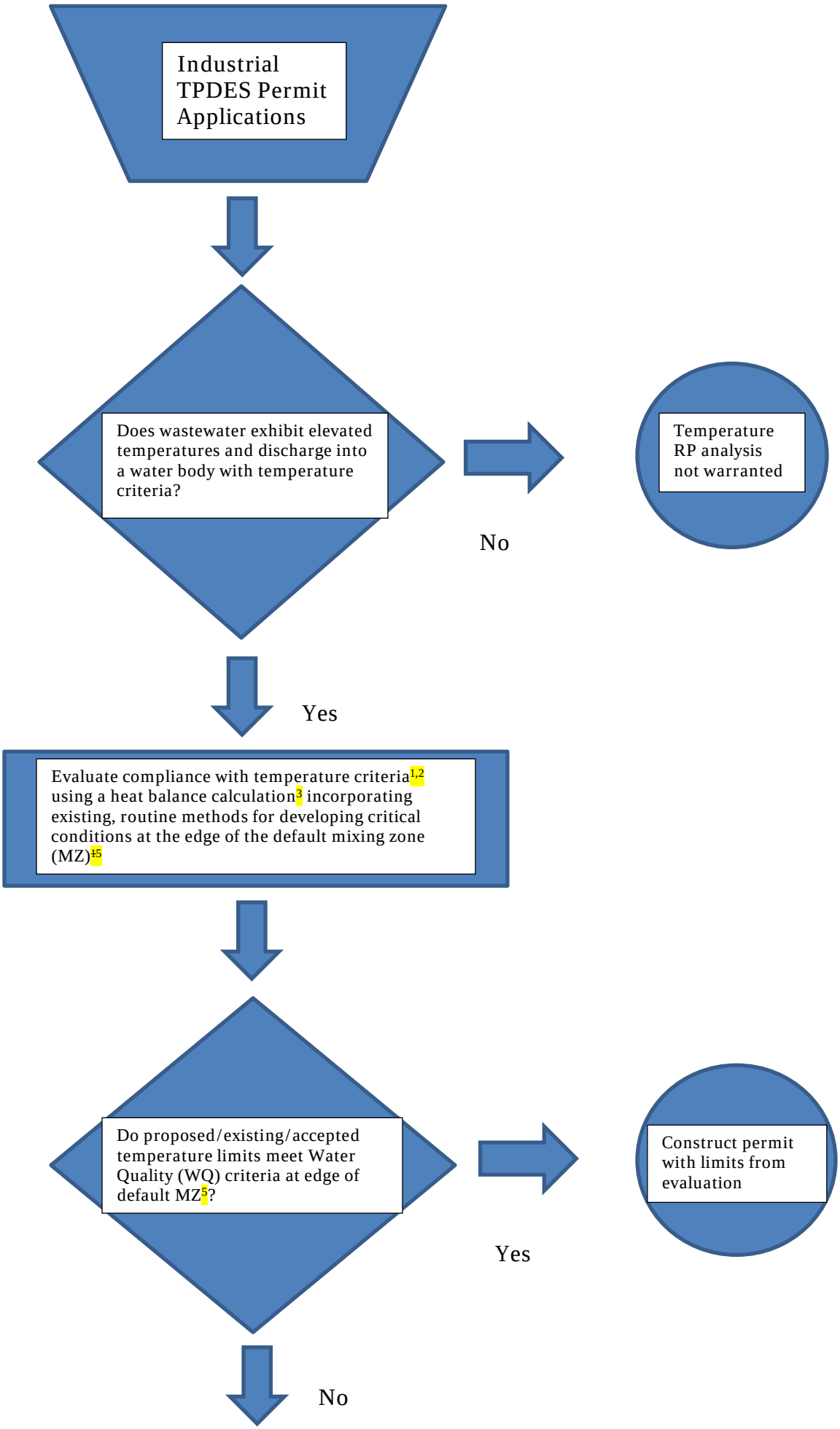
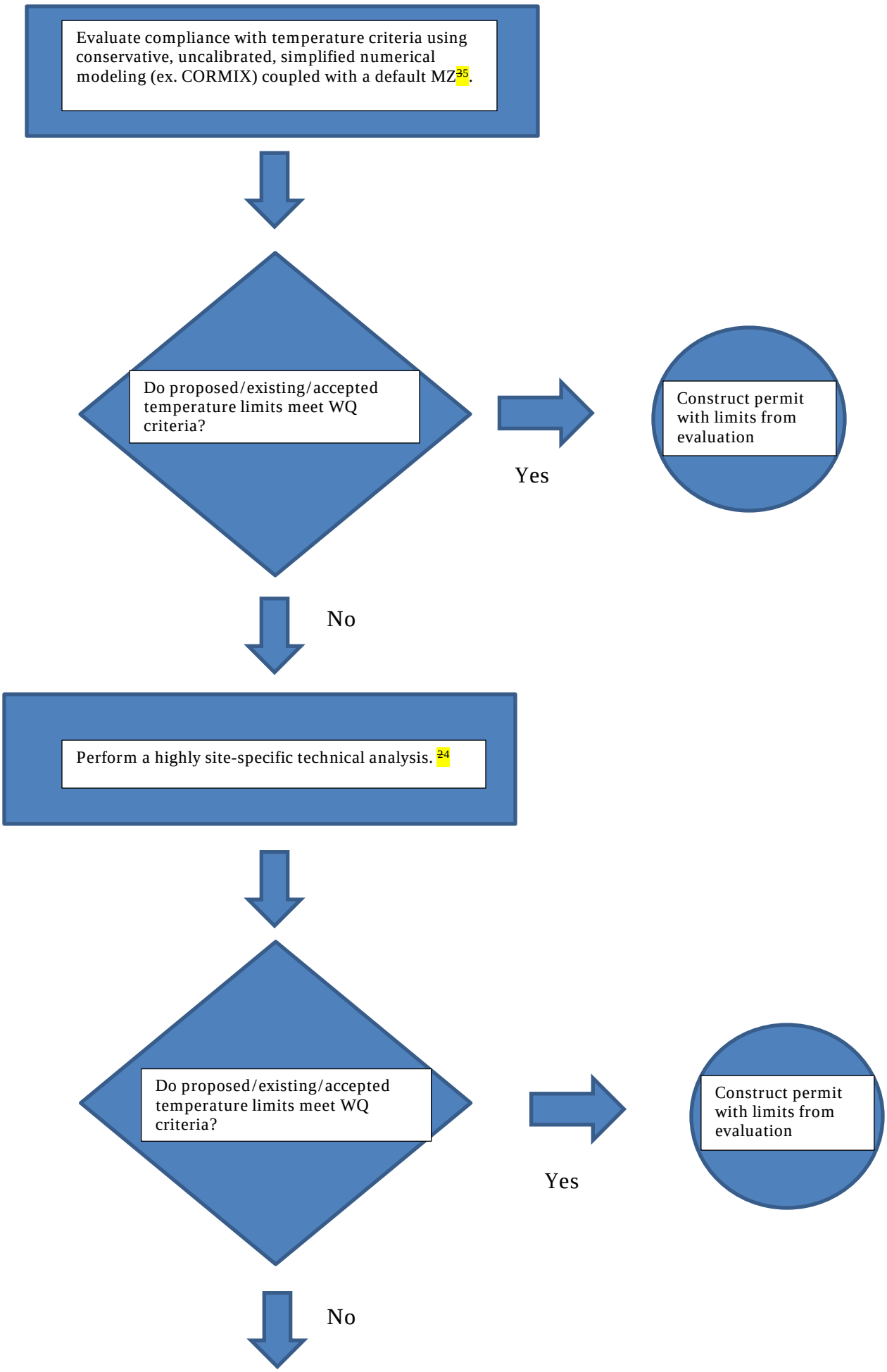

Industrial TPDES Permit Applications
Does wastewater exhibit elevated temperatures and discharge into a water body with temperature criteria?
No
Temperature RP analysis not warranted
Yes
Evaluate compliance with temperature criteria[1,2] using a heat balance calculation[3] incorporating existing, routine methods for developing critical conditions at the edge of the default mixing zone (MZ)[4,5]
Do proposed/existing/accepted temperature limits meet Water Quality (WQ) criteria at edge of default MZ[5]?
Yes
Construct permit with limits from evaluation
No


Evaluate compliance with temperature criteria using conservative, uncalibrated, simplified numerical modeling (ex. CORMIX) coupled with a default MZ[35].
Do proposed/existing/accepted temperature limits meet WQ criteria?
Yes
Construct permit with limits from evaluation
No
Perform a highly site-specific technical analysis. [24]
Do proposed/existing/accepted temperature limits meet WQ criteria?
Yes
Construct permit with limits from evaluation
No

Consider performing a 316(a) analysis and/or seek a variance to the WQ Standards if justified

1 Only rise over ambient temperature criteria apply to unclassified waters.

2 Intermittent water bodies with a minimal aquatic life use assigned are not subject to temperature criteria. However, downstream waters with higher aquatic life uses may need to be screened for potential thermal impacts.

3 $WLA_t = [T_{crit} - T_{amb}(1-E_f)]/E_f$

WLA_t = effluent temp that will not cause temp criterion to be exceeded at the edge of the MZ

E_f = effluent fraction at the edge of the mixing zone

T_{crit} = temperature criterion

T_{amb} = ambient temperature

4 These analyses may include, but are not limited to, any combination of the following considerations:

- Site-specific temperature mixing zone or specification of an industrial cooling area in combination with numerical modeling.
- Installation and analysis of a high rate effluent diffuser.
- Collection of site-specific temperature data for use in numerical model calibration.

5 The thermal mixing zone may be different from the mixing zone used for toxics