SAMPLING AND ANALYSIS PLAN

This plan needs to be certified by a certified nutrient management specialist, maintained as part of the NMP, and included in the list of items completed in the July 1, 2008 Statement of Completion. The plan must be made available to Central Valley Water Board staff during their inspections of the dairy and submitted to the Executive Officer when requested by the Executive Officer.

SOLID MANURE SAMPLING AND ANALYSIS PLAN				
Minimum Sampling Frequency	**Sampling Method**	**Source Description (pond, corral, separator, or settling basin solids, or other)**	**Minimum Analyses**	
			Field	**Laboratory**
Each application to each land application area			Total volume (cubic yards) applied and density (pounds per cubic foot) **OR** Total weight (tons) applied and percent moisture	Density (when volume applied is reported) OR Percent Moisture (when weight applied is reported)
Once within 12 months				General minerals, including: calcium, magnesium, sodium, bicarbonate, carbonate, sulfate, and chloride
Twice per year				Total nitrogen, total phosphorus, potassium, and density (when volume manure applied is reported) OR percent moisture (when weight manure applied is reported)
Each offsite export of manure			Total volume (cubic yards) OR Total weight (tons) exported	Density (grams per liter) when volume manure exported is reported OR Percent moisture when weight of manure exported is reported
Annually			Total dry weight (tons) manure applied annually to each land application area, and total dry weight (tons) manure exported offsite annually	

PROCESS WASTEWATER (LIQUID MANURE) SAMPLING AND ANALYSIS PLAN				
Minimum Sampling Frequency	**Sampling Method**	**Source Description (pond identification)**	**Minimum Analyses**	
			Field	**Laboratory**
Each application			Date applied and volume (gallons or acre-inches) applied	None
Quarterly during one application event			Electrical conductivity	Nitrate-nitrogen (only when pond is aerated), ammonium-nitrogen, total Kjeldahl nitrogen, total phosphorus, and potassium
Once within 12 months and annually for two years after groundwater monitoring wells are required			None	General minerals, including: calcium, magnesium, sodium, bicarbonate, carbonate, sulfate, and chloride

SOIL SAMPLING AND ANALYSIS PLAN				
Minimum Sampling Frequency	**Sampling Method**	**Source Description (soil sampling locations)**	**Minimum Analyses**	
			Field	**Laboratory**
Once in summer of 2008 and then once every five years from each land application area			None	Total phosphorus
Recommended: Spring pre-plant for each crop				0 to 1 foot: Nitrate-nitrogen and organic matter 1 to 2 foot: Nitrate-nitrogen

Recommended: Fall pre-plant for each crop			None	0 to 1 foot: Electrical conductivity, nitrate-nitrogen, soluble phosphorus, potassium, organic matter 1 to 2: Nitrate- nitrogen 2 to 3 foot: Nitrate-nitrogen

PLANT TISSUE SAMPLING AND ANALYSIS PLAN				
Minimum Sampling Frequency	**Sampling Method**	**Source Description (land application area)**	**Minimum Analyses**	
			Field	**Laboratory**
At each harvest from each land application area			Total weight (tons) OR Total volume (cubic yards) harvested material removed from each land application area	Percent wet weight when weight of harvested material removed is reported OR Density (grams per liter) when volume of harvested material removed is reported Total nitrogen, phosphorus, and potassium, expressed on a dry weight basis
Mid-season, if necessary to assess need for additional nitrogen during the growing season (only if Discharger wants to add fertilizer in excess of 1.4 times the nitrogen expected to be removed by the harvested portion of the crop)				Total nitrogen, expressed on a dry weight basis

IRRIGATION WATER SAMPLING AND ANALYSIS PLAN[1]				
Minimum Sampling Frequency	**Sampling Method**	**Source Description (well or canal identification)**	**Minimum Analyses**	
			Field	**Laboratory**

[1] Irrigation water from each well source and canal that is used on all land application areas are to be monitored.

Each irrigation event for each land application area			Volume (gallons or acre-inches)[2] applied and date applied	
One irrigation event during each irrigation season during actual irrigation events – for each irrigation water source (well and canal)				Electrical conductivity and total nitrogen[3] Data collected to satisfy the groundwater monitoring requirements will satisfy this requirement for irrigation wells

[2] Initial volume measurements may be the total volume for all land application areas. Actual volume measurements for each irrigation source for each land application area are to be recorded no later than July 1, 2011.

[3] In lieu of sampling the irrigation water, the Discharger may provide equivalent data from the local irrigation district.