS" WHERE PIPE ENTER & EXIT POINT WERE INSTALLED.
	- BACKFILL BEING PLACED ALONG OUTSIDE EDGE OF LINER TO SECURE. LINER HAD BEEN FOADED OVER 2x4 AROUND PERIMETER & SPIKEN INTO GROUND PREVIOUS TO BEING COVERED
3:30	BOB MCINTYRE ON SITE
	PIPE PIPE INTAKE & DISCHARGE <sup>WERE</sup> <del>ARE</del> BOTH INSTALLED & PREVIOUSLY ALONG WITH LIME INJECTION BOX.
	PHOTOGRAPHS WERE TAKE THROUGHOUT VARIOUS STAGES OF ON-SITE WORK. 11 digital photos taken.
5:30	JBB DEPART SITE.

SIGNED:   
EBA PROJECT NUMBER: 1200032.