

Technical Memorandum Jshear
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To:	Nunavut Water Board
From:	Shear Diamonds Ltd.
Date:	September 15, 2011
Re:	Jericho Diamond Mine, 2AM-JER0410

**Surface Water Management – C4 Diversion
Jericho Diamond Mine, Nunavut**

2AM-JER0410 Renewal Application Technical Meeting June 20-21, 2011

The C4 diversion comprises part of the site water management plan developed for the original Jericho Diamond Mine water licence submission. Its intended purpose was to divert runoff from the catchment area upstream of Waste Rock Pile 1, in order to reduce the waste rock contact water volume and ultimately the southward runoff discharging from the waste rock pile.

The proposed C4 diversion location is shown in Figure 1. The diversion alignment parallels a proposed access road (not constructed) and discharges to Lake C4. The north portion of the alignment passes along the east side of a low-lying marsh and into a relatively flat area adjacent to Lake C4. The marsh area is lower in elevation than Lake C4 and therefore controls the horizontal diversion alignment. The C4 diversion will divert a maximum of 14.6 ha of runoff that would otherwise report to the marsh area, adjacent to the waste rock pile.

The proposed C4 diversion alignment was inspected in July 2011. The following observations were noted during the inspection:

- The proposed alignment generally runs parallel to the existing contour lines
- Surface conditions generally comprise glacial till, although some open graded boulder fields were present
- Outcropping bedrock was noted near the north end of the alignment, adjacent to the marsh area
- The alignment cannot be shifted closer to the waste rock pile, due to the controlling influence of the marsh. The alignment would likely need to be shifted up gradient, particularly at the south end to develop sufficient runoff diversion grade. This could reduce the catchment area being diverted to C4 by an estimated 3 ha.
- A control structure would likely be required near the marsh area to prevent back flow into the marsh area.

Based on the relatively small diversion area and potential challenges associated with diversion construction, Shear proposes that the C4 diversion be removed from the surface water management plan. Surface water from the C4 catchment area will be allowed to flow through the low marshy area (along the natural drainage path) and will

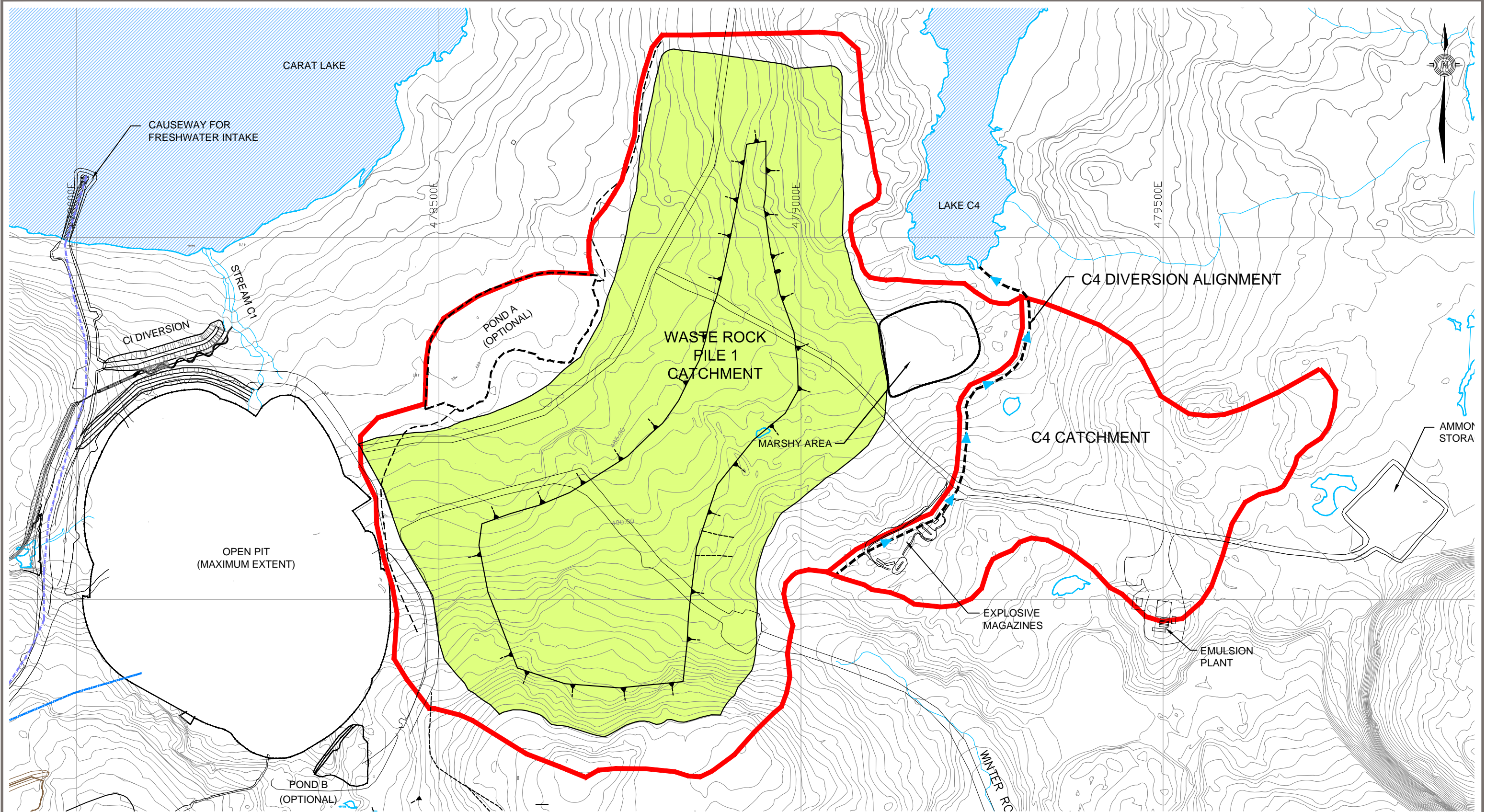
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be managed as part of the waste rock pile runoff. This water will become part of the overall catchment area that encompasses Waste Rock Pile 1 which is 69.7 Ha.

Attachment: Figure 1 – C4 Location and Catchment Areas



LEGEND:

- CATCHMENT BOUNDARY
- FLOW DIRECTION

0 250
Scale: 1: 5 000 (metres)

NOTES

- LAYOUTS ARE APPROXIMATE, AND MAY NOT REFLECT ACTUAL SIZE AND LOCATIONS.
- FOOTPRINTS OF WASTE ROCK PILES, COARSE PK STOCKPILES, AND ORE STOCKPILES ARE SHOWN IN MAXIMUM LIMITS, ACTUAL FOOTPRINTS MAY VARY.

STATUS
ISSUED FOR USE

CLIENT

**WATER LICENSE RENEWAL
JERICHO DIAMOND MINE, NU**

C4 LOCATION AND CATCHMENT AREAS

PROJECT NO. E14101140	DWN GDK	CKD WTH	REV 0	Figure 1
OFFICE EBA-EDM	DATE September, 2011			