



STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

900 North Skyline Drive, Suite B • Idaho Falls, ID 83402 • (208) 528-2650

Brad Little, Governor
John H. Tippetts, Director

CERTIFIED RETURN RECEIPT: 7013 1090 0001 7435 8597

June 19, 2020

Mr. Drew Facer, President & CEO
Idahoan Foods, LLC.
P.O. Box 130
Lewisville, Idaho 83431

Subject: Reuse Permit No. I-010-06, Idahoan – Idaho Falls Facility, Permit Modification 2

Dear Mr. Facer:

The Idaho Department of Environmental Quality is issuing a permit modification to Reuse Permit I-010-06. This modification, referred to as Modification 2, increases land application acreage by 72.25 acres. The enclosed document is your official copy of the permit modification and demonstrates you are authorized to operate the reuse facility subject to specified conditions in the modified permit. Enclosed with this letter, is a summary of the changes made in the final permit modification as a result of comments received on the draft permit modification.

This permit modification is incorporated into and constitutes a part of Reuse Permit I-010-06. The permit is incomplete and unlawful without this modification attached.

If you have any questions, please contact Tyler Ayers at (208) 528-2650 or via e-mail at tyler.ayers@deq.idaho.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Erick Neher", written over a horizontal line.

Erick Neher
Regional Administrator
Idaho Falls Regional Office

Enclosures: Modification 2 to Reuse Permit I-010-06, Attachment 1

c: Dennis Leikam, Idahoan Foods (dleikam@idahoan.com)
Erick Neher, Regional Administrator, Idaho Falls Regional Office
Larry Waters, P.E., Wastewater Program Manager, State Office
Tressa Nicholas, MSCE, Wastewater Analyst, State Office
Greg Eager, P.E., Engineering Manager, Idaho Falls Regional Office
Todd Higgins, Wastewater Reuse Permit Writer
EDMS 2020AGH762

Attachment 1

Summary of Permit Modification Changes

Page 8 – 10, Section 3 – Compliance Schedule for Required Activities. Removed the requirement for a well location acceptability analysis (WLAA) for well #8 in compliance activity CA-010-06 as this was completed and submitted in the monitoring well plan (See response to Comment 1 below).

Response to Comments on Draft Permit Modification 2 for I-010-06

Response to Comments from Idahoan Foods, LLC. letter received on March 30, 2020

1. **Comment:** Staff Analysis Section 5.1 Buffer Zones includes a discussion of domestic wells #7 and #8. An analysis of the physical and hydrogeologic setting of these wells is included in the report titled, “Buffer Zone Mitigation for Proposed Management Unit, Idahoan Foods, LLC Idaho Falls Plant 2020”, prepared by Clearwater Geoscience dated January 18, 2020 (Buffer Zone Mitigation Report). The Buffer Zone Mitigation Report provides the discussion requested in the Staff Analysis Section 5.1 for Well #8 and concludes that, “...the natural characteristics of the site that are protective of groundwater and the mitigation techniques described herein and the increased efforts by Idahoan to improve their wastewater treatment process, we are confident that the development of the proposed application site will have negligible impact from wastewater on people, waterways, and homes.” Because of the thorough Buffer Zone Mitigation Report, it is our understanding that the Well Location Acceptability Analysis that is requested in Staff Analysis 5.1 has been completed, and the location of Well #8 is acceptable.

Therefore, Idahoan respectfully requests that Compliance Activity CA-010-06 be modified to eliminate the requirement for the WLAA for Well #8 (H-6). Idahoan agrees with the remainder of CA-010-06 regarding the need for an updated Buffer Zone Plan to address the north corner of the field where the pivot swings towards the Snake River.

Response: DEQ acknowledges the oversight of the WLAA submitted with the supporting documents for monitoring wells and buffer zones. DEQ Staff has reviewed the WLAA and concurs the location of Well #8 is acceptable. Therefore, the requirement for the WLAA of Well #8 has been removed from compliance activity CA-010-06.

2. **Comment:** Staff Analysis Section 9: Recommendations recommends that this permit expire in 2023. We appreciate the time and effort that has been put into developing this Major Modification both with the team at DEQ and at Idahoan and believe that the permit as written is protective of the environment and human health. Idahoan respectfully requests that the expiration date for this permit be extended to 5 years from the adoption of this Major Modification, to expire in 2025. This date is consistent with the 5-year permitting cycle that DEQ aims for with land application sites and allows both parties to not tie up limited resources reviewing a permit that is acknowledged to be protective of the environment and human health.

Response: In determining an appropriate period for extending the permit duration, DEQ examined the facility’s ability to comply with the permit requirements and potential impacts to public health. As stated in the staff analysis, this acreage expansion is expected to reduce nitrogen loading by 27% to an average rate of 507 lb/acre. However, nitrogen loading is still expected to slightly exceed the expected permitted loading rate to MU-01004 and MU-01005 of 476 lb/acre, based on average uptake rates observed on MU-01004. Furthermore, this expansion should allow the facility to now consistently comply with the permitted nitrogen loading rate limits for MU-01001, MU-01002, and MU-01003, although loading will still be in excess of agronomic rates. Although there have been no impacts to public health observed to date from nitrogen loading exceeding agronomic rates, that may not continue to be the case. DEQ would like to see the facility continue to pursue acreage expansions or treatment upgrades that allow for nitrogen loading at agronomic rates.

The permit modification has been extended to five-years; however, compliance activity CA-010-08 has been added to the permit requiring an analysis of nitrogen constituent loading rates to the management units and what additional actions need to be taken to reduce nitrogen loading to all management units to agronomic rates (ie. 150% of typical crop uptake). This analysis will be due within 36 months of issuance of the permit modification.

Response to Comments from the Idaho Conservation League letter received on April 10, 2020

1. **Comment:** This permit modification proposal for Idahoan Foods calls for a new land application unit (MU-01005) that directly abuts the Snake River. The wastewater that will be land applied to this unit has an average total phosphorus concentration of 20.9 mg/L. It is imperative that reuse water not leave the fields via runoff or sprinkler spray and enter the Snake River, a mere 35 feet to the east of the site at its closest point.

We appreciate that DEQ is implementing certain measures to provide an adequate buffer for the Snake River from reuse activities, including requiring an updated Buffer Zone Plan for MU-01005 and that sprinkler heads be no higher than four feet above the ground surface. However, we recommend the following additional mitigation measures to ensure that reuse activities do not impact the Snake:

- DEQ and the facility should model spray transport associated with wind at the site given the current configuration. We suspect that even with a 4-foot sprinkler height, a strong SW-W wind could lead to excessive spray of reuse water over the berm and eventually into the Snake. Based off of wind data since 2010 at Idaho Falls Fanning Field, the wind blows out of the southwest 42% of the time, with an average speed of 12.8 mph (Figure 1). Maximum wind gusts in the area also typically occur when winds are from the southwest (Figure 2). Those statistics demonstrate potential for moderate winds (and stronger gusts) in the proper direction to potentially cause sprinkler spray towards the Snake. Once this issue is properly investigated, and if it is found to be a credible concern, DEQ should include a permit condition that prevents reuse water application on MU-01005 if specific threshold conditions are met for wind speed, gust, and direction.
- The Staff Analysis notes that the berm does not line the top 500 feet of the field along the Snake River in MU-01005. This berm should be extended northward to prevent any runoff potential in that area.

Response: DEQ modeling shows minimal phosphorus loading impacts to the Snake River with an increased concentration of 0.00028 mg/L in the worst-case scenario. The model ran six scenarios for the different types of nozzles that could be used based on the operating parameters supplied in the permit modification application. The model had the following assumptions:

- An irrigation set of eight (8) hours, with two (2) hours along the river,
- Average lateral distance from the river was 55 feet,
- Rotator or wobbler type nozzle height was 6 feet above the ground surface (the model does not allow for adjusting the height),
- Impact nozzle type height was 15 feet above the ground surface,
- Wind speed was 10 mph and perpendicular to the pivot laterals,
- Phosphorus concentration in the recycled water was 20.9 mg/L.

Although the pivot does come within 35 feet of the river, this is for only one span; on average, the pivot is 55 feet from the river and was used for the model. The table below describes the predicted outputs from the pivot. The facility stated Senniger nozzles would be used which are identified as No. 32 and No. 37 in the table.

Nozzle Types	Wobbler (no. 37)	Impact (no. 7)	Rotator (no. 47)	Rotator (no.42)	Wobbler (no. 32)	Flatspray (no. 76)
Snake River flow during the irrigation set (gal/set) = 1,297,283,328						
Recycled water discharge to Snake River (gal/set)						
	0	18,041	248	106	142	283
Predicted Phosphorus Water Quality Impacts						
- River conc. increase of P during irrigation set (mg/L)	0.0	0.00028370	0.00000389	0.00000167	0.00000223	0.00000445
Narrative P river concentration increases	none	2.8 ten thousandths of a ppm	3.9 millionths of a ppm	1.7 millionths of a ppm	2.2 millionths of a ppm	4.4 millionths of a ppm

These predictions are conservative and actual impacts are expected to be lower. The model assumed the wobbler and rotator nozzles would be six (6) feet above the ground surface where the permit will limit the nozzles to no higher than four (4) feet above the ground surface. The model does not factor in the berm height which ranges from 4.27 feet to 10.45 feet above the ground surface. The nozzle and berm heights will affect spray trajectory further reducing impacts to the river than stated in the model.

As wind drift is not predicted to contribute detectable levels of phosphorus to the Snake River, no additional conditions will be added to the permit.

The second point of your letter requested that the berm be extended northward to prevent potential runoff into the river. This section of the river will be no closer than 180 feet to the management unit, and so direct runoff is not expected to occur. Existing permit conditions require to facility to operate in a manner that prevents runoff from occurring, and are sufficient to address any issue as it occurs.

Idaho Department of Environmental Quality

Reuse Permit

I-010-06 – Modification 2

Permittee Name: Idahoan Foods, LLC.

Effective Date of this Modification: June 19, 2020

Complete Description of Modification

The purpose of this Permit Modification is to extend the permit expiration date, update the Authorized Representative, increase the available acreage by adding MU-01005, and to modify the reporting requirements for MU-01001 for Reuse Permit No. I-010-06.

1. Page 1, shall now state: This permit is effective from the date of signature and expires on August 9, 2025.
2. Section 2. Facility Information, Page 7, sixth row of the Reuse Permit shall be replaced with the following:

Facility responsible official and authorized representative	<p><u>Responsible Official:</u> Mr. Drew Facer, President and CEO</p> <p><u>Authorized Representative:</u> Mr. Dennis Leikam, Environmental Manager Tel: (208) 525-2294 dleikam@idahoan.com</p> <p>Notify DEQ within 30 days if there is a change in personnel for any of the above facility contacts. A minor permit modification will be issued by DEQ to confirm the change.</p>
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3. Section 3. Compliance Schedule for Required Activities, Page 8–10, Add the following rows to the table following CA-010-05:

CA-010-06 As specified	An updated Buffer Zone Plan addressing mitigation measures to be taken for application along the Snake River shall be submitted to DEQ for review and approval before MU-01005 is allowed to receive any constituent loading from recycled water or supplemental fertilizer.
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<p>CA-010-07</p> <p>Within six (6) months of permit modification issuance</p>	<p>Ground water monitoring wells GW-01006 through GW-01008 shall be installed as soon as possible but no later six (6) months after the date the permit modification is issued.</p>
<p>CA-010-08</p> <p>Within thirty-six (36) months of permit modification issuance</p>	<p>An analysis of nitrogen constituent loading rates to the management units and what additional actions need to be taken to reduce nitrogen loading to all management units to agronomic rates (ie. 150% of typical crop uptake).</p>

4. Section 4.1. Hydraulic Management Unit Descriptions, Page 11 of the Reuse Permit. Replace the table with the following:

Serial Number	Description	Irrigation System Type and Irrigation Efficiency (E _i)	Maximum Acres ^a Allowed
MU-01001	Field #1	1 Large Pivot #1a, 1 Small Pivot #1b and associated corners with 'big-guns' (E _i = 0.80)	68.9
MU-01002	Field #2	1 Pivot and associated corners with 'big-guns' (E _i = 0.80)	97.5
MU-01003	Field #3	'Big-guns' (E _i = 0.55)	48.2
MU-01004	Field #4	1 Pivot (E _i = 0.80)	20.8
MU-01005	Field #5	1 Pivot (E _i = 0.80)	72.25
Total acreage			307.65

a. Maximum acres represent the total permitted acreage of the MU as provided by the permittee. If the permittee uses less acreage in any season or year, then loading rates shall be presented and compliance shall be determined based on the actual acreage used during each season or year.

5. Section 4.2. Hydraulic Loading Limits, Page 11 of the Reuse Permit. Replace the table with the following:

Serial Number	Growing Season Hydraulic Loading	Nongrowing Season Maximum Hydraulic Loading (inches) ^a
<p>MU-01001</p> <p>MU-01002</p> <p>MU-01003</p>	Substantially at the irrigation water requirement (IWR) ^b	12.8
MU-01004	Substantially at the irrigation water requirement (IWR) ^b	9.0

MU-01005	Substantially at the irrigation water requirement (IWR) ^b	8.3
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- a. Record daily, as necessary, abnormal conditions as a result of nongrowing season application including ponding, excessive ice buildup, or runoff from the permitted site.
- b. For compliance purposes, the method for calculating the IWR shall be specified in the PO.

6. Section 4.3. Constituent Loading Limits, Page 12 of the Reuse Permit. Replace the table with the following:

Serial Number	Constituent Loading from All Sources			
	Nitrogen (lb/acre)	Non-volatile dissolved solids (lb/acre)	COD Growing Season (lb/(acre·day)) ^a	COD Nongrowing Season (lb/(acre·day)) ^a
MU-01001 MU-01002 MU-01003	600	n/a	50	50
MU-01004 MU-01005	150% of typical crop uptake ^{b,c}	n/a	50	50

- a. COD limit is expressed in pounds per acre per day (lb/(acre·day)) based on a seasonal average.
- b. MU-01005 shall not receive any constituent loading from recycled water, supplemental fertilizer, or any other source until the permittee has submitted and DEQ has approved an updated buffer zone plan. See Section 4.4, Footnote a, for more information.
- c. Typical crop uptake is the median constituent crop uptake from the three most recent previous years the crop has been grown. For crops having fewer than three years of on-site crop uptake data, other crop yield data or nutrient content values may only be used if DEQ provides written approval before growing season. If written approval is not provided by DEQ, compliance with the 150% nitrogen loading limit shall be determined by comparing the current year nitrogen loading to the current year nitrogen uptake.

7. Section 4.4. Constituent Loading Limits, Page 12 of the Reuse Permit. Add “MU-01005” below “MU-01004” in the second row of the first column.

8. Section 4.5. Other Permit Limits and Conditions, Page 13, fifth and sixth rows of the Reuse Permit shall be replaced with the following:

Posting	Storage Lagoon LG-01001: Signs around the perimeter of the storage lagoon should read “Wastewater Storage Facility – Keep Out” or equivalent. MU-01001, MU-01002, MU-01003, MU-01004, MU-01005: Posting not required.
Fencing	Storage Lagoon LG-01001: Chain-link fencing. MU-01001, MU-01002, MU-01003, MU-01004, MU-01005: Fencing not required.

9. Section 5.1.1. Constituent Monitoring, Page 15 of the Reuse Permit. Add “MU-01005” below “MU-01004” in the second row of the second column.
10. Section 5.1.2. Management Unit and Other Flow Monitoring, Page 15 and 16 of the Reuse Permit. Add “MU-01005” below “MU-01004” in the fourth and fifth row of the first column.
11. Section 5.2.1. Ground Water Monitoring Point Descriptions, Page 16 of the Reuse Permit. Replace the table with the following:

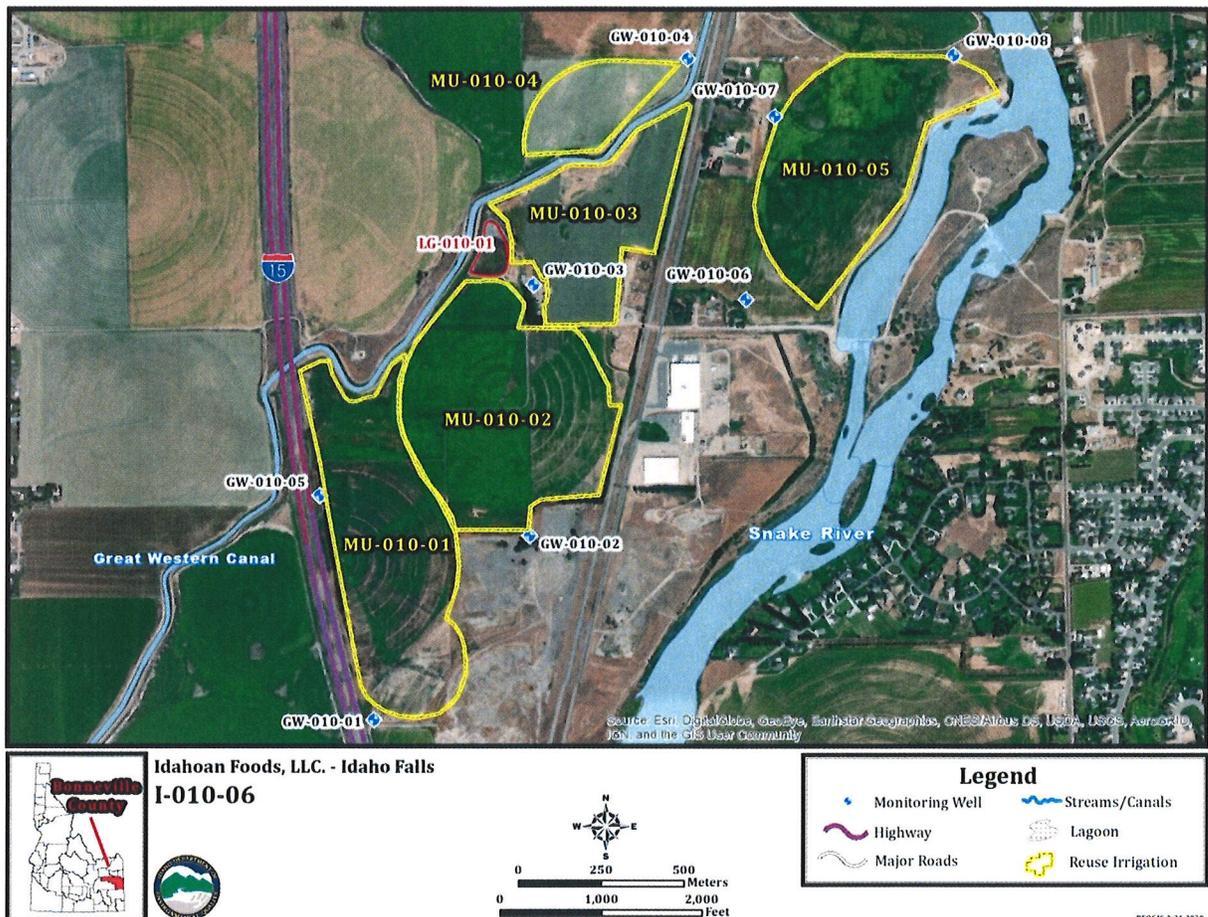
Monitoring Point Serial Number	Common Designation	Well Type	Gradient Location
GW-01001	MW 1	Monitoring well	Downgradient
GW-01002	MW 2	Monitoring well	Downgradient
GW-01003	MW 3	Domestic well at Farm Manager house	Midgradient
GW-01004	MW 4	Monitoring well	Upgradient
GW-01005	MW 5	Monitoring well	Downgradient
GW-01006	MW 6	Monitoring well	Downgradient
GW-01007	MW 7	Monitoring well	Midgradient
GW-01008	MW 8	Monitoring well	Upgradient

12. Section 5.2.2. Ground Water Monitoring, Sampling, and Analyses, Page 17 of the Reuse Permit. Replace “GW-01001 through GW-01005” with “GW-01001 through GW-01008” in the second and third row of the first column.
13. Section 5.3.1. Soil Monitoring Unit Descriptions, Page 17 of the Reuse Permit. Replace the table with the following:

Monitoring Point Serial Number	Description	Associated Management Unit
SU-01001	Field #1 Pivot #1a, Pivot #1b, and associated corners)	MU-01001
SU-01002	Field #2 (Pivot #2 and associated corners)	MU-01002
SU-01003	Field #3 ('Big-Gun' fields)	MU-01003
SU-01004	Field #4 (Pivot)	MU-01004
SU-01005	Field #5 (Pivot)	MU-01005

14. Section 5.3.2. Soil Monitoring, Sampling, and Analyses, Page 18 of the Reuse Permit. Add “SU-01005” below “SU-01004” in the second row of the first column.

15. Section 5.4.1. Crop Harvest Monitoring, Page 19 of the Reuse Permit. Add “MU-01005” below “MU-01004” in the second row of the first column.
16. Section 5.4.2. Plant Tissue Monitoring, Page 19 of the Reuse Permit. Add “MU-01005” below “MU-01004” in the second row of the first column.
17. Section 6.1.2. Required Contents, Page 21 and 22 of the Reuse Permit. Add “MU-01005” below “MU-01004” in the second row of the first column.
18. Section 11.2. Facility Map, Page 34 of the Reuse Permit. Replace the map with the following map:



Modification 2 is hereby approved. This modification to the permit is incorporated into, and constitutes a part of, Reuse Permit No. I-010-06. This permit modification must be attached to the permit. The permit is incomplete and unlawful under IDAPA 58.01.17, *Recycled Water Rules*, without this permit modification attached.

Signed,



Erick Neher, Regional Administrator
Idaho Falls Regional Office
Department of Environmental Quality

6-19-2020
Date