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	Bever Street, Goldthorpe	SHEET No. 01
	Run-off Analysis of existing Impermeable Area	BY. BLS
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The following analysis has been undertaken to establish the peak discharge from the existing (brownfield) development. The analysis relates peak discharge to contributing area, average rainfall intensity and a dimensionless coefficient. The coefficient is generally termed the 'runoff coefficient' and has a range from 0 (no runoff produced) to 1 (perfect conversion of rainfall intensity). A unit conversion factor of 2.78 is applied to account for the units typically used.

The Modified Rational Method can be expressed as:

$$Q_p = 2.78 CiA$$

Where:

Q_p is the peak discharge

C is a dimensionless coefficient

i is the average rainfall intensity during the time of concentration, 50 mm/hr

A is the contributing catchment area

The impermeable area contributing to the combined outfall is:

0.1036 ha

$$Q_p = 14.4 \text{ l/s}$$

Proposed Discharge Rate:

As agreed prior, a 40 per cent reduction will be applied to the existing peak flow rate.

$$Q_{MAX} = 8.6 \text{ l/s} *$$

*This is the maximum permissible rate. Therefore the outgoing pipe flow rate must not exceed this rate in any design storm event up to and including the 1 in 100 year Critical Duration Event, with an allowance for climate change.