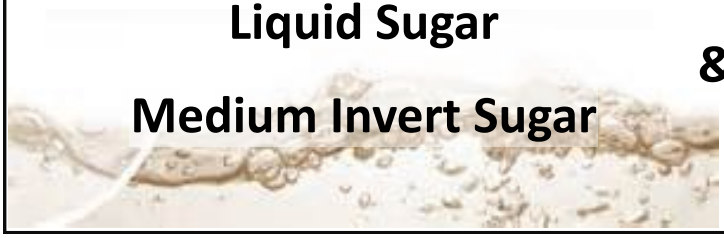
Amalgamated Sugar

NATIONAL SUGAR MARKETING

Portland Facility

Food Safety Plan

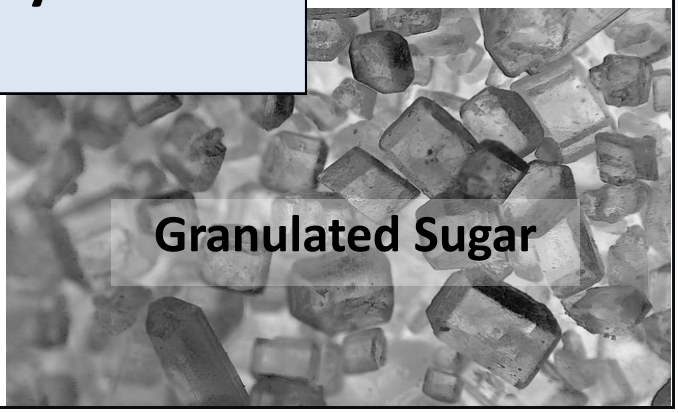
FSP-11



Liquid Sugar

&

Medium Invert Sugar



Granulated Sugar

Plan Contents:	

Plan Approval

Warehouse Manager (Coordinator): Richard Howard Date: 05/05/2023

Local HACCP Coordinator: Date: 05/05/2023

Facility Information

Facility Name:	Portland Facility
Facility Address:	2600 N.E. Columbia Blvd, Portland, OR 97211
Phone:	503.282.5573
Plant/Facility Manager:	Rick Howard
Local HACCP Coordinator:	Lacey Messing
Number of Employees:	Nine employees (seven hourly and two exempt)
Temporary Employees:	Yes
Facility Description:	The Portland Facility was built in 1951 and receives granulated sugar from Amalgamated beet sugar factories via bulk rail. Sugar is received and stored in large silos or can be processed directly as liquid sugar. Stored sugar is screened and packaged into bulk trailers, liquid sugar, or totes. Totes are shipped via truck.

Food Safety

Products:	Liquid Sugar, Medium Invert Sugar, and Granulated Sugar
Third Party Audit Standard:	BRCGS current issue
Certification Body:	SGS
Additional Certification:	None
Ingredients/Raw Materials:	Ingredient: Sugar, Granulated (Refer to NSM Website) Ingredient: Water (Softened, Purified, and Filtered) Raw Material: Sodium Hydroxide, Caustic (pH adjustment per customer request) or Sodium Bicarbonate (invert production) (Refer to approved supplier approval) Raw Material: Acid, Hydrochloric (Invert Only) (Refer to approved supplier approval)
Packaging:	Tote (Flexible Intermediate Bulk Container), Norpac Tote (customer supplied), Liquid Tote, and Liquid Tote-reusable. (Refer to approved supplier approval)
Prerequisite Programs :	1. Personnel Practices 2. Employee Training 3. Equipment Calibration 4. Integrated Pest Management 5. Facility & Equipment Maintenance 6. Cleaning & Sanitation 7. Air & Water Programs 8. Physical Contaminant Prevention & Control 9. Product Storage & Warehousing 10. Sanitary Transportation 11. Allergens & Sensitizing Agents 12. Chemical Control & Approval 13. Supplier Approval 14. Visitors

Team

Rick Howard	Warehouse Manager	AIB HACCP Training
Larry Lee	Terminal Foreman and QC Tech	AIB HACCP Training
Stacy Galbraith	Maintenance Coordinator	In-house Training
Miguel Rivera	Warehouseman/ Dispatch	In-house Training
Kelly Malone	Quality Assurance Manager	Preventive Controls Qualified Individual
Lacey Messing	Food Safety & Quality Professional–Team Leader	Preventive Control Qualified Individual

General Product Information	
Product Name:	Liquid sugar
Technical Name:	Sucrose
Product Description:	Solution of sucrose in water
Ingredients:	Crystalline sucrose and water
Intended Use:	This product is used as an ingredient in many food products and functions as a sweetener.
Intended Consumer:	Liquid sugar is distributed to food processors that provide products to the general public, including high risk groups.
Shelf Life:	30 Days
Labeling Instructions:	None
FDA Classification:	GRAS 21 CFR 184.1854
Storage:	Stored in bulk tanks
Distribution:	Distributed by liquid tanker and liquid totes shipped by trailer.

Technical Information	
Chemical Formula:	$C_{12}H_{22}O_{11} + H_2O$
Water Activity (a_w):	0.86[1]
Moisture:	32.5 to 33.5%
Sulfites:	Results equivalent to granulated sugar.
Microbiological:	Will not support the growth of vegetative pathogens.[2,3] Meets ISBT[4] and NFP[5] standards for use in carbonated beverages and canned foods.

Preventive Controls	
Process Control:	CCP Liquid Filtration (porosity of 100 microns or less)
Allergen Control:	None
Sanitation Control:	None
Supply-Chain Control:	Approved Supplier for Sugar Ingredient and Third-Party Audit Report

[1] BC CDC: Water Activity of Sucrose and NaCl Solutions

[2] Microbial Risk Assessment: Pathogen Challenge Evaluations of Granulated and Liquid Sugar

[3] Fate of Bacterial Pathogens

[4] ISBT: Liquid Sucrose

[5] GMA Canners Standard

Product Description

General Product Information	
Product Name:	Invert Sugar, Medium
Technical Name:	Liquid invert sugar solution
Product Description:	Solution of sucrose, fructose, and glucose in water
Ingredients:	Crystalline sucrose and water
Intended Use:	This product is used as an ingredient in many food products and functions as a sweetener.
Intended Consumer:	Medium invert sugar is distributed to food processors that provide products to the general public, including high risk groups.
Shelf Life:	90 Days
Labeling Instructions:	None
FDA Classification:	GRAS 21 CFR 184.1859
Storage:	Stored in bulk tanks
Distribution:	Distributed by liquid tanker and liquid totes shipped by trailer.

Technical Information	
Chemical Formula:	$C_{12}H_{22}O_{11} + C_{12}H_{24}O_{12} + H_2O$
Water Activity (a_w):	0.73
Moisture:	22.5 to 23.5%
Sulfites:	Results equivalent to granulated sugar.
Microbiological:	Will not support the growth of vegetative pathogens.[1,2] Meets ISBT[3] and NFP[4] standards for use in carbonated beverages and canned foods.

Preventive Controls	
Process Control:	CCP Liquid Filtration (porosity of 100 microns or less)
Allergen Control:	None
Sanitation Control:	None
Supply-Chain Control:	Approved Supplier for Sugar Ingredient and Third-Party Audit Report

[1] Microbial Risk Assessment: Pathogen Challenge Evaluations of Granulated and Liquid Sugar

[2] Fate of Bacterial Pathogens

[3] ISBT: Medium Invert

[4] GMA Canners Standard

	Product Description	NATIONAL SUGAR MARKETING

General Product Information

Product Name:	Granulated Sugar
Technical Name:	Sucrose
Product Description:	Sucrose is a nonreducing disaccharide composed of glucose and fructose bonded by an oxygen atom. It is derived from sugar beets or sugar cane and is used as a food and a sweetener.
Ingredients:	Crystalline sucrose
Intended Use:	This product is used as an ingredient in many food products and functions as a sweetener.
Intended Consumer:	Granulated sugar is sold as retail or distributed to food processors that provide products to the general public, including high risk groups.
Shelf Life:	5 years, 70%RH, 90°F
Labeling Instructions:	None
FDA Classification:	GRAS 21 CFR 184.1854
Storage:	Silo storage, ambient. Packaged product is warehoused.
Distribution:	Granulated sugar is distributed in bulk or packaged form. Bulk sugar is transported by bulk truck. Packaged sugar is distributed by trailer.

Technical Information

Chemical Formula:	$C_{12}H_{22}O_{11}$
Water Activity (a_w):	0.22[1]
Moisture:	0.04% Max.
Sulfites:	2 to 5 ppm. Must be less than 10 ppm.
Microbiological:	Will not support the growth of vegetative pathogens.[2,3] Meets ISBT[4] and NFP[5] standards for use in carbonated beverages and canned foods.

Preventive Controls

Process Control:	CCP Metal Detection
Allergen Control:	None
Sanitation Control:	None
Supply-Chain Control:	Approved Supplier for Sugar Ingredient and Third-Party Audit Report

[1] Water Activity Values of Select Food Ingredients and Products

[2] Microbial Risk Assessment: Pathogen Challenge Evaluations of Granulated and Liquid Sugar

[3] Fate of Bacterial Pathogens and Indicator Organisms in Liquid Sweeteners

[4] ISBT

[5] GMA Canner's Standard

Process Flowchart: Liquid & Invert Sugar

This facility receives bulk sugar for liquid and invert production. Sugar is dissolved in hot water to desired brix. Batch sugar is transferred to storage tanks where it is then filtered, loaded, and distributed to customers.

Input

Process Step

Critical Control Point

Magnet

Screen/Filter

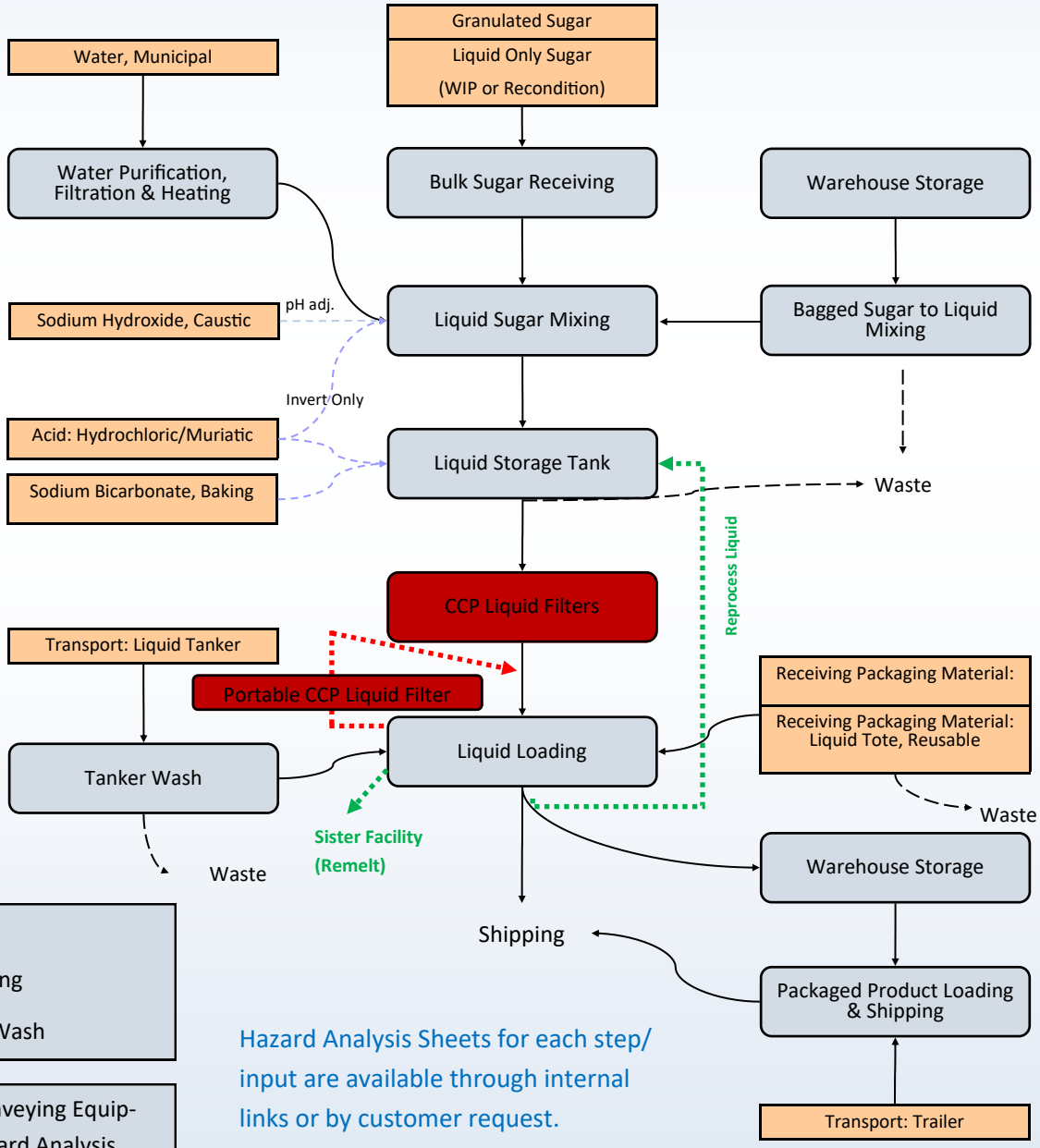
All steps are Low Risk.

Sugar and Liquid Sugar flow through an enclosed system. Mixing step is monitored.

[All Hazard Analysis Links]

From Granulated

Diagram



Waste

- Packaging
- Liquid Wash

Product Conveying Equipment & Hazard Analysis

- Liquid Pump

Hazard Analysis Sheets for each step/ input are available through internal links or by customer request.

Process Flowchart: Granulated Sugar

This facility receives bulk sugar for liquid and invert production. Sugar may be stored in silos or used directly for liquid production. Stored sugar is screened and either packaged into totes or into bulk trailers. Packaged totes are warehoused and shipped via trailer.

Input

Process Step

Critical Control Point

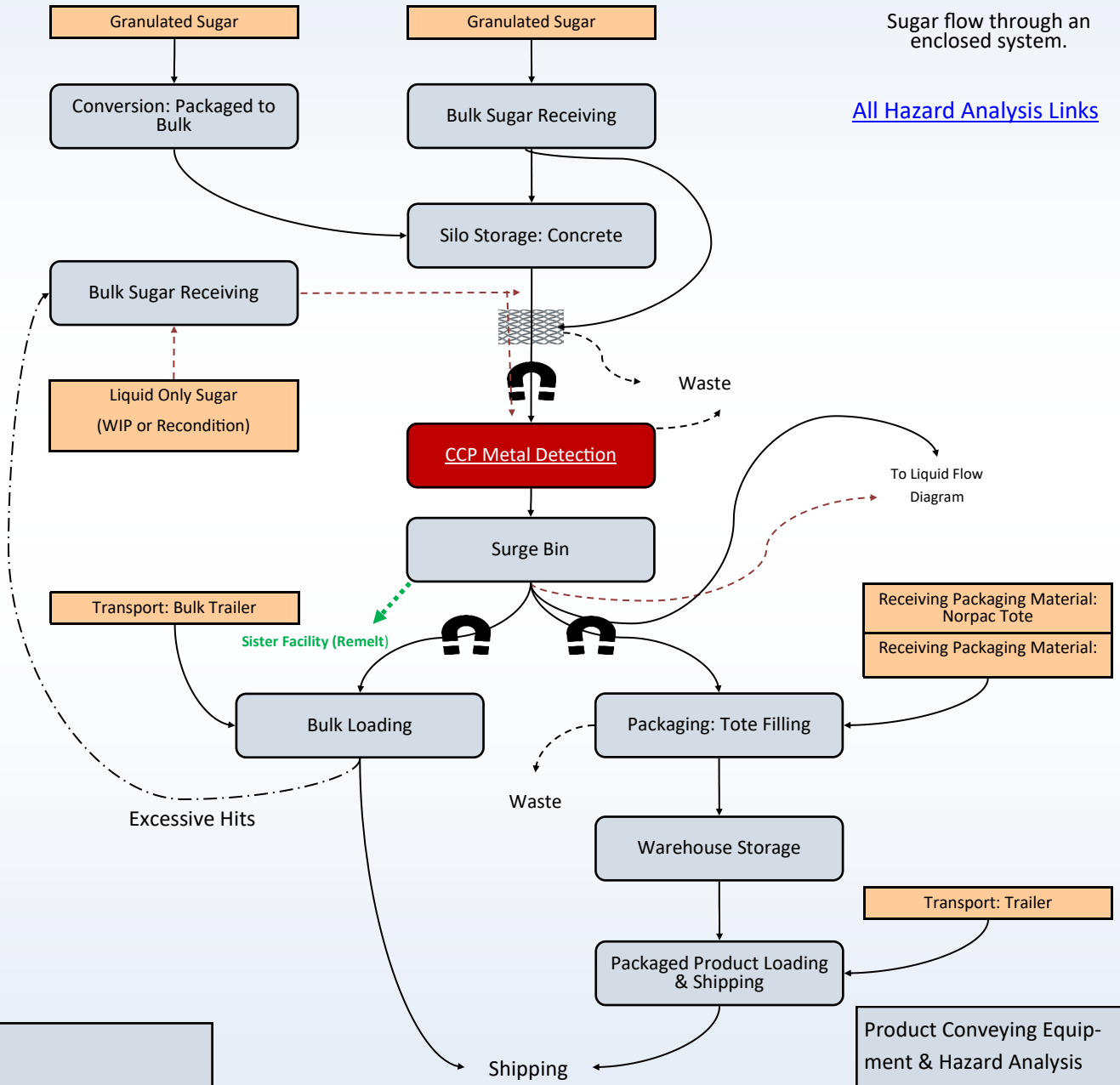
Magnet

Screen/Filter

All steps are Low Risk.

Sugar flow through an enclosed system.

All Hazard Analysis Links



Waste

- Packaging
- Metal Detector Rejections
- Screen

Hazard Analysis Sheets for each step/ input are available through internal links or by customer request.

Product Conveying Equipment & Hazard Analysis

- Bucket Elevator
- Screw Conveyor

Process Preventive Control: Critical Control Point Summary

Process Control Step:		CCP Liquid Filter
Hazard(s):		Foreign Material (Physical Hazards)
Parameters, values, or critical limits:		Filter (100 microns or less) is intact and in place throughout product loading.
Monitoring:	**What:**	Final filter with a porosity of 100 microns or less.
	How:	Monitor the final filter according to SOP 6.3-02 CCP Monitoring: Liquid Filter.
	Frequency:	Conduct the inspection after loading each liquid trailer or each shipment of liquid totes.
	Who:	Trained warehouse operator.
Corrective Action:		Operator notifies supervisory personnel. Supervisory personnel complete corrective action according to SOP 6.3.4-04 HACCP Deviation: Liquid Filter.
Verification:	**Monitoring Activity:**	Supervisory personnel verify the monitoring activity through record review within 7 days of record generation. The review is indicated by a signature and date.
	Food Safety Plan:	The food safety plan is incorporated into annual internal audits. The plan, CCP selection, and CL determination are reviewed/assessed annually.
Validation:	**Critical Control Point:**	CCP selection is reevaluated annually in light of emerging technological and regulatory information. This review is documented on record Validation.
	Critical Limits:	CL or parameter selection is reevaluated annually in light of emerging technological and regulatory information. This review is documented on record Validation.
	Scientific & Technical Information:	Decisions for the hazard analysis, CCP selection, and CL selection have been based on scientific and technical information. This information is available upon request.
Records:		Monitoring Activity: 6.3-02.0 Critical Control Point: Liquid Filter. Records are retained per Retention Policy.

Procedural documentation is available on the corporate intranet through direct links or through the quality assurance tab. This documentation will be made available to customers upon request.

Process Preventive Control: Critical Control Point Summary

Process Control Step:		CCP Metal Detection
Hazard(s):		Metal
Parameters, values, or critical limits:		Functioning metal detector that can detect 1.5 Fe, 1.8 NF, 2.0 SS, and 2.0 Al mm spheres.
Monitoring:	**What:**	All shipped, granulated product passes through an operating metal detector.
	How:	Monitor according to SOP 6.3-01 CCP Monitoring: Metal Detector.
	Frequency:	Conduct the inspection after loading each bulk trailer or shipment of totes.
	Who:	Trained warehouse operator.
Corrective Action:		Operator notifies supervisory personnel. Supervisory personnel complete corrective action according to SOP 6.3.4-03 HACCP Deviation: Metal Detector.
Verification:	**Monitoring Activity:**	Supervisory personnel verify the monitoring activity through record review within 7 days of record generation. The review is indicated by a signature and date.
	Food Safety Plan:	The food safety plan is incorporated into annual internal audits. The plan, CCP selection, and CL determination are reviewed/assessed annually.
Validation:	**Critical Control Point:**	CCP selection is reevaluated annually in light of emerging technological and regulatory information. This review is documented on record Validation.
	Critical Limits:	CL or parameter selection is reevaluated annually in light of emerging technological and regulatory information. This review is documented on record Validation.
	Scientific & Technical Information:	Decisions for the hazard analysis, CCP selection, and CL selection have been based on scientific and technical information. This information is available upon request.
Records:		Monitoring Activity: 6.3-01.1 Critical Control Point: Bulk Loading Metal Detector. Records are retained per Retention Policy.

Procedural documentation is available on the corporate intranet through direct links or through the quality assurance tab. This documentation will be made available to customers upon request.

Supply-Chain Program

Hazards Requiring a Supply -Chain-Applied Control:	Hazard analysis determined that incoming bulk and packaged sugar requires a supply -chain-applied control for metal contamination. In the absence of a supplier-applied control, there could be the potential for hazardous metal contamination based on sugar processing equipment and facilities. Some of this product might be ware-housed and distributed directly to the customer without further processing.
Preventive Controls Applied by Supplier:	Approved suppliers continually monitor sugar by passing all product through metal detectors or magnets. These actions are documented in a supplier's records.
Verification Activities:	Based on supplier performance and the low risk associated with material, a 2nd or 3rd party audit by a qualified auditor is used to verify supplier's control of metal haz-ard. Preference is given to GFSI certification.
Verification Procedures:	The Quality Assurance Team will verify that suppliers have the appropriate documen-tation on an annual basis. These verification activities include: an onsite audit(s) per-formed by a third-party audit and report provided based on their certification stand-ard. Verify the facility's controls for metal detection and removal. A qualified individ-ual (QI) will conduct onsite audits, third-party auditors or company affiliated PCQI's. Must retain FDA-required records and have access within 24 hours of request from regulatory inspectors. Lastly, supplier must inform the facility of any changes to the product composition or if it includes any allergens. Refer to the Food Safety & Quali-ty Assurance Manual, Supplier Approval Policy.
Verification Records:	Supplier audit report made available– Beet Sugar.
Receiving Facility Procedures:	Receiving facility only accepts product from approved suppliers as outlined on the Approved Supplier Register. Facilities hold and do not accept shipments from unap-proved suppliers. If this occurs, it is only permitted during emergency situations pro-vided facilities notify quality assurance and obtain and review, third-party audits. If not, temporary approval may be granted through a second-party audit from a com-pany-affiliated PCQI.
Receiving Records:	Inspection and receipt records are maintained locally.

Amendments	
05/05/2023	Added refer to supplier approval identify the supplier name for ingredients and raw material. Added team leader to Lacey. Added specification to the Technical Information. Added low risk and the enclosed system and monitoring to the flow. Updated the validation for CCP without the link section.
06/03/2022	Updated the Verification and receiving facility procedures in the supply chain program to match the supply approval policy. Updated BRC to BRCGS.
02/08/2022	Removed the silo storage for cane on the flow. Removed cane sugar from supplier chain program.
09/13/2021	Added the document control FSP-11-Portland onto the cover page. This came from the NSM Quality Documents Directory. Added color to the remelt and failed ccp.
05/14/2021	Page 8 & 9 updated on records from 3 year retention records to “per Retention Policy”. Added waste streams on both flow diagrams.
04/16/21	Added the excessive hits route on the granulated sugar flow.
02/11/2021	Removed Zack Gallegy from the Team and added Damian Conner.
09/18/2020	Removed all hyperlinks on the flowchart and added one link to “All Hazard Analysis Links”. Added alternate routes for failed CCP on the flow charts and portable liquid filter.
04/21/2020	Updated Recondition Sugar (Input) title to Liquid Only Sugar (WIP or Recondition). It is located in the same input and HA title changed for both flow diagrams.
03/20/2020	Updated Supply Chain links to the NSM website for the Approved Supplier list and beet sugar reports and to refer to One Drive for Cane Sugar. Removed Gordon and added Stacy Galbraith for maintenance.
08/14/2019	Updated the Prerequisite Program to match the new Quality Manual.
04/22/2019	Added Lacey Messing to team and local HACCP. Updated Third Party Audit Standard from BRC issue 7 to BRC current version. Removed Jeremy Adamson from Corporate HACCP Coordinator.
09/25/2018	Added Packaging Material: Liquid Tote Reusable to the liquid sugar flow diagram. Generated a hazard analysis for this material. Updated the product description to include liquid totes.
04/20/2018	Updated number of employees and facility description. Added Zack Gallegly to HACCP team. Modified flow diagram for granulated to liquid. Updated training log to include Zack Gallegly’s training and Rick Howard’s most recent training.
06/07/2017	Replaced HACCP team member John Sigurdson with Kelly Malone. Updated the training log with Kelly’s training. Removed the Environmental Monitoring prerequisite program. Documented a validation of change & a notification letter outlining rationale.
06/27/2016	Added requirements for the Supply-Chain program as part of the supplier approval program.
04/26/2016	Revised the plan to include invert production and updated the hazard analysis. Removed the local organizational chart. Added carbon filtration for water supply.

Amendments	
01/09/2015	Modified SOPs due to corporate standardization of SOPs. Records and SOPs have been moved from the food safety plan to the corporate intranet.
08/24/2012	Modified HACCP deviation and corrective action SOP to include product hold and an investigation to assign level of risk to product since last successful test. This amendment also resulted in modifications to the HACCP deviation form.
08/01/2012	Updated the organizational chart by removing the VP of Quality.
04/22/2012	Revised the corporate food safety plan to suit individual locations. Developed flow diagram and site-specific information.

Training Log	
10/18/2017	Zack Gallegly completed AIB 2 day HACCP workshop.
8/26/2016	Lacey Messing completed PCQI training.
01/21/2016	Jeremy Adamson, John Sigurdson, and Kelly Malone completed FSPCA Preventive Controls for Human Food course.
05/14/2015	Jeremy Adamson, John Sigurdson, and Kelly Malone completed Three Day: Practical Food Safety and HACCP Workshop.
04/18/2013	Jeremy Adamson, John Sigurdson, and Kelly Malone completed Advanced HACCP: Verification, Validation, and Auditing HACCP Systems.
01/01/2009	Larry Lee received formal HACCP training.
01/01/2005	Rick Howard received formal HACCP training.