

ATTACHMENT C.1

**EXXONMOBIL INTERIM TRUCKING FOR SYU PHASED
RESTART**

AIR QUALITY ANALYSIS

ExxonMobil Production Company, a division of Exxon Mobil Corporation (ExxonMobil or “Applicant”) is requesting approval from the Santa Barbara County Planning and Development Department and the Santa Barbara County Air Pollution Control District (APCD) for the onsite construction and operation of the ExxonMobil Interim Trucking for Phased Restart (Interim Trucking) activities. These activities include installation of a crude truck loading facility at Las Flores Canyon, including associated piping and components, to allow transfer of product from LFC to crude transport trucks for delivery to local markets. The emissions from the LFC interim trucking include both stationary source emissions from the operation of the truck loading facilities at LFC and the mobile source emissions from operation of the crude transport trucks delivering the product to markets.

Stationary Source

At LFC, the LFC interim trucking operation will result in additional air emissions of Reactive Organic Compounds (ROCs) and respective greenhouse emissions expressed in carbon dioxide equivalents (CO₂e). Emission sources include piping components necessary to transfer product, emissions occurring during the truck loading operations, and emissions from the transfer of truck vapors to the facility’s vapor recovery system. In addition, since the Bureau of Safety and Environmental Enforcement (BSEE) requires Lease Automatic Custody Transfer (LACT) units be installed for royalty measurement determination, the fugitive component category includes the emissions from these components based on preliminary engineering information.

The Interim Trucking facilities at LFC will include the following:

1. Installation of a truck rack at an existing previously disturbed pad at LFC just north of the Transportation Terminal (TT) [area designated as “Truck Loading Area”];
2. Installation of product transfer piping from a connection point in the TT to the Truck Loading Area to allow for the loading of trucks;
3. Installation of off-specification product transfer piping from the Truck Loading Area to a connection point in the TT to recycle product back to a crude storage tank;
4. Installation of vapor recovery piping from the Truck Loading Area to a connection point at the existing TT Vapor Recovery Compressor system to collect truck loading vapors. From the TT, the vapors will be routed to the Oil Treating Plant (OTP) and then to the Stripping Gas Treating Plant (SGTP) for compression, processing and use as fuel gas within the facility;
5. Installation of fuel gas piping from a connection point in the TT to the Truck Loading Area to automatically inject fuel gas into the vapor recovery system, as necessary, to reduce oxygen content to safe levels;

6. Installation of associated piping and components as well as electrical and communication connections to support the Interim trucking activities;
7. Installation of four (4) LACT units at the Truck Loading Area for royalty measurement as required by BSEE;
8. Installation of an operator shelter at the Truck Loading Area;
9. Excavation for pipe supports, and containment and drainage grading, as required;
10. Paving of selected area, as required

The emissions from the proposed loading operation are required to be controlled in accordance with the Best Available Control Technology (BACT) requirements defined in the APCD's rules pertaining to New Source Review. ExxonMobil will comply with this requirement by including a number of features during the truck loading operation to reduce or eliminate the release of hydrocarbons to the environment to the maximum extent practical as summarized below:

- Conduct Crude Oil Motor Carrier Safety Survey of selected trucking companies prior to use;
- Utilize low-leak transfer hose connections;
- Automatically inject plant fuel gas into loading vapor recovery system to reduce oxygen content to safe levels;
- Construct interconnecting piping (product, off-specification product, vapor, and fuel gas) with welded connections, wherever possible, and utilize low leak valves, wherever practical;
- Control truck vapors generated during loading by connecting to loading vapor recovery line that enters existing Transportation Terminal (TT) vapor recovery compressor system (operates at -5 psig);
- Transfer loading vapors with crude storage tank vapors to existing Oil Treating Plant (OTP) vapor recovery compressors for transfer to Stripping Gas Treating Plant (SGTP);
- Control truck loading vapors by routing to the Stripping Gas Treating Plant (SGTP) for conversion to fuel gas for plant operations (reduces fuel gas purchased to operate facility equipment);
- Include Interim Trucking piping, valves, and components in facility Leak Detection and Repair (LDAR) program;
- Inspect truck transport trailers and connections prior to and after each loading to verify proper operation and no leaks;

The Truck Loading Area will be designed to allow simultaneous loading of up to four (4) trucks at a time and up to eight (8) trucks in any hour. The Interim Trucking operations will be limited to a maximum of no more than seventy (70) trucks per day leaving LFC.

Additionally, as the SYU stationary source has previously triggered the requirement to provide emission offsets under the APCD's New Source Review regulation, all future projects must provide emission offsets. ExxonMobil will provide offsets in the form of emission reduction

credits (ERCs) for the stationary source emissions associated with the LFC interim trucking. The stationary source greenhouse gas emissions are not required to be offset.

The estimated stationary source emissions from the LFC interim trucking are summarized below. The analysis utilizes a minimum overall 95% vapor recovery efficiency (APCD default) during truck loading and vapor transfer operations as directed by the APCD.

Table C.1-1: Estimated Stationary Source Emissions

	ROC (TPY)	ROC (lb/day)	CO₂e (MT/yr)
Fugitive Hydrocarbon Components	10.65	58.38	44.8

ExxonMobil will work with the agencies with jurisdiction to appropriately mitigate the emissions associated with the LFC interim trucking to satisfy the compliance obligations as required by CEQA and the APCD. At this time, ExxonMobil proposes to purchase applicable SBC ERCs to provide to the APCD for the ROC emission increases.

Mobile Source

The LFC interim trucking will result in mobile emission from the exhaust gases generated during operation of the crude transport truck engines. These mobile sources include air emissions of criteria pollutants (Nitrogen Oxides (NO_x), Reactive Organic Compounds (ROC), Carbon Monoxide (CO), Sulfur Oxides (SO₂), and Particulate Matter (PM)) and greenhouse gas (GHG) emissions expressed in CO₂e.

Mobile source emissions are determined using the following factors: number of trucks per day transporting product to the unloading facility, distance each truck travels to and from unloading facility, number of trucks in fleet, and truck engine emissions based on T7 Tractor vehicle category utilizing emission rate data approach. The calculations assume that each truck returns to LFC after unloading at the designated facility to re-load.

In order to reduce emissions, ExxonMobil will require the trucking contractor to restrict trucks to only those that have a 2017 or newer model-year engine. The engine emissions are based on EMFAC2014 criteria pollutant and CO₂ emission factors for on-road vehicles per the California Air Resources Board's EMFAC2014 Web Database. Emissions were estimated for 2018 in Santa Barbara County for vehicle model years- 2017, 2018, 2019, with vehicle speeds aggregated. The Vehicle Category is based on EMFAC2011 vehicle definitions, applying the T7 Tractor vehicle type for both running exhaust and idle exhaust, as directed by the SBC APCD. The EMFAC2014 particulate matter emission factors are supplemented with US EPA factors for on-road vehicle paved road dust entrainment.

Two truck transport scenarios are provided to cover the most likely operating situations. In Scenario 1, all of the trucks (70 per day) will load product at LFC and travel to the P66 Santa Maria Terminal for unloading. All of the trucks are assumed to return to LFC for re-loading. In Scenario 2, 68 trucks per day will load product at LFC and travel to the Plains Pentland Terminal for unloading. All of the trucks are assumed to return to LFC for re-loading. On any particular day some portion of the total truck trips may go to P66 Santa Maria Terminal with the remainder going to Plains Pentland Terminal.

Note the estimated mobile source emissions associated with travel to the Plains Pentland Terminal incorporate the requirement to include both in-county and out-of-county truck travel emissions to account for the full impact of the project under CEQA. Since the P66 Santa Maria Terminal is located within Santa Barbara County, no out of county mobile source emission evaluation is necessary.

The estimated mobile source emissions for the project are summarized in the table below. The table provides both the total truck travel emissions in all counties (SBC/SLO/Kern) as well as the emissions in only Santa Barbara County. Under CEQA, the total mobile source emissions including both in-county and out-of-county truck travel emissions will be evaluated and compared to the SBC mobile emissions significance thresholds.

Based on the estimated emissions, both the NO_x daily significance threshold of 25 lb/day (mobile emissions) and the GHG annual significance threshold of 1,000 MT/yr of CO₂e will be exceeded.

ExxonMobil will work with the agencies with jurisdiction to appropriately mitigate the emissions associated with the LFC interim trucking to satisfy the compliance obligations as required by CEQA and the APCD.

Table: C.1-2: Estimated Mobile Source Emissions

Criteria Pollutants	ROC	NO _x	PM 10	CO	SO ₂	CO ₂ e
Scenario 1						MT/Yr
Total Trips Emissions (Lb/Day)	0.91	13.33	10.05	5.33	0.23	
SBC Only Trip Emissions (Lb/Day)	0.91	13.33	10.05	5.33	0.23	
Total Trip Emissions (Tons/Yr)	0.16	2.33	1.83	0.96	0.04	4.38k
Scenario 2						
Total Trips Emissions (Lb/Day)	2.25	32.51	25.13	13.23	0.57	
SBC Trip Emissions (Lb/Day)	0.93	13.65	10.30	5.47	0.23	
Total Trip Emissions (Tons/Yr)	0.41	5.83	4.59	2.40	0.10	10.95k

Note: Emissions based on 70 trucks per day for Scenario 1 and 68 trucks per day for Scenario 2

Stationary and Mobile Sources Combined

Combined stationary and mobile emissions are summarized in the table below. The ROC combined emissions exceed the CEQA significance threshold of 55 lbs/day. However, these emissions would be mitigated below the significance threshold after emission reduction credit offsets provided to the APCD for the stationary source are applied. Likewise, the GHG combined emissions exceed the CEQA significance threshold of 1,000 MT CO₂e/yr. These emissions will likely be mitigated through Cap and Trade credits and potentially an appropriate project.

ExxonMobil will work with the agencies with jurisdiction to appropriately mitigate the emissions (e.g., NO_x, GHG) associated with the LFC interim trucking to satisfy the compliance obligations as required by CEQA and the APCD.

Table C.1-3: Combined Stationary and Mobile Source Emissions

Criteria Pollutants	ROC	NO _x	PM 10	CO	SO ₂	CO _{2e}
Scenario 1						MT/Yr
Daily Stationary Source Emissions (Lb/Day)	58.38	0	0	0	0	44.8
Daily Mobile Source Emissions (Lb/Day)	0.91	13.33	10.05	5.33	0.23	4.38k
Daily Stationary + Mobile Source Emissions (Lb/Day)	59.29	13.33	10.05	5.33	0.23	4.42k
Scenario 2						
Daily Stationary Source Emissions (Lb/Day)	58.38	0	0	0	0	44.8
Daily Mobile Source Emissions (Lb/Day)	2.25	32.51	25.13	13.23	0.57	10.95k
Daily Stationary + Mobile Source Emissions (Lb/Day)	60.63	32.51	25.13	13.23	0.57	10.99k

Note: Stationary source emissions based on 70 trucks per day for Scenario 1 and 2.

Mobile source emissions based on 70 trucks/day for Scenario 1 and 68 trucks per day for Scenario 2.