

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION**

**AMENDED MONITORING AND REPORTING
PROGRAM NO. 00-57-A04
WDID NO. 6B190107069
FOR
LOS ANGELES COUNTY SANITATION DISTRICT NO. 20
PALMDALE WATER RECLAMATION PLANT**

Los Angeles County

The Monitoring and Reporting Program for the Los Angeles County Sanitation District No. 20, Palmdale Water Reclamation Plant (Facility), is as follows:

1. MRP 6-00-57-A01, effective February 26, 2004;
2. MRP 6-00-57-A02, effective April 14, 2004;
3. MRP 6-00-57-A03, effective October 13, 2004; and
4. MRP 6-00-57-A04, effective July 13, 2005."

The Monitoring and Reporting Program is being amended, effective within the first full month after signature, for the following reasons:

1. Installation of an additional vadose zone station in the tree farm;
2. Monitoring effectiveness of the chlorine disinfection system;
3. Sampling of new groundwater monitoring wells for the nitrate plume delineation; and
4. Monitoring recycled water use on Sections 14 and 16.

The District submitted a Sampling and Analysis Plan (SAP) dated April 26, 2005 that replaces the SAP dated June 18, 2004. The SAP describes sample collection methods, monitoring well purging procedures and laboratory reporting limits, quality control and assurance methods. That SAP is acceptable. It must be kept current and revised as necessary based on modified sampling and/or laboratory procedures, methods or locations.

Monitoring and Reporting Program, 00-57-A01, Section I – MONITORING, A. Flow Monitoring – is amended by adding the following.

8. The flow of recycled water to each center pivot irrigation system for each month shall be recorded. This information shall be used to assess the crop agronomic water and nutrient needs.

Monitoring and Reporting Program, 00-57-A01, Section I – MONITORING, C. Facility Effluent Monitoring – is amended by adding the following.

Table 1 – Disinfection Monitoring

Parameter	Units	Sample Type	Frequency
Total coliform	MPN/100 mL	Grab	Daily
Chlorine residual	mg/L	Grab	Weekly
Sodium hypochlorite demand	Kg/day	Record	Daily

Include a compliance evaluation with each monthly self-monitoring report evaluating the effluent coliform concentrations with respect to the applicable Title 22 criteria for recycled water use.

Monitoring and Reporting Program, 00-57-A01, Section I – MONITORING, D. Groundwater Monitoring – is replaced as follows.

A. Ground Water Monitoring

The ground water monitoring system is intended to evaluate the effects of the discharge from the unlined secondary oxidation/percolation ponds and land disposal and agricultural re-use operations. The network consists of the following wells.

Table 1 – Groundwater Monitoring Wells

Well	Well Screen Interval (feet bgs, see SAP, Table 3)	Location (Section No.)	Landowner
MW-1	360 – 400	21	Airport
MW-2	480 – 540	20	District
MW-4	289 – 334	9	Airport
MW-15	284 – 329	3	Airport
MW-16	286 – 331	10	Airport
MW-17	245 – 290	12	Airport
MW-18	290 – 335	11	Airport
MW-19	290 – 335	3	Airport
MW-20	257 – 295	9	Airport
MW-21	300 – 339	2	Airport
MW-22	282 – 320	4	Airport
MW-23	268 – 397	16	District
MW-24	304 – 328	15	Airport
MW-25	320 – 349	17	Airport
MW-26	361 – 372	2	Airport
MW-27	390 – 399	2	Airport
MW-28	420 – 430	4	Airport
MW-29	490 – 500	4	Airport
MW-31	483 – 518	19	Airport
MW-32	372 – 395	18	Airport
MW-33	362 – 376	8	Airport
MW-35	302 – 336	34	Sol A Leshin Trust
MW-37	318 – 352	1	Airport
MW-38	281 – 315	24	Airport
MW-39	306 – 345	23	Airport
MW-46	510 – 549	20	Airport
MW-51	330 – 339	16	District

Table 2 – Groundwater Supply Wells

Well	Well Screen Interval (feet bgs, see SAP, Table 3)	Location (Section No.)	Landowner
DW4-2	410 – 430 470 – 490 650 - 670	5	AFP –42
17D1	380 – 771	17	Airport
LAWA 7	414 - 626	8	Airport
SW-1	Not Available	10	Airport
SW-2	376 – 706	9	Airport
SW-5	Not Available	21	Airport
SW-7	Not Available	9	Airport
SW-8	170 - 650	4	Airport
SW-9	Not Available	3	Airport
SW-10	Not Available	9	Airport
SW-13	Not Available	11	Airport

Additional wells may be added as necessary to delineate the nitrate plume. The Sampling and Analysis Program must be updated accordingly.

Beginning immediately, grab samples shall be collected from the monitoring and supply wells.

To the extent possible ground water samples obtained from monitoring wells shall be collected from the top five feet of the aquifer. Ground water samples obtained from water supply wells shall be collected from the uppermost portion of the aquifer, to the maximum extent possible.

The Discharger must monitor these water supply wells at the required frequencies; unless factors beyond the Discharger's control prevent sampling. These factors include, but are not limited to, a supply well that is dismantled or out of service. The District must make an effort to monitor supply wells that are used during the quarter but are not in use on the day that samples are typically collected. Each factor shall be noted in the Monitoring report.

All monitoring and supply well samples shall be analyzed to determine the magnitude of the following parameters:

Table 3 – Groundwater Monitoring Parameters

Parameter	Units	Frequency
Kjeldahl nitrogen	mg/L as N	Quarterly
Nitrate nitrogen	mg/L as N	Quarterly
Ammonia nitrogen	mg/L as N	Quarterly
Methyl blue active substances	mg/L	Quarterly
Total Dissolved Solids	Mg/L	Quarterly
Chloride	mg/L	Quarterly
Sodium	mg/L	Quarterly
Sulfate	mg/L	Quarterly
Total organic carbon	mg/L	Quarterly
Total petroleum hydrocarbons	ug/L	Annually (*)
Bromoform	ug/L	Annually (*)
Chloroform	ug/L	Annually (*)
Dibromochloromethane	ug/L	Annually (*)
Dichlorobromomethane	ug/L	Annually (*)
Total Cyanides	ug/L	Annually (*)
Total Phenols	ug/L	Annually (*)
Volatile Organics	ug/L	Annually (*)
Base/Neutral Extractable Organics	ug/L	Annually (*)
Acid Extractable Organics	ug/L	Annually (*)
Heavy Metals	ug/L	Annually (*)
Pesticides	Ug/L	Annually (*)
Methyl Tertiary Butyl Ether	ug/L	Annually (*)

The Volatile Organics, Base/Neutral Extractable Organics, Acid Extractable Organics, Heavy Metals and Pesticides shall be from the US EPA List of Priority Pollutants (Attachment B). Monitoring for PCBs (Constituent No.'s 119 – 125, Attachment B) and dioxin (Constituent No. 16, Attachment B) is not required.

For parameters marked with an (*), the Discharger may propose to reduce the sampling frequency to once every three years on a case by case basis. A reduced sampling is contingent upon the Executive Officer's approval. The Sampling and Analysis Plan shall be modified accordingly.

Wells shall be purged in accordance with standard practice. If low-flow well purge methods are used, the samples should not be collected parameters have stabilized and turbidity is less than 5 NTU. If low-flow well purging is used, well purge rates should be less than 1 L/min for sample collection. Well purge methods and extracted water volumes and rates shall be reported.

Field parameters shall be determined in all monitoring and supply wells each time they are sampled to determine the following. The final field parameters from each well shall be reported in a separate table.

Table 4 – Field Parameters

Parameter	Units
Static water depth	Feet below ground surface
Electrical conductivity	uS/cm
pH	pH units
Temperature	Degrees C
Dissolved Oxygen	mg/L
Turbidity	NTU
Color	Visual

Ground water monitoring reports shall contain running graphs and trend analyses of total dissolved solids and nitrate as N for ground water monitoring well data.

Semi-annually, an updated figure(s) showing the groundwater nitrate plume and total dissolved solids concentrations shall be included.

Monitoring and Reporting Program, 00-57-A01, Section I – MONITORING, E. Vadose Zone Monitoring – is replaced as follows.

E. Vadose Zone Monitoring

The existing vadose zone monitoring system consists of seven lysimeters as indicated on Attachment "A" of Board Order No. 6-00-57. Many of these lysimeters are dry or located in less than optimal locations. This system is being replaced and a new network being installed with the first samples planned for collection in May 2005.

1. Lysimeters must be positioned in the appropriate locations and depths to provide a vertical distribution of vadose zone pore-fluid chemistry below the land spreading and irrigated areas of the EMS. Data collected from this vadose zone monitoring program shall be adequate to assist in the evaluation of irrigation efficiency at agricultural re-use.
2. Use of conventional ceramic soil suction lysimeters instead of pan lysimeters is acceptable.
3. Soil moisture sensors shall be placed at depths of 2, 3, 5, 10 and 14 feet below ground surface at each vadose zone monitoring station to signal the arrival of soil moisture as it approaches each lysimeter.
4. The District shall remove all non-operational vacuum suction lysimeters from the old vadose zone monitoring network and report completion no later than **January 1, 2006.**
5. The vadose zone monitoring system shall be sufficient to adequately monitor pore-moisture fluid from all representative soil types, irrigation methods and crop types.

6. Vadose zone monitoring shall be for the parameters and frequencies described in Table 1 below.

Table 3. Vadose Zone Parameters & Frequencies

Parameter	Units	Frequency
Total Kjeldahl Nitrogen	mg/L as N	Quarterly
Nitrate Nitrogen	mg/L as N	Quarterly
Ammonia Nitrogen	mg/L as N	Quarterly
Nitrite Nitrogen	mg/L as N	Quarterly
Total Dissolved Solids	mg/L	Quarterly
Bromoform	µg/L	Annually
Chloroform	µg/L	Annually
Dibromochloromethane	µg/L	Annually
Dichlorobromomethane	µg/L	Annually

7. Vadose zone monitoring shall be performed at the stations described in Table 2, below and shown on Figure 1. Station numbers refer to the field center pivot number.

Table 2. Vadose Zone Monitoring Stations

Station ID	Location	Shallow Pressure / Vacuum Samplers	Deep Pressure Vacuum Samplers	Passive Capillary Lysimeter	Soil Moisture Monitoring
		(ft bgs)	(ft bgs)	(ft bgs)	(ft bgs)
VZ 1	Pivot 1	5	14	4.75	2, 3, 5, 10, 14
VZ 4	Pivot 4	5	14	5.00	2, 3, 5, 10, 14
VZ 5	Pivot 5	5	14	5.00	2, 3, 5, 10, 14
VZ 7	Pivot 7	5	14	4.58	2, 3, 5, 10, 14
VZ 7A	Pivot 7	5	N/A	4.67	N/A
VZ 7B	Pivot 7	5	N/A	4.33	N/A
VZ 12	Pivot 12	5	14	4.50	2, 3, 5, 10, 14
VZ 14	Pivot 14	5	14	4.67	2, 3, 5, 10, 14
VZ 15	Pivot 15	5	14	4.33	2, 3, 5, 10, 14
VZ 19	Pivot 19	5	14	5.00	2, 3, 5, 10, 14
VZ P	Pistachio Orchard	5	14	5.00	2, 3, 5, 10, 14
*	Section 14	*	*	*	*

Site indicated by (*) will be installed in the fall 2005 similar to VZ-19

Ordered by: _____

Dated: July 13, 2005

HAROLD J. SINGER
EXECUTIVE OFFICER

Attachments: A – Vadose Zone Monitoring Stations

LACSD NO. 20
Los Angeles County

-7- AMENDED MONITORING AND REPORTING
PROGRAM NO. 00-57-A04
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B – Priority Pollutants

JC/tp S/BO2005/LACSD20 MRP 57-A04