5 RANCHO MONTICELLO RESORT

5.1 Waste Water Systems

Ponds:
There are ten evaporation ponds on four separate systems, called Day Park, Road 6, Road 8, and Road 12.

Day Park:
This system has three ponds with 2 sprinkler heads per pond. There are spray fields for disposal of pond effluent that reportedly run all the time in the summer but not in the winter. The lift station can pump to any of the ponds. The pumps to the spray fields are 1-2 years old.

The ponds were lined with bentonite clay in January 2001. According to the staff person who guided us during the inspection, the ponds never overload, but this is contrary to the need for the spray disposal system. Duckweed was a problem in 1996. The pumps get clogged with leaves on occasion. There are no wind sensors and the misters are manually controlled. There is a 3" force main from the lift station and 1" pipes between ponds. There are some grading problems near Pond #3.

Road 6:
There are two ponds at this location. The misters at these ponds were not operating properly during the inspection. The mister for Pond #1 was turned off and the one on pond #2 was a solid stream. These ponds get oil and grease run off from the highway. There are sprayers to dispose of pond effluent on the hillside, but the spray field was dry during inspection.

Road 8:
There are two ponds for this system. Electrical power at this site was removed, but some exposed electrical wires remain. Discharge from the lift station is sprayed into Pond #1 to control algae growth. There are exposed, damaged joints in the overflow pipe between the two ponds; a joint failure would result in both ponds emptying down the hillside.

Road 12:
This system is composed of three ponds with zero, one, and two misters. During inspection, there was water in the roadway below the ponds, but the maintenance crew did not know the source. They are planning to increase the embankments to provide additional freeboard. Freeboard was added in 1997, but subsequent overflows still occurred. There is minimum pressure when the misters and spray fields are turned on. There are 1" pipes between the ponds

that are used for equalization. Flow moves between the ponds by gravity only; there is no pumping between them.

Lift Stations:
There are four lift stations for 470 hookups. They follow the same naming convention as the ponds.

Day Park:
This station can pump 60-80 gal/min when the screen is clean, using a 6.5" diameter Berkeley pump, model B1-1/2 TPLS. The force main is a 4" diameter pipeline. Flow doubles on rainy days.

The lift station is located near a picnic area. There are three chambers to the station, with the lift station sitting on chamber number three. Ventilation appears to be adequate to control odors. This station is equipped with a light alarm on top.

Road 6:
This station also has three chambers. Using a 5 horsepower, Berkeley pump it can pump 40 gal/min when the screen is clean through the 2" diameter force main. The lift station is checked daily. Flow metering is based on a run-time electrical meter.

Road 8:
This is the smallest lift station at Rancho Monticello Resort. This station also has three chambers, with the lift station on chamber number three. The pump is a Baldor Model R433A and can pump 40 gal/min when the screen is clean. This lift station is housed by cinder blocks. Although the cinder blocks have been resealed, leaks through the walls are very likely. This lift station sits relatively close to the lake on a mild slope and the water level in the lake has reached a level just 2.5" below the concrete pad on multiple occasions. The phone dial out alarm system does not work.

Road 12:
This station has the smallest lift with the highest capacity. It has three chambers, which are approximately 12'x12'x12'. The 10 horsepower Baldor pump is capable of pumping 40 gal/min when the screen is clean. Pump station flows are measured using an electric run-time meter. A mercury switch activates the start and stop of the pump. If the water level in the wetwell reaches a predetermined set point, an alarm light located on top of the pump station illuminates. There is no pager and the dial out phone system does not work. Sandbags surround the station prevent the lake water from entering the lift station.

On occasion, the maintenance crews have used a chemical additive to aid biological digestion of the wastewater, but the digester is too slow to be effective. Currently there is only one pump but the resort has a back up in storage, which would reportedly take approximately one hour to change.

As a general statement, each of the lift stations was found to be unacceptable for continued use. The lift stations would require, at a minimum, additional reliable pumping capacity, new instrumentation and controls, a functional alarm system, and standby power facilities in order to be adequate. In addition, the structures housing the pump stations are substandard. These conditions make these lift stations unreliable; coupled with the location of many of the stations, the risk of failure leading to contamination of the lake is considered very high.

The force mains connecting these lift stations to the ponds are also questionable. Force mains that are less than 4 inches in diameter are susceptible to plugging in wastewater applications. New lift stations should be constructed using new equipment and materials. The force mains should also be replaced. These new facilities should be located and sized in conformance with planned future uses of the resorts.

Miscellaneous:
Numerous problems such as exposed polyvinyl chloride pipe (susceptible to ultraviolet degradation and failure), non-operating pumps, and spray mister heads that should be replaced were observed. Exposed electrical wiring represents a safety hazard and should be corrected immediately. Maintenance activities such as weed removal and clay-lining repairs should be performed at the ponds.

5.2 Potable Water Systems

Treatment Plant:
This plant is larger than the treatment plants at the other resorts. It is equipped with an alarm for high chlorine levels (but not pressure) hooked up to a pager system, a light outside to indicate high turbidity, and shuts off if chlorine is too low. There is a booster pump to get water through the filters, as gravity is not enough. The pipes and valves are all composed of plastic. The 3 Sta-Rite water conditioners and one Water King are set up in serial alignment. The polymer and chlorine solutions are mixed daily and fed into the treatment system through static in-line mixers.

This water treatment facility also has a larger chlorine tank outside the main building to contain the larger volumes of mixed chlorine required. The maintenance staff reports that they have a problem with solids settling in the bottom of the tank. This facility also has a standby diesel generator for emergency power.

Storage Tanks:
Two storage tanks for 600 hookups.
Tank 1: This tank, which was erected in 1996, is approximately 15’ high and 20’ in diameter. It is stainless steel and operates on a feed/fill system. This tank is connected with Tank #2 through a 2” steel line. The maintenance staff reported that there was a buckling problem when they first placed this tank into operation as they erroneously thought that Tank #1 was higher than Tank

#2. An extended standpipe (7') was added to the top of Tank #1, but the buckling at the top of the tank was not repaired. There are sensors 6" from the top to control the water levels in the tanks. On weekends, the fill pumps run all weekend in manual mode to try to keep up with demand.

Tank 2: This tank is also a stainless steel tank, constructed in 1996. It is feed by a 6" asbestos concrete pipe and a separate pump. Water levels are balanced between Tank #1 and Tank #2. No alarm has been installed on this tank; a neighbor will phone if the tank is observed to overflow. A crack was visible on the bottom of the tank and the cement pad is breaking up. There was also an exposed pipe that reportedly froze and burst at Christmas a few years ago.

5.3 Roads/Parking Lots

Pavement Section:
As indicated in Table 3, the collector roads and secondary roads are in poor condition. For a 20-year design life, all areas of severe alligator cracking should be excavated and replaced with compacted aggregate base to match the level of the existing roadway. Collector roads should then receive an asphalt concrete overlay that is 3 inches thick. Secondary roads should receive an asphalt concrete overlay that is 2 inches thick.

Geometry:
The width of most collector roads is adequate. No areas of severe curvature or overly steep grades were noted. After receiving an overlay these roads should be striped and signed.

Most secondary roads are not wide enough to accommodate two-way traffic. In most areas there is the potential to create one-way loops by appropriate signing (without the need for new road construction). In three or four areas this does not appear to be practical and it will be necessary to widen the pavement to accommodate 2-way traffic and install fire truck turnarounds at the ends of roads. In addition, several curves will need to have their radius of curvature increased to permit fire truck access. Although site grades will generally allow these improvements, they will require the removal or relocation of some trailers. In some areas it will also be necessary to remove trailers in order to provide adequate parking for residents and guests. These areas of roadway modification will need surveys to determine the appropriate roadway geometry. No areas of overly steep grades were noted. After alignment modifications and an overlay, secondary roads should be signed

Other Considerations:
Near the north end of the site a significant landslide has been repaired (the approximate location is indicated on Plate 3). The repair consists of a gabion wall that was constructed near the toe of the landslide. This wall is poorly constructed and because the road in this area has not been paved it is not clear whether landslide movement has stabilized. We recommend additional geotechnical studies to determine the extent of the landslide and the adequacy of repairs.

5.4 Electrical Systems

Most concession buildings have individual PG&E meters and are served by an overhead high voltage distribution system with pole-mounted transformers owned by PG&E that runs through the marina. Some small concession buildings are sub-fed from larger buildings via a resort-owned distribution system. Electrical services ranged from poor to good. Internal wiring condition ranged from fair to good. Generally, the electrical systems are adequate for current use, and most are adequate for long term use.

5.5 Boat Launch Facilities

The boat launch ramp located here has a six launching lane capacity. It is approximately 141½ feet wide and extends 135 feet to the waterline. It has an eight launching lane capacity per the Guidelines[2]. Two 30'-6" courtesy docks extend from the ramp, secured by chain anchor lines running from the ramp. The ramp consists of a 4-inch thick concrete slab and has a 14.6 percent slope. Construction joints are present on approximately 15'-0" centers running perpendicular to the water. Scoring is present on the surface and concrete deterioration is present in some areas. As with the ramp at Putah Creek, concrete is breaking up at the edges of the ramp and some erosion beneath the slab is present. There are several areas that have been patched and some large cracks are present.

The access ramps for both courtesy docks are of recent construction and are in good condition. They consist of galvanized steel frame and pipe handrails with a pressure treated timber decking. Galvanized pipe pontoons support the docks. There appears to be some rust on the pontoons, but they are in fair condition, with the docks level. The pontoon floats support timber cross members, which in turn support timber decking. The decking is showing effects of the environment with some deterioration evident. The docks are held in position by two chain anchor line attached to the shore side of the dock. The other ends are secured to the concrete launch ramp. Adjustments for changing lake levels can be made by varying the chain length.

Although the ramp is currently in usable condition, deterioration is present and will increase with time. The ramp may be retained but repair is required for future use. Shore protection should be used in the areas immediately adjacent to the ramp. The cracks should be filled by an epoxy injection method and the broken concrete repaired. Cutoff walls should be used at the ramp boundaries to prevent future erosion due to the changing water levels. The turnaround area at the head of the ramp is adequate and there is parking in the area beyond the ramp apron.

It is recommended that the courtesy ramps not be retained for future. Extrapolating the rate of deterioration forward and taking into account the amount of maintenance required, it is not economically feasible to retain the dock.

5.6 Shoreline Developments

A large variety of retaining wall construction methods are present at this resort, consisting of rip rap, gabion baskets, wood (both treated and non-treated), poured-in-place concrete, masonry block, tie-back walls, and a combination of all of the above.

Excepted as noted below, the majority of the structures are at or very near to the end of their service life, due to wood rot, excessive lateral movements, foundation undermining from wave erosion, lack of back drains to control excessive hydrostatic pressures, and corrosion of metal fasteners. Some new/rebuilt wooden walls were noted, however, such wood construction is expected to have a relatively short service life.

The following is a listing of retaining structures that appear to be acceptable structures, having a reasonable design life, if properly maintained:

- Road "F", approximate units C1 through C5: a 5'± tall masonry block wall
- Road "10", approximate units 380 through 389: a 4' to 5' tall masonry block wall

All other shoreline developments are not recommended for future use and should be removed.

5.7 Marinas and Fuel Systems

5.7.1 Dock Facilities

The docks owned by the concessionaire are located on and adjacent to the boat launch ramp and include a single fuel dock with a building structure and two courtesy docks. The fuel dock supporting the building structure and the fuel pump is in good condition. The building is a store operated by an attendant for the fuel dispenser. The construction appears to be relatively recent. There is a timber gangway leading to the dock supporting the building. The decking on the gangway is treated timber and is in good condition. The decking for the building float is fiberglass and plastic composite. The floats are plastic encapsulated foam. The building appears to be slightly out of level, so several of the floats may be leaking. The building is in good condition from an external visual inspection. The wall panels and roofing are in good condition.

The building dock is attached to the fuel dock. The decking for the fuel dock consists of precast concrete panels in good uncracked condition. The fuel line for the pump runs down the center of the dock in a recess covered by grating. The floats supporting the dock are concrete-encapsulated foam and appear to be in good condition. The rubstrips and timber fendering are all in good condition. The store and fuel docks are held in position by two anchors located on either side of the end of the fuel dock. There are two additional chain anchor lines running from the shore to either side of the building float. Adjustments for varying lake levels are made by adjusting the chain anchor line length.

There are several utility lines running from the shore to the dock. They include the fuel line, power and water.

5.7.2 Fueling Services

A single dispenser located on the end of the fuel dock. The dispenser has two fueling hoses with hand held service station type nozzles. There is a single compartment storage tank on shore. The tank holds regular unleaded. The tank is piped to the dispenser on the dock.

The storage tank is located on shore adjacent across from the grocery store. This is a flat paved area. The storage tank is an above grade, horizontal, cylindrical double wall tank that sits on a concrete slab. The tank capacity is 4,000 gallons. The tank appurtenances include a primary vent, emergency vent, fill line, vapor recovery line, manhole and product dispensing pump. Stick gauging is accomplished by removing a plug on the on the vapor line where it enters the tank. There is a ladder for access to the top of the tank. There is no tank level gage. There is no leak detection monitoring system for the tank. There is no containment parking area for the tank truck.

The tank piping includes a 3-inch fill line, 3-inch vapor line and 1 ½ inch product dispensing line. The fill line has a couple, plug valve and swing check valve. The vapor line has a coupler. There is no containment for this piping. The pump discharge line contains an on/off solenoid valve, check valve, gate valve and cartridge type filter. This piping connects to flexible double wall piping in a valve box. This double wall piping is routed to the fueling dock. The double wall piping is connected to the dock piping in a valve box on the dock. A hose connection with a ball valve is made to a 1-½ inch steel pipe, which is in a piping containment trough with a grate over it on the dock. There is no leak detection monitoring system for the double wall piping.

The courtesy docks located at the boat launch ramp are not recommended for future use because of the condition of the timber decking. Docks #2, #3 and #4 should be removed due the condition of the decking and the non-encapsulated open cell foam floats.

The resort owned floating fuel dock and store are in fair to good condition. It is recommended that both be retained for future use provided maintenance is performed at regular intervals.

For the storage tank, provide an overfill alarm to sound an alarm at 85 percent of tank capacity in accord with California Fire Code, Appendix ll-F 5.4 Overfill Prevention. The tank is allowed to be filled to 90 percent, but there is a warning at 85 percent. The fill line has a shut off device at 90 percent full.

A permanent sign should be provided at the fill point for the tank documenting the filling procedure in accord with California Fire Code, Appendix ll-F 5.4 Overfill Prevention. The

filling procedure should require the person filling the tank to determine the amount required to fill it to 90 percent of capacity before commencing the filling operation.

The tank foundation is unsatisfactory. It has experienced undermining under the waterside corner. The subgrade material is gone and not providing support. This must be repaired to prevent tank settlement.

5.8 Preliminary Environmental Assessement

A site visit was conducted to assess and photograph present site conditions. Mr. Peter White, resort owner, was interviewed regarding site history and operations. Results of the interview and site observations are presented in the following table. Results of the preliminary environmental assessent are summarized in the following site observations table:

SITE OBSERVATIONS

General Observations	Remarks	Observed	Not
Current Use	Resort with motel, restaurant, store boat facilities and mobile homes	X	
Past Use			X
Structures	Numerous buildings, restrooms, kiosks, office, restaurant, store	X	
Terrain	Varied	X	
Interior and exterior observations or environmental conditions that may involve the use, storage, disposal or generation of hazardous substances or petroleum products.		**Observed**	**Not Observed**
Hazardous chemical and petroleum products in connection with known use. Fill dirt from an unknown source.			X
Aboveground storage tanks (ASTs)	Unleaded gasoline near store. Numerous small propane tanks around site	X	
Underground storage tanks (USTs)	Reportedly removed.		X
Odors			X
Pools of Liquid			X
Drums	Used oil recycling.	X	
Hazardous chemical and petroleum products in connection with unknown use.			X
Unidentified substance containers			X

SITE OBSERVATIONS (CONTINUED)

Interior and exterior observations or environmental conditions that may involve the use, storage, disposal or generation of hazardous substances or petroleum products.		**Observed**	**Not Observed**
Chemical storage or agricultural chemical mixing areas			X
Asbestos, and lead based paints	Not assessed		
Polychlorinated biphenyls (PCBs)			X
Pits, Ponds, or Lagoons	Waste water ponds on hill above site.	X	
Stained soil or pavement			X
Stressed vegetation			X
Hazardous Waste Storage	Miscellaneous small quantities of paints, oils and grease in maintenance area.	X	
Solid Waste			X
Waste Water		X	
Process waste water			X
Wells			X
Dry wells			X
Surface water	Waste water ponds on hill above site	X	
Storm basins/catch	Discharged to lake.		X

SITE OBSERVATIONS (CONTINUED)

Interior and exterior observations or environmental conditions that may involve the use, storage, disposal or generation of hazardous substances or petroleum products.		**Observed**	**Not Observed**
Storm drains			X
Drains and sumps			X
Septic system	Septic dump station	X	
Loading and unloading areas			X
Burned or buried debris			X

In summary, the environmental survey did not reveal recognized environmental conditions at the site. Small quantities of paints, oils, greases, were observed near the maintenance area. In addition, a used oil recycling bin was noted on site.