

**HILL CREST DAIRY**  
**STORMWATER POLLUTION PREVENTION PLAN**  
**Illinois General NPDES Permit**

**IL0074705**

Prepared for:

Hill Crest Dairy, L.L.C.

And

Illinois Environmental Protection Agency

Prepared by:



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Date:

August 13, 2010

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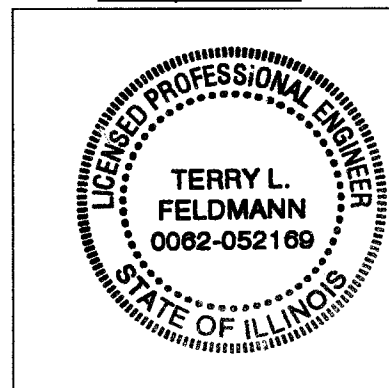
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MSI Project No. 238-04006.01

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## INTRODUCTION

On May 1, 2002 a Consent Order was approved by the Tenth Judicial Circuit Court Peoria, IL as case No. 01 CH 76 as agreed to by the Illinois EPA, Illinois Attorney General, and Hill Crest Dairy, LLC (formerly New horizons dairy, LLC). This plan has been prepared pursuant to the compliance section of this Consent Order as one of several required plans.

The purpose of this plan is to outline measures and operational controls or practices that the Dairy will use to prevent stormwater pollution.

## Facility Description

A Site Layout Plan is attached showing the existing facility and anticipated additional facilities. Hill Crest Dairy, L.L.C. is currently a 1610 cow milking facility. Dry cows and new stock (heifers) are raised off site.

Sam Dilsaver is the managing member of Hill Crest Dairy LLC. The dairy facility is managed by Sam Dilsaver. Manure Systems and handling is managed by Jordan Spackman under the supervision of Sam Dilsaver.

The facility consists of three roofed freestall barns, a special needs and two parlors. Waste is scraped from the barns to a 24" dia. pvc pipe where it flows by gravity to a collection tank. From the collection tank the manure is pumped to a plug-flow, heated mesophillic digester. Following digestion solids are separated prior to lagoon storage of liquids. Screw press solids separators are installed in a concrete solids stacking area. Solids are approximately 65% to 70% moisture content and sold although some are land applied. The lagoon has an operation and management plan for pumping and sludge removal which includes monitoring of sludge accumulations so as not to infringe upon the treatment volume.

Waste from the parlor is washed down to the holding pens by hosing. The main holding pen is then partially flushed with recycled plate cooler water to a catch gutter and flows by gravity to the 24" dia. pipe that bypass the collection tank and goes directly to the lagoon unless extra dilution water is needed. A manual valve enables the change of flow through digester of the holding pen water.

The future capacity of the facility is planed for 1970 cows as follows.

- 1 Freestall (Approved for Construction) with 360 stalls
- 2 Freestalls (w/ lean-to's) with 585 stalls each
- 1 Freestall with 400 stalls
- 1 Special Needs area with 40 stalls
- 1 single 8 Special Needs Parlor
- 1 double 24 Parlor

All surface water is diverted away from or around the facility. Stormwater which falls on roofs and other "clean" areas outlined in section below is directed to one of two existing stormwater

detention basins located at both the Northwest and Southwest corners of the facility where silt is settled out of the stormwater.

### **Measures and Practices/Operational Controls**

1. The roof water from the barns and the clean areas between the barns and south of the southern most freestall barn is being collected by gutters and detained by a small berm between the buildings. Surface inlets and storm water pipe with valves are located up gradient of these berms to collect the storm water and discharge it into the Northwest detention basin (Stormwater Basin #1). Sanitary risers are located on the roadside of the berms and collect runoff from the driveways and feed pushout areas at the west end of the freestall barns.
2. The runoff from the west field is being diverted around the south side of the lagoon. An earthen berm and swale with an approximate 0.5% slope along the north and east side of the ditch at the west property line south of the buildings. The berm and swale extend along the ditch from the west corner (300' northwest of the commodity shed) to a point approximately 150' south of the commodity shed where the ditch slope increases to approximately 2% and is hydraulically sufficient. The commodity shed roof water is directed into the ditch as well.
3. Most of the area south of the silage bunkers has been cleaned up so that clean surface water is diverted to the ditch south of the bunker and around the south side of the lagoon. This area is kept clean by placing an earth berm or swale along the south side of the bunker from the commodity shed to the lagoon so it captures and transfers silage leachate to the lagoon as shown on the drawings via a pipe into the lagoon.
4. Various areas of the lagoon berm and outside slopes as well as drainage areas and all clean water areas (see list below) permanent grass cover has been established and will be maintained.
5. Concrete has been poured along the sides of the freestall buildings and transfer alleys increasing their height to approximately 17" in order to keep all manure out of all clean areas.
6. Lean-to's have been installed on the north side of freestall barn #2 and south side of freestall #3. The lean to additions consist of an 8.5' addition plus an additional 3' roof overhang. Under the lean-to-addition are freestalls which are approximately 18" higher than the scrape alley to prevent any release of manure. During construction, the earth berm between the buildings were cut back 8.5' to allow for the additional barn width. However, after construction, the berm were extended to the sidewall of the barn so as to keep clean water and potential dirty water separate.
7. Gutters and downspouts on the north side of the north barn and the west side of the parlor have been repaired.

8. The lot on the north side of barn #1 has been removed from service and permanent grass cover has been established so that this area can be approved by IEPA to be a "clean area". A surface inlet and storm water pipe with valve shall be installed up gradient of an earthen berm to collect the storm water and discharge it into the Northwest detention basin (Stormwater Basin #1). The existing sanitary riser shall be located on the roadside of the berms and collect runoff from the driveways and feed pushout areas at the west end of the freestall barn #1.
9. Dirty areas that may contain contaminated storm water have been graded so that water will be diverted away from downspouts and storm water connector pipes (e.g., west driveway near push out feed areas).
10. The manure collection tank located at the SW corner of barn #3 does not receive storm water (contaminated or not). Contaminated storm water is directed to the lift station and pumped into the lagoon.
11. A diversion swale is located along the east side of the east roadway and directs contaminated storm water flow south and west toward to the sanitary sewer system (i.e. the lift station).
12. Permanent grass cover shall be maintained by mowing. Bare spots or any disturbed areas shall be reseeded and maintained to prevent erosion and present a good appearance.

All diversion of clean water shall follow engineer's specifications (see-attached drawings). All manure will be contained and not allowed to enter "clean" storm water areas. A summary of "clean" storm water areas and "dirty" wastewater areas is as follows:

#### **"Clean" Storm Water Areas**

1. Grass/Earth area between barn #1 and #2
2. Grass/Earth area between barn #3 and #2
3. Grass/Earth area south of barn #3 but north of the road & separator pad
4. Grass/Earth area north of barn #1 and adjacent driveway
5. All roofs

#### **"Dirty" Waste Water Areas**

1. West driveway
2. South portion of east driveway adjacent to transfer lane
3. East gutter/cow transfer lane
4. South driveways
5. All buildings and other areas where cows have access
6. Bunker silage and manure separation area