CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER R5-2014-0056

WASTE DISCHARGE REQUIREMENTS

FOR
STEVE GIKAS
CALIFORNIA NUGGETS, INC. AND GOLDEN GATE NUT COMPANY
SAN JOAQUIN COUNTY

The California Regional Water Quality Control Regional Board, Central Valley Region, (hereafter Central Valley Water Board) finds that:

1. In July 2005, Steve Gikas (hereafter "Discharger") submitted a Report of Waste Discharge (RWD) for the treatment and disposal of food processing wastewater from California Nuggets, Inc. and Golden Gate Nut Company. A revised RWD was submitted in March 2013 and addenda were submitted in September and October 2013.

2. The Discharger owns and operates the facilities that generate the waste and the land discharge areas and is responsible for compliance with these Waste Discharge Requirements (WDRs).

3. The facilities are at 23073 South Fredrick Road in Ripon (Section 23, T2S, R7E, MDB&M). They occupy approximately 14.77 acres on Assessor's Parcel Numbers (APN) 228-130-21, as shown on Attachment A, which is attached hereto and made part of this Order by reference.

Background

4. California Nuggets, Inc. and Golden Gate Nut Company are in operation and have been discharging wastewater to land without regulation under WDRs since approximately 2002. The Discharger submitted a RWD on 27 July 2005. The Discharger's July 2005 RWD did not contain enough information to develop WDRs. Specifically, the RWD did not fully characterize waste discharge. At that time, the Discharger proposed the following improvements to reduce the threat to groundwater quality: a) Off-site disposal of ion exchange regeneration brine; b) Installation of a flow meter on the well used for the process water supply; c) Enlargement of the wastewater pond's storage capacity and lining the ponds with a synthetic liner. The Discharger did not make the proposed improvements until Cleanup and Abatement Order (CAO) R5-2007-0715 was issued by the Executive Officer on 14 June 2007.

5. CAO R5-2007-0715 was issued to compel the Discharger to make improvements to the wastewater management system to better protect groundwater quality and provide sufficient information to complete the RWD. The CAO required the following:

- No discharge of industrial wastewater to the on-site septic system;
- Implementation of a Monitoring and Reporting Program (MRP) by 2 July 2007;
- Installation of influent and effluent flow meters by 31 August 2007;
- Submittal of a report describing the removal of ion exchange brine from the wastewater flow by 31 August 2007;
- Submittal of an interim cropping plan by 31 August 2007;
- Submittal of additional waste characterization report by 1 September 2008; and
- Submittal of a RWD Addendum by 31 December 2008.

6. The cropping plan, wastewater characterization report and RWD Addendum were not submitted until after Central Valley Water Board staff issued a Notice of Violation in August 2012. The wastewater characterization report was received on 19 November 2012 and the cropping plan was received on 1 March 2013.

7. The Discharger summited a RWD Addendum on 7 March 2013, but the RWD was still incomplete. On 19 August 2013, the Executive Officer issued an Order for Technical Reports pursuant to Water Code section 13267 Order (the 13267 Order) that required the Discharger to submit certain information by 15 September 2013, including:

   a. A detailed schedule for full implementation of the proposed improvements;
   b. A water balance demonstrating adequate wastewater storage and disposal capacity for the 100-year, 365-day precipitation event;
   c. A conceptual design and detailed schedule for completion of new land application areas (LAAs) and additional lined storage pond;
   d. A description of the specific means of storm water management;
   e. A specific structural and operational controls to prevent wastewater runoff at the LAA; and
   f. Notices of Determination for exemption from California Environmental Quality Act (CEQA) and underlying environmental review documents.

8. On 16 September 2013, the Discharger submitted a partial response to the 13267 Order and requested a 30-day extension of time to submit the information that was not provided. A revised 13267 Order was issued on 26 September 2013 and it extended the due date for the previously-required information and added certain new information, including a preliminary engineering evaluation of options for structural and operational improvements, and definition of the volume of the existing lined wastewater pond. The Discharger submitted another RWD addendum on 16 October 2013 to comply with the revised 13267 Order, but did not provide all of the required information.

Existing Facility and Discharge

9. The Discharger manufactures snack food products and operates other business at the facility site. California Nuggets, Inc. produces corn nuts and Golden Gate Nut Company processes almonds. The Discharger processes approximately 1,700 tons of corn and between 750 and 1,500 tons of almonds per year. The facilities generally operate 24 hours per day and are shut down for equipment maintenance once per week. The Facility Site Plan is shown on Attachment B, which is attached hereto and made part of this Order by reference.

10. An on-site water supply well provides process water to the facilities. The water is softened using ion-exchange treatment prior to use. The ion exchange brine is separated from the wastewater stream and transported off-site for disposal. Water quality for untreated supply water and softened water is characterized in the table below:

Constituent	Units	Well Supply Water 04/01/05	Well Supply Water 06/24/09	Softened Water 06/24/09
Biochemical Oxygen Demand	mg/L	<2.0	1.4	2.1
Nitrate Nitrogen	mg/L	--	18	17
Total Kjeldahl Nitrogen (TKN)	mg/L	<1.0	<0.20	0.15
Ammonia Nitrogen	mg/L	<1.0	<0.05	<0.05
Fixed Dissolved Solids (FDS)	mg/L	330	540	350
Total Dissolved Solids (TDS)	mg/L	400	840	570
Bicarbonate Alkalinity (as $CaCO_3$)	mg/L	130	190	190
Calcium	mg/L	54	58	1.1
Chloride	mg/L	19	21	20
Electrical Conductivity	umhos/cm	520	551	575
Iron	µg/L	30	<50	<50
Magnesium	mg/L	16	18	0.3
Manganese	µg/L	<10	<10	<10
pH	-	7.7	8.0	7.8
Sodium	mg/L	24	26	130
Sulfate	mg/L	35	35	32
Total Hardness	mg/L	200	220	4.1

11. Wastewater is generated in food processing activities. The major processes include the following:

    a. Corn processing occurs year round. Dried corn kernels are soaked in a lime solution to remove skins, steeped in a citric acid solution and then rinsed before being fried in canola or safflower oil and seasoned.

    b. Almonds are processed seasonally during harvest. The almonds are blanched in

hot water to remove their skins. The almonds are then cooked and/or seasoned.

c. Caustic and acid rinses of the processing equipment are performed approximately every two weeks for sanitation purposes. The waste acid and base solutions are discharged to the wastewater system.

12. The Discharger also owns HP Commodities, Inc. which recycles used cooking oil from various sources. Wastewater is generated periodically from the used cooking oil recycling process. The used oil is filtered and pasteurized and the reclaimed oil is sold. The wastewater separated from the oils in the refining process is directed to a series of above-ground tanks (45,000 gallons total capacity) where it is treated with a product designed to enhance the rate of biodegradation. In 2012 and the first half of 2013, an unknown portion of the wastewater separated from used oil in the refining process was discharged to the treatment and disposal system. The rest was reportedly taken off-site for disposal.

13. The chemicals used in the processes and sanitation are listed below.

Chemical Name	Annual Usage	Units
Smokehouse 101K Cleaner	880	gallons
Flex SG Cleaner	440	gallons
Perasan A Sanitizer	unknown	gallons
Caustic Soda Beads	1,000	pounds
Calcium Hydroxide	unknown	pounds
Citric Acid	2,000	pounds
BioWish	17	pounds

14. Nut processing rinse water, spent lime solution, blanching water, boiler blowdown, and wastewater from equipment sanitation are collected in floor drains. From January through August 2013, the monthly average wastewater flows applied to the LAA ranged from 21,000 to 67,000 gpd.

15. The wastewater is screened and passed through a solids separator and an oil/water separator before being directed into a lined wastewater storage pond. Rudimentary standpipe aerators are used to circulate and aerate the wastewater. Effluent from the storage pond is filtered prior to being discharged to a 5.2-acre land application area by spray irrigation. Attachment C, which is a process flow schematic, is attached hereto and made part of this Order by reference.

16. The effluent analytical results for the last four years are summarized below.

		Average Effluent Concentration			
Constituent	Units	2010	2011	2012	Current [1]
BOD	(mg/L)	1,600	1,700	4,400	2,300
Nitrate N	(mg/L)	7.9	0.5	0.5	5.1
Ammonia N	(mg/L)	2.0	2.7	8.3	0.7
TKN	(mg/L)	43	62	140	41
TDS	(mg/L)	1,500	1,400	2,900	2,550
FDS	(mg/L)	610	550	1,200	860
Iron	(µg/L)	130	210	1,900	205
Manganese	(µg/L)	47	40	56	29
Sodium	(mg/L)	52	72	190	100
Chloride	(mg/L)	43	42	280	70

[1] Current character (without wastewater from oil recycling) based on the data collected in July and August 2013.

17. Based on the data above, the wastewater typically has high concentrations of biochemical oxygen demand (BOD), nitrogen, and salinity. The data show a significant increase in these constituents in 2012, which is likely due to the discharge of wastewater from recycling oil processing between mid-2012 and mid-2013. The RWD states that the pH of wastewater generally varies between 4.5 and 5.5 standard units.

18. The combination of high BOD and minimal aeration can cause low dissolved oxygen (DO) concentrations in the storage pond. Based on the Discharger's monthly monitoring reports from January through May 2013, wastewater in the pond has an average DO concentration of 0.7 mg/L, which is lower than the required DO concentration of 1 mg/L to prevent odors and reducing conditions that can mobilize metals that occur naturally in soil, such as iron and manganese.

19. The existing wastewater storage pond was lined with 24-mil reinforced polyethylene geomembrane in November 2007. The RWD provided the following estimated data for the existing ponds.

Pond	Max Depth (feet)	Surface Area (acres)	Internal Slope (Horizontal: Vertical)	Volume (MG)[1]
Unlined Storm Water Pond	9	0.24	2	0.3
Lined Wastewater Storage Pond	8	0.31	2	0.4
Total Storage Capacity	--	--	--	0.7

[1] Based on two feet of freeboard.

The lining system was installed without a Construction Quality Assurance (CQA) Plan, and the Discharger has not provided the results of any CQA testing during or after construction. Based on an inspection in October 2013, the pond liner shows signs of deterioration and tearing above the water line, and may need to be replaced.

20. According to the revised 2013 RWD, an ultrasonic influent flow meter was installed in the influent line to the wastewater pond in April 2008 and an effluent meter was installed in April 2009 to monitor the wastewater applied to the LAA, as the mechanical wastewater flow meters previously installed failed due to solids in the wastewater.

21. The LAA is irrigated by impact sprinklers. The recent hydraulic loading rates to the LAA are summarized below.

Wastewater applied to the LAA					
Year	Lowest Month (MG)	Highest Month (MG)	Average Monthly (MG)	Annual Total (MG)	Hydraulic Loading (inches/year)
2010	0.812	2.45	1.76	21.1	149
2011	1.48	3.37	2.31	27.7	196
2012	0.779	1.98	1.35	16.2	115

Based on the water balance in the RWD, the agronomic water demand for alfalfa is 10.8 MG per year, which is much less than the annual wastewater volumes of 21.1, 27.7 and 16.2 MG in the years of 2010, 2011, and 2012, respectively. The recent years' water application rates greatly exceed the water needs of any row, pasture, or fodder crops grown in the Central Valley. Although the RWD did not specify LAA operational practices, it is likely that irrigation of the LAA is essentially continuous around the clock, with little or no resting period between wastewater applications. This practice leads to soil saturation, BOD and nitrogen overloading, and reducing conditions that promote dissolution of iron and manganese.

22. The Discharger has attempted to grow crops on the LAA (primarily alfalfa) with some limited success. A new crop of Sudan grass was planted in October 2013 and the Discharger plans to plant alfalfa after it is harvested. The crops will be harvested and removed from the site.

23. The RWD also summarizes the annual nitrogen loading rates for the years of 2010, 2011, 2012 and 2013. The RWD states that the increased nitrogen loading rates in 2012 is most likely due to the discharge of oil recycling wastewater between mid-2012 and mid-2013.

Nitrogen Loading Rates						
		Year				Typical Crop Demand [2]
Constituents	Units	2010	2011	2012	Current [1]	
Total Nitrogen	lb/acre/year	1,745	2,290	4,540	1,394	120 to 400

1. Estimated based on the effluent monitoring reports for July and August 2013 (without wastewater from oil recycling).

[2] Nitrogen demands vary by crop. The lowest value is typical of oats and the highest value is typical of onions.

24. Based on the data tabulated above, over application of wastewater has also caused gross nitrogen overloading; prolonged soil saturation with high-BOD wastewater (anaerobic conditions); and forced percolation of the excess nitrogen, salts, dissolved organic matter, and metals to shallow groundwater.

25. Residuals solids, sludges, and solid wastes are produced at the facility through several processes:
    a. Almond and corn byproduct (skins) are transported off-site for animal feed.
    b. The wastewater pond is emptied periodically to remove sludge that has accumulated on the pond floor. The sludge is hauled offsite for disposal.
    c. Sludges recovered in the cooking oil recycling process are hauled offsite and used as biofuel.

Changes in the Facility and Discharge

26. Based on the 16 October 2013 RWD Addendum and a 24 October 2013 site inspection, the Discharger has implemented the following actions to reduce the threat to water quality:
    a. The Discharger ceased the discharge of high strength oil recycling wastewater to the LAA. This wastewater is now hauled off-site for disposal.
    b. In October 2013, the Discharger planted Sudan grass on the LAA.
    c. The Discharger has installed fountain-type sprinkler nozzles on the LAA in order to enhance evaporation.

27. Based on the 16 October 2013 RWD Addendum, the Discharger proposes to complete the following to bring the discharge into compliance with the Basin Plan:
    a. Alfalfa will be planted in the LAA to maximize nutrient and water uptake.
    b. The Discharger will plant salt cedar trees around the LAA perimeter to improve water and salt uptake.
    c. The Discharger will line the existing storm water pond for use as additional wastewater storage. Based on the Discharger's comments on the tentative WDRs, this pond will only be lined if it will be used to treat or store wastewater.
    d. The Discharger will evaluate the condition of the existing wastewater pond liner and will repair or replace the liner system.
    e. The Discharger will evaluate and implement treatment and/or control alternatives for the facility.

The discharger may also explore the feasibility of using the corn processing wastewater for irrigation of crops at other off-site locations. This Order must be amended or revised prior to application of wastewater to sites other than the existing LAA.

28. Based on an RWD Addendum submitted on 19 February 2014, the following additional changes have occurred since the Discharger submitted its 16 October 2013 RWD Addendum:

    a. The Discharger planted 36 salt cedar trees around the parameter of the LAA in November 2013.

    b. Beginning in January 2014, some of the corn processing wastewater is sent to an above-ground tank. The corn slurry that settles in the tank is hauled off-site for use as livestock food. Some of the remaining corn processing wastewater is hauled off-site for disposal. However, the Discharger has not provided flow or wastewater analytical data that reflect the current discharge to the pond.

    c. The Discharger has implemented improvements that allow it to recycle one-third of the corn processing wastewater internally within the facility.

Site-Specific Conditions

29. The site topography relatively is flat with a gentle overall slope to the southwest. Local drainage is to San Joaquin River, located approximately two miles southeast of the facility.

30. The site is outside the 100-year flood zone.

31. According to the U.S. Department of Agriculture's Soil Conservation Service, near surface soil at the site primarily consists of loamy coarse sand. The estimated soil permeability is greater than 6 inches per hour. The LAA has a moderate to high infiltration rate.

32. The average annual precipitation is 12.8 inches per year and the 100-year, 365-day precipitation event is 22.8 inches. The mean reference evapotranspiration rate is approximately 52.2 inches per year.

33. Surrounding land uses are agriculture (orchards and a wholesale nursery).

34. Domestic wastewater is disposed of separately from the process wastewater in a septic system, which is regulated by the San Joaquin County Environmental Health Department.

Groundwater Conditions

35. Based on the Discharger's Quarterly Groundwater Monitoring Reports from September 2005 through March 2013, shallow groundwater occurs at a depth ranging from approximately 12 to 17 feet below ground surface (bgs). The groundwater primarily flows to the west-southwest. The groundwater gradient ranges from 0.0003 to 0.002 feet/foot.

36. Four shallow groundwater monitoring wells (MW-1, MW-2, MW-3 and MW-4) were installed in 2005 onsite, as shown on Attachment B. Well MW-1 is an upgradient (background) well and it is located approximately 500 feet from the wastewater application area. MW-2 is located near the downgradient edge of the LAA, and MW-3 and MW-4 are located immediately adjacent to the downgradient side of the storm water pond and the wastewater storage pond, respectively. The following table presents a summary of the monitoring well construction details.

Monitoring Well ID	Well Depth (feet, bgs)	Screened Interval (feet, bgs)	Top of Casing Elevation (feet, msl)
MW-1	30	15 to 30	50.78
MW-2	25	10 to 25	51.19
MW-3	30	15 to 30	50.13
MW-4	30	15 to 30	49.68

37. A summary of groundwater monitoring data for select constituents is presented in the table below.

Shallow Groundwater Concentration [1]						Potentially Applicable Water Quality Objective
		Background	Downgradient			
Constituents	Unit	MW-1	MW-2	MW-3	MW-4	
TDS	mg/L	850	1,600	1,108	860	450 [2] -1,500 [3]
FDS	mg/L	500	1,000	698	540	--
Nitrate N	mg/L	25	0.1	<0.20	0.1	10 [4]
Ammonia N	mg/L	0.05	0.3	0.7	5.5	--
TKN	mg/L	0.2	1.3	1.5	5.9	--
Sodium	mg/L	220	110	95	60	69 [2]
Chloride	mg/L	24	250	133	100	106 [2] – 250 [5]
Manganese	µg/L	<10.0	9,000	11,000	6,300	50 [5]
Iron	µg/L	<50	3,600	6,500	4,200	300 [5]

1. Mean for the last four quarters (through March 2013).
2. Lowest Agricultural Water Quality Goal.
3. Short-Term Secondary Maximum Contaminant Level.
4. Primary Maximum Contaminant Level.
5. Secondary Maximum Contaminant Level.

38. The average TDS concentrations in all wells exceed the recommended secondary maximum concentration limit (MCL) of 500 mg/L for TDS. The average TDS concentration in the background well MW-1 is 850 mg/L. The average TDS concentrations in the down-gradient wells MW-2 and MW-4 ranged from 860 to 1,600 mg/L. Therefore the discharge has degraded groundwater quality and caused pollution for TDS.

39. The average nitrate nitrogen concentration in the background well MW-1 is 25 mg/L, which is greater than the primary MCL of 10 mg/L for nitrate as nitrogen. Background shallow groundwater is polluted with nitrate, presumably due to the prevalence of irrigated agriculture in the local area. Although the groundwater nitrate nitrogen concentrations in the downgradient wells were less than the primary MCL, groundwater monitoring data indicate that groundwater has been degraded by total Kjeldahl nitrogen and ammonia, which are nitrate precursors. The ammonia nitrogen concentrations in some downgradient wells greatly exceed the taste and odor threshold of 1.5 mg/L.

40. The secondary MCL for dissolved iron is 300 µg/L. The average dissolved iron concentrations in the background well MW-1 is less than 50 µg/L. The average dissolved iron concentrations in the down-gradient wells MW-2, MW-3, and MW-4 ranged from 3,600 to 6,500 µg/L, which show that the discharge has caused dissolved iron in shallow groundwater to exceed the secondary MCL in violation of the water quality objective in the Basin Plan.

41. The secondary MCL for dissolved manganese is 50 µg/L. The average dissolved manganese concentration in the background well MW-1 is less than 10 µg/L. However, the average dissolved manganese concentrations in the down-gradient wells MW-2, MW-3, and MW-4 ranged from 6,300 to 11,000 µg/L, which show that the discharge has caused dissolved manganese in shallow groundwater to exceed the secondary MCL in violation of the water quality objective in the Basin Plan.

42. The average chloride concentration in the background well MW-1 is 24 mg/L, which is less than the Agricultural Water Quality Goal of 106 mg/L for chloride. The average chloride concentrations in the down-gradient wells MW-2, MW-3, and MW-4 ranged from 100 to 250 mg/L, which show that the discharge has degraded groundwater quality for chloride.

43. The average sodium concentration in the upgradient well MW-1 is 220 mg/L, which exceeds the lowest agricultural water quality goal of 69 mg/L for sodium. The average sodium concentrations in the down-gradient wells ranged from 60 to 110 mg/L, which were less than the average sodium concentration in the upgradient well MW-1.

Basin Plan, Beneficial Uses, and Regulatory Considerations

44. The *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins,* Fourth Edition (hereafter Basin Plan) designates beneficial uses, establishes

water quality objectives, contains implementation plans and policies for protecting waters of the basin, and incorporates by reference plans and policies adopted by the State Water Board. Pursuant to Water Code section13263(a), waste discharge requirements must implement the Basin Plan.

45. Local drainage is to San Joaquin River. The beneficial uses of San Joaquin River, as stated in the Basin Plan, are municipal (MUN) and domestic supply; agricultural supply; industrial process and service supply; hydropower generation; water contact recreation; non-contact water recreation; warm and cold fresh water habitat; migration of aquatic organisms; spawning, reproduction, and /or early development; and wildlife habitat.

46. The beneficial uses of underlying groundwater as set forth in the Basin Plan are municipal and domestic supply, agricultural supply, industrial service supply and industrial process supply.

47. The Basin Plan establishes narrative water quality objectives for chemical constituents, tastes and odors, and toxicity in groundwater. It also sets forth a numeric objective for total coliform organisms.

48. The Basin Plan's numeric water quality objective for bacteria requires that the most probable number (MPN) of coliform organisms over any seven-day period shall be less than 2.2 per 100 mL in MUN groundwater.

49. The Basin Plan's narrative water quality objectives for chemical constituents, at a minimum, require waters designated as domestic or municipal supply to meet the MCLs specified in Title 22 of the California Code of Regulations (hereafter Title 22). The Basin Plan recognizes that the Central Valley Water Board may apply limits more stringent than MCLs to ensure that waters do not contain chemical constituents in concentrations that adversely affect beneficial uses.

50. The narrative toxicity objective requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, animal, plant, or aquatic life associated with designated beneficial uses.

51. Quantifying a narrative water quality objective requires a site-specific evaluation of those constituents that have the potential to impact water quality and beneficial uses. The Basin Plan states that when compliance with a narrative objective is required to protect specific beneficial uses, the Central Valley Water Board will, on a case-by-case basis, adopt numerical limitations in order to implement the narrative objective.

52. In the absence of specific numerical water quality limits, the Basin Plan methodology is to consider any relevant published criteria. General salt tolerance guidelines, such as *Water Quality for Agriculture* by Ayers and Westcot and similar references indicate that yield reductions in nearly all crops are not evident when irrigation water has an EC less

than 700 µmhos/cm. There is, however, an eight- to ten-fold range in salt tolerance for agricultural crops and the appropriate salinity values to protect agriculture in the Central Valley are considered on a case-by-case basis. It is possible to achieve full yield potential with waters having EC up to 3,000 µmhos/cm if the proper leaching fraction is provided to maintain soil salinity within the tolerance of the crop.

53. Pollution Abatement in the Fruit and Vegetable Industry, published by the United States Environmental Protection Agency, cites BOD loading rates in the range of 36 to 600 lbs/acre-day to prevent nuisance, but indicates the loading rates can be even higher under certain conditions. The studies that supported this report did not evaluate actual or potential groundwater degradation associated with those rates. There are few studies that have attempted to determine maximum BOD loading rates for protection of groundwater quality. Those that have been done are not readily adapted to the varying soil, groundwater, and climate conditions that are prevalent throughout the region.

54. The California League of Food Processors' Manual of Good Practice for Land Application of Food Processing/Rinse Water proposes risk categories associated with particular BOD loading rate ranges as follows:

    a. Risk Category 1: (less than 50 lbs/ac/day; depth to groundwater greater than 5 feet) Indistinguishable from good farming operations with good distribution important.
    b. Risk Category 2: (less than 100 lbs/ac/day; depth to groundwater greater than 5 feet) Minimal risk of unreasonable groundwater degradation with good distribution more important.
    c. Risk Category 3: (greater than 100 lbs/ac/day; depth to groundwater greater than 2 feet) Requires detailed planning and good operation with good distribution very important to prevent unreasonable degradation, as well as use of oxygen transfer design equations that consider site-specific application cycles and soil properties and special monitoring.

    The Manual of Good Practice recommends allowing a 50 percent increase in the BOD loading rates in cases where sprinkler irrigation is used, but recommends that additional safety factors be used for sites with heavy and/or compacted soils. These risk categories were based on the assumption that best management practices would be employed to prevent odors and reducing conditions. Typical best management practices include ensuring even distribution of wastewater and waste constituents on each LAA, applying water at rates consistent with the needs of the crop, and allowing adequate resting time between wastewater applications to ensure consistently aerobic conditions within the soil column.

55. Although it has not been subject to a scientific peer review process, the Manual of Good Practice provides science-based guidance for BOD loading rates that, if fully implemented, are considered a best management practice to prevent groundwater degradation due to reduced metals.

56. If the Discharger employed best management practices as described above, the discharge at this facility would fall within Risk Category 2 of the Manual of Good Practice. Therefore, this Order sets a BOD loading rate of 100 lbs/acre/day as an irrigation cycle average and requires the use of best management practices.

Antidegradation Analysis

57. State Water Resources Control Board Resolution 68-16 ("Policy with Respect to Maintaining High Quality Waters of the State") (hereafter Resolution 68-16) prohibits degradation of groundwater unless it has been shown that:

    a. The degradation is consistent with the maximum benefit to the people of the state.

    b. The degradation will not unreasonably affect present and anticipated future beneficial uses.

    c. The degradation does not result in water quality less than that prescribed in state and regional policies, including violation of one or more water quality objectives, and

    d. The discharger employs best practicable treatment or control (BPTC) to minimize degradation.

58. Degradation of groundwater by some of the typical waste constituents associated with discharges from a food processing facility, after effective source control, treatment, and control measures are implemented, is consistent with the maximum benefit to the people of the state. The economic prosperity of valley communities and associated industry is of maximum benefit to the people of the State, and provides sufficient justification for allowing the limited groundwater degradation that may occur pursuant to this Order.

59. The Discharger has been monitoring groundwater quality at the site since 2005. Based on the data available, it is not possible to determine pre-1968 groundwater quality. Therefore, determination of compliance with Resolution 68-16 for this facility must be based on the background groundwater quality in 2005.

60. Constituents of concern that have the potential to degrade groundwater include salts (primarily TDS, sodium, and chloride), nutrients and, as discussed below:

Constituent		Average Concentrations			Potential Water Quality Objective
		Current Effluent [1]	Background Groundwater [2]	Downgradient Groundwater [3]	
TDS	mg/L	2,550	850	860 to 1,600	450 [4] to 1,500 [7]
FDS	mg/L	860	500	540 to 1,000	--
Nitrate Nitrogen	mg/L	5.1	25	<0.20 to 0.1	10 [5]
Ammonia Nitrogen	mg/L	0.7	0.05	0.3 to 5.5	--

Constituent		Average Concentrations			Potential Water Quality Objective
		Current Effluent [1]	Background Groundwater [2]	Downgradient Groundwater [3]	
TKN	mg/L	41	0.2	1.3 to 5.9	--
Manganese	µg/L	29	<10	6,300 to 11,000	50 [6]
Iron	µg/L	205	<50	3,600 to 6,500	300 [6]

[1] Estimated based on the effluent monitoring reports for July and August 2013 (without wastewater from oil recycling).
[2] Based on MW-1; mean for the last four quarters (through March 2013)
[3] Based on MW-2, MW-3 and MW-4; range of means for the last four quarters (through March 2013)
[4] Agricultural water quality goal.
[5] Primary Maximum Contaminant Level.
[6] Secondary Maximum Contaminant Level.
[7] Short-Term Secondary Maximum Contaminant Level.

a. **Total Dissolved Solids.** The Secondary MCL for TDS is 500 mg/L as a recommended level, 1000 mg/L as an upper level, and 1500 mg/L as a short-term maximum. The current average wastewater TDS and FDS concentrations are 2,550 mg/L and 860 mg/L, respectively. The background groundwater TDS concentration is 850 mg/L and the average TDS concentrations in the down-gradient wells ranged from 860 to 1,600 mg/L. Therefore, the discharge has caused exceedance of the least stringent potential water quality objective for protection of MUN beneficial uses, which is the short-term maximum secondary MCL of 1,500 mg/L.

   This Order includes a groundwater limitation that prohibits exceedance of a water quality objective and an effluent FDS limitation that does not allow the salinity of the discharge to increase above current levels. Based on the planned improvements to the facility, groundwater quality with respect to TDS is expected to improve over time. However, it is not possible to predict whether TDS concentrations will be reduced to below the Water Quality Objective or exactly when significant improvement in groundwater quality will occur. A companion Cease and Desist Order includes a time schedule that requires the Discharger to complete the proposed improvements and submit a plan for implementing additional treatment or control that will ensure compliance with the groundwater limitations of this Order. If the proposed improvements do not result in significantly improved groundwater quality by 2016, the CDO requires that the Discharger implement additional treatment or control as necessary to bring the discharge into compliance with the Basin Plan water quality objective.

b. **Manganese**. The secondary MCL for dissolved manganese is 50 µg/L. The average dissolved manganese concentration in the background well MW-1 is less than 10 µg/L. However, the average dissolved manganese concentrations in down-gradient wells ranged from 6,300 to 11,000 µg/L, which show that the discharge has caused dissolved manganese in shallow groundwater to exceed the water quality objective.

Although the current wastewater manganese concentration (29 µg/L) is less than that in the downgradient wells, as noted in previous findings, excessive BOD loading rates can deplete oxygen, resulting in anoxic conditions that can solubilize naturally occurring metals in soil. If the reducing conditions do not reverse as the percolate travels down through the vadose zone, these dissolved metals (primarily iron, manganese, and arsenic) can degrade shallow groundwater quality. This condition can be exacerbated by acidic soils and/or acidic wastewater. It is likely that the current practice of rapid infiltration with high-BOD and acidic wastewater with little or no rest period between applications has caused reducing conditions that favor dissolution of manganese from native soil.

This Order includes a groundwater limitation that prohibits exceedance of a water quality objective. The Discharger has not yet committed to a specific plan of action that would improve groundwater quality with respect to manganese. A companion Cease and Desist Order includes a time schedule that requires the Discharger to complete the proposed improvements and submit a plan for implementing additional treatment or control that will ensure compliance with the groundwater limitations of this Order. If the proposed improvements do not result in significantly improved groundwater quality by 2016, the CDO requires that the Discharger implement additional treatment or control as necessary to bring the discharge into compliance with the Basin Plan water quality objective.

c. **Iron.** The Secondary MCL for iron is 300 µg/L, and background groundwater quality is below this level. However, the average dissolved iron concentrations in the down-gradient wells ranged from 3,600 to 6,500 µg/L, showing that the discharge has caused dissolved iron in shallow groundwater to exceed the secondary MCL in violation of the Basin Plan. Although the iron concentration in the effluent (205 µg/L) is less than the Secondary MCL, the presence of degradable organic matter in the wastewater depletes oxygen and creates reducing conditions that favor dissolution of iron from the native soil minerals. It is likely that the current practice of rapid infiltration with high-BOD and acidic wastewater with little or no rest period between applications has caused reducing conditions that favor dissolution of iron from native soil.

This Order includes a groundwater limitation that prohibits exceedance of a water quality objective. The Discharger has not yet committed to a specific plan of action that would improve groundwater quality with respect to iron. A companion Cease and Desist Order includes a time schedule that requires the Discharger to complete the proposed improvements and submit a plan for implementing additional treatment or control that will ensure compliance with the groundwater limitations of this Order. If the proposed improvements do not result in significantly improved groundwater quality by 2016, the CDO requires that the Discharger implement additional treatment or control as necessary to bring the discharge into compliance with the Basin Plan water quality objective.

d. **Nitrate.** For nutrients such as nitrate, the potential for groundwater degradation depends on wastewater quality; crop uptake, and the ability of the vadose zone below the LAA to support nitrification and denitrification to convert the nitrogen to nitrogen gas before it reaches the water table. Most of the nitrogen in the process wastewater is present as TKN, which can readily mineralize and convert to nitrate (with some loss via ammonia volatilization) in the LAA soil. Background shallow groundwater is polluted with nitrate, presumably due to irrigated agriculture. The nitrate levels in the Discharger's downgradient wells are less than the primary MCL for nitrate nitrogen. However, groundwater monitoring data indicate that the discharge has degraded groundwater by total Kjeldahl nitrogen and ammonia nitrogen, which are nitrate precursors. The ammonia nitrogen concentrations in some downgradient wells greatly exceed the taste and odor threshold of 1.5 mg/L. Although the current effluent nitrate level is less than the primary MCL for nitrate nitrogen, the wastewater nitrogen loading rate to the LAA has greatly exceeded the crop demand.

Although groundwater oxidation-reduction potential is not being monitored, it seems likely that the highly reducing conditions that have caused pollution with iron and manganese have promoted denitrification in the vadose zone and shallow groundwater beneath the site, effectively "cleaning up" the nitrate pollution due to sources upgradient of the site and preventing pollution from the discharge. If this is true and the reducing conditions are alleviated, the current nitrogen loading would likely cause severe nitrate pollution.

This Order includes a groundwater limitation that prohibits exceedance of a water quality objective. The proposed alfalfa and trees at the LAA will maximize nitrogen uptake and minimize the potential for nitrate to migrate to groundwater. However, the Discharger must implement greatly reduce the nitrogen concentration through either source control or treatment in order to ensure compliance with the groundwater limitation. Therefore, this Order requires that nitrogen be applied to the LAA at rates consistent with crop demand. A companion Cease and Desist Order includes a time schedule that requires the Discharger to complete the proposed improvements and implement additional treatment or control that will ensure compliance with the groundwater limitations of this Order.

61. This Order establishes both effluent and groundwater limitations for the facility that will ultimately ensure that the discharge will not affect beneficial uses and will not result in water quality less than that prescribed in state and regional policies, including water quality objectives set forth in the Basin Plan. For TDS, manganese, and iron, current groundwater monitoring data indicates that the discharge has caused (or contributed to) exceedance of a water quality objective. For nitrate, it is likely that pollution would occur if the reducing conditions that have caused pollution with iron and manganese were to be rectified. The Discharger has not implemented best practicable treatment or control and cannot immediately comply with:

a. The Basin Plan Water Quality Objectives;

b. Nitrogen and BOD loading rates that would stop the pollution; and

c. Wastewater application rates that would prevent excessive percolation of waste constituents to groundwater.

62. It is therefore appropriate for the Board to issue a companion Cease and Desist Order that will set forth an enforceable schedule to complete the proposed improvements and any other work needed to ensure that the discharge will not impact the beneficial uses of groundwater. However, the Board has the obligation to ensure that this compliance period will be as short as practicable. If TDS, manganese or iron concentrations in shallow groundwater remain elevated beyond their respective secondary MCLs after a reasonable period following the improvements required by the companion Cease and Desist Order, the Board will require the Discharger to take additional action to bring the discharge into compliance with the Basin Plan.

63. This Order imposes protective effluent and mass loading rate limitations and does not allow the discharge to cause exceedance of any water quality objective. The companion Cease and Desist Order contains a time schedule for the implementation of additional treatment or control to ensure that the highest water quality consistent with the maximum benefit to the people of the State will be achieved while minimizing any degradation that may occur pending completion of the required tasks. Following completion of the time schedule, this Order will be reopened if necessary to reconsider effluent limitations and other requirements to comply with Resolution 68-16.

Other Regulatory Considerations

64. In compliance with Water Code section 106.3, it is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This order promotes that policy by requiring discharges to meet maximum contaminant levels designed to protect human health and ensure that water is safe for domestic use.

65. Based on the threat and complexity of the discharge, the facility is determined to be classified as 2B as defined below:

a. Category 2 threat to water quality: “Those discharges of waste that could impair the designated beneficial uses of the receiving water, cause short-term violations of water quality objectives, cause secondary drinking water standards to be violated, or cause a nuisance.”

b. Category B complexity, defined as: “Any discharger not included [as Category A] that has physical, chemical, or biological treatment systems (except for septic systems with subsurface disposal) or any Class 2 or Class 3 waste management units.”

66. Title 27 of the California Code of Regulations (hereafter Title 27) contains regulatory requirements for the treatment, storage, processing, and disposal of solid waste. However, Title 27 exempts certain activities from its provisions. Discharges regulated by this Order are exempt from Title 27 pursuant to provisions that exempt domestic sewage, wastewater, and reuse. Title 27, section 20090 states in part:

> The following activities shall be exempt from the SWRCB-promulgated provisions of this subdivision, so long as the activity meets, and continues to meet, all preconditions listed:
>
> (b) Wastewater - Discharges of wastewater to land, including but not limited to evaporation ponds, percolation ponds, or subsurface leachfields if the following conditions are met:
>
> (1) the applicable RWQCB has issued WDRs, reclamation requirements, or waived such issuance;
>
> (2) the discharge is in compliance with the applicable water quality control plan; and
>
> (3) the wastewater does not need to be managed according to Chapter 11, Division 4.5, Title 22 of this code as a hazardous waste.

67. The discharge authorized herein, and the treatment and storage facilities associated with the discharge, are exempt from the requirements of Title 27. The current lined wastewater storage pond, future lined storm water pond and LAA are exempt pursuant to Title 27, section 20090(b) because they are discharges of wastewater to land and:

a. The Central Valley Water Board is issuing WDRs;

b. A companion Cease and Desist Order prescribes requirements that will ensure compliance with the Basin Plan; and

c. The wastewater discharged to the LAA does not need to be managed as hazardous waste.

68. The U.S. EPA published *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance* (hereafter "Unified Guidance") in 2009. As stated in the Unified Guidance, the document:

> …is tailored to the context of the RCRA groundwater monitoring regulations … [however, t]here are enough commonalities with other regulatory groundwater monitoring programs … to allow for more general use of the tests and methods in the Unified Guidance… Groundwater detection monitoring involves either a comparison between different monitoring stations … or a contrast between past and present data within a given station… The Unified Guidance also details methods to compare background data against measurements from regulatory compliance points … [as well as] techniques for comparing datasets against fixed numerical standards … [such as those] encountered in many regulatory programs.

The statistical data analysis methods in the Unified Guidance are appropriate for determining whether the discharge complies with Groundwater Limitations of this Order.

69. The State Water Board adopted Order 97-03-DWQ (NPDES General Permit CAS000001) specifying waste discharge requirements for discharges of storm water associated with industrial activities, and requiring submittal of a Notice of Intent by all affected industrial dischargers. The Discharger is required to obtain coverage under General Permit CAS000001 or submit a Notice of Non-Applicability to demonstrate that coverage is not required.

70. Water Code section 13267(b) states:

> In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of discharging, or who proposes to discharge within its region … shall furnish, under penalty of perjury, technical or monitoring program reports which the board requires. The burden, including costs of these reports, shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.

The technical reports required by this Order and the attached Monitoring and Reporting Program R5-2014-0056 are necessary to ensure compliance with these waste discharge requirements. The Discharger owns and operates the facility that discharges the waste subject to this Order.

71. The California Department of Water Resources sets standards for the construction and destruction of groundwater wells (hereafter DWR Well Standards), as described in *California Well Standards Bulletin 74-90* (June 1991) and *Water Well Standards: State of California Bulletin 94-81* (December 1981). These standards, and any more stringent standards adopted by the state or county pursuant to Water Code section 13801, apply to all monitoring wells used to monitor the impacts of wastewater storage or disposal governed by this Order.

72. The action to adopt waste discharge requirements for this existing facility, including the existing wastewater pond and LAA, is exempt from the provisions of the California Environmental Quality (CEQA), in accordance with the California Code of Regulations, title 14, section 15301.

73. Pursuant to Water Code section 13263(g), discharge is a privilege, not a right, and adoption of this Order does not create a vested right to continue the discharge.

Public Notice

74. All the above and the supplemental information and details in the attached Information Sheet, which is incorporated by reference herein, were considered in establishing the following conditions of discharge.

75. The Discharger and interested agencies and persons have been notified of the Central Valley Water Board's intent to prescribe waste discharge requirements for this discharge, and they have been provided an opportunity to submit written comments and an opportunity for a public hearing.

76. All comments pertaining to the discharge were heard and considered in a public hearing.

IT IS HEREBY ORDERED that pursuant to Water Code sections 13263 and 13267, Steve Gikas, California Nuggets, Inc. and Golden Gate Nut Company, their agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the Water Code and regulations adopted hereunder, shall comply with the following:

A. Discharge Prohibitions

1. Discharge of wastes to surface waters or surface water drainage courses is prohibited.

2. Discharge of waste classified as 'hazardous', as defined in the California Code of Regulations, title 23, section 2510 et seq., is prohibited.

3. Treatment system bypass of untreated or partially treated waste is prohibited, except as allowed by Standard Provision E.2 of the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements*.

4. Discharge of waste at a location different from that described in the Findings is prohibited.

5. Discharge of oil recycling wastewater to the process wastewater system is prohibited.

6. Discharge of ion exchange regeneration brine to the process wastewater system is prohibited.

7. Discharge of toxic substances into the process wastewater system or land application areas such that biological treatment mechanisms are disrupted is prohibited.

8. Application of residual solids to the land application areas is prohibited.

9. Discharge of domestic wastewater to the process wastewater system is prohibited.

10. Discharge of process wastewater to the domestic wastewater treatment system (septic system) is prohibited.

B. Flow Limitations

1. **Effectively immediately**, wastewater flows from the storage ponds to the LAA shall not exceed the following limits:

Flow Measurement	Flow Limit
Maximum Monthly Flow [1]	2.0 MG
Total Annual Flow [2]	16 MG

[1] As determined by the total flow for the calendar month.

[2] As determined by the total flow for the calendar year.

C. Effluent and Mass Loading Limitations

1. Effective **1 January 2015**, the wastewater applied to the LAA shall not exceed the following effluent limits:

Constituent	Units	Limit
FDS	mg/L	700 [1]

[1.] As a flow-weighted annual average.

2. Effective **1 January 2015**, the wastewater applied to the LAA shall not exceed the following mass loading limits:

Constituent	Units	Limit
BOD Mass Loading	lb/ac/day	100 [1]
Total Nitrogen Mass Loading	lb/ac/year	Crop Demand

[1.] This limit applies as an irrigation cycle average. For the purpose of this Order, "irrigation cycle" is defined as the time period between the start of an irrigation event for a single field and the start of the next irrigation event for the same field.

3. Compliance with the above requirements shall be determined as specified below:

   a. The mass of BOD applied to the LAA as an irrigation cycle average shall be calculated using the following formula:

$$M = \frac{8.345(CV)}{A(CT)}$$

Where:	M	=	mass of BOD applied to an LAA in lb/ac/day
	C	=	concentration of BOD in mg/L based on most recent monitoring result
	V	=	volume of wastewater applied to the LAA in millions of gallons during the irrigation cycle
	A	=	area of the LAA irrigated in acres
	CT	=	cycle time (i.e., irrigation cycle length) in days
	8.345	=	unit conversion factor

   b. The mass of total nitrogen applied to each LAA on an annual basis shall be calculated using the following formula and compared to published crop demand for the crops actually grown:

$$M = \sum_{i=1}^{12} \frac{(8.345(C_i V_i) + M_x)}{A}$$

Where:
M = mass of nitrogen applied to LAA in lb/ac/yr
C_i = Monthly average concentration of total nitrogen for month i in mg/L
V_i = volume of wastewater applied to the LAA during calendar month i in million gallons
A = area of the LAA irrigated in acres
i = the number of the month (e.g., January = 1, February = 2, etc.)
M_x = nitrogen mass from other sources (e.g., fertilizer and compost) in pounds
8.345 = unit conversion factor

   c. The average annual FDS concentration shall be calculated using the following formula:

$$C_a = \frac{\sum_{1}^{12}[(C_{Pi} \times V_{Pi})]}{\sum_{1}^{12}(V_{Pi})}$$

Where: C_a = Average annual FDS concentration in mg/L
$_i$ = the number of the month (e.g., January = 1, February = 2, etc.)
C_{Pi} = Monthly average process wastewater FDS concentration for calendar month *i* in mg/L
V_{Pi} = volume of process wastewater applied to LAA during calendar month *i* in million gallons

D. Discharge Specifications

1. No waste constituent shall be released, discharged, or placed where it will be released or discharged, in a concentration or in a mass that causes violation of the Groundwater Limitations of this Order.

2. The discharge shall not cause degradation of any water supply.

3. Wastewater treatment, storage, and disposal shall not cause pollution or a nuisance as defined by Water Code section 13050.

4. The discharge shall remain within the permitted waste treatment/containment structures and land application area at all times.

5. The Discharger shall operate all systems and equipment to optimize the quality of the discharge.

6. All conveyance, treatment, storage, and disposal systems shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.

7. Objectionable odors shall not be perceivable beyond the limits of the property where the waste is generated, treated, and/or discharged at an intensity that creates or threatens to create nuisance conditions.

8. As a means of discerning compliance with Discharge Specification D.7, the dissolved oxygen (DO) content in the upper one foot of any wastewater pond shall not be less than 1.0 mg/L for three consecutive weekly sampling events. If the DO in any single pond is below 1.0 mg/L for three consecutive sampling events, the Discharger shall report the findings to the Regional Water Board in writing within 10 days and shall include a specific plan to resolve the low DO results within 30 days.

9. The Discharger shall operate and maintain all ponds sufficiently to protect the integrity of containment dams and berms and prevent overtopping and/or structural failure. Unless a California-registered civil engineer certifies (based on design, construction, and conditions of operation and maintenance) that less freeboard is adequate, the operating freeboard in any pond shall never be less than two feet

(measured vertically from the lowest possible point of overflow). As a means of management and to discern compliance with this requirement, the Discharger shall install and maintain in each pond a permanent staff gauge with calibration marks that clearly show the water level at design capacity and enable determination of available operational freeboard.

10. Wastewater treatment, storage, and disposal ponds or structures shall have sufficient capacity to accommodate allowable wastewater flow, design seasonal precipitation, and ancillary inflow and infiltration during the winter while ensuring continuous compliance with all requirements of this Order. Design seasonal precipitation shall be based on total annual precipitation using a return period of 100 years, distributed monthly in accordance with historical rainfall patterns.

11. On or about **1 October** of each year, available capacity shall at least equal the volume necessary to comply with Discharge Specifications D.9 and D.10.

12. All ponds and open containment structures shall be managed to prevent breeding of mosquitoes. Specifically:

    a. An erosion control program shall be implemented to ensure that small coves and irregularities are not created around the perimeter of the water surface.

    b. Weeds shall be minimized through control of water depth, harvesting, or herbicides.

    c. Dead algae, vegetation, and debris shall not accumulate on the water surface.

    d. The Discharger shall consult and coordinate with the local Mosquito Abatement District to minimize the potential for mosquito breeding as needed to supplement the above measures.

13. Newly constructed or rehabilitated berms or levees (excluding internal berms that separate ponds or control the flow of water within a pond) shall be designed and constructed under the supervision of a California Registered Civil Engineer.

14. Wastewater contained in any unlined pond shall not have a pH less than 6.0 or greater than 9.0.

15. Storage of residual solids, including pomace and/or diatomaceous earth on areas not equipped with means to prevent storm water infiltration, or a paved leachate collection system is prohibited.

16. All ion exchange regeneration brine and oil recycling wastewater shall be separated from the wastewater system and disposed of at appropriately permitted off-site disposal facilities.

E. Groundwater Limitations

Release of waste constituents from any portion of the facility shall not cause groundwater to:

1. Contain constituents in concentrations that exceed either the Primary or Secondary MCLs established in Title 22 of the California Code of Regulations or background groundwater quality, whichever is greater.
2. Contain taste or odor-producing constituents, toxic substances, or any other constituents in concentrations that cause nuisance or adversely affect beneficial uses or background groundwater quality, whichever is greater.

F. Land Application Area Specifications

1. Tailwater runoff and spray of wastewater shall not be discharged outside of the LAA.

2. Crops shall be grown in the LAA, harvested as appropriate for the crop, and removed from the site after harvest.

3. Land application of wastewater shall be at rates consistent with actual crop water needs.

4. Land application of wastewater shall be managed to minimize erosion.

5. The LAA shall be managed to prevent breeding of mosquitoes. In particular:
   a. There shall be no standing water 48 hours after irrigation ceases;
   b. Tailwater ditches shall be maintained essentially free of emergent, marginal, and floating vegetation; and
   c. Low-pressure and unpressurized pipelines and ditches accessible to mosquitoes shall not be used to store recycled water.

6. The LAA shall be designed, maintained, and operated to comply with the following setback requirements:

Setback Definition	Minimum Irrigation Setback (feet)
Edge of LAA to property boundary	25 [1]
Edge of LAA to manmade or natural surface water drainage course	25
Edge of LAA to domestic water supply well	100

[1] Except as allowed by CDO R5-2014-0057.

7. Irrigation of the LAA shall occur only when appropriately trained personnel are on duty.

8. The LAA shall be inspected as frequently as necessary to ensure continuous compliance with the requirements of this Order.

9. Spray irrigation with wastewater is prohibited when wind speed (including gusts) exceeds 30 mph.

10. Sprinkler heads shall be designed, operated and maintained to create a minimum amount of mist.

11. Any irrigation runoff (tailwater) shall be confined to the LAA or returned to the pond and shall not enter any surface water drainage course or storm water drainage system.

12. Discharge of storm water runoff from the LAA to off-site land or surface water drainage courses is prohibited

G. Solids Disposal Specifications

Sludge, as used in this document, means the solid, semisolid, and liquid organic matter removed from wastewater treatment, settling, and storage vessels or ponds. Solid waste refers to solid inorganic matter removed by screens and soil sediments from washing of unprocessed fruit or vegetables. Except for waste solids originating from meat processing, residual solids means organic food processing byproducts such as culls, pulp, stems, leaves, and seeds that will not be subject to treatment prior to disposal or land application.

1. Sludge and solid waste shall be removed from screens, sumps, and ponds as needed to ensure optimal operation and adequate storage capacity.

2. Any handling and storage of sludge, solid waste, and residual solids shall be controlled and contained in a manner that minimizes leachate formation and precludes infiltration of waste constituents into soils in a mass or concentration that will violate the groundwater limitations of this Order.

3. If removed from the site, sludge, solid waste, and residual solids shall be disposed of in a manner approved by the Executive Officer and consistent with Title 27, division 2. Removal for reuse as animal feed, or land disposal at facilities (i.e., landfills, composting facilities, soil amendment sites) operated in accordance with valid waste discharge requirements issued by a Regional Water Board will satisfy this specification.

4. Any proposed change in solids use or disposal practice shall be reported in writing to the Executive Officer at least 90 days in advance of the change.

H. Provisions

1. The following reports shall be submitted pursuant to Water Code section 13267 and shall be prepared as described in Provision H.4:

   a. By **30 May 2014**, the Discharger shall submit either a Notice of Non-Applicability, an application for a No Exposure Certification, or a Notice of Intent to comply with State Board Water Quality Order No. 97-03-DWQ for discharges of storm water from the facility.

   b. By **30 December 2014**, the Discharger shall submit a *Background Groundwater Quality Study Report*. For each groundwater monitoring parameter/constituent identified in the MRP, the report shall present a summary of monitoring data and calculation of the concentration in background monitoring wells. Determination of background quality shall be made using appropriate statistical methods that have been selected based on site-specific information and the U.S. EPA Unified Guidance document cited in Finding No.69 of this Order. The report shall explain and justify the selection of the appropriate statistical methods.

   c. By **30 March 2015**, the Discharger shall submit a *Groundwater Limitations Compliance Assessment Plan*. The plan shall describe and justify the statistical methods used to evaluate compliance with the Groundwater Limitations of this Order for the specified compliance wells and constituents. Compliance shall be determined using appropriate statistical methods that have been selected based on site-specific information and the U.S. EPA Unified Guidance document cited in Finding No.69 of this Order. The report shall explain and justify the selection of the appropriate statistical methods.

2. **Effective after compliance with the groundwater limitations of this Order has been achieved**, if subsequent groundwater monitoring results show that the discharge of waste is causing groundwater to contain any waste constituents in concentrations statistically greater than the Groundwater Limitations of this Order, within 120 days of the request of the Executive Officer, the Discharger shall submit a BPTC Evaluation Workplan that sets forth the scope and schedule for a systematic and comprehensive technical evaluation of each component of the facility's waste treatment and disposal system to determine best practicable treatment and control for each waste constituent that exceeds a Groundwater Limitation. The workplan shall contain a preliminary evaluation of each component of the wastewater treatment facility and effluent disposal system and propose a time schedule for completing the comprehensive technical evaluation. The schedule to complete the evaluation shall be as short as practicable, and shall not exceed one year.

3. A discharger whose waste flow has been increasing, or is projected to increase, shall estimate when flows will reach hydraulic and treatment capacities of its treatment, collection, and disposal facilities. The projections shall be made in January, based on the last three years' average dry weather flows, peak wet weather flows and total

annual flows, as appropriate. When any projection shows that capacity of any part of the facilities may be exceeded in four years, the discharger shall notify the Central Valley Water Board by **31 January**.

4. In accordance with California Business and Professions Code sections 6735, 7835, and 7835.1, engineering and geologic evaluations and judgments shall be performed by or under the direction of registered professionals competent and proficient in the fields pertinent to the required activities. All technical reports specified herein that contain workplans for investigations and studies, that describe the conduct of investigations and studies, or that contain technical conclusions and recommendations concerning engineering and geology shall be prepared by or under the direction of appropriately qualified professional(s), even if not explicitly stated. Each technical report submitted by the Discharger shall bear the professional's signature and stamp, as appropriate.

5. The Discharger shall submit the technical reports and work plans required by this Order for consideration by the Executive Officer, and incorporate comments the Executive Officer may have in a timely manner, as appropriate. Unless expressly stated otherwise in this Order, the Discharger shall proceed with all work required by the foregoing provisions by the due dates specified.

6. The Discharger shall comply with Monitoring and Reporting Program R5-2014-0056, which is part of this Order, and any revisions thereto as ordered by the Executive Officer. The submittal dates of Discharger self-monitoring reports shall be no later than the submittal date specified in the MRP.

7. The Discharger shall comply with the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements", dated 1 March 1991, which are attached hereto and made part of this Order by reference. This attachment and its individual paragraphs are commonly referenced as "Standard Provision(s)."

8. The Discharger shall comply with all conditions of this Order, including timely submittal of technical and monitoring reports. On or before each report due date, the Discharger shall submit the specified document to the Central Valley Water Board or, if appropriate, a written report detailing compliance or noncompliance with the specific schedule date and task. If noncompliance is being reported, then the Discharger shall state the reasons for such noncompliance and provide an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Central Valley Water Board in writing when it returns to compliance with the time schedule. Violations may result in enforcement action, including Central Valley Water Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or rescission of this Order.

9. The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or

used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems that are installed by the Discharger when the operation is necessary to achieve compliance with the conditions of this Order.

10. The Discharger shall use the best practicable cost-effective control technique(s) including proper operation and maintenance, to comply with this Order.

11. As described in the Standard Provisions, the Discharger shall report promptly to the Central Valley Water Board any material change or proposed change in the character, location, or volume of the discharge.

12. The Discharger shall report to the Central Valley Water Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to section 313 of the "Emergency Planning and Community Right to Know Act of 1986."

13. The Discharger shall not allow pollutant-free wastewater to be discharged into the wastewater collection, treatment, and disposal systems in amounts that significantly diminish the system's capability to comply with this Order. Pollutant-free wastewater means rainfall, groundwater, cooling waters, and condensates that are essentially free of pollutants.

14. At least **90 days** prior to termination or expiration of any lease, contract, or agreement involving disposal or recycling areas or off-site reuse of effluent, used to justify the capacity authorized herein and assure compliance with this Order, the Discharger shall notify the Central Valley Water Board in writing of the situation and of what measures have been taken or are being taken to assure full compliance with this Order.

15. In the event of any change in control or ownership of the facility, the Discharger must notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Central Valley Water Board.

16. To assume operation as Discharger under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the state of incorporation if a corporation, the name and address and telephone number of the persons responsible for contact with the Central Valley Water Board, and a statement. The statement shall comply with the signatory paragraph of Standard Provision B.3 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the Water Code. If approved by the

Executive Officer, the transfer request will be submitted to the Central Valley Water Board for its consideration of transferring the ownership of this Order at one of its regularly scheduled meetings.

17. A copy of this Order including the MRP, Information Sheet, Attachments, and Standard Provisions, shall be kept at the discharge facility for reference by operating personnel. Key operating personnel shall be familiar with its contents.

18. The Central Valley Water Board will review this Order periodically and will revise requirements when necessary.

If, in the opinion of the Executive Officer, the Discharger fails to comply with the provisions of this Order, the Executive Officer may refer this matter to the Attorney General for judicial enforcement, may issue a complaint for administrative civil liability, or may take other enforcement actions. Failure to comply with this Order or with the WDRs may result in the assessment of Administrative Civil Liability of up to $10,000 per violation, per day, depending on the violation, pursuant to the Water Code, including sections 13268, 13350 and 13385. The Central Valley Water Board reserves its right to take any enforcement actions authorized by law.

Any person aggrieved by this action of the Central Valley Water Board may petition the State Water Board to review the action in accordance with Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date of this Order, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at:

http://www.waterboards.ca.gov/public_notices/petitions/water_quality

or will be provided upon request.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify that the foregoing is a full true, and correct copy of an Order adopted by the California Regional Water Quality Control Board on 28 March 2014.

Original signed by

PAMELA C. CREEDON, Executive Officer

LF

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM R5-2014-0056

FOR
STEVE GIKAS
CALIFORNIA NUGGETS, INC. AND GOLDEN GATE NUT COMPANY
SAN JOAQUIN COUNTY

This monitoring and reporting program (MRP) incorporates requirements for monitoring of the process wastewater, wastewater ponds, land application areas, solid waste, and groundwater. 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 wastewater samples should 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. Process wastewater flow monitoring shall be conducted continuously using a flow meter and shall be reported in cumulative gallons per day.

Field test instruments (such as pH and dissolved oxygen) may be used provided that:

1. The operator is trained in the proper use of the instrument;
2. The instruments are field calibrated prior to each use;
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.

INFLUENT FLOW MONITORING

The Discharger shall monitor wastewater flows from the processing facility to the wastewater storage pond. Influent monitoring for the process wastewater system shall include at least the following:

Constituents	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Flow	gallons	Continuous	Daily[1]	Monthly

[1] Continuous monitoring requires daily meter reading or automated data collection.

WASTEWATER POND MONITORING

Samples shall be collected from an established sampling station located in an area that will provide representative samples of the water in each wastewater storage pond. Freeboard shall be measured vertically from the surface of the pond water to the lowest elevation of the surrounding berm and shall be measured to the nearest 0.1 foot. Monitoring of the ponds shall include, at a minimum, the following:

Constituent	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Dissolved Oxygen[1]	mg/L	Grab	Weekly	Monthly
Freeboard	feet (±0.1)	Measurement	Weekly	Monthly
pH	pH Units	Grab	Weekly	Monthly
Odors	--	Observation	Weekly	Monthly

[1] Samples shall be collected at a depth of one foot, opposite the inlet.

EFFLUENT MONITORING

The Discharger shall collect effluent samples from the irrigation system pipeline that will be representative of the water applied to the LAA. Effluent monitoring shall include, at a minimum, the following:

Constituent	Units	Type of Sample	Sampling Frequency	Reporting Frequency
BOD_5[1]	mg/L	Grab	Weekly	Monthly
Nitrate Nitrogen	mg/L	Grab	Weekly	Monthly
Total Kjeldahl Nitrogen	mg/L	Grab	Weekly	Monthly
Ammonia Nitrogen	mg/L	Grab	Weekly	Monthly
Total Dissolved Solids	mg/L	Grab	Weekly	Monthly
Fixed Dissolved Solids	mg/L	Grab	Weekly	Monthly
Standard Minerals[2, 3]	mg/L	Grab	Monthly	Monthly

[1] 5-day biochemical oxygen demand.
[2] Standard Minerals shall include at least the following compounds: boron, calcium, iron, magnesium, manganese, potassium, sodium, chloride, sulfate, total alkalinity (including alkalinity series), and hardness.
[3] Samples for metals shall be filtered prior to preservation using a 0.45µ filter.

LAND APPLICATION AREA MONITORING

The Discharger shall monitor the wastewater discharged to the land application area. Monitoring shall be conducted **daily during operation** of the irrigation system and the results shall be included in the monthly monitoring report. Evidence of erosion, field saturation, runoff, or the presence of nuisance conditions shall be noted in the report. Loading rates for the land application area shall be calculated. Monitoring of the land application area shall include the following:

Constituent	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Wastewater Flow[1]	Gallons	Continuous[1]	Daily	Monthly
Supplemental Irrigation Flow[2]	Gallons	Continuous[1]	Daily	Monthly
Acreage Applied[3]	Acres	Calculated	Daily	Monthly

Constituent	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Water Application Rate	Inches/day	Calculated	Daily	Monthly
BOD Loading Rate	lbs/acre•day	Calculated	Daily	Monthly
Total Nitrogen Loading Rate[4]	lbs/acre•month[5]	Calculated	Monthly	Monthly

[1] Continuous monitoring requires daily meter reading or automated data collection and shall define the volume of wastewater discharged to the land application areas from the wastewater storage pond.
[2] If any other sources of irrigation water are used.
[3] Land Application Area(s) in use shall be identified by name or number and the acreage provided. If a portion of an area is used, then the acreage shall be estimated.
[4] Total nitrogen applied from all sources, including fertilizers and supplemental irrigation water if used.
[5] Report monthly total and cumulative annual to date.

At least **once per week** when wastewater is being applied to the land application area, the entire application area shall be inspected to identify any equipment malfunction or other circumstance that might allow irrigation runoff to leave the area and/or create ponding conditions. A log of the inspections shall be kept at the facility and be submitted with the monthly monitoring reports. If wastewater was not applied to the land application area, then the monthly monitoring reports shall so state.

SOLIDS MONITORING

The Discharger shall record and report monthly the quantity, disposal location, and method of disposal of solids disposed of during the processing season, as well as during the off-season, if applicable. If solid waste is shipped offsite, then an estimated amount and location of disposal shall be reported in the monthly report and the hauler identified.

APPLICABILITY OF GROUNDWATER LIMITATIONS

Prior to construction and/or sampling of any groundwater monitoring wells, the Discharger shall submit plans and specifications for approval. Once installed, all new wells shall be added to the compliance monitoring network. The following table lists all existing monitoring wells and designates the purpose of each well:

MW-1[1] MW-2[2] MW-3[2] MW-4[2]

[1] Background well not used for compliance monitoring.
[2] Compliance well.

The Groundwater Limitations set forth in Section E of the WDRs shall apply to the specific compliance monitoring wells MW-2, MW-3 and MW-4.

GROUNDWATER MONITORING

Prior to sampling, depth to groundwater measurements shall be measured in each monitoring well to the nearest 0.01 feet. Groundwater elevations shall then be calculated to determine groundwater gradient and flow direction.

Low or no-purge sampling methods are acceptable, if described in an approved Sampling and Analysis Plan. Groundwater monitoring for all monitoring wells shall include, at a minimum, the following:

Constituent	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Depth to Groundwater	±0.01 feet	Measurement	Quarterly	Quarterly
Groundwater Elevation[1]	±0.01 feet	Calculated	Quarterly	Quarterly
Gradient	feet/feet	Calculated	Quarterly	Quarterly
Gradient Direction	Degrees	Calculated	Quarterly	Quarterly
pH	pH units	Grab	Quarterly	Quarterly
Nitrate Nitrogen	mg/L	Grab	Quarterly	Quarterly
Ammonia Nitrogen	mg/L	Grab	Quarterly	Quarterly
Total Dissolved Solids	mg/L	Grab	Quarterly	Quarterly
Fixed Dissolved Solids	mg/L	Grab	Quarterly	Quarterly
Standard Minerals[2,3]	mg/L	Grab	Quarterly	Quarterly

[1] Groundwater elevation shall be determined based on depth-to-water measurements from a surveyed measuring point elevation on the well.

[2] Standard Minerals shall include at least the following compounds: arsenic, boron, calcium, iron, magnesium, manganese, potassium, sodium, chloride, sulfate, total alkalinity (including alkalinity series), and hardness.

[3] Samples shall be filtered prior to preservation using a 0.45µ filter.

REPORTING

In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the date, sample type (e.g., influent monitoring, groundwater monitoring well, 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 in the next scheduled monitoring report.

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 Regional Board by the **1st day of the second month** following the end of the reporting period (i.e. the January monthly report is due by 1 March). The monthly reports shall include the following:

1. Results of influent flow, wastewater storage pond, effluent, land application area, and solids monitoring;
2. Average BOD loading for each irrigation cycle completed during the month;
3. The total pounds of nitrogen (year to date, from all sources including fertilizer) applied to the land application area as calculated from the sum of monthly loadings;
4. The crop grown on the LAA, date planted, and date harvested.
5. A comparison of monitoring data to the discharge specifications and an explanation of any violation of those requirements. Data shall be presented in tabular format;
6. If requested by staff, copies of laboratory analytical report(s); and
7. A calibration log verifying calibration of all hand held monitoring instruments and devices used to comply with the prescribed monitoring program.

B. Quarterly Monitoring Reports

The Discharger shall establish a quarterly sampling schedule for groundwater monitoring such that samples are obtained approximately every three months. Quarterly monitoring reports shall be submitted to the Regional Board by the **1st day of the second month after the quarter** (i.e. the January-March quarter is due by May 1st) each year. The Quarterly Report shall include the following:

1. Results of groundwater monitoring;
2. A narrative description of all preparatory, monitoring, sampling, and analytical testing activities for groundwater monitoring. The narrative shall be sufficiently detailed to verify compliance with the WDRs, this MRP, and the Standard Provisions and Reporting Requirements. The narrative shall be supported by field logs for each well documenting depth to groundwater; parameters measured before, during, and after purging; method of purging; calculation of casing volume; and total volume of water purged;
3. Calculation of groundwater elevations, an assessment of groundwater flow direction and gradient on the date of measurement;
4. Summary data tables of historical and current water table elevations and analytical results;

5. A scaled map showing relevant structures and features of the facility, the locations of monitoring wells and any other sampling stations, and groundwater elevation contours referenced to mean sea level datum; and

6. Copies of laboratory analytical report(s) for groundwater monitoring.

C. Annual Report

An annual report shall be prepared as the December monthly monitoring report. The Annual Report shall be submitted to the Regional Board by **1 February** each year. In addition to the data normally presented in a monthly monitoring report, the Annual Report shall include the following:

1. The maximum monthly effluent flow to the LAA for the year, total annual effluent flow to the LAA for the year; and a comparison of these results to the flow limitations of this Order;

2. Tabular and graphical summaries of monthly total loading rates for wastewater used for irrigation (hydraulic loading to the LAA in gallons and inches), total nitrogen loading, and BOD cycle average loading;

3. Comparison of total nitrogen loading to the LAA with published crop demand values for the crops that were grown;

4. Calculation of the flow-weighted annual average FDS concentration of the wastewater;

5. An evaluation of the effectiveness of the past year's wastewater application operation in terms of odor control and groundwater protection, including consideration of application management practices (i.e.: waste constituent and hydraulic loadings, application cycles, drying times, and cropping practices), and groundwater monitoring data;

6. A digital database (Microsoft Excel) containing historic groundwater and effluent data;

7. Concentration vs. time graphs for each monitored constituent using all historic groundwater monitoring data. Each graph shall show the background groundwater concentration range and the Groundwater Limitation as horizontal lines at the applicable concentration;

8. An evaluation of the groundwater quality beneath the site and determination of Compliance with Groundwater Limitations E.1 and E.2 of the WDRs based on statistical analysis for each constituent monitored for each compliance well. Include all calculations and data input/analysis tables derived from use of statistical software as applicable;

9. A discussion of compliance and the corrective actions taken, as well as any planned or proposed actions needed to bring the discharge into full compliance with the waste discharge requirements.

10. A discussion of the following:

    a. Waste constituent reduction efforts implemented in accordance with any required workplan;

    b. Other treatment or control measures implemented during the calendar year either voluntarily or pursuant to the WDRs, this MRP, or any other Order; and

    c. Based on monitoring data, an evaluation of the effectiveness of the treatment or control measures implemented to date.

11. A discussion of any data gaps and potential deficiencies/redundancies in the monitoring system or reporting program;

12. The locations for off-site disposal of oil recycling wastewater, ion exchange regeneration brine, and any other wastewater;

13. A summary of the quantity of residual solid waste generated and disposed of; and

14. Estimated flows for the next calendar year.

A transmittal letter shall accompany each self-monitoring report. The letter shall include a discussion of all violations of the WDRs or this MRP during the reporting period and actions taken or planned for correcting each violation. If the Discharger has previously submitted a report describing corrective actions taken and/or a time schedule for implementing the corrective actions, reference to the previous correspondence will be satisfactory. Pursuant to Section B.3 of the Standard Provisions and General Reporting Requirements, the transmittal letter shall contain a statement by the Discharger or the Discharger' authorized agent certifying under penalty of perjury that the report is true, accurate and complete to the best of the signer's knowledge.

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

Ordered by: Original signed by

PAMELA C. CREEDON, Executive Officer

28 March 2014
(Date)

LF: 2/18/14

INFORMATION SHEET

WASTE DISCHARGE REQUIREMENTS ORDER R5-2014-0056
STEVE GIKAS
CALIFORNIA NUGGETS, INC. AND
GOLDEN GATE NUT COMPANY
SAN JOAQUIN COUNTY

Background

California Nuggets, Inc. and Golden Gate Nut Company are located at 23073 South Fredrick Road in Ripon, as shown on Attachment A. California Nuggets, Inc. processes approximately 1,700 tons of corn nuts and Golden Gate Nut Company processes between 750 and 1,500 tons of almonds per year. Steve Gikas (hereafter "Discharger") owns and operates the facilities that generate the waste and the land discharge areas and is responsible for compliance with these Waste Discharge Requirements (WDRs).

The facilities are in operation and have been discharging wastewater to land without regulation under WDRs since approximately 2002. The Discharger submitted a Report of Waste Discharge (RWD) on 27 July 2005. However, the July 2005 RWD did not contain enough information to develop WDRs. Cleanup and Abatement Order (CAO) R5-2007-0715 was issued by the Executive Officer on 14 June 2007 to compel the Discharger to make improvements to the wastewater management system to better protect groundwater quality and provide sufficient information to complete the RWD. The CAO required installation of flow monitoring equipment, submittal of an interim cropping plan by August 2007, submittal of additional waste characterization information by September 2008, and submittal of a RWD Addendum by December 2008. The CAO included a Monitoring and Reporting Program.

The cropping plan, wastewater characterization report and RWD Addendum were not submitted until after Central Valley Water Board staff issued a Notice of Violation in August 2012. The wastewater characterization report was received on 19 November 2012 and the cropping plan was received on 1 March 2013.

The Discharger summited a RWD Addendum on 7 March 2013, but the RWD was still incomplete. On 19 August 2013, the Executive Officer issued an Order for Technical Reports pursuant to Water Code section 13267 Order (the 13267 Order). On 16 September 2013, the Discharger submitted a partial response to the13267 Order and requested a 30-day extension of time to submit the information that was not provided. A revised 13267 Order was issued on 26 September 2013. The Discharger submitted another RWD addendum on 16 October 2013 to comply with the revised 13267 Order, but did not provide all of the required information.

Existing Facility and Discharge

An on-site water supply well provides process water to the facility. The water is softened using ion-exchange treatment prior to use. The ion exchange brine is separated from the wastewater stream and transported off-site for disposal.

Wastewater is generated in food processing activities. The major processes include the following:

a. Corn processing occurs year round. Dried corn kernels are soaked in a lime solution to remove skins, steeped in a citric acid solution and then rinsed before being fried in canola or safflower oil and seasoned.

b. Almonds are processed seasonally during harvest. The almonds are blanched in hot water to remove their skins. The almonds are then cooked and/or seasoned.

c. Caustic and acid rinses of the processing equipment are performed approximately every two weeks for sanitation purposes. The waste acid and base solutions are discharged to the wastewater system.

The Discharger also owns HP Commodities, Inc. which recycles used cooking oil from various sources. In 2012 and the first half of 2013, an unknown portion of the wastewater separated from used oil in the refining process was discharged to the treatment and disposal system. The rest was reportedly taken off-site for disposal.

Nut processing rinse water, spent lime solution, blanching water, brine, boiler blowdown, and wastewater from equipment sanitation are collected in floor drains. The wastewater is screened and passed through a solids separator and an oil/water separator before being directed into a lined wastewater storage pond. Rudimentary standpipe aerators are used to circulate and aerate the wastewater. Effluent from the storage pond is filtered prior to being discharged to a 5.2-acre land application area by spray irrigation.

The wastewater typically has high concentrations of biochemical oxygen demand (BOD), nitrogen, and salinity. The RWD states that the pH of wastewater generally varies between 4.5 and 5.5 standard units. Based on the water balance in the RWD, the agronomic water demand for alfalfa is 10.8 MG per year, which is much less than the annual wastewater volumes of 21.1, 27.7 and 16.2 MG in the years of 2010, 2011, and 2012, respectively. The recent years' water application rates greatly exceed the water needs of any row, pasture, or fodder crops grown in the Central Valley. Over application of wastewater has also caused gross nitrogen overloading; prolonged soil saturation with high-BOD wastewater (anaerobic conditions); and forced percolation of the excess nitrogen, salts, dissolved organic matter, and metals to shallow groundwater

The discharge has caused TDS, dissolved manganese and iron in shallow groundwater to exceed the water quality objectives. Background shallow groundwater is polluted with nitrate due to irrigated agriculture. Although nitrate pollution is not evident in the downgradient wells today, ammonia nitrogen concentrations in some downgradient wells greatly exceed the taste and odor threshold of 1.5 mg/L and may contribute to the local nitrate pollution farther downgradient of the site.

This Order establishes both effluent and groundwater limitations for the facility that will ultimately ensure that the discharge will not affect beneficial uses and will not result in water quality less than that prescribed in state and regional policies, including water quality objectives set forth in the Basin Plan. For TDS, manganese, and iron, current groundwater monitoring data indicate that the discharge has caused (or contributed to) exceedance of water quality objectives. For nitrate, it is likely that pollution would occur if the reducing conditions that have caused pollution with iron and manganese were to be rectified. The Discharger has not implemented best practicable treatment or control and cannot immediately comply with:

a. The Basin Plan Water Quality Objectives;
b. Nitrogen and BOD loading rates that would stop the pollution; and
c. Wastewater application rates that would prevent excessive percolation of waste constituents to groundwater.

It is therefore appropriate for the Board to issue a companion Cease and Desist Order that will set forth an enforceable schedule to complete the proposed improvements and any other work needed to ensure that the discharge will not impact the beneficial uses of groundwater.

Changes in the Facility and Discharge

Based on the 16 October 2013 RWD Addendum and a 24 October 2013 site inspection, the Discharger has implemented the following actions to reduce the threat to water quality:

a. The Discharger ceased the discharge of high strength oil recycling wastewater to the LAA. This wastewater is now hauled off-site for disposal.

b. In October 2013, the Discharger planted Sudan grass on the LAA.

c. The Discharger has installed fountain-type sprinkler nozzles on the LAA in order to enhance evaporation.

Based on the 16 October 2013 RWD Addendum, the Discharger proposes to complete the following to bring the discharge into compliance with the Basin Plan:

a. Alfalfa will be planted in the LAA to maximize nutrient and water uptake.

b. The Discharger will plant salt cedar trees around the LAA perimeter to improve water and salt uptake.

c. The Discharger will line the existing storm water pond for use as additional wastewater storage. Based on the Discharger's comments on the tentative WDRs, this pond will only be lined if it will be used to treat or store wastewater.

d. The Discharger will evaluate the condition of the existing wastewater pond liner and will repair or replace the liner system.

e. The Discharger will evaluate and implement treatment and/or control alternatives for the facility.

Based on an RWD Addendum submitted on 19 February 2014, the following additional changes have occurred since the Discharger submitted its 16 October 2013 RWD Addendum:

a. The Discharger planted 36 salt cedar trees around the parameter of the LAA in November 2013.

b. Beginning in January 2014, some of the corn processing wastewater is sent to an above-ground tank. The corn slurry that settles in the tank is hauled off-site for use as livestock food. Some of the remaining corn processing wastewater is hauled off-site for disposal. However, the Discharger has not provided flow or wastewater analytical data that reflect the current discharge to the pond.

c. The Discharger has implemented improvements that allow it to recycle one-third of the corn processing wastewater internally within the facility.

Discharge Prohibitions, Specifications and Provisions

Effectively immediately, wastewater flows from the storage ponds to the LAA shall not exceed the following limits:

Flow Measurement	Flow Limit
Maximum Monthly Flow [1]	2.0 MG
Total Annual Flow [2]	16 MG

[1] As determined by the total flow for the calendar month.
[2] As determined by the total flow for the calendar year.

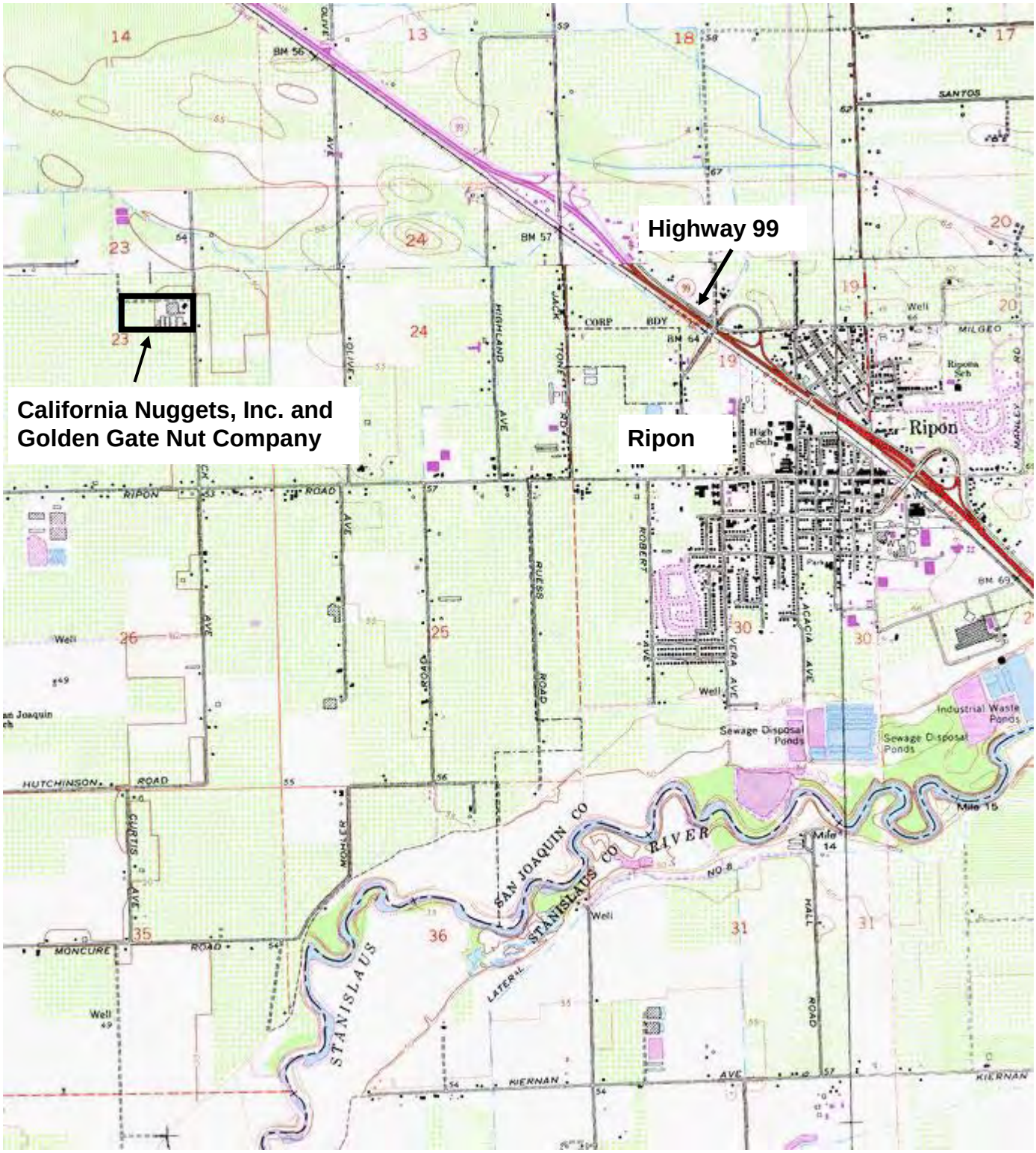
This Order includes effluent limitations for FDS and mass loading limitations for BOD, and total nitrogen. This Order also prescribes groundwater limitations that implement water quality objectives for groundwater from the Basin Plan.

This Order requires the Discharger submit either a Notice of Non-Applicability, an application for a No Exposure Certification, or a Notice of Intent to comply with State Board Water Quality Order 97-03-DWQ for discharges of storm water from the facility.

The Provisions require submittal of the following technical reports: *Background Groundwater Quality Study Report* and *Groundwater Limitations Compliance Assessment Plan*.

The Monitoring and Reporting Program is designed to verify compliance with effluent limitations, groundwater limitations, and operational requirements of the WDRs.

LF: 2/21/14

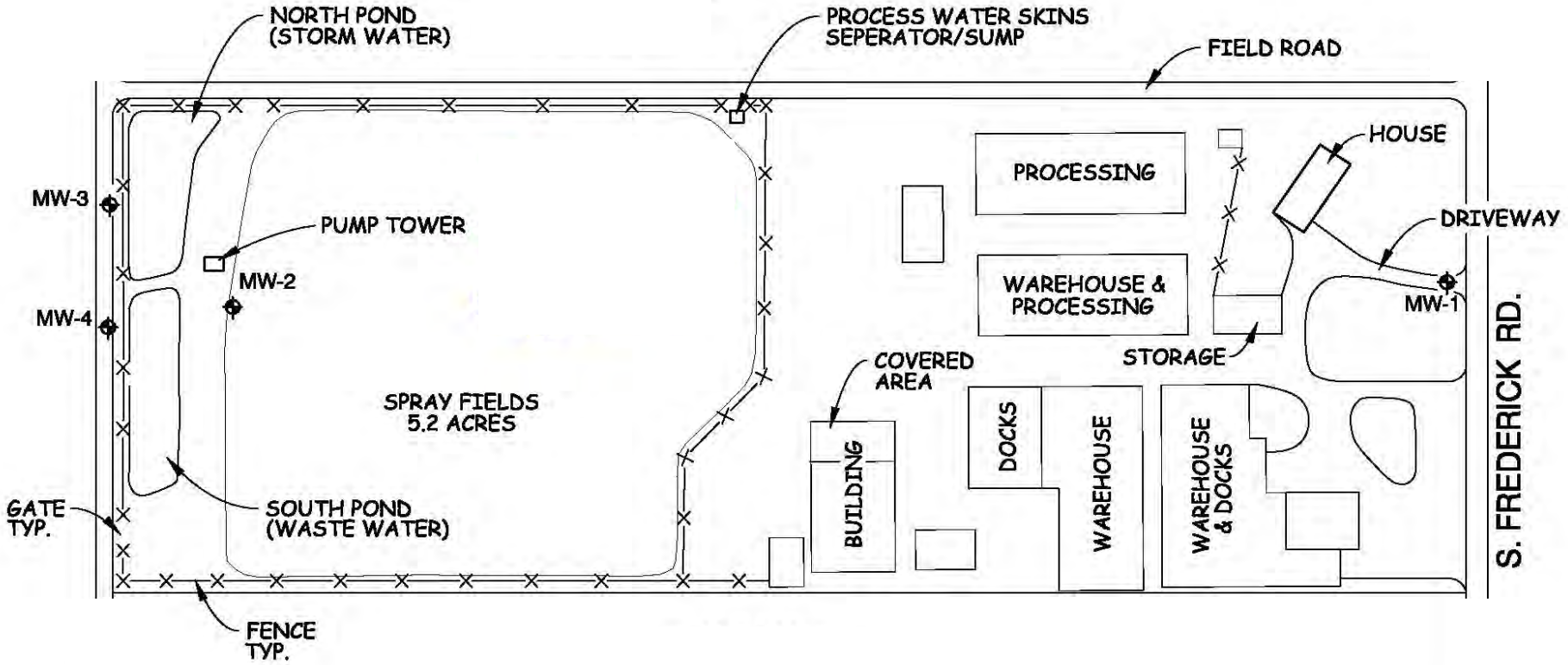


Drawing Reference: USGS 7.5' Quadrangle Ripon, CA

SITE LOCATION MAP
STEVE GIKAS
CALIFORNIA NUGGETS, INC. AND GOLDEN GATE NUT COMPANY
SAN JOAQUIN COUNTY

N
W E
S

Approx. Scale: 1" = 2,600'



Legend

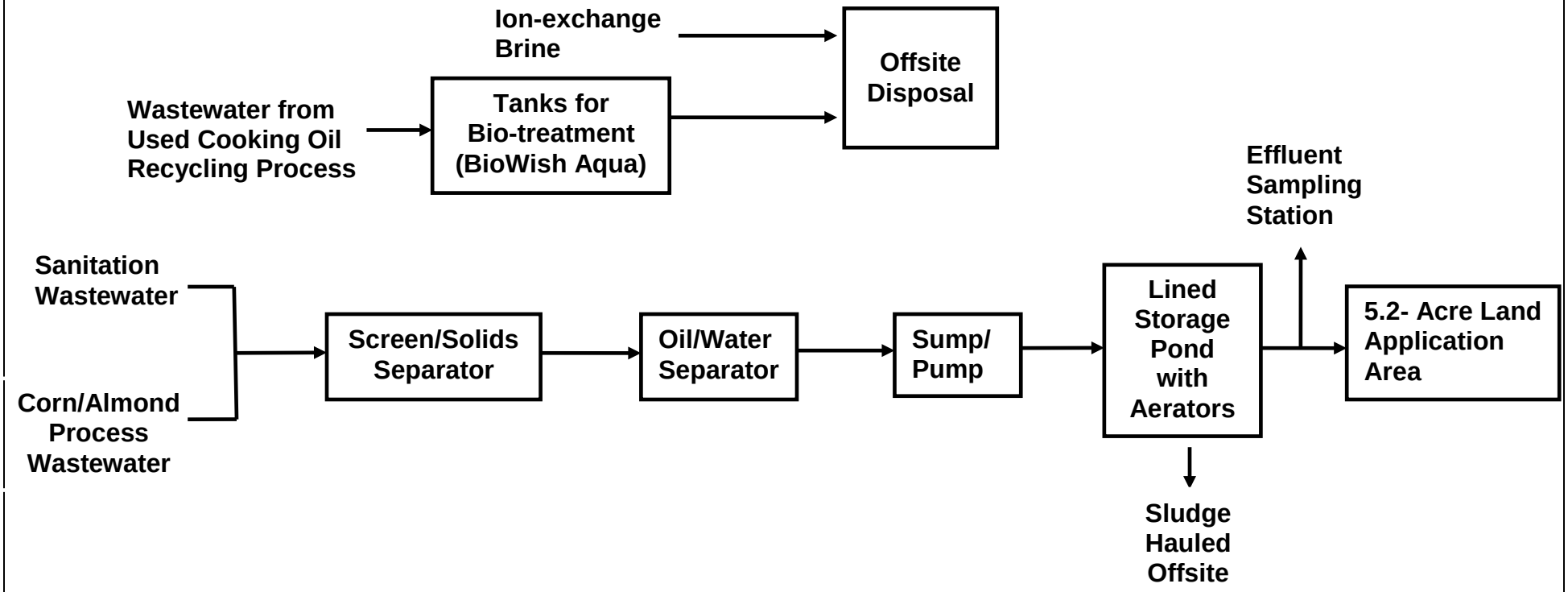
MW-1 MONITORING WELL

N

160′ 0′ 160

1′ = 160′ -0′

Drawing Reference: Revised RWD, February 2013	**SITE PLAN** STEVE GIKAS CALIFORNIA NUGGETS, INC. AND GOLDEN GATE NUT COMPANY SAN JOAQUIN COUNTY	



Drawing Reference: Revised RWD, February 2013	**PROCESS SCHEMATIC** STEVE GIKAS CALIFORNIA NUGGETS, INC. AND GOLDEN GATE NUT COMPANY SAN JOAQUIN COUNTY	