



## **7 Assess The ILO's Potential Impact On The Water, Land And Air**

### **Water**

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#### ***How will this factory farm affect the water resource in the area/region?***

##### **Identify, locate and/or describe:**

- all surface waters near manure application sites and manure storage site(s)
- nearest intermittent stream and/or drainage ditch
- downstream surface water bodies that may suffer from the over-application of nutrients
- potential for area to become flooded in heavy rain fall events or spring run-off
- nearby drinking water sources (wells and surface water)
- abandoned or uncapped wells on site or in land to be used for manure spreading
- sinkholes, mining sites or gravel pits in the vicinity
- information regarding aquifers (capacity, quality of water, direction of flow, recharge areas)
- source water protection plans for/in the area
- wetlands protected under the UN Ramsar Convention or provincial legislation. See: [http://www.cws-scf.ec.gc.ca/publications/habitat/ramconv/where\\_e.cfm](http://www.cws-scf.ec.gc.ca/publications/habitat/ramconv/where_e.cfm)
- wetlands that may need protection
- information regarding sensitive areas (or pollution zones)
- type of manure storage facility (earthen with clay liner, earthen with synthetic liner, above ground, compost pile)
- water quality monitoring wells installed
- source of water for washing barns or watering livestock
- adequacy of supply of water available for the project
- water license or water permit required or issued
- watershed planning activities in the region

Talk with people in your community—they often better know the lay of the land and the state of the water resource than government officials. For instance elders in your community will know how scarce water may become in periods of drought, or how creeks behave in flood years.

## Land

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### *How will this factory farm affect the land around you?*

#### **Nutrient (Manure) Management Plans**

Depending on the province, an ILO proponent may be required to develop a nutrient management plan so that they may dispose of the manure onto the land in an acceptable fashion. A nutrient management plan attempts to identify suitable nearby acreage for the proponent to spread the manure so that the amount of nitrogen contained in the manure matches the amount of nitrogen that will be removed from the soil by the crop growing on the land in that year. Manure management based on nitrogen quantities alone results in the over-application of phosphorus. Quebec is the only province that has modified this nutrient balancing exercise by having operators shift towards applying manure based on a crops' ability to take up phosphorus. Manitoba is also in the process of requiring operators to eventually reduce phosphorus applications onto the land. Excessive or inappropriate manure spreading can also result in copper, zinc, salt and selenium contamination of soils.

#### **To assess what kind of impact the factory farm will have on the land, find out:**

- type of crops grown in the area
- amount of nutrients applied to the land (nitrogen and phosphorus)
- does the operator require a permit or certification for manure management
- available land acres and location for manure spreading
- tenure status of land for manure spreading (rented or owned)
- if manure spreading contracts or agreements exist, what is their duration and who is responsible or liable for the application of manure
- do manure plans require a certification from a professionally trained agrologist
- will the proponent file a caveat<sup>1</sup> on land to be used for manure spreading?
- how will manure be applied
- how will manure be transported
- what distance manure will be transported
- rate and frequency of manure application
- suitability of land for manure application (soil classification, permeability, hydrogeologic conditions in the area)
- slope of land
- are soil test results or soil samples available or supplied
- are test bore results available or required in order to construct an earthen manure storage facility (lagoon)?



*'Caveats are notices from parties who are not owners of lands that they are claiming some right or interest in the lands. Usually this claim results from some agreement entered into between the owner of the lands and the person who filed the caveat. For example many people give Manitoba Hydro the right to run power lines across their lands. Manitoba Hydro will register a caveat to let anyone searching the title know of their agreement with the owner of the lands. This is particularly useful for providing information to people looking to purchase lands.*

You may want to involve a professional engineer or agrologist to help with some of the technical aspects of the proposal. Professional assistance may also be available from your local university. Most provinces have updated Canada's Soil Classification maps of the 1950's and 60's and soil and terrain maps may be available on-line from your provincial agriculture department.

Factory farming also generates high animal mortalities which may require a formal dead animal plan. Dead animals are incinerated, composted, buried on site or stockpiled and hauled away to landfill or rendering.

## **Air**

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### ***How will this factory farm affect the air around you?***

Agriculture is exempt from any industrial air quality standards that have been set across the country. Air emissions from factory farms usually come from one of three main sources: the ventilation stacks of the barns, the manure lagoon and from the manured fields. In addition to odor, factory farms release dangerous and toxic compounds into the air, such as hydrogen sulfide, ammonia, methane and volatile organic compounds. Most provinces have established setback distances as guidelines for ILOS near residences and community buildings, however research shows that odor plumes can travel well over five kilometers, depending on the atmospheric conditions. In addition, the nitrous oxide and methane emitted by factory farms are powerful greenhouse gases that contribute to climate change.

To assess what kind of impact the factory farm will have on the air, find out:

- the direction and speed of prevailing winds in the area
- frequency and occurrences of air inversions
- if the manure storage facility will be covered? (type of cover)
- will bio-filters be installed on the stacks of the barn
- will liquid manure be injected into the soil and incorporated
- how often will barns be washed?
- will the operation monitor air emissions?
- other advanced technologies proposed (bio-gas recovery)



## Gather Baseline Information

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It is beneficial to have credible data that tells what conditions exist in your area before construction of the factory farm begins. That way, if the project goes ahead and you suffer losses you will may be able to hold the factory farm accountable.

### You may want to:

- have your land appraised
- perform water quality tests on wells, dugouts, ponds and creeks on your property or acquire water quality data of others in the vicinity. *Putting Factory Farms to the Test* is a manual designed by Environmental Defence to help community groups monitor the effects of local factory farms on nearby water sources. Download from:  
**<http://www.environmentaldefence.ca/reports/put-factory-farm-to-test.htm>**
- send a letter through a lawyer to the proponent stating your concerns and asking how they will be addressed
- determine where the environmental liability falls with each component of the factory farm operation
- ask for an environmental performance bond to be placed as a condition on the development to help offset foreseeable environmental costs
- utilize freedom of information laws to acquire some of the background information
- check previous council meeting minutes held with proponents

*For assistance with gathering baseline data you can contact the BFF offices.*

