

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM R5-_____

FOR
SYNGENTA SEEDS, INC
WOODLAND SEED PROCESSING FACILITY
YOLO COUNTY

This Monitoring and Reporting Program (MRP) describes requirements for monitoring wastewater flow rate, process wastewater, supplemental irrigation water, process wastewater land application area, residual solids, and residual solids land application area. This MRP is issued pursuant to Water Code section 13267. The Discharger shall not implement any changes to this MRP unless and until a revised MRP is issued by the Executive Officer.

All samples shall be representative of the volume and nature of the discharge. The time, date, and location of each grab sample shall be recorded on the sample chain of custody form.

Field test instruments (such as those used to test pH and electrical conductivity) may be used provided that:

1. The operator is trained in proper use and maintenance of the instruments;
2. The instruments are calibrated prior to monitoring event;
3. Instruments are serviced and/or calibrated by the manufacturer at the recommended frequency; and
4. Field calibration reports are submitted as described in the "Reporting" section of this MRP.

Analytical procedures shall comply with the methods and holding times specified in the following: *Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater* (EPA); *Test Methods for Evaluating Solid Waste* (EPA); *Methods for Chemical Analysis of Water and Wastes* (EPA); *Methods for Determination of Inorganic Substances in Environmental Samples* (EPA); *Standard Methods for the Examination of Water and Wastewater* (APHA/AWWA/WEF); and *Soil, Plant and Water Reference Methods for the Western Region* (WREP 125). Approved editions shall be those that are approved for use by the United States Environmental Protection Agency or the California Department of Public Health's Environmental Laboratory Accreditation Program. The Discharger may propose alternative methods for approval by the Executive Officer. Where technically feasible, laboratory reporting limits shall be lower than the applicable water quality objectives for the constituents to be analyzed.

FLOW MONITORING

The Discharger shall monitor flows discharged to the wastewater land application area as follows:

Flow Source	Units	Type of Measurement	Monitoring Frequency	Reporting Frequency
Process Wastewater	gallons and inches	Meter	Daily ¹	Monthly, Annually
Supplemental Irrigation	gallons and inches	Meter	Daily ¹	Monthly, Annually
Total discharge to LAA	gallons and inches	Calculation	Daily	Monthly, Annually

¹ Report as total daily flow to each check in use.

PROCESS WASTEWATER MONITORING

Wastewater samples shall be collected at a point in the system downstream of the mechanical screen and upstream of the wastewater land application area. Sampling is not required during periods when no wastewater is discharged to the land application area. If no wastewater is discharged to the land application areas, the Monitoring Report shall so state. Grab samples collected from the pipeline or 3,000 gallon holding tank will be considered representative. At a minimum, the Discharger shall monitor the wastewater as follows:

Constituents	Units	Sample Type	Sample Frequency	Reporting Frequency
pH	pH units	Grab	Weekly ²	Monthly
Total Dissolved Solids	mg/L	Grab	Weekly ²	Monthly
Fixed Dissolved Solids	mg/L	Grab	Weekly ²	Monthly
BOD ₅ ¹	mg/L	Grab	Weekly ²	Monthly
Chloride	mg/L	Grab	Weekly ²	Monthly
Sodium	mg/L	Grab	Weekly ²	Monthly
Total Kjeldahl Nitrogen	mg/L	Grab	Weekly ²	Monthly
Nitrate Nitrogen	mg/L	Grab	Weekly ²	Monthly
Total Nitrogen	mg/L	Grab	Weekly ²	Monthly

¹ Five-day, 20 degrees Celsius biochemical oxygen demand.

² During each week that wastewater is discharged to the LAAs.

SUPPLEMENTAL IRRIGATION WATER MONITORING

If supplemental fresh water is used to irrigate the wastewater land application area, the Discharger shall monitor the supplemental irrigation supply water. Sampling is not required during periods when no water is discharged to the land application areas. If supplemental fresh water is not used, the Monitoring Report shall so state. Grab samples of supplemental irrigation water collected at any point between the wellhead and the

wastewater land application area will be considered representative. At a minimum, the Discharger shall monitor the supplemental irrigation supply water as follows:

Constituents	Units	Sample Type	Sample Frequency	Reporting Frequency
pH	pH units	Grab	Monthly	Monthly
Total Dissolved Solids	mg/L	Grab	Monthly	Monthly
Fixed Dissolved Solids	mg/L	Grab	Monthly	Monthly
Chloride	mg/L	Grab	Monthly	Monthly
Sodium	mg/L	Grab	Monthly	Monthly
Total Kjeldahl Nitrogen	mg/L	Grab	Monthly	Monthly
Nitrate Nitrogen	mg/L	Grab	Monthly	Monthly
Total Nitrogen	mg/L	Grab	Monthly	Monthly

PROCESS WASTEWATER LAND APPLICATION AREA MONITORING

The Discharger shall monitor the land application areas **at least once daily prior to and during** an irrigation event and observations from those inspections shall be documented for inclusion in the monthly monitoring reports. The following items shall be documented for each check or field to be irrigated on that day and any corrective actions taken based on observations made shall be reported.

1. Runoff control berm condition;
2. Condition of each sprinkler head and flow control valve;
3. Soil saturation, ponding, and evidence of soil clogging;
4. Potential runoff to off-site areas and/or surface water;
5. Accumulation of organic solids at soil surface;
6. Odors that have the potential to be objectionable at or beyond the property boundary; and
7. Insects.

The Discharger shall perform the following routine monitoring and loading calculations for each LAA and irrigation check during all months when land application of process wastewater occurs, and shall present the data in the Monthly and Annual Monitoring Reports. If no wastewater was land applied during a reporting period, the monitoring report shall so state.

Constituent	Units	Sample Type	Sampling Frequency	Reporting Frequency
Precipitation	0.1 in	Rain gauge ¹	Daily	Monthly, Annually
Irrigation Area Receiving Process Wastewater	acres	Observation	Daily	Monthly, Annually

Constituent	Units	Sample Type	Sampling Frequency	Reporting Frequency
Hydraulic Loading Rate <ul style="list-style-type: none"> · Process Wastewater · Supplemental Irrigation · Total 	gallons and inches	Calculated ²	Daily	Monthly, Annually
Flow-weighted Annual Average FDS Concentration to date	mg/L	Calculated ³	Monthly	Monthly, Annually
BOD ₅ Loading Rate <ul style="list-style-type: none"> · Irrigation Cycle Average 	lb/ac/day	Calculated ^{2,4}	Daily	Monthly, Annually
Total Nitrogen Loading Rate <ul style="list-style-type: none"> · Process Wastewater · Irrigation Water · Total to date 	lb/ac	Calculated ^{2,5}	Monthly	Monthly, Annually

- ¹ Data obtained from the nearest National Weather Service, California Irrigation Management Information System (CIMIS), or on-site rain gauge is acceptable.
- ² Designate identification numbers for discrete checks within each disposal area. Rate shall be calculated for each discrete check based on combined loading from wastewater and supplemental irrigation water.
- ³ Flow-weighted average based on total flow of all sources of water discharged to the LAAs.
- ⁴ BOD₅ shall be calculated using the daily applied volume of wastewater, actual application area, average of the three most recent BOD₅ results for the wastewater, and the number of days per irrigation cycle.
- ⁵ Total nitrogen loading rate shall be calculated using the applied volume of water, actual application area, and average of the three most recent total nitrogen results for each source of water. Loading rates for supplemental nitrogen (including commercial fertilizers, residual solids, etc.) shall be calculated using the actual load and application area.

PROCESSING RESIDUAL SOLIDS MONITORING

Samples of residual solids removed from the processing area and wastewater screen shall be collected just prior to discharge to the solids application area. Sampling is not required during periods when no solids are discharged to the land application area, but the Monthly Report shall describe whether solids were generated, and if so, where they were stored. Grab samples collected from a bin or transport vehicle will be considered representative. At a minimum, the Discharger shall monitor the solids as follows:

Constituent/Parameter	Units	Sample Type	Sampling Frequency	Reporting Frequency
Total weight discharged	tons ¹	Calculated	Daily	Monthly, Annually
Total solids	mg/Kg	Grab	Monthly	Monthly, Annually
Total organic carbon	mg/Kg ²	Grab	Monthly	Monthly, Annually
Total nitrogen	mg/Kg ²	Grab	Monthly	Monthly, Annually

- ¹ May be estimated based on volume (cubic yards) and typical wet density, if known. Report as both wet weight and dry weight.
- ² Results shall be reported on both a wet weight and dry weight basis.

RESIDUAL SOLIDS LAND APPLICATION AREA MONITORING

The Discharger shall inspect the residual solids land application area **at least once daily prior to and during** land application operations, and observations from those inspections shall be documented for inclusion in the monthly monitoring reports. The following items shall be documented for each check or field to be used on that day:

1. Accumulation of organic solids at soil surface;
2. Odors that have the potential to be objectionable at or beyond the property boundary; and
3. Insects.

A copy of entries made in the log during each month shall be submitted as part of the Monthly Monitoring Report.

The Discharger shall perform the following routine monitoring and loading calculations during all months when land application of solids occurs, and shall present the data in the Monthly and Annual Monitoring Reports.

Constituent/Parameter	Units	Sample Type	Sampling Frequency	Reporting Frequency
Fields Receiving Solids (depict on scaled map)	--	Observation	Daily	Monthly, Annually
Application Rate: <ul style="list-style-type: none"> · Wet · Dry 	ton/ac, inches ton/ac	Calculated ¹	Daily	Monthly, Annually
Cumulative Total Nitrogen Loading Rate	lb/ac	Calculated ¹	Daily	Monthly, Annually

¹ Rates shall be calculated for each check or field.

REPORTING

In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the date, sample type (e.g., effluent, pond, etc.), and reported analytical result for each sample are readily discernible. The data shall be summarized in such a manner to clearly illustrate compliance with waste discharge requirements and spatial or temporal trends, as applicable. The results of any monitoring done more frequently than required at the locations specified in the Monitoring and Reporting Program shall be reported to the Central Valley Water Board.

As required by the California Business and Professions Code sections 6735, 7835, and 7835.1, all Groundwater Monitoring Reports shall be prepared under the direct supervision of a Registered Professional Engineer or Geologist and signed by the registered professional.

A. Monthly Monitoring Reports

Monthly reports shall be submitted to the Central Valley Water Board on the **1st day of the second month following sampling** (i.e. the January Report is due by 1 March). At a minimum, the reports shall include:

1. Tabulated flow monitoring of each flow source for each month of the calendar year, including cumulative flow to date, and comparison to the Flow Limitations of the WDRs.
2. Tabulated process wastewater monitoring data for each month of the calendar year and comparison to the Effluent Limitations of the WDRs.
3. Tabulated supplemental irrigation water monitoring data for each month of the calendar year.
4. Tabulated process wastewater land application area monitoring data, including at least the following:
 - a. Hydraulic loading rate of each flow source for each disposal check or field.
 - b. Flow-weighted average FDS concentration to date for the calendar year.
 - c. Irrigation cycle average BOD loading rate for each disposal check or field and comparison to the Mass Loading Limitations of the WDRs.
 - d. Total nitrogen loading rate of each flow source for each disposal check or field for the month and cumulative loading to date for the calendar year.
5. Tabulated processing residual solids monitoring data, or a statement regarding whether solids were generated, and if so, where they were stored.
6. Tabulated residual solids land application area monitoring data, or a statement that the solids were not applied to the land application areas.
7. Daily precipitation data in tabular form accompanied by starting and ending dates of irrigation for each field or check.
8. A statement that summarizes the daily application inspection reports for the month.

9. A comparison of monitoring data to the flow limitations, effluent and mass loading limitations, and discharge specifications and an explanation of any violation of those requirements.
10. Copies of laboratory analytical report(s).
11. Copies of current calibration logs for all field test instruments.

B. Annual Monitoring Report

An Annual Report shall be submitted to the Central Valley Water Board by **1 February** each year and shall include the following:

1. Total annual flow of each flow source discharged to each LAA check or field for the calendar year.
2. Total annual industrial process wastewater flow to each LAA check or field for the calendar year and comparison to the annual maximum flow limit.
3. Flow-weighted annual average FDS concentration of the wastewater discharged to each LAA check or field for the calendar year with supporting data and calculations and comparison to the Effluent Limitations.
4. Total precipitation for each month of the calendar year and annual total for the calendar year.
5. Total hydraulic loading rate of each flow source discharged to each LAA check or field for the calendar year with supporting data and calculations.
6. Total nitrogen loading rate applied to each LAA check or field for the calendar year with supporting data and calculations and comparison to crop evapotranspiration rate, nitrogen demand, and Mass Loading Limitations.
7. Tabulated process wastewater land application area monitoring for each month of the calendar year and annual total for the calendar year.
8. Tabulated residual solids land application area monitoring for each month of the calendar year and annual total for the calendar year.
9. A narrative description of residual solids disposal practices, including identification of the fields where residual solids were applied, the total nitrogen applied to each field during the calendar year, typical application depths and incorporation practices, any nuisance conditions that occurred, and corrective actions taken to remedy nuisance conditions, if any.

10. A nitrogen mass balance (from all sources) for the calendar year with supporting data and calculations. Include description of the types of crops planted and dates of planting and harvest for each crop. If the mass balance indicates that nitrogen has been applied in excess of the agronomic rate, include a discussion of any corrective action performed during the year and a plan and schedule for additional corrective actions if needed to ensure future compliance with the land application area specifications of the WDRs.
11. A comprehensive evaluation of the effectiveness of the past year's wastewater application operation in terms of odor control, including consideration of application management practices (i.e.: waste constituent and hydraulic loadings, application cycles, drying times, and cropping practices), soil profile monitoring data and groundwater monitoring data.
12. A discussion of compliance and the corrective action taken, as well as any planned or proposed actions needed to bring the discharge into full compliance with the waste discharge requirements.
13. A discussion of the following:
 - a. Any treatment or control measures implemented during the calendar year either voluntarily or pursuant to the WDRs, this MRP, or any other Order; and
 - b. Based on monitoring data, an evaluation of the effectiveness of the treatment or control measures implemented to date.
14. A discussion of any data gaps and potential deficiencies/redundancies in the monitoring system or reporting program.

A letter transmitting the self-monitoring reports shall accompany each report. The letter shall include a discussion of requirement violations found during the reporting period, and actions taken or planned for correcting noted violations, such as operation or facility modifications. If the Discharger has previously submitted a report describing corrective actions and/or a time schedule for implementing the corrective actions, reference to the previous correspondence will be satisfactory. The transmittal letter shall contain the penalty of perjury statement by the Discharger, or the Discharger's authorized agent, as described in the Standard Provisions General Reporting Requirements Section B.3.

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The Discharger shall implement the above monitoring program as of the date of this Order.

Ordered by: _____
PAMELA C. CREEDON, Executive Officer

(Date)

LLA: 061714