5.0 General Requirements

- Each Priority Development Project (PDP) must provide a description of existing site conditions and proposed changes to them, including changes to topography and drainage.
- Has a **Drainage Report** has been prepared for the PDP?

  ☒ **Yes**

  - Review of the Drainage Report must be concurrent with the PDP SWQMP.
  - Include the summary page of the Drainage Report with this cover page, and provide the following information:

    Title: CEQA-Level Drainage Study for the Cottonwood Sand Mining Project

    Prepared By: Chang Consultants

    Date: July 24, 2024

  - Do not complete the rest of this attachment (also exclude these additional pages from your submittal). Additional documentation of site and drainage conditions is not required unless requested by County staff.

  ☐ **No** -- Complete and submit the remainder of this attachment below.

The rainfall and stream gage records show that the maximum water transfer associated with rainfall during the water transfer periods primarily remained at or below 400 cfs. In 2021, rainfall caused the water transfer to reach 421 cfs on one day. In 2017, the water transfer on the initial release date reached 591 cfs due to heavy rainfall exceeding 2 inches on the preceding day. As mentioned above, the flow rates are measured at Sloane Canyon Road, which is several miles upstream of the project. There will be additional flow added below Sloane Canyon Road during rainfall events, but the data shows that this will generally be minor. This will be offset a small amount by infiltration and evaporative losses (minor during storm events) and a larger amount by storage losses. The large pond immediately downstream of Sloane Canyon Road as well as the natural drainage channel and overbank areas provide significant storage. Based on this, the on-site channel has been designed to convey the maximum historic water transfer measured at 591 cfs. This occurred once over the 128 days of total historic water transfer or 0.8 percent of the time.

Normal depth analyses were used to size the on-site trapezoidal channel. The existing channel will remain. The mining activities will lower the channel banks, but the banks will remain at 3.7 feet high in order to convey the water transfer. For mined areas behind the banks, the ground will be sloped at no steeper than 4:1 (horizontal:vertical) to meet the ground surface. Separate normal depth analyses were performed for the upper and lower portions using FlowMaster. The upper portion of the channel is narrower and steeper than the lower portion. The average channel dimensions, side slopes, and longitudinal slopes were determined from 2-foot contour interval topographic mapping. The channel bed will remain undisturbed. The upper channel will maintain the current bed width of approximately 25 feet and the lower channel will maintain the current bed width of approximately 50 feet. The existing side slopes will be generally unchanged. The FlowMaster results are included in Appendix B. They show that the capacity of the upper and lower channels is 618 and 756 cfs, respectively. Therefore, the maximum historic water transfer of 591 cfs will be conveyed in the on-site channel with a factor of safety. The results also show flow velocities of 5.2 and 3.6 fps, which indicate low erosion potential.

Based on these analyses, the trapezoidal channel that will remain during and after mining will convey water transfer flow rates similar to pre-project conditions. This will avoid water transfer flow and capture beyond the channel limits. The channel has been conservatively sized to convey the maximum water transfer flow rate. The typical water transfer flow rates are much lower than the maximum.

CONCLUSION AND CERTIFICATION

CEQA-level hydraulic analyses have been performed for the proposed Cottonwood Sand Mining Project along the Sweetwater River in the county of San Diego, California. This report includes existing and proposed condition 100-year HEC-RAS hydraulic analyses. The existing condition analyses are from a corrected Rick Engineering Company As-built model included in the Cottonwood Golf Course LOMR approved by FEMA. The proposed condition analyses show that the 100-year flow velocities within the project are generally low and considered non-erosive. Grouted riprap will be installed on some of the pit slopes to protect against upstream headcutting.

The riprap will not prevent nor impede water transfer along the low flow channel. An Industrial SWPPP will address BMPs required for operations.

Since the project proposes mining and restoration in the floodplain, the floodplain is being altered somewhat. In most areas, the 100-year water surface elevations are lowered due to the instream excavation. The river course and on-site drainage patterns are generally being maintained as evidenced by comparison of the effective and proposed condition floodplains on the HEC-RAS Work Map. The flow velocities are generally being reduced since the mining increases conveyance, so the project will not cause substantial erosion. The mining pits will have the ability to capture sediment and reduce downstream sedimentation. The project is creating minimal impervious surfaces, so the river's 100-year flow rate is not altered.

The following summarizes the CEQA-level requirements:

- The project will not substantially alter the existing drainage pattern of the site or area. In addition, there are no significant impervious areas such that an increase in the rate or amount of surface runoff will occur. The site and area runoff will continue to be conveyed to the Sweetwater River that flows through the site – flows would not be impeded or redirected. The Sweetwater River will continue to flow in the same direction through the site. Riprap will be installed at the upstream end of the mining pit to prevent headcutting erosion. The mining pit will reduce downstream siltation since it spreads the river flow and reduces flow velocities.

- The project proposes minor impervious surfaces, so will essentially maintain existing storm runoff flow rates. The project meets no-rise criteria, so will not cause on- or off-site flood inundation impacts.

- The project is primarily within the Sweetwater River floodplain. There are no existing or planned storm water drainage systems in the floodplain that will be impacted by the project since the flow rate is not being altered and the no-rise criteria is met.

- The project does not propose housing.

This is to certify that I am a duly qualified registered professional engineer licensed to practice in the State of California.

Name of Report: *CEQA-Level Drainage Study for the Cottonwood Sand Mining Project*
Date of Report: July 24, 2024

Will sign and stamp upon approval

Date: July 24, 2024
Name: Wayne W. Chang

6.0 General Requirements

- Use this attachment to document all proposed (1) self-mitigating, (2) de minimis, and (3) self-retaining DMAs. Indicate under "DMA Compliance Option" below which design options will be used to satisfy structural performance requirements for one or more DMA.

DMA Compliance Option	Required Sub-attachments or Printouts	BMPDM Design Resources
☒ **Self-mitigating**	• Sub-attachment 6.1	• BMPDM Section 5.2.1
☐ **De minimis**	• Sub-attachment 6.2	• BMPDM Section 5.2.2
☒ **Self-retaining**[1]	• Sub-attachment 6.3	• BMPDM Section 5.2.3 (all options)
SSD-BMP Type(s)		
☐ **Impervious Area Dispersion**	• DCV calculations from SSD-BMP tool • Dispersion Areas calculations from SSD-BMP tool	• Fact Sheet SD-B (Appendix E.8) • Appendix I
☒ **Tree Wells**	• DCV calculations from SSD-BMP tool • Tree Well calculations from SSD-BMP tool	• Fact Sheet SD-A (Appendix E.7) • Appendix I

- Submit this cover page and all "Required Sub-attachments or Printouts" listed for each selected DMA compliance option.
- See the BMPDM sections and appendices listed under "BMPDM Design Resources" for additional explanation of design requirements. Each constructed feature must fully satisfy the requirements described in these resources, and any other guidance identified by the County.
- DMA Exhibits and Construction Plans: DMAs, features, and BMPs identified and described in this attachment must be shown on DMA Exhibits and all applicable construction plans submitted for the project. See Attachment 2 for additional instruction on exhibits and plans.

[1] If "Self-retaining" is selected, also choose the types of Significant Site Design BMPs (SSD-BMPs) to be used. SSD-BMPs are Site Design BMPs that are sized and constructed to fully satisfy all applicable Structural Performance Standards for a DMA.

6.1 Self-mitigating DMAs (complete this page once for ALL self-mitigating DMAs)

Self-mitigating DMAs consist of natural or landscaped areas that drain directly offsite or to the public storm drain system. These DMAs are excluded from DCV calculations.

- Provide the information requested below for each proposed self-mitigating DMA. Add rows or copy the table if additional entries are needed.

DMA #	*a. DMA Area (ft^2)*	*Incidental Impervious Area*		*Permit # and Sheet #*
		b. Size(ft^2)	*c. % (b/a*100)*	
1C	737,489	13,427	1.8	PDS2018-MUP-18-023; Sheet 2 thru 10.
1D	966,627	8,876	0.0	PDS2018-MUP-18-023; Sheet 2 thru 10.
1E	970,306	3,151	0.3	PDS2018-MUP-18-023; Sheet 2 thru 10.
2A	247,619	0	0	PDS2018-MUP-18-023; Sheet 2 thru 10.
2B	1,614,714	13,477	0.3	PDS2018-MUP-18-023; Sheet 2 thru 10.
3A	2,166,898	37,891	1.7	PDS2018-MUP-18-023; Sheet 2 thru 10.
3B	809,566	950	0.1	PDS2018-MUP-18-023; Sheet 2 thru 10.
4A-4F	7,407,026	60,194	0.81	PDS2018-MUP-18-023; Sheet 6 and 10.

- "DMA #", "DMA Area", and "Permit # and Sheet #" are required for all DMAs listed.
- "Incidental Impervious Area" calculations are required only where applicable (see below).
- Each self-mitigating DMA must <u>fully</u> satisfy all design requirements and restrictions described in BMPDM Section 5.2.1 and any other guidance or instruction identified by the County. Check the boxes below to confirm that all required conditions are satisfied <u>for every DMA listed</u>.

☒ Each DMA is hydraulically separate from other DMAs that contain permanent storm water pollutant control BMPs.

<u>Natural and Landscaped Areas</u>

☒ Each DMA consists solely of natural or landscaped areas, except for incidental impervious areas (see below).

☒ Each area drains directly offsite or to the public storm drain system.

☒ Soils are undisturbed native topsoil, or disturbed soils that have been amended and aerated to promote water retention characteristics equivalent to undisturbed native topsoil.

☒ Vegetation is native and/or non-native/non-invasive drought tolerant species that do not require regular application of fertilizers and pesticides.

<u>Incidental Impervious Areas (if applicable; see above)</u>

Minor impervious areas may be permitted within the DMA if they satisfy the following criteria:

☒ They are not hydraulically connected to other impervious areas (unless it is a storm water conveyance system such as a brow ditch).

☒ They comprise less than 5% of the total DMA. Calculate the % incidental impervious area in the table above (c= b/a). DMAs are <u>not</u> self-mitigating if this area is 5% or greater.

6.2 De Minimis DMAs (complete this page once for ALL de minimis DMAs)

De minimis DMAs consist of areas too small to be considered significant contributors of pollutants and not practicable to drain to a BMP. They are excluded from DCV calculations. Examples include driveway aprons connecting to existing streets, portions of sidewalks, retaining walls, and similar features at the external boundaries of a project.

- Provide the information requested below for each proposed de minimis DMA. Add rows or copy the table if additional entries are needed.

DMA #	***DMA Area (ft^2)***	***Permit # and Sheet #***
N/A		

- "DMA #", "DMA Area", and "Permit # and Sheet #" are required.
- Check the boxes below to confirm that each required condition is satisfied for ALL de minimis DMAs on the site.

  ☐ Each DMA listed is less than 250 square feet and not adjacent or hydraulically connected to each other.

  ☐ Each DMA listed <u>fully</u> satisfies all design requirements and restrictions described in BMPDM Section 5.2.2 De Minimis DMAs.

6.3 Self-retaining DMAs using Significant Site Design BMPs

Self-retaining DMAs use Site Design BMPs to fully-retain the entire DCV, at a minimum. Site Design BMPs that fully retain the DCV, at a minimum, therefore replacing the need for a Structural BMP (S-BMP), are classified as Significant Site Design BMPs (SSD-BMPs). To satisfy pollutant control requirements only, self-retaining means retention of the entire DCV. However, under some circumstances, a self-retaining DMA can also satisfy hydromodification management requirements by implementing BMPs that retain a greater volume of runoff.

- Provide the information requested below for each proposed self-retaining DMA. Add rows or copy the table if additional entries are needed.

DMA #	DMA Area (ft^2)	**BMP Type** (choose one per DMA)		*Permit # and Sheet #*
		Dispersion Area (Att. 6.3.1)	**Tree Wells (Att. 6.3.2)**	
Within 1E	2,468	☒	☐	Sheet 5 (see DMA Exhibit Sheet 1 for self-retaining subareas discussion).
Within 2B	13,477	☒	☐	Sheet 6 (see DMA Exhibit Sheet 1 for self-retaining subareas discussion).
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	

Copy and Paste table here for additional DMAs

- "DMA #", "DMA Area", and "Permit # and Sheet #" are required.
- Select one BMP Type per DMA. Provide detailed documentation for each DMA in Attachments 6.3.1 (Impervious Dispersion Areas) and/or 6.3.2 (Tree Wells) below.
- Each self-retaining DMA must <u>fully</u> satisfy all design requirements and restrictions described in BMPDM Section 5.2.3, applicable BMPDM Appendix E Fact Sheets, BMPDM Appendix I, and any other guidance or instruction identified by the County.

6.3.1 Self-retaining DMAs with Impervious Dispersion Areas

Impervious area dispersion (dispersion) refers to the practice of effectively disconnecting impervious areas from directly draining to the storm drain system by routing runoff from impervious areas such as rooftops (through downspout disconnection), walkways, and driveways onto the surface of adjacent pervious areas. The intent is to slow runoff discharges and reduce volumes. Dispersion with partial or full infiltration results in significant volume reduction by means of infiltration and evapotranspiration. When adequately sized, dispersion can also be used to satisfy both the pollutant control and hydromodification management structural performance standards for a DMA.

- Each self-retaining DMA with impervious area dispersion must fully satisfy all design requirements and restrictions described in BMPDM Section 5.2.3, Fact Sheet SD-B: Impervious Area Dispersion, and any other guidance or instruction identified by the County.
- Documentation of compliance with all applicable conditions must be submitted with this sub-attachment using the ***Summary Sheet for DMAs with Impervious Area Dispersion*** on the next page. One version of this Summary Sheet must be completed for each applicable DMA.
- Applicants are responsible to comply with all other applicable requirements, regardless of whether they are included in the summary sheet.
- The following applies if the dispersion area is **native soil** (SD-B in Appendix E):
    - For pollutant control only, the DMA is considered self-retaining if the impervious to pervious ratio is:
        - 2:1 when the pervious area is composed of Hydrologic Soil Group A
        - 1:1 when the pervious area is composed of Hydrologic Soil Group B
- The following applies if the dispersion area includes **amended soil** (SD-B in Appendix E):
    - DMAs using impervious area dispersion can be considered to meet both pollutant control and hydromodification flow control requirements if the impervious to pervious area ratio is 1:1 or less and all other design requirements of SD-B are satisfied, including 11 inches of amended soil.

Summary Sheet for Self-retaining DMAs with Impervious Area Dispersion

Attach Printouts from SSD-BMP tool below

- DCV calculations from SSD-BMP tool
- Dispersion Areas calculations from SSD-BMP tool

6.3.2 Self-retaining DMAs with Tree Wells

Trees wells can provide a variety of benefits such as interception and increased infiltration of rainfall, reduced erosion, energy conservation, air quality improvement, and aesthetic enhancement. They can also be used to satisfy both pollutant control and hydromodification management performance standards for a DMA.

- Each self-retaining DMA with tree wells must fully satisfy all design requirements and restrictions described in BMPDM Section 5.2.3, Fact Sheet SD-A: Tree Wells, and any other guidance or instruction identified by the County.
- For pollutant control only, the DMA must retain the entire DCV. For hydromodification management, an additional volume must be retained in accordance with the sizing requirements presented in the DCV multiplier table in Fact Sheet SD-A.
- Documentation of compliance with applicable conditions must be submitted using the ***Summary Sheet for Self-retaining DMAs with Tree Wells*** on the next page. One version of this Summary Sheet must be completed for each applicable DMA.
- If both pollutant control and hydromodification standards apply, the soil depth of all tree wells in the DMA must be selected before determining the Required Retention Volume (RRV). Each tree well must be constructed to the selected depth. For pollutant control only, tree wells within a DMA may be constructed to different soil depths.
- In most cases tree wells must use Amended Soil per Fact Sheet SD-F. However, Structural Soil is required in some cases (e.g., placing the tree well next to a curb). See ***Structural Requirements for Confined Tree Well Soil Volume*** in Fact Sheet SD-A for additional explanation. If applicable, list the DMAs and Tree Well #s below for all tree wells requiring Structural Soil.

DMA #	**Tree Wells Requiring Structural Soil (list Tree Well #s)**
1A	Four tree wells (TW1, TW2, TW3, and TW4) will be used to treat the Willow Glen Drive runoff.

- The Design Capture Volume (DCV) must be known for each DMA in order to determine the volume to be mitigated by the tree wells. Instructions for DCV calculation are provided in BMPDM Appendix I.1. An automated version of Worksheet I.1 (Calculation of Design Capture Volume) is available at www.sandiegocounty.gov/stormwater under the Development Resources tab.

Summary Sheet for Self-retaining DMAs with Tree Wells

Attach Printouts from SSD-BMP tool below

- DCV calculations from SSD-BMP tool
- Tree Wells calculations from SSD-BMP tool

SSD-BMP Automated Worksheet I-1: Step 1. Calculation of Design Capture Volume (V1.0)													
Category	**#**	**Description**	***i***	***ii***	***iii***	***iv***	***v***	***vi***	***vii***	***viii***	***ix***	***x***	**Units**
Standard Drainage Basin Inputs	1	Drainage Basin ID or Name	Tree Wells										unitless
	2	85th Percentile 24-hr Storm Depth	0.50										inches
	3	Is Hydromodification Control Applicable?	Yes										yes/no
	4	Impervious Surfaces Not Directed to Dispersion Area (C=0.90)	14,212										sq-ft
	5	Semi-Pervious Surfaces Not Serving as Dispersion Area (C=0.30)											sq-ft
	6	Engineered Pervious Surfaces Not Serving as Dispersion Area (C=0.10)											sq-ft
	7	Natural Type A Soil Not Serving as Dispersion Area (C=0.10)											sq-ft
	8	Natural Type B Soil Not Serving as Dispersion Area (C=0.14)											sq-ft
	9	Natural Type C Soil Not Serving as Dispersion Area (C=0.23)											sq-ft
	10	Natural Type D Soil Not Serving as Dispersion Area (C=0.30)											sq-ft
SSD-BMPs Proposed	11	Does Tributary Incorporate Dispersion and/or Rain Barrels?	No										yes/no
	12	Does Tributary Incorporate Tree Wells?	No										yes/no
Dispersion Area & Rain Barrel Inputs (Optional)	13	Impervious Surfaces **Directed to Dispersion Area** per SD-B (Ci=0.90)											sq-ft
	14	Semi-Pervious Surfaces **Serving as Dispersion Area** per SD-B (Ci=0.30)											sq-ft
	15	Engineered Pervious Surfaces **Serving as Dispersion Area** per SD-B (Ci=0.10)											sq-ft
	16	Natural Type A Soil **Serving as Dispersion Area** per SD-B (Ci=0.10)											sq-ft
	17	Natural Type B Soil **Serving as Dispersion Area** per SD-B (Ci=0.14)											sq-ft
	18	Natural Type C Soil **Serving as Dispersion Area** per SD-B (Ci=0.23)											sq-ft
	19	Natural Type D Soil **Serving as Dispersion Area** per SD-B (Ci=0.30)											sq-ft
	20	Number of Rain Barrels Proposed per SD-F											#
	21	Average Rain Barrel Size											gal
Initial Runoff Factor Calculation	22	Total Tributary Area	14,212	0	0	0	0	0	0	0	0	0	sq-ft
	23	Initial Runoff Factor for Standard Drainage Areas	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	unitless
	24	Initial Runoff Factor for Dispersed & Dispersion Areas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	unitless
	25	Initial Weighted Runoff Factor	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	unitless
	26	Initial Design Capture Volume	533	0	0	0	0	0	0	0	0	0	cubic-feet
Dispersion Area Adjustment & Rain Barrel Adjustment	27	Total Impervious Area Dispersed to Pervious Surface	0	0	0	0	0	0	0	0	0	0	sq-ft
	28	Total Pervious Dispersion Area	0	0	0	0	0	0	0	0	0	0	sq-ft
	29	Ratio of Dispersed Impervious Area to Pervious Dispersion Area for DCV Reduction	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	ratio
	30	Adjustment Factor for Dispersed & Dispersion Areas	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	ratio
	31	Runoff Factor After Dispersion Techniques	0.90	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	unitless
	32	Design Capture Volume After Dispersion Techniques	533	0	0	0	0	0	0	0	0	0	cubic-feet
	33	Total Rain Barrel Volume Reduction	0	0	0	0	0	0	0	0	0	0	cubic-feet
Results	34	Final Adjusted Runoff Factor	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	unitless
	35	Final Effective Tributary Area	12,791	0	0	0	0	0	0	0	0	0	sq-ft
	36	Initial Design Capture Volume Retained by Dispersion Area and Rain Barrel(s)	0	0	0	0	0	0	0	0	0	0	cubic-feet
	37	Remaining Design Capture Volume Tributary to Tree Well(s)	533	0	0	0	0	0	0	0	0	0	cubic-feet

No Warning Messages

SSD-BMP Automated Worksheet I-3: Step 3. Tree Well Sizing (V1.0)

Category	#	Description	i	ii	iii	iv	v	vi	vii	viii	ix	x	Units
Standard Tree Well Inputs	1	Drainage Basin ID or Name	Tree Wells	-	-	-	-	-	-	-	-	-	unitless
	2	Design Capture Volume Tributary to BMP	533	-	-	-	-	-	-	-	-	-	cubic-feet
	3	Is Hydromodification Control Applicable?	Yes	-	-	-	-	-	-	-	-	-	yes/no
	4	Predominant NRCS Soil Type Within Tree Well(s) Location	B										unitless
	5	Select a Tree Species for the Tree Well(s) Consistent with SD-A Tree Palette Table Note: Numbers shown in list are Tree Species Mature Canopy Diameters	30' - Other										unitless
	6	Tree Well(s) Soil Depth (Installation Depth) Must be 30, 36, 42, or 48 Inches; Select from Standard Depths**	42										inches
	7	Number of Identical* Tree Wells Proposed for this DMA	4										trees
	8	Proposed Width of Tree Well(s) Soil Installation for One (1) Tree	21.0										feet
	9	Proposed Length of Tree Well(s) Soil Installation for One (1) Tree	21.0										feet
Tree Data	10	Botanical Name of Tree Species	Provide in PDP SWQMP	-	-	-	-	-	-	-	-	-	unitless
	11	Tree Species Mature Height per SD-A	Provide in PDP SWQMP	-	-	-	-	-	-	-	-	-	feet
	12	Tree Species Mature Canopy Diameter per SD-A	30	-	-	-	-	-	-	-	-	-	feet
	13	Minimum Soil Volume Required In Tree Well (2 Cubic Feet Per Square Foot of Mature Tree Canopy Projection Area)	1414	-	-	-	-	-	-	-	-	-	cubic-feet
	14	Credit Volume Per Tree	420	-	-	-	-	-	-	-	-	-	cubic-feet
Tree Well Sizing Calculations	15	DCV Multiplier To Meet Flow Control Requirements	2.73	-	-	-	-	-	-	-	-	-	unitless
	16	Required Retention Volume (RRV) To Meet Flow Control Requirements	1455	-	-	-	-	-	-	-	-	-	cubic-feet
	17	Number of Trees Required	4	-	-	-	-	-	-	-	-	-	trees
	18	Total Area of Tree Well Soil Required for Each Tree	404	-	-	-	-	-	-	-	-	-	sq-ft
	19	Approximate Required Width of Tree Well Soil Area for Each Tree	21	-	-	-	-	-	-	-	-	-	feet
	20	Approximate Required Length of Tree Well Soil Area for Each Tree	21	-	-	-	-	-	-	-	-	-	feet
	21	Number of Trees Proposed for this DMA	4	-	-	-	-	-	-	-	-	-	trees
	22	Total Area of Tree Well Soil Proposed for Each Tree	441	-	-	-	-	-	-	-	-	-	sq-ft
	23	Minimum Spacing Between Multiple Trees To Meet Soil Area Requirements (when applicable)***	30.0	-	-	-	-	-	-	-	-	-	feet
Results	24	Are Tree Well Soil Installation Requirements Met?	Yes	-	-	-	-	-	-	-	-	-	yes/no
	25	Is Remaining DCV Requirement Fully Satisfied by Tree Well(s)?	Yes	-	-	-	-	-	-	-	-	-	yes/no
	26	Is Hydromodification Control Requirement Satisfied by Tree Well(s)?	Yes	-	-	-	-	-	-	-	-	-	yes/no

Attention!

-[Line 12] Applicant to provide supporting documentation for tree species in PDP SWQMP.

Notes:

*If using more than one mature canopy diameter within the same DMA, only the smallest mature canopy diameter should be entered. Alternatively, if more than one mature canopy diameter is proposed and/or the dimensions of multiple tree well installations will vary, separate DMAs may be delineated.

**If the actual proposed installation depth is not available in the table of standard depths, select the next lower depth.

***Tree Canopy or Agency Requirements May Also Influence the Minimum Spacing of Trees.

9.0 General Requirements

- Complete the table below to indicate which compliance pathway was selected in PDP SWQMP Table 6. Include the corresponding sub-attachment with your SWQMP submittal. Other sub-attachments do not need to be included.
- See the BMPDM sections and appendices listed under "BMPDM Design Resources" for additional explanation of design requirements. Constructed features must fully satisfy the requirements described in these resources, and any other guidance identified by the County.
- DMA Exhibits and Construction Plans: CCSYAs and applicable BMPs identified and described in this attachment must be shown on DMA Exhibits and all applicable construction plans submitted for the project. See Attachment 2 for additional instruction on exhibits and plans.

Sub-attachments	BMPDM Design Resources
☐ **9.1: Documentation of Hydromodification Management Exemption**[1]	Section 1.6
☒ **9.2: Watershed Management Area Analysis (WMAA) Mapping**[1]	Appendix H.1.1.2
☐ **9.3: Resource Protection Ordinance (RPO) Methods**	Appendix H.1.1.1
☐ **9.4: No Net Impact Analysis**	Appendix H.4

[1] The San Diego County Regional comprehensive WMAA mapping data can be found on the Project Clean Water website here: http://www.projectcleanwater.org/download/wmaa_attc_data/

9.1 Documentation of Hydromodification Management Exemption (BMPDM Section 1.6)

- If the PDP is exempt from hydromodification management requirements (see Table 4 Part A.1 of the PDP SWQMP), use this Sub-attachment to document the exemption.
- Select the type of exemption below that applies and provide an explanation of the selection, including maps or other applicable documentation. Additional documentation may be requested by County staff.

Exemption Type per BMPDM Figure 1-2 (select one)
☐ a. The proposed project will discharge runoff directly to existing underground storm drains discharging directly to water storage reservoirs, lakes, enclosed embayments, or the Pacific Ocean.
☐ b. The proposed project will discharge runoff directly to conveyance channels whose bed and bank are concrete lined all the way from the point of discharge to water storage reservoirs, lakes, enclosed embayments, or the Pacific Ocean.
☐ c. The proposed project will discharge runoff directly to an area identified by the County as appropriate for an exemption by the WMAA for the watershed in which the project resides[2].
Explanation (add or attach pages as necessary)
N/A

[2] This option must include an analysis of the project using the methodology presented in Attachment E of the Regional Watershed Management Area Analysis.

9.2 Watershed Management Area Analysis (WMAA) Mapping (BMPDM Appendix H.1.1.2)

Watershed Management Area Analysis (WMAA) mapping is a simple way to screen projects to determine the presence of onsite or offsite upstream Potential Critical Coarse Sediment Yield Areas (PCCSYAs). The San Diego County Regional WMAA mapping data can be found on the Project Clean Water website here: http://www.projectcleanwater.org/download/wmaa_attc_data/ .[3]

- Based on the WMAA map and the proposed project design, demonstrate below that both of the following conditions apply to the PDP:

  (a) Less than 5% of PCCSYAs will be impacted (built on or obstructed) by the PDP, and

  (b) All upstream offsite PCCYSAs will be bypassed (see BMPDM Appendix H.3).

A. Mapping Results -- At a minimum, show: (1) the project footprint, (2) areas of proposed development, (3) impacted onsite PCCSYAs, (4) offsite tributary areas[4], and (5) bypass of upstream offsite PCCSYAs.

The attached PCCSYA Exhibit contains the project boundary and the Project Clean Water PCCSYAs on Google Earth. The PCCSYA Exhibit shows there are no PCCSYAs within the project boundary, so no PCCSYAs will be within the project footprint.

The upstream watershed is from the Sweetwater River and contains PCCSYAs. The project will maintain the existing Sweetwater River trapezoidal channel through the site in order to allow the Sweetwater Authority's water transfers. As a result, upstream off-site PCCSYA's will be bypassed through the site in the portion of the trapezoidal channel that is being preserved.

[3] Applicants may refine initial mapping results using options identified in BMPDM Appendix H.1.2.
[4] Tributary areas must be shown to demonstrate that upstream offsite PCCSYAs do not exist. If bypassing these areas, only the bypass should be shown.

B. Explanation -- Provide documentation as needed to demonstrate that (1) impacts to PCCSYAs are below 5%, and (2) upstream offsite PCCYSAs are effectively bypassed. Add pages as necessary.

The PCCSYA Exhibit shows there are no impacts to on-site PCCSYAs since none exist, i.e., 0% impact.

Under pre-project conditions a trapezoidal channel exists within the site and conveys a portion of the Sweetwater River flows through the golf course. Under post-project conditions, the trapezoidal channel will be preserved with the ability to maintain capacity for the Sweetwater Authority's water transfer flow rates. The trapezoidal channel will bypass upstream off-site PCCSYAs through the site.

PCCSYA Exhibit

CCSYA are shaded light green (from Project Clean Water kmz). None mapped on-site, but are within the tributary watershed.