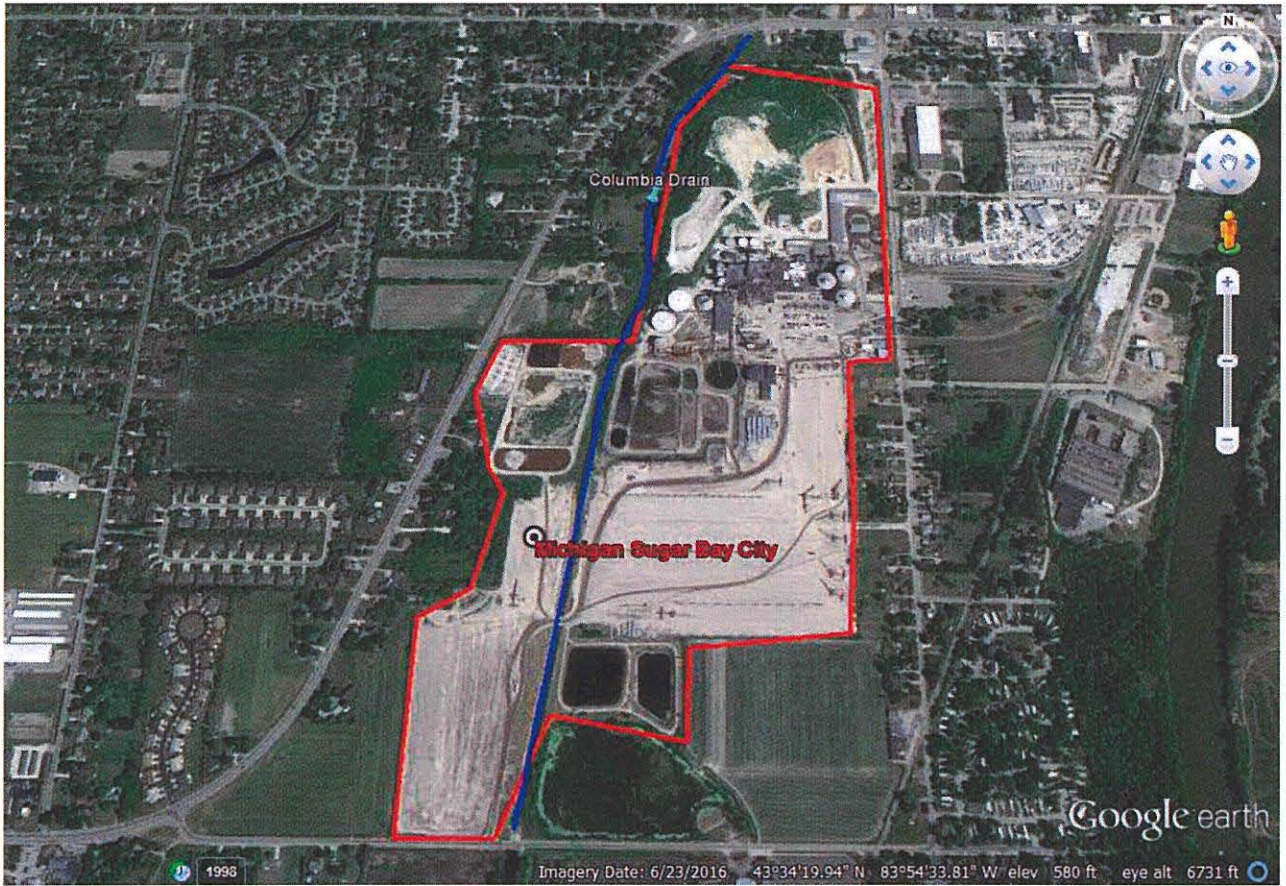


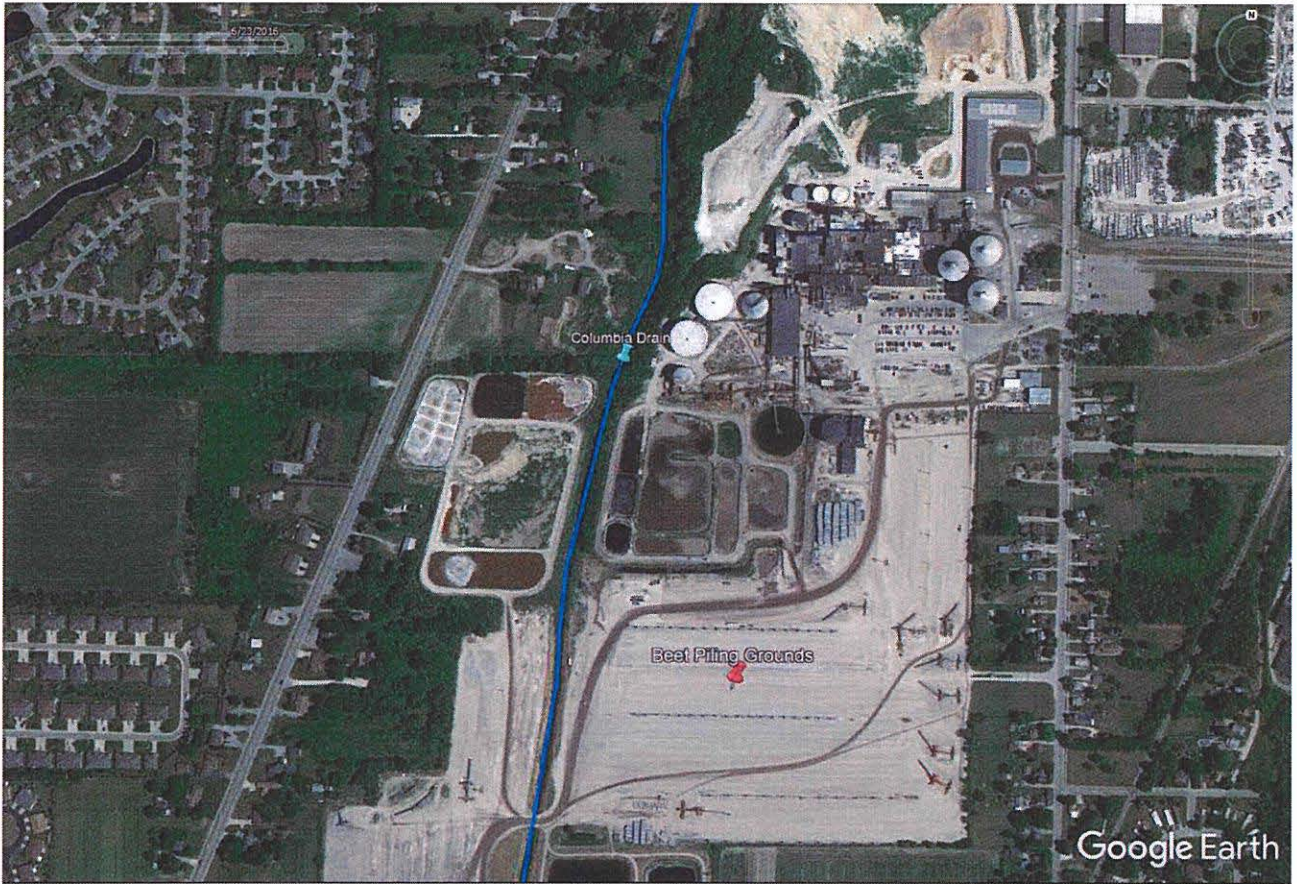
**APPENDIX A**

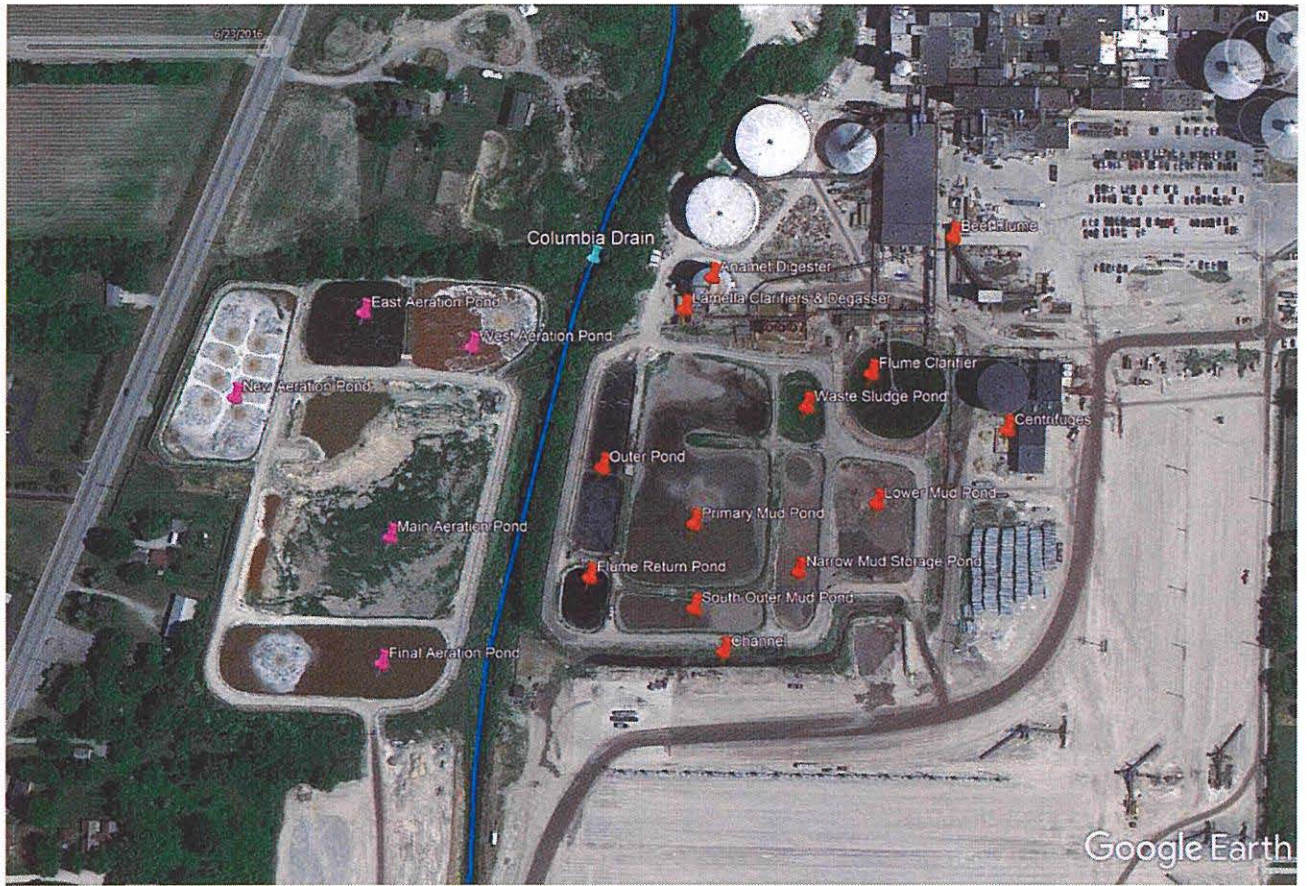
**MAPS OF BAY CITY FACILITY**

Consent Judgment

Michigan Department of Environmental Quality v Michigan Sugar Company  
Ingham County Circuit Court, Case No. 17-000727-CE







Columbia Drain

07/27/2016

Google Earth

East Aeration Pond  
West Aeration Pond  
New Aeration Pond  
Main Aeration Pond  
Final Aeration Pond

Anamnet Digester  
Lamella Clarifiers & Degasser  
Flume Clarifier  
Waste Sludge Pond  
Centrifuges  
Outer Pond  
Primary Mud Pond  
Lower Mud Pond  
Flume Return Pond  
Narrow Mud Storage Pond  
South Outer Mud Pond  
Channel

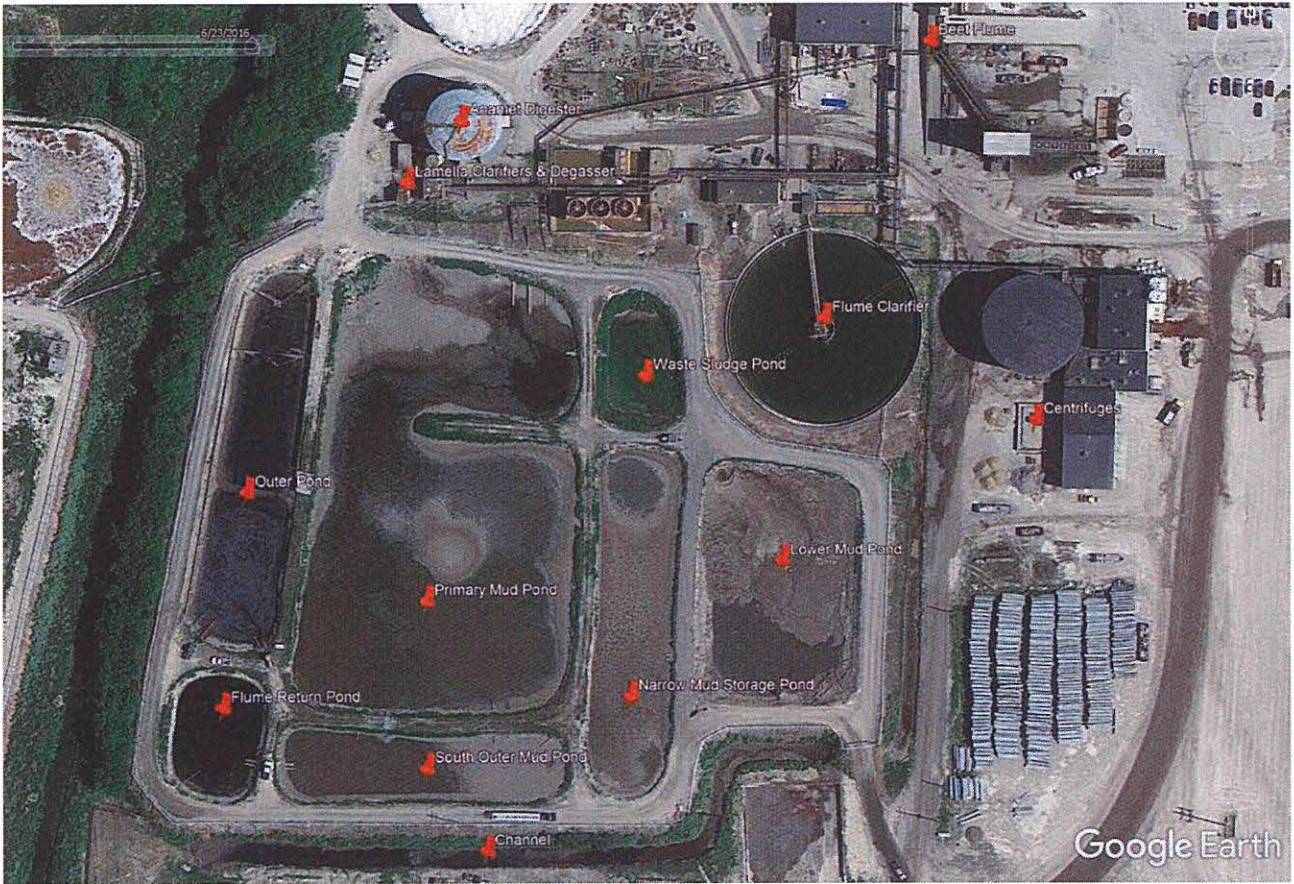
Bechtel



6/23/2016

Storm Water Pond

Google Earth







LAST REVISED 2018-12-17

MICHIGAN SUGAR Co. GENERAL OFFICES — BAY CITY, MICHIGAN	PLANT	Scale 1" = 300'	Job No.
	BAY CITY	Dr. By FMR	
TITLE CONCEPT PLAN - INTERNAL ROAD		Tr. By	File No.
		Dr. By	
		Date DEC 2018	



## APPENDIX B

### DISSOLVED OXYGEN SAMPLING PLAN

#### Consent Judgment

*Michigan Department of Environmental Quality v Michigan Sugar Company*  
Ingham County Circuit Court, Case No. 17-000727-CE

#### I. GENERAL PROVISIONS

- A. Incorporation of the Operations Plan: This Dissolved Oxygen Sampling Plan is incorporated by reference into the terms and conditions of the Consent Judgment.
- B. Defined Terms: Unless otherwise specified herein, any capitalized terms that have been defined in the Consent Judgment shall have the meaning set forth in the Consent Judgment.
- C. "Sample" Defined. For the purposes of this Dissolved Oxygen Sampling Plan, the term "sample" as used herein may include or reference a reading from a meter, probe, sensor or monitor in addition to any physical or chemical sampling, testing, or analysis.
- D. "Sampling" Defined. For the purposes of this Dissolved Oxygen Sampling Plan, the term "sampling" as used herein may include monitoring or metering using a probe, monitor, sensor or meter to measure the concentration of dissolved oxygen in addition to any physical or chemical sampling, testing, or analysis.

#### II. DISSOLVED OXYGEN SAMPLING REQUIREMENTS

Michigan Sugar shall sample and monitor the dissolved oxygen concentration in each of the Aeration Ponds as follows:

- A. Dissolved Oxygen Profile: Michigan Sugar shall conduct a dissolved oxygen profile in each of the Aeration Ponds (the "Dissolved Oxygen Profile") by May 1, 2019. The Dissolved Oxygen Profile shall be performed pursuant to the Dissolved Oxygen Profile Workplan attached hereto as **Exhibit 1**.
- B. Dissolved Oxygen Profile Report: Michigan Sugar shall prepare a report summarizing the results of the Dissolved Oxygen Profile, including the sampling results and locations (the "Dissolved Oxygen Profile Report").

- C. Dissolved Oxygen Meter Locations: The Dissolved Oxygen Profile Report shall identify proposed locations for the placement of continuous dissolved oxygen meters that measure dissolved oxygen at least once every hour (the "Dissolved Oxygen Meters"). The proposed locations for the Dissolved Oxygen Meters shall be: (1) representative of the average dissolved oxygen concentrations in the uppermost five feet of each pond; (2) not located within fifty (50) feet of the inlet point where wastewater enters each such pond; and (3) not located within twenty feet of the bank or edge of each such pond.
- D. Dissolved Oxygen Meters Per Pond: The number of Dissolved Oxygen Meter locations for each pond shall be as follows:
- (1) Three (3) Dissolved Oxygen Meters in East Aeration Pond
  - (2) Three (3) Dissolved Oxygen Meters in West Aeration Pond
  - (3) One (1) Dissolved Oxygen Meter in New Aeration Pond
  - (4) One (1) Dissolved Oxygen Meter in the Final Aeration Pond
- E. Submittal of Dissolved Oxygen Profile Report: By May 1, 2019, Michigan Sugar shall submit the Dissolved Oxygen Profile Report to the DEQ for review and approval pursuant to Section X of the Consent Judgment (Review and Approval of Submittals), provided, however, that the time for the DEQ and Michigan Sugar to perform the actions identified in Paragraphs 10.1 and 10.2 of the Consent Judgment shall be 15 days for each such action. Notwithstanding the foregoing, any and all approved locations for Dissolved Oxygen Meters shall be consistent with the parameters identified in Paragraph II.C of this Dissolved Oxygen Sampling Plan (above).
- F. Dissolved Oxygen Meter Installation: Michigan Sugar shall install the Dissolved Oxygen Meters within 21 days after the DEQ's approval of the Dissolved Oxygen Profile Report at the locations in the approved Dissolved Oxygen Profile Report.
- G. Operation and Maintenance of Dissolved Oxygen Meters: After installation, Michigan Sugar shall operate and maintain the Dissolved Oxygen Meters in accordance with the manufacturer's recommendations. Michigan Sugar shall keep at least one (1) spare Dissolved Oxygen Meter at the Bay City Facility that it shall use when a Dissolved Oxygen Meter is removed for maintenance or repairs.
- H. Dissolved Oxygen Sampling: After installation of the Dissolved Oxygen Meters, Michigan Sugar shall sample and record the dissolved oxygen concentration of each Aeration Pond. Michigan Sugar shall be deemed to be in compliance with Paragraph 5.6 of the Consent Judgment if the dissolved

oxygen concentration in each of the Aeration Ponds is at least 1.0 milligram per liter (mg/l) measured as a calendar day average. The "calendar day average" for the dissolved oxygen concentration in each Aeration Pond shall be calculated by averaging the dissolved oxygen levels at each Dissolved Oxygen Meter over the 24-hour period in each calendar day. For the East and West Aeration Ponds (in which three (3) meters will be used in each pond to sample dissolved oxygen concentrations), the dissolved oxygen concentration for each of the three Dissolved Oxygen Meters will be averaged to determine the "calendar day average" for each such pond.

- I. Sampling During Required Maintenance, Repair or Calibration of Dissolved Oxygen Meters: Michigan Sugar may temporarily cease sampling at any Dissolved Oxygen Meter: (1) as necessary to perform maintenance or repairs or to calibrate the Dissolved Oxygen Meters; and/or (2) during pond clean-out activities. In all such instances, Michigan Sugar shall use best efforts to resume operation of any such Dissolved Oxygen Meters as soon as practicable.

## EXHIBIT 1

### Dissolved Oxygen Profile Workplan

#### Purpose

Dissolved oxygen (DO) testing will be performed to identify locations for DO meters in the Aeration Ponds which will provide representative readings suitable for long term DO sampling. The same procedure will be used for the East Aeration Pond, West Aeration Pond, New Aeration Pond, and Final Aeration Pond. The results and recommendations will be summarized in a Dissolved Oxygen Profile Report.

#### Workplan

1. A site-specific health and safety plan will be prepared in coordination with Michigan Sugar's safety program. Two workers will be in a boat with life jackets with one observer on the shore. Each worker will wear a gas monitor. Air-packs will be available in the boat for use in the event of an air quality issue.
2. Michigan Sugar will develop an up to date site plan including:
  - a. Outline of the bank and water level in each pond
  - b. Locations of aeration equipment
  - c. Work will be done in State Plane coordinates
3. Work will be performed in one Aeration Pond at a time. Any chemical feed systems will be shut down and locked out until work on that pond is completed. It is intended that aeration equipment will remain online while the work is being done. If it is necessary to take this equipment offline, the approach will be as follows:
  - a. Specific lockout procedure will be outlined in the aforementioned health and safety plan.
  - b. The number of aeration units taken offline at any one time will be minimized.
  - c. Shutdowns will be as brief as possible, with readings taken within a short period of time after the equipment is shutdown.
  - d. All Aeration Ponds will be returned to normal operation after completion of data collection.
4. DO measurements will be taken throughout each pond from a boat using a handheld DO probe. DO measurements will be taken and recorded at depths of 1, 3, and 5 feet below the water surface at test points throughout each pond. The DO probe will be calibrated before the beginning of work each day.

- a. A GPS unit will be used to record the location of each DO measurement.
- b. Test points will be spaced as evenly as possible across the entire surface of each pond.
- c. The number of test points in each pond will be as follows:
  - i. Approximately 30 test points in the East Aeration Pond
  - ii. Approximately 25 test points in the West Aeration Pond
  - iii. Approximately 40 test points in the New Aeration Pond
  - iv. Approximately 40 test points will be measured in the Final Aeration Pond
- d. DO measurements at additional test points may be taken if initial observations suggest a need for increased data resolution.
- e. Note that guy wires, diffusers, air piping, and electrical cables may limit access for DO testing, causing some variation in test point spacing.

5. Field data will be tabulated and imported to AutoCAD Civil 3D along with survey data. The data will be developed into Dissolved Oxygen contour lines, allowing for easy visual interpretation of the data.

6. Recommendations will be prepared for long term DO meter locations which will provide measurements representative of the average DO concentrations in the uppermost five feet of each Aeration Pond.

**APPENDIX C**

**OPERATIONS PLAN**

Consent Judgment

*Michigan Department of Environmental Quality v Michigan Sugar Company*  
Ingham County Circuit Court, Case No. 17-000727-CE

## Table of Contents

- I. General Provisions
- II. Beet Piling Grounds
- III. Centrifuges and Flume Ponds
  - A. Centrifuges
  - B. Flume Ponds
    - 1. Flume Pond Solids Removal
    - 2. Hydrogen Peroxide System for the Flume Ponds
- IV. Storm Water Pond
  - A. Hydrogen Peroxide System for the Storm Water Pond
- V. Channel
- VI. Cover for Outer Pond
- VII. Aeration Ponds
- VIII. Main Aeration Pond as Temporary Storage Basin
- IX. Track-Out Controls for Truck Traffic
- X. Exception to Operating Requirements

## I. GENERAL PROVISIONS

- A. Operations Plan as part of Consent Judgment. This Operations Plan is an appendix to the Consent Judgment and is part of the Consent Judgment. The provisions of this Operations Plan shall be treated as terms and conditions of the Consent Judgment.
- B. Defined Terms. Unless otherwise specified herein, any capitalized terms that are defined in the Consent Judgment shall have the meaning set forth in the Consent Judgment.
- C. Descriptions. All general descriptions of processes, equipment or operations contained in this Operations Plan are included only for explanation or reference and do not constitute enforceable provisions of this Operations Plan or the Consent Judgment.



## II. BEET PILING GROUNDS

The Beet Piling Grounds at the Bay City Facility are a hard-packed surface of gravel and clay to provide a stable platform for large piles of sugar beets. The Beet Piling Grounds are used to store the sugar beets prior to processing at the Bay City Facility. The annual period during which sugar beets are delivered to the Bay City Facility, placed in the Beet Washing and Flume Process, and sliced is from approximately late-August through early-April (“Campaign”), but the Campaign season can vary from year to year depending on the size of the harvest and weather conditions. The beet piles vary in height and length from year to year and throughout each Campaign as beets are processed.

Beets are continuously removed from the Beet Piling Grounds during each Campaign for processing at the Bay City Facility. Michigan Sugar conducts visual inspections of the beets on the Beet Piling Grounds and uses infra-red photography to identify both deteriorating beets to prioritize them for processing and beets that Michigan Sugar has determined can no longer be processed (“Non-Usable Beets”).

A. Operating Requirements. Within five days of identifying any Non-Usable Beets, Michigan Sugar shall begin the process of removing such beets from the Bay City Facility and shall diligently continue the process of removing such beets each day until all such beets are removed. Substantially all Non-Usable Beets shall be removed from the Bay City Facility by April 1 of each year or by the end of the Campaign plus fifteen days, whichever is later.

B. Recordkeeping Requirements. Michigan Sugar shall create and retain records regarding any Non-Usable Beets on the Beet Piling Grounds that include the date on which such beets were identified and the dates on which they were removed.

C. Reporting Requirements. The semi-annual reports that Michigan Sugar shall submit pursuant to Section VII (Reporting Requirements) of the Consent Judgment shall include the records regarding any Non-Usable Beets on the Beet Piling Grounds.

### III. CENTRIFUGES AND FLUME PONDS

The Beet Washing and Flume Process is a water-based system in which sugar beets are washed and floated in a water-filled trough (flume) into the Bay City Facility for further processing. Water and solids from the Beet Washing and Flume Process are routed to the Flume Clarifier, Centrifuges, and Flume Ponds to remove solids. During each Campaign, the majority of the water in the Flume Ponds is reused in the Beet Washing and Flume Process while a portion of that water is routed to the Outer Pond and Anaerobic Digester.

The Flume Clarifier is a settling tank that removes suspended solids from the Beet Washing and Flume Process. The Flume Clarifier overflow is pumped for reuse in the Beet Washing and Flume Process. The Flume Clarifier underflow is routed to three decanter Centrifuges to separate soil and other solids. Solids removed by the Centrifuges are stored on-site temporarily prior to offsite transport. The decanted water from the Centrifuges is routed to the Lower Mud Pond and then

the other four Flume Ponds where additional solids settle. The Flume Clarifier, Centrifuges, and Flume Ponds are depicted in Appendix A to the Consent Judgment.

A. Centrifuges

1. Operating Requirements. Michigan Sugar shall operate all three Centrifuges during at least 85% of each Campaign and may cease operating all three Centrifuges during up to 15% of each Campaign to perform routine repairs and maintenance. The requirement to operate all three Centrifuges during at least 85% of each Campaign shall be calculated by dividing (a) the total number of hours of operation of all three Centrifuges during the Campaign by (b) the total number of hours of the Campaign multiplied by three and subtracting from that product any hours during which a Centrifuge is not operating due to a malfunction or other Force Majeure event.<sup>1</sup>

2. Recordkeeping Requirements. Michigan Sugar shall create and retain records of Centrifuge operation that include the number of hours of operation of each Centrifuge during the Campaign, the number of hours of the Campaign, and the number of hours that each Centrifuge was not operating due to routine repairs and maintenance.

---

<sup>1</sup>The following example illustrates the calculation. The number of hours of a Campaign is 5000 hours; Centrifuges 1, 2, and 3 operated for 4500 hours, 4300 hours, and 4200 hours, respectively; and Centrifuge 1 did not operate for 100 hours of the Campaign due to a Force Majeure event. The calculation is:

$$(4500 + 4300 + 4200) \div ((5000 \times 3) - 100) = 13,000 \div 14,900 = 0.8725 = 87.25\%$$

3. Reporting Requirements. The semi-annual reports that Michigan Sugar shall submit pursuant to Section VII (Reporting Requirements) of the Consent Judgment shall include the total number of hours of operation for all three Centrifuges during the Campaign and the total number of hours that all three Centrifuges were not operating due to routine repairs and maintenance.

4. Preventive Maintenance and Malfunction Abatement Plan. Michigan Sugar shall maintain a preventive maintenance and malfunction abatement plan for the Centrifuges and shall provide a current copy of that plan to DEQ by September 1, 2019. If Michigan Sugar revises the preventive maintenance and malfunction abatement plan after September 1, 2019, then Michigan Sugar shall submit the revised plan to the DEQ within 30 days after making such revision.

B. Flume Ponds

1. Flume Ponds Solids Removal

Michigan Sugar measures the solids present in each of the Flume Ponds at the end of each Campaign to determine if solids need to be removed to provide adequate pond capacity for solids settling during the following Campaign.

a. Operating Requirements

i. After August 15, 2022, Michigan Sugar shall not remove solids from more than three Flume Ponds between June 1 and August 31 in each calendar year.

ii. Michigan Sugar shall not remove solids from a Flume Pond on Sundays, Memorial Day, Labor Day, the 4<sup>th</sup> of July, Thanksgiving, Christmas Eve, Christmas Day, New Years' Eve, and New Years' Day.

iii. Michigan Sugar shall use odor neutralizing equipment as described in Exhibit 1 to this Operations Plan whenever it removes solids from a Flume Pond. Michigan Sugar shall use its best efforts to minimize the duration of solids removal from a Flume Pond.

b. Recordkeeping Requirements. Michigan Sugar shall create and retain records of the removal of solids from the Flume Ponds that include the dates of the removal, the method of removal, the Flume Pond(s) from which solids were removed, the approximate amount of solids removed from each Flume Pond, and the dates on which odor neutralizing equipment was used.

c. Reporting Requirements. The semi-annual reports that Michigan Sugar shall submit pursuant to Section VII (Reporting Requirements) of the Consent Judgment shall include the records of the removal of solids from the Flume Ponds.

## 2. Hydrogen Peroxide System for the Flume Ponds

The Hydrogen Peroxide System for the Flume Ponds includes storage tanks, service lines, and distribution lines that are used to distribute hydrogen peroxide across the surface of the Flume Ponds to oxidize near surface odorous compounds and minimize their release to the atmosphere. The flow rates at which hydrogen

peroxide is applied to the Flume Ponds is adjustable. The parameters used to establish the flow rates include pH and oxidation-reduction potential among others. The Flume Pond Hydrogen Peroxide Distribution System is operated by Michigan Sugar in coordination with a third-party vendor, USP Technologies (“USP”).

a. Operating Requirements

i. Michigan Sugar shall retain USP to conduct monthly evaluations of the Hydrogen Peroxide System for the Flume Ponds, at which time USP shall provide recommendations for the proper operation of the Hydrogen Peroxide System for the Flume Ponds, including the flow rates at which hydrogen peroxide is to be applied to the Flume Ponds.

ii. Michigan Sugar shall operate the Hydrogen Peroxide System for the Flume Ponds at flow rates consistent with the recommendations of USP.

iii. At least once every seven days, Michigan Sugar shall inspect the Hydrogen Peroxide System for the Flume Ponds for proper operation.

iv. Michigan Sugar shall not be required to operate the Hydrogen Peroxide System for the Flume Ponds during any extended periods of ice or freezing temperatures that impair its operation.

- v. Michigan Sugar shall not be required to operate the Hydrogen Peroxide System for the Flume Ponds for an individual Flume Pond when Michigan Sugar is removing solids from that pond.
- b. Recordkeeping Requirements. Michigan Sugar shall create and retain records of the following:
  - i. The flow rates recommended by USP for applying hydrogen peroxide to the Flume Ponds;
  - ii. The information on which USP's recommended flow rates are based, including pH and oxidation-reduction potential;
  - iii. The flow rates at which hydrogen peroxide is applied to the Flume Ponds.
  - iv. Any days on which the Hydrogen Peroxide System for the Flume Ponds, or any portion thereof, was not operated, and the reasons therefore; and
  - v. Inspections of the Hydrogen Peroxide System for the Flume Ponds.
- c. Reporting Requirements. The semi-annual reports that Michigan Sugar shall submit pursuant to Section VII (Reporting Requirements) of the Consent Judgment shall include the records identified above in the recordkeeping requirements for the Hydrogen Peroxide System for the Flume Ponds.

#### IV. STORM WATER POND

The Storm Water Pond is the pond at the Bay City Facility into which storm water from the Beet Piling Grounds is routed.

##### A. Hydrogen Peroxide System for the Storm Water Pond

The Hydrogen Peroxide System for the Storm Water Pond uses a diffused air system with diffusers suspended from a floating cable to apply hydrogen peroxide across the surface of the pond to oxidize near surface odorous compounds and minimize their release to the atmosphere. The hydrogen peroxide is introduced to the Storm Water Pond at each diffuser location. The Hydrogen Peroxide System for the Storm Water Pond is operated by Michigan Sugar in coordination with a third-party vendor, Hydrite Chemical Co. (“Hydrite”).

##### 1. Operating Requirements

i. Michigan Sugar shall retain Hydrite to conduct monthly evaluations of the Hydrogen Peroxide System for the Storm Water Pond, at which time Hydrite shall provide recommendations for the proper operation of the Hydrogen Peroxide System for the Storm Water Pond. Hydrite shall not be required to conduct evaluations or provide recommendations during winter months when the Hydrogen Peroxide System for the Storm Water Pond is not in operation.

ii. Michigan Sugar shall operate the Hydrogen Peroxide System for the Storm Water Pond consistent with the recommendations of Hydrite.



iii. At least once every seven days, Michigan Sugar shall inspect the Hydrogen Peroxide System for the Storm Water Pond for proper operation.

iv. Michigan Sugar shall not be required to operate the Hydrogen Peroxide System for the Storm Water Pond at the following times: (a) during any extended periods of ice or freezing temperatures that impair its operation; (b) when Michigan Sugar is removing solids from the Storm Water Pond; and (c) when the Storm Water Pond is substantially empty.

2. Recordkeeping Requirements. Michigan Sugar shall create and retain records of the following:

i. Hydrite's recommendations for operation of the Hydrogen Peroxide System for the Storm Water Pond;

ii. The information on which Hydrite's recommendations are based, including oxidation-reduction potential;

iii. The amount of hydrogen peroxide applied to the Storm Water Pond each month;

iv. Any days on which the Hydrogen Peroxide System for the Storm Water Pond was not operated, and the reasons therefore; and

v. Inspections of the Hydrogen Peroxide System for the Storm Water Pond.

3. Reporting Requirements. The semi-annual reports that Michigan Sugar shall submit pursuant to Section VII (Reporting Requirements) of the

Consent Judgment shall include the records identified above in the recordkeeping requirements for the Hydrogen Peroxide System for the Storm Water Pond.

## V. CHANNEL

The Channel is a channel or ditch between the Flume Ponds and the Beet Piling Grounds depicted in Appendix A of the Consent Judgment that collects surficial runoff from the Beet Piling Grounds and other site runoff. The Channel is graded to allow water in it to flow to a pumping station on the Channel's western end where the water is pumped to the Outer Pond or the East Aeration Pond.

### A. Operating Requirements

1. Maintenance. Michigan Sugar shall maintain the Channel to allow for the flow of water to the pumping station.

2. Pumping. Michigan Sugar shall operate and maintain the pumps to remove the standing water from the Channel within 72 hours of any precipitation.

3. Inspections. At least once every seven days, Michigan Sugar shall inspect the Channel for standing water and the pumps for proper operation.

B. Recordkeeping Requirements. Michigan Sugar shall create and retain records of the following: (1) inspections of the Channel and pumps; and (2) pump maintenance.

C. Reporting Requirements. The semi-annual reports that Michigan Sugar shall submit pursuant to Section VII (Reporting Requirements) of the Consent Judgment shall include the records of inspections to confirm the removal of the standing water from the Channel.

## VI. COVER FOR OUTER POND

The Outer Pond is a pond at the Bay City Facility from which wastewater and storm water is routed to the Anaerobic Digester and which is depicted in Appendix A. The Cover is a floating cover constructed of LLDPE flexible material that Michigan Sugar installed to cover the Outer Pond. The Cover is intended to reduce the release of potentially odorous gases to the atmosphere.

### A. Operating Requirements

1. Michigan Sugar shall keep the Cover on the Outer Pond at all times except as follows:

- a. After the Effective Date of the Consent Judgment, if the temperature of the influent to the Anaerobic Digester from the Outer Pond is greater than or equal to 90° Fahrenheit, then Michigan Sugar may temporarily remove up to one third of the Cover as needed for proper operation of the Anaerobic Digester and shall re-install the Cover on the entire Outer Pond when the influent to the Anaerobic Digester from the Outer Pond is less than or equal to 85° Fahrenheit. If Michigan Sugar temporarily removes any portion of the Cover, then it shall use odor neutralizing equipment as described in Exhibit 1 to this Operations Plan.
- b. For maintenance or repair of the Cover.
- c. For removal of solids in the Outer Pond to provide adequate pond capacity.

2. Michigan Sugar shall inspect the Cover on a weekly basis to identify visible damage and shall promptly repair any damage identified.

B. Recordkeeping Requirements. Michigan Sugar shall create and retain records of operating the Cover that include the following: (1) the dates on which the Cover was removed, the amount of the Cover that was removed, and the reasons for the removal; (2) the temperature of the influent to the Anaerobic Digester from the Outer Pond; and (3) actions performed to maintain or repair the Cover.

C. Reporting Requirements. The semi-annual reports that Michigan Sugar shall submit pursuant to Section VII (Reporting Requirements) of the Consent Judgment shall include the records of the dates on which the Cover was removed, the amount of the Cover that was removed, and the reasons for the removal.

## VII. AERATION PONDS

The Aeration Ponds are a series of ponds in which aeration is used to treat wastewater and storm water from the Bay City Facility prior to discharge to the Saginaw River. At the end of each Campaign, Michigan Sugar measures the solids present in each of the Aeration Ponds and removes the solids as necessary to provide adequate pond capacity for aeration during the following Campaign.

A. Operating Requirements

1. Michigan Sugar shall sample the dissolved oxygen in each Aeration Pond pursuant to the Dissolved Oxygen Sampling Plan approved by the DEQ and attached to the Consent Judgment as Appendix B.

2. Michigan Sugar shall maintain the dissolved oxygen meters pursuant to the Dissolved Oxygen Sampling Plan. Maintenance of the dissolved oxygen meters shall include calibration.

3. Michigan Sugar shall not remove solids from the Aeration Ponds on Sundays, Memorial Day, Labor Day, the 4<sup>th</sup> of July, Thanksgiving, Christmas Eve, Christmas Day, New Years' Eve, and New Years' Day and shall use its best efforts to minimize the duration of the removal of solids from each Aeration Pond.

4. Michigan Sugar shall use odor neutralizing equipment as described in Exhibit 1 to this Operations Plan whenever it removes solids from an Aeration Pond.

B. Recordkeeping Requirements. Michigan Sugar shall create and retain records of operating the Aeration Ponds that include the following: (1) the dissolved oxygen sampling results for each of the Aeration Ponds; (2) the dissolved oxygen concentration in each of the Aeration Ponds as a calendar day average; (3) the dates on which Michigan Sugar used odor neutralizing equipment; and (4) the maintenance performed for the dissolved oxygen meters.

C. Reporting Requirements. The semi-annual reports that Michigan Sugar shall submit pursuant to Section VII (Reporting Requirements) of the Consent

Judgment shall include the following: (1) the records of the dissolved oxygen concentration in each of the Aeration Ponds as a calendar day average that is less than 1.0 milligrams/liter and (2) the records of the maintenance performed for the dissolved oxygen meters.

**VIII. MAIN AERATION POND AS TEMPORARY STORAGE BASIN**

Michigan Sugar is considering using the Main Aeration Pond or a portion thereof as a temporary storage basin by routing water from the Outer Pond to the Main Aeration Pond if there is a malfunction of the Anaerobic Digester.

A. Operating Requirements. If Michigan Sugar routes water from the Outer Pond to the Main Aeration Pond or a portion of the Main Aeration Pond, then Michigan Sugar shall (1) use odor neutralizing equipment as described in Exhibit 1 to this Operations Plan while any water is in the Main Aeration Pond; (2) use its best efforts to re-route water back to the Outer Pond as soon as practicable; and (3) use its best efforts to remove any water from the Main Aeration Pond as soon as practicable.

B. Recordkeeping Requirements. Michigan Sugar shall create and retain records of (1) the dates on which water from the Outer Pond was in the Main Aeration Pond and (2) the dates on which Michigan Sugar used odor neutralizing equipment.

C. Reporting Requirements. The semi-annual reports that Michigan Sugar shall submit pursuant to Section VII (Reporting Requirements) of the Consent Judgment shall include the records of (1) the dates on which water from the Outer

Pond was in the Main Aeration Pond and (2) the dates on which Michigan Sugar used odor neutralizing equipment.

## **IX. TRACK-OUT CONTROLS FOR TRUCK TRAFFIC**

The Internal Road is a paved private road within the boundaries of the Bay City Facility that, after August 15, 2019, Michigan Sugar shall utilize to reduce potential track-out of solids from the Beet Piling Grounds onto South Euclid Avenue. The route of the Internal Road is depicted in Exhibit 2 to this Operations Plan. South Euclid Avenue is a public road adjoining the Bay City Facility.

### **A. Operating Requirements**

1. **Truck Routing.** Except as set forth in Paragraph IX.A.5 (below), Michigan Sugar shall ensure that all trucks that have delivered sugar beets to the Bay City Facility and all trucks that are carrying pressed pulp exit the Bay City Facility via the Internal Road.

2. **Internal Road Cleaning.** Michigan Sugar shall operate a street sweeper on the Internal Road at least twice every 24 hours when truck traffic is occurring on the Internal Road provided that Michigan Sugar may delay any street sweeping activities on the Internal Road to the extent that excessive snow cover prevents or precludes effective operation of the street sweeper.

3. **Internal Road Maintenance.** At least once per calendar year after each Campaign, Michigan Sugar shall inspect the Internal Road and keep it in a reasonable state of repair such that it has a hard surface from which solids can be removed.

4. Rumble Strips. By August 15, 2019, Michigan Sugar shall install four 12-foot long sections of rumble strips (the “Rumble Strip Sections”) on the Internal Road by August 15, 2019. The individual rumble strips on each 12-foot long section shall be at least 1.5 inches high. Michigan Sugar shall inspect the rumble strips on a weekly basis for damage and shall promptly repair any damaged rumble strips. When truck traffic is occurring on the Internal Road, Michigan Sugar shall remove solids from the rumble strips at least once every 24 hours and shall remove solids more frequently as needed to maintain the rumble strips’ effectiveness at removing dirt from truck tires. Notwithstanding the foregoing, with the written approval of the DEQ, Michigan Sugar may substitute alternative soil removal technologies or equipment in place of rumble strips across any portions of the Rumble Strip Sections.

5. Notification of Start and Finish of Peak Harvest Period. Michigan Sugar shall notify the DEQ by email of the dates of the start and finish of the Peak Harvest Period within three business days of each.

6. Peak Harvest Period Truck Routing. During the Peak Harvest Period, Michigan Sugar is not required to route all trucks that have delivered sugar beets to the Bay City Facility and all trucks that are carrying pressed pulp onto the Internal Road due to a high volume of truck traffic.

7. Operating Mechanical Street Sweeper. During the Peak Harvest Period, Michigan Sugar shall operate a Mechanical Street Sweeper on South Euclid Avenue at least twice every 24 hours to collect and remove any track-out of solids



onto South Euclid Avenue by trucks exiting the Bay City Facility. During each Campaign, at all times other than the Peak Harvest Period, Michigan Sugar shall operate a Mechanical Street Sweeper on South Euclid Avenue at least twice every seven days to collect and remove any track-out of solids onto South Euclid Avenue by trucks exiting the Bay City Facility. In all instances, Michigan Sugar may delay any street sweeping activities on South Euclid Avenue to the extent that excessive snow cover prevents or precludes effective operation of the Mechanical Street Sweeper.

8. Catch Basin Cleanout. Within seven days after the end of each Peak Harvest Period and each Campaign, Michigan Sugar shall clean out the catch-basins along South Euclid Avenue. The clean out may be performed either by the Bay County Road Commission (BCRC), the City of Bay City (Bay City), or by a contractor acceptable to the BCRC and Bay City.

B. Recordkeeping requirements. Michigan Sugar shall create and retain records of the following: (1) operating a street sweeper on the Internal Road; (2) inspecting and repairing the Internal Road; (3) installing the Rumble Strip Sections and inspecting, repairing, and removing solids from them; (4) operating the Mechanical Street Sweeper; and (5) cleaning out the catch basins on South Euclid Avenue.

C. Reporting requirements. The semi-annual reports that Michigan Sugar shall submit pursuant to Section VII (Reporting Requirements) of the Consent Judgment shall include the records of installing the rumble strips, repairing the rumble strips,

operating the Mechanical Street Sweeper, and cleaning out the catch basins on South Euclid Avenue.

**X. EXCEPTION TO OPERATING REQUIREMENTS**

A. If Michigan Sugar determines it is necessary to temporarily shutdown any equipment that it is required to operate by this Operations Plan or the Consent Judgment due to a malfunction, then its failure to operate that equipment shall be excused during that period. In any such instance, Michigan Sugar shall use its best efforts to resume operation of the equipment as soon as practicable.

1. Recordkeeping requirements. Michigan Sugar shall create and retain records of any shutdown of equipment due to a malfunction that include the duration of the shutdown and the actions taken to resume operation of the equipment.

2. Reporting requirements. The semi-annual reports that Michigan Sugar shall submit pursuant to Section VII (Reporting Requirements) of the Consent Judgment shall include the records of any shutdown of equipment due to a malfunction.

## **Exhibit 1 to Operations Plan**

### **Description of Odor Neutralizing Equipment**

When required to use odor neutralizing equipment pursuant to the Consent Judgment and/or the Operations Plan, Michigan Sugar shall use odor control equipment generally consistent with the specifications provided in the attached description, provided that Michigan Sugar may substitute any other odor neutralizing equipment that is the functional equivalent of the specified odor control equipment.



## **ODORBOSS® 60G**

The OB-60G is designed to disperse water soluble air treatment agents using water as the delivery vehicle.

The OB-60G is paired with a tank for premixing, both of which are placed on a trailer for easy mobility. The tank is housed in an enclosure where it can be heated, in addition to other freeze protection measures.

## SPECIFICATIONS

### GENERAL SPECIFICATIONS

- 30,000 CFM generated by fan.
- 0°–359° user defined oscillation.
- Adjustable throw angle: 0° to 50°.
- 500 gallon (1,892.7 liter) water tank for premixing chemical. Runtime: ~16 hours.
- Single air atomizing nozzle.
- Foam filled tires standard.
- Fluid flow: 0.5 gpm (1.9 lpm) at 55 psi (3.8 bar).
- Droplet size: 15 - 30 microns.
- Standard hitch: Pintle. Others available.
- Tank housed in heated enclosure standard.
- Units without heated enclosure available.
- Touch screen controls.

### ELECTRICAL SPECIFICATIONS

- U.S.: 3 Phase / 25 HP fan / 480 Volt / 60 Hertz.
- Power: 60 KW gen set or equivalent (customer must provide).
- FLA without heat: 44
- FLA with heat: 47
- 150 foot (45.72 meters) 8/4 type W electrical cord.
- Control panel housed in NEMA 3R cabinet.
- FLA of enclosure heater is 10 amps at 120 VAC. When connected to 120 VAC shore power, the incoming circuit needs to be capable of handling up to a 30 amp inrush for approximately 20 seconds.
- Supply pump: 1/2 HP (.37 KW).
- Air compressor: 10 HP (7.46 KW).
- Oscillator: 1/8 HP (0.10 KW).

### AIR TREATMENT AGENTS

- Our air treatment agents are effective on a wide range of worksite odors, including VOCs, sulfides, mercaptans, ammonia, and amines.
- Completely biodegradable. Safe for planet and user.
- Dilution rate depends on the intensity of the odor and the chemical used. For our chemicals, typically use between 0.5 and 0.75 gallons (1.9 and 2.8 liters) per 500 gallon (1,892.7 liter) tank of water.

### MAINTENANCE

- Fan motor: Grease every 10,000 hours.
- Air compressor: Air filter check/change and oil change every 500 hours minimum.
- Turntable bearing: Grease as needed.
- Nozzle: Clean as needed.
- Bag filter: Inspect once a month.

### OVERALL DIMENSIONS

- Width: 8.5 feet (102 inches, 2.62 meters).
- Length: 20.5 feet (246 inches, 6.25 meters).
- Height: 9.17 feet (110 inches, 2.80 meters).
- Weight: 4,800 lbs. (2,177.24 kilograms).

### OUR WARRANTY

3-year/3,000-hour warranty.

## Exhibit 2 - Operations Plan Route of the Internal Road



LAST REVISED 2018-12-17

MICHIGAN SUGAR Co. GENERAL OFFICES — BAY CITY, MICHIGAN	PLANT	Scale 1" = 300'	
	BAY CITY	Dr. By EMR	Job No.
TITLE CONCEPT PLAN - INTERNAL ROAD		Dc. By	File No.
		Date DEC 2018	

## Appendix D

### DESCRIPTION OF COVER FOR THE OUTER POND

#### Consent Judgment

*Michigan Department of Environmental Quality v Michigan Sugar Company*  
Ingham County Circuit Court, Case No. 17-000727-CE

The Cover that was installed in the Outer Pond in September of 2018 consists of two (2) floating pond covers made from linear low-density polyethylene (LLDPE) that were manufactured by Industrial and Environmental Concepts, Inc. (IEC). Both pond covers are comprised of an outer shell that includes a 40-mil upper geo-membrane layer and a 60-mil LLDPE lower geo-membrane layer surrounding reinforced buoyant foam. The pond covers are approximately 16,458 square feet (north pond cover) and 14,795 square feet (south pond cover).

**Appendix E**

**SUPPLEMENTAL ENVIRONMENTAL PROJECTS**

**Consent Judgment**

*Michigan Department of Environmental Quality v Michigan Sugar Company*  
Ingham County Circuit Court, Case No. 17-000727-CE



Michigan Sugar shall comply with the requirements of this Appendix in fulfilling its obligations under Section IX (Supplemental Environmental Projects) of the Consent Judgment.

I. Rocks for Saginaw Bay Reef Restoration

A. Michigan Sugar shall expend \$179,000 to purchase and deliver rocks for the DEQ to use in restoring rock reefs in the Saginaw Bay (“Reef Restoration SEP”). The rocks shall consist of glacial cobble that range in size from four to eight inches in diameter. Michigan Sugar shall purchase the rocks from a company identified by the DEQ and shall have the rocks delivered to that company’s site along the Saginaw River.

B. By February 15, 2019, Michigan Sugar shall contact Michael Jury of the DEQ by telephone and first-class mail to schedule the purchase and delivery of the rocks and to identify the amount of rocks, in tons, that Michigan Sugar shall purchase and deliver for \$179,000. Michigan Sugar shall contact Michael Jury at:

Michael Jury  
Michigan Department of Environmental Quality  
Remediation and Redevelopment Division  
Saginaw Bay District Office  
401 Ketchum Street, Suite B  
Bay City, MI 48708-5430  
(989) 894-6255  
[jurym1@michigan.gov](mailto:jurym1@michigan.gov)

C. Michigan Sugar shall complete the Reef Restoration SEP by July 31, 2019.

## II. Vegetative Barrier

A. Michigan Sugar shall expend \$83,500 to construct a vegetative barrier of *Nigra Arborvitae* at the Bay City Facility (“Vegetative Barrier SEP”) to reduce transport of particulate matter emissions from truck traffic. The Vegetative Barrier SEP shall be located as follows: (1) along a 620-foot line on the east side of the Internal Road; (2) along the north and south sides of the entrance to the Bay City Facility from South Euclid Avenue between Backus Street and Niagara Street (“South Entrance”) (collectively, 560 feet in length); and (3) along a 480-foot line on the east side of the Bay City Facility south of the South Entrance. The approximate location of the Vegetative Barrier SEP is shown in Exhibit 1.

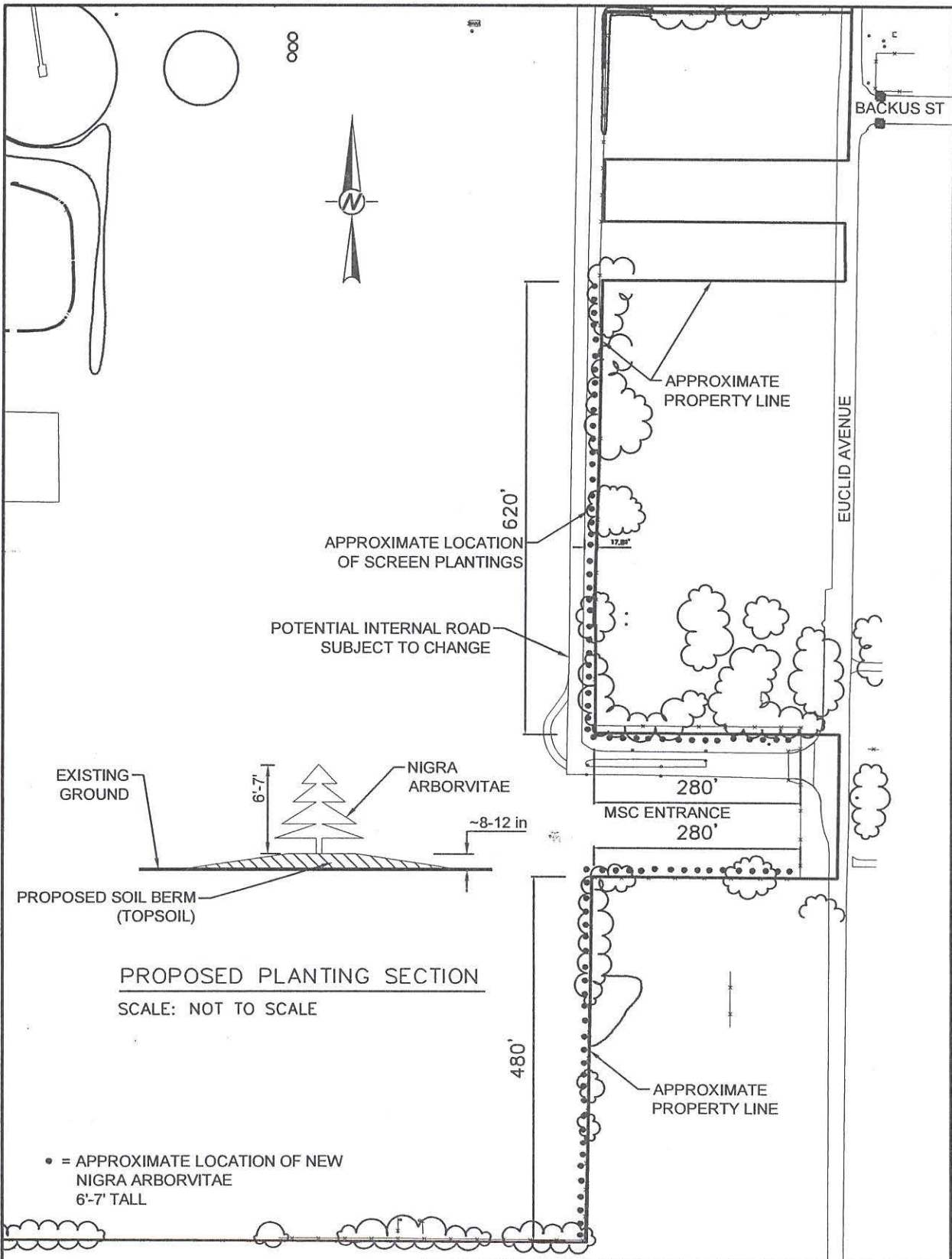
B. The Vegetative Barrier SEP shall include *Nigra Arborvitae* six to seven feet tall planted every five feet on top of an eight-inch berm of topsoil and mulched. Additional details for the Vegetative Barrier SEP are included in Exhibit 2.

C. Michigan Sugar shall plant the *Nigra Arborvitae* by November 15, 2019. By November 15, 2020, Michigan Sugar shall replace any *Nigra Arborvitae* that fail to survive.

D. Michigan Sugar shall complete the Vegetative Barrier SEP by December 1, 2020.

**EXHIBIT 1**

**to Appendix E - Supplemental Environmental Projects**



LAST REVISED 2018-10-30

MICHIGAN SUGAR Co. GENERAL OFFICES - BAY CITY, MICHIGAN TITLE SUPPLEMENTAL ENVIRONMENTAL PROJECT 2019	PLANT	Scale: 1/8" = 1'	Job No.
	BAY CITY	Dr. by: S. SMOGCK	
		Cl. by:	File No.
		Date: OCT. 2018	

**EXHIBIT 2**

**to Appendix E - Supplemental Environmental Projects**



Nursery and Garden Center, Inc.

www.begicknursery.com

5993 West Side Saginaw Rd. Office (989) 684-4210
Bay City, MI 48706 Fax (989) 684-0372

Proposal 1

Michigan Sugar Co.

9/10/18

122. Uptown Dr. Suite 300

Bay City, MI 48708

Table with 2 columns: Description and Amount. Includes items like Nigra Arborvitae, Sales tax, Round Up application, Soil amendments, Equipment, Labor, and Mulching.

\* Estimate presumes that the ravine/ditch (approx.. 620') has be filled in and crowned 8-16" higher than the existing drive grade and suitable for planting.

\*\* Prices are based upon Fall - 2018 availabilities and freight costs and may be subject to change.

Proposal prepared by: James P. Begick (Jim)



**Nursery and Garden Center, Inc.**

www.begicknursery.com

5993 West Side Saginaw Rd. Office (989) 684-4210  
Bay City, MI 48706 Fax (989) 684-0372

---

**Proposal 2**

**Michigan Sugar Co.  
122 Uptown Dr. Suite 300  
Bay City, MI 48708**

**9/10/18**

---

Installation of 96 Arborvitae along a 480' strip of North/South fence line from the southwest corner of the Euclid Avenue south entrance quadrant following the same specifications pertaining to the south entrance quadrant (described in Proposal 1) regarding Round-Up application (approx. 7' band), planting, and mulching.

96	5-6' Normal earth ball grade - Planted and mulched	\$147.00 ea.	\$14,112.00
----	--	--------------	-------------

OR

96	6'-7' Normal earth ball grade - Planted and mulched	\$165.34 ea.	\$15,872.64
----	---	--------------	-------------

As in Proposal #1, prices are based upon Fall, 2018 availabilities and freight costs and may be subject to change.

Proposal prepared by:

James P. Begick (Jim)

# Anthony Gushow & Sons, Inc.

1676 W. Midland Rd.  
 Auburn, MI 48611  
 Phone (989) 662-6591  
 Fax (989) 662-6121

# Estimate

DATE	ESTIMATE NO.
1/5/18	1797

NAME / ADDRESS
Begick Nursery 5993 Westside Saginaw Road Bay City, MI 48706

Job/Location
Michigan Sugar

	DESCRIPTION	TOTAL
	Site A: Unscreened topsoil delivered and leveled in place. 660' long swale filled in and 8" tall berm created between roadway and fence.	9,900.00
	Site B: Unscreened topsoil delivered and leveled in place. 375' long swale filled in and 8" tall berm created between roadway and fence.	5,625.00

Thank you!	<b>TOTAL</b>	\$15,525.00
------------	--------------	-------------