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CENTRAL VALLEY REGION

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WASTE DISCHARGE REQUIREMENTS ORDER
R5-2021-0045



ORDER INFORMATION

Order Type(s): Waste Discharge Requirements (WDRs)
Status: Adopted
Program: Non-15 Discharge to Land
Region 5 Office: Sacramento (Rancho Cordova)
Discharger(s): California American Water (CalAm)
Facility: Dunnigan Wastewater Treatment Facility
Address: 5011 County Road 7, Dunnigan
County: Yolo
Parcel Nos.: 052-130-009
WDID: 5A571005001
Prior Order(s): R5-2010-0013

CERTIFICATION

I, PATRICK PULUPA, Executive Officer, hereby certify that the following is a full, true, and correct copy of the order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 13 August 2021.

PATRICK PULUPA, Executive Officer

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GLOSSARY

ac	Acre
ac-ft	Acre-feet
Antidegradation Policy	<i>Statement of Policy with Respect to Maintaining High Quality Water in California</i> , State Water Board Resolution 68-16.
Basin Plan	Water Quality Control Plan for Sacramento and San Joaquin River Basins
bgs	Below ground surface
BOD₅	Five-day biochemical oxygen demand
BPTC	Best practicable treatment and control
CEQA	California Environmental Quality Act, Public Resources Code section 21000 et seq.
C.F.R.	Code of Federal Regulations
COC[s]	Constituent[s] of concern
DO	Dissolved oxygen
DTSC	California Department of Toxic Substances Control
DWR	California Department of Water Resources
EC	Electrical conductivity at 25° C
EIR	Environmental Impact Report
FDS	Fixed dissolved solids
FEMA	Federal Emergency Management Agency
ft	Feet
gpd	Gallons per day
HAL	EPA Health Advisory Level.
I/I	Inflow and infiltration
MRP	Monitoring and Reporting Program
MW	Monitoring well
MCL	Maximum Contaminant Level per Title 22
µg/L	Micrograms per liter
µmhos/cm	Micromhos per centimeter
MG[D]	Million Gallons [per Day]
mg/L	Milligrams per liter

N	Nitrogen
ND	Non-detect
NA	Not available
PQL	Practical Quantitation Limit
R[O]WD	Report of Waste Discharge
SERC	State Emergency Response Commission
SPRRs	Standard Provisions and Reporting Requirements
SSGL	Site-Specific Groundwater Limitation
TDS	Total dissolved solids
Title 22	California Code of Regulations, Title 22
Title 23	California Code of Regulations, Title 23
Title 27	California Code of Regulations, Title 27
TKN	Total kjeldahl nitrogen
T&O	Taste & Odor Threshold.
TTHMs	Trihalomethanes
TSS	Total suspended solids
<i>Unified Guidance</i>	<i>Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance (USEPA, 2009)</i>
USEPA	United States Environmental Protection Agency
WDRs	Waste Discharge Requirements
WQO[s]	Water Quality Objective[s]

FINDINGS

The Central Valley Regional Water Quality Control Board (Central Valley Water Board) hereby finds as follows:

Introduction

1. California American Water (CalAm) owns and operates the Dunnigan Wastewater Treatment Facility (WWTF). Hereafter, CalAm is referred to as the Discharger. The Dunnigan WWTF (Facility) is located at 5011 County Road 7 in Dunnigan; Assessor Parcel Number (APN) 052-130-009; Section 26, T12N, R1W, MDB&M (38.864887 degrees, -121.949617 degrees). The Facility's location is depicted in Attachment A (Vicinity Map).
2. As the owner and operator, the Discharger is responsible for compliance with the Waste Discharge Requirements (WDRs) prescribed in this Order.
3. The following material are attached and incorporated as part of this Order.
 - a. Attachment A – Vicinity Map
 - b. Attachment B – Facility and Monitoring Well Location Map
 - c. Attachment C – Process Flow Diagram
 - d. Information Sheet
 - e. Standard Provisions & Reporting Requirements dated 1 March 1991 (SPRRs)
4. Also attached is Monitoring and Reporting Program R5-2021-0045 (MRP), which requires monitoring and reporting for the discharge regulated under these WDRs.
5. On 21 December 2020, the Discharger submitted a Report of Waste Discharge (RWD) that describes an update to the facility description and treatment and disposal operations.

Regulatory History

6. WDRs R5-2010-0013, adopted on 29 January 2010 by the Central Valley Water Board, prescribed waste discharge requirements for the Facility to four evaporation/percolation ponds and envisioned expansion of the Facility to accommodate planned development projects. The planned expansion of the Facility was to include a headworks influent screen and parallel treatment trains, a disinfection system, recycled water use areas, and unlined storage ponds for undisinfected effluent. The storage ponds for undisinfected effluent were planned to be constructed at the location of the existing ponds. The planned development

projects included the North Valley Depot near the Facility west of County Road 99 and a Truck and Travel Center located on the west side of Interstate 5. Order R5-2010-0013 allowed an average and maximum influent monthly flow of 0.025 and 0.032 million gallons per day (mgd), respectively and influent flow increases in 3 phases upon approval of each successive facility phase completion report and water balance capacity analysis. The described Facility expansion and planned development project west of Interstate 5 was never constructed. The Discharger is no longer proposing to expand the Facility as described in WDRs Order R5-2010-0013.

7. The WDRs are being updated to ensure the discharge is consistent with water quality plans and policies and to reflect current treatment operations. Treatment improvements that were completed included reconfiguration of the ponds to a more traditional facultative pond system and updated maintenance activities that involve pond sludge removal. WDRs Order R5-2010-0013 will be rescinded and replaced with this Order.

Existing Facility and Discharge

8. The Facility has been in operation since 1974 and serves a 186-unit mobile home park; a 67-space recreational vehicle (RV) park; and multi-tenant commercial property west of County Road 99, adjacent to the RV Park (referred to as the North Valley Depot Development in WDRs Order R5-2010-0013).
9. Wastewater at the Facility is generated from residential users at the mobile home park and the RV park and from commercial properties connected to the collection system, which currently consists of a gas station and two fast-food restaurants.
10. The collection system is comprised of gravity sewer piping, a main lift station, and a force main to convey wastewater to the Facility.
11. At the time WDRs Order R5-2010-0013 was adopted, the Facility consisted of four unlined evaporation/percolation ponds that operated as individual treatment and disposal ponds. The ponds have since been reconfigured to operate as a traditional facultative pond system. The Facility currently consists of two lined treatment ponds that are operated in series and two disposal ponds that may be operated in tandem or alternating. Wastewater flows through the lined treatment ponds and subsequently into the dedicated disposal ponds, which help to promote solids settling and wastewater stabilization prior to disposal. The ponds are designated numerically from the west to the east as Pond 1, Pond 2, Pond 3, and Pond 4. A facility map and process flow diagram are shown in Attachment B and C, respectively.
 - a. Wastewater is treated in facultative ponds (from Pond 4, then to Pond 3) and no mechanical aeration or mixing currently exists. Aeration may be

added in the future. Treatment Ponds 4 and 3 were lined with a 60-mil high-density polyethylene (HDPE) system, which was completed during the summer of 2020.

- b. Ponds 2 and 1 are dedicated disposal ponds and were constructed with rock slope protection consisting of quarry stone over bedding stone.
- c. Interconnecting piping allows for bypassing and isolation of individual ponds for maintenance.

12. Pond characteristics are summarized in Table 1. Depth and capacity estimated at 2 feet of freeboard from the top of berm.

Table 1. Pond Characteristics

Parameters	Pond 4	Pond 3	Pond 2	Pond 1
Function	Treatment	Treatment	Disposal	Disposal
Surface Area, ac	0.28	0.31	0.29	0.29
Depth, ft	11	11.5	8.25	10
Capacity, ac-ft	2.2	2.1	1.3	1.7

13. Influent volumes and flow rates from 2016 through 2020 as provided in the RWD are shown in Table 2. Monthly total volumes are shown in million gallons (MG) with the monthly average in gallons per day (gpd) shown in parentheses. Seasonal increases in wastewater flow are expected to be a result of inflow & infiltration (I/I) that occurs in the months of October through March. Additional increases during this time may be attributed to increased domestic water use during the holidays.

Table 2. Historical Influent Volumes and Flows

Month	2016	2017	2018	2019	2020
January	0.31 (10,018)	0.85 (27,519)	0.56 (17,990)	0.48 (15,468)	0.46 (14,860)
February	0.26 (9,136)	0.68 (24,148)	0.5 (18,017)	0.42 (15,003)	0.41 (14,300)
March	0.30 (10,454)	0.63 (20,361)	0.47 (15,074)	0.46 (14,806)	0.47 (15,011)
April	0.29 (9,678)	0.58 (19,417)	0.38 (12,540)	0.50 (16,709)	0.53 (17,696)
May	0.34 (11,017)	0.62 (20,045)	0.44 (14,124)	0.40 (12,832)	0.65 (20,968)

Month	2016	2017	2018	2019	2020
June	0.36 (12,110)	0.67 (22,366)	0.55 (18,384)	0.45 (15,001)	0.59 (19,600)
July	0.43 (13,892)	0.69 (22,102)	0.60 (19,460)	0.50 (16,050)	0.66 (21,129)
August	0.44 (14,131)	0.62 (20,136)	0.63 (20,228)	0.51 (16,374)	0.62 (20,032)
September	0.51 (17,096)	0.56 (18,581)	0.46 (15,436)	0.46 (15,260)	0.62 (20,500)
October	0.76 (24,392)	0.57 (18,311)	0.45 (14,502)	0.51 (16,379)	0.64 (20,581)
November	0.73 (24,220)	0.63 (20,843)	0.45 (14,893)	0.56 (18,604)	0.58 (19,400)
December	0.75 (24,182)	0.60 (19,461)	0.45 (14,537)	0.54 (17,279)	0.61 (20,000)
Total Flow:	5.48	7.70	5.94	5.79	6.23
Annual Average Flow:	15,027	21,108	16,265	15,814	18,552

14. Source water within the area is provided by the Discharger from two water supply wells, Well 1 and Well 2. Well 1, the primary supply well, is located within the service area near commercial facilities. Well 2, the standby well, is located within the RV park. Water from Well 1 is treated to remove hexavalent chromium via resin contactors and chlorinated before distribution to users. Average water quality data obtained from the California Division of Drinking Water Safe Drinking Water Information System is provided in Table 3. For non-detections, the Practical Quantitation Limit (PQL) is shown.

Table 3. Average Water Supply Quality Data (2015 - 2020)

Parameter	Units	Well 1	Well 2
pH	Std. units	8.0	7.9
EC	µmhos/cm	658	655
TDS	mg/L	358	373
Nitrate as N	mg/L	2.7	7.1
Total Hardness	mg/L	275	300
Total Alkalinity	mg/L	263	290
Boron	mg/L	0.15	0.13
Sodium	mg/L	34	28

Parameter	Units	Well 1	Well 2
Chloride	mg/L	50	23
Fluoride	mg/L	0.89	0.18
Orthophosphate as PO ₄	mg/L	0.24	0.32
Sulfate as SO ₄	mg/L	3	14
Arsenic	µg/L	2.4	2.4
Copper	µg/L	1.3	0.5
Iron	µg/L	<30	51
Lead	µg/L	<5	<5
Manganese	µg/L	<10	<10
Nickel	µg/L	<5	<5
Zinc	µg/L	<50	74

15. An additional supply well, Well 3, will be added as a water source and will be located adjacent to the existing Water Treatment and Storage Facility. Upon completion of the installation of Well 3, Well 2 may be decommissioned. Well 3 is expected to produce approximately 400 gallons per minute (gpm) of additional water.

16. Wastewater received by the Facility is currently domestic waste, with flows higher in Biochemical Oxygen Demand (BOD₅) loading from the commercial properties within the Facility's service area. Influent BOD₅ and total suspended solids (TSS) concentrations from 2016 through 2020 as provided in the RWD are shown in Table 4. Concentrations are measured in mg/L. NA denotes data not available. The occasional high BOD₅ and TSS concentration is likely an anomaly and not representative of typical influent quality. Influent grab samples are collected from the collection system lift station.

Table 4. Average Influent Water Quality Data (2016 - 2020)

Month	2016		2017		2018		2019		2020	
	BOD ₅	TSS	BOD ₅	TSS	BOD ₅	TSS	BOD ₅	TSS	BOD ₅	TSS
January	930	570	380	490	320	190	350	240	510	160
February	340	540	290	190	130	160	190	165	260	150
March	510	660	420	440	130	100	200	94	330	170

Month	2016		2017		2018		2019		2020	
	BOD ₅	TSS	BOD ₅	TSS	BOD ₅	TSS	BOD ₅	TSS	BOD ₅	TSS
April	230	830	220	190	130	100	270	140	1,400	370
May	570	400	440	3,600	230	250	360	280	500	270
June	840	550	280	2,300	190	190	430	140	620	290
July	350	310	270	210	310	210	360	160	430	460
August	340	226	340	140	200	260	220	180	540	500
September	350	230	160	160	230	150	45	110	360	280
October	390	190	300	150	260	120	370	160	380	250
November	390	190	310	110	200	140	370	190	1,100	1,100
December	260	210	210	230	370	250	360	160	NA	NA
Annual Average	458	409	302	684	225	177	294	168	585	364

17. WDRs Order R5-2010-0013 required effluent sampling from each pond. A comparison of the average influent and effluent water quality data (available data from January 2015 through November 2020) as provided in the RWD is shown in Table 5. Dunnigan’s wastewater is considered medium strength domestic waste (Metcalf & Eddy, 3rd Ed, Table 3-16). Ag denotes Agricultural Water Quality Goal. SSSL denotes to Site-Specific Groundwater Limitation. MCL denotes Primary Maximum Contaminant Level. sMCL denotes Secondary MCL. T&O denotes Taste & Odor Threshold. HAL denotes EPA Health Advisory Level.

Table 5. Average Influent and Effluent Water Quality Data (Jan 2015 - Nov 2020)

Parameter	Units	Water Quality Goal	Influent	Effluent
BOD ₅	mg/L	--	344	71
TSS	mg/L	--	367	136
pH	Std. units	6.5 – 8.4 (Ag)	--	8.1
EC	µmhos/cm	700 (Ag)	1,400	1,142
TDS	mg/L	594 (SSGL)	510	664
Nitrate as N	mg/L	10 (MCL)	0.20	0.5

Parameter	Units	Water Quality Goal	Influent	Effluent
Ammonia as N	mg/L	1.2 (T&O)	29.5	18.4
TKN	mg/L	--	51	--
Total Hardness	mg/L	--	260	285
Total Alkalinity	mg/L	--	480	532
Phenol	mg/L	2 (HAL)	--	0.08
Formaldehyde	µg/L	1,000 (HAL)	--	47.49
Arsenic	µg/L	10 (MCL)	1.7	3.5
Sodium	mg/L	69 (Ag)	92	94
Chloride	mg/L	106 (Ag)	160	144
Orthophosphate as PO ₄	mg/L	--	17	11
Sulfate as SO ₄	mg/L	250 (sMCL)	19	8
Copper	µg/L	200 (MCL)	28	7
Iron	µg/L	300 (sMCL)	180	212
Lead	µg/L	15 (MCL)	<5	<5
Manganese	µg/L	50 (sMCL)	19	52
Nickel	µg/L	100 (MCL)	42	12
Zinc	µg/L	5,000 (sMCL)	125	35

18. Commercial properties may contribute higher BOD₅ loads. As shown in Table 4, an occasional high BOD₅ detection up to 1,400 mg/L has occurred but these anomalous results are not representative of the typical influent ranges. Based on available data from 2016 through 2020, influent BOD₅ concentrations ranged from approximately 300 to 590 mg/L or an average of approximately 375 mg/L.
19. Since reconfiguring and lining two of the four ponds, effluent samples are collected from treatment Ponds 3 and 4. Recent available effluent data for BOD₅ show an increase in BOD₅ reduction from the average of 37.6 percent to between 56 and 93 percent reduction (an average of approximately 83 percent reduction).
20. Solids generated at the Facility consists of waste sludge accumulated in the treatment ponds. During the pond reconfiguration, the ponds were drained, and solids removed from the bottom of the ponds and disposed of at a permitted landfill. To maintain treatment capacity, solids from the treatment ponds will be

removed for disposal, dewatered, and collected in waste trucks for off hauling to a landfill. Expected frequency of solids removal is every 15 to 20 years.

Changes to Facility

21. The Discharger proposes an average daily dry weather flow of 0.028 mgd. Based on projected influent flows with a 5.5 percent safety factor (including future planned commercial development consisting of a coffeehouse and approximately 80-room hotel with no pool or dining facilities), pond dimensions, and reasonable estimates of precipitation and evaporation, the water balance provided in the RWD demonstrates adequate disposal capacity. Approximately 56 percent of the incoming wastewater will be generated from residential properties and the remaining wastewater from commercial properties. The commercial property is not fully developed. There are future plans to include a truck wash facility to complete a full built out of the property.
22. Expansion of the Facility including a headworks influent screen and parallel treatment trains, a disinfection system, recycled water use areas, and unlined storage ponds for undisinfected effluent as envisioned in WDRs Order R5-2010-0013 were not constructed and are no longer being proposed because the envisioned developments west of Interstate 5 have not been constructed. Alternatively, the evaporation/percolation ponds were reconfigured to operate as a traditional facultative pond system.

Site Specific Conditions

23. The Facility is located on a relatively flat terrain. The area surrounding the Facility is unpaved, with a gravel entrance road and gravel surrounding the ponds. Near surface soils in the vicinity of the Facility are generally comprised of Rg Rincon silty clay loam.
24. The Federal Emergency Management Agency (FEMA) designates the location of the Facility as an "Area of Minimal Flood Hazard", Flood Zone X.
25. The nearest California Irrigation Management Information System (CIMIS) station is the Zamora CIMIS Station (#27), approximately 6 miles to the south east of the Facility. Based on data from the Zamora CIMIS Station, the annual average precipitation in the area of the Facility is approximately 33.66 inches per year and reference evapotranspiration is approximately 53.39 inches per year. The 100-year total annual precipitation is approximately 37.36 inches per year.
26. Land use in the vicinity of the Facility primarily consists of agriculture, rural residential and mobile home parks, and a truck stop area which includes two gas stations and several fast-food restaurants. Land immediately to the east and south of the Facility is agricultural consisting of mostly row crops such as

tomatoes, sunflowers, and melons. Immediately to the west of the Facility is the mobile home and RV park. The Discharger owns the land immediately to the north of the Facility and is currently fallow. However, this land is sometimes leased for agricultural activities. Agricultural irrigation in the area is supplied by groundwater or irrigation canals.

Groundwater Conditions

27. Five wells make up the groundwater monitoring network. Well construction details are summarized in Table 6 and well locations are shown in Attachment B. Depth to groundwater values as presented in the table reflect measured depth at the time of well installation. For MW-1, MW-2, and MW-3, more recent data show depth at approximately 35 – 47 ft below ground surface (bgs). In recent years groundwater levels have dropped and, in some wells, there have been insufficient water to sample.

Table 6. Well Construction Details

Monitoring Well	Installation Date	Well Depth (ft, bgs)	Screen Interval (ft, bgs)	Depth to Groundwater (ft, bgs)
MW-1	May 2007	41.5	21.9 – 41.5	19 - 21
MW-2	May 2007	38.5	19.4 – 38.5	19 - 21
MW-3	May 2007	39.0	19.0 – 39.0	19 - 21
MW-4	August 2020	50.0	25 – 50	35
MW-5	August 2020	50.0	25 - 50	45

28. Groundwater monitoring began in 2007 and included wells MW-1, MW-2, and MW-3. Groundwater gradient within the monitoring network has historically varied significantly in direction and no single well has been consistently up-gradient. Because of the variable groundwater gradients and with local and regional gradient generally assumed to be in a south-west to south-easterly direction, wells MW-4 and MW-5 were installed in 2020 to better characterize underlying groundwater quality and gradient in the area. MW-4 and MW-5 are located in the northwest and northeast corners of the Facility, believed to be up-gradient and outside of the influence of the ponds. More recent data has shown either MW-2 or MW-3 as the up-gradient well and flow direction has been more consistent towards the west.
29. At the time WDRs Order R5-2010-0013 was adopted, the Discharger did not implement any source control and the unlined effluent ponds did not incorporate any specific measures to reduce potential groundwater degradation. Therefore,

WDRs Order R5-2010-0013 required submittal of *Background Groundwater Quality and Antidegradation Analysis Report* (Report) and prescribed interim groundwater limitations that were the most restrictive of water quality objectives for the protection of groundwater quality or existing background groundwater concentrations, whichever was greater. The Discharger submitted a Report dated 14 May 2013 with the following information:

- a. Water quality analyses from wells MW-1, MW-2, and MW-3 during the period from March 2007 through March 2013 were reviewed. Data showed relatively flat gradients and inconsistent groundwater flow directions, which made it difficult to identify a consistently upgradient well.
 - b. The Report identified nearby Pilot Travel Center monitoring well MW-16 as most representative of local background quality conditions, specifically due to the low nitrogen concentrations in groundwater. However, TDS concentrations in MW-16 were above 450 mg/L, the interim groundwater TDS limitation.
 - c. Based on available water quality data and a statistical analysis, the Report proposed a background TDS concentration of 594 mg/L. However, groundwater comparison between the Pilot Travel Center well MW-16 and the Dunnigan wells MW-1, MW-2, and MW-3 indicates a lack of uniformity within the distances spanned by the monitoring network. Therefore, the Report concludes that it is unclear that the WWTF has impacted shallow groundwater with respect to TDS.
 - d. The Report stated that all monitoring wells contained nitrate concentrations above the water quality objective, the water supply, and the Pilot Travel Center well MW-16. Sources of nitrate are likely from the ponds, however because the ponds are located in an agricultural area, other sources of nitrate were suspect.
 - e. Since adoption of WDRs Order R5-2010-0013 and submittal of the Report, interim groundwater limitations remained unchanged.
30. Groundwater quality is monitored on a quarterly basis. Since 2011, groundwater elevation data show a steady declining trend. Low water levels were observed in multiple quarters during years 2013, 2014, 2015, and 2016 and no water samples were obtained at that time. Water quality data as provided in the RWD are shown in Table 7. Average concentrations based on available data from 2007 through 2020 are shown for MW-1, MW-2, and MW-3. Initial sampling results are shown for MW-4 and MW-5. Concentrations above the interim groundwater limits (GW Limit) as prescribed in WDRs Order R5-2010-0013 were observed for iron, manganese, nitrate as N, and TDS (shown in bold). NA denotes not analyzed.

For non-detections, the reporting limit (RL) or method detection limit (MDL) when specified, is shown. Units are in mg/L, unless otherwise specified.

Table 7. Groundwater Quality Data (2007 – 2020)

Constituent	GW Limit	MW-1	MW-2	MW-3	MW-4	MW-5	RL or MDL
Ammonia as N	1.5	0.05	0.05	0.10	<0.1	<0.1	RL
Arsenic, µg/L	--	3.07	4.31	3.26	4.6	4.1	--
Bicarbonate as CaCO ₃	--	NA	NA	NA	550	420	--
Boron	0.71	0.08	0.16	0.11	0.15	0.18	--
Bromide	--	0.05	0.07	0.09	<0.1	<0.1	RL
Bromodichloromethane, µg/L	0.27	0.07	0.03	0.07	<0.061	<0.061	MDL
Bromoform, µg/L	4	0.09	0.08	0.11	<0.16	<0.16	MDL
Calcium	--	47.1	171	101	81	66	--
Carbonate as CaCO ₃	--	NA	NA	NA	<5	<5	RL
Chloride	106	9.64	46.4	57.1	23	32	--
Chloroform, µg/L	1.1	0.09	0.07	0.10	0.23	0.46	--
Copper, µg/L	--	4.11	8.38	30.3	<3.2	<3.2	MDL
Dibromochloromethane, µg/L	0.37	0.08	0.07	0.10	<0.13	<0.13	MDL
EC (field), µmhos/cm	--	643	1,215	1,156	1,200	910	--
Fluoride	--	0.10	0.67	0.11	<0.1	0.059	RL
Formaldehyde, µg/L	--	0.01	0.02	0.01	<9.1	<9.1	MDL
Hardness as CaCO ₃	--	NA	NA	NA	530	390	--
Hydroxide as CaCO ₃	--	NA	NA	NA	<5	<5	RL
Iron	0.3	0.69	89.1	10.1	<0.0068	0.0078	MDL
Lead, µg/L	--	2.50	27.3	6.48	0.46	0.29	--
Magnesium	--	41.3	131	82	79	54	--
Manganese	0.05	0.03	2.57	0.41	0.004	0.012	--
Nickel, µg/L	--	71.6	468	142	<3.1	<3.1	MDL
Nitrate as N	10	10.2	16.7	17.2	23	14	--

Constituent	GW Limit	MW-1	MW-2	MW-3	MW-4	MW-5	RL or MDL
Orthophosphate as PO ₄	--	0.27	0.27	0.34	0.28	0.31	--
pH (field), pH Units	--	7.58	7.25	7.33	7.3	7.3	--
Phenolics	--	0.02	0.02	0.01	0.006	0.009	--
Potassium	--	1.19	1.43	1.61	2.1	1.5	--
Sodium	69	22.1	52.2	36.2	53	52	--
Sulfate as SO ₄	--	19.7	52.9	37.2	63	40	--
TDS	450	364	720	666	760	560	--
TKN	--	0.13	0.14	0.45	0.04	0.07	--
Total Alkalinity	--	270	498	453	550	420	--
Total Coliforms, MPN/100mL	--	NA	NA	NA	<1	102	--
TTHMs, µg/L	--	NA	NA	NA	<0.50	<0.50	RL
Zinc, µg/L	--	47.2	338	57.5	1.8	0.82	--

31. Although the overall average iron and manganese concentration in MW-2 and MW-3 exceeds the sMCL of 0.3 mg/L and 0.05 mg/L, respectively, for the most part iron and manganese concentrations were non-detect with the exception of sporadic elevated concentrations observed in years 2007, 2010, 2014, and 2015. In recent years (2017 – 2020), iron and manganese concentrations in groundwater have been non-detect.

32. WDRs Order R5-2010-0013 prescribed interim groundwater limits that reflect the most restrictive of water quality objectives, including the agricultural water quality goal and taste and odor threshold. Historically, concentrations in MW-2 and MW-3 have exceeded the interim groundwater TDS limit of 450 mg/L, which is the agricultural water quality goal. However, TDS concentrations in MW-2 and MW-3 have been fairly consistent while groundwater concentrations are trending downward. Since 2015, either MW-2 or MW-3 has been considered an upgradient well as determined on a quarterly basis based on available groundwater data. MW-1 is the only well with TDS concentrations at or below 450 mg/L. Historical groundwater trends with respect to TDS for MW-1 show a downward trend. Newly installed MW-4 and MW-5 show TDS concentrations above 450 mg/L.

33. For the most part, historical data show that nitrate as N concentrations in all the wells have been above 10 mg/L, the primary maximum containment level (MCL). Groundwater concentrations for MW-1 and MW-3 show a downward trend, while MW-2 show an upward trend. The Facility is surrounded by agricultural activities that likely contributed to the presence of nitrate in groundwater.
34. The Facility's monitoring network is also analyzed for total coliform organisms on a quarterly basis. Review of the groundwater data show sporadic detections of total coliform organisms in all the monitoring wells. However, for the most part, total coliform organisms are not consistently detected in the wells.
35. The Facility receives RV waste. The Facility's monitoring network is also analyzed for commercially available chemical products such as formaldehyde, phenol, and zinc which are used to control odors from RV holding tanks or portable toilets. There are no MCL or sMCLs for phenol or formaldehyde. Phenol and formaldehyde concentrations in groundwater do not exceed 4.2 mg/L or 100 µg/L, respectively which is the California Notification Level published by the California State Water Resources Control Board, Division of Drinking Water for chemicals for which there is no drinking water MCL and mainly based on health effect. Zinc concentrations in groundwater do not exceed the sMCL of 5000 µg/L.

Legal Authority

36. This Order is adopted pursuant to Water Code section 13263, subdivision (a), which provides in pertinent part as follows:

The regional board, after any necessary hearing, shall prescribe requirements as to the nature of any proposed discharge, existing discharge, or material change in an existing discharge..., with relation to the conditions existing in the disposal area or receiving waters upon, or into which, the discharge is made or proposed. The requirements shall implement any relevant water quality control plans that have been adopted, and shall take into consideration the beneficial uses to be protected, the water quality objectives reasonable required for that purpose, other waste discharges, the need to prevent nuisance, and the provisions of Section 13241.

37. Compliance with section 13263, subdivision (a), including implementation of applicable water quality control plans, is discussed in the findings below.
38. The ability to discharge waste is a privilege, not a right, and adoption of this Order shall not be construed as creating a vested right to continue discharging waste. (Wat. Code, section 13263, subd. (g).)

39. This Order and its associated Monitoring and Reporting Program (MRP) are also adopted pursuant to Water Code section 13267, subdivision (b)(1), which provides as follows:

[T]he regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste ... shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.

40. The reports required under this Order, as well as under the separately issued MRP, are necessary to verify and ensure compliance with WDRs. The burden associated with such reports is reasonable relative to the need for their submission.

Basin Plan Implementation

41. Pursuant to Water Code section 13263, subdivision (a), WDRs must “implement any relevant water quality control plans, and shall take into consideration the beneficial uses to be protected, the water quality objectives reasonably required for that purpose, other waste discharges, the need to prevent nuisance, and the provisions of Section 13241.”

Beneficial Uses of Water

42. This Order implements the Central Valley Water Board’s *Water Quality Control Plan for the Sacramento River and San Joaquin River Basin* (hereafter Basin Plan), which designates beneficial uses for surface water and groundwater and establishes water quality objectives (WQOs) necessary to preserve such beneficial uses. (See Wat. Code Section 13241 et seq.).
43. Local surface water drainage is to the Colusa Basin Drainage Canal, which is tributary to the Sacramento River at Knights Landing. The beneficial uses of the Colusa Basin Drain are agricultural supply (AGR); water contact recreation and canoeing and rafting (REC-1); warm and cold freshwater habitat (WARM and COLD); warm water migration (MIGR); warm water spawning, reproduction, and/or early development (SPWN); and wildlife habitat (WILD).

44. The beneficial uses of underlying groundwater as set forth in the Basin Plan are municipal and domestic supply (MUN), agricultural supply (AGR), industrial service supply (IND), and industrial process supply (PRO).

Water Quality Objectives

45. The Basin Plan establishes narrative WQOs for chemical constituents, taste and odors, and toxicity in groundwater. It also sets forth a numeric objective for total coliform organisms.
46. The Basin Plan's numeric water quality objective for bacteria requires that the most probable number (MPN) of coliform organisms over any seven-day period shall be less than 2.2 per 100 mL in MUN groundwater.
47. The Basin Plan's narrative WQOs for chemical constituents require MUN-designated water to at least meet the MCLs specified in California Code of Regulations, title 22 (Title 22). The Basin Plan recognizes that the Central Valley Water Board may apply limits more stringent than MCLs to ensure that waters do not contain chemical constituents in concentrations that adversely affect beneficial uses.
48. The narrative WQO for toxicity provides that groundwater shall be maintained free of toxic substances in concentrations producing detrimental physiological responses in human, animal, plant or aquatic life associated with designated beneficial uses.
49. Quantifying a narrative WQO requires a site-specific evaluation of those constituents that have the potential to impact water quality and beneficial uses. The Basin Plan states that when compliance with a narrative objective is required to protect specific beneficial uses, the Central Valley Water Board will, on a case-by-case basis, adopt numerical limitations to implement the narrative objective.
50. In the absence of specific numerical water quality limits, the Basin Plan methodology is to consider any relevant published criteria. General salt tolerance guidelines, such as *Water Quality of Agriculture* by Ayers and Westcot and similar references indicate that yield reductions in nearly all crops are not evident when irrigation water has an electrical conductivity (EC) of less than 700 $\mu\text{mhos/cm}$. There is, however, an eight- to ten-fold range in salt tolerance for agricultural crops and the appropriate salinity values to protect agriculture in the Central Valley are considered on a case-by-case basis. It is possible to achieve full yield potential with groundwater EC up to 3,000 $\mu\text{mhos/cm}$, if the proper leaching fraction is provided to maintain soil salinity within the tolerance of the crop.

Salt and Nitrate Control Programs

51. The Central Valley Water Board adopted Basin Plan amendments incorporating new programs for addressing ongoing salt and nitrate accumulation in the Central Valley at its 31 May 2018 Board Meeting. The Basin Plan Amendments were conditionally approved by the State Water Board on 16 October 2019 and the Office of Administrative Law on 15 January 2020.
 - a. For salinity, dischargers that are unable to comply with stringent salinity requirements would instead need to meet performance-based requirements and participate in a basin-wide effort to develop a long-term salinity strategy for the Central Valley. The Discharger has received a Notice to Comply (NTC) with instructions and obligations for the Salt Control Program. The Discharger has submitted a NTC with the Salt Control Program Pathway 2 – Alternative Salinity Permitting Approach.
 - b. For nitrate, dischargers that are unable to comply with stringent nitrate requirements will be required to take on alternate compliance approaches that involve providing replacement drinking water to persons whose drinking water is affected by nitrates. Dischargers could comply with the new nitrate program either individually or collectively with other dischargers. For the Nitrate Control Program, the Facility falls within the Yolo Sub-basin of the Sacramento Valley Groundwater Basin 5-021.67, a Priority 2 Basin. Notices to Comply for Priority 2 Basins will be issued within two to four years after the effective date of the Nitrate Control Program.
52. As these strategies are implemented, the Central Valley Water Board may find it necessary to modify the requirements of these WDRs to ensure the goals of the Salt and Nitrate Control Programs are met.
53. This Order may be amended or modified to incorporate any newly applicable requirements.

Antidegradation Policy

54. The *Statement of Policy with Respect to Maintaining High Quality Waters in California*, State Water Board Resolution 68-16 (Antidegradation Policy) prohibits the Central Valley water board from authorizing degradation of “high quality water” unless it is shown that such degradation: (1) will be consistent with the maximum benefit to the people of California; (2) will not unreasonably affect beneficial uses, or otherwise result in water quality less than as prescribed in applicable policies; and (3) is minimized through the discharger’s best practicable treatment or control (BPTC).

55. The Facility has been at its current location since 1974. There is no data with which to evaluate shallow groundwater quality at the site prior to that date. Monitoring of the shallow groundwater began May 2007. As discussed in the Finding 28, because of the variable groundwater gradients, additional wells were installed in 2020 to better characterize background/ambient groundwater quality and gradient in the area. Determination of compliance with Resolution 68-16 for this facility must be based on current groundwater quality.
56. Based on the data presented in Table 3 (Supply Well 1), Table 5 (influent and effluent quality), and Table 7 (groundwater quality), constituents of concern (COCs) that have the potential to degrade groundwater underlying the ponds include salts (EC and TDS) and nitrate as N. Prior to reconfiguring and lining the treatment ponds, effluent was monitored from each pond. Since the summer of 2020, effluent is monitored from Ponds 3 and 4. The average effluent concentration at Pond 3 (based on available data from May 2020 through December 2020) is representative of effluent prior to discharge to the disposal ponds. Based on available data since 2015, either monitoring well MW-2 or MW-3 has been the up-gradient well. A summary of the data as an average concentration (if available, maximum concentration shown in parenthesis) is summarized in Table 8. Units are in mg/L unless specified. Potential Water Quality Objectives (WQO) are based on the Primary Maximum Contaminant Level (MCL) and Secondary MCL (sMCL). INF denotes influent. EFF denotes effluent. NA denotes not analyzed.

Table 8. Effluent and Groundwater Quality Comparison

Parameters	WQO	Supply Water	INF	EFF	EFF, Pond 3	MW-1	MW-2	MW-3
EC, μ mhos/cm	900 (sMCL recommended)	658	1,400	1,142	1,169 (1,258)	643 (751)	1,215 (1,400)	1,156 (1,300)
TDS	1,000 (sMCL upper)	358	510	664	678 (723)	364 (789)	720 (960)	666 (1,300)
Nitrate as N	10 (MCL)	2.7	0.2	0.5	NA	10.2 (32.3)	16.7 (32)	17.2 (33)

- a. **Salinity (EC and TDS).** Based on available data, the average EC concentration in the effluent is approximately 1,142 μ mhos/cm, which slightly exceeds the recommended sMCL of 900 μ mhos/cm. The average TDS concentration in the effluent is 664 mg/L and slightly exceeds the recommended sMCL of 500 mg/L, but is below the upper sMCL of 1,000 mg/L. Since reconfiguring the ponds to operate as facultative ponds, more recent effluent EC and TDS data from Pond 3 show concentrations between 1,000 and 1,300 μ mhos/cm and between 610 and 720 mg/L,

respectively. Based on the available data, effluent EC and TDS concentrations are similar in quality to groundwater quality observed in wells MW-2 and MW-3. Although TDS concentrations in MW-2 and MW-3 have historically been greater than 450 mg/L, the interim groundwater limitation for TDS; concentrations have been fairly consistent while groundwater concentrations are trending downward. Designating separate ponds for treatment and for disposal and lining the treatment ponds with a geosynthetic liner, minimizes the threat to underlying groundwater.

The Discharger has chosen to participate in Pathway 2, the Alternative Option for Salt Permitting. For salinity, this Order includes a performance based average EC limit requiring the discharge not to exceed 1,300 $\mu\text{mhos/cm}$. In addition, this Order requires the Discharger to comply with the new Salinity Control Program.

The Discharger has expanded the groundwater monitoring network to include two additional wells to better characterize underlying groundwater quality and gradient in the area. This Order requires continued groundwater monitoring. At the time WDRs Order R5-2010-0013 was adopted, salinity concentrations in groundwater were not defined and the groundwater limitations were based on the most restrictive water quality goals. Since then, data collected to date show salinity concentrations are greater than 450 mg/L, the agricultural water goal for TDS. Therefore, this Order prescribes groundwater limits for EC and TDS that prohibit exceedance of the primary or secondary MCL or concentrations statistically greater than current groundwater quality, whichever is greater. Due to the directional variability in shallow groundwater, intra-well analysis is appropriate to determine compliance with the groundwater limitations.

- b. **Nitrate as Nitrogen.** For nutrients such as nitrate, the potential for groundwater degradation depends on wastewater quality and the ability of the vadose zone below the disposal ponds to support nitrification and denitrification to convert the nitrogen-to-nitrogen gas before it reaches the water table. Based on available effluent data, total nitrogen in the effluent consists primarily of TKN, which consists of organic nitrogen and ammonia nitrogen. TKN has the potential to mineralize and convert to nitrate with some loss via ammonia volatilization.

Based on available data, the average nitrate as N concentration in the effluent is 0.5 mg/L. Historically, nitrate as N concentrations in groundwater has been greater than 10 mg/L. For the most part, groundwater data for the other nitrogen constituents (e.g., TKN and ammonia) range from non-detects to very low concentrations. Groundwater trends for nitrate as N for MW-2 and MW-3, show concentrations trending upward and downward, respectively. Treatment is performed through facultative ponds. Designating separate ponds for

treatment and for disposal and lining the treatment ponds with a geosynthetic liner, minimizes the threat to underlying groundwater.

This Order requires monitoring for nitrate as N and other nitrogen constituents (TKN and ammonia) in the effluent. Groundwater data shows nitrate as N concentrations historically greater than 10 mg/L, the primary MCL for nitrate. Therefore, recognizing that this discharge is located in an agricultural region where elevated nitrate as N is common in groundwater, this Order prescribes groundwater limits for nitrate as N that prohibit the exceedance of concentrations statistically greater than current groundwater quality. Due to the directional variability in shallow groundwater, intra-well analysis is appropriate to determine compliance with the groundwater limitations.

For the Nitrate Control Program, the Facility falls within the Yolo Sub-basin of the Sacramento Valley Groundwater Basin 5-021.67, a Priority 2 Basin. This Order requires the Discharger to comply with the new Nitrate Control Program.

- c. **Total Coliform Organisms.** Based on available monitoring data, detections for coliform organisms do not appear to have impacted groundwater as discussed in Finding 34 and Table 7. The treatment ponds have been lined which minimizes the threat to underlying groundwater. The Facility does not provide active disinfection to remove pathogens in the wastewater; therefore, this Order requires continued groundwater monitoring for total coliform organisms.
 - d. **Formaldehyde, Phenol, and Zinc.** Based on available data, detections for formaldehyde, phenol, and zinc do not appear to have impacted groundwater as discussed in Finding 35 and Table 7. RV waste is accepted at the Facility. Therefore, this Order requires continued groundwater monitoring for formaldehyde, phenol, and zinc, which are chemicals used to control odors from RV holding tanks or portable toilets.
57. The Discharger implements, or will implement, as required by this Order, the following BPTC measures:
- a. Treatment is performed through lined facultative ponds, which promote solids settling and wastewater stabilization prior to discharge into designated disposal ponds.
 - b. Performance-based EC limit.
 - c. Appropriate solids management practices.
 - d. Certified wastewater treatment plant operators.
 - e. Compliance with the Salt and Nitrate Control Programs.

58. The Discharge's implementation of the above-listed BPTC measures will minimize the extent of water quality degradation resulting from the Facility's continued operation.
59. Generally, limited degradation of groundwater by some of the typical waste constituents of concern (e.g., EC and nitrate) released with the discharge from a municipal wastewater utility after effective source control, and treatment is consistent with maximum benefit to the people of the state. The technology, energy, water recycling, and waste management advantages of municipal utility service far exceed any benefits derived from a community otherwise reliant on numerous concentrated individual wastewater systems, and the impacts on water quality will be substantially less. The degradation will not unreasonably affect present and anticipated beneficial uses of groundwater, or result in water quality less than water quality objectives.
60. Based on the foregoing, the adoption of this Order is consistent with the State Water Board's Antidegradation Policy.

California Environmental Quality Act

61. The issuance of this Order, which prescribes requirements and monitoring of waste discharges at an existing facility, with negligible or no expansion of its existing use, is exempt from the procedural requirements of the California Environmental Quality Act (CEQA), Public Resources Code section 21000 et seq., pursuant to California Code of Regulations, title 14, section 15301 (CEQA Guidelines). The discharges authorized under this Order are substantially within parameters established under prior WDRs, particularly with respect to character and volume of discharges.
62. To the extent that the construction of any new basins, ponds and/or surface impoundments are authorized under this Order, such features involve minor alterations to land, which are exempt from CEQA procedural requirements pursuant to California Code of Regulations, title 14, section 15304 (CEQA Guidelines).
63. This Order is further exempt from CEQA procedural requirements insofar as it is adopted for protection of the environment and does not authorize construction activities or the relaxation of standards allowing for environmental degradation, in accordance with California Code of Regulations, title 14, section 15308 (CEQA Guidelines).
64. In accordance with the California Environmental Quality Act (CEQA), Public Resources Code section 21000 et seq., on 4 June 2003, Yolo County Planning and Public Works Department adopted a Tiered Initial Study and Mitigated Negative Declaration for the North Valley Depot, Dunnigan Truck and Travel

Center, and Wastewater Treatment Facility expansion project. No potentially significant impacts to water quality were identified and no mitigation measures to prevent such impacts were imposed. Compliance with these waste discharge requirements will avoid significant impacts to water quality.

Other Regulatory Considerations

Human Right to Water

65. Pursuant to Water Code section 106.3, subdivision (a), it is “the established policy of the state that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes.” Although this Order is not subject to Water Code section 106.3, as it does not revise, adopt or establish a policy, regulation or grant criterion, (see § 106.3, subd. (b)), it nevertheless promotes the policy by requiring discharges to meet maximum contaminant levels (MCLs) for drinking water, which are designed to protect human health and ensure that water is safe for domestic use.

Title 27 Exemption

66. This Order, which prescribes WDRs for discharges of domestic sewage or treated effluent from a municipal treatment plant, is exempt from the prescriptive requirements of California Code of Regulations, title 27 (Title 27), section 20005 et seq. (See Cal. Code Regs., tit. 27, section 20090, subd. (a) - (b).)

Stormwater

67. This Order does not cover stormwater and other discharges that are subject to the Clean Water Act’s National Pollution Discharge Elimination System (NPDES). The Facility has a design capacity of less than 1.0 mgd and does not have a pretreatment program, therefore the Discharger is not required to obtain coverage under the Statewide General Permit for Storm Water Discharges Associated with Industrial Activities, State Water Board Order 2014-0057 DWQ, NPDES General Permit CAS000001 (Industrial General Permit) at this time.

Sanitary Sewer Overflows

68. For the purposes of this Order, a "Sanitary Sewer Overflow" (SSO) is a discharge to ground or surface water from the sanitary sewer system at any point upstream of the treatment facility. Temporary storage and conveyance facilities (e.g., wet wells, regulated impoundments, tanks, highlines, etc.) may be part of a sanitary sewer system and discharges to these facilities are not considered SSOs, provided that the waste is fully contained within these temporary storage/conveyance facilities.

69. Sanitary Sewer Overflows (SSO), which typically consist of a mixture of domestic and commercial wastewater, often contain pathogenic organisms, toxic pollutants, nutrients, oxygen demanding organic compounds, oil and grease, suspended solids and other pollutants. When an SSO results in a discharge to surface water, it can cause temporary exceedances of water quality objectives, pose a threat to public health, adversely affect aquatic life, and impair recreational use and aesthetic enjoyment of surface waters in the area. The most common causes are grease blockages, root blockages, debris blockages, sewer line flood damage, manhole structure failures, vandalism, pump station mechanical failures, power outages, storm or groundwater inflow/infiltration, lack of capacity, and/or contractor-caused blockages.
70. On 2 May 2006, the State Water Board adopted Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, State Water Board Order 2006-0003-DWQ (SSO General Order), which requires that all public agencies owning or operating sanitary sewer systems with total system lengths in excess of one mile enroll under the SSO General Order. The Facility's collection system is privately owned, and therefore is not subject to regulation under the SSO General Order.

Groundwater Well Standards and Statistical Data Analysis

71. Existing California Department of Water Resources (DWR) standards for the construction and destruction of groundwater wells, as well as any more stringent standards that are subsequently adopted, shall apply to all monitoring wells used to monitor impacts of wastewater storage or disposal governed by this Order. (see Cal. Well Stds. Bulletin 74-90 [DWR, June 1991]; Water Wells Stds. Bulletin 74-81 [DWR, Dec. 2918].)
72. Statistical data analysis methods outlined in the US EPA's Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance (Unified Guidance) are appropriate for determining compliance with the Groundwater Limitations of this Order. Depending on the circumstances, other methods may also be appropriate.

Threat-Complexity Rating

73. This Order implements the Central Valley Water Board's Basin Plan, which designates beneficial uses for surface water and groundwater and establishes water quality objectives (WQOs) necessary to preserve such beneficial uses. (Wat. Code, section 13241 et seq.) Designated beneficial uses of surface water and groundwater are discussed in Finding 42 and Finding 43, respectively.
74. For the purposes of the California Code of Regulations (CCR), title 23 (Title 23), section 2200, the Facility has a threat-complexity rating of 2-B, where:

- a. Threat Category “2” reflects waste discharges that can impair receiving water beneficial uses, cause short-term water quality objective violations, cause secondary drinking water standard violations, and cause nuisances; and
- b. Category “B” reflects any discharger not included in Category A that has physical, chemical, or biological treatment systems (except for septic systems with subsurface disposal), or any Class 2 or Class 3 waste management units.

Scope of Order

75. This Order is strictly limited in scope to those waste discharges, activities and processes described and expressly authorized herein.
76. Pursuant to Water Code section 13264, subdivision (a), the Discharger is prohibited from initiating the discharge of new wastes (i.e., other than those described herein), or making material changes to the character, volume and timing of waste discharges authorized herein, without filing a new Report of Waste Discharge (RWD) per Water Code section 13260.
77. Failure to file a new RWD before initiating material changes to the character, volume or timing of discharges authorized herein, shall constitute an independent violation of these WDRs.
78. This Order is also strictly limited in applicability to those individuals and/or entities specifically designated herein as “Discharger,” subject only to the discretion to designate or substitute new parties in accordance with this Order.

Procedural Matters

79. All of the above information, as well as the information contained in the attached Information Sheet (incorporated herein) was considered by the Central Valley Water Board in prescribing the WDRs set forth below.
80. California American Water, interested agencies, and interested persons were notified of the Central Valley Water Board’s intent to prescribe the WDRs in this Order, and provided an opportunity to submit their written views and recommendations at a public hearing. (Wat. Code, section 13167.5; Title 27, section 21730.)
81. At a public meeting, the Central Valley Water Board heard and considered all comments pertaining to the discharges regulated under this Order.
82. The Central Valley Water Board will review and revise the WDRs in this Order as necessary.

REQUIREMENTS

IT IS HEREBY ORDERED, pursuant to Water Code sections 13263 and 13267, that WDRs Order R5-2010-0013 is rescinded (except for enforcement purposes); and that California American Water and their agents, employees, and successors shall comply with the following.

A. Standard Provisions

1. Except as expressly provided herein, the Discharger shall comply with the Standard Provisions and Reporting Requirements dated 1 March 1991 (SPRRs), which are incorporated herein. This attachment and its individual paragraphs are referred to as Standard Provisions.

B. Discharge Prohibitions

1. Except as otherwise expressly authorized in this Order, discharge of wastes to surface waters or surface water drainage courses (including irrigation ditches outside of the Dischargers' control) is prohibited.
2. Discharge of waste classified as 'hazardous', as defined in the California Code of Regulations, title 22, section 66261.1 et seq., at the Facility is prohibited.
3. Discharge of waste classified as 'designated', as defined in Water Code section 13173, is prohibited.
4. Except as allowed by Section E.2 of the SPRRs, treatment system bypass of untreated or partially treated waste is prohibited.
5. Discharge of waste at a location or in a manner different from that described in the Findings is prohibited.
6. Discharge of toxic substances into any wastewater treatment system such that biological treatment mechanisms are disrupted is prohibited.

C. Flow Limitations

1. Influent flows to the WWTF shall not exceed the following limits shown below. Dry weather is defined as the months of July through September, inclusive. Average daily dry weather flow is determined by the total influent flow for the dry weather period divided by the total days in that month.

Table 9. Flow Limitations

Influent Flow Measurement	Influent Flow Limit
Average daily dry weather influent flow	28,000 gpd
Annual influent flow	10.2 MG

D. Effluent Limitations

1. Effluent discharged to the disposal ponds shall not exceed the following limits:

Table 10. Effluent Limitations

Parameter/ Constituents	Annual Average	Monthly Maximum
BOD ₅ , mg/L	--	130
EC, μ mhos/cm	1,300	--

E. Discharge Specifications

1. No waste constituent shall be released, discharged, or placed where it will be released or discharged, in a concentration or in a mass that causes violation of the Groundwater Limitations of this Order.
2. Wastewater treatment, storage, and disposal shall not cause pollution or a nuisance as defined by Water Code section 13050.
3. The Discharger shall operate all systems and equipment to optimize the quality of the discharge.
4. Public contact with wastewater shall be precluded or controlled through such means as fences and signs, or acceptable alternatives.
5. The discharge shall remain within the permitted waste treatment/containment structures and conveyance structures at all times.
6. Objectionable odors shall not be perceivable beyond the limits of the property where the waste is treated and/or discharged at an intensity that creates or threaten to create nuisance conditions.
7. As a means of ensuring compliance with Discharge Specification E.6, the dissolved oxygen (DO) content in the upper one foot of any wastewater treatment or disposal pond shall not be less than 1.0 mg/L for three consecutive sampling events. Notwithstanding the DO monitoring frequency specified in the monitoring and reporting program, if the DO in any single pond is below 1.0 mg/L for three consecutive sampling events and objectionable odors are perceivable beyond the property limits, the Discharger shall report the findings to the Central Valley Water Board in accordance with Section B.1 of the SPRRs. The written notification shall include a specific plan to resolve the low DO results within 30 days of the first date of violation.

8. The wastewater ponds shall be managed to prevent breeding of mosquitos or other vectors. Specifically:
 - a. An erosion control program shall be implemented to ensure that small coves and irregularities are not created around the perimeter of the water surface.
 - b. Weeds shall be minimized through control of water depth, harvesting, or herbicides.
 - c. Dead algae, vegetation, and debris shall not accumulate on the water surface.
 - d. The Discharger shall consult and coordinate with the local Mosquito Abatement District to minimize the potential for mosquito breeding as needed to supplement the above measures.
9. The Discharger shall design, construct, operate, and maintain all ponds sufficiently to protect the integrity of containment dams and berms and prevent overtopping and/or structural failure. The operating freeboard in any pond shall never be less than two feet (measured vertically from the lowest possible point of overflow). As a means of management and to discern compliance with this requirement, the Discharger shall install and maintain in each pond a permanent staff gauge or other suitable measurement device with calibration marks that clearly show the water level at design capacity and enable determination of available operational freeboard.
10. Wastewater treatment, storage, and disposal ponds or structures shall have sufficient capacity to accommodate allowable wastewater flow, design seasonal precipitation, and ancillary inflow and infiltration during the winter while ensuring continuous compliance with all requirements of this Order. Design seasonal precipitation shall be based on total annual precipitation using a return period of 100 years, distributed monthly in accordance with historical rainfall patterns.
11. On or about 1 October of each year, available capacity shall at least equal the volume necessary to comply with Discharge Specifications E.9 and E.10.
12. Newly constructed or rehabilitated berms or levees (excluding internal berms that separate ponds or control the flow of water within a pond) shall be designed and constructed under the supervision of a California Registered Civil Engineer.
13. Wastewater contained in any unlined pond shall not have a pH less than 6.0 or greater than 9.0.

14. The Discharger shall monitor sludge accumulation in the wastewater treatment/disposal ponds at least every five years beginning in 2022 and shall periodically remove sludge as necessary to maintain adequate storage capacity. If the estimated volume of sludge in the ponds exceed 25 percent of the permitted pond capacity (or other approved percentage by the Executive Officer), the Discharger shall complete sludge cleanout within 12 months after the date of the estimate.

F. Groundwater Limitations

1. Release of waste constituents from any portion of the Facility shall not cause groundwater to:
 - a. For all compliance monitoring wells, contain waste constituents that exceed applicable Basin Plan water quality objectives, other numerical limitations, or concentrations statistically greater than current groundwater quality, whichever is greater. "Current groundwater quality" will be defined using appropriate statistical methods described in an approved Groundwater Limitations Compliance Assessment Plan (Provision H.1.a).
 - b. For all compliance monitoring wells, exceed a total coliform organism level of 2.2 MPN/100 mL over any seven-day period.
 - c. For all compliance monitoring wells, contain taste or odor-producing constituents, toxic substances, or any other constituents in concentrations that cause nuisance or adversely affect beneficial uses.
2. Compliance with these limitations shall be determined annually based on comparison of data for each well with the groundwater limitations as specified in the Monitoring and Reporting Program using approved intra-well statistical methods.

G. Solids Disposal Specifications

1. For the purposes of this section, "Sludge" means the solid, semisolid, and liquid residues removed during primary, secondary, or advanced wastewater treatment processes. "Solid Waste" refers to solid inorganic matter (grit and screenings) generated during preliminary treatment. "Residual Sludge" means sludge that will not be subject to further treatment at the Facility. "Biosolids" refers to sludge that has been treated and tested and shown to be capable of being beneficially used as a soil amendment for agriculture, silviculture, horticulture, and land reclamation activities pursuant to federal and state regulations.

2. Sludge and Solid Waste shall be removed from screens, sumps, and ponds as needed to ensure optimal operation, prevent nuisance conditions, and maintain adequate storage capacity.
3. Onsite handling and storage of Residual Sludge, Solid Waste, and Biosolids shall be temporary (6 months or less); and controlled and contained in a manner that minimizes leachate formation and precludes infiltration of waste constituents into soils in a mass or concentration that will violate the Groundwater Limitations of this Order.
4. Residual Sludge, Solid Waste, and Biosolids shall be disposed of in a manner approved by the Executive Officer and consistent with Title 27, division 2. Removal for further treatment, disposal, or reuse at disposal sites (i.e., landfills, WWTF, composting facilities, soil amendment sites) operated in accordance with valid waste discharge requirements issued by a Regional Water Board will satisfy this specification.
5. Use of Biosolids as a soil amendment shall comply with valid waste discharge requirements issued by a regional water board or the State Water Board except in cases where a local (e.g., county) program has been authorized by a regional water board. In most cases, this will mean the General Biosolids Order (State Water Resources Control Board Water Quality Order 2004-12-DWQ, "General Waste Discharge Requirements for the Discharge of Biosolids to Land for Use as a Soil Amendment in Agricultural, Silvicultural, Horticultural, and Land Reclamation Activities"). For a biosolids use project to be covered by Order 2004-12-DWQ, the Discharger must file a complete Notice of Intent and receive a Notice of Applicability for each project.
6. Use and disposal of biosolids shall comply with the self-implementing federal regulations of 40 Code of Federal Regulations part 503, which are subject to enforcement by the U.S. EPA, not the Central Valley Water Board. If during the life of this Order, the State accepts primacy for implementation of part 503, the Central Valley Water Board may also initiate enforcement where appropriate.
7. Any proposed change in residual solids use or disposal practice shall be reported in writing to the Executive Officer at least 90 days in advance of the change.

H. Provisions

1. The following reports shall be submitted pursuant to Water Code section 13267 and shall be prepared as described in Provision H.4:
 - a. **By 12 months from adoption of this Order**, the Discharger shall submit a *Groundwater Limitations Compliance Assessment Plan*. The Plan shall propose and justify the values to determine "current

groundwater quality” (as defined in Groundwater Limitations F.1) for each of the compliance wells listed in the MRP. In addition, the plan shall propose and justify the statistical methods used to evaluate compliance with the groundwater Limitations of this Order for the compliance wells and constituents specified in the MRP.

Compliance shall be determined using appropriate statistical methods that have been selected based on site-specific information and the Unified Guidance document cited in Finding 70 of this Order. The report shall explain and justify the selection of the appropriate statistical methods.

- b. **At least 120 days prior** to any removal, drying, treatment, or disposal of sludge for pond maintenance, the Discharger shall submit a *Sludge Management Plan*. At a minimum, the plan shall describe the following:
 - i. Estimate the amount of sludge and scum that will be generated.
 - ii. Describe how sludge, scum, and supernatant will be stored and disposed of to protect groundwater quality and prevent vectors and nuisance conditions.
 - iii. If sludge will be subject to further treatment, describe the treatment and storage requirements.
 - iv. Described cleaning of storage vessels and the treatment and disposal of residuals. If drying or residuals is planned, describe how that will be performed to prevent nuisance odors, prevent vectors, and protect groundwater quality.
- c. **Every 5 years from the date of this Order**, the Discharger shall submit a *Pond Liner Inspection Report*, reviewed and signed by a licensed professional. The report shall include an evaluation of the liner condition for each pond and test results that determine whether the pond liner is leak-free. The report shall include procedures for replacement or repair of the liner when a leak is detected.
- d. **Within 90 days** after any removal of sludge from any lined pond, the Discharger shall submit a *Pond Liner Inspection Report*, reviewed and signed by a licensed professional. The report shall include an evaluation of the pond liner condition and test results that determine whether the pond liner is leak-free. The report shall include procedures for replacement or repair of the liner when a leak is detected.

- e. **Within 120 days**, the Discharger shall notify the Regional Board in writing of any new commercial property tenants. Notification shall include the nature of the business in terms of wastewater flow and quality, and a discussion of any source control or other possible BPTC measures that will be implemented to minimize the discharge from adversely affecting the overall discharge quality and/or disruption of the treatment processes. Depending on the nature of the additional commercial discharge(s), these WDRs may be amended and/or the MRP be revised accordingly.
2. If groundwater monitoring results show that the discharge of waste is causing groundwater to contain any waste constituents in concentration statistically greater than the Groundwater Limitations of this Order based on intra-well evaluation, **within 120 days** of the request of the Executive Officer, the Discharger shall submit a BPTC Evaluation Workplan. The workplan shall set forth the scope and schedule for a systematic and comprehensive technical evaluation of each component of the facility's waste treatment and disposal system to determine best practicable treatment and control for each waste constituent that exceeds a Groundwater Limitation. The workplan shall contain a preliminary evaluation of each component of the wastewater treatment, storage, and disposal system and propose a time schedule for completing the comprehensive technical evaluation. The schedule to complete the evaluation shall be as short as practicable and shall not exceed one year. Alternatively, if it can be shown that the increase is the result of activities outside the Discharger's control, a technical report shall be submitted that justifies and supports that determination.
3. A discharger whose waste flow has been increasing, or is projected to increase, shall estimate when flows will reach hydraulic and treatment capacities of its treatment, collection, and disposal facilities. The projections shall be made in January, based on the last three years' average dry weather flows, peak wet weather flows and total annual flows, as appropriate. When any projection shows that capacity of any part of the facilities may be exceeded in four years, the discharger shall notify the Central Valley Water Board by 31 January.
4. In accordance with California Business and Professions Code sections 6735, 7835, and 7835.1, engineering and geologic evaluations and judgments shall be performed by or under the direction of registered professionals competent and proficient in the fields pertinent to the required activities. All technical reports specified herein that contain workplans for investigations and studies, that describe the conduct of investigations and studies, or that contain technical conclusions and recommendations concerning engineering and geology shall be prepared by or under the direction of appropriately qualified professional(s), even if

not explicitly stated. Each technical report submitted by the Discharger shall bear the professional's signature and stamp.

5. The Discharger shall submit the technical reports and work plans required by this Order for consideration by the Executive Officer, and incorporate comments the Executive Officer may have in a timely manner, as appropriate. Unless expressly stated otherwise in this Order, the Discharger shall proceed with all work required by the foregoing provisions by the due dates specified.
6. The Discharger shall comply with the separately issued Monitoring and Reporting Program (MRP) R5-2021-0045, and any revisions thereto as ordered by the Executive Officer. The submittal dates of Discharger self-monitoring reports shall be no later than the submittal date specified in the MRP.
7. The Discharger shall comply with all conditions of this Order, including timely submittal of technical and monitoring reports. On or before each report due date, the Discharger shall submit the specified document to the Central Valley Water Board or, if appropriate, a written report detailing compliance or noncompliance with the specific schedule date and task. If noncompliance is being reported, then the Discharger shall state the reasons for such noncompliance and provide an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Central Valley Water Board in writing when it returns to compliance with the time schedule. Violations may result in enforcement action, including Central Valley Water Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or rescission of this Order.
8. The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also include adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems that are installed by the Discharger when the operation is necessary to achieve compliance with the conditions of this Order.
9. The Discharger shall use the best practicable cost-effective control technique(s) including proper operation and maintenance, to comply with this Order.
10. Per the SPRRs, the Discharger shall report promptly to the Central Valley Water Board any material change or proposed change in the character, location, or volume of the discharge.

11. Upon the reduction, loss, or failure of the Sanitary Sewer System (SSS) resulting in a Sanitary Sewer Overflow (SSO), the Discharger shall take any necessary remedial action to: (a) control or limit the volume of sewage discharged; (b) terminate the sewage discharge as rapidly as possible; and (c) recover as much as possible of the sewage discharged (including wash down water) for proper disposal. The Discharger shall implement all applicable remedial actions including, but not limited to, the following:
 - a. Interception and rerouting of sewage flows around the sewage line failure;
 - b. Vacuum truck recovery of sanitary sewer overflows and wash-down water;
 - c. Use of portable aerators where complete recovery of the sanitary sewer overflows are not practicable and where severe oxygen depletion is expected in surface waters; and
 - d. Cleanup of sewage-related debris at the overflow site.
12. In the event that the Discharger reports toxic chemical release data to the State Emergency Response Commission (SERC) pursuant to section 313 of the "Emergency Planning and Community Right to Know Act of 1986" (42 U.S.C. section 11023), the Discharger shall also report the same information to the Central Valley Water Board within 15 days of the report to the SERC.
13. In the event of any change in control or ownership of the Facility, the Discharger must notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Central Valley Water Board.
14. To assume operation as Discharger under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the state of incorporation if a corporation, the name and address and telephone number of the persons responsible for contact with the Central Valley Water Board, and a statement. The statement shall comply with the signatory paragraph of Standard Provision B.3 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the Water Code. If approved by the Executive Officer, the transfer request will be submitted to the Central Valley Water Board for its consideration of transferring the ownership of this Order at one of its regularly scheduled meetings.
15. A copy of this Order (including Information Sheet, Attachments, and SPRRs) and the MRP, shall be kept at the Facility for reference by

operating personnel. Key operating personnel shall be familiar with their contents.

16. The Discharger shall comply with the Basin Plan amendments adopted in Resolution R5-2018-0034 incorporating new programs (Salt and Nitrate Control Programs) for addressing ongoing salt and nitrate accumulation in the Central Valley developed as part of the Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) initiative.
17. The Central Valley Water Board will review this Order periodically and will revise requirements when necessary.

List of Attachments

Attachment A – Vicinity Map

Attachment B – Facility and Monitoring Well Location Map

Attachment C – Process Flow Diagram

Information Sheet

Standard Provisions and Reporting Requirements

Monitoring and Reporting Program R5-2021-0045 (separate document)

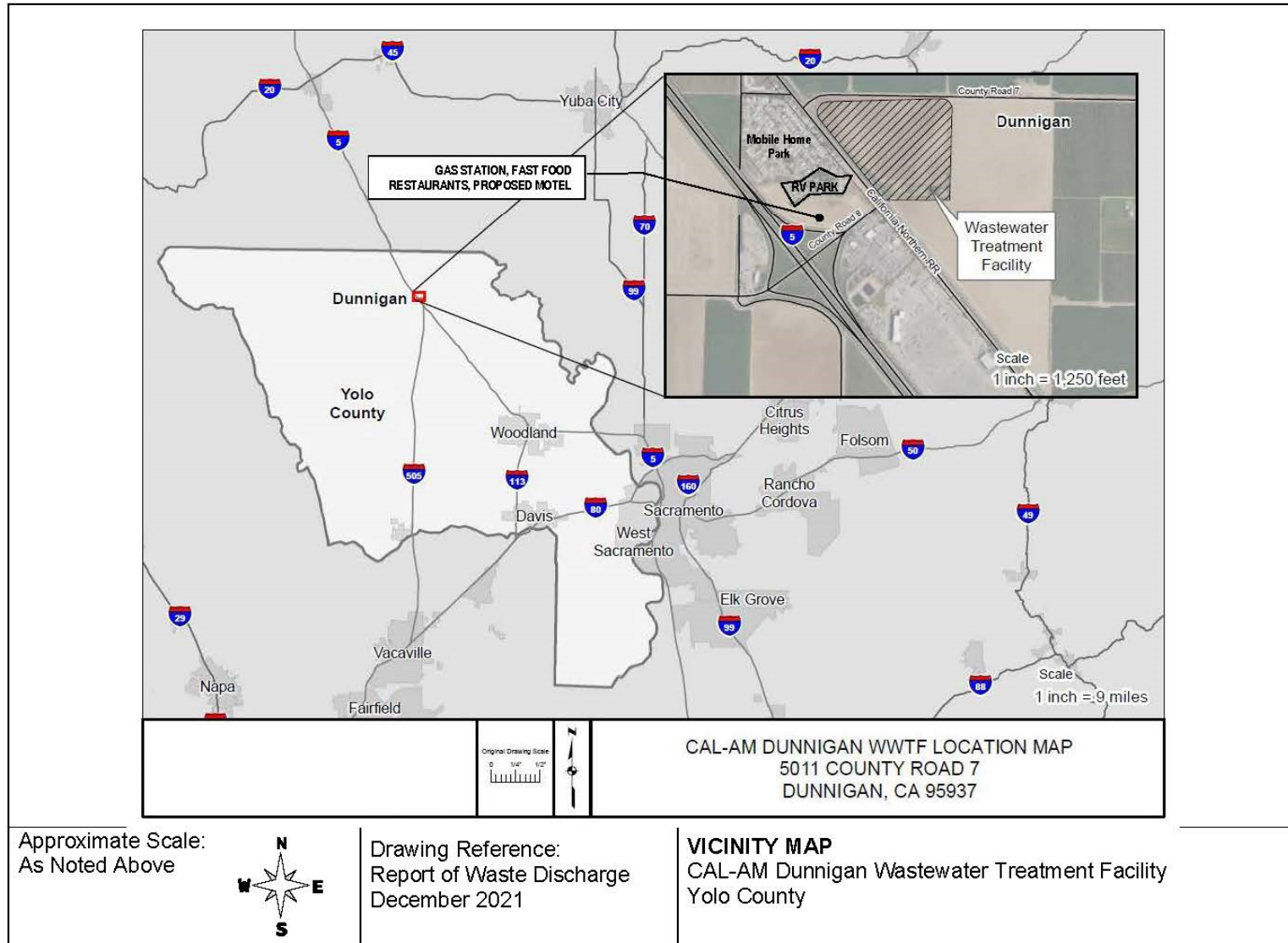
ENFORCEMENT

If, in the opinion of the Executive Officer, the California American Water fail to comply with the provisions of this Order, the Executive Officer may refer this matter to the Attorney General for judicial enforcement, may issue a complaint for administrative civil liability, or may take other enforcement actions. Failure to comply with this Order may result in the assessment of Administrative Civil Liability of up to \$10,000 per violation, per day, depending on the violation, pursuant to the Water Code, including sections 13268, 13350 and 13385. The Central Valley Water Board reserves its right to take any enforcement actions authorized by law.

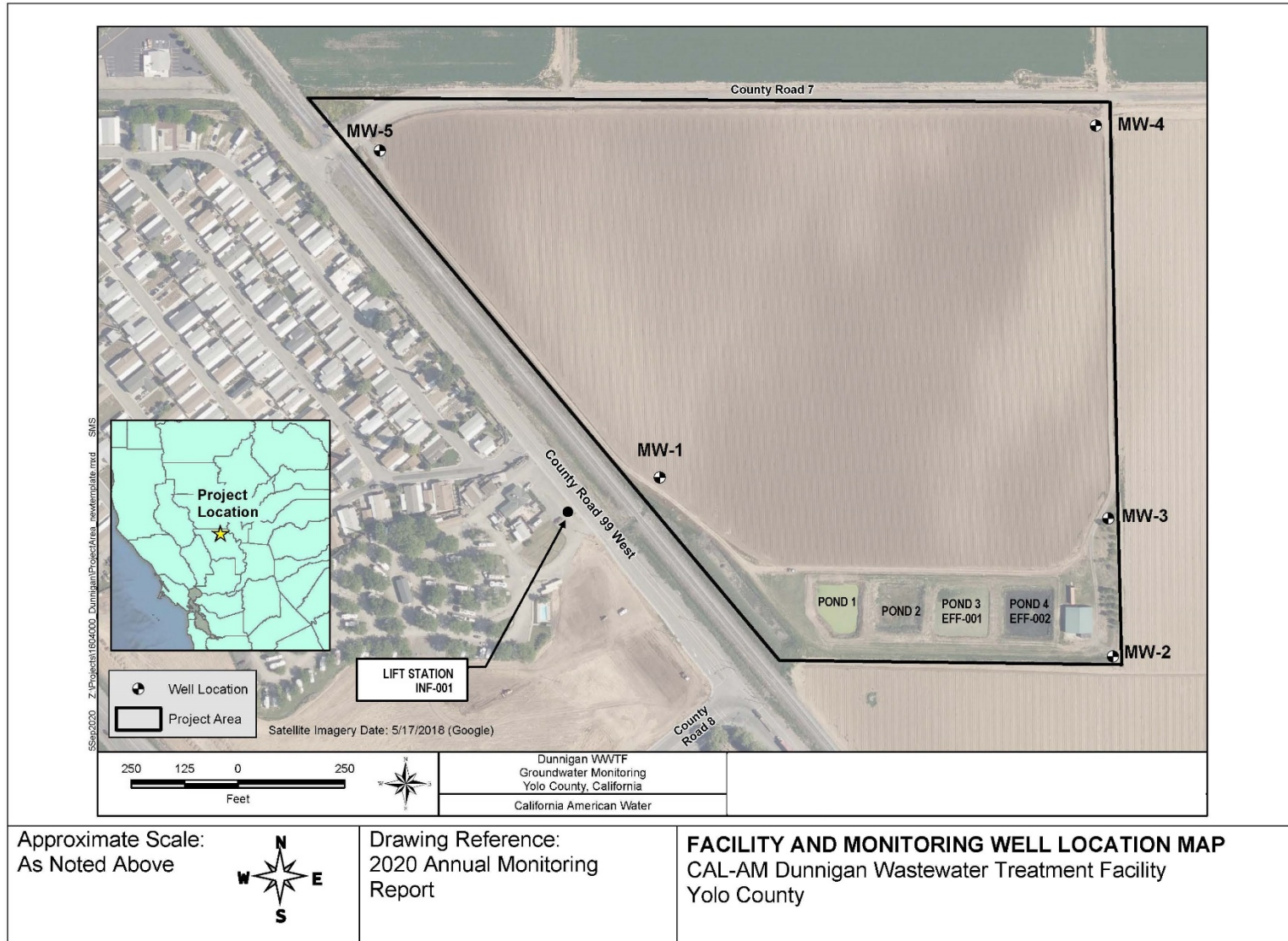
ADMINISTRATIVE REVIEW

Any person aggrieved by this Central Valley Water Board action may petition the State Water Board for review in accordance with Water Code section 13320 and California Code of Regulations, title 23, section 2050 et seq. To be timely, the petition must be received by the State Water Board by 5:00 pm on the 30th day after the date of this Order; if the 30th day falls on a Saturday, Sunday or state holiday, the petition must be received by the State Water Board by 5:00 pm on the next business day. The law and regulations applicable to filing petitions are available on the [State Water Board website](http://www.waterboards.ca.gov/public_notices/petitions/water_quality) (http://www.waterboards.ca.gov/public_notices/petitions/water_quality). Copies will also be provided upon request.

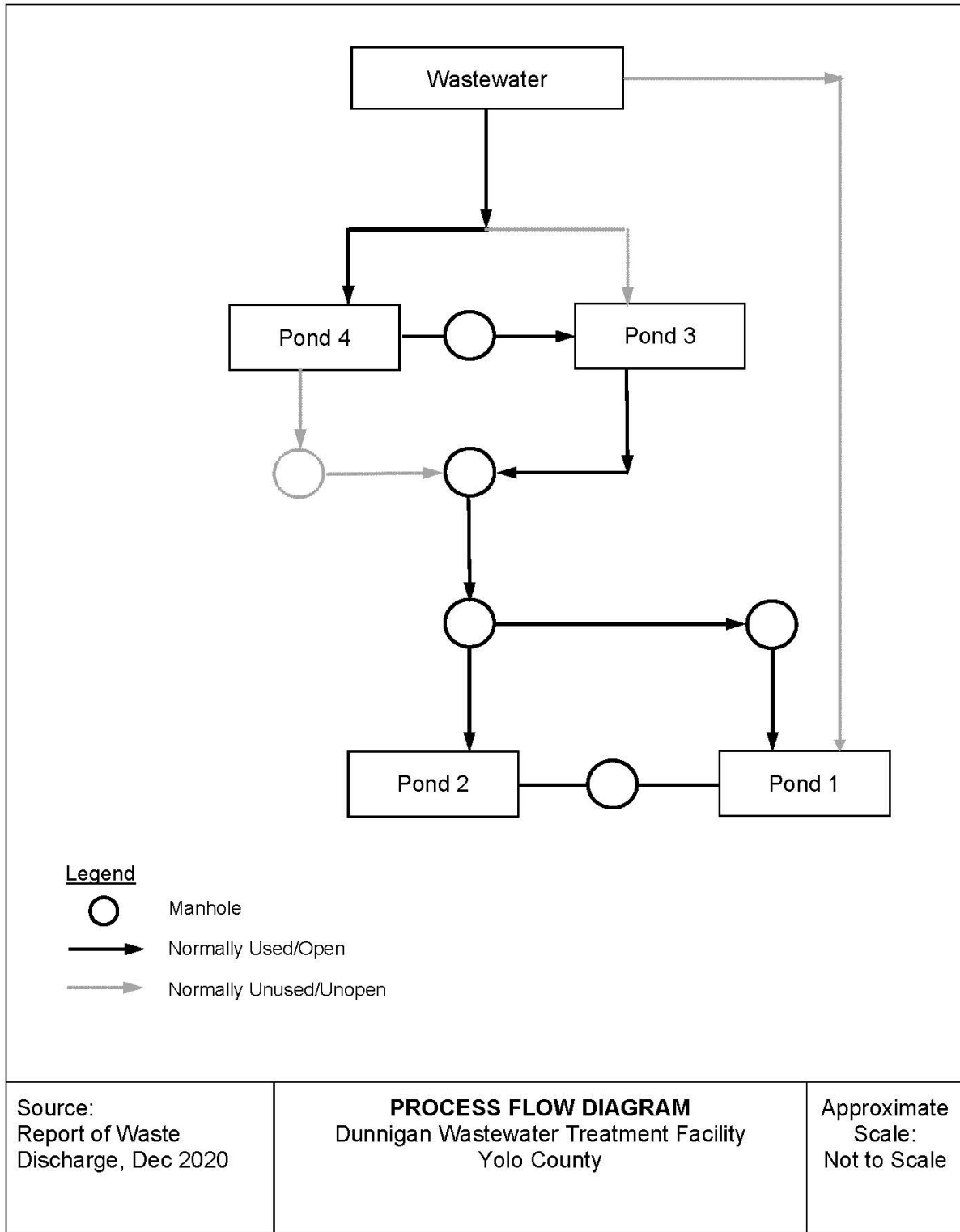
ATTACHMENT A – VICINITY MAP



ATTACHMENT B – FACILITY AND MONITORING WELL LOCATION MAP



ATTACHMENT C- PROCESS FLOW DIAGRAM



INFORMATION SHEET

Background

California American Water (CalAm) owns and operates the Dunnigan Wastewater Treatment Facility (WWTF or Facility). The Facility consists of two HDPE lined treatment ponds and two disposal ponds. The Facility has been in operation since 1974 and serves a 186-unit mobile home park; a 67-space recreational vehicle (RV) park; and newer development west of County Road 99 which includes a gas station and several fast-food restaurants. The Board previously regulated the discharge from the WWTF under Waste Discharge Requirements (WDRs) Order R5-2010-0013.

Wastewater and Sludge Disposal

The collection system is comprised of gravity sewer piping, a main lift station, and a force main to convey wastewater to the Facility. The lined treatment ponds are operated in series (Ponds 4 and 3) and the two disposal ponds (Ponds 2 and 1) may be operated in tandem or alternating. Solids generated at the Facility consists of waste sludge accumulated in the treatment ponds. To maintain treatment capacity, solids from the treatment ponds will be removed for disposal, dewatered, and collected in waste trucks for off hauling to a landfill. Expected frequency of solids removal is every 15 to 20 years.

Groundwater Considerations

Groundwater conditions are discussed in Findings 27 through 35 of the Order.

The Discharger installed a monitoring well network in 2007 that included three wells and installed two additional wells in 2020. Historical groundwater trends for TDS and nitrate as N based on available data in the 2020 Annual Groundwater Monitoring Report is shown below.

Figure 1 Historical TDS Trends

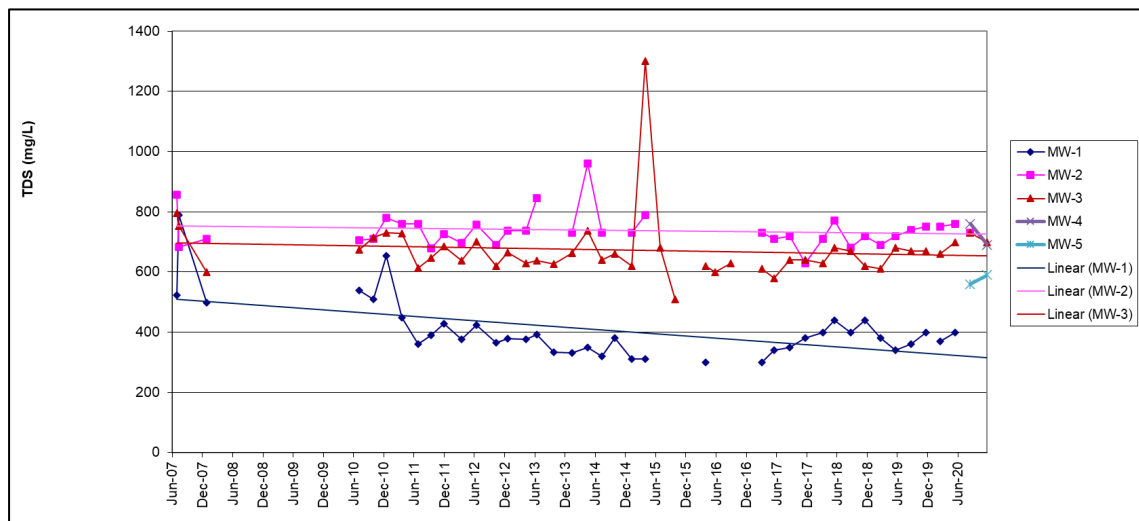
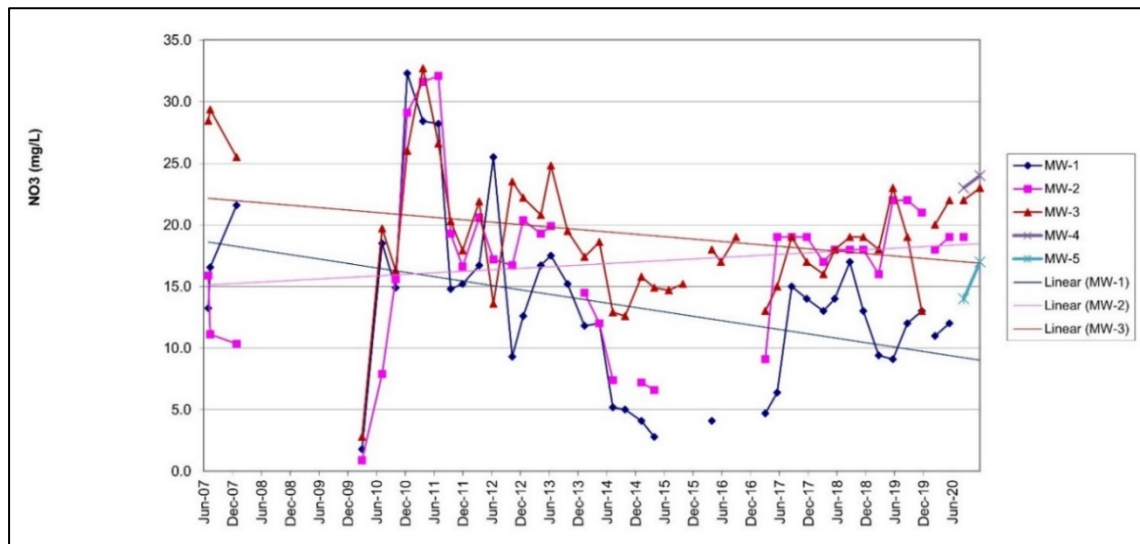


Figure 2 Historical Nitrate as Nitrogen Trends



Antidegradation

Antidegradation analysis and conclusions are discussed in Finding 54 through 60 of the Order.

Discharge Prohibitions, Discharge Specifications, and Provisions

The Order prescribes an average daily dry weather influent flow of 28,000 gallons per day and a maximum annual discharge up to 10.2 million gallons. The RWD included a water balance that demonstrated adequate disposal capacity based on projected flows, pond dimensions, and reasonable estimates of precipitation and evaporation.

This Order contains Effluent Limitations D.1 that limits the monthly maximum BOD₅ concentration to 130 mg/L and an annual average EC not to exceed 1,300 µmhos/cm. Since lining the treatment ponds, BOD₅ reduction has increased from 37.6 percent to between 56 and 93 percent (or an average of approximately 83 percent) reduction. Lined treatment ponds are BPTC. A monthly maximum of 130 mg/L is a performance based effluent limit based on a 65 percent reduction (in accordance with General Waste Discharge Requirements for Small Domestic Wastewater Treatment Systems, Water Quality 2014-0153-DWQ) of an incoming BOD of 375 mg/L. The effluent EC limit of 1,300 µmhos/cm is a performance-based limit, based on historical effluent data. Setting the effluent EC limit as an annual average should provide the Discharger additional control to comply with the limit. This Order does not contain a TSS effluent limit. TSS limits are technology based and not appropriate for pond systems. This Order does not contain a total coliform effluent limit. The Facility does not provide active disinfection.

Wastewater is discharged into ponds that are enclosed within a fence with proper signage to minimize public contact.

Legal Effect of Rescission of Prior WDRS or Orders on Existing Violations

The Board's rescission of prior waste discharge requirements and/or monitoring and reporting orders does not extinguish any violations that may have occurred during the time those waste discharge requirements or orders were in effect. The Central Valley Water Board reserves the right to take enforcement actions to address violations of prior prohibitions, limitations, specifications, requirements, or provisions of rescinded waste discharge requirements or orders as allowed by law.

Salt and Nitrate Control Programs

The Central Valley Water Board adopted Basin Plan amendments incorporating new programs for addressing ongoing salt and nitrate accumulation in the Central Valley at its 31 May 2018 Board Meeting. These programs, once effective, could change how the Central Valley Water Board permits discharges of salt and nitrate. The Salinity Control Program currently being developed would subject dischargers that do not meet stringent salinity numeric values (700 $\mu\text{mhos/cm}$ EC as a monthly average to protect the AGR beneficial use and 900 $\mu\text{mhos/cm}$ as an annual average to protect the MUN beneficial use) to performance-based salinity requirements, and would require these dischargers to participate in a Basin-wide Prioritization and Optimization Study to develop a long-term strategy for addressing salinity accumulation in the Central Valley.

The level of participation required of dischargers whose discharges do not meet stringent salinity requirements will vary based on factors such as the amount of salinity in the discharge, local conditions, and type of discharge. The Central Valley Water Board anticipates that the CV-SALTS initiative will result in regulatory changes that will be implemented through conditional prohibitions and modifications to many WDRs region-wide, including the WDRs that regulate discharges from the Facility. More information regarding this regulatory planning process can be found at the following link: https://www.waterboards.ca.gov/centralvalley/water_issues/salinity/

Reopener

The conditions of discharge in the Order were developed based on currently available technical information and applicable water quality laws, regulations, policies, and plans, and are intended to assure conformance with them. The Order sets limitations based on the information provided thus far. If applicable laws and regulations change, or once new information is obtained that will change the overall discharge and its potential to impact groundwater, it may be appropriate to reopen the Order.

**STANDARD PROVISIONS & REPORTING REQUIREMENTS
FOR
WASTE DISCHARGE REQUIREMENTS
1 MARCH 1991 EDITION**