

3745-65-91 Ground water monitoring system.

- (A) A ground water monitoring system shall be capable of yielding ground water samples for analysis and shall consist of:
- (1) Monitoring wells (at least one) installed hydraulically upgradient (i.e., in the direction of increasing static head) from the limit of the waste management area. Their number, locations, and depths shall be sufficient to yield ground water samples that are:
 - (a) Representative of background ground water quality in the uppermost aquifer near the facility; and
 - (b) Not affected by the facility; and
 - (2) Monitoring wells (at least three) installed hydraulically downgradient (i.e., in the direction of decreasing static head) at the limit of the waste management area. Their number, locations, and depths shall ensure that such wells immediately detect any statistically significant amounts of hazardous waste or hazardous waste constituents that migrate from the waste management area to the uppermost aquifer.
 - (3) The facility owner or operator may demonstrate that an alternate hydraulically downgradient monitoring well location will meet the criteria outlined in paragraphs (A)(3)(a) to (A)(3)(d) of this rule. The demonstration shall be in writing and shall be kept at the facility. The demonstration shall be certified by a qualified ground water scientist and shall establish that:
 - (a) An existing physical obstacle prevents monitoring well installation at the hydraulically downgradient limit of the waste management area; and
 - (b) The selected alternate downgradient location is as close to the limit of the waste management area as practical; and
 - (c) The location ensures detection that, given the alternate location, is as early as possible of any statistically significant amounts of hazardous waste or hazardous waste constituents that migrate from the waste management area to the uppermost aquifer.
 - (d) Lateral expansion, new, or replacement units are not eligible for an alternate downgradient location under paragraphs (A)(3) to (A)(3)(d) of this rule.
- (B) Separate monitoring systems for each waste management component of a facility are not required provided that provisions for sampling upgradient and downgradient water quality will detect any discharge from the waste management area.

- (1) In the case of a facility consisting of only one surface impoundment, landfill, or land treatment area, the waste management area is described by the waste boundary (perimeter).
 - (2) In the case of a facility consisting of more than one surface impoundment, landfill, or land treatment area, the waste management area is described by an imaginary boundary line which circumscribes the several waste management components.
- (C) All monitoring wells shall be cased in a manner that maintains the integrity of the monitoring well bore hole. This casing shall be screened or perforated, and packed with gravel or sand where necessary, to enable sample collection at depths where appropriate aquifer flow zones exist. The annular space (i.e., the space between the bore hole and well casing) above the sampling depth shall be sealed with a suitable material (e.g., cement grout or bentonite slurry) to prevent contamination of samples and the ground water.

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