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Air Quality Purpose and Topics

- Purpose: provide overview of assessment, results, and responses to key comments.
- Topics to be discussed:
 - Air Quality Overview
 - Receptor Locations and Types
 - Air and Health Risk Impact Assessment
 - Master Response to Comments (June 2015)
 - Respirable Crystalline Silica
 - Dust Deposition and Wind Data
 - Effect of Removing Pasini Knoll
 - Adequacy of Dust Mitigations



Air Quality Purpose and Topics

– Topics to be discussed (continued):

- Key Comments Heard at Planning Commission
 - Truck and rail trip distance assumptions lead to underestimated emissions.
 - DEIR impermissibly dismisses:
 - » Daily significance thresholds.
 - » PM_{2.5} Ambient Air Quality Standard.
 - Rail trip distance is underestimated.
- New Comments
 - Baseline dust emissions are misrepresented.
 - How production and excavation amounts were used.
 - Reclamation emissions were omitted.



Air Quality Overview

- Primary Pollutants: Dust, Diesel Exhaust.
- Primary Effects: Cancer Risk, Ozone Precursor (NO_x), Nuisance, Deposition.
- Primary Sources: Road Dust, Diesel Engines.
- Other Sources: Aggregates/Recycle Processing Plants, Asphalt Plants, Mining, Blasting, Stockpile Areas, Wind Erosion, Locomotive, Barge.



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Regional Air Impact Results

	ROG (tons/ yr)	NO _x (tons/ yr)	PM ₁₀ (tons/ yr)	PM _{2.5} (tons/ yr)
Mitigated Emissions	4.67	9.53	< 0	< 0 *
Significance Thresholds	10	10	15	10
Exceeds Threshold?	No	No	No	No
Type of Impact	Less Than Significant	Less Than Significant	Beneficial	Beneficial

* PM_{2.5} value adjusted to reflect reduction in maximum production from 2 million tons/ yr to 1.3 million tons/ yr.

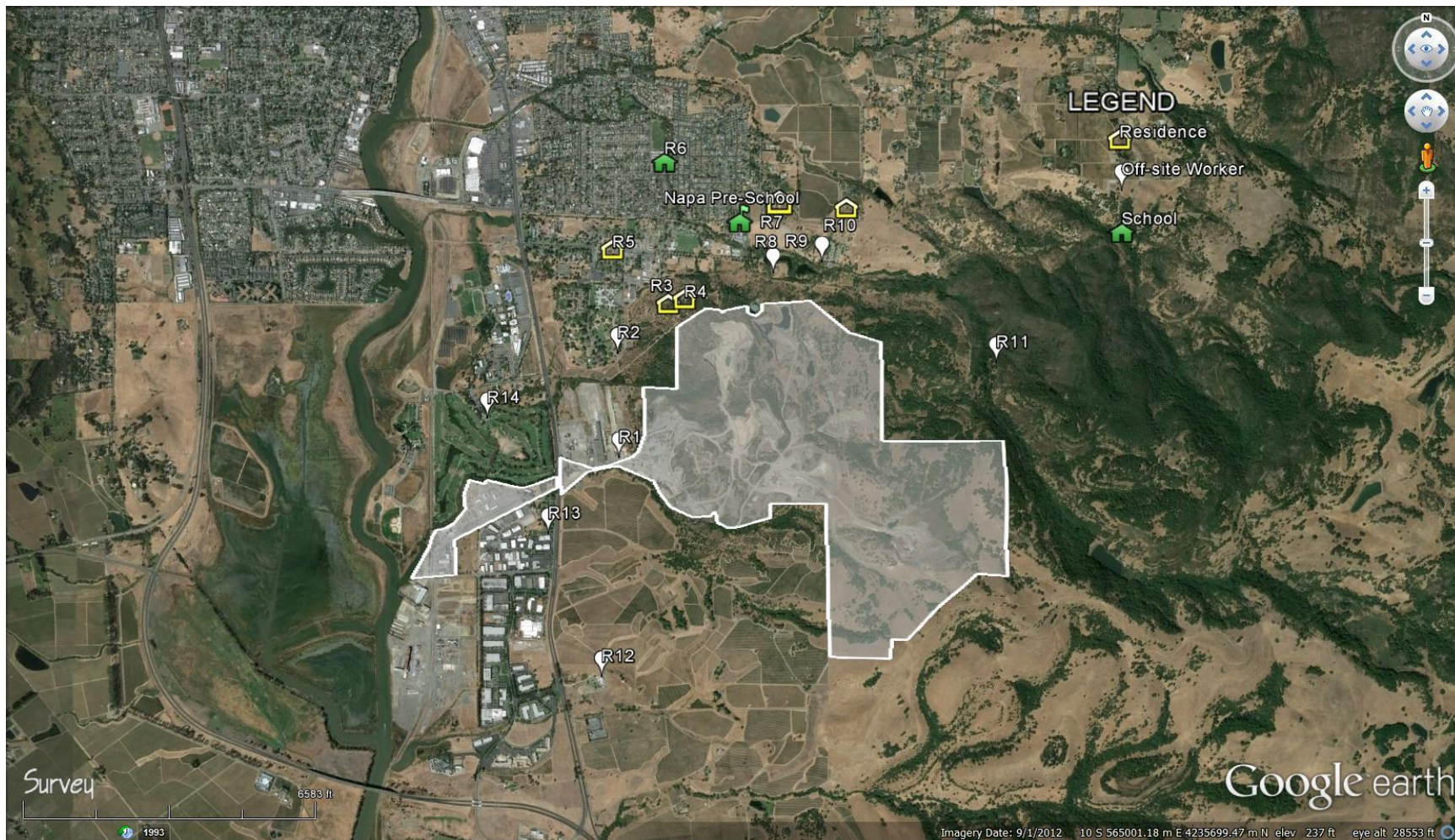
Source: DEIR Page 4.3-39.



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Receptors in Local Setting





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Local Health Risk Impact Results

	Incremental Risk			Cumulative Risk	
	Cancer (*)	Chronic (HI)	Acute (HI)	Cancer (*)	Chronic (HI)
Mitigated Project	8.8	0.05	0.085	94.3	1.2
Significance Threshold	10	1.0	1.0	100	10
Exceeds Significance Threshold?	No	No	No	No	No
Significant Impact?	No	No	No	No	No

*Cancer risk values are in units of excess cancer cases per one million individuals exposed.

Source: DEIR Pages 4.3-42 through 44.



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Local Criteria Pollutant Impact Results

	Incremental PM _{2.5}	Cumulative PM _{2.5}	Cumulative Carbon Monoxide
Mitigated Project	0.1	1.4	4.9
Significance Threshold	0.3	0.8	9
Exceeds Significance Threshold?	No	Yes	No
Significant Impact?	No	No *	No

* PM_{2.5} is not increasing on-site and regional impact is beneficial. Health risk assessment (HRA) is more precise evaluation of health risk from particulates than PM_{2.5} because it accounts for chemical composition of particles. BAAQMD method excludes road dust which is included in the modeling for this project for purposes of completeness and disclosure. The HRA predicts less than significant cumulative impact. Therefore, the PM_{2.5} impact is set aside in favor of the more precise HRA results.

Source: DEIR Pages 4.3-44 through 45.



Air Issues in Master Response

- Health effects of fugitive dust/silica.
- Health risk assessment methods.
- Effects at Skyline Regional Park and from removing Pasini Knoll.
- Dust deposition (vineyards, Arroyo Creek).
- BAAQMD wind data and other wind data.
- Adequacy of dust mitigation measures (other projects, air monitoring, load covering).



Respirable Crystalline Silica

- Does not cause cancer at ambient exposure levels. No approved cancer potency factor.
- Non-cancer effect is silicosis.
- Inhalation hazard only. Not a hazard if deposited into Arroyo Creek.
- Rock on-site is not high in crystalline silica.
- At pre-mitigation emissions levels, crystalline silica contributes 0.12 HI ($0.36 \mu\text{g}/\text{m}^3$).
- 0.12 HI less than threshold (1.0 HI).



Air Quality – Deposition and Wind Data

- High wind for blasting mitigation changed as suggested by commenter to 20 mph two-minute average.
- Wind direction fluctuates over time but should remain relatively constant from year to year. There are some years when wind is different (e.g., el Nino, la Nina).
- The 1973 EIR wind direction was primarily from the southwest. The current EIR shows wind primarily from the south.



Air Quality – Pasini Knoll Removal Effect

- Removing the knoll does not expose Skyline Park visitors to greater air flow or dust.
- Existing landform gently slopes. Streamlines of air can pass without disruption.
- Project landform has a steep slope with a sharp edge at the top.
- Increased turbulence and vertical mixing will reduce ground level pollutant concentrations.



Air Quality – Dust Mitigation (MM 4.3-2B)

- Applicable BAAQMD “Basic Construction Mitigation Measures” are included.
- Most sources controlled already by rule or permit condition.
- Mitigation comparable to other quarry projects.
- EIR demonstrates that less than significant PM_{10} and $PM_{2.5}$ emissions levels can feasibly be achieved with mitigation.



Air Quality – Air Monitoring

- County could require air monitoring as condition of approval but ensuring that the monitoring generates meaningful results is problematic for the following reasons:
 - Large site with many nearby sources of dust (i.e., agricultural activities, roads).
 - Upwind and downwind measurement required.
 - Monitor citing criteria limits available locations
- County is requiring emissions inventory instead.



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Truck Trip Distance

- Project attributed transportation emissions from 100% of forecasted growth in regional aggregates consumption.
- In this context the default in-county average commercial trip distance of 14.7 miles is appropriate.
- Additional analysis prepared that attributes fair share of regional growth and 30 mile trip shows EIR method emissions were 2.5 times greater and as such are conservative.



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Rail Trip Distance

- Historical rail haul was 5 to 10 miles because rock was used to build railroad.
- Small railroad engine emissions factors used with a 14.7 mile haul which is longer.
- Additional analysis prepared assuming line haul engine emissions factors and longer trips shows EIR emissions estimates are representative of either scenario.



Daily Significance Thresholds

- NO_x is the pollutant that exceeds first and mitigation reduces NO_x to less than 10 ton/yr.
 - $10 \text{ ton/yr} \div 365 \text{ day/yr} = 54.8 \text{ lb/day}$
 - $10 \text{ ton/yr} \div 250 \text{ day/yr} = 80 \text{ lb/day}$
- Facility may operate 24/7/365 but normal operation is 250 day/yr.
- If 10 ton/yr were emitted over only 250 days, then NO_x would exceed 54 lb/day threshold.



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Daily Significance Thresholds (continued)

- Using 365 days is appropriate because:
 - Baseline annual production is averaged over 5 years and does not reflect daily average.
 - Standard practice as implemented by the version of CalEEMod available at the time used Annual Average Daily Trips which uses 365 days/yr.
 - Non-peak hour emissions have diminished effect on frequency and severity of AAQS exceedences.
 - BAAQMD did not take issue with 365 day/yr.
- Mitigation measure text based on 250 day/yr is available in FEIR Appendix C, if warranted.



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BAAQMD Cumulative PM_{2.5} Threshold

- Rescinded after lawsuit yet contained in EIR.
- On-site PM_{2.5} emissions would be less than current levels. Potential beneficial impact.
- Health hazard depends on toxicity of chemical. Chemicals in dust represent less health risk as compared to chemicals in urban settings (e.g., combustion).
- Threshold intended for urban sources.
- Health risk assessment accurately represents health hazard and impact is less than significant.



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New Comments

Responses in recent memo (Sespe, 3/2/2016).

- Comment was that baseline dust emissions are misrepresented, Memo describes how they are accurate and conservative
- Memo describes how production and excavation amounts were used appropriately.
- Comment alleges that reclamation emissions were omitted however they were included.



Newhall Ranch Opinion

– GHG Issues:

- Business-as-usual (BAU) methodology upheld; but
 - Threshold criteria was (statewide average reduction of 29% by 2020) unsubstantiated for the project.
- Napa Quarry DEIR analysis used bright-line GHG thresholds published by BAAQMD, not BAU.
- No changes to DEIR are warranted.



Air Quality – Summary

- Emissions and health risk impacts are less than significant after mitigation.
- DEIR analysis was based on 2 million tons/yr but Project is now limited to 1.3 million tons/yr which will have lower impact.
- DEIR analysis is conservative.