

## **AGENDA ITEM/STAFF REPORT**

### **California Regional Water Quality Control Board Los Angeles Region**

#### **City of Simi Valley, Council Chamber Room December 11, 2008 521th Regular Board Meeting**

**ITEM:** 18

**SUBJECT:** Waste Discharge Requirements (WDR)/Waste Reclamation Requirements (WRR) and for redevelopment of 1.8-acre site known as Malibu Lumber.

**PURPOSES:** To consider a tentative WDR/WRR, for discharge of up to 17,000 gallons per day (gpd) from new commercial facilities, by Malibu Lumber LLC and the City of Malibu, into the City of Malibu's Legacy Park.

**SUMMARY:** Malibu Lumber's enrollment in a General WDR for 500 gpd will be rescinded to allow permitting of 17,000 gpd onto the adjacent City of Malibu's Legacy Park because the groundwater level at Malibu Lumber is too shallow and the site too small to dispose of the waste onsite.

The new commercial facility will consume about a third of the maximum estimated remaining groundwater capacity.

The new treatment system will dispose of average waste volumes and the Dischargers will rely on trucking to remove waste when (a) the flow is small and (b) when the flow is large and critical groundwater and stormwater conditions exist.

The WDR/WRR uses groundwater monitoring to ensure that sufficient separation is present between the water table and the treatment system. If separation is not present the Discharger will cease discharge.

#### **This staff report contains**

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## **Issues**

### **(1) Groundwater**

The Discharger's disposal system relies on a leachfield on the adjacent Legacy Park property for subsurface discharge. During high flows and critical conditions, the Dischargers will seek alternative means of disposal such as storing waste for pumping and trucking.

A key provision in the WDR is a restriction on subsurface disposal during periods when there is inadequate subsurface capacity to assimilate the discharge. Groundwater monitoring at the leachfield is required by the WDR and discharge is prohibited when the water table is less than 5 feet below the base of the leachfield.

### **(2) Treatment**

The treatment plant uses operator intervention for safe operation at initial low flows and high flows. Low flows may be insufficient to support the system's bio-activated sludge system and high flows cannot be discharged into the leachfield during critical conditions when the groundwater is shallow.

At low and high flows, the waste will be managed by operator procedures such as frequent system pumping, retreatment of partially treated wastes, and on-site inspection of system performance to ensure safe sub-surface discharge.

The system does include odor controls, but they will not operate during low and high flows. If odors are detected from effluent held for pumping in the trash trap, grease trap and equalization tank, the operator will modify the vapor seals for additional containment after construction.

### **(3) Disinfection**

Disinfection of the waste is necessary to meet TMDL bacteria numeric targets and load allocations.

The WDR includes filtering of the waste through a membrane, which has pores too small to permit pathogens to remain in the effluent. System operation will ensure attainment of bacteria limits under all conditions<sup>1</sup>.

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<sup>1</sup> The membrane methodology has limited use in California, but its excellent performance with extensive operator supervision and small footprint could make its successful operation an important asset in the watershed.

#### **(4) Nutrient removal**

The total Nitrogen numeric target of 1 mg/L set in USEPA's TMDL for Malibu Creek is difficult to attain with individual or centralized treatment plants (Stone 2005), where subsurface oxidation is absent.

The WDR includes disposal through a leachfield with a minimum of five feet of separation or through surface irrigation.

The Discharger's engineering design meets 3 mg/L at end of pipe and groundwater wells will be monitored to ensure dry subsurface soils are present to provide the additional treatment necessary to attain 1 mg/L.

#### **(5) Leachfield Performance**

A 100% replacement area for the leachfield disposal system has not yet been proposed, as required in WDRs.

The WDR/WRR prohibits discharge if groundwater monitoring shows that the leachfield is failing.

#### **(6) Recycling/Reclaimed**

Recycling/Reclamation should augment subsurface waste disposal to optimize disposal system performance.

The WDR/WRR includes a discussion of the permitting requirements for future irrigation within Legacy Park, which might consume the effluent volume during ten months of the year.

### **COMMENTS**

#### **(1) Timing**

Heal the Bay and Santa Monica Bay Keeper commented that on November 20, 2008, the Regional Board directed staff to re-negotiate a Memorandum of Understanding (MOU) with the City of Malibu and to develop a septic prohibition, with both to be heard by the Board within a year. They state that the juxtaposition and close timing of this Board finding with the Board's review of this WDR/WRR makes it difficult for decision makers to evaluate the WDR/WRR.

In the response to comments section, staff has provided a timeline for re-negotiation of the MOU and development of a septic prohibition for Board review. While this schedule is tentative, it is provided to assist the Regional Board and the public in determining how the implementation of this WDR/WRR fits with the overall policy development for the Civic Center in Malibu.

## **(2) Future Development**

Malibu LLC, one of the Dischargers, commented that review of the WDR/WRR should not be affected by possible future developments or an upcoming determination of the assimilative capacity in the Civic Center area under critical conditions. Staff notes that the City of Malibu, the other Discharger, with local control and the authority to limit proposed development or relate it to assimilative capacity, did not comment.

## **BACKGROUND:**

### **(1) Application for Discharge**

Malibu Lumber LLC and the City are the Dischargers. The City of Malibu (City) purchased the land at 3939 Cross Creek Road and the adjacent parcel at 23500 Civic Center Way, bounded by Pacific Coast Highway, Civic Center Way and Stuart Ranch Road, which is currently being developed as the Legacy Park Stormwater Control Project. The City leased the Malibu Lumber and Hardware buildings and the underlying 3939 Cross Creek Road parcel to Malibu Lumber LLC, where the structure is being expanded to include 30,316 square feet of retail stores, hair salons, two restaurants and public restrooms.

On May 3, 2007, Malibu Lumber LLC filed a Report of Waste Discharge (ROWD) for discharge of up to 17,110 gallons per day (gpd) of domestic and commercial wastewater to be treated by an advanced wastewater treatment system located offsite and discharging into a disposal field covering more than 50,000 square feet on the adjacent Legacy Park, also owned by the City (see Figure 1 and 2).

### **(2) Location**

The Malibu Lumber Yard site is located adjacent to Malibu Creek; 1,000 feet inland of the Santa Monica Bay and one half miles east of the coastal area designated by the State Water Resource Control Board (SWRCB) Area of Special Biological Significance extending from Mugu Lagoon to Latigo Point. Furthermore, the site is located near the world-famous Surfrider Beach.

### **(3) Impairments**

Surfrider Beach has been posted as impaired for water quality or closed to public use due to effluent discharge from septic systems after 2004.

The State Water Resource Control Board and the Regional Board designated water bodies adjacent to Malibu Lumber, such as Malibu Creek, Malibu Lagoon and Malibu Lagoon (Surfrider's) Beach, as impaired for coliform, nutrients (algae), scum/foam-

unnatural; viruses, eutrophication, coliform and swimming restrictions; and beach closures and coliform, respectively, on the 2002 303(d) list<sup>2</sup>. On January 24, 2002 and on December 12, 2002, the Regional Board adopted a Total Maximum Daily Load (TMDL) for bacteria during dry and wet weather, respectively, in Santa Monica Bay which includes Surfrider Beach. On December 13, 2004, the Regional Board also adopted a TMDL for bacteria in Malibu Creek and Lagoon. On March 21, 2003, the United States Environmental Protection Agency (USEPA) promulgated a nutrient TMDL for Malibu Creek Watershed. The 2006 303(d) list included the same impairments, except that Malibu Creek, Malibu Lagoon and Surfrider's Beach were placed on the List of Water Quality Limited Segments Being Addressed by USEPA Approved TMDLs. Winter dry weather limits must be met in November 2009 in the vicinity of Malibu Lumber. Compliance with reduced bacteria loads at all times is required by January 2012 for the City of Malibu.

#### **(4) Compliance**

A Notice of Violation was issued in 2008 to the City of Malibu and Los Angeles County for failure to meet the Santa Monica Bay bacteria dry weather limits including violations at Surfrider Beach. Two Notices of Violation were issued this year to Malibu Country Mart I, II and III for failure to upgrade and existing systems adjacent to Malibu Lumber.

Heal the Bay's 'Beach Quality Report Card' documents changes in bacteria ocean pollution, including areas near Malibu Lumber where pathogens continue to impact public use.

#### **(5) Treatment System**

The Waste Discharge Requirements for the treatment plant have a maximum capacity of 17,000 gpd. Biologically-activated sludge treatment chamber will remove all pollutants and solids. An aerobic/anaerobic digester will remove the nutrients, and additional carbon oxidation will be used if necessary to meet discharge limits. An ultraviolet disinfection system will augment a micro-membrane treatment designed to kill and filter bacteria and viruses.

##### **(5A) Disinfection System**

The WDR/WRR ensures the wastewater discharged to the disposal system will not contain constituents in excess of the following limits based on the numeric targets in the Santa Monica Bay Beaches and Malibu Creek and Lagoon Bacteria TMDLs for surface discharge during wet and dry weather:

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<sup>2</sup> Federal Clean Water Act section 303(d) list of national water bodies with impaired water quality.

Constituent	Units*	Geometric 30-day Mean	30-day Maximum	7-day Maximum	Daily Maximum
Total coliform	MPN/100mL		23	1.1	230
Fecal coliform	MPN/100mL	200			400
Enterococcus	MPN/100mL	35			104

#### (5B) Nutrient and Priority Pollutant Treatment

The nutrient and phosphorus in the wastewater discharged to the disposal system must not contain constituents which would exceed the load allocations in EPA's Nitrogen TMDL for surface water in Malibu Creek Watershed which call for a 93% reduction in total nitrogen discharge and a 90% reduction in phosphorus from septic systems. Typical discharge concentrations from standard commercial septic discharges with a denitrification process such as in this treatment plant are 10 mg/L or below. While 20% additional nitrogen loss might be optimistically expected during nitrification within a mound and an expanded unsaturated zone beneath the leach field, the 93% reduction must otherwise be met at the effluent monitoring point. Phosphorus should be removed in 3 to 5 feet and so no phosphorus limit is imposed.

Constituent	Units	Monthly Average
Total Nitrogen (a)	mg/L	1 (without mound)
Total Nitrogen	mg/L	3 (with mound)

Control of priority pollutants will not be solely dependent on voluntary compliance by the tenants when sufficient groundwater separation is present. Specific education of tenants is required in the WDR.

#### (5C) Odors

Odors are generated in the collection system (trash trap and equalization tanks) and during nutrient removal. Odor control is by mechanized fans and granular activated carbon filters on the nutrient removal system alone. Odors from low and high flows when sewage is stored in the trash trap and equalization tank for trucking will be addressed by the operator after construction with additional vapor seals as necessary.

#### (5D) Leachfield Disposal

Leachfields can provide subsurface treatment as long as the soils are not occluded with waste. The Discharger has not yet identified a 100% replacement area for the leachfield, as required in all standard discharge permits. Should groundwater monitoring show

water quality limits are exceeded, Regional Board staff may determine that the leachfield has failed. At such time, discharge would be prohibited.

(5E) Groundwater Monitoring

The monitoring and reporting program (MRP) was developed to ensure that the Dischargers place groundwater monitoring wells at the perimeter of the leachfield and disposal area to ensure that groundwater levels do not rise to within 5 feet of the bottom of the Malibu Lumber leach field. The MRP calls for continuous monitoring of the groundwater wells and the following performance limits.

Daily Groundwater Separation

In wells	Influent (gpd)	Effluent (gpd)
More than 10 feet	max daily 17,000	max daily 17,000
Less than 10 feet	max daily 10,000	max daily 17,000
Less than 5 feet	less than recycle	no discharge
And storage capacities		

(5F) Treatment of Low Flows

Low flow treatment is not expected to meet Title 22 requirements. However, effluent limits prevent the discharge of non-Title 22 effluent into the subsurface. The effluent disposal method at low volumes is expected to be daily or weekly pumping of the trash trap and equalization tank, which would function as holding tanks, for removal by truck and disposal in another wastewater treatment plant.

(5G) Recycling/Reclamation

The compliance point for the reclaimed use is "end-of-pipe" following treatment and prior to discharge. In addition to meeting all effluent limitations, the treated wastewater to be discharged through surface and subsurface drip irrigation disposal shall at all times be adequately oxidized, disinfected tertiary-treated wastewater only. Disinfected tertiary-treated water is wastewater that has been filtered and subsequently disinfected, and that meets several criteria listed in the WDR/WRR.

(5H) Incomplete Documentation

Staff included regulatory controls in the WRD/WRR which should be sufficient to protect the water quality objectives and beneficial uses of the receiving waters, even though not all the requested materials were provided. However, staff expresses concern about the Discharger's commitment to comply with the WDR/WRR. Protection of public health is not consistent with the Discharger's written comments and failure to complete (a) an operation and

maintenance plan showing how the operator will modify the system operation at low and high flows and/or when odors are present and (b) public documentation showing that Legacy Park will attain its water quality goals after construction and operation of the Malibu Lumber leachfield and irrigation system.

**OPTIONS:** The Board may adopt, adopt with revisions, deny or continue consideration of the tentative WDRs to a future meeting.

**RECOMMENDATION:** Staff recommends that the tentative Order be adopted.

Note: The Malibu Lumber case file is hereby incorporated by reference.