4.7 HYDROLOGY AND WATER QUALITY

4.7.1 SCOPE OF REVIEW

The Nichols Canyon Mine, as discussed in Section 2.0, Environmental Setting, is an existing, ongoing surface mining operation operating pursuant to vested mining rights and an approved reclamation plan (RP 2006-01A1), which was analyzed in a prior MND. Although the City has chosen to prepare an EIR for the Project here, the scope of review addresses those impacts resulting from the Project as described in Section 3.0, Project Description, and not impacts related to existing, approved operations, which form the environmental baseline, as discussed in Section 2.7, Existing Physical Site Conditions. Accordingly, this Subsection analyzes hydrology and water quality impacts related to the Project specifically. This Subsection does not analyze hydrology and water quality impacts related to existing, approved operations.

4.7.2 EXISTING CONDITIONS

The Nichols Canyon Mine is located within the jurisdiction of the Santa Ana Regional Water Quality Control Board (RWQCB). Accordingly, the analysis contained in this Subsection is based in part on information obtained from the Santa Ana RWQCB's Santa Ana River Basin Water Quality Control Plan (updated June 2011) and the Integrated Regional Water Management Plan (IRWMP) for the Santa Ana River Watershed (also referred to as "One Water One Watershed," dated November 16, 2010), prepared by the Santa Ana Watershed Project Authority (SAWPA). The Nichols Canyon Mine is located within the service area of the Elsinore Valley Municipal Water District (EVMWD), so general information also was obtained from the 2010 EVMWD Urban Water Management Plan (UWMP).

With respect to site-specific hydrology, the analysis in this Subsection is based on a report by Joseph E. Bonadiman & Associates, Inc. titled, "Hydrology Study and Drainage Analysis," dated June 2015, included as *Technical Appendix H* appended to this EIR. A complete list of references are contained in EIR Section 7.0, *References*.

A. Regional Hydrology

The Nichols Canyon Mine is located in the Santa Ana River watershed, which drains a 2,650 square-mile area and is the principal surface flow water body within the region (SAWPA, 2014, Ch. 3). The Santa Ana River rises in Santa Ana Canyon in the southern San Bernardino Mountains and runs southwesterly across San Bernardino, Riverside, and Orange Counties, where it discharges into the Pacific Ocean at the City of Huntington Beach. The total length of the Santa Ana River and its major tributaries is approximately 700 miles (SAWPA, 2014, Ch. 3). The Project site's location within the Santa Ana River Watershed is depicted on Figure 4.7-1, *Santa Ana River Watershed Map*. The Project site is within the Lee Lake Hydrologic Subarea of the Lake Mathews Hydrologic Area of the Santa Ana River Hydrologic Unit (Bonadiman, 2015, p. 4).

B. Site Hydrology

Under existing conditions, the Nichols Canyon Mine property is located east of Interstate 15 (1-15) and north and south of Nichols Road. To the north and east is undeveloped land and to the south is residential development. The hilly topography located north and east of the Mine result in small

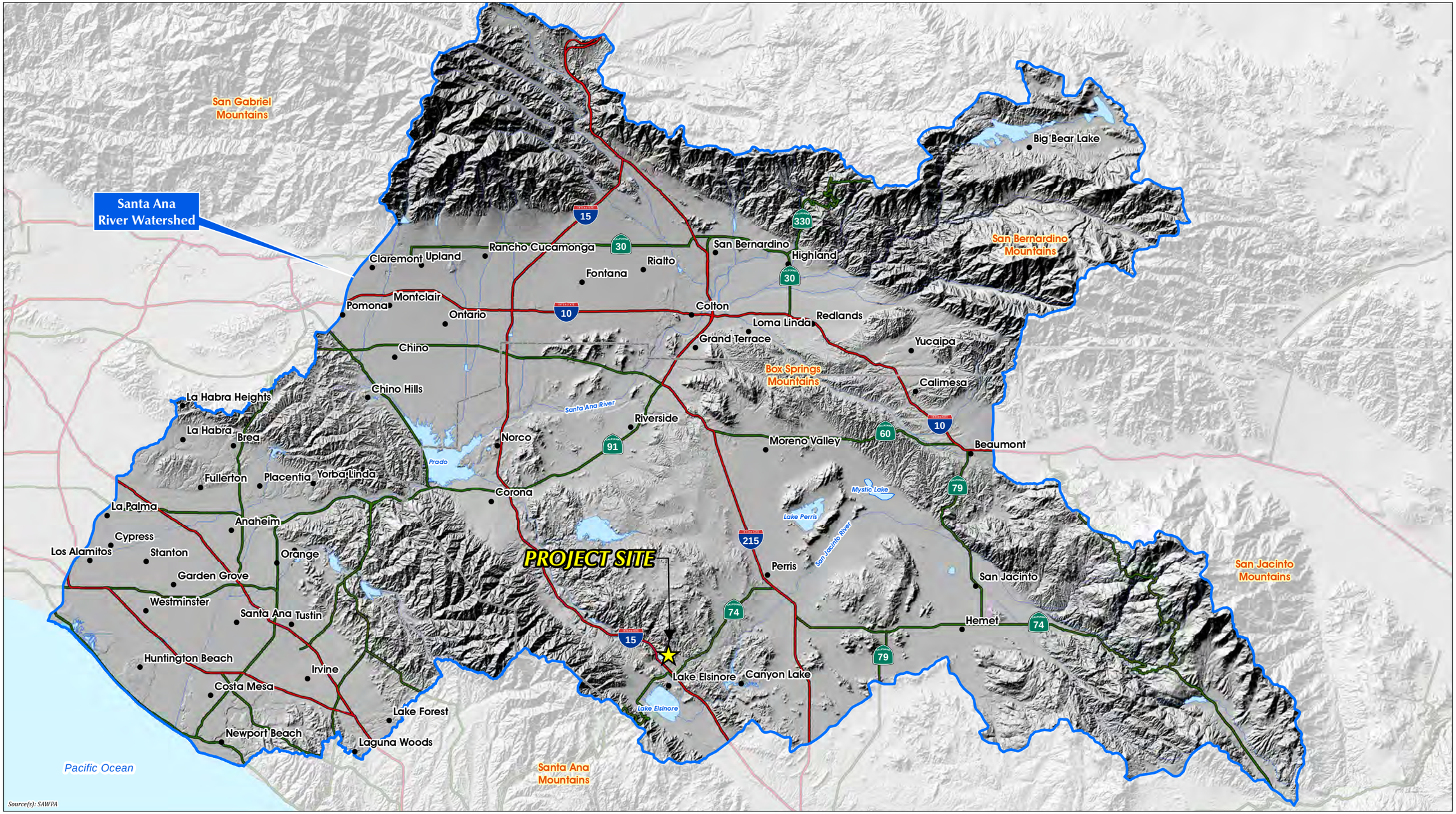


Figure 4.7-1

SANTA ANA RIVER WATERSHED MAP

tributaries of run-on to the Mine property. Stovepipe Creek bisects a portion of the Nichols South portion of the property. Stovepipe creek enters the Mine site along the easterly property line via two 24" corrugate metal pipes and exits the property along the western property line via a 6'x14' concrete box culvert that crosses under I-15. (Bonadamin, 2015, p. 5)

As illustrated on Figure 4.7-2, *Existing Hydrologic Conditions Map*, the Mine site is part of two drainage areas, herein referred to as Area A and Area B. Under existing conditions, runoff from the western disturbed portions of the Nichols North site flows in a southwesterly direction into an on-site retention basin at the southwest corner of Nichols North. The Nichols North site is graded to capture and retain on-site all surface flows within the western portions of the site. The eastern and northern portions of the Nichols North site, as well as the majority of the Nichols South site, also flow in a southwestern direction via Stovepipe Creek and to the west beneath I-15 via the existing concrete box culvert. A small portion of the runoff from the northern portions of the Nichols South site are conveyed northerly into a swale located along the northern edge of Nichols Road. (Bonadamin, 2015, Exhibit G) These conditions would not change under the Project. Under historical conditions, the peak stormwater runoff calculations for the two drainage areas within which the Mine is located are shown on Table 4.7-1, *Hydrograph Method Calculations for Historical Conditions*.

For existing conditions, the values are identical to the historical conditions for Drainage Area B, but lower slightly for Drainage Area A, as shown on Table 4.7-2, *Hydrograph Method Calculations for Existing Conditions.*

Table 4.7-1 Hydrograph Method Calculations for Historical Conditions

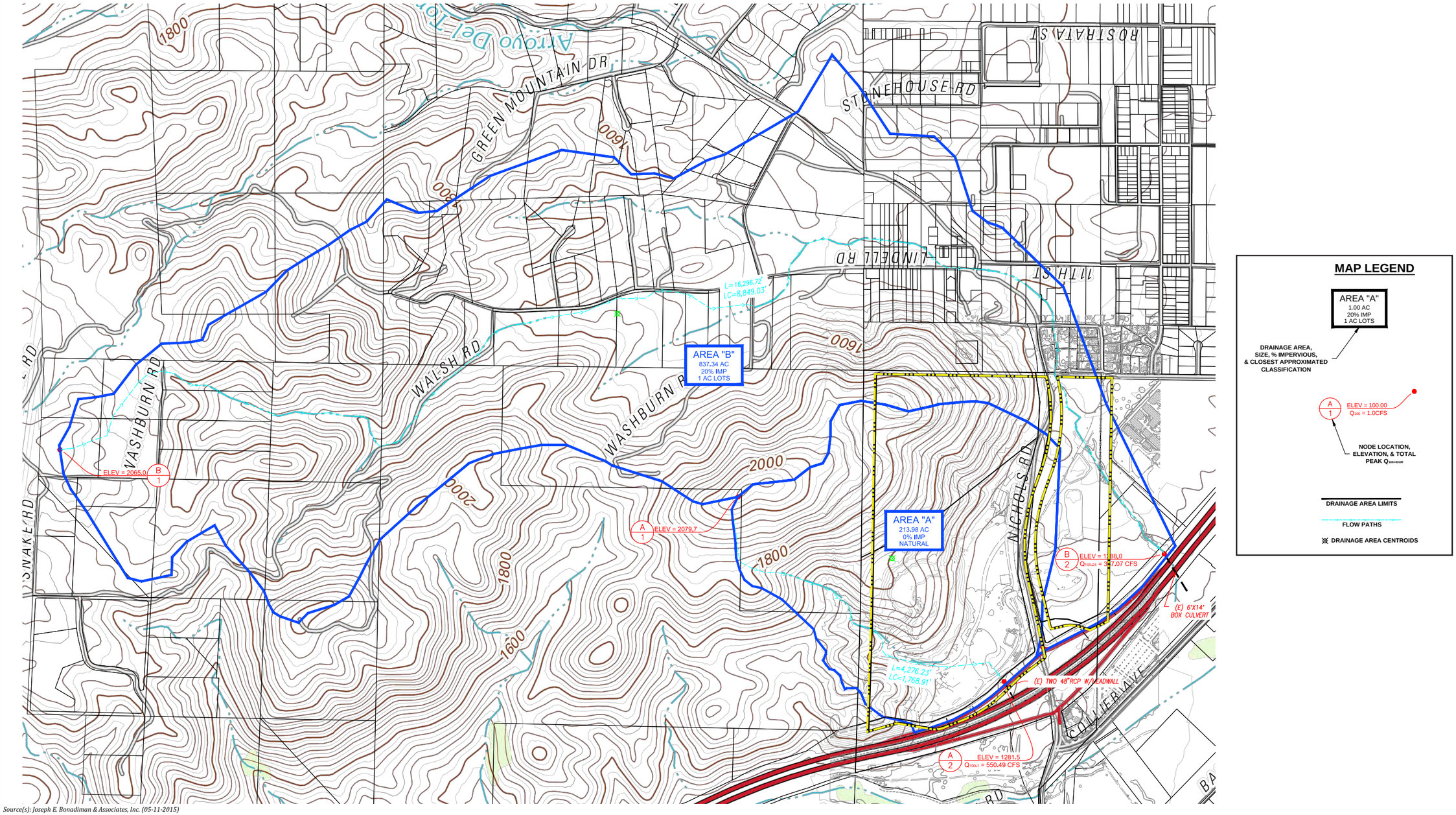
20-YEAR

DRAINAGE AREA	1-HOUR		3-HOUR		6-HOUR		24-HOUR	
	Q (CFS)	VOLUME (AC-FT)	Q (CFS)	VOLUME (AC-FT)	Q (CFS)	VOLUME (AC-FT)	Q (CFS)	VOLUME (AC-FT)
A	390.14	16.41	292.14	24.39	265.03	28.53	110.92	40.98
B	103.35	64.32	150.12	97.75	165.93	117.03	188.54	168.69

100-YEAR

DRAINAGE AREA	1-HOUR		3-HOUR		6-HOUR		24-HOUR	
	Q (CFS)	VOLUME (AC-FT)	Q (CFS)	VOLUME (AC-FT)	Q (CFS)	VOLUME (AC-FT)	Q (CFS)	VOLUME (AC-FT)
A	**553.66**	24.72	418.06	40.38	383.55	53.89	176.59	86.49
B	153.82	95.73	240.36	157.85	285.67	212.15	**337.07**	347.82

(Bonadamin, 2015,Tables 4 and 5)



Source(s): Joseph E. Bonadiman & Associates, Inc. (05-11-2015)

NOT TO SCALE

Figure 4.7-2

EXISTING HYDROLOGIC CONDITIONS MAP

Table 4.7-2 Hydrograph Method Calculations for Existing Conditions

20-YEAR

DRAINAGE AREA	1-HOUR		3-HOUR		6-HOUR		24-HOUR	
	Q (CFS)	VOLUME (AC-FT)	Q (CFS)	VOLUME (AC-FT)	Q (CFS)	VOLUME (AC-FT)	Q (CFS)	VOLUME (AC-FT)
A	387.86	16.42	291.54	24.42	264.72	28.58	110.20	41.05
B	SEE HISTORICAL CONDITION							

100-YEAR

DRAINAGE AREA	1-HOUR		3-HOUR		6-HOUR		24-HOUR	
	Q (CFS)	VOLUME (AC-FT)	Q (CFS)	VOLUME (AC-FT)	Q (CFS)	VOLUME (AC-FT)	Q (CFS)	VOLUME (AC-FT)
A	550.49	24.72	380.48	40.40	383.04	53.91	104.86	86.57
B	SEE HISTORICAL CONDITION							

(Bonadamin, 2015,Tables 7 and 8)

C. Water Quality

The California Porter-Cologne Water Quality Control Act (Section 13000 ("Water Quality") et seq., of the California Water Code), and the Federal Water Pollution Control Act Amendment of 1972 (also referred to as the Clean Water Act (CWA)) require that comprehensive water quality control plans be developed for all waters in the State of California. In order to accomplish this, the California State Water Resources Control Board divided the state into planning regions and the present system of nine Regional Water Quality Control Boards (RWQCBs). The Nichols Canyon Mine and vicinity are located in the Santa Ana River watershed, which is within the purview of the Santa Ana RWQCB. The Santa Ana RWQCB's Santa Ana River Basin Water Quality Control Plan is the governing water quality plan for the region, which sets forth goals and objectives for protecting water quality within the region (SARWQCB, 2011). One Water One Watershed (OWOW) is an Integrated Regional Water Management Plan (IRWMP) planning process being developed within the Santa Ana River Watershed. The OWOW 2.0 Plan, adopted by the SAWPA on February 4, 2014, reflects a collaborative planning process that addresses all aspects of water resources in the Watershed over a 20-year time period. (SAWPA, 2014)

D. Groundwater

The Elsinore Valley is underlain by the Elsinore Groundwater Basin (Lake Elsinore, 2011b. p. 3.9-5). Almost all of the groundwater production that is used for potable use by the EVWMD occurs in the Elsinore Basin (EVMWD, 2011, p. 5). Inflows to Elsinore Basin include infiltration of local precipitation, runoff from the surrounding watershed, infiltration from the San Jacinto River prior to reaching Lake Elsinore, and return flows from either irrigation or domestic use. Natural groundwater inflow is almost equal to the average yield of the Basin because there are no natural outflows from the Basin. Groundwater pumping to meet water demands accounts for essentially the entire outflow from the Basin. (EVWMD, 2011, p. 4-11) In addition to the Elsinore Basin, EVWMD has access to groundwater from the Coldwater Basin, San Bernardino Bunker Hill Basin, Rialto-Colton and the Riverside-North Basin. See EIR Section 4.10, *Utilities and Service Systems*, for more detail on the groundwater resources utilized by EVMWD.

E. Flooding and Dam Inundation

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) No. 06065C2028G (Effective Date – August 28, 2008), the majority of the Nichols Canyon Mine is located in an unshaded "Zone X", identified by FEMA as an area determined to be outside the 0.2% (500-year) annual chance of flood. A portion of the Nichols Canyon Mine located along Stovepipe Canyon Creek is located in a shaded "Zone A", identified by FEMA as an area determined to be within a "Special Flood Hazard Area subject to inundation by the 1% annual chance of flood." (Bonadiman, 2015, p. 8) The FEMA FIRM for the Nichols Canyon Mine is depicted on Figure 4.7-3, *FEMA FIRM No. 06065C2028G*.

According to the City of Lake Elsinore General Plan Update (GPU) EIR, a portion of the City of Lake Elsinore is located within the high inundation zone of the Railroad Canyon Dam, which is located northwesterly of the City and its sphere of influence (SOI), in the City of Canyon Lake. If a catastrophic failure were to occur at the dam, the water would flow into the San Jacinto River and Lake Elsinore, flooding the portion of the City located southwest of Lakeshore Drive, southeast of Riverside Drive (SR-74) northeast of Grand Avenue and northwest of Corydon Street. (Lake Elsinore, 2011b, p. 3.9-35). As depicted on Figure 3-2, *Vicinity Map*, the Nichols Canyon Mine is located north of these locations and approximately 5.0 miles north of the Railroad Canyon Dam. A levee is present at Lake Elsinore, which is located approximately 2.0 miles south of the Nichols Canyon Mine. According to Figure 10, *Flood Hazards*, of the Riverside County General Plan's Elsinore Area Plan, the Nichols Canyon Mine is not located within a dam hazard zone related to the Railroad Canyon Dam or any other dam hazard zone. (Riverside County, 2003a, Figure 10).

F. Applicable Regulatory Requirements

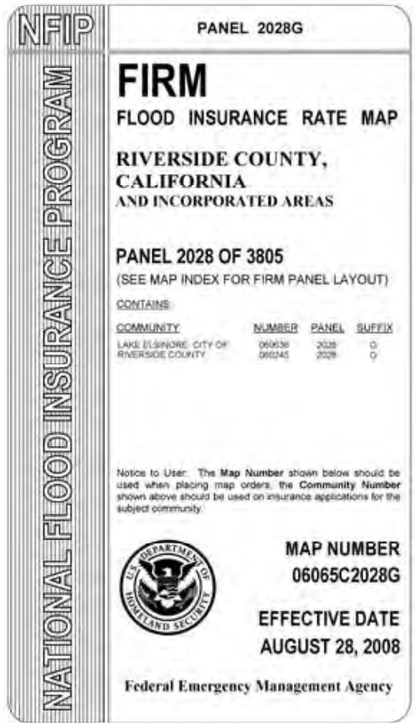
Local agencies that regulate water in the City of Lake Elsinore include the Lake Elsinore and San Jacinto Watersheds Authority (LESJWA), which is a joint powers authority (JPA) entrusted with state and local funds to improve water quality in the region and satisfy other water resource protection needs; the Riverside County Flood Control and Water Conservation District (RCFCWCD) which oversees development of stormwater drainage and water quality programs for participating jurisdictions; and the City of Lake Elsinore through its General Plan, City Zoning Ordinance and actions and programs of the Public Works Department. (Lake Elsinore, 2011b, p. 3.9-13)

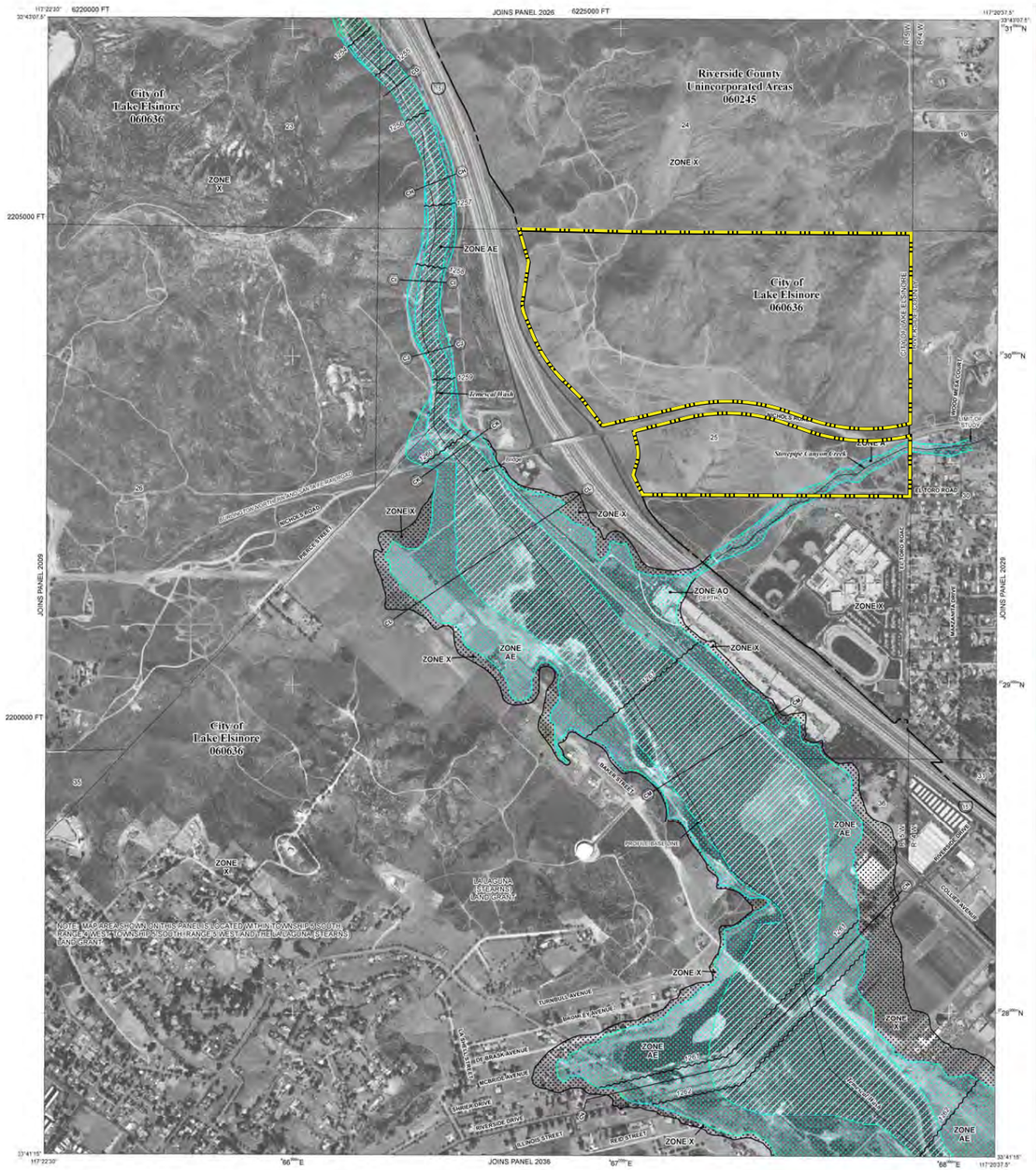
❑ Water Quality Regulations

1. Federal Water Pollution Control Act (Clean Water Act)

The Federal Water Pollution Control Act (also known as the Clean Water Act (CWA)) is the principal federal statute that addresses water resources. The statute employs a variety of regulatory and non-regulatory tools to reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff. The broad goal is to restore and maintain the chemical, physical, and biological integrity of the nation's waters so that they can support "the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water."

Section 402 of the CWA authorizes the National Pollutant Discharge Elimination System (NPDES) permit program that covers point sources of pollution discharging to a water body. The NPDES program also requires operators of construction sites one acre or larger to prepare a Storm Water





Source(s): FEMA (08-28-2015)

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Figure 4.7-3

FEMA FIRM NO. 06065C2028G

Pollution Prevention Plan (SWPPP) for construction activities and obtain authorization to discharge storm water under an NPDES construction storm water permit. The NDPES program also requires certain land uses (e.g., industrial uses) to prepare a SWPPP for operational activities and to implement a long-term water quality sampling and monitoring program, unless an exemption has been granted.

2. Elsinore Valley Municipal Water District Urban Water Management Plan

EVMWD prepared an Urban Water Management Plan (UWMP) in year 2000 in compliance with the Urban Water Management Act which was adopted by EVMWD's Board of Directors on December 22, 1999. An update to the 2000 UWMP was prepared in 2005 and adopted on June 9, 2011. The EVMWD UWMP complies with the requirements of the Urban Water Management Planning Act. (EVMWD, 2011, p. 1)

3. Elsinore Valley Municipal Water District Best Management Practices

EVWMD became a signatory to the California Urban Water Conservation Council (CUWCC) Memorandum of Understanding (MOU) regarding urban water conservation on December 11, 2002. As part of the MOU, EVWMD is required to implement Best Management Practices (BMPs) as part of its water conservation program. The MOU was amended in June 2010 and full implementation of BMPs are required by 2018. EVMWD intends to achieve full coverage of each BMP no later than Fiscal Year 2018. (EVWMD, 2011, pp. 10-11)

4. Lake Elsinore Municipal Code (LEMC) –Title 19, Chapter 19.08

The City of Lake Elsinore Municipal Code (LEMC) Chapter 19.08 (Water Efficiency Landscaping Requirements) implements the requirements necessary to meet the State of California Efficiency in Landscaping Act and the California Code of Regulations Title 23, Division 2, Chapter 2.7. The purpose and intent of Chapter 2.7 is also to: 1) establish provisions for water management practices and water waste prevention; 2) establish a structure for planning, designing, installing, maintaining, and managing water efficient landscapes in new construction and rehabilitated projects; 3) reduce the water demand from landscapes with a decline in landscape quality or quantity; 4) retain flexibility and encourage creativity through appropriate design; 5) assure the attainment of water efficient landscape goals by requiring that landscapes not exceed a maximum water demand of 70 percent of their reference evapotranspiration or any lower percentage as may be required by water purveyor policy or state legislation whichever is stricter; 6) eliminate water waste from overspray and/or runoff; and 7) achieve water conservation by raising the public awareness of the need to conserve water through education and motivation to embrace an effective water demand management program. (Lake Elsinore, 2011b, pp. 3.16-14 through 3.16-15)

4.7.3 BASIS FOR DETERMINING SIGNIFICANCE

The proposed Project would result in a significant impact to hydrology and water quality if the Project or any Project-related component would:

a. Violate any water quality standards or waste discharge requirements;

b. Substantially deplete groundwater supplies or interfere with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level

(e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted);

c. *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on- or off-site;*

d. *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on-or off-site;*

e. *Create or contribute runoff water, which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff;*

f. *Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;*

g. *Otherwise substantially degrade water quality;*

h. *Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;*

i. *Place within a 100-year flood hazard area structures that would impede or redirect flood flows;*

j. *Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or da; or.*

k. *Be subject to inundation by seiche, tsunami, or mudflow.*

The above-listed thresholds are derived from Section IX of Appendix G to the CEQA Guidelines and address typical adverse effects associated with hydrology and water quality. (OPR, 2009).

4.7.4 IMPACT ANALYSIS

Threshold a. Would the Project violate any water quality standards or waste discharge requirements?

A. EDA-Related Water Quality Impacts

The Project involves expansion of an existing mining operation, a reduction in production level, and altered hours of operation. The expanded disturbance area (EDA) comprises +/- 24 acres on the Nichols North portion of the Mine site. Mining operations at the site would continue to be regulated by an approved Stormwater Pollution Prevention Plan (SWPPP), which incorporates Best Management Practices (BMPs) to preclude water quality impacts associated with the existing mining operations. The Project would revise the SWPPP to include additional BMP measures, as necessary and appropriate, to address the expanded mining limits. The BMPs specified in the revised SWPPP would be required to ensure that all potential pollutants of concern are prevented, minimized, and/or otherwise appropriately treated prior to being discharged from the subject property. Mandatory compliance with the SWPPP would ensure that the Project would not violate any water quality standards or waste discharge requirements during EDA-related activities.

In addition, pursuant to the requirements of the Santa Ana RWQCB and the City of Lake Elsinore, the Project would be required to comply with the NPDES General Permit to encompass the EDA, in addition to the existing mining limits that already are subject to a General Permit. An NPDES

General Permit is required for all new and expanded mining facilities. An Amended Notice of Intent (NOI) will be filed certifying that the permit's eligibility conditions have been met, as there is an existing Waste Discharger Identification (WDID) number. In addition, the Project would be required to comply with the Santa Ana RWQCB's *Santa Ana River Basin Water Quality Control Program*. Compliance with the NPDES General Permit and the *Santa Ana RWQCB's Santa Ana River Basin Water Quality Control Program* involves the revision and implementation of the current SWPPP. Because the Project would comply with mandatory SWPPP requirements and all runoff from actively mined portions of the Mine would be retained on-site during ongoing mining activities and would not affect any downstream properties or facilities, impacts would be less than significant.

B. Post-EDA Water Quality Impacts

Upon completion of mining activities and once the final grades pursuant to RP 2006-01A2 have been achieved, runoff on the Nichols North site would be conveyed to a proposed sediment basin located in the southwestern portion of the Nichols North site, and eventually conveyed westerly to Stovepipe Creek beneath an existing culvert underneath I-15. Similarly, the Nichols South site also would achieve the final grades specified by RP 2006-01A2 upon completion of mining activities, and the majority of drainage from this portion of the site would be conveyed to a proposed sedimentation basin located in the northwestern portion of the Nichols South site and ultimately west beneath I-15. Runoff from the portions of the Nichols South and Nichols North sites that are not subject to mining activities would continue to be conveyed by Stovepipe Creek, located in the southeast corner of the Nichols South site, and ultimately west beneath I-15. (Bonadiman, 2015, Exhibit H) The maximum water depth in both proposed siltation basins would not exceed six feet and access to the basins would be gated and locked. If basin infiltration rates do not allow for percolation of the basin volume within 72 hours, an outflow pipe may be required and would be designed in accordance with California Stormwater Quality Association (CSQA) Sedimentation Basin requirements. Due to the rocky nature of the Mine, the potential for sedimentation is considered low, and the proposed sedimentation basins have been designed in accordance with Santa Ana RWQCB requirements to ensure runoff from the Mine does not result in any new violations or water quality objectives. (Bonadiman, 2015, p. 16) As such, impacts would be less than significant.

Threshold b.	***Would the Project substantially deplete groundwater supplies or interfere with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?***

The Nichols Canyon Mine does not have any groundwater wells, nor would any groundwater wells directly service the Project. As discussed in Section 3.0, *Project Description*, based on the reduced areas subject to watering as compared to existing conditions, it can reasonably be assumed that under the proposed Project water usage would drop by approximately 45.84%, resulting in a total demand for 34,660 gallons of water per day. This water demand would be provided by the EVMWD. Water to the Nichols Canyon Mine is currently provided by the EVMWD via a construction water meter and fire hydrant. EVMWD prepared an UWMP dated July 2011, that provides for the long-range planning efforts of water purveyance within its district. The UWMP includes an analysis of water supply sufficiency that concludes that sufficient supply exists to meet the demand for projected normal year, singly-dry year, and multiple-dry-year supply through 2035, with dry years assumed to

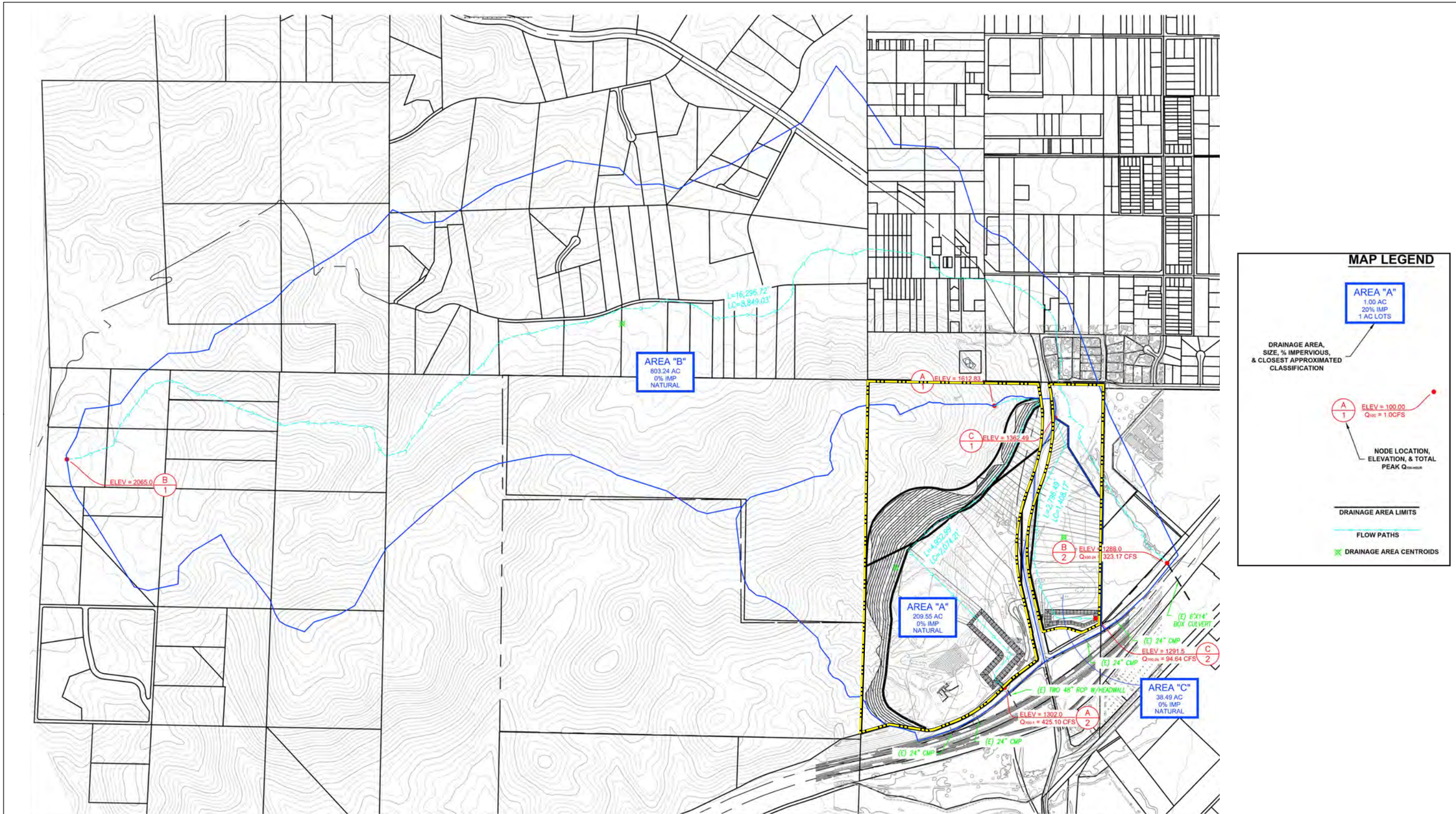
result in an approximately nine percent increase in demand as compared to normal year demand. (EVMWD, 2011, p. 10)

Under baseline conditions, the Nichols Canyon Mine utilizes approximately 64,000 gallons of water per day. SMP No. 2015-01 requires the use of soil binders in lieu of water trucks to meet a portion of the Mine's demands for dust suppression to off-set the incremental increase in areas subject to mining activities that would require expanded dust suppression efforts on-site; as such, there would be no net increase in water demand at the Mine generated by the proposed mine expansion as compared to existing and baseline conditions. Therefore, because the UWMP demonstrates that the EVWMD has sufficient supplies to meet the demand for projected normal year, singly-dry year, and multiple-dry-year supply through 2035, and because the Project would not result in a net increase in water demand as compared to existing and baseline conditions, the Project would not substantially deplete groundwater supplies or interfere with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level. Thus, impacts would be less than significant.

Threshold c. ***Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on- or off-site?***

The Project proposes to add approximately 24 acres to the disturbance limits of the Nichols Canyon Mine. During on-going mining activities, all runoff within the areas subject to mining activities would be retained on-site by an on-site retention basin, while areas not subject to disturbance would continue to drain via Stovepipe Creek, located in the southeastern portion of the Nichols South site. As such, under ongoing mining operations, no impact would occur.

The reclamation hydrologic conditions are illustrated on Figure 4.7-4, *Reclamation Hydrologic Conditions Map*. Upon final reclamation of the site, runoff that had been previously detained on-site would instead be conveyed to one of the two sediment basins located in Nichols North and Nichols South. Following water quality treatment, the flows would be conveyed via existing culverts beneath I-15 to the west. As indicated by the analysis of unit hydrograph calculations in the site-specific hydrology study and drainage analysis (see Table 14 of *Technical Appendix H*), a decrease in runoff flows is expected as a result of reclamation. The decrease in flow rate is a result of the longer path lengths which in turn reduce peak flow rates, with the exception of a slight increase at Location B2 due to a shift in drainage area as a result of reclamation. (Bonadiman, 2015, Table 14 and p. 16). The two sedimentation basins would be designed to provide the minimum required capacities (see Tables 12 and 13 of *Technical Appendix H*) as the basins are not required to reduce peak flow rates but instead are proposed to provide sediment control. As required by the Project's Reclamation Plan, and because the sediment basins are not designed to reduce peak flow rates, spillways capable of passing the 1000-year flow rates would be incorporated in the outlet of each basin. If basin infiltration rates do not allow for percolation of the basin volume within 72 hours, an outflow pipe may be required that would be designed in accordance with California Stormwater Quality Association (CSQA) requirements. A paved slope interceptor drain shall be provided along the top of cut slopes where the drainage path is greater than 40 feet towards the cut slope in accordance with local requirements. With the above-mentioned design features, the proposed Project would not have an adverse impact on downstream properties (Bonadamin, 2015, p. 16). Because the Project would result in a decrease in runoff and runoff that had been previously detained on-site would instead be conveyed to one of the two sediment basins located in Nichols North and Nichols South and then



Source(s): Joseph E. Bonadiman & Associates, Inc. (June 2015)

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Figure 4.7-4

RECLAMATION HYDROLOGIC CONDITIONS MAP

conveyed via existing culverts beneath I-15 to the west, implementation of the Project would result in less erosion and siltation than under existing conditions. Accordingly, the Project would not alter the existing drainage pattern of the site or area, through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion on-or-off-site. Thus, impacts would be less than significant.

Threshold d.	***Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on-or off-site?***

As discussed under Threshold (c), the Project proposes to add approximately 24 acres to the disturbance limits of the Nichols Canyon Mine. During on-going mining activities, all runoff within the areas subject to mining activities would be retained on-site, while areas not subject to disturbance would continue to drain via Stovepipe Creek, located in the southeastern portion of the Nichols South site. As such, under ongoing mining operations, no impact would occur. As also discussed under Threshold c), upon final reclamation of the site, runoff that had been detained on-site would instead be conveyed to one of the two sediment basins located in Nichols North and Nichols South. Following water quality treatment, the flows would be conveyed by Stovepipe Creek via existing culverts beneath I-15 to the west.

As indicated by the analysis of unit hydrograph calculations in the site-specific hydrology study and drainage analysis (see Table 14 of *Technical Appendix H)* a decrease in runoff flows would occur during the reclamation phase of the Project. The decrease in flow rate is a result of the longer path lengths which in turn reduce peak flow rates, with the exception of a slight increase at Location B2 due to a shift in drainage area as a result of reclamation. (Bonadamin, 2015, Table 14 and p. 16). The two sedimentation basins would be designed to provide the minimum required capacities (see Tables 12 and 13 of *Technical Appendix H*) as the basins are not required to reduce peak flow rates but instead are proposed to provide sediment control. As the sediment basins are not designed to reduce peak flow rates, spillways capable of passing the 1000-year flow rates would be incorporated in the outlet of each basin. If basin infiltration rates do not allow for percolation of the basin volume within 72 hours, an outflow pipe may be required designed in accordance with California Stormwater Quality Association (CSQA) requirements. Paved slope interceptor drain shall be provided along the top of cut slopes where the drainage path is greater than 40 feet towards the cut slope in accordance with local requirements. Because the design features would ensure that runoff rates would be reduced compared to the existing condition, with the above-mentioned design features, the proposed Project would not have an adverse impact on downstream properties. (Bonadiman, 2015, p. 16) Accordingly, the Project would not substantially increase the rate of surface runoff in a manner which would result in flooding on-or off-site. Thus, impacts would be less than significant.

Threshold e.	***Would the Project create or contribute runoff water, which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?***

During on-going mining activities, all runoff within the areas subject to mining activities would be retained on-site, while areas not subject to disturbance would continue to drain via Stovepipe Creek, located in the southeastern portion of the Nichols South site. As discussed under Threshold c), upon final reclamation of the site, runoff that had been detained on-site would instead be conveyed to one

of the two sediment basins located in Nichols North and Nichols South. Following water quality treatment, the flows would be conveyed by Stovepipe Creek via existing culverts beneath I-15 to the west. As discussed under Threshold (d), a decrease in runoff flows would occur during the reclamation phase of the Project. The decrease in flow rate is a result of the longer path lengths which in turn reduce peak flow rates, with the exception of a slight increase at Location B2 due to a shift in drainage area as a result of reclamation. (Bonadiman, 2015, Table 14 and p. 16). The two sedimentation basins would be designed to provide the minimum required capacities (see Tables 12 and 13 of T*echnical Appendix H*) as the basins are not required to reduce peak flow rates but instead are proposed to provide sediment control. As the sediment basins are not designed to reduce peak flow rates, spillways capable of passing the 1000-year flow rates would be incorporated in the outlet of each basin. As mentioned above in Threshold (d), design features would ensure that runoff rates would be reduced compared to the existing condition.

Runoff within the Nichols Canyon Mine is subject to the existing SWPPP which provides BMP measures that ensures that runoff does not exceed the capacity of existing or planned storm water drainage systems, does not provide substantial, additional sources of polluted runoff, or otherwise degrade water quality. As indicated under the analysis of Threshold a), the Project would revise the SWPPP to include additional BMP measures, as necessary and appropriate, to address the expanded mining limits. As discussed under the analysis of Threshold a), the proposed Project would be required to comply with the SWPPP, which identifies required BMPs to be incorporated into the Project to ensure that the proposed Project would not result in substantial amounts of polluted runoff. Thus, with mandatory compliance with the Project's SWPPP, the proposed Project would not create or contribute substantial additional sources of polluted runoff. Thus, impacts would be less than significant.

Threshold f. Would the Project require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

No new storm drainage facilities would be required in support of on-going mining activities, as the existing basins on-site are adequately sized to detain all runoff from the mined areas. However, as part of the Project's proposed Reclamation Plan Amendment, two sediment basins would be constructed (one each on Nichols North and Nichols South). Additionally, as discussed in Threshold a., a decrease in runoff flows is expected as a result of reclamation. The decrease in flow rate is a result of the longer path lengths which in turn reduce peak flow rates, with the exception of a slight increase at location B2 due to a shift in drainage area as a result of reclamation. (Bonadiman, 2015, Table 14 and p. 16). Accordingly, reclamation would result in a reduction of flow rates and the Project would not require or result in the construction of new storm water drainage facilities or expansion of existing facilities. Thus, impacts would be less than significant.

Threshold g. Would the Project otherwise substantially degrade water quality?

There are no other components associated with the proposed Project that could result in the substantial degradation of water quality beyond what is described in the responses to Thresholds a, c, and/or e. Accordingly, no additional impacts would occur and mitigation is not required.

Threshold h. Would the Project place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

As illustrated in Figure 4.7-3, the Nichols Canyon Mine's existing and proposed mining limits, which includes the EDA, is not located within a 100-year flood zone. Furthermore, the Project would involve the continuation and expansion of an existing mining operation that does not include any housing. Accordingly, because the Nichols Mine site, which includes the EDA, is not located within a 100-year flood hazard area and the Project does not propose housing, there is no potential to place housing within a 100-year flood hazard. Thus, no impact would occur as a result of the Project.

Threshold i. Would the Project place within a 100-year flood hazard area structures that would impede or redirect flood flows?

As illustrated in Figure 4.7-3, the Nichols Canyon Mine, a portion of the Nichols Canyon Mine located along Stovepipe Canyon Creek is located in a shaded "Zone A," identified by FEMA as an area determined to be within a "Special Flood Hazard Area subject to inundation by the 1% annual chance of flood." The Project would involve the continuation and expansion of an existing mining operation that does not include the construction of structures. Accordingly, because the Project does not propose the construction of any structures, there is no potential for the Project to place within a 100-year flood hazard area, structures that would impede or redirect flows. Thus, no impact would occur as a result of the Project.

Threshold j. Would the Project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

According to Figure 10, *Flood Hazards*, of the Riverside County General Plan's Elsinore Area Plan, the Nichols Canyon Mine is not located within a dam hazard zone related to the Railroad Canyon Dam or any other dam hazard zone. As depicted on Figure 3-2, *Vicinity Map*, the Nichols Canyon Mine is located approximately 2.0 miles north of the levee that is present in association with Lake Elsinore. Thus, due to the location of the Nichols Canyon Mine approximately 5.0 miles north of the Railroad Canyon Dam and approximately 2.0 miles north of the levee at Lake Elsinore and the direction of sheet flow, the Project would not expose people or structures to a significant risk of loss, injury, or death involving flooding as a result of the failure of a levee or dam. Impacts would be less than significant.

Threshold k. Would the Project be subject to inundation by seiche, tsunami, or mudflow?

The Nichols Canyon Mine, which includes the EDA is located approximately 2.0 miles north of Lake Elsinore, which is the nearest body of water subject to seiches. Lake Elsinore incorporates USACE flood control devices including a berm fill at the southern end of the lake to lower the potential for a seiche to occur (Lake Elsinore, 2011b, 3.9-36). In addition, due to the site's distance from Lake Elsinore, and the elevation difference between Lake Elsinore and the Nichols Canyon Mine (i.e., the Project site occurs approximately 250 feet in elevation above Lake Elsinore), the Project would not be subject to seiches or mudflow. Furthermore, the Nichols Canyon Mine, which includes the EDA, is located approximately 25 miles from the Pacific Ocean, and has no potential to be affected by

tsunamis. (Google Earth, 2015) Thus, the Project would not be subject to seiche, tsunami, or mudflow. No Impact would occur.

4.7.5 CUMULATIVE IMPACT ANALYSIS

The proposed Project and any other project under construction or land use that generates water quality pollutants within the 2,650 square-mile Santa Ana River watershed would have the potential to result in a cumulative water quality impact, including erosion and sedimentation. Pursuant to the requirements of the State Water Resources Control Board and the Santa Ana RWQCB, all construction projects that disturb one (1) or more acres of land area are required to obtain a NPDES permit and obtain coverage for construction activities. In order to obtain coverage, an effective site-specific SWPPP is required to be developed and implemented for all development projects. The SWPPP must identify potential on-site pollutants and identify and implement an effective combination of erosion control and sediment control measures to reduce or eliminate discharge of pollutants to surface water from stormwater and non-stormwater discharges. In addition, the Project and all cumulative developments would be required to comply with the Santa Ana RWQCB's Santa Ana River Basin Water Quality Control Program. With compliance to these mandatory regulatory requirements, the Project's contribution to water quality impairments during Project construction would be less than cumulatively considerable and mitigation is not required.

Other developments within the watershed would similarly be required to prepare site-specific WQMPs and to incorporate BMPs into site design as necessary to ensure that runoff does not substantially contribute to existing water quality violations. With implementation of the Project as designed and required adherence to the SWPPP, the Project's storm water runoff would not contribute to a violation of water quality standards or waste discharge requirements or exacerbate an existing violation. Accordingly, the Project's long-term operational impacts to water quality would be less than cumulatively considerable and no mitigation would be required.

4.7.6 SIGNIFICANCE OF IMPACTS BEFORE MITIGATION

Threshold a): Less-than-Significant Impact. The Nichols Canyon Mine is required to comply with a Stormwater Pollution Prevention Plan (SWPPP) and obtain coverage under a National Pollutant Discharge Elimination Permit (NPDES). The Project would not violate any water quality standards or waste discharge requirements.

Threshold b): Less-than-Significant Impact. The Project does not propose the installation of any water wells on the Project site that would extract groundwater. Also, the proposed Project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in an aquifer volume or lowering of the groundwater table.

Threshold c): Less-than-Significant Impact. The Project would not result in substantial erosion on-or-off-site.

Threshold d): Less-than-Significant. Alterations to the drainage characteristics (i.e., drainage pattern and flow rate) of the Project site would minimize the risk of on-and off-site flooding and would not substantially increase the rate of surface runoff.

Threshold e): Less-than-Significant. The proposed Project would not create or contribute runoff that would exceed the capacity of existing or planed stormwater drainage systems, nor would the Project provide additional sources of polluted runoff.

Threshold f): Less-than-Significant Impact. The proposed Project would not require or result in the construction of new storm water drainage facilities or expansion of existing facilities.

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Threshold g): No Impact. There are no other components of the proposed Project with a potential to substantially degrade water quality.

Threshold h): No Impact. The proposed Project does not involve the construction of housing and is not located within a 100-year flood hazard area.

Threshold i): No Impact. The proposed Project is not located within a 100-year flood hazard area, and would not result in the construction of new structures within a 100-year flood hazard area which could impede or redirect flows.

Threshold j): Less-than-Significant Impact. The proposed Project would not expose people or structures to a significant risk of loss, injury, or death involving flooding as a result of the failure of a levee or dam.

Threshold k): No Impact. The proposed Project is not subject to inundation from seiche, tsunami, or mudflow.

4.7.6 MITIGATION

Although impacts would be less than significant and mitigation is not required, the following measures shall be incorporated into the Project's post-reclamation sedimentation basins to ensure compliance with regulatory requirements for stormwater runoff.

MM 4.7-1 Prior to final inspection for reclamation activities, the City of Lake Elsinore shall ensure that sedimentation basins are designed to include spillways capable of passing the 1000-year flow rates, and shall ensure that the sedimentation basins are designed to allow for percolation of the basin volume within 72 hours. If percolation rates exceed 72 hours, then an outflow pipe shall be installed to ensure the basins drain completely within 72 hours, in conformance with California Stormwater Quality Association requirements. A paved slope interceptor drain shall be provided along the top of cut slopes where the drainage path is greater than 40 feet towards the cut slope in accordance with local requirements. The City also shall ensure the sedimentation basins comply with all stormwater regulations in effect at the time of final inspection for reclamation activities.