CALIFORNIA ENVIRONMENTAL
PROTECTION AGENCY

OPERATION AND MAINTENANCE PLAN

Dairy Name: _____

Dairy Address: _____

Plan Preparation Date: _____

Plan Update Date (if applicable): _____

3/4/08

OPERATIONAL PLAN CHECKLIST

THE FOLLOWING OPERATIONAL PROCEDURES AND PRACTICES ARE UTILIZED ON THE _____ DAIRY.

Indicate those characteristics or activities in each production area category that you are using in the operation of the manure management system on your dairy farm. Check all that apply.

MILKING PARLOR
Standard Operating Procedures
- ☐ Automatic parlor wash
- ☐ Manual parlor wash (red barn hose)

- ☐ Other _____

ANIMAL HOUSING
Standard Operating Procedures
- ☐ Freestall housing <u>without</u> exercise pens
- ☐ Freestall housing with exercise pens (see corral management section)
- ☐ Corrals with shade structures
- ☐ Corrals without shade structures
- ☐ Corrals unused during rainy months
- ☐ Corrals used during periods of dry weather

- ☐ Other:_____

MANURE STORAGE
Standard Operating Procedures
- ☐ Solid manure is stored covered outside of corrals until spread
- ☐ Solid manure is stored uncovered outside of corrals until spread
- ☐
- ☐ Solid manure is immediately spread upon removal from corrals
- ☐ Manure bedding piles are covered
- ☐ Manure bedding piles are not covered
- ☐ Liquid manure is stored in waste storage ponds
- ☐ Liquid manure is stored in specifically designed anaerobic lagoons
- ☐ Liquid manure is stored in specifically designed aerobic lagoons
- ☐ Lagoon or pond has a system of agitation for use during unloading
- ☐ Lagoon or storage ponds have mechanical agitators (circulators) on all or some of the ponds
- ☐ Ponds are managed in a sequential manner
- ☐ Mechanical solids separation is used
- ☐ Mechanical agitation is used
- ☐ Hydraulic agitation is used

Operational Plan Checklist

- ☐ No agitation system
- ☐ Settling basins are used
- ☐ Weeping walls are used
- ☐ Mechanical sand separation is used
- ☐ Gravity sand separation is used
- ☐ Lagoon or pond is covered with a non-permeable cover including a gas capture system
- ☐ Lagoon or pond has a non-permeable cover without a gas capture system
- ☐ Lagoon or pond has a semi-permeable cover
- ☐ Lagoon or pond has a bio-cover
- ☐ Lagoon or pond has a natural or artificial crust by operational design
- ☐ Lagoon or pond has a method of measuring freeboard
- ☐ Lagoon or pond sludge accumulation is monitored

- ☐ Other_____

FEED STORAGE AREA
Standard Operating Procedures:

- ☐ Concentrate feedstuffs and feed commodities are stored in barns
- ☐ Concentrate feedstuffs and feed commodities are stored on cement/asphalt
- ☐ Concentrate feedstuffs and feed commodities are stored on earthen ground
- ☐ Concentrate feedstuffs and feed commodities are covered
- ☐ Concentrate feedstuffs and feed commodities are not covered
- ☐ Silage piles are covered
- ☐ Silage piles are uncovered
- ☐ Silage is bagged
- ☐ Liquids, including rain runoff are collected and conveyed to the liquid storage system
- ☐ Liquids, including rain runoff are collected in a centralized point and pumped to the liquid storage system
- ☐ Berms, ditches, or other methods are used to divert run-on or clean run-off
- ☐ Berms, ditches, or other methods are used to direct contaminated run-off to collection point or to a conveyance to the liquid storage system
- ☐ Non-manure commodities used for bedding are stored in barns
- ☐ Non-manure commodities used for bedding are stored in/on cement/asphalt
- ☐ Non-manure commodities used for bedding are stored in/on earthen ground
- ☐ Non-manure commodities used for bedding are covered
- ☐ Non-manure commodities used for bedding are uncovered

- ☐ Other_____

LAND APPLICATION AREAS
Standard Operating Procedures

- ☐ Liquid manure is applied blended with irrigation water
- ☐ Liquid manure is applied full strength
- ☐ Flood irrigation
- ☐ Sprinkler irrigation line
- ☐ Big gun irrigation

Operational Plan Checklist

- ☐ Liquid manure is applied with trucks or trailers
- ☐ Liquid manure is applied with center pivot system
- ☐ Drop Hoses
- ☐ Sprinkler Heads
- ☐ Liquid manure injected
- ☐ Liquid manure not injected
- ☐ Liquid manure tilled under within 3 days
- ☐ Liquid manure not tilled under within 3 days
- ☐ Liquid manure used on pasture
- ☐ Irrigation lines hand set
- ☐ Irrigation lines automatically reeled
- ☐ Slurry manure applied with tank or vacuum tank trucks or trailers
- ☐ Slurry manure applied by drag hose system
- ☐ Slurry manure injected
- ☐ Slurry manure not injected
- ☐ Slurry manure tilled under within 3 days
- ☐ Slurry manure not tilled under within 3 days
- ☐ Slurry manure used on pasture
- ☐ Dry manure spread by truck and/or trailer
- ☐ Dry manure tilled under within 3 days
- ☐ Dry manure not tilled under within 3 days
- ☐ Dry manure tilled under when next crop is farmed
- ☐ Dry manure used on pasture
- ☐ Custom manure hauling service used (circle as appropriate: Liquid, Slurry, Dry)
- ☐ Personally-owned hauling equipment used (circle as appropriate: Liquid, Slurry, Dry)

- ☐ Other:_____

OTHER OPERATIONAL CONSIDERATIONS OR PLANS
Standard Operating Procedures

- ☐ Mortality management is consistent with current approved practices to minimize nuisance conditions and protect groundwater quality
- ☐ Salt management practices have been selected to limit the amount to that required to maintain animal health and optimum production

- ☐ Other_____

- ☐ Emergency manure management plan available to farm management staff on-site to address:
  - o Unauthorized discharge of manure
  - o Unauthorized discharge of contaminated storm water
  - o Pond failure (overflow)
  - o Pump failures
  - o Power failure

MAINTENANCE PLAN CHECKLIST

THE FOLLOWING MAINTENANCE PROCEDURES AND PRACTICES ARE UTILIZED ON THE _____DAIRY.

Indicate those maintenance activities in each production area category that you are using in the operation of the manure management system on your dairy operation. Check all that apply. Where applicable, indicate the frequency that the activity is conducted. Mark "event" if the work is only done in response to an irregular event, such as rainfall.

Maintenance Plan Checklist

	Frequency (where applicable)				
	Daily	Weekly	Monthly	Other	Event
MILK BARN					
☐ Have a scheduled maintenance program with equipment supplier					
☐ Pumps and associated infrastructure maintained according to manufacturers direction					
☐ Manufacturers recommendations are on file					
☐ Flush valves clear and functional					
☐ Floor drains clear and functional					
☐ Water supply and hoses kept in good repair					
☐ Floors maintained in good condition					
☐ Milk parlor inspected					
☐ Curbing and wastewater flow control measures maintained					
☐ Other:					
ANIMAL HOUSING AREAS					
☐ Flush valves are maintained clear of debris					
☐ Pumps are maintained on a schedule with equipment supplier					
☐ Pumps are maintained by operator as recommended by manufacturer					
☐ Pumps are checked prior to the rainy season to ensure proper function					
☐ Roofs are guttered - drain to flush system					
☐ Roofs are guttered - drain off production area					
☐ Corral shades are guttered-downspouts drain to flush system					
☐ Gutters and downspouts are cleaned as necessary to remain functional throughout rain season					
☐ Gutters are inspected for leaks and serviced as necessary prior to the rainy season					

Maintenance Plan Checklist

	Frequency (where applicable)				
	Daily	Weekly	Monthly	Other	Event
☐ Gutters and associated piping are inspected for sound connections and joints					
☐ Gutters are observed for leaks during rain events					
☐ Flush valves are maintained clear of debris					
☐ Trash and foreign material removed to prevent inadvertent disposal in or clogging of liquid waste system					
☐ Corral feed aprons (where cows stand when eating) are flushed to manure storage					
☐ Corral feed aprons scraped to manure storage					
☐ Corral feed apron runoff collected and transferred to liquid storage system					
☐ Corrals sloped to drain directly into flush lane					
☐ Corrals sloped to drain to collection point & water pumped to flush lane- automatic pump system					
☐ Corrals sloped to drain to collection point & water pumped to flush lane- manual pump system					
☐ Exercise pens and open corrals are cleaned prior to the wet season					
☐ Holes in corrals that may cause ponding are filled					
☐ Corrals are observed for ponding after rainfall					
☐ Corrals are managed in the rainy season to prevent ponding.					
☐ Corral manure mounds built and compacted prior to the rainy season					
☐ Wet weather manure accumulation in corrals is checked to determine the need for manure removal or corral grading					
☐ Unless diverted, rain run-on to housing and corrals is collected and conveyed to the liquid manure storage system					
☐ Corrals scraped/harrowed weather permitting					
☐ Corral solid manure removed spring and fall					
☐ Corral solid manure removed prior to wet weather.					
☐ Manure removed from fence lines when corrals are cleaned					
☐ Rain runoff and surface drainage is diverted away from manured areas					
☐ Rain runoff and surface drainage are collected and conveyed to liquid storage system.					
☐ Diversion piping used to divert storm water run-off checked before and during rain season to ensure freedom from blockage					

Maintenance Plan Checklist

	Frequency (where applicable)				
	Daily	Weekly	Monthly	Other	Event
☐ Run-on and run-off controls such as berms or ditches are inspected before the rain season to ensure they will work properly					
☐ Run-on and run-off controls inspected during rain season					
☐ A stream, drain, or other surface water does not flow though the confined areas					
☐ A stream, drain, or other surface water flows through some or all of the confined areas					
☐ Animals within confined areas are prevented from entering surface waters flowing through the confined area(Ex: creeks, rivers, streams)					
☐ Other					
MANURE STORAGE AREAS					
☐ All waste storage areas, liquid or solid, and manure bedding storage areas, are inspected as required by Table 1 of Monitoring and Reporting Program No. R5-2007-0035					
☐ Record-keeping requirements of Monitoring and Reporting Program No. R5-2007-0035 are being performed as directed.					
☐ Solid manure stored outside of corrals is covered or protected from rainfall					
☐ Solid manure stored outside of corrals is covered or protected from rainfall					
☐ Runoff from solid manure piles is collected and conveyed to liquid storage system					
☐ Solid manure storage areas are inspected for standing water during and after significant storm events					
☐ Integrity of the solid manure storage surface is maintained					
☐ Integrity of solid manure storage surface is repaired if it is damaged prior to additional use					
☐ Pumps and other equipment are serviced and maintained on a schedule with equipment supplier					
☐ Pumps and other equipment are serviced and maintained by operator as recommended by manufacturer					
☐ Other manure management equipment (agitators, weirs, gates, valves)inspected, serviced and maintained in operating					

	Frequency (where applicable)				
	Daily	**Weekly**	**Monthly**	**Other**	**Event**
condition					
☐ Lagoon or pond freeboard is maintained as directed by Waster Discharge Order No. R5-2007-0035					
☐ Ponds are managed to maintain the required freeboard					
☐ Ponds are managed to minimize vectors (mosquitoes, burrowing animals, flies, etc)					
☐ Pond liner integrity is maintained during pond operation (including sludge removal)					
☐ Contractors hired to empty ponds, install equipment, or to remove sludge will be briefed on the importance of maintaining pond liner integrity					
☐ Ponds are managed to ensure adequate storage throughout the rain season as per the Waste Management Plan calculations					
☐ Sludge accumulation on lagoon or pond bottoms is monitored					
☐ Herbicides and other agricultural chemicals are not allowed to enter the manure system					
☐ Equipment is used as intended by the manufacturer					
☐ Spare parts (belts, bearings, switches, plumbing, fuses, etc) inventory is maintained on-site					
☐ Spare parts not on site but available on demand as needed reliably on a 24/7 basis					
☐ Emergency plan, including the sources of equipment that may be needed is readily available on-site					
☐ Equipment with screens is regularly inspected to prevent accumulation of debris					
☐ Other:					
FEED STORAGE AREAS					
☐ Berms, ditches, or other diversion or control methods are checked before the rain season for proper integrity and function					
☐ The perimeter of the feed storage area is checked prior to rain season to be sure that run-on and run-off controls are in working order					
☐ Berms, ditches, or other methods used to divert run-on or clean run-off are monitored regularly					
☐ Berms, ditches, or other methods are used to control and direct leachate, rainfall and other contaminated water are monitored					

Maintenance Plan Checklist

	Frequency (where applicable)				
	Daily	Weekly	Monthly	Other	Event

regularly
- ☐ Area is checked for proper drainage while in use
- ☐ Employees are instructed to repair or report malfunctions
- ☐ Pumps are checked and serviced as necessary prior to and during the rainy season
- ☐ Feed covers are kept in good repair or replaced if necessary
- ☐ Plastic from covers collected and prevented from clogging feed area runoff controls
- ☐ Spoiled feed disposed of, covered or appropriately managed
- ☐ Surface of feed storage area is managed to prevent infiltration of silage and feed leachate to underlying soil
- ☐ Other

LAND APPLICATION AREAS
- ☐ Manure application vehicles maintained in operating condition
- ☐ Application equipment calibrated as necessary
- ☐ Transport ditches, pipelines kept in operating condition, free of debris
- ☐ Ditches and pipelines inspected for structural integrity, holes, erosion, etc
- ☐ Equipment is operated per manufacturers instructions
- ☐ Equipment is used for its intended use
- ☐ Spare parts (hoses, belts, roller chains, pipe fittings, etc) on hand or readily available 24/7
- ☐ Flow meters and associated system serviced and maintained as directed
- ☐ Field valves checked and verified operational before irrigating
- ☐ Other:

OTHER OPERATIONAL CONSIDERATIONS OR PLANS
Standard Operating Procedures
- ☐ Mortality management is kept up to date with current approved practices to minimize nuisance conditions and protect groundwater quality
- ☐ Salt management practices have been selected and updated to limit the amount of salt to that required to maintain animal health and optimum production

- ☐ Other:

Maintenance Plan Checklist

	Frequency (where applicable)				
	Daily	Weekly	Monthly	Other	Event

☐ Emergency manure management SOPs are kept current and readily available to farm management staff on-site to address:
  o Unauthorized discharge of manure
  o Unauthorized discharge of contaminated storm water
  o Pond failure (overflow)
  o Pump failures
  o Power failure

Location of Waste Discharge Requirements, mortality management, salt management and emergency management plans:

_____

Location of equipment maintenance requirements and records:

_____

Location of sampling equipment, procedures and records:

_____

Parties trained to conduct Operations and Maintenance work:

_____