

**WELL ISOLATION DISTANCE WORKSHEET for MAJOR and POTENTIAL SOURCES of
CONTAMINATION
PRIVATE WELLS and TYPE IIA, IIB and III PUBLIC WELLS
(Following the criteria listed in Waste Storage Facility (313) Practice Standard, Table 1)**

Producer Name: _____ **County:** _____

Farm location: Township _____ **Range** _____ **Section** _____ **1/4 of** _____ **1/4 of** _____ **1/4**

Farm address: _____

Prepared by: _____ **Date:** _____ **Checked by:** _____ **Date:** _____

Instructions: Enter the appropriate information for each step in the order they are presented and follow the directions provided after each step. Attach a map of the farmstead showing the locations and identifications for all waste storage facilities/sources of contamination and wells included in the worksheet. **This completed worksheet must be filed with the records for this farm.**

Note: Wells must be properly constructed and unused wells properly abandoned, as determined by the Michigan Department of Environmental Quality, local health department, or a registered licensed well drilling contractor. Wells must be sampled. Bacteria and nitrate levels must meet drinking water standards.

1. Are there any wells located within 800 feet (2,000 feet for Type IIA) of any existing or planned waste storage facility on the farm? YES NO (check one)
If YES, complete Part B-1 and B-2 for each well located within 800 feet (2,000 feet for Type IIA) before proceeding to Step 2.
If NO, you may proceed with assistance without further consideration of well isolation distances.
2. Are there any wells noted in any Part B-2 where the Actual Isolation Distance from a waste storage facility is less than the Minimum Isolation Distance? YES NO (check one)
If YES and the source of contamination is existing, proceed to Step 3.
If YES and the source of contamination is planned, proceed to Step 4.
If NO, proceed with design and construction assistance. Do not proceed to Steps 3 or 4.
3. Existing source of contamination:
 - For any well where the actual isolation distance from an existing source of contamination is not adequate, the Comprehensive Nutrient Management Plan (CNMP) must include the notation below. No corrective action date is necessary.
The isolation distance for well _____ from the existing source of contamination _____ does not meet the minimum State of Michigan isolation distance requirements.
4. Planned source of contamination:
 - For any well where the actual isolation distance from a planned source of contamination is not adequate, the CNMP must include the notation below. The corrective action and scheduled date must be shown in the CNMP Schedule of Implementation.
The isolation distance for well _____ from the planned source of contamination _____ does not meet the minimum State of Michigan isolation distance requirements. Corrective action to the well or source of contamination must be taken prior to operation of the planned source of contamination facility.
 - Verify in Part B-1 Step 7 when corrective action, as noted in Part B-1 Step 6, is fully implemented.

The well isolation distance criteria is applicable to existing Type IIA, Type IIB and Type III public water supplies on agricultural operations where it is necessary to upgrade an existing waste storage structure, handling area, or tank for major sources of contamination within the isolation distance of a drinking water well. Sources of contamination that comply with applicable regulations and are located in accordance with this procedure are considered to be complying with the requirements to maintain isolation distance from the well to the contaminant source.

- Type II water supply is classified as any non-community public well
 - Type IIA water supply is an operation with 25 or more employees and a production of 20,000 gallons or more per day during the peak month
 - Type IIB water supply serves 25 or more employees with a production of less than 20,000 gallons per day during the peak month
- Type III water supply is any dairy operation that does not meet the requirements above or a farm operation with 1-24 employees (non-family members)

The isolation distance from major sources of contamination is 2,000 feet from Type IIA wells and 800 feet from Type IIB and Type III wells prior to reductions.

Isolation Distance Reduction for Part B-2	
Type IIA – Reduction allowed down to 1,000 feet Type IIB and Type III - Reduction allowed down to 400 feet where the following Protection Factors are documented in Part B-2	Type IIA – Reduction allowed down to 500 feet Type IIB and Type III - Reduction allowed down to 200 feet where the following Protection Factors are documented in Part B-2
A or, B+C or, E	A+B or, E+B+C or, A+C or, E+D or, A+E or, F (agricultural and fuel storage only)

WELL PROTECTION FACTORS:

- A – Based on groundwater flow direction, well is up-gradient from the contamination source
- B – Confining material of 10 feet continuous clay, 10 feet continuous shale, or 20 feet continuous clay mixture
- C – Well casing depth is 100 feet or more
- D - B (minimum of 10 feet of continuous clay, 10 feet continuous shale, 20 feet continuous clay mixture) + C (minimum of 60 feet casing depth) = 100 feet or more
- E – Waste storage facility or other major source of contamination is constructed with a flexible membrane liner, a reinforced concrete liner, a glass fused steel tank, or a solid manure stacking facility constructed in accordance with USDA Natural Resources Conservation Service - Michigan conservation practice standard for Waste Storage Facility (313) and the well is sited or graded to protect the water supply in the event of a failure. The structure must have been built within the 15 years prior to the well assessment, be certified by a professional engineer, or assessed by an NRCS Engineer with appropriate job approval that the structure provides equivalent environmental protection with documented test data where appropriate. Plain concrete liners do not meet this criterion.
- F – Agricultural handling facilities or fuel storage facilities without secondary containment that meet factor D may be reduced to 200 feet for Type IIB and Type III wells and 500 feet for Type IIA wells.

The isolation distance where secondary containment is present may be reduced to 75 feet for Type IIB and Type III wells and 200 feet for Type IIA wells.

Minimum isolation distances are required for both “major sources of contamination” and “potential sources of contamination.” Actual isolation distances should be maximized to the extent possible. Major sources of contamination include storages of toxic materials, such as pesticides and fertilizers, fuel, or large amounts of less dangerous contaminants, such as animal manure. In general, practices or facilities meeting the definitions and purposes of NRCS practice standards for Waste Storage Facility (313), Composting Facility (317) for manure, Agricultural Handling Facility (309), and Fueling Facilities (713 and 710) are major sources of contamination.

Potential sources of contamination include small quantities of less dangerous contaminants such as animal and poultry yards. Practices or facilities meeting the definitions and purposes of the NRCS practice standard for Waste Transfer (634) generally are potential sources of contamination. Lots where livestock are concentrated, such as feedlots and exercise lots, and manure packs in livestock buildings are also considered potential sources of contamination. Pastures as defined in GAAMPs are neither major nor potential sources of contamination.

WELL ISOLATION DISTANCE WORKSHEET for MAJOR and POTENTIAL SOURCES of CONTAMINATION for TYPE IIA, IIB and III PUBLIC WELLS and PRIVATE WELLS (following the criteria listed in Waste Storage Facility Practice Standard, Table 1)

Producer Name: _____ County: _____

Well Identification: _____ Prepared by: _____ Date: _____ Checked by: _____ Date: _____

Instructions: Complete a separate Part B for each well within 800 feet (2,000 feet for Type IIA) of any existing or planned source of contamination on the farm. Attach a copy of the well record, if available.

- 1. Has the Michigan Department of Environmental Quality or the local health department issued a permit or a deviation for this well in full consideration of the location of any existing or planned source of contamination located within 800 feet (2,000 feet for Type IIA) of this well? YES NO (check one)
If YES, use the isolation distance allowed by the permit or deviation and record that distance in the Minimum Well Isolation Distance block on Part B-2 for each source of contamination where the permit or deviation applies (attach copy of permit or deviation). Proceed to Step 2.
If NO, proceed to Step 2.
2. Does the well casing extend at least 25 feet below the ground surface? YES NO (check one)
If YES, proceed to Step 3.
If NO, casing depth is less than allowed by State of Michigan law. Unless casing depth is extended to at least 25 feet, a variance is required from MDEQ or the local health department in order to proceed.
3. Do any of the following conditions apply?
The well record indicates the well is a Type IIB or Type III public well. YES NO (check one)
The well is used for the milkhouse or milking parlor for a Grade A dairy. YES NO (check one)
The well is connected to a potable plumbing system and is on a farm that has at least one employee at any time during the year. YES NO (check one)
If YES to any of the above conditions, this is a public well. Proceed to Step 4.
If NO to all of the above conditions, this is a private well. Proceed to Part B-2 recording 150 feet in the Minimum Well Isolation Distance block from Major sources of contamination.
**For Potential sources of contamination (as identified on page 2), document the well isolation distances - Private is 50 feet; Public (Type IIB and Type III) is 75 feet.
4. Is the well capacity less than 70 gallons per minute? YES NO (check one). Is the facility's well withdrawal average less than 20,000 gallons per day during the peak month? YES NO (check one)
If YES to either question, proceed to Part B-2.
If NO to both questions, capacity exceeds the limit established by MDEQ. Unless capacity or withdrawal is reduced, a variance is required from MDEQ or the local health department in order to proceed.
5. Are there any planned sources of contamination noted in Part B-2 where the Actual Isolation Distance is less than the Minimum Isolation Distance? YES NO (check one)
If YES, proceed to Step 6.
If NO, proceed to Part A Step 2.

PART B-1

6. List the planned source(s) of contamination and the corrective action(s) needed so the Actual Isolation Distance is equal to or greater than the Minimum Isolation Distance, then proceed to Part A Step 2.

Planned Source of Contamination	Corrective Action(s) Required

7. Verification of Corrective Action: Corrective action is fully implemented as required above for this well where the actual isolation distance from any planned source(s) of contamination was not adequate.

Verified By: _____ Date: _____

Record documentation supporting verification below or attached supporting documentation:

**WELL ISOLATION DISTANCE WORKSHEET for MAJOR and POTENTIAL SOURCES of
CONTAMINATION for TYPE IIA, IIB and III PUBLIC WELLS and PRIVATE WELLS**

Instructions: At the top of the table, enter the identification/description of each source of contamination within 800 feet (2,000 feet for Type IIA) of the well and circle Existing or Planned for each source of contamination. Then indicate whether or not each well protection factor applies relative to each source of contamination. Use information from the site well records and information on the individual waste storage facility or source of contamination. Where a well record does not exist, answer “NO” to the well protection factors that are unknown, or obtain written documentation from a licensed well drilling contractor on the specific well protection factors for the specific site well. Where on-site soils investigations provide additional information, attach a copy of the investigation report and note on the worksheet where the investigation information altered the worksheet results, as applicable. **After completing the table, return to Step 5 on Part B-1.**

Producer Name: _____ **County:** _____ **Prepared by:** _____ **Date:** _____ **Checked by:** _____ **Date:** _____

Well Identification: _____	Sources of Contamination within 800 feet (2,000 feet for Type IIA) of the Well								
	Identification/Description:		Identification/Description:		Identification/Description:		Identification/Description:		
	Existing	Planned	Existing	Planned	Existing	Planned	Existing	Planned	
Well Protection Factors									
A - Based on groundwater flow direction, well is up-gradient from the contamination source.	YES	NO	YES	NO	YES	NO	YES	NO	
	UNKNOWN		UNKNOWN		UNKNOWN		UNKNOWN		
B - Confining material of 10 feet of continuous clay or shale or 20 feet of a continuous clay mixture* below the design bottom elevation of the waste storage facility/source of contamination	YES	NO	(check one) Thickness = _____ feet	CLAY	SHALE	CLAY MIXTURE (check one)			
C - Well casing depth is 100 feet or more	YES	NO	(check one) Actual Casing Depth = _____ feet						
D - Confining material (minimum of 10 feet continuous clay or shale, or 20 feet continuous clay mixture* below the design bottom elevation of the waste storage facility/source of contamination) + Well casing depth (minimum of 60 feet casing depth) = 100 feet or more	YES	NO	(check one) Thickness = _____ feet	CLAY	SHALE	CLAY MIXTURE (check one)			
	Actual Casing Depth = _____ feet								
E - Waste storage facility constructed with flexible membrane liner, reinforced concrete**, glass fused steel; or solid manure stacking facility constructed in accordance with USDA NRCS-Michigan conservation practice standards and sited or graded to protect the water supply in the event of failure	YES	NO	Describe facility type and liner, as appropriate:	YES	NO	Describe facility type and liner, as appropriate:	YES	NO	Describe facility type and liner, as appropriate:
F - Agrichemical or fueling facilities with secondary containment	YES	NO	YES	NO	YES	NO	YES	NO	
List the well protection factors (A, B, C, D, E, F) with a “YES” response for each individual waste storage facility.									
Minimum Well Isolation Distance in feet (based on Part B-1 Step 1, Part B-1 Step 3, or Isolation Distance Reduction table on page 2 of Part A, whichever is less.)			Feet		Feet		Feet		Feet
Actual Well Isolation Distance in feet.			Feet		Feet		Feet		Feet
Is the Actual Well Isolation Distance less than the Minimum Well Isolation Distance?	YES	NO	YES	NO	YES	NO	YES	NO	

*Note – For continuous clay mixtures, when interpreting water well record information contained under Formation Description, the first material named is the dominant material in the strata being described. For example: (a) If the material is described as “clay/sand/gravel,” clay is the dominant material and would classify as a continuous clay mixture; (b) If the material is described as “sand/clay,” it would not be acceptable as a continuous clay mixture since sand is the dominant material.

**Note – Reinforced concrete structures include tanks with pre-cast or cast-in-place reinforced concrete walls and plain concrete floors where: (1) the floor is placed below the natural ground surface to a depth equal to at least 3/4 of the maximum wall height, and (2) the walls are backfilled to a depth equal to at least 3/4 of the wall height. Plain concrete liners do NOT meet well protection factor E.