

**HARRIS QUARRY EXPANSION
MITIGATION MONITORING AND REPORTING PROGRAM**

	MITIGATION	IMPLEMENTED BY	WHEN IMPLEMENTED	MONITORED BY	VERIFIED BY AND DATE
4.1 Geology and Soils					
Impact 4.1-A: Quarry activities could result in unstable slopes.	4.1-A.1 Prior to the start of the second year of grading in the quarry expansion area, and biannually thereafter, a licensed Geotechnical Engineer and Certified Engineering Geologist shall inspect the slopes of the quarry excavation in accordance with then current Mine Safety and Health Administration (MSHA) requirements as the quarry progresses, and a final slope stability analysis will be performed prior to the quarry face progressing within 150 feet of the proposed final slope face.	Applicant's geo-technical consultant	Biannually	Applicant's geo-technical consultant Final slope stability – DPB & OMR	DPB Final slope stability analysis would be approved after meeting all SMARA requirements
	4.1-A.2 The uppermost 20-foot quarry cut shall be sloped no steeper than 1.5h:1v in accordance with recommendations of the report prepared by Blackburn Consulting (Cut Slope Evaluation for Harris Quarry Haul Road (BCI) February 2007, with addendum dated July 2008).	Applicant	Final reclamation grading	DPB	DPB Completion of mining under the permit
	4.1-A.3 Final cut slopes on the quarry walls shall be cut at the gradient required to attain a factor of safety of 1.3, with intervening 12-foot benches every 40 vertical feet.	Applicant	Final reclamation grading	DPB	DPB Completion of mining under the permit
Impact 4.1-B: Unstable geology and slopes at the asphalt processing facility site could cause failure of improvements at that site.	4.1-B.1 A Certified Engineering Geologist and a Geotechnical Engineer shall be identified to conduct the mitigation measures recommended below. The choice of Certified Engineering Geologist and Geotechnical Engineer shall be approved by the County Department of Planning and Building Services.	Applicant	Prior to pad construction	DPB	DPB Prior to asphalt facility pad construction
	4.1-B.2 The processing building pad will be designed and constructed to be stable for the maximum credible earthquake for the area. A supplement to the previous design level study prepared by BCI shall be performed in the area	Applicant's geo-technical consultant	Prior to construction	Applicant's geo-technical consultant and	DPB Prior to approval of Plan Sheets

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	<p>of the proposed asphalt processing area that will verify design measures needed to ensure building pad stability, including for the design seismic event. The following will be included in the supplement.</p> <p>1) The investigation shall specifically address the feasibility and long-term stability of 1h:1v cut slopes and 1.5h:1v fill slopes. A slope stability analysis of proposed cut and fill slopes will be performed. Recommended maximum gradients for cut slopes and engineered fill slopes required to maintain a 1.3 static factor of safety will be determined.</p> <p>2) The potential for settlement shall also be addressed and the analysis shall include characterization of gross settlement, differential settlement, and dynamic (earthquake induced) settlement within and between adjacent materials. The study will include design recommendations for structural footings and foundations to minimize future settlement.</p> <p>3) Design Review and Approval of Plan Sheets will be done by the Mendocino County Public Works and Building Departments to ensure conformance with Grading and Drainage Ordinances and the recommendations of the final geotechnical report.</p> <p>4) Construction observation and testing (special inspections) will be done during construction to ensure conformance with design requirements and geotechnical recommendations.</p>			DPB	

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	4.1-B.3 The site of proposed fills in the west-southwestern portion of the expansion area will also be evaluated and appropriate measures to stabilize proposed fills shall be determined and incorporated into project design, consistent with the requirements of Section 3704(d) of the State Mining and Geology Board Reclamation Regulations. Proposed fills shall be properly compacted to a minimum 90% compaction relative to the maximum dry density and shall be no steeper than 2h:1v unless measures to reinforce the fills are included in project plans and a slope stability analysis is completed by the Project Geotechnical Engineer and Certified Engineering Geologist which finds that proposed fills will be stable.	Applicant's geo-technical consultant	Prior to construction of fills	Applicant's geo-technical consultant and DPB	DPB Completion of reclamation
Impact 4.1-C: The project site is subject to seismic events and strong seismic ground shaking.	The mitigations recommended for Impacts 4.1-A and 4.1-B also apply to this impact.	See the cited mitigations			
Impact 4.1-D: The new access road and the new road to the water tank could fail if not properly constructed.	4.1-D.1 A Certified Engineering Geologist and a Geotechnical Engineer shall be identified to conduct the mitigation measures recommended below. The choice of Certified Engineering Geologist and Geotechnical Engineer shall be approved by the County Department of Planning and Building Services.	Applicant	Prior to road construction	DPB	DPB Prior to road construction
	4.1-D.2 The supplement described in Mitigation Measure 4.1-B.2 shall include slope stability analysis for the proposed road cuts to confirm that the proposed slopes meet minimum standards of stability such as factor of safety calculations. This study shall be performed by a Certified Engineering Geologist or Geotechnical Engineer.	Applicant's geo-technical consultant	Prior to road construction	Applicant's geo-technical consultant and DPB	DPB Prior to approval of Plan Sheets

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	4.1-D.3 A Civil Engineer shall design any required retaining walls, gravity walls, buttress fills, or other slope stabilization technique in accordance with recommendations of the geotechnical investigations and slope stability analysis and in accordance with County and State Guidelines.	Applicant's civil engineer	Prior to road construction	Applicant's civil engineer and DPB	DPB Prior to approval of Plan Sheets
Impact 4.1-F: Improper construction and operation of the project could result in soil erosion and the loss of topsoil.	The project shall comply with Mitigation Measures 4.2-A.1 through 4.2-A.6 and 4.2-B.1 through 4.2-B.4.	See the cited mitigations			
4.2 Hydrology and Water Quality					
Impact 4.2-A: Stormwater runoff containing sediments, metals, dust suppressants, total petroleum hydrocarbons, oil and grease, and other pollutants associated with mining activities and vehicle and equipment use would potentially violate water quality standards and/or impact habitat.	4.2-A.1 The project shall comply with the RWQCB's Construction General Permit conditions.	Applicant	Throughout project construction	Applicant's contractors DPB	DPB Termination of construction
	<p>4.2-A.2 The applicant shall not cause or contribute to a violation of an applicable water quality standard. The applicant shall comply with the NPDES Permit Requirements for the Industrial General Permit (Order No. 97-03-DWQ).</p> <p>The specific elements of this mitigation measure are:</p> <p><i>Water Quality Monitoring and Sampling</i></p> <p>The applicant shall develop and implement a facility-specific monitoring program to provide indicator monitoring information for the following: (1) BMPs addressing pollutants in stormwater discharges and authorized non-stormwater discharges comply with the</p>	Applicant	Annually throughout the use permit period	Applicant DPB RWQCB	<p>DPB Annual quarry review and report</p> <p>RWQCB When reviewing project compliance with NPDES Permit Requirements for the Industrial General Permit</p>

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	<p>Discharge Prohibitions, Effluent Limitations, and Receiving Water Limitations of this General Permit, (2) the presence of pollutants (and their sources) in stormwater discharges and authorized non-stormwater discharges that may require immediate corrective action, additional BMP implementation, or SWPPP revisions, and (3) the effectiveness of BMPs to prevent or reduce pollutants in stormwater discharges and authorized non-stormwater discharges.</p> <p>The applicant shall be required to:</p> <ol style="list-style-type: none"> 1. Collect and analyze stormwater samples from the first two qualifying storm events of the wet season. Analysis must include: (a) the minimum indicator parameters: pH, total suspended solids (TSS), total organic carbon (TOC) or Oil and Grease, and specific conductance, (b) parameters that indicate the presence of materials that are mobilized by contact with stormwater (such as rock salt) and are likely to be exposed to stormwater (based upon the discharger's pollutant source assessment required in the SWPPP), (c) parameters listed in Table VIII "Additional Analytical Parameters" (these parameters are dependent on the facility's SIC code), and (d) parameters indicating the presence of industrial materials that may be causing or contributing to an exceedance of a water quality standard in the receiving waters. Water sampling shall be conducted by a third-party consultant and water samples shall be submitted to a California-certified analytical laboratory for analysis. 				

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	<p>2. Visually observe the facility before every anticipated storm event to locate and manage obvious pollutant sources.</p> <p>The Industrial General Permit requires dischargers to collect samples from all drainage areas. The following actions are required:</p> <p>1. Facility operators shall visually observe and collect samples of stormwater discharges from all project drainage areas. The samples shall represent the quality and quantity of the facility's stormwater discharges from the storm event.</p> <p>2. If the facility's stormwater discharges are commingled with run-on from surrounding areas, the facility operator shall identify other visual observation and sample collection locations where project discharges have not been commingled by run-on and that represent the quality and quantity of the facility's stormwater discharges from the storm event.</p> <p>3. If visual observation is not possible or sample collection locations are difficult to sample (e.g., sheet flow, submerged outfalls), facility operators shall identify and collect samples from other locations that represent the quality and quantity of the facility's stormwater discharges from the storm event.</p> <p>4. If facility operators determine that the industrial activities and BMPs within two or</p>				

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	<p>more drainage areas are substantially identical, they may either (i) collect samples from a reduced number of substantially identical drainage areas, or (ii) collect samples from each substantially identical drainage area and analyze a combined sample from each of these drainage area. Facility operators must document such a determination in the annual report.</p> <p>Sample collection sites shall include, at a minimum:</p> <ol style="list-style-type: none"> 1. Due to the steep slope and associated inaccessibility for sampling at the existing 36-inch CMP outfall from the existing sump pond at the southeast corner of the quarry site, another point upstream shall be used for sampling. This location shall be the outlet of the proposed 48-inch pipe entering the sump pond, or sampling can be conducted via installation of a vertical CMP clean-out in the proposed 48-inch pipe within the quarry site. 2. Outfall of the proposed 12-inch pipe outlet for the bio-retention area at the processing site. <p>All associated records of stormwater quality monitoring, sampling, and analyses shall be retained and submitted per RWQCB permit requirements. The applicant shall submit a monitoring report to the RWQCB with a copy submitted to the County Department of Planning and Building Services. Frequency of reporting shall be determined by the RWQCB</p>				

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	but shall not be less frequent than twice each rainy season. The qualified water quality professional conducting the monitoring shall provide an analysis of the data and an evaluation of the overall effectiveness of the sediment control system. If the water quality objectives have been exceeded, the report shall include analysis as to the specific causes of the exceedances and recommended measures to bring the discharges into compliance.				
	4.2-A.3 If necessary, implement corrective measures to meet water quality objectives. Once mining commences, if annual surface water monitoring indicates that discharges from the quarry exceed the water quality objectives, the applicant shall propose changes to the sediment control program that will improve its performance sufficiently to meet the performance criteria. Corrective action may include, but is not limited to, implementation of additional source control BMPs, use of chemical flocculation, installation of mechanical filtration of the discharge, and/or construction of extended wet ponds and/or treatment wetlands. The proposed changes shall be submitted to the RWQCB for comment, revised as needed to address their comments, and then implemented by the applicant. If the performance criteria are not met for two consecutive years, the County Department of Planning and Building Services will confer with the applicant and the RWQCB to determine whether further changes in the sediment control plan are likely to result in compliance. If suitable changes are not identified, then the	Applicant	Throughout the use permit period	Applicant DPB RWQCB	DPB Annual quarry inspection and report RWQCB When reviewing project compliance with NPDES Permit Requirements for the Industrial General Permit

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	County shall require the quarry to reduce production as needed to meet the performance criteria.				
	<p>4.2-A.4 The applicant shall revise and implement an updated Storm Water Pollution Prevention Plan (SWPPP) for the project. The erosion control portion of the SWPPP shall include an aggressive sediment source and delivery control program. It shall place greater emphasis on establishing temporary and permanent protection of disturbed fill slopes and drainages in the processing areas that drain to Forsythe Creek. Most importantly the plan must include an annual winterization report that documents the location and application of best management practices to mitigate reduction in water quality due to sediment in storm runoff. The SWPPP shall be regularly updated as BMPs are updated and new BMPs are constructed and/or the quarry operation changes. The SWPPP shall be implemented during the initial stage of quarry construction and stay in effect through the completion of reclamation.</p> <p>The required detailed SWPPP, including the erosion control plan shall also include:</p> <ol style="list-style-type: none"> 1. A formal plan for preventing the inadvertent side cast of materials from the quarrying area entering Forsythe Creek and its tributary shall be developed. 2. All fill slopes draining to Forsythe Creek shall be stabilized prior to October 15 of each year. The plan shall include a 	Applicant	Throughout the use permit period	Applicant DPB RWQCB	<p>DPB Annual quarry inspection and report</p> <p>RWQCB When reviewing project compliance with NPDES Permit Requirements for the Industrial General Permit</p>

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	<p>detailed design plan for annual stabilization. Stabilization measures include fill slopes suitable for hydraulic application of surface stabilizing compounds, hydroseeding, mulching, or other measures to prevent erosion, and the application thereof. It shall include a description of the erosion control materials to be used and application rates. Seed mixes shall be specified. A schedule for completion of stabilization shall be included, and the stabilization shall be completed by October 15 each year.</p> <p>3. Silt fences, fiber rolls, and straw bale barriers shall be used on bare slopes not being actively mined to intercept and trap sediment carried by sheet flow.</p> <p>4. The site plan shall show work areas, indicating the year the initial reclamation occurred, active mining, stockpiling, work areas, and areas to be mined the following year.</p> <p>5. The site plan shall show erosion and drainage problem areas, and proposed emergency stormwater runoff flow directions, in addition to the planned retention, bio-retention, and treatment areas.</p> <p>6. The applicant shall place all hazardous materials and fueling areas above predicted 100-year 24-hour flood elevations and above observed seasonal high-water elevations.</p>				

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	7. A plan to annually monitor and treat stormwater outlets that discharge to slopes and drainages to insure that gullyng, incision, or other erosion and mass wasting processes are not occurring as a result of project area operations and site drainage will be implemented.				
	<p>4.2-A.5 During mining and reclamation activities, the following measures shall be included in the SWPPP required under the General Construction Permit and implemented to reduce the potential for erosion and sediment discharge:</p> <p>1. Topsoil suitable for use in revegetation shall be stockpiled in a stable manner for use in reclamation and replanting of cut slopes. Prior to October 15 of each year, all topsoil stockpiled for future use in revegetation shall be seeded and mulched in order to prevent soil loss through erosion. Topsoil shall be stored in locations that are not immediately above or adjacent to stream drainages..</p>	Applicant	Throughout the use permit period	Applicant DPB RWQCB	<p>DPB Annual quarry inspection and report</p> <p>RWQCB When reviewing project compliance with General Construction Permit Requirements</p>
	4.2-A.6 The applicant shall implement best management practices to reduce the potential for discharge of contaminants to stormwater runoff. These BMPs shall be included in the General Construction Permit SWPPP and shall be designed by a civil engineer, and the design engineer shall oversee BMP installation. To minimize the introduction of contaminants, which may degrade the quality of water discharged from the site, the following measures shall be taken:	Applicant	Throughout the use permit period	Applicant DPB RWQCB	<p>DPB Annual quarry inspection and report</p> <p>RWQCB When reviewing project compliance with General Construction Permit and Industrial General Permit Requirements</p>

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	<ul style="list-style-type: none"> Runoff from all access roads shall be collected and passed through a treatment swale or trap system prior to entering the existing or planned drainage features for the highway improvements that outfall to the secondary channel of the Forsythe Creek tributary. Fueling and maintenance of all rubber-tired loading, grading, and support equipment shall be prohibited within 100 feet of drainage ways. Fueling and maintenance activities associated with other less mobile equipment shall be conducted with proper safeguards to prevent releases of hazardous material. All refueling and maintenance of mobile vehicles and equipment shall take place in a designated area with an impervious surface and berms to contain any potential spills. All chemical dust suppressants, slope stabilization chemicals or polymers, and sediment detention basin enhancement chemicals or polymers shall be used strictly according to the manufacturer's specifications. An accurate accounting of all these materials purchased and used on the site shall be maintained, including kinds and quantities of material. The bio-retention swale shall be designed to meet all RWQCB requirements, including being able to handle the 100-year storm event with 6 inches of freeboard. 				
Impact 4.2-B: Quarry	4.2-B.1 The bio-retention basin will be	Applicant	Throughout the use	Applicant	DPB

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expansion and use will alter the runoff regime to Forsythe Creek.	<p>designed to minimize erosion at the point of outlet. To meet this standard, the following actions will be taken:</p> <ol style="list-style-type: none"> 1. The flow from the basin must be attenuated via an increase in basin size and/or decrease in pipe outlet sizing to match post-construction runoff volume to pre-construction runoff volume for the smallest storms up to the 85th percentile storm event (or the smallest storm event that generates runoff, whichever is larger). 2. A slotted pipe dissipater shall be designed to capture and disperse outflow from the basin to the hillslopes below. The design will be provided by the applicant engineer and is subject to review and approval by RWQCB per the NPDES discharge requirements. 3. Visual observations shall be made at the bio-retention basin outlet after each rain event. Photos from two photo points (one upslope and one downslope of the pipe outlet) shall be taken before (October-November) and after (March-April) the rainy season of each year of quarry operation. Photos shall be available for review by RWQCB and will be submitted with the Construction and Industrial General Permits' annual reporting. 		permit period	<p>DPB</p> <p>RWQCB</p>	<p>Annual quarry inspection and report</p> <p>RWQCB When reviewing project compliance with General Construction Permit and Industrial General Permit Requirements</p>

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Impact 4.2-D: <i>Cumulative impact</i> - The project in combination with other projects would generate sediments and other pollutants that could potentially violate water quality standards and/or impact habitat.	The mitigation measures listed under Impact 3.3-A also apply to this impact.	See the cited measure			
Impact 4.2-E: <i>Cumulative impact</i> - Future mining of the quarry could generate sediments and other pollutants that could potentially violate water quality standards and/or impact habitat.	The mitigation measures recommended for Impact 4.2-A apply to this impact.	See the cited measure			
4.3 Biological Resources					
Impact 4.3-A: Project development could impact special status plant species, either directly or through habitat modification.	4.3-A.1 Project construction or operation shall not adversely affect special status species of plants. If feasible, surveys for special status species of plants will be conducted by a qualified biologist approved by the County prior to certification of the Final EIR or project approval. Otherwise, surveys will be conducted prior to project-related vegetation removal. New surveys shall be conducted every three years in areas that have not yet been mined. If special status species of plants are found, the plant will be avoided, or, if that is not feasible, the biologist will confer with the Department of Fish and Game to identify suitable mitigation. The applicant will abide by the decision of the Department of Fish and Game concerning the	Applicant's biologist	Prior to initial vegetation removal and then every 3 years	DPB	DPB Annual quarry inspection and report CDFG (if special status species found)

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	special status species.				
Impact 4.3-B: Project development could impact special status wildlife species, either directly or through habitat modification.	All mitigations required for 4.1-E and 4.2-A are required for this impact.	See the cited measures			

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	4.3-B.1 As required by law, the project applicant shall not remove nests or den sites of any special status species of wildlife when constructing the project or expanding the quarry. Because special status species may move into the project area in the following years, additional biological surveys will be conducted at least every 3 years to ensure that special status species are not present in the area where vegetation will be removed. The surveys shall be conducted by a qualified biologist, during the spring, in the specific area proposed for vegetation removal. If dens or nest sites of special status species of wildlife are found, the den or nest site will be avoided, or, if that is not feasible, the biologist will confer with the Department of Fish and Game to identify suitable mitigation. The applicant will abide by the decision of the Department of Fish and Game concerning the special status species.	Applicant's biologist	Every 3 years	DPB	DPB Annual quarry inspection and report CDFG (if special status species found)
Impact 4.3-C: Project development would result in the loss of about 24 acres of native vegetation.	4.3-C.1 The Final Reclamation Plan shall be submitted to the State Office of Mine Reclamation for review. All conditions recommended by OMR during that review shall become part of the final Reclamation Plan for the project..	Applicant	Prior to initiation of project	DPB	OMR Review of Final Reclamation Plan DPB Approval to construct the proejct and mine the expansion area
Impact 4.3-D: Project development could impact wetlands and "waters of the U.S."	4.3-D.1 The applicant shall conduct all improvements set forth on EIR Figures 3-11 through 3-13. The applicant shall prepare a final improvement plan describing how and when these improvements will be done and monitored and the responsibility for follow-up work if monitoring finds that the improvements are failing or not operating as planned. This plan shall be submitted to the Army Corps and	Applicant	Prior to filing wetlands or waters of the U.S.	DPB CDFG USACE	Army Corps Approval of delineation and permit if needed) CDFG Streambed Alteration Permit

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	DFG when applying for required permits/agreements.				DPB Approval of Plan Sheets
	4.3-D.2 When constructing the on-site haul road, no construction shall occur within the wetland between the haul road and Black Bart Drive. Drainage improvements will be incorporated to allow the area above the road that currently drains to the small on-site wetland to continue to do so. Level spreaders or other structures shall be installed below the road to spread runoff before it enters the wetland.	Applicant's contractor	Prior to haul road construction	DPB	DPB Prior to approval of road construction
Impact 4.3-E: Project development could conflict with the State law regarding oak woodland conversion (Public Resources Code 21083.4).	4.3-E.1 During site preparation for the access road to the asphalt processing facility, the access road to the water tank, and the asphalt processing facility itself, the applicant shall flag the actual area to be graded or disturbed. A qualified biologist shall inventory the species and number of true oaks that will actually be removed or encroached in such a fashion that could lead to future mortality. Similar inventories shall be done when trees are removed for quarry expansion.	Applicant's biologist	Prior to road and asphalt pad construction	DPB	DPB Prior to road and pad construction

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	4.3-E.2 Plant replacement oaks on the applicant's property (Assessor's Parcel Nos. 147-180-07, & -08 and/or 147-140-07) within three years of project approval or tree removal, whichever is later. The new oaks will be replanted at a ratio of 3:1 for each oak removed. New seedlings will be the same species as the tree removed except that canyon live oak will be used instead of interior live oak. If black oak in the area become infected with SOD, then a non-susceptible species of oak will be used to replace black oak. The oaks shall be fertilized, irrigated, protected, and maintained until they are 5 years old. Any trees dying within that period shall be replanted until there are new live trees at the 3:1 ratio described above on the property that have been alive for at least 7 years. Tree seedlings should be planted no closer than 10 feet apart from other tree seedlings and no closer than 20 feet apart from the trunk of any mature tree. Compacted ground shall be broken to an area three times the diameter of the root ball prior to planting to allow root growth. Trees shall be watered weekly by the property owner in weeks with no natural precipitation (usually April 15 through October 15 of each year) and shall be watered three times per week when temperatures exceed 100 F° for the first three years after planting. During site reclamation, additional oaks will be planted at a 2:1 ratio. So, at least 5 new oaks will be established for each one removed by the end of site reclamation.	Applicant	Plant within 3 years of project approval Maintain as stated though the end of reclamation	DPB	DPB Annual mine inspection and report
Impact 4.3-K: <i>Secondary Impact -</i> <i>Widening Highway 101</i>	Mitigation Measures 4.3-E.1 and 4.3-E.2 also apply to this impact.	See the cited measures			

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Widening Highway 101 per Mitigation Measure 4.4-B.1 will impact biological resources.	<p>4.3-K.1 The applicant shall implement the proposed expansion and improvements of the vernal pool as shown on Figure 3-14. Final improvement plans will be approved by the Army Corps and the Department of Fish and Game, and the applicant shall be responsible for implementing any changes or additions the Corps and/or Department make to the improvement plan. It is expected that the Corps or the Department of Fish and Game will require a functional or qualitative assessment of the vernal pool that will be expanded to ensure that it is considered a "higher resource" than the two small roadside wetlands that would be filled. At least the following additional conditions will apply:</p> <ul style="list-style-type: none"> To ensure success of the vernal pool expansion, a water budget for the given drainage area shall be developed to ensure the site can support a larger pool feature. If it cannot, then runoff from other nearby slopes shall be directed to the vernal pool. Prior to construction, baseline data shall be gathered at the vernal pool mitigation site, over multiple hydrologically different years (three years minimum), to determine characteristics such as the size, depth, duration of inundation, slope, and biologic species present before construction. This will ensure existing wetlands are not damaged and provide a reference for the performance of the new wetlands. After construction, monitoring shall occur every year for at least 7 years or until specific performance standards are met. 	Applicant	Prior to filing wetlands or waters of the U.S.	DPB CDFG USACE	U. S. Army Corps Approval of delineation and permit (If needed) CDFG Streambed Alteration Permit DPB Approval of Plan Sheets

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	<ul style="list-style-type: none"> Pool expansion shall mimic existing habitat characteristics. Construction plans shall be adjusted based on baseline data collection. Maintain the hydrology of the pool after construction by preparing horizontal and vertical relief plans for the contractor-operator. The plan should mimic the existing pool as much as possible as regards the depth, no berm, and the back slope, and ensuring the soil type is continuous. A final plan shall describe all details and operation of the pool. Written protocols shall be developed for each stage of construction. Protocols shall cover the collection of baseline data, post construction hydroperiod, and the establishment of vegetation and wildlife. Inoculation materials shall be raked from the existing vegetation during the end of the dry season and then spread over the raked constructed pool during the beginning of the wet season. A conservation easement shall be established to ensure the vernal pool is protected. 				
4.4 Traffic and Circulation					
Impact 4.4-B: The project would increase traffic turning in and out of the project access, and this would increase	<p>4.4-B.1 The applicant shall construct the following improvements prior to increasing aggregate production or selling asphalt:</p> <ul style="list-style-type: none"> Highway 101 Northbound Approach – 	Applicant	Prior to increasing aggregate production or selling asphalt	DPB	Caltrans Improvements meet all Caltrans requirements DPB

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the existing safety hazard in the area.	<p>Provide a left-turn deceleration/storage lane on Highway 101 at least 470 feet in length.</p> <ul style="list-style-type: none"> Highway 101/Southbound Approach – Provide a right-turn deceleration lane on Highway 101 at least 200 feet in length. Highway 101 Northbound Departure – Provide a speed change acceleration lane for left turns from the project site extending at least 1,410 feet in length (which would extend through and north of the Black Bart Drive intersection) as well as a 300-foot taper (total length 1,710 feet). Highway 101 Southbound Departure – Provide a speed change/acceleration lane for right turns extending at least 1,090 feet from the project site as well as a 300-foot taper (total length of 1,390 feet). Although only a 300-foot-long acceleration taper is theoretically warranted, observations of truck driver turns and their disruption to the flow of traffic on southbound Highway 101 indicate the need for the full acceleration lane with Base volumes. A lighted sign with a flashing beacon (with a solar panel) that warns southbound Highway 101 travelers of slow and turning trucks shall be placed on the west side of Highway 101 about 925 feet north of the project access driveway. A similar sign and beacon that warns northbound Highway 101 travelers shall be placed on the east side of Highway 101 south of the project 				Prior to allowing sale of asphalt or an increased amount of aggregate (over current permitted level)

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	access driveway, at a distance that meets Caltrans' requirements.				
	<p>4.4-B.2 Project-generated traffic shall not result in unsafe operational conditions near the project site as determined by the Mendocino County Department of Transportation and Caltrans. To ensure conformance with this performance standard, the following shall be done:</p> <ul style="list-style-type: none"> • Traffic operational and accident conditions shall be monitored at the Highway 101/Harris Quarry Access and Highway 101/Black Bart Drive intersections every two years after project approval. Counts and evaluation shall be conducted during both July and October. The applicant shall fund each study, and the County shall select the firm to conduct the monitoring. Filming of traffic counts and truck driver behavior will be done to provide a defensible record of actual operations. • If a monitoring report indicates a safety or operational problem at either intersection, an evaluation will be conducted of potential additional mitigation measures that should be considered for implementation. Measures may include: 1) limits on how many trucks can be loaded during peak hours; 2) limits on trucks making left turns in and/or out of the access driveway during peak hours; and 3) provision of a partial or full interchange at the Harris Quarry Access intersection and the possible connection of Black Bart Drive to that new interchange in 	Applicant's traffic engineer	Biannually throughout the permit period (or until an interchange is constructed)	DOT Caltrans	DOT and DPB Annual quarry inspection and report Caltrans Approval of any additional highway improvements

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	<p>conjunction with elimination of the Highway 101/Black Bart Drive intersection. If the County and Caltrans agree that such operational changes and/or highway improvements are warranted, then they shall be installed within 2 years of Caltrans' approval of the final design and funding mechanism. The applicant shall be responsible for paying its fair share (as determined by Caltrans and the County) of the improvements.</p>				
	<p>4.4-B.3 Aggregate production and project-generated traffic shall not exceed the levels predicted and assessed in this EIR. Every three (3) years, an aerial survey of the site shall be submitted to the Department of Planning and Building Services to evaluate the volume of material extracted during the 3-year period. The survey shall include topographic mapping developed from aerial photos taken in such a manner as to clearly show the full extent of the extraction area. The aerial survey aerial shall delineate the limits of extraction for the previous 3 years. A report shall be prepared by a licensed engineer or land surveyor or photogrammetrist, and shall quantify the extraction volume based on the aerial survey. Photos and topographic mapping shall include a standard reference scale and north arrow, and shall be of size and quality acceptable to the Department of Planning and Building Services. A baseline aerial photo and topographic map shall be taken and submitted to the Department of Planning and Building Services within 90 days of approval of this permit."</p>	Applicant	Every 3 years after project initiation	DPB	DPB Annual quarry inspection and report

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Impact 4.4-C: Nighttime use of the project access would increase the safety hazard in the area.	4.4-C.1 During nighttime operations that will occur more than 5 days a year, the applicant will provide lighting that illuminates the access intersection. The lighting can be permanent lighting or temporary lighting such as Caltrans uses in construction zones.	Applicant	During nighttime operations exceeding 5 nights a year	DPB	DPB During extended nighttime operations
Impact 4.4-D: Use of the project access during times with limited visibility would increase the safety hazard in the area.	4.4-D.1 The southfacing side of the "truck warning sign" located north of Black Bart Drive shall be painted or treated with a reflective surface or have a light installed that can be seen from the project access driveway. During periods of reduced visibility, the quarry operator will monitor the visibility of this sign. When it is not visible from the project access driveway, then trucks will not be permitted to turn left out of the project. Drivers will need to turn right and proceed to the Highway 101/Highway 20 interchange where they can turn and proceed north. Once the Willits Bypass is constructed, northbound drivers wanting to turn left into the project who cannot see the reflective surface of the warning sign will be required to proceed north to the first Bypass interchange where they can turn and access the project from the north. The applicant shall prepare a driver's training manual for trucks that haul aggregate or asphalt. It shall notify drivers of the requirements described above.	Applicant and haul truck drivers	Throughout the permit process	DOT DPB	DPB Annual quarry inspection and report

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	4.4-D.2 The monitoring done by the County-approved monitor recommended in Mitigation Measure 4.4-B.2 shall include monitoring of safety and compliance with Mitigation 4.4-D.1 during periods of limited visibility.	Applicant's traffic engineer	Biannually throughout the permit period (or until an interchange is constructed)	DOT Caltrans	DOT and DPB Annual quarry inspection and report Caltrans Approval of any additional highway improvements
Impact 4.4-E: <i>Cumulative Impact</i> - The project would increase 2014 traffic volumes at	Mitigation Measures 4.4-B.1, 4.4-B.2, 4.4-C.1 and 4.4-D.1 are required for both 2014 scenarios.	See the cited measures			

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the intersections of Highway 101 with Black Bart Drive and the quarry access.					
Impact 4.4-F: <i>Cumulative Impact</i> - The project would increase 2030 traffic volumes at the intersections of Highway 101 with Black Bart Drive and the quarry access.	Mitigation Measures 4.4-B.1, 4.4-B.2, 4.4-C.1 and 4.4-D.1 are required for both 2030 scenarios.	See the cited measures			
4.5 Noise					
Impact 4.5-B: The project would generate noise and vibration from quarry blasting.	4.5-B.1 Blasting shall be done as needed, but no more than ten times per year.	Applicant	Throughout the use permit period	DPB	DPB Annual quarry inspection and report
4.6 Air Quality					
Impact 4.6-A: Project construction would increase air emissions from equipment operation and fugitive dust from earth-moving activities.	<p>4.6-A.1 Implement the measures recommended by MCAQMD under their Rule 430 for Fugitive Dust Emissions as listed below:</p> <ol style="list-style-type: none"> 1. All visibly dry disturbed soil road surfaces shall be watered to minimize fugitive dust emissions. 2. All unpaved surfaces, unless otherwise treated with suitable chemicals or oils, shall have a posted speed limit of 10 miles per hour. 3. Earth or other material that has been transported by trucking or earth moving equipment, erosion by water, or other means onto paved streets shall be promptly removed. 4. Asphalt, oil, water or suitable chemicals 	Applicant	Throughout the use permit period	MCAQMD	DPB Annual quarry inspection and report

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	<p>shall be applied on materials stockpiles, and other surfaces that can give rise to</p> <p>5. All earthmoving activities shall cease when sustained winds exceed 15 miles per hour.</p> <p>6. The operator shall take reasonable precautions to prevent the entry of unauthorized vehicles onto the site during non-work hours.</p> <p>7. The operator shall keep a daily log of activities to control fugitive dust.</p>				
<p>Impact 4.6-B: The quarry project would generate direct emissions of criteria pollutant emissions (NOx, CO, VOCs, PM10, and PM2.5) from on-site activities during operation of the quarry and asphalt plant which could exceed applicable significance levels.</p>	<p>4.6-B.1 The applicant shall not emit criteria pollutants beyond the levels described and analyzed in this EIR. The Mendocino County Air Quality Management District (MCAQMD) shall not issue an Authority to Construct and a Permit to Operate if the equipment installed would cause the emission of pollutants that exceed the levels analyzed herein. If the MCAQMD determines that the final list of equipment and/or the proposed hours of operation per day and per year of any of the equipment would exceed the levels assessed in this EIR, then additional CEQA analysis would be required to assess the air quality and health impacts of that final list of equipment and operating hours prior to considering whether to issue the Authority to Construct and a Permit to Operate.</p>	Applicant	Prior to issuance of an Authority to Construct and a Permit to Operate	MCAQMD	<p>MCAQMD Authority to Construct and a Permit to Operate</p> <p>DPB (if subsequent CEQA review is required) Approval to operate asphalt facility or sell aggregate beyond currently permitted level</p>
	<p>4.6-B.2 MCAQMD will review the final list of equipment and the analysis in this EIR and add any additional equipment or operation mitigations that the District finds are needed to avoid air quality standard exceedances and conform to all District, State, and Federal air quality standards and requirements.</p>	Applicant	Prior to issuance of an Authority to Construct and a Permit to Operate	MCAQMD	<p>MCAQMD Authority to Construct and a Permit to Operate</p> <p>DPB (if subsequent CEQA review is required) Approval to operate asphalt facility or sell</p>

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					aggregate beyond currently permitted level
Impact 4.6-E: Emissions of toxic air contaminants from the project could injure the health of workers and residents living in the area.	4.6-E.1 The applicant shall build and operate the project so that it does not exceed MCAQMD threshold indices for cancer and acute and chronic non-cancer health effects. The applicant shall comply with all MCAQMD requirements all facilities, including for the asphalt facility at least: 1) venting the asphalt storage silos to a Blue Smoke system, and 2) controlling load-out emissions by use of a fiberbed mist collector (part of the Blue Smoke System), unless MCAQMD determines such measures are not required or alternate control measures should be used.	Applicant	Prior to issuance of an Authority to Construct and a Permit to Operate And then throughout the use permit process	MCAQMD	MCAQMD Authority to Construct and a Permit to Operate DPB Annual quarry inspection and report
	4.6-E.2 The asphalt plant will be a facility that meets at least the emission levels and controls used to assess impacts from that facility in this EIR. If MCAQMD determines that the facility selected for installation would exceed pollutant emission standards as stated in Mitigation Measure 4.6-B.1, then additional risk analysis will be conducted as part of the required additional CEQA review prior to MCAQMD issuing any permits for the project.	Applicant	Prior to issuance of an Authority to Construct and a Permit to Operate	MCAQMD	MCAQMD Authority to Construct and a Permit to Operate DPB (if subsequent CEQA review is required) Approval to operate asphalt facility or sell aggregate beyond currently permitted level
Impact 4.6-F: The asphalt plant would generate odors.	4.6-F.1 The asphalt plant shall not result in noxious odors. The plant will be a facility that meets at least the odor emission levels and controls used to assess impacts from that facility in this EIR. If MCAQMD determines that the facility selected for installation would exceed pollutant emission standards as stated in Mitigation Measures 4.6-C.1 and 4.6-E.2, then additional odor analysis will be conducted	Applicant	Prior to issuance of an Authority to Construct and a Permit to Operate	MCAQMD	MCAQMD Authority to Construct and a Permit to Operate DPB (if subsequent CEQA review is required) Approval to operate asphalt facility or sell

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	as part of the required additional CEQA review prior to MCAQMD issuing any permits for the project.				aggregate beyond currently permitted level
Impact 4.6-I: <i>Cumulative Impact</i> - The proposed project could conflict with applicable GHG plans, policies, or regulations of an agency adopted for the purpose of reducing greenhouse gases.	4.6-I.1 The applicant shall reduce greenhouse gas emissions from the project by conducting at least the following actions: <ul style="list-style-type: none"> • Comply with California Air Resource Board standards for light duty and heavy duty vehicles. All vehicles will need to continue to abide by these standards, including possibly stricter standards set in the future. • Restrict idling of diesel engines on the site to less than 5 minutes. • When replacing diesel mobile equipment, purchase new equipment meeting the most recent CARB emission requirements. • Maintain facility mobile equipment in good working order. • Reclaim the site. • Use energy efficient appliances and lighting. All new equipment shall be energy efficient. Except where needed for outdoor work or security, all new lighting shall use fluorescent lighting. • Increase new building efficiency by 20% over Title 24 standards. • Meet Green Building Code standards for new building construction. • If available, use clean alternative fuels. • Use electricity provided by PG&E to the maximum extent possible to replace electricity generated by the on-site generator. • Install solar panels to power the electrical demands of the office and outdoor lighting. 	Applicant And Applicant's energy auditor	Energy audit conducted prior to construction Use PG&E power as soon as it is available to the site Solar panels installed prior to the end of construction All other measures complied with throughout the use permit period	MCAQMD DPB	MCAQMD Authority to Construct and a Permit to Operate DPB Annual quarry inspection and report

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	<ul style="list-style-type: none"> • Install any additional features recommended by the MCAQMD. • Have an energy audit conducted by a qualified individual or firm to identify additional methods to conserve energy (this may include installation of solar panels or other on-site electrical generation facilities). The audit shall be done prior to construction and will confirm that all new equipment and appliances meet accepted standards for energy efficiency. 				
4.7 Aesthetics					
Impact 4.7-A: The processing facilities site would change views from Black Bart Drive and Ridgewood Subdivision.	4.7-A.1 The asphalt processing facility site shall be planted to screen views from Black Bart Drive. Once the asphalt processing site grading is completed, the applicant shall contract with an arborist to develop a final tree planting plan along the frontage of the site. Plantings will start as the applicant has proposed about 500 feet west of the existing driveway and extend to a point opposite the northeast corner of the facility site. The arborist will determine whether the trees the applicant has available are suitable for the site, or, if not what species of trees shall be planted along this frontage to provide rapid screening of the site from the road. The planting should incorporate fast-growing trees that can quickly provide screening. If feasible, native trees and shrubs should be used. Preferably native oaks and Douglas fir will be incorporated in the planting scheme (which would count against the previous requirement for tree replacement), with oaks being planted behind the faster-growing screening plants or intermixed with them so that at the reclamation phase any non-	Applicant Applicant's arborist	Completion of site grading for asphalt facility pad	DPB	DPB Annual quarry inspection and report

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	native species can be removed to leave oak woodland. The plan will detail site preparation, planting, fertilization, irrigation, and performance monitoring as well as replacement standards.				
Impact 4.7-C: Lighting of the processing facilities would impact night views in the area.	<p>4.7-C.1 Final design and construction shall include no lighting of the asphalt processing facility site except when there are active nighttime operations occurring and for security lighting. The lights will be shielded (90 degree cut-off shielding) lights at no greater than 10 feet in height. Operational lighting will be on light poles distributed to have forward-throw lighting and light trespass cut-off shields. No direct lighting shall be visible from off the site.</p> <p>Lights will be selected from the list of approved security lights adopted by the International Dark Sky Association (IDA). No pinkish, yellowish, or bluish colored light sources will be used. The minimum number of security lights needed for security purposes as determined by the Mendocino County Sheriff's Department will be installed.</p>	Applicant	Prior to final design	DPB	DPB Approval of Plan Sheets
Impact 4.7-E: <i>Cumulative Impact</i> - The quarry expansion and highway improvements would change views from Highway 101.	4.7-E.1 The area west of Highway 101 between the highway and the newly constructed access road shall be replanted to screen views of the quarry from Highway 101. The tree planting plan required in Mitigation 4.7-A.1 shall include a plan for replanting the area between the project access driveway intersection with Highway 101 and the south end of the quarry site along the highway frontage. This area shall be planted with fast-growing trees that can quickly provide screening to twenty feet above the highway elevation. These trees shall be	Applicant Applicant's arborist	Completion of road and highway grading	DPB	DPB Annual quarry inspection and report

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	fertilized, irrigated and maintained by the applicant.				
	4.7-E.2 The sign at the quarry entrance off the highway shall be kept small and unobtrusive; it shall not exceed 40 square feet.	Applicant	Prior to sale of asphalt or additional aggregate beyond currently permitted level	DPB	DPB Annual quarry inspection and report
4.8 Public Services					
Impact 4.8-A: The project would generate increased calls for fire response and emergency medical aid.	<p>4.8-A.1 The applicant shall comply with all Little Lake Fire Protection District (LLFPD) requirements, including:</p> <ul style="list-style-type: none"> • A sign that complies with LLFPD signage requirements shall be installed at the project entrance. • Liquid on-site storage tanks (other than water tanks) shall be reviewed and approved by LLFPD. If multiple tanks are placed in close proximity to one another, the spacing between tanks must be reviewed and approved by LLFPD. • LLFPD shall review and approve the final project design to ensure adequate hydrant location and fireflow to the hydrants. • LLFPD will approve the size, type, and number of fire extinguishers for the project. Approved spark arrestors must be installed on all internal combustion engines that require them. These items are required during and after construction. • The water storage tank will be fit with the apparatus that LLFPD and/or CAL FIRE 	Applicant	Prior to sale of asphalt or additional aggregate beyond currently permitted level	LLFPD CAL FIRE	DPB Annual quarry inspection and report

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	require to be able to access the water in the tank.				

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	4.8-A.2 An emergency-only, gated, and paved access shall be provided from the asphalt processing facility site to Black Bart Drive.	Applicant	During construction of the asphalt facility pad	DPB	DPB Prior to sale of asphalt
Impact 4.8-B: The project would increase the risk of igniting wildland fires or being affected by a wildland fire.	The mitigation measures recommended for Impact 4.8-A also apply to this impact.	See the cited measure			
Impact 4.8-D: The project would generate increased demand for water.	4.8-D.1 The quarry shall cease operations if the applicant cannot provide 7,200 gallons of water per day for dust control. The amount of required water for dust control may be reduced by the Mendocino County Air Quality Management District if it determines that the applicant, using alternative methods of dust control, is preventing dust from drifting off the property.	Applicant	Throughout the use permit period	DPB MCAQMD	DPB When apprised by MCAQMD that the project cannot meet dust control requirements
4.9 Hazards and Hazardous Materials					
Impact 4.9-A: Transport, storage, and use of diesel fuels and other chemicals on-site pose a potential safety risk.	All mitigations required for Impacts 4.1-B, 4.1-C, 4.4-B, 4.4-D, and 4.8-A also apply to this impact.	See the cited measures			
	4.9-B.1 Trucks transporting diesel fuel will be restricted to turning left into the site no later than 10 a.m. If deliveries occur after 10 a.m., the delivery truck must access the site from the north.	Applicant and truck drivers	Throughout the use permit period	DPB	DPB Annual quarry inspection and report
4.12 Cultural Resources					
Impact 4.12-A: Future development of the site could damage cultural resources.	4.12-A.1 If cultural resources are discovered on the site during construction activities, all earthmoving activity in the area of impact shall be halted until the applicant retains the services of a qualified archaeological consultant who shall examine the findings, assess their	Applicant Applicant's archaeologist	Throughout the use permit period	DPB	DPB Annual quarry inspection and report

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	significance, and develop proposals for any procedures deemed appropriate to further investigate and/or mitigate adverse impacts to those resources. The applicant shall abide by the recommended proposals.				
	4.12-A.2 In the event that human skeletal remains are discovered, work shall be discontinued in the area of the discovery and the County Coroner shall be contacted. If skeletal remains are found to be prehistoric Native American remains, the Coroner shall call the Native American Heritage Commission within 24 hours. The Commission will identify the person(s) it believes to be the "Most Likely Descendant" of the deceased Native American. The Most Likely Descendant would be responsible for recommending the disposition and treatment of the remains. The Most Likely Descendant may make recommendations to the landowner or the person responsible for the excavation/grading work for means of treating or disposing of the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98.	Applicant	Throughout the use permit period	DPB County Coroner	DPB Annual quarry inspection and report
	4.12-A.3 If any paleontological resources are discovered, work at the place of discovery shall be halted, and a qualified paleontologist shall be consulted to assess the significance of the finds. Prompt evaluations can then be made regarding the finds, and a management plan consistent with CEQA cultural resources management requirements shall be adopted	Applicant Applicant's paleontologist	Throughout the use permit period	DPB	DPB Annual quarry inspection and report