

Idaho Department of Environmental Quality

Reuse Permit

I-050-03: Modification 2

Permittee Name: The Amalgamated Sugar Company LLC (TASCO), Mini-Cassia Facility

Effective Date of Modification: July 7, 2017

Complete Description of Modification:

- Section 3 of the reuse permit lists compliance activities required to be completed by the permittee. Four (4) new compliance activities associated with the addition of management units MU-05013 and MU-05014 have been added to this section.

3. Compliance Schedule for Required Activities

Compliance Activity (CA) Number and Completion Due Date	Compliance Activity Description
CA-050-09 Prior to application of recycled water	Plans and specifications: The permittee shall submit to DEQ for review and approval, plans and specifications for all new and existing infrastructure that will be used for land applying recycled water to management units MU-05013 and MU-05014.
CA-050-10 May 7, 2018	Well Location Acceptability Analysis (WLAA): The permittee shall submit to DEQ for review and approval, an updated WLAA to reflect recycled water application to management units MU-05013 and MU-05014. The methodology described in Section 6.6.4 of the DEQ <i>Guidance for Reclamation and Reuse of Municipal and Industrial Wastewater</i> shall be used to conduct the WLAA.
CA-050-11 October 7, 2017	Supplemental Irrigation Water Measurement: The permittee shall submit to DEQ for review and approval, a plan for the measurement of supplemental irrigation water applied to management units MU-05013 and MU-05014. If flow meters are specified, plans and specifications shall be submitted to DEQ for review and approval.
CA-050-12 Plan due September 7, 2017 Report due June 1, 2018	Aquifer Properties Characterization: The permittee shall submit to DEQ for review and approval, a plan for characterizing aquifer properties (hydraulic conductivity, effective porosity, and gradient) associated with management units MU-05013 and MU-05014. Effective porosity may be obtained from standard tables. If pump testing is specified, the testing shall be conducted at least once in October 2017 and April 2018 to determine aquifer properties at high and low ground water level conditions. An aquifer properties characterization report shall be submitted to DEQ for review and approval by June 1, 2018.

Compliance Activity (CA) Number and Completion Due Date	Compliance Activity Description
CA-050-13 June 1, 2018	Ground Water Monitoring Results: Following the completion of the April 2018 ground water sampling event required by section 5.2.2 of this modification for the monitoring wells associated with management units MU-05013 and MU-05014 (GW-05039, GW-05071, and GW-05072), the permittee shall submit to DEQ: all ground water monitoring results (hard copy and electronic data), basic statistical evaluations of all collected data, a ground water elevation evaluation, a common ion analysis, and any other evaluations of differences having occurred between up, down, and cross-gradient conditions.

2. Section 4 of the reuse permit now specifies management units MU-05013 and MU-05014 as permitted management units approved for the land application of recycled water. The following subsections have been updated to include the addition of the new management units: 4.1 specifies management unit descriptions, 4.2 specifies growing season and non-growing season hydraulic loading limits, and 4.3 specifies constituent loading limits. The description of management unit MU-05012 has also been updated in section 4.1 to reflect the separation of the East PCC Storage Areas Phase 1 and Phase 2.

4.1. Hydraulic Management Unit Descriptions

Serial Number	Description	Type of Recycled Water Allowed	Irrigation System Type	Maximum Acres Allowed
MU-05012 ^b	East PCC Storage Area, Phase 1	Process and condensate wastewater	Hand lines	14.7
MU-05013	East PCC Storage Area, Phase 2	Process and condensate wastewater	Hand/wheel lines	18.7
MU-05014	South Suchan	Process and condensate wastewater	Hand/wheel lines	102.4

- b. Prior to any recycled water application to MU-05012, a minimum depth of three (3) feet of precipitated calcium carbonate (PCC) material shall be deposited and compacted over the entire permitted acreage.

4.2. Hydraulic Loading Limits, Vegetation, and Grazing^a

Serial Number	Growing Season Hydraulic Loading	Non-growing Season Maximum Hydraulic Loading, inches
MU-05013	Substantially at the irrigation water requirement (IWR) ^b	7.3
MU-05014	Substantially at the IWR ^b	6.5

- a. No limits on type of vegetation grown. No grazing is currently allowed. A DEQ-approved grazing management plan is required prior to grazing.
- b. For compliance purposes, the source of P_{def} data used to calculate the IWR shall be specified in the PO.

4.3. Constituent Loading Limits

Serial Number	Constituent Loading (from all sources) ^a			
	Nitrogen	Salt as Nonvolatile Dissolved Solids (lb/acre-year) ^b	Chemical Oxygen Demand, Growing Season (lb/acre-day)	Chemical Oxygen Demand, Non-growing Season (lb/acre-day)
MU-05013	150% of typical crop uptake ^c	1,900	50	25
MU-05014	150% of typical crop uptake ^c	1,900	50	25

- a. Includes waste solids, fertilizer, soil amendments, and any other material that would add to the constituent application amount.
- b. Limit is based upon loading rates contributed by process and condensate wastewater only.
- c. Typical crop uptake is the median constituent crop uptake from the 3 most recent years the crop has been grown. For crops having less than 3 years of on-site crop uptake data, regional crop yield data and typical nutrient content values, or other values approved by DEQ, may be used.

3. Section 5 of the reuse permit now lists all required monitoring associated with the addition of management units MU-05013 and MU-05014. Section 5.1.2 has been updated to require the flow monitoring of all recycled water and supplemental irrigation water applied to the new management units. Section 5.2.1 has been updated to include ground water monitoring wells GW-05071 (MW-122) and GW-05072 (MW-123) that were installed to assist in monitoring ground water quality upgradient and downgradient of the new management units. Section 5.2.2 has been updated to include the ground water monitoring requirements of monitoring wells associated with the new management units. Section 5.3 and section 5.4 now specify soil and plant tissue monitoring for the new management units, respectively.

5.1.2 Management Unit and Other Flow Monitoring

Management Unit or Flow Measurement Serial Number and Location	Sample Description	Sample Type and Frequency	Measured Parameters, each MU or FM
MU-05013 MU-05014	Process wastewater volume to each specified management unit	- Daily meter reading(s) as needed to calculate volume to each MU - Monthly compilation of data to report monthly volume to each MU	- MG/month - Inches/month - MG/growing season - Inches/growing season - MG/non-growing season - Inches/non-growing season
MU-05013 MU-05014	Condensate wastewater volume to each specified management unit	- Daily meter reading(s) as needed to calculate volume to each MU - Monthly compilation of data to report monthly volume to each MU	- MG/month - Inches/month - MG/growing season - Inches/growing season - MG/non-growing season - Inches/non-growing season
MU-05013 MU-05014	Supplemental irrigation water volume to each specified management unit	- Daily meter reading(s) as needed to calculate volume to each MU - Monthly compilation of data to report monthly volume to each MU	- MG/month - Inches/month - MG/growing season - Inches/growing season

5.2 Ground Water Monitoring

5.2.1 Ground Water Monitoring Point Descriptions

Monitoring Point Serial Number	Common Designation	Well Type	Location
GW-05071 ^a	MW-122	Monitoring well	Upgradient well for MU-05014
GW-05072 ^a	MW-123	Monitoring well	Downgradient well for MU-05014

- a. At least one ground water sample from each monitoring well shall be collected and analyzed prior to the application of recycled water to MU-05013 and MU-05014.

5.2.2 Ground Water Monitoring, Sampling, and Analyses

Monitoring Point Serial Number	Sampling Point Description	Sample Type and Frequency	Constituents (Units in mg/L Unless Otherwise Specified)
GW-05039 GW-05071 GW-05072	Monitoring wells	Unfiltered grab sample: Monthly through April 2018; and thereafter twice annually in April (prior to the irrigation season) and October	<ul style="list-style-type: none"> - Water table elevation (feet) - Water table depth (feet) - Nitrate-nitrogen, as N - Total phosphorus, as P - Total dissolved solids (TDS) - Chloride - Total and dissolved iron - Total and dissolved manganese - Chemical oxygen demand (COD) - Electrical conductivity (µmhos/cm) - pH (Standard Units) - Temperature (°F)
		Unfiltered grab sample: October 2017 and April 2018	<ul style="list-style-type: none"> - Sulfate - Carbonate - Bicarbonate - Sodium - Potassium - Calcium - Magnesium

5.3 Soil Monitoring

5.3.1 Soil Monitoring Unit Descriptions

Monitoring Point Serial Number	Description	Acres ^a	Associated Hydraulic Management Unit	Notes
SU-05015	East PCC Storage Area, Phase 2	18.7	MU-05013	Purchased in 2014
SU-05016	South Suchan	102.4	MU-05014	Purchased in 2014

a. Total acres available for cropping. If less than the maximum acres are used for wastewater application, the loading rate shall be based on the actual acres used.

5.3.2 Soil Monitoring, Sampling, and Analyses

Monitoring Point Serial Number	Sample Type	Sample Frequency	Constituents (Units in mg/kg Soil Unless Otherwise Specified)
SU-05015 ^c SU-05016 ^c	Composite samples ^a	Annually, March	- Electrical conductivity (µmhos/cm) - Nitrate-nitrogen - Ammonium-nitrogen - Plant available phosphorus - pH (standard units)

- a. The number of sample locations specified in the PO or QAPP for each SU shall be sampled. At each location, samples shall be obtained from three depths: 0-12 inches, 12-24 inches, and 24-36 inches or refusal. The samples obtained from each depth shall be composited by depth and yield three composite samples for each soil monitoring unit; one composite sample for each depth.
- c. Soil samples shall be collected prior to the application of recycled water to MU-05013 and MU-05014.

5.4 Plant Tissue Monitoring

Associated Hydraulic Management Units	Sample Type	Sample Frequency	Reporting Parameters ^a
MU-05013 MU-05014	Harvested portion, (each MU)	Each harvest	- Yield in customary harvest units (tons/acre; bushels/acre) - Moisture content (%); - Ash (%) - Total Kjeldahl nitrogen (%) - NO ₃ -N+NO ₂ -N (ppm)

- a. For each harvest, report the following for each management unit: sample collection date, crop type, harvested portion, and reporting parameters in the table above.

4. Section 6.1.2, item 9 of the reuse permit has been updated to include the reporting requirements for MU-05013 and MU-05014 that must be submitted with the annual report.

6.1.2 Required Contents

The Annual Report shall include the following:

9. The parameters in the following table:

Monitoring Point Serial Number	Parameter (Calculate for each MU)	Units
MU-05013 MU-05014	Process and condensate wastewater loading rate (for each MU)	- MG/month - Inches/month - MG/growing season - Inches/growing season - MG/non-growing season - Inches/non-growing season
	Supplemental irrigation water loading rate	- MG/month - Inches/month - Inches/growing season
	COD loading rate: growing season seasonal average	- Pounds/acre-day
	COD loading rate: non-growing season seasonal average	- Pounds/acre-day
	Process wastewater loading rates for nitrogen	- Pounds/acre-month - Pounds/acre-year
	Condensate wastewater loading rates for nitrogen	- Pounds/acre-month - Pounds/acre-year
	Process wastewater loading rates for NVDS	- Pounds/acre-month - Pounds/acre-year
	Condensate wastewater loading rates for NVDS	- Pounds/acre-month - Pounds/acre-year
	Nitrogen fertilizer application	- Date of application(s) - Pounds/acre-year
	Phosphorous fertilizer application	- Date of application(s) - Pounds/acre-year
	Waste solids application rates	- Pounds of solids/acre-year - Pounds of nitrogen/acre-year - Pounds of phosphorous/acre- year
	Crop type	- Name(s)
	Crop IWR estimate	- IWR by month for each crop type - Source of data
	Crop yield (each harvest)	- Customary harvested units (tons/acre, bushels/acre and pounds/bushel)
Crop constituent removal: nitrogen, phosphorous, and ash	- Pounds/acre - Pounds	

5. This modification removes dissolved oxygen from the constituents required to be monitored in ground water samples listed in section 5.2.2 of the permit.
6. This modification removes ground water monitoring wells GW-05026 (MW-A), GW-05046 (MW-102), and GW-05062 (MW-105) from section 5.1.2 of the permit.
7. This modification removes the Fly Ash Pond (LG-05004) from section 5.5 of the permit.
8. The facility map located in section 11.1 of the reuse permit has been updated to include management units MU-05013 and MU-05014, the changes to the ground water monitoring well network, and the removal of lagoon LG-05004. The updated facility map is attached to this modification.

The modifications described above in this Modification 2 are hereby approved. This modification to the permit is incorporated into and constitutes as part of Reuse Permit I-050-03. The modified permit is incomplete and unlawful under IDAPA 58.01.17 Recycled Water Rules without this modification attached.

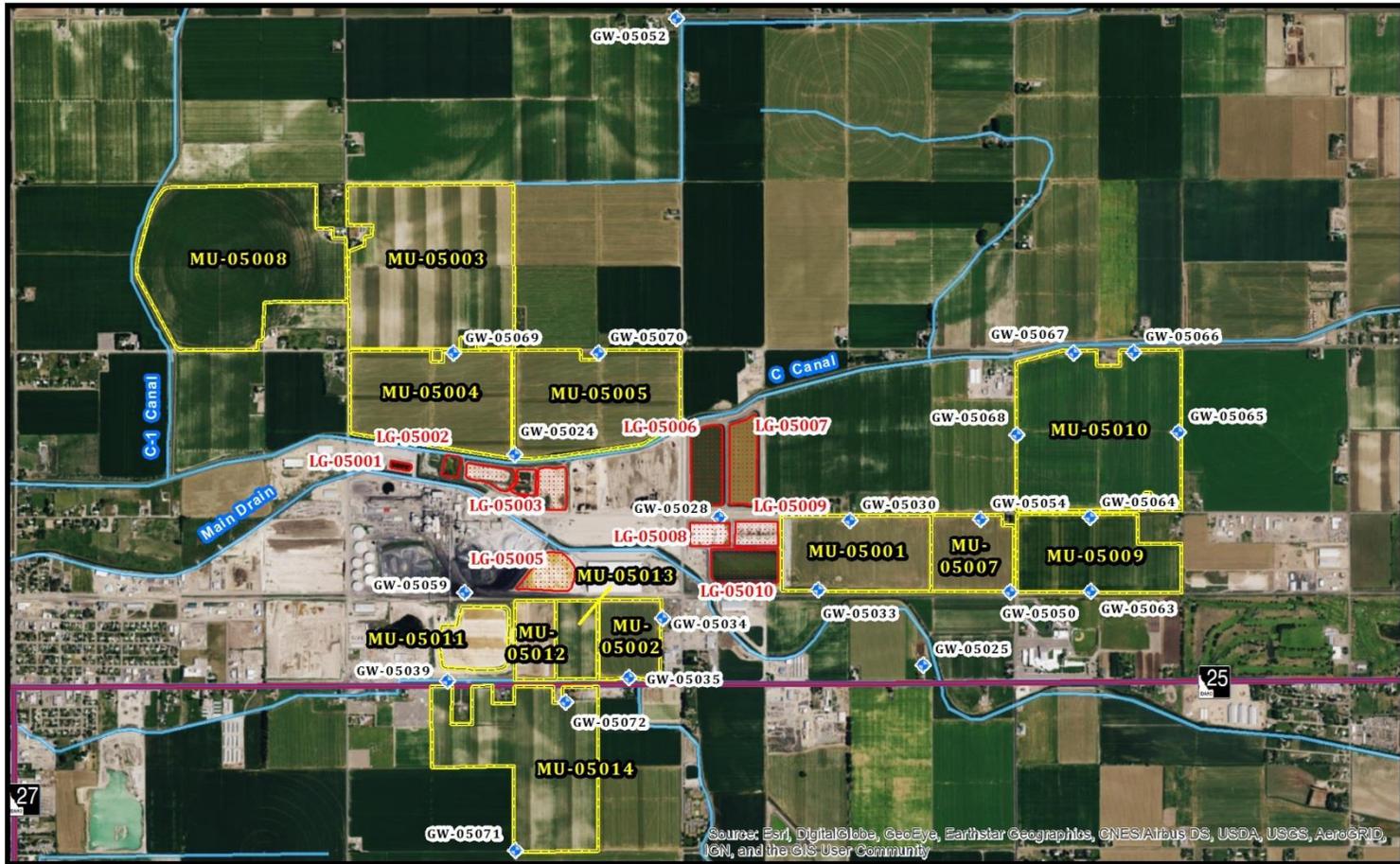

Signature


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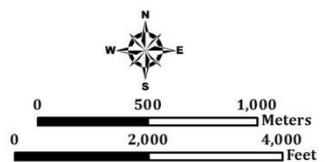
11.1 Facility Map



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Amalgamated Sugar Company LLC
 Mini-Cassia Facility, Paul
I-050-03



Legend	
	Monitoring Well
	Streams/Canals
	Highway
	Lagoon
	Major Roads
	Reuse Irrigation

DEQGIS-6-6-2017