

Livestock Technical Review Committee
Manitoba Indigenous and Municipal Relations,
Room 604 - 800 Portage Avenue,
Winnipeg, MB, R3G 0N4
March 17, 2017



Attn: Don Malinowski, TRC Coordinator
Re: File No. TRC 12-024, Delta II Boar Test Station

Firstly, I would like to acknowledge the concerns raised by the seven area residents regarding our proposed Topigs Norsvin Canada Delta II Boar Test Station project in the RM of Woodlands. We respect their views and thank them for their time to comment in the Technical Review Committee's (TRC) public review process.

As many points raised had common themes, the following is a response to all the concerns expressed.

Our Company - Topigs Norsvin Canada

Topigs Norsvin Canada is a subsidiary of an international company that is one of the leading swine genetics companies in the world. The proposed facility will be wholly owned and operated by Topigs Norsvin Canada Inc. Topigs Norsvin Canada Inc. has been a Canadian registered company since 1984. We are headquartered in Winnipeg, Manitoba and already operate two farms in Manitoba.

Our proposed "Delta II" project will be an innovative and state of the art facility. It will be a world class research facility containing the most sophisticated and modern equipment available, including a CT scanner and computerized feed intake and recording equipment. There will be a filtered intake ventilation system and the strictest protocols to ensure the highest levels of biosecurity. This facility will deliver top genetics to over 50 countries around the world.

The research station will hold approximately 2800 animals. Half of these will be in the testing phase while the other half will be for global sales. The focus is on research and not production of animal

Government Regulations, Monitoring & Enforcement

In Manitoba, a livestock producer must meet stringent development requirements and undergo a rigorous and complex development process. This process includes mandatory public reviews, a formal public hearing and various provincial and local council approvals.

In particular, the livestock operation proposal must meet the requirements of The Planning Act, The Groundwater Protection Act, The Environment Act's Livestock Manure and Mortalities Management Regulation as well as other regulatory requirements depending on the nature and location of the proposed project.

Strict government requirements based on good science, good land use planning, professional engineering design and construction, and on-going government monitoring and enforcement protects both the public interest and the environment.

Remote Site

The proposed 80-acre site located on the E1/2 of NE 19-14-3 WPM, on the eastern edge of the Woodlands Community Pasture was carefully chosen. Its remoteness and existing thick bush cover provides both bio-security and security for the Delta II Boar Test Station. As well, the location ensures that siting of the proposed test station barn and manure storage facility far exceed requirements for separation distances from even the single closest rural residence. The site is ideally located with direct access to extensive farmland. Area producers will benefit from the application of organic manure fertilizer; thereby reducing crop input costs.

The proposed Delta II project will have a minimal impact on the Woodlands Community Pasture. Topigs Norsvin Canada will be responsible at its own cost, to construct perimeter fencing and an access gate to maintain the integrity and current use of the rest of the expansive Community Pasture lands.

There is also provision for the Municipality (or Woodlands Community Pasture Inc) to either buy back or lease any of the land that may not be required for Delta II after it is fully developed. Thus, any excess land could be returned to the Woodlands Community Pasture. Moreover, it is our understanding that the Woodlands Municipality has deposited the land sale proceeds into a fund to buy more land for the Woodlands Community Pasture should other nearby community pasture land be divested from the federal or provincial government, in future.

The proposed Delta II project site is **NOT** located within any provincially designated Wildlife Management Area (WMA). It should also be noted that Manitoba Sustainable Development, (Dec 28, 2016 Director of Lands) has confirmed that "based on their records there is **NO** Order-in-Council on the NE 19-14 -3WPM " that pertains to the Woodlands Community Pasture".

Water Quality - Protection of Surface Water and Groundwater

The proposed location for the Delta II facility is located within the West Interlake Watershed for water management planning purposes. It is NOT within the provincially designated Red River Special Management Area that requires special attention and flood risk mitigation measures to protect from flooding, and ground and surface water pollution.

As in all cases, provincial regulations regulate all activities that have the potential to contaminate both surface and groundwater supply. Besides livestock operations, this includes urban development of cities, municipal (earthen) sewage lagoons and other treatment systems, gas stations, refuse disposal sites, many types of heavy industry, rural residential subdivisions and individual residential septic fields.

Surface and groundwater protection is provided by means of multi-layered regulations and monitoring and enforcement system. This includes location, design and construction of manure storage facilities, certification of manure applicators, strict annual manure testing, and regulating the methods and rate of fertilizer application. Provincial regulation strictly prohibits the application of manure immediately around surface watercourses or over potential aquifer recharge areas (gravel deposits, bedrock outcrops, sinkholes, etc.).

Livestock industry environmental stewardship programs are supported by both Manitoba Agriculture and Manitoba Pork for livestock producers to utilize "Best Practices". Manitoba Sustainable Development's public policies, regulations, conservation programs and monitoring and enforcement is mandated to

protect the environment and natural resources for multiple uses including safe water quality and recreation, wildlife, forestry, parks and unique or ecologically sensitive areas.

The proposed Delta II site is surrounded on three sides (north, south and west) by Community Pasture in its natural state and this will remain in its current use. Much of the land to the east of the proposed site is cultivated and has been used for annual crops, hay and pasture for many years. It is this land that producers have offered up to be utilized for manure application on about a 4 to 5-year rotational basis with only about 250 acres used each year. This will be applied only once in the fall over a 2 to 3-day period and only during favourable weather conditions.

Manure application will be in accordance with a government approved annual manure management plan. All manure application will be applied at an agronomic rate and in locations that meet the requirements of the Livestock Manure & Mortalities Regulation. Manure fertilizer application will also be GIS mapped and supervised by a professional agronomist.

Manure Storage Safety

An earthen manure storage (EMS) is proposed to contain the manure from this operation. This type of storage is very common and is used by almost every municipality for safely storing and treating human waste.

Earthen manure storages have been regulated by the Province of Manitoba since 1995. A permit to construct an EMS requires a detailed geotechnical assessment of soils; a design prepared by a professional engineer; review of the design and all relevant information by Manitoba Sustainable Development prior to issuing the permit; site supervision of the construction by the responsible engineer and finally certification of the storage by the engineer when the work is completed.

The above process is required for all manure storages constructed in Manitoba. Since the legislation was enacted in 1995 many hundreds of hog, poultry and dairy storages have been constructed. This program is among the strongest legislation in North America and has an excellent record of providing safe containment of livestock manure.

Delta II has retained DGH Engineering Ltd. to conduct a geotechnical site assessment to determine the specification of the manure storage required. Design features of typical earthen manure storages include:

- Determination of soil type on site. As per the soil type at this location we will be using a HDPE liner to prevent ground water contamination;
- Thick earthen berms, a minimum of five feet above grade. This design provides extremely high structural integrity and ensures that surface waters will not be impacted, and that surface water will not impact the storage;
- The interior and exterior slopes are designed to prevent erosion from occurring. The exterior berms will be grassed to further ensure bank stability.
- Erosion within the storage during filling and pump out will be eliminated using concrete pads and ramps.

Setbacks from surface watercourses are the final defense that, in conjunction with the above measures, will ensure that surface water is protected. The proposed EMS meets all setback requirements.

The design and construction standards enforced by the Province of Manitoba ensure that there is no risk of groundwater contamination.

Since this program originated, the Province annually conducts audits of manure storages. Any storages found to have experienced damage or deterioration are required to implement remedial repairs to ensure environmental safety. To date, no permitted storage in Manitoba has experienced an incident that has resulted in any significant environmental impact.

Land Base Required to Recycle Crop Nutrients

Nutrients contained in the manure will be utilized as organic fertilizer for crop production. The organic material contained in the manure will act as a soil conditioner improving soil tilth, fertility, and water retention. Over the long term, increased soil organic content also builds a better and more stable soil structure less prone to erosion.

The manure will be applied as a fertilizer at rates that will match crop phosphorus and nitrogen uptake. An annual manure management plan must be filed with Manitoba Sustainable Development at least 60 days prior to application of manure to fields. Delta II plans to do annual soil testing to ensure that there is no build-up of nutrients that could pose a risk to surface or groundwater. The manure application rate is calculated using target yield, crop nutrient uptake, and manure nutrient levels. Soil and manure nutrient contents are analysed annually.

As the manure management plans are filed with the Province annually, should a build-up of nutrients begin to occur, the Province would be alerted and require changes in the operation's manure management practices.

The land base required to sustainably support this proposed hog operation has been identified in the assessment filed with the Technical Review Committee (TRC). In fact, the manure agreements that have been signed with area producers far exceed the required farm acreage required. It is expected that the TRC will verify that there is an adequate land base to recycle the nitrogen and phosphorous from this proposed operation.

Manure will be applied using one of the following application toolbars: a cultivator, Aerway or Coulter. These specific application toolbars do a very accurate job applying the manure uniformly across the land while physically opening the soil to allow land to absorb the nutrients. Delta II will not use broadcast/spray toolbars.

A three-metre setback is recommended by Provincial Guidelines as a setback from watercourses when manure is injected. In addition to respecting this setback, Delta II will maintain a vegetated buffer strip within this setback. Vegetated buffer strips have proven to be very effective in controlling nutrient runoff from cultivated crop land.

Water Consumption & Sustainable Water Supply

The proposed 2,830 head finisher barn and research facility will require 10,393 imperial gallons per day or 7.2 gallons per minute. A new well will be drilled for the proposed operation.

Prior to any new development of a water supply that exceeds 5,500 gallons per day, a Water Rights License must be obtained through Manitoba Sustainable Development. The license process includes the assessment of the proposed use on the aquifer and other uses. Manitoba Sustainable Development establishes withdrawal rates that prevent problems for other users prior to issuing a license. The local aquifer is expected to sustain all current uses as well as the proposed development without any concern.

Odour Control

Odour is one of the primary concerns regarding swine farms. Odorants in swine manure result primarily from the partial decomposition of organic matter by anaerobic microorganisms. Although not present at toxic concentrations, livestock odours present a nuisance potential.

There are three sources of odour from swine operations: the facilities that house the animals, the manure storage, and the manure spreading operation. At the present time, it is not economically feasible to raise swine without some odour production. However, odours can be maintained at acceptable levels through proper siting, correct facility design and management and proper planning and operation of manure management systems.

In Barn Measures - with frequent manure removal and by keeping the animal and floor as clean and dry as possible, odours within the proposed barns will be kept to a practical minimum. Manure will be flushed out of the barns on a two-week interval to exterior long-term storage. This will keep the in-barn production of the most odorous gases to a minimum. Hydrogen sulphide, mercaptans, and organic acid gases are produced and released in greater quantities when manure is stored in the barn for longer periods.

A state-of-the-art ventilation system will be installed, with computerized controls to ensure that the animals are always comfortable and healthy. This promotes improved barn cleanliness and reduced odour production. Further, the facility will be operated in an all-in all-out fashion by room; with complete wash-down and disinfection of every room between subsequent groups of pigs, improving barn sanitation and reducing odour production.

Manure Storage Measures - odour nuisance from the earthen manure storage experienced by neighbouring residents should be negligible due to the isolation and remoteness of the site as it is located far from houses and is surrounded by dense bush to the south, west and north sides. The layout and clearing of the actual development site will provide a shelterbelt of existing mature bush on **all sides of the Delta II Test Station.**

Shelter belts around the hog facility will not only improve the aesthetic appearance of the area, but will help to disperse odours. Windbreak buffers also help decrease the effects of odours by creating greater lift and turbulence to better dissipate and diffuse odours.

However, if odour complaints are experienced **within the first two years**, our company is prepared to include as a condition in a development agreement the installation of a plastic cover on the manure storage. This technology involves a geosynthetic membrane that covers the complete storage surface and eliminates almost all gas emissions from the storage.

Manure Application Measures - historically it was reported that about 40% of the public complaints on odour nuisance from swine operations were related to land application of manure when broadcasting was used as the delivery method. As mentioned previously, Delta II will NOT be using broadcasting to apply manure fertilizer. In contrast, the use of injection has virtually eliminated odour from the manure application process.

In our proposed operation, manure will be injected into the topsoil using a cultivator as our preferred method. The liquids are not atomized, evaporation and exposure to the air is eliminated, nutrients in the manure are stabilized with respect to runoff and odour release is negligible. Of the methods of manure applications available, injection results in the least odour during and after spreading. Alternatively, where rocks may be encountered, we will use an Aerway or Coulter equipment allowing manure to be incorporated directly into the soil. Irrespective of which application method is used, the effect on area residents is predicted to be minimal. This is due to the sparse population surrounding the spreading lands and the need for only a 2 - 3 day "fair weather" window to spread on about 250 acres only once a year in the fall. Our company will provide notice to neighbours before annual manure application takes place. The nearest weather station with wind data applicable to the project site is in Winnipeg. Weather patterns at the site are expected to be generally similar to those observed in Winnipeg. The annual prevailing winds in the area of the site are from the North-West.

Traffic

There will be minimal traffic to the Delta II Test Station. Staff of 10 will be encouraged to car pool whenever possible and visitors will be intermittent. It is anticipated that an average of 6 to 11 passenger vehicles carrying staff or visitors will enter the Delta II site per day.

We have re-estimated our expected truck traffic on a weekly basis. There will be 3 - 4 tractor trailers per week; 1 hauling pigs in and 1 hauling pigs out plus 1 or 2 tractor trailers hauling feed. As well, there will be 1 service truck entering the Delta II site per week.

This will **NOT** put a heavy stress on road 82N and not require additional road maintenance beyond what is normally required.

Quality of Life and Property Values

The quality of life and land values for neighbours adjacent to hog farms were studied a few years ago, by Alberta Pork Producers and Alberta Agriculture. In the study, completed by Serecon Management Consulting Inc., 73 neighbours to existing hog operations were surveyed for their view. The study concluded as follows:

“While most neighbours share public concerns about odour, water quality and the impact of the operations on their quality of life, the large majority haven’t had any problems. They believe water quality, property impacts and aesthetics are important, but said that the existing operations did not significantly impact on these values.”

An additional study undertaken by Serecon examined the impact of intensive swine operations on neighbouring property values. This study occurred in the Lacombe and Rimbey areas of Alberta and concluded the following:

“Our findings in the analysis and supported by our expertise in this area is that generally intensive livestock operations, more specifically hog enterprises, do not have a negative impact on area land values. In fact, most of the purchasers surveyed found that land prices have increased in the areas studied due primarily to the number and density of livestock enterprises. This was due to the increased number of buyers in the area”.

With respect to the subject proposal, the proposed Delta II Boar Test Station is not expected to have a negative impact on the quality of life for area neighbours with respect to social interaction or outdoor recreation pursuits nor land values in the Rural Municipality of Woodlands. It bears repeating that the site is very isolated and heavily bushed making it virtually "out of sight and out-of-mind" for most residents and the public. Compliance with strict government regulations and good neighbour "best practices" in both the management and operation of the Test Station facility will also contribute towards maintaining a high quality of life and property values.

Jobs & Benefits to Community

The proposed \$9.0 - \$10 Million development project will create 15 jobs in Manitoba of which 10 will be directly employed at the Delta II Boar Test Station in the R.M of Woodlands. Some technicians will be required to be trained and certified to run the specialized equipment such as the CT Scanner, feed intake recording equipment and sophisticated software programs. Besides research and lab technicians, employees for animal care, administration and deliveries will be required. The estimated annual payroll will be about \$600,000. Topigs Norsvin Canada's hiring policy and preference is to hire locally first.

The other 5 jobs will include 3 staff at existing quarantine nursery barns in the R.M. of Rockwood as well as 2 mobile testing positions to service all three barn operations owned and operated in Manitoba.

The house to be built on the test station site in the Woodlands Municipality is needed for biosecurity/security reasons. We prefer someone living on-site to monitor visitors and activities beyond the normal work day.

Delta II once fully developed will also provide considerable benefits to the area including annual tax revenues estimated at \$6,000 to the Municipality and \$4,000 to the local School Division. The project will also create additional spinoff benefits with annual operating expenditures of \$2.0 million. Project construction will also create opportunities for local trades and suppliers.

On behalf of Topigs Norsvin Canada, thank you for the opportunity to provide this additional information and clarification of our proposed Delta II Boar Test Station project. We are excited about the prospects of making major advances in swine genetics of global significance and market reach, right here in the Municipality of Woodlands, Manitoba. We are committed to be a "good corporate" citizen in the community and indeed, a good neighbour to adjacent residents and producers.

Regards,



Mike Shaw, Director Genetic Services
Topigs Norsvin Canada Inc.