From:	Ronnie Williams
To:	Wheat, Gretchen S - DNR
Subject:	FW: Emerald Sky Dairy, LLC
Date:	Thursday, October 05, 2017 10:18:45 AM
Attachments:	Emerald Sky Dairy, LLC Revisions 10-2-2017.pdf

Hi Gretchen,

Here are responses to some of the comments from the County.

Thanks,

Ron

Ronnie Williams, PE
Williams Engineering Services, LLC
E14910 Bears Grass Rd
Augusta WI, 54722
Office 715-286-5726
Cell 715-829-3231

From: Ronnie Williams [mailto:wes@chipvalley.com]
Sent: Monday, October 02, 2017 5:53 PM
To: 'Steve Olson'; 'peter.wurzer@wisconsin.gov'
Cc: 'todd@tulsdairies.com'; 'TJ@tulsdairies.com'; 'cody.overgard@chipvalley.com'
Subject: RE: Emerald Sky Dairy, LLC

Hi Steve,

Below are the responses to the review questions. We have responded in **red** in the body of your email.

A PDF is attached that includes any updates to drawings or calculations related to your engineering review comments.

The following is a list of comments and questions that will need to be addressed prior to approval of the Animal Waste Storage Facility Construction Permit for Emerald Sky Dairy, LLC.

- *Include the slab design computation data in the submittals for the feed pad, storage pad and heavy use areas.*

  See attached PDF. We have included our standard cover letter and computation sheets that we have used on several prior projects reviewed by the Eau Claire Area Office NRCS/DATCP staff.

- *Where are the site drawings for the heifer lot runoff tank and the north feed pad collection tank systems?*

  See attached PDF. Unfortunately, in our haste to get this project under construction, we did not include larger scale details of these areas in the construction plans. We had the areas drawn, but including the specific PDF's got missed.

- *Sheet 99 mentions reshaping the waterway north of the stacking area. Will the new dimensions contain a 25-year storm event? Where are the waterway dimensions located?*

  The existing waterway to the north of the stacking area may need to be regraded based on the revised site layout that includes the stacking pad being installed over top of the existing waterway. The designed floor elevation of the north stacking slab area is approximately 1' higher than the existing ground, so it is unlikely any runoff will reach the slab. Also, the proposed slab has a proposed 4 foot liquid tight wall surrounding it. The proposed wall would prevent the waterway from overflowing onto the stacking slab. The grassed area to the north of the stacking slab will likely be regarded to shape water to flow directly toward the west along the north side of the pad. In the event that the landowner does wish to install a designed waterway we have included the design information. The watershed of this new waterway is substantially smaller than the existing waterway that will be removed due to keeping clean road ditch water in the road ditch and collecting all runoff from the feed pad area that has historically flowed to the waterway.

  An 8' wide waterway with a 1% slope to the west would be installed. This potential waterway would handle the 25-year 24 hour rainfall event at approximately 0.77 feet of depth. See attached PDF for additional design information.

- *Is the ramp shown correctly on the west side of the calf hutch area shown on sheet 101? The 1191.93 elevation shown on the SW corner appears low based on the 1% slope shown.*

  The elevation depicted in the NW corner of sheet 101 regarding the northwest calf lot concrete slab area have been corrected. There was also a typographical error regarding the slope notation in that the slopes of the calf lot area are to be graded at 0.5% not 1.0%. Both errors have been corrected. See attached PDF

- *Is Specification 202 the correct callout for fill materials shown on sheet 130? Why does the exterior embankment only have the specification fill material towards it core?*

  Fill materials for the HDPE will utilize both the 202 and 204 standards as noted in the upper left corner of page 130. The actual earthwork construction of the material beyond the clay liner will be installed according the Wisconsin Construction Specification 204. The clay liner of the HDPE pond will follow the requirements of Wisconsin Construction Specification 202 for proper liner placement on subgrade and meeting requirements for rocks, etc. Due to fill heights of the embankment, we have adjusted the drawing to reflect that Spec 204 shall be used for the entire 12

foot wide embankment construction with other fill materials being allowed for use beyond the minimum embankment geometry requirements. See attached PDF

- *Page 140 shows a # 4 dowel pin at 12 inches on center-should this be a #5 dowel pin to match the page 5 and NRCS standard drawing details?*

  A #5 dowel pin has been added. See attached PDF

- *The backfill EFP is 60 and 80 pounds per cubic foot in the design computations. Will the clay backfill exceed these values? The 313 standard in table 8 requires 65 to 85 pounds per square foot to be used for the computations and design if over 50% fines are present in the backfill.*

  The only wall drawing showing a backfill less than 80 pounds per square foot is the feedpad wall drawing. This wall is not located within a clay liner area and will likely be backfilled with onsite materials. The majority of soils on site are sandy and are not expected to be greater than 50% fines.

- *Where are the computations for the point loads on the wall tops with the slab placed directly on top of them? The crossover channel shows the slab on the wall top, will equipment drive over the cross channels to clean it out?*

  Wall Calculations have been included for the crossover channel. The detail drawing has also been updated to reflect the additional loading that is possible if heavy equipment were to drive on the wall. See attached PDF

- *Include the statement that a construction quality assurance report detailing the HDPE liner inspection will be submitted to the St Croix County CDD after the liner installation as required by WI. Const. Spec. 202.*

  A statement has been added. See attached PDF

- *Include details of safety barricades to be placed between the stacking areas and concrete lined waste storage facility to prevent falling into the facility during operation.*

  Concrete Barricade Blocks have been added on the northern side of the concrete waste storage facility. A gap between blocks is planned to allow runoff to flow between the blocks and into the waste storage facility. See attached PDF

- *Include earthwork quantities as required on page 5 of the 313 standard.*

  The estimated earthwork for the site is 122,374 cubic yards of cut with 84,901 cubic yards of fill (No compaction included)

- *Please specify a dimension for the roadway setback on page 77.*

  A setback line 100' from the road right of way has been added. The inside berm edge of the waste storage facilities is proposed as 150.6 feet away from the right of way at the nearest point. The location of the road right of way is an estimated distance based on survey data provided by the certified surveyor. See attached PDF

If you have any additional questions or comments please let us know.

Thanks,

Ron Williams

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Cell 715-829-3231

From: prvs=143834b530=Steve.Olson@sccwi.gov [mailto:prvs=143834b530=Steve.Olson@sccwi.gov]
On Behalf Of Steve Olson
Sent: Friday, September 29, 2017 4:39 PM
To: 'Ronnie Williams'
Cc: Sarah Droher
Subject: Emerald Sky Dairy, LLC

Ronnie,

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- Include the slab design computation data in the submittals for the feed pad, storage pad and heavy use areas.

- Where are the site drawings for the heifer lot runoff tank and the north feed pad collection tank systems?

- Sheet 99 mentions reshaping the waterway north of the stacking area. Will the new dimensions contain a 25-year storm event? Where are the waterway dimensions located?

- Is the ramp shown correctly on the west side of the calf hutch area shown on sheet 101? The 1191.93 elevation shown on the SW corner appears low based on the 1% slope shown.

- Is Specification 202 the correct callout for fill materials shown on sheet 130? Why does the exterior embankment only have the specification fill material towards it core?

- Page 140 shows a # 4 dowel pin at 12 inches on center-should this be a #5 dowel pin to match the page 5 and NRCS standard drawing details?

- The backfill EFP is 60 and 80 pounds per cubic foot in the design computations. Will the clay backfill exceed these values? The 313 standard in table 8 requires 65 to 85 pounds per square foot to be used for the computations and design if over 50% fines are present in the backfill.

- Where are the computations for the point loads on the wall tops with the slab placed directly on top of them? The crossover channel shows the slab on the wall top, will equipment drive over the cross channels to clean it out?

- Include the statement that a construction quality assurance report detailing the HDPE liner inspection will be submitted to the St Croix County CDD after the liner installation as required by WI. Const. Spec. 202.

- Include details of safety barricades to be placed between the stacking areas and concrete lined waste storage facility to prevent falling into the facility during operation.

- Include earthwork quantities as required on page 5 of the 313 standard.

- Please specify a dimension for the roadway setback on page 77.

Thanks,

Steve Olson
Conservation and Land Use Specialist
St. Croix County Community Devopment Department
715-531-1909 cell 715-760-1992