

California Regional Water Quality Control Board
Santa Ana Region

April 27, 2012

STAFF REPORT

ITEM: *8A.

SUBJECT: Amendment of Order No. R8-2007-0003, NPDES No. CA8000326, Waste Discharge and Producer/User Reclamation Requirements for Irvine Ranch Water District, Michelson Water Reclamation Plant, Orange County – Order No. R8-2012-0004

DISCUSSION:

On November 30, 2007, the California Regional Water Quality Control Board, Santa Ana Region (hereinafter, Regional Board), adopted Order No. R8-2007-0003, NPDES No. CA8000326, prescribing waste discharge requirements and Producer/User Water Reclamation Requirements for the Irvine Ranch Water District (hereinafter Discharger) Michelson Water Reclamation Plant. In December 2009, the Discharger completed the purchase of the Siphon Reservoir property from The Irvine Company LLC (TIC), which included 40 acres of the reservoir property, 6.3 acres of TIC-owned remnant property, and a temporary easement over the Highline Canal alignment from Rattlesnake Reservoir to Siphon Reservoir.

In a letter entitled, "Request to add Siphon Reservoir to Order R8-2007-0003," dated January 19, 2010, the Discharger requested Regional Board approval of the discharge of tertiary treated wastewater effluent to Siphon Reservoir for storage purposes and subsequent use as part in its recycled water distribution system. According to the Discharger, Siphon Reservoir would receive tertiary-2.2 recycled water, produced at their Michelson Water Reclamation Plant, from the Rattlesnake Reservoir through the Highline Canal. Then, the Discharger would route the stored recycled water, by gravity, into its recycled water distribution system.

Siphon Reservoir is listed as an inland surface water body (water of the United States) in the Regional Board's Santa Ana River Basin Water Quality Control Plan (Basin Plan), 1995 edition (updated in 2008). The Discharger requested that Order No. R8-2007-0003 be amended to include a new discharge point, DP 007, to Siphon Reservoir. The CEQA documents for the new discharge location were completed on December 10, 2009 and a negative declaration was certified on December 14, 2009.

The current permitted design treatment capacity of the treatment plant is 18 million-gallons-per-day (MGD) and the Discharger is in the process of completing the construction phase of its 10 MGD treatment expansion and may start the operation of the new treatment units during 2012. This Order allows the Discharger to operate at a treatment capacity of up to 28 MGD. The treatment capacity expansion includes new headworks, primary clarifiers, membrane bioreactor (MBR), high-rate clarifier, and 15-MGD capacity UV disinfection system.

The discharger plans to operate both UV and chlorine based disinfection technologies and both the MBR and conventional activated sludge process, for secondary treatment, in parallel. Therefore, Order No. R8-2007-0003 is being amended to include discharge specifications and monitoring requirements for UV disinfection and membrane microfiltration.

This order will also amend Order No. R8-2007-0003 to clarify stormwater discharge and monitoring points, as well as the Total Chlorine Residual compliance points.

The following shows the proposed changes to Order No. R8-2007-0003. Additions are **bold and highlighted**. Deletions are ~~stricken out~~.

1. Order No. R8-2007-0003, page 1, modify Table 2., as follows:

Table 2. Discharge Locations

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	Recycled water from MWRP to distribution system	33°39'50"N	117°50'17"W	Irvine GMZ
002	Recycled water from MWRP to San Joaquin Reservoir	33°37'12"N	117°50'39"W	Irvine GMZ
003	Tertiary treated effluent from MWRP	33°43'37"N	117°44'27"W	Rattlesnake Reservoir & Irvine GMZ
004	Tertiary treated effluent from MWRP	33°38'55"N	117°47'47"W	Sand Canyon Reservoir & Irvine GMZ
005	Dewatered groundwater from MWRP	33°39'47"N	117°50'16"W	San Diego Creek Reach 1 tributary to Upper Newport Bay
006	Dewatered groundwater from MWRP	33°39'51"N	117°50'27"W	San Joaquin Freshwater Marsh tributary to Upper Newport Bay
007	Tertiary treated effluent from MWRP	33°42'36"N	117°43'56"W	Siphon Reservoir & Irvine GMZ
Storm-007	Pumped stormwater (emergency) from MWRP	33°39'47"N	117°50'16"W	San Diego Creek Reach 1 tributary to Upper Newport Bay
Storm-008	Pumped stormwater (emergency) from MWRP	33°39'51"N	117°50'27"W	San Joaquin Freshwater Marsh tributary to Upper Newport Bay

2. Order No. R8-2007-0003, Facility Information, page 5, modify Table 4., as follows:

Table 4. Facility Information

Discharger/Operator	Irvine Ranch Water District
Name of Facility	Michelson Water Reclamation Plant
Facility Address	3512 Michelson Drive
	Irvine, CA 92612
	Orange County
Facility Contact, Title, and Phone	Paul Cook, Assistant General Manager, Phone: (949) 453-5590 David W. Pedersen, Executive Director of Operations, (949) 453-5720
Mailing Address	15600 Sand Canyon Avenue, Irvine, CA 92618
Type of Facility	POTW
Facility Design Flow	28 million gallons per day tertiary treatment

3. Order No. R8-2007-0003, Findings, page 5, modify Section II.B., as follows:

B. Facility Description. The Discharger owns and operates the Michelson Water Reclamation Plant (MWRP). The wastewater treatment systems consist of primary, secondary, and tertiary treatment. Recycled water is directly delivered from DP 001 to customers for irrigation and other recycled water reuse, except groundwater recharge. Wastewater from this Facility is discharged at Discharge Point (DP) 003, and at DP 004, and DP 007 to Rattlesnake Reservoir, and Sand Canyon Reservoir, and Siphon Reservoir, respectively, for storage. The three reservoirs are waters of the United States. The area of recycled water use overlies the Irvine Groundwater Management Zone.

4. Order No. R8-2007-0003, Findings, page 6, modify Section II.E., as follows:

E. California Environmental Quality Act (CEQA). Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of CEQA, Public Resources Code section 21000 et seq. (*County of Los Angeles v. California State Water Resources Control Board* (2006) 143 Cal.App.4th 985, mod. (Nov. 6, 2006, B184034) 50 Cal.Rptr.3d 619, 632-636). This action also involves the re-issuance of waste discharge requirements for an existing facility that discharges treated wastewater to land and as such, is exempt from the provisions of the California Environmental Quality Act (commencing with Section 21100) in that the activity is exempt pursuant to Title 14 of the California Code of Regulations Section 15301. The Discharger completed the MWRP capacity expansion project Environmental Impact report, SCH 2005051174 on December 28, 2005. The EIR was certified on February 27, 2006. **The CEQA documents for discharge location DP 007, Siphon Reservoir, were completed on December 10, 2009 and a negative declaration was certified on December 14, 2009.**

5. Order No. R8-2007-0003, Findings, page 8, modify Section II.H. and Table 5., as follows:

H. Water Quality Control Plans. The Regional Water Board adopted a revised Water Quality Control Plan for the Santa Ana Region (hereinafter Basin Plan) that became effective on January 24, 1995. The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters in the Santa Ana Region addressed through the plan. More recently, the Basin Plan was amended significantly to incorporate revised boundaries for groundwater subbasins, now termed “management zones”, new nitrate-nitrogen and TDS objectives for the new management zones, and new nitrogen and TDS management strategies applicable to both surface and ground waters.

This Basin Plan Amendment was adopted by the Regional Water Board on January 22, 2004. The State Water Resources Control Board (State Water Board) and Office of Administrative Law (OAL) approved the Amendment on September 30, 2004 and December 23, 2004, respectively. EPA approved the surface water standards components of the N/TDS Amendment on June 20, 2007.

In addition, the Basin Plan implements State Water Resources Control Board (State Water Board) Resolution No. 88-63, which established State policy that all waters should be considered suitable or potentially suitable for municipal or domestic supply (i.e., designated MUN), unless certain exception criteria apply. Pursuant to these criteria, the Regional Board excepted certain waters, including Rattlesnake, **Siphon**, and Sand Canyon Reservoirs, San Diego Creek, and Newport Bay, from the MUN designation.

Table 5. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001-008	Irvine Groundwater Management Zone	<u>Present or Potential:</u> Municipal and domestic supply, agricultural supply, industrial service supply, and industrial process supply.
003	Rattlesnake Reservoir	<u>Present or Potential:</u> Agricultural supply, water contact recreation, non-contact water recreation, warm freshwater habitat, wildlife habitat Excepted from Municipal and Domestic Supply
004	Sand Canyon Reservoir	<u>Present or Potential:</u> Agricultural supply, water contact recreation, non-contact water recreation, warm freshwater habitat, wildlife habitat Excepted from Municipal and Domestic Supply
007	Siphon Reservoir	<u>Present or Potential:</u> Agricultural supply, water contact recreation, non-contact water recreation, warm freshwater habitat, wildlife habitat Excepted from Municipal and Domestic Supply

Table 5. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
005 Storm-007	San Diego Creek, Reach 1	<u>Present or Potential:</u> Water contact recreation, non-contact water recreation, warm freshwater habitat, and wildlife habitat Excepted from Municipal and Domestic Supply
006, Storm-008	San Joaquin Freshwater Marsh	<u>Present or Potential:</u> Water contact recreation; non-contact water recreation; warm freshwater habitat; preservation of biological habitats of special significance; rare, threatened or endangered species; and wildlife habitat Excepted from Municipal and Domestic Supply
005 & 006, Storm-007 & 008	Newport Bay, Upper	<u>Present or Potential:</u> Navigation, Water contact recreation, Non-contact water recreation, Commercial and sport fishing, Preservation of biological habitats of special significance, Wildlife habitat, Rare, threatened or endangered species, Spawning, reproduction, and development, Marine habitat, Shellfish harvesting, and Estuarine habitat. Excepted from Municipal and Domestic Supply

6. Order No. R8-2007-0003, Effluent Limitations and Discharge Specifications, page 13 and 14, modify Section IV.A., as follows:

A. Tertiary Treated Effluent Limitations – Discharge Points 003, & 004, & 007

Unless otherwise specifically specified hereinafter, compliance with the following effluent limitations is measured at monitoring locations M-003A, and M-004A, and M-007 as described in the attached MRP (Attachment E).

1. Final Effluent Limitations – Discharge Point 003, & 004, & 007

- a. The Discharge shall maintain compliance with the following effluent limitations:

Table 6. Effluent Limitations at DPs 003, and 004, and 007

7. Order No. R8-2007-0003, Effluent Limitations and Discharge Specifications, page 15, add new Section IV.A.1.d.(2)(f), as follows :

(f) Where ultraviolet (UV) disinfection is used for disinfection, UV disinfection shall meet the requirements specified in the Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse, published by the National Water Research Institute, Second Edition, and/or the acceptance conditions specified by the California Department of Public Health (CDPH). The facility must be operated and maintained in accordance with a CDPH approved operations plan, which is part of the Title 22 Engineering Report. The

operations plan included in the Title 22 Engineering Report shall become an enforceable part of Order No. R8-2007-0003.

8. Order No. R8-2007-0003, Effluent Limitations and Discharge Specifications, page 15, add new Section IV.A.1.d.(3), as follows:

(3) The turbidity of disinfected tertiary recycled water that is passed through a microfiltration, ultrafiltration, nanofiltration, or reverse osmosis membrane shall not exceed any of the following:

- (a) 0.2 Nephelometric Turbidity Unit (NTU) more than 5 percent of the time within a 24-hour period; and**
- (b) 0.5 NTU at any time.**

9. Order No. R8-2007-0003, Reclamation Specifications, page 17, add new Section IV.C.1.c.(2)(f), as follows:

(f) Where ultraviolet (UV) disinfection is used for disinfection, UV disinfection shall meet the requirements specified in the Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse, published by the National Water Research Institute, Second Edition, and/or the acceptance conditions specified by the California Department of Public Health (CDPH). The facility must be operated and maintained in accordance with a CDPH approved operations plan, which is part of the Title 22 Engineering Report. The operations plan included in the Title 22 Engineering Report shall become an enforceable part of Order No. R8-2007-0003.

10. Order No. R8-2007-0003, Reclamation Specifications, page 17, add new Section IV.C.1.c.(3), as follows:

(3) The turbidity of disinfected tertiary recycled water that is passed through a microfiltration, ultrafiltration, nanofiltration, or reverse osmosis membrane shall not exceed any of the following:

- (a) 0.2 Nephelometric Turbidity Unit (NTU) more than 5 percent of the time within any 24-hour period; and**
- (b) 0.5 NTU at any time.**

11. Order No. R8-2007-0003, Receiving Water Limitations, page 21, modify Section V.A.1. as follows:
 1. Receiving water limitations are based upon water quality objectives contained in the Basin Plan. As such, they are a required part of this Order. The discharge shall not cause the following in San Joaquin Freshwater Marsh, Rattlesnake, **Siphon**, and Sand Canyon reservoirs, Reach 1 of the San Diego Creek and downstream reaches:
12. Attachment B, Locations, page B1, replace map of Attachment B with attached map (page 16 of this Order):
13. Attachment E, Monitoring Locations, page E-7, modify Table 2, as follows:

Table 2 Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description	Latitude and Longitude
--	M-INF	Influent distribution channel	33°39'47" & 117°50'19"
001	REC-001	Effluent from MWRP to recycling system	33°39'50" & 117°50'17"
002	REC-002	Effluent to San Joaquin Reservoir	33°37'12" & 117°50'39"
003	M-003A	Effluent to Rattlesnake Reservoir	33°43'37" & 117°44'43"
003	M-003B	Rattlesnake Reservoir ZID boundary	33°43'37" & 117°44'27"
004	M-004A	Effluent to Sand Canyon Reservoir	33°38'55" & 117°47'47"
004	M-004B	Sand Canyon Reservoir ZID boundary	33°38'50" & 117°47'50"
005	M-005	Dewatered groundwater to Reach 1 of San Diego Creek	33°39'47" & 117°50'16"
006	M-006	Dewatered groundwater to San Joaquin Freshwater Marsh	33°39'51" & 117°50'27"
007	M-007	Effluent to Siphon Reservoir	33°42'36" & 117°43'56"
Storm-007	M-008 Storm-007	Emergency stormwater overflow to reach 1 of San Diego Creek	33°39'47" & 117°50'16"
Storm-008	M-009 Storm-008	Emergency stormwater overflow to San Joaquin Marsh	33°39'51" & 117°50'27"
	R-001	Receiving surface water—Rattlesnake Reservoir 3 location spatial composite	33°43'46" & 117°44'12" 33°43'42" & 117°44'23" 33°43'41" & 117°44'29"
	R-002	Receiving surface water—Sand Canyon Reservoir location 3 spatial composite	33°38'38" & 117°47'46" 33°38'48" & 117°47'48" 33°38'51" & 117°47'47"
	R-003	Receiving surface water—Siphon Reservoir location 3 spatial composite	33°43'39" & 117°44'28" 33°43'43" & 117°44'20" 33°43'46" & 117°44'13"

14. Attachment E, Effluent Monitoring Requirements to Surface Waters, page E-9 and E-10, modify Section IV.A., and the title of Table 4, as follows:

A. Effluent Monitoring Locations M-003, & M-004, & M-007

1. The Discharger shall monitor tertiary treated effluent for DP 003, DP 004, and DP 007 at Monitoring Locations M-003A, and M-004A, and M-007 as follows.

Table 4 Tertiary Effluent Monitoring M-003A, & M-004A, & M-007

15. Attachment E, Effluent Monitoring Requirements to Surface Waters, page E-12, modify Section IV.A.2. and the title of Table 5, as follows:

2. The Discharger shall monitor tertiary treated effluent for DP 003, and DP 004, and DP 007 at Monitoring Locations M-003B, and M-004B, and M-007 for Total Residual Chlorine as follows.

Table 5 Tertiary Effluent Monitoring M-003B, & M-004B, & M-007

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method and Minimum Level, units, respectively
Total Residual Chlorine	mg/L	Grab	Weekly	See Section I.A.3. above of this MRP

16. Attachment E, Effluent Monitoring Requirements to Surface Waters, page E-13, modify Sections IV.A.5. and IV.A.6. as follows:

5. If there are no discharges of treated effluent to DP 003, and DP 004, and DP 007, the Discharger is not required to monitor for all the constituents in Table 4 and Table 5, above. However, the Discharger shall record on a permanent log on a daily basis when there is no discharge and report this information together with the monthly report.
6. If there are discharges of water other than treated effluent at DP 003, and DP 004, and DP 007, the volume (mgd), date and source of the water shall be recorded on the permanent log. This information shall be reported together with the monthly report.

17. Attachment E, Whole Effluent Toxicity Testing Requirements, page E-13, modify the title of Section V.A., as follows:

A. Toxicity Monitoring Requirements at M-003A, and M-004A, and M-007

18. Attachment E, Receiving Water Monitoring Requirements – Surface Water and Groundwater, page E-17, modify Section VIII.A.1. and title of Table 8, as follows:

1. The Discharger shall monitor receiving water at R-001, & R-002, & **R-003** as follows:

Table 8 Receiving Water Monitoring Requirements at R-001, & R-002, & R-003

19. Attachment E, Reclamation Monitoring Requirements, page E-16, modify Section VII.A.2., as follows:

2. The Discharger may demonstrate compliance with the Effluent Limitations **(except for Total Chlorine Residual)**, Discharge Specifications, and Monitoring and Reporting Requirements in this Order for discharges at all Discharge Locations **DP 002, DP 003, DP 004, and DP 007** ~~including recycled water reuse sites,~~ by monitoring at Discharge Location 001**(monitoring location REC-001)**.

20. Attachment E, Reclamation Monitoring Requirements, page E-16, add new Section VII.C., as follows:

C. UV Disinfection System Monitoring Requirements

1. **The Discharger shall provide continuous, reliable monitoring and recording of flow, UV intensity, UV dose, UV power, and turbidity.**
2. **The Discharger shall continuously monitor and record the age of each lamp.**

21. Attachment F, Permit Information, page F-4, modify Table 1, as follows:

Table 1. Facility Information

WDID	8 302006002
Discharger/Operator	Irvine Ranch Water District
Name of Facility	Michelson Water Reclamation Plant
Address	3512 Michelson Drive
	Irvine, CA 92612
	Orange County
Facility Contact, Title and Phone	Paul Cook, Assistant General Manager, Phone: (949) 453-5590 David W. Pedersen, Director of Operations, Phone (949) 453-5720
Authorized Person to Sign and Submit Reports	Paul Cook, Assistant General Manager, Phone: (949) 453-5590 David W. Pedersen, Director of Operations, Phone (949) 453-5720
Mailing Address	15600 Sand Canyon Avenue, Irvine, CA 92618
Billing Address	P.O. BOX 57000, Irvine, CA 92619-7000
Type of Facility	POTW
Major or Minor Facility	Major
Threat to Water Quality	1

Complexity	A
Pretreatment Program	Y
Reclamation Requirements	Producer/User
Facility Permitted Flow	28 million gallons per day (mgd)
Facility Design Flow	28 mgd
Watershed	San Diego Creek/Newport Bay watershed
Receiving Water	Irvine Groundwater Management Zone. Surface waters: Rattlesnake, Siphon, and Sand Canyon Reservoirs, Reach 1 of San Diego Creek, San Joaquin Freshwater Marsh and Upper Newport Bay.
Receiving Water Type	Inland Surface Water, Estuary and Groundwater

22. Attachment F, Facility Description, page F-7, modify Table 2 and the paragraph between Table 2 and Table 3, as follows:

Table 2. MWRP Treatment Processes

Preliminary Treatment	Primary Treatment	Secondary Treatment	Tertiary Treatment
In-line channel grinders at the old headworks (to be abandoned) and rock trap, coarse mechanical screens, aerated grit basins, screenings washer/compactor, and grit washer/classifier at new headworks.	Primary clarifiers, flow equalization basins	Activated sludge treatment using diffused aeration basins and secondary clarifiers. Activated sludge (AS) process can be operated either in carbonaceous or nitrification/denitrification modes. Nitrification/denitrification mode and uses methanol augmented anoxic zone at the head of the aeration system followed by clarification. Membrane bioreactor (MBR) process operated as a separate treatment train in parallel with AS process.	Addition of Alum prior to filtration and high rate clarification. Conventional down flow dual media filters, chlorination. Potassium hydroxide pH adjustment capability is provided to regulate pH as needed. Microfiltration membrane technology that is part of the MBR treatment train followed by UV disinfection.

The treatment design capacity of MWRP is 28 mgd. Treated wastewater flows at MWRP for the last three years are listed below:

23. Attachment F, Section II., Facility Description, page F-8, modify Table 5, as follows:

Table 5. Open Reservoirs

Reservoir	Capacity, MG	Designation
Sand Canyon	250	Water of the United States
Rattlesnake	359	Water of the United States
Siphon	180	Water of the United States
San Joaquin	954	Restricted Impoundment

Attachment F, Facility Description, page F-10, modify last paragraph of Section II.B.1., as follows:

Tertiary treated wastewater is discharged to surface waters at ~~two~~ **three** points located at Rattlesnake Reservoir, and Sand Canyon, **and Siphon** Reservoirs, designated as DP 003, and 004, **and 007**, respectively.

24. Attachment F, Facility Description, page F-10, modify Section II.B.3., as follows:

3. Stormwater Discharge points

Stormwater from the facility is channeled into an onsite emergency storage pond, from which it is pumped to the treatment plant for treatment. However, during heavy storms, the stormwater may be discharged to surface water. This Order designates two stormwater runoff discharge points as ~~Storm-DPs-007 and 008~~ **Storm-007 and Storm-008**.

25. Attachment F, Facility Description, page F-10, modify Table 7, as follows:

Table 7. Summary of Discharge Points and Receiving Waters

Discharge Serial No.	Latitude	Longitude	Description and Receiving Waters	Flow & Frequency
001	33°39'50"N	117°50'17"W	Recycled water to distribution system serving recycled water users	12.3 MGD Continuous
002	33°37'12"N	117°50'39"W	Recycled water to San Joaquin Reservoir, overlying Irvine GMZ	Variable up to 12.3 MGD
003	33°43'37"N	117°44'27"W	Tertiary treated effluent to Rattlesnake Reservoir, overlying Irvine GMZ	Variable up to 12.3 MGD
004	33°38'55"N	117°47'47"W	Tertiary treated effluent to Sand Canyon Reservoir, overlying Irvine GMZ	Variable up to 12.3 MGD
005	33°39'47"N	117°50'16"W	Dewatering groundwater to San Diego Creek Reach 1 tributary to Upper Newport Bay	Up to 0.3 MGD
006	33°39'51"N	117°50'27"W	Dewatering groundwater to San Joaquin Freshwater Marsh tributary to Upper Newport Bay	Up to 0.3 MGD
007	33°42'36"N	117°43'56"W	Tertiary treated effluent to Siphon Reservoir, overlying Irvine GMZ	Variable up to 12.3 MGD
Storm-007	33°39'47"N	117°50'16"W	Pumped stormwater (emergency) to San Diego Creek Reach 1 tributary to Upper Newport Bay	Unmetered
Storm-008	33°39'51"N	117°50'27"W	Pumped stormwater (emergency) to San Joaquin Freshwater Marsh tributary to Upper Newport Bay	Unmetered

26. Attachment F, Applicable Plans, Policies, and Regulations, page F-14, modify Section III.B., as follows:

B. California Environmental Quality Act (CEQA)

Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of CEQA, Public Resources Code section 21000 et seq. (*County of Los Angeles v. California State Water Resources Control Board* (2006) 143 Cal.App.4th 985, mod. (Nov. 6, 2006, B184034) 50 Cal.Rptr.3d 619, 632-636.) For the plant expansion project, a mitigated negative declaration and addendum was adopted on July 2, 2003 and October 5, 2005, respectively. This action also involves the re-issuance of waste discharge requirements for an existing facility that discharges treated wastewater to land and as such, is exempt from the provisions of California Environmental Quality Act (commencing with Section 21100) in that the activity is exempt pursuant to Title 14 of the California Code of Regulations Section 15301". MWRP has completed the capacity expansion project Environmental Impact Report, SCH 2005051174 on December 28, 2005. The EIR was certified on February 27, 2006. **The CEQA documents for discharge location DP 007, Siphon Reservoir, were completed on December 10, 2009 and a negative declaration was certified on December 14, 2009.**

27. Attachment F, Applicable Plans, Policies, and Regulations, page F-15, modify Table 12, as follows:

Table 12. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001 to 08	Irvine Groundwater Management Zone	<u>Present or Potential:</u> Municipal and domestic supply, agricultural supply, industrial service supply, and industrial process supply.
003	Rattlesnake Reservoir	<u>Present or Potential:</u> Agricultural supply, water contact recreation, non-contact water recreation, warm freshwater habitat, and wildlife habitat Excepted from Municipal and Domestic Supply
004	Sand Canyon Reservoir	<u>Present or Potential:</u> Agricultural supply, water contact recreation, non-contact water recreation, warm freshwater habitat, and wildlife habitat Excepted from Municipal and Domestic Supply
007	Siphon Reservoir	<u>Present or Potential:</u> Agricultural supply, water contact recreation, non-contact water recreation, warm freshwater habitat, and wildlife habitat Excepted from Municipal and Domestic Supply
005, Storm-007	San Diego Creek, Reach 1	<u>Present or Potential:</u> Water contact recreation, non-contact water recreation, warm freshwater habitat, and wildlife habitat Excepted from Municipal and Domestic Supply

Table 12. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
006, Storm-008	San Joaquin Freshwater Marsh	<u>Present or Potential:</u> Water contact recreation; non-contact water recreation; warm freshwater habitat; preservation of biological habitats of special significance; rare, threatened or endangered species; and wildlife habitat Excepted from Municipal and Domestic Supply
005 & 006, Storm-007 & 008	Newport Bay, Upper	<u>Present or Potential:</u> Water contact recreation, Non-contact water recreation, Commercial and sport fishing, Preservation of biological habitats of special significance, Wildlife habitat, Rare, threatened or endangered species, Spawning, reproduction, and development, Marine habitat, Shellfish harvesting, and Estuarine habitat Excepted from Municipal and Domestic Supply

28. Attachment F, Applicable Plans, Policies, and Regulations, page F-19, modify Section III.G., as follows:

G. Rattlesnake, Siphon, Reservoir and Sand Canyon Reservoirs

Rattlesnake, **Siphon**, Reservoir and Sand Canyon Reservoirs are used as impoundments to store and deliver recycled water. ~~Rattlesnake Reservoir and Sand Canyon Reservoir~~ **and** are isolated from other surface waters. Except during catastrophic storm events, water in Rattlesnake Reservoir **and Siphon Reservoirs** is not released into downstream surface waters, while the Sand Canyon Reservoir is managed to reduce recycled overflow to the maximum extent practicable.

29. Attachment F, Rationale for Effluent Limitations and Discharge Specifications, page F-21, modify the paragraphs for Total Chlorine Residual and TDS/Ammonia-Nitrogen of Section IV.C.2.a., as follows:

Total Chlorine Residual: Recycled water from the MWRP is distributed to the Sand Canyon, **Siphon**, and Rattlesnake Reservoirs for storage. Super-chlorination of the recycled water is necessary to prevent fouling of the recycled water distribution lines. As such, discharges of recycled water into the reservoirs contain concentrations of residual chlorine that may be toxic to aquatic organisms that may be present in the reservoirs. However, the residual chlorine present in the discharges dissipates within the reservoirs such that, currently, the reservoirs support aquatic life, including fish. The discharge of chlorinated recycled water to the reservoirs does not compromise the beneficial uses of the reservoirs, which include warm water aquatic habitat. The discharge of chlorinated recycled water to the reservoirs is necessary to accommodate wastewater reclamation and water conservation. It is in the public interest to accommodate these activities.

This Order specifies an effluent limitation for total chlorine residual to protect aquatic life beneficial uses. Compliance with this limitation for Rattlesnake and

Sand Canyon Reservoirs is to be achieved outside a zone of initial dilution (about 45 feet away from the outfall at each reservoir), wherein dissipation of the chlorine occurs. **In the case of Siphon Reservoir, due its smaller volume with respect to the other two reservoirs, compliance is to be achieved at the point of discharge to the reservoir (DP 007).**

TDS/Ammonia-Nitrogen: TDS/Ammonia-Nitrogen limitations are specified in the Order for discharges to surface waters, including Sand Canyon, **Siphon**, and Rattlesnake Reservoirs. The proposed TDS and Ammonia-Nitrogen limits are based on the prior effluent limits in Order No. 01-95. The TDS/ Ammonia-Nitrogen limits are shown in the table below.

30. Attachment F, Rationale for Effluent Limitations and Discharge Specifications, page F-26, modify the title of Section IV.D., as follows:

D. Best Professional Judgment-Based Effluent Specifications for DPs 003, & 004, & 007

31. Attachment F, Rationale for Effluent Limitations and Discharge Specifications, page F-26, modify the title of Section IV.E., as follows:

E. Summary of Final Effluent Limitations for DPs 003, & 004, & 007

32. Attachment F, Rationale for Effluent Limitations and Discharge Specifications, page F-28, modify the titles of Section IV.E.4. and Table 19, as follows:

4. Summary of Final Effluent Limitations for DPs 003, & 004, & 007:

Table 19. Summary of Water Quality-based Final Effluent Limitations for Discharge Points 003, & 004, & 007

33. Attachment F, Rationale for Effluent Limitations and Discharge Specifications, page F-31, modify the title of Section IV.J., as follows:

J. Stormwater Discharge Requirements – ~~DPs 007 & 008~~ Storm-007 & Storm-008

34. Attachment F, Rationale for Monitoring and Reporting Requirements, page F-33, modify the fourth paragraph of Section VI.C., as follows:

This Order requires the Discharger to conduct chronic toxicity testing of the effluent on a monthly basis whenever there is a discharge of recycled water to waters of the US, Sand Canyon, **Siphon**, and Rattlesnake Reservoirs. The Order also requires the Discharger to conduct an Initial Investigation Toxicity Reduction Evaluation (IITRE) program when either the two-month median of toxicity test results exceeds 1 TUc or any single test exceeds 1.7 TUc for survival endpoint. Based on the results of this investigation program and at the discretion of the

Executive Officer, a more rigorous Toxicity Reduction Evaluation/Toxicity Identification Evaluation (TRE/TIE) may be required. A re-opener provision is included in the Order to incorporate a chronic toxicity effluent limitation if warranted by the toxicity test results.

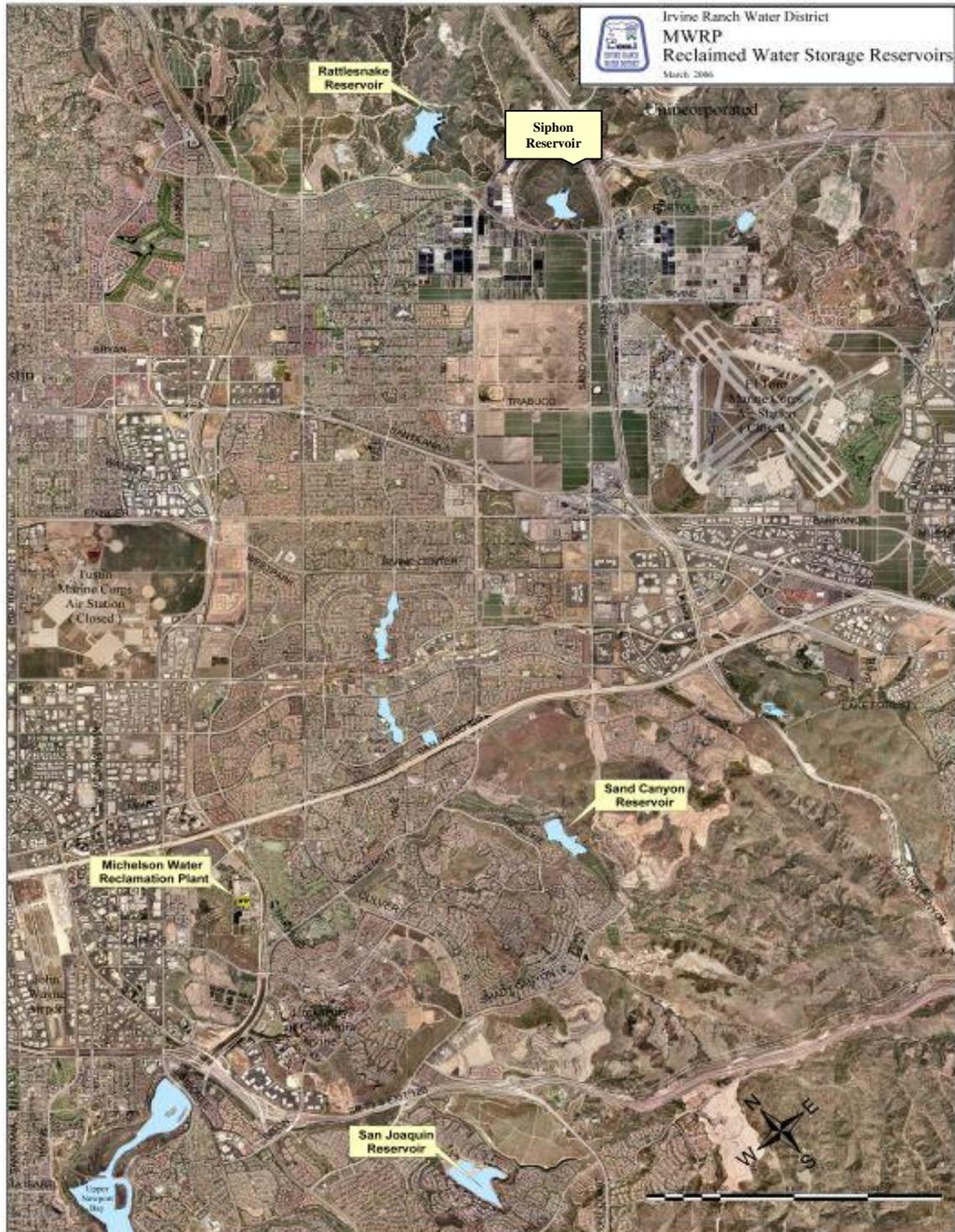
RECOMMENDATION:

Adopt Order No. R8-2012-0004, as presented.

Comments were solicited from the following agencies and persons:

U.S. Environmental Protection Agency, Permits Issuance Section (WTR-5)
U.S. Fish and Wildlife Service, Carlsbad
State Department of Fish and Game, Los Alamitos
California Department of Public Health, Santa Ana – Anthony Nhan
Orange County Health Care Agency, Santa Ana – Larry Honeybourne
Orange County Water District - Nira Yamachika
The Irvine Company - Sat Tamaribuchi
Orange County, Resources and Development Management Department
City of Newport Beach – City Manager
City of Irvine – City Manager
SPON – Jack Skinner
Robert Caustin
Orange County Coastkeeper - Garry Brown
Lawyers for Clean Water C/c San Francisco Baykeeper

ATTACHMENT B – LOCATION



California Regional Water Quality Control Board
Santa Ana Region

Order No. R8-2012-0004
Amending Order No. R8-2007-0003, NPDES No. CA8000326
Waste Discharge and Producer/User Reclamation Requirements
For
Irvine Ranch Water District
Michelson Water Reclamation Plant
Orange County

Tentative

The California Regional Water Quality Control Board, Santa Ana Region (hereinafter, Regional Board), finds that:

1. On November 30, 2007, the Regional Board adopted Order No. R8-2007-0003, NPDES No. CA8000326, prescribing waste discharge requirements and Producer/User Water Reclamation Requirements for the Irvine Ranch Water District (hereinafter Discharger) Michelson Water Reclamation Plant.
2. The Discharge completed the purchase of the Siphon Reservoir property from The Irvine Company LLC (TIC) in December 2009. The property includes 40 acres of the reservoir property, 6.3 acres of TIC-owned remnant property, and temporary easement over the Highline Canal alignment from Rattlesnake Reservoir to Siphon Reservoir.
3. In a letter entitled, "Request to add Siphon Reservoir to Order R8-2007-0003," dated January 19, 2010, the Discharger requested to this Regional Board the approval of the discharge of tertiary treated wastewater to Siphon Reservoir for storage purposes and its subsequent use as part of its recycled water distribution system. Siphon Reservoir will receive tertiary-2.2 recycled water, produced at their Michelson Water Reclamation Plant, from the Rattlesnake Reservoir through the Highline Canal. The Discharger will then route the stored recycled water, by gravity, into its recycled water distribution system
4. Siphon Reservoir is listed as an inland surface water body (water of the United States) in the Regional Board's Santa Ana River Basin Water Quality Control Plan (Basin Plan), 1995 edition (updated in 2008).
5. It is appropriate to amend Order No. R8-2007-0003 to add a new discharge point (DP 007) for discharges to Siphon Reservoir.
6. The current permitted design treatment capacity of the treatment plant is 18 million-gallons-per-day (MGD). The Discharger is in the process of completing construction of a 10 MGD treatment expansion. The operation of the new treatment units is anticipated to begin during 2012. The treatment capacity expansion includes new headworks, primary clarifiers, membrane bioreactor (MBR), high-rate clarifier, and 15-MGD capacity UV disinfection system. It is

appropriate to modify Order No. R8-2007-0003 to allow the Discharger to operate at a treatment capacity of up to 28 MGD.

7. The discharger plans to operate both UV and chlorine based disinfection technologies and both the MBR and conventional activated sludge process, for secondary treatment, in parallel. Therefore, it is appropriate to amend Order No. R8-2007-0003 to include discharge specifications and monitoring requirements for UV disinfection and membrane microfiltration. It is also appropriate to amend Order No. R8-2007-0003 to clarify the locations of stormwater discharge and monitoring points, as well as to modify Section VII.A.2., of Attachment E, to specify applicable discharge locations and to clarify Total Chlorine Residual compliance points.
8. In accordance with Water Code Section 13389, amending the waste discharge requirements for this discharge is exempt from those provisions of the California Environmental Quality Act (CEQA) contained in Chapter 3 (commencing with Section 21100), Division 13 of the Public Resources Code. The CEQA documents for the new discharge location were completed on December 10, 2009 and a negative declaration was certified on December 14, 2009.
9. The Regional Board has notified the discharger and other interested agencies and persons of its intent to amend waste discharge requirements for the discharge and has provided them with an opportunity to submit their written views and recommendations.
10. The Regional Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that Order No. R8-2007-0003 be amended as follows:

1. Order No. R8-2007-0003, page 1, replace Table 2., as follows:

Table 2. Discharge Locations

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	Recycled water from MWRP to distribution system	33°39'50"N	117°50'17"W	Irvine GMZ
002	Recycled water from MWRP to San Joaquin Reservoir	33°37'12"N	117°50'39"W	Irvine GMZ
003	Tertiary treated effluent from MWRP	33°43'37"N	117°44'27"W	Rattlesnake Reservoir & Irvine GMZ
004	Tertiary treated effluent from MWRP	33°38'55"N	117°47'47"W	Sand Canyon Reservoir & Irvine GMZ

Table 2. Discharge Locations

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
005	Dewatered groundwater from MWRP	33°39'47"N	117°50'16"W	San Diego Creek Reach 1 tributary to Upper Newport Bay
006	Dewatered groundwater from MWRP	33°39'51"N	117°50'27"W	San Joaquin Freshwater Marsh tributary to Upper Newport Bay
007	Tertiary treated effluent from MWRP	33°42'36"N	117°43'56"W	Siphon Reservoir & Irvine GMZ
Storm-007	Pumped stormwater (emergency) from MWRP	33°39'47"N	117°50'16"W	San Diego Creek Reach 1 tributary to Upper Newport Bay
Storm-008	Pumped stormwater (emergency) from MWRP	33°39'51"N	117°50'27"W	San Joaquin Freshwater Marsh tributary to Upper Newport Bay

2. Order No. R8-2007-0003, Facility Information, page 5, replace Table 4., as follows:

Table 4. Facility Information

Discharger/Operator	Irvine Ranch Water District
Name of Facility	Michelson Water Reclamation Plant
Facility Address	3512 Michelson Drive
	Irvine, CA 92612
	Orange County
Facility Contact, Title, and Phone	David W. Pedersen, Executive Director of Operations, Phone: (949) 453-5720
Mailing Address	15600 Sand Canyon Avenue, Irvine, CA 92618
Type of Facility	POTW
Facility Design Flow	28 million gallons per day tertiary treatment

3. Order No. R8-2007-0003, Findings, page 5, replace Section II.B., as follows:

B. Facility Description. The Discharger owns and operates the Michelson Water Reclamation Plant (MWRP). The wastewater treatment systems consist of primary, secondary, and tertiary treatment. Recycled water is directly delivered from DP 001 to customers for irrigation and other recycled water reuse, except groundwater recharge. Wastewater from this Facility is discharged at Discharge Point (DP) 003, DP 004, and at DP 007 to Rattlesnake Reservoir, Sand Canyon Reservoir, and Siphon Reservoir, respectively, for storage. The three reservoirs are waters of the United States. The area of recycled water use overlies the Irvine Groundwater Management Zone.

Because of high groundwater elevation at the Facility site, dewatering of the shallow groundwater zone is necessary to protect in-ground facilities. The area is dewatered through a network of shallow zone wells with two separate discharge points, DP 005 and DP 006. These discharge points discharge either

into Reach 1 of San Diego Creek or into the San Joaquin Freshwater Marsh. Reach 1 of San Diego Creek and San Joaquin Freshwater Marsh are tributaries to San Diego Creek and waters of the U.S. This Order also regulates the groundwater dewatering discharges from the Facility.

4. Order No. R8-2007-0003, Findings, page 6, replace Section II.E., as follows:

E. California Environmental Quality Act (CEQA). Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of CEQA, Public Resources Code section 21000 et seq. (*County of Los Angeles v. California State Water Resources Control Board* (2006) 143 Cal.App.4th 985, mod. (Nov. 6, 2006, B184034) 50 Cal.Rptr.3d 619, 632-636). This action also involves the re-issuance of waste discharge requirements for an existing facility that discharges treated wastewater to land and as such, is exempt from the provisions of the California Environmental Quality Act (commencing with Section 21100) in that the activity is exempt pursuant to Title 14 of the California Code of Regulations Section 15301. The Discharger completed the MWRP capacity expansion project Environmental Impact report, SCH 2005051174 on December 28, 2005. The EIR was certified on February 27, 2006. The CEQA documents for discharge location DP 007, Siphon Reservoir, were completed on December 10, 2009 and a negative declaration was certified on December 14, 2009.

5. Order No. R8-2007-0003, Findings, page 8, replace Section II.H. and Table 5., as follows:

H. Water Quality Control Plans. The Regional Water Board adopted a revised Water Quality Control Plan for the Santa Ana Region (hereinafter Basin Plan) that became effective on January 24, 1995. The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters in the Santa Ana Region addressed through the plan. More recently, the Basin Plan was amended significantly to incorporate revised boundaries for groundwater subbasins, now termed "management zones", new nitrate-nitrogen and TDS objectives for the new management zones, and new nitrogen and TDS management strategies applicable to both surface and ground waters.

This Basin Plan Amendment was adopted by the Regional Water Board on January 22, 2004. The State Water Resources Control Board (State Water Board) and Office of Administrative Law (OAL) approved the Amendment on September 30, 2004 and December 23, 2004, respectively. EPA approved the surface water standards components of the N/TDS Amendment on June 20, 2007.

In addition, the Basin Plan implements State Water Resources Control Board (State Water Board) Resolution No. 88-63, which established State policy that all waters should be considered suitable or potentially suitable for municipal or domestic supply (i.e., designated MUN), unless certain exception criteria apply. Pursuant to these criteria, the Regional Board excepted certain waters, including Rattlesnake, Siphon, and Sand Canyon Reservoirs, San Diego Creek, and Newport Bay, from the MUN designation.

Table 5. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001-008	Irvine Groundwater Management Zone	<u>Present or Potential:</u> Municipal and domestic supply, agricultural supply, industrial service supply, and industrial process supply.
003	Rattlesnake Reservoir	<u>Present or Potential:</u> Agricultural supply, water contact recreation, non-contact water recreation, warm freshwater habitat, wildlife habitat Excepted from Municipal and Domestic Supply
004	Sand Canyon Reservoir	<u>Present or Potential:</u> Agricultural supply, water contact recreation, non-contact water recreation, warm freshwater habitat, wildlife habitat Excepted from Municipal and Domestic Supply
007	Siphon Reservoir	<u>Present or Potential:</u> Agricultural supply, water contact recreation, non-contact water recreation, warm freshwater habitat, wildlife habitat Excepted from Municipal and Domestic Supply
005 Storm-007	San Diego Creek, Reach 1	<u>Present or Potential:</u> Water contact recreation, non-contact water recreation, warm freshwater habitat, and wildlife habitat Excepted from Municipal and Domestic Supply
006, Storm-008	San Joaquin Freshwater Marsh	<u>Present or Potential:</u> Water contact recreation; non-contact water recreation; warm freshwater habitat; preservation of biological habitats of special significance; rare, threatened or endangered species; and wildlife habitat Excepted from Municipal and Domestic Supply
005 & 006, Storm-007 & 008	Newport Bay, Upper	<u>Present or Potential:</u> Navigation, Water contact recreation, Non-contact water recreation, Commercial and sport fishing, Preservation of biological habitats of special significance, Wildlife habitat, Rare, threatened or endangered species, Spawning, reproduction, and development, Marine habitat, Shellfish harvesting, and Estuarine habitat. Excepted from Municipal and Domestic Supply

6. Order No. R8-2007-0003, Effluent Limitations and Discharge Specifications, page 13 and 14, replace title and paragraph of Section IV.A., title of Section IV.A.1. and title of Table 6., as follows:

A. Tertiary Treated Effluent Limitations – Discharge Points 003, 004, & 007

Unless otherwise specifically specified hereinafter, compliance with the following effluent limitations is measured at monitoring locations M-003A, M-004A, and M-007 as described in the attached MRP (Attachment E).

1. Final Effluent Limitations – Discharge Point 003, 004, & 007

- a. The Discharge shall maintain compliance with the following effluent limitations:

Table 6. Effluent Limitations at DPs 003, 004, and 007

7. Order No. R8-2007-0003, Effluent Limitations and Discharge Specifications, page 15, insert Section IV.A.1.d.(2)(f), as follows :

- (f) Where ultraviolet (UV) disinfection is used for disinfection, UV disinfection shall meet the requirements specified in the Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse, published by the National Water Research Institute, Second Edition, and/or the acceptance conditions specified by the California Department of Public Health (CDPH). The facility must be operated and maintained in accordance with a CDPH approved operations plan, which is part of the Title 22 Engineering Report. The operations plan included in the Title 22 Engineering Report shall become an enforceable part of Order No. R8-2007-0003.

8. Order No. R8-2007-0003, Effluent Limitations and Discharge Specifications, page 15, insert new Section IV.A.1.d.(3), as follows:

- (3) The turbidity of disinfected tertiary recycled water that is passed through a microfiltration, ultrafiltration, nanofiltration, or reverse osmosis membrane shall not exceed any of the following:

- (a) 0.2 Nephelometric Turbidity Unit (NTU) more than 5 percent of the time within a 24-hour period; and
(b) 0.5 NTU at any time.

9. Order No. R8-2007-0003, Reclamation Specifications, page 17, insert Section IV.C.1.c.(2)(f), as follows:

- (f) Where ultraviolet (UV) disinfection is used for disinfection, UV disinfection shall meet the requirements specified in the Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse, published by the National Water

Research Institute, Second Edition, and/or the acceptance conditions specified by the California Department of Public Health (CDPH). The facility must be operated and maintained in accordance with a CDPH approved operations plan, which is part of the Title 22 Engineering Report. The operations plan included in the Title 22 Engineering Report shall become an enforceable part of Order No. R8-2007-0003.

10. Order No. R8-2007-0003, Reclamation Specifications, page 17, insert Section IV.C.1.c.(3), as follows:

(3) The turbidity of disinfected tertiary recycled water that is passed through a microfiltration, ultrafiltration, nanofiltration, or reverse osmosis membrane shall not exceed any of the following:

- (a) 0.2 Nephelometric Turbidity Unit (NTU) more than 5 percent of the time within any 24-hour period; and
- (b) 0.5 NTU at any time.

11. Order No. R8-2007-0003, Receiving Water Limitations, page 21, replace Section V.A.1. as follows:

1. Receiving water limitations are based upon water quality objectives contained in the Basin Plan. As such, they are a required part of this Order. The discharge shall not cause the following in San Joaquin Freshwater Marsh, Rattlesnake, Siphon, and Sand Canyon reservoirs, Reach 1 of the San Diego Creek and downstream reaches:

12. Attachment B, Locations, page B1, replace map of Attachment B with attached map (page 16 of this Order):

13. Attachment E, Monitoring Locations, page E-7, replace Table 2, as follows:

Table 2 Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description	Latitude and Longitude
--	M-INF	Influent distribution channel	33°39'47" & 117°50'19"
001	REC-001	Effluent from MWRP to recycling system	33°39'50" & 117°50'17"
002	REC-002	Effluent to San Joaquin Reservoir	33°37'12" & 117°50'39"
003	M-003A	Effluent to Rattlesnake Reservoir	33°43'37" & 117°44'43"
003	M-003B	Rattlesnake Reservoir ZID boundary	33°43'37" & 117°44'27"
004	M-004A	Effluent to Sand Canyon Reservoir	33°38'55" & 117°47'47"
004	M-004B	Sand Canyon Reservoir ZID boundary	33°38'50" & 117°47'50"
005	M-005	Dewatered groundwater to Reach 1 of San Diego Creek	33°39'47" & 117°50'16"
006	M-006	Dewatered groundwater to San Joaquin Freshwater Marsh	33°39'51" & 117°50'27"
007	M-007	Effluent to Siphon Reservoir	33°42'36" & 117°43'56"

Table 2 Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description	Latitude and Longitude
Storm-007	M-008	Emergency stormwater overflow to reach 1 of San Diego Creek	33°39'47" & 117°50'16"
Storm-008	M-009	Emergency stormwater overflow to San Joaquin Marsh	33°39'51" & 117°50'27"
	R-001	Receiving surface water—Rattlesnake Reservoir 3 location spatial composite	33°43'46" & 117°44'12" 33°43'42" & 117°44'23" 33°43'41" & 117°44'29"
	R-002	Receiving surface water—Sand Canyon Reservoir location 3 spatial composite	33°38'38" & 117°47'46" 33°38'48" & 117°47'48" 33°38'51" & 117°47'47"
	R-003	Receiving surface water—Siphon Reservoir location 3 spatial composite	33°43'39" & 117°44'28" 33°43'43" & 117°44'20" 33°43'46" & 117°44'13"

14. Attachment E, Effluent Monitoring Requirements to Surface Waters, page E-9 and E-10, replace the title of Section IV.A., paragraph IV.A.1., and title of Table 4, as follows:

A. Effluent Monitoring Locations M-003, M-004, & M-007

1. The Discharger shall monitor tertiary treated effluent for DP 003, DP 004, and DP 007 at Monitoring Locations M-003A, M-004A, and M-007 as follows.

Table 4 Tertiary Effluent Monitoring M-003A, M-004A, & M-007

15. Attachment E, Effluent Monitoring Requirements to Surface Waters, page E-12, replace Section IV.A.2. and Table 5, as follows:

2. The Discharger shall monitor tertiary treated effluent for DP 003, DP 004, and DP 007 at Monitoring Locations M-003B, M-004B, and M-007 for Total Residual Chlorine as follows.

Table 5 Tertiary Effluent Monitoring M-003B, M-004B, & M-007

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method and Minimum Level, units, respectively
Total Residual Chlorine	mg/L	Grab	Weekly	See Section I.A.3. above of this MRP

16. Attachment E, Effluent Monitoring Requirements to Surface Waters, page E-13, replace Sections IV.A.5. and IV.A.6. as follows:

5. If there are no discharges of treated effluent to DP 003, DP 004, and DP 007, the Discharger is not required to monitor for all the constituents in Table 4 and Table 5, above. However, the Discharger shall record on a permanent log on a daily basis when there is no discharge and report this information together with the monthly report.
6. If there are discharges of water other than treated effluent at DP 003, DP 004, and DP 007, the volume (mgd), date and source of the water shall be recorded on the permanent log. This information shall be reported together with the monthly report.

17. Attachment E, Whole Effluent Toxicity Testing Requirements, page E-13, replace the title of Section V.A., as follows:

A. Toxicity Monitoring Requirements at M-003A, M-004A, and M-007

18. Attachment E, Receiving Water Monitoring Requirements – Surface Water and Groundwater, page E-17, replace the paragraph of Section VIII.A.1. and title of Table 8, as follows:

1. The Discharger shall monitor receiving water at R-001, R-002, & R-003 as follows:

Table 8 Receiving Water Monitoring Requirements at R-001, R-002 & R-003

19. Attachment E, Reclamation Monitoring Requirements, page E-16, replace Section VII.A.2., as follows:

2. The Discharger may demonstrate compliance with the Effluent Limitations (except for Total Chlorine Residual), Discharge Specifications, and Monitoring and Reporting Requirements in this Order for discharges at Discharge Locations DP 002, DP 003, DP 004, and DP 007 by monitoring at Discharge Location DP 001 (monitoring location REC-001).

20. Attachment E, Reclamation Monitoring Requirements, page E-16, insert new Section VII.C., as follows:

C. UV Disinfection System Monitoring Requirements

1. The Discharger shall provide continuous, reliable monitoring and recording of flow, UV intensity, UV dose, UV power, and turbidity.
2. The Discharger shall continuously monitor and record the age of each lamp.

21. Attachment F, Permit Information, page F-4, replace Table 1, as follows:

Table 1. Facility Information

WDID	8 302006002
Discharger/Operator	Irvine Ranch Water District
Name of Facility	Michelson Water Reclamation Plant
Address	3512 Michelson Drive
	Irvine, CA 92612
	Orange County
Facility Contact, Title and Phone	David W. Pedersen, Executive Director of Operations, Phone: (949) 453-5720
Authorized Person to Sign and Submit Reports	David W. Pedersen, Executive Director of Operations, Phone: (949) 453-5720
Mailing Address	15600 Sand Canyon Avenue, Irvine, CA 92618
Billing Address	P.O. BOX 57000, Irvine, CA 92619-7000
Type of Facility	POTW
Major or Minor Facility	Major
Threat to Water Quality	1
Complexity	A
Pretreatment Program	Y
Reclamation Requirements	Producer/User
Facility Permitted Flow	28 million gallons per day (mgd)
Facility Design Flow	28 mgd
Watershed	San Diego Creek/Newport Bay watershed
Receiving Water	Irvine Groundwater Management Zone. Surface waters: Rattlesnake, Siphon, and Sand Canyon Reservoirs, Reach 1 of San Diego Creek, San Joaquin Freshwater Marsh and Upper Newport Bay.
Receiving Water Type	Inland Surface Water, Estuary and Groundwater

22. Attachment F, Facility Description, page F-7, replace Table 2 and the paragraph between Table 2 and Table 3, as follows:

Table 2. MWRP Treatment Processes

Preliminary Treatment	Primary Treatment	Secondary Treatment	Tertiary Treatment
In-line channel grinders at the old headworks (to be abandoned) and rock trap, coarse mechanical screens, aerated grit basins, screenings washer/compact or, and grit washer/classifier at new headworks.	Primary clarifiers, flow equalization basins	Activated sludge (AS) process operated in nitrification/denitrification mode and uses methanol augmented anoxic zone at the head of the aeration system followed by secondary clarification. Membrane bioreactor (MBR) process operated as separate treatment train in parallel with AS process.	Addition of Alum prior to filtration and high rate clarification. Conventional down flow dual media filters, chlorination. Potassium hydroxide pH adjustment capability is provided to regulate pH as needed. Microfiltration membrane technology that is part of the MBR treatment train followed by UV disinfection.

The treatment design capacity of MWRP is 28 mgd. Treated wastewater flows at MWRP for the last three years are listed below:

23. Attachment F, Section II., Facility Description, page F-8, replace Table 5, as follows:

Table 5. Open Reservoirs

Reservoir	Capacity, MG	Designation
Sand Canyon	250	Water of the United States
Rattlesnake	359	Water of the United States
Siphon	180	Water of the United States
San Joaquin	954	Restricted Impoundment

24. Attachment F, Facility Description, page F-10, replace last paragraph of Section II.B.1., as follows:

Tertiary treated wastewater is discharged to surface waters at three points located at Rattlesnake, Sand Canyon, and Siphon Reservoirs, designated as DP 003, 004, and 007, respectively.

25. Attachment F, Facility Description, page F-10, replace Section II.B.3., as follows:

3. Stormwater Discharge points

Stormwater from the facility is channeled into an onsite emergency storage pond, from which it is pumped to the treatment plant for treatment. However, during heavy storms, the stormwater may be discharged to surface water. This

Order designates two stormwater runoff discharge points as Storm-007 and Storm-008.

26. Attachment F, Facility Description, page F-10, replace Table 7, as follows:

Table 7. Summary of Discharge Points and Receiving Waters

Discharge Serial No.	Latitude	Longitude	Description and Receiving Waters	Flow & Frequency
001	33°39'50"N	117°50'17"W	Recycled water to distribution system serving recycled water users	12.3 MGD Continuous
002	33°37'12"N	117°50'39"W	Recycled water to San Joaquin Reservoir, overlying Irvine GMZ	Variable up to 12.3 MGD
003	33°43'37"N	117°44'27"W	Tertiary treated effluent to Rattlesnake Reservoir, overlying Irvine GMZ	Variable up to 12.3 MGD
004	33°38'55"N	117°47'47"W	Tertiary treated effluent to Sand Canyon Reservoir, overlying Irvine GMZ	Variable up to 12.3 MGD
005	33°39'47"N	117°50'16"W	Dewatering groundwater to San Diego Creek Reach 1 tributary to Upper Newport Bay	Up to 0.3 MGD
006	33°39'51"N	117°50'27"W	Dewatering groundwater to San Joaquin Freshwater Marsh tributary to Upper Newport Bay	Up to 0.3 MGD
007	33°42'36"N	117°43'56"W	Tertiary treated effluent to Siphon Reservoir, overlying Irvine GMZ	Variable up to 12.3 MGD
Storm-007	33°39'47"N	117°50'16"W	Pumped stormwater (emergency) to San Diego Creek Reach 1 tributary to Upper Newport Bay	Unmetered
Storm-008	33°39'51"N	117°50'27"W	Pumped stormwater (emergency) to San Joaquin Freshwater Marsh tributary to Upper Newport Bay	Unmetered

27. Attachment F, Applicable Plans, Policies, and Regulations, page F-14, replace Section III.B., as follows:

B. California Environmental Quality Act (CEQA)

Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of CEQA, Public Resources Code section 21000 et seq. (*County of Los Angeles v. California State Water Resources Control Board* (2006) 143 Cal.App.4th 985, mod. (Nov. 6, 2006, B184034) 50 Cal.Rptr.3d 619, 632-636.) For the plant expansion project, a mitigated negative declaration and addendum was adopted on July 2, 2003 and October 5, 2005, respectively. This action also involves the re-issuance of waste discharge requirements for an existing facility that discharges treated wastewater to land and as such, is exempt from the provisions of California Environmental Quality Act (commencing with Section 21100) in that the activity is exempt pursuant to Title 14 of the California Code of Regulations Section 15301". MWRP has completed the capacity expansion project

Environmental Impact Report, SCH 2005051174 on December 28, 2005. The EIR was certified on February 27, 2006. The CEQA documents for discharge location DP 007, Siphon Reservoir, were completed on December 10, 2009 and a negative declaration was certified on December 14, 2009.

28. Attachment F, Applicable Plans, Policies, and Regulations, page F-15, replace Table 12, as follows:

Table 12. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001 to 08	Irvine Groundwater Management Zone	<u>Present or Potential:</u> Municipal and domestic supply, agricultural supply, industrial service supply, and industrial process supply.
003	Rattlesnake Reservoir	<u>Present or Potential:</u> Agricultural supply, water contact recreation, non-contact water recreation, warm freshwater habitat, and wildlife habitat Excepted from Municipal and Domestic Supply
004	Sand Canyon Reservoir	<u>Present or Potential:</u> Agricultural supply, water contact recreation, non-contact water recreation, warm freshwater habitat, and wildlife habitat Excepted from Municipal and Domestic Supply
007	Siphon Reservoir	<u>Present or Potential:</u> Agricultural supply, water contact recreation, non-contact water recreation, warm freshwater habitat, and wildlife habitat Excepted from Municipal and Domestic Supply
005, Storm-007	San Diego Creek, Reach 1	<u>Present or Potential:</u> Water contact recreation, non-contact water recreation, warm freshwater habitat, and wildlife habitat Excepted from Municipal and Domestic Supply
006, Storm-008	San Joaquin Freshwater Marsh	<u>Present or Potential:</u> Water contact recreation; non-contact water recreation; warm freshwater habitat; preservation of biological habitats of special significance; rare, threatened or endangered species; and wildlife habitat Excepted from Municipal and Domestic Supply
005 & 006, Storm-007 & 008	Newport Bay, Upper	<u>Present or Potential:</u> Water contact recreation, Non-contact water recreation, Commercial and sport fishing, Preservation of biological habitats of special significance, Wildlife habitat, Rare, threatened or endangered species, Spawning, reproduction, and development, Marine habitat, Shellfish harvesting, and Estuarine habitat Excepted from Municipal and Domestic Supply

29. Attachment F, Applicable Plans, Policies, and Regulations, page F-19, replace Section III.G., as follows:

G. Rattlesnake, Siphon, and Sand Canyon Reservoirs

Rattlesnake, Siphon, and Sand Canyon Reservoirs are used as

impoundments to store and deliver recycled water and are isolated from other surface waters. Except during catastrophic storm events, water in Rattlesnake and Siphon Reservoirs is not released into downstream surface waters, while the Sand Canyon Reservoir is managed to reduce recycled overflow to the maximum extent practicable.

30. Attachment F, Rationale for Effluent Limitations and Discharge Specifications, page F-21, replace the paragraphs for Total Chlorine Residual and TDS/Ammonia-Nitrogen of Section IV.C.2.a., as follows:

Total Chlorine Residual: Recycled water from the MWRP is distributed to the Sand Canyon, Siphon, and Rattlesnake Reservoirs for storage. Super-chlorination of the recycled water is necessary to prevent fouling of the recycled water distribution lines. As such, discharges of recycled water into the reservoirs contain concentrations of residual chlorine that may be toxic to aquatic organisms that may be present in the reservoirs. However, the residual chlorine present in the discharges dissipates within the reservoirs such that, currently, the reservoirs support aquatic life, including fish. The discharge of chlorinated recycled water to the reservoirs does not compromise the beneficial uses of the reservoirs, which include warm water aquatic habitat. The discharge of chlorinated recycled water to the reservoirs is necessary to accommodate wastewater reclamation and water conservation. It is in the public interest to accommodate these activities.

This Order specifies an effluent limitation for total chlorine residual to protect aquatic life beneficial uses. Compliance with this limitation for Rattlesnake and Sand Canyon Reservoirs is to be achieved outside a zone of initial dilution (about 45 feet away from the outfall at each reservoir), wherein dissipation of the chlorine occurs. In the case of Siphon Reservoir, due its smaller volume with respect to the other two reservoirs, compliance is to be achieved at the point of discharge to the reservoir (DP 007).

TDS/Ammonia-Nitrogen: TDS/Ammonia-Nitrogen limitations are specified in the Order for discharges to surface waters, including Sand Canyon, Siphon, and Rattlesnake Reservoirs. The proposed TDS and Ammonia-Nitrogen limits are based on the prior effluent limits in Order No. 01-95. The TDS/ Ammonia-Nitrogen limits are shown in the table below.

31. Attachment F, Rationale for Effluent Limitations and Discharge Specifications, page F-26, replace the title of Section IV.D., as follows:

D. Best Professional Judgment-Based Effluent Specifications for DPs 003, 004, & 007

32. Attachment F, Rationale for Effluent Limitations and Discharge Specifications, page F-26, replace the title of Section IV.E., as follows:

E. Summary of Final Effluent Limitations for DPs 003, 004, & 007

33. Attachment F, Rationale for Effluent Limitations and Discharge Specifications, page F-28, replace the titles of Section IV.E.4. and Table 19, as follows:

4. Summary of Final Effluent Limitations for DPs 003, 004, & 007:

Table 19. Summary of Water Quality-based Final Effluent Limitations for Discharge Points 003, 004, & 007

34. Attachment F, Rationale for Effluent Limitations and Discharge Specifications, page F-31, replace the title of Section IV.J., as follows:

J. Stormwater Discharge Requirements – Storm-007 & Storm-008

35. Attachment F, Rationale for Monitoring and Reporting Requirements, page F-33, replace the fourth paragraph of Section VI.C., as follows:

This Order requires the Discharger to conduct chronic toxicity testing of the effluent on a monthly basis whenever there is a discharge of recycled water to waters of the US, Sand Canyon, Siphon, and Rattlesnake Reservoirs. The Order also requires the Discharger to conduct an Initial Investigation Toxicity Reduction Evaluation (IITRE) program when either the two-month median of toxicity test results exceeds 1 TUc or any single test exceeds 1.7 TUc for survival endpoint. Based on the results of this investigation program and at the discretion of the Executive Officer, a more rigorous Toxicity Reduction Evaluation/Toxicity Identification Evaluation (TRE/TIE) may be required. A re-opener provision is included in the Order to incorporate a chronic toxicity effluent limitation if warranted by the toxicity test results.

36. These amendments shall become effective upon the adoption of this Order.
37. All other conditions and requirements of Order No. R8-2007-0003, including Attachments, shall remain unchanged.

I, Kurt V. Berchtold, Executive Officer, do hereby certify that the forgoing is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, Santa Ana Region, on April 27, 2012.

Kurt V. Berchtold
Executive Officer

ATTACHMENT B – LOCATION

