

**DRAFT Engineering Evaluation: Sub-Slab Depressurization**  
**College for Certain, LLC**  
**1009 66<sup>th</sup> Avenue, Oakland, CA**  
**Application No. 30427; Plant No. 24665**

**Background**

College for Certain, LLC (CFC) has applied for an Authority to Construct for soil remediation at the site located at 1009 66th Avenue in Oakland, CA. CFC is a new facility.

**S-1 Sub-Slab Depressurization System consisting of two 150 scfm Obar Blowers**

The sub-slab depressurization (SSD) system proposed to mitigate this site consists of two blowers (S-1) each with a maximum capacity of 150 scfm. The applicant has stated that one of the blowers will be installed as a back-up only. For conservative purposes, emission estimates will be calculated assuming both blowers are in operation. Soil vapor samples taken for lab analysis have shown presence of petroleum hydrocarbons. However, the emissions estimates are well below Regulation 2-5 toxic thresholds. This project is expected to be exempt from Regulation 8-47-301 control requirements. The proposed system will not be abated.

The applicant will be conditioned to provide written notification at the start of the operation. Procedures are outlined in the conditions found below.

**Emission Calculations**

For a conservative estimate of yearly emissions, we shall assume that the system is operated for an entire year within an inlet concentration corresponding to the initial soil concentration level. Generalized assumptions follow:

- Operating conditions: Pressure = 1 Atm; Inlet Temperature = 21°C; 1 mole occupies 24.15L
- A combined influent flow rate of 300 cfm (2 blowers at 150 cfm each) was used to estimate emissions . Benzene, Ethyl Benzene, Toluene, Xylenes, Methyl tert-butyl ether (MTBE), Naphthalene, and Total Petroleum Hydrocarbons (TPH) were reported in soil vapor laboratory results submitted by the applicant. Maximum concentrations found in the report can be seen in Table 1. Example calculations can be seen below.

$$16,000 \frac{\mu g}{m^3} (TPH) \times 300 \frac{ft^3}{min} \times 1440 \frac{min}{day} \times \frac{1}{35.31} \frac{m^3}{ft^3} \times \frac{1}{4.54 \times 10^8} \frac{lb}{\mu g} = 0.43 \frac{lb}{day} (TPH; unabated)$$

$$0.43 \frac{lb}{day} (TPH) \times 365 \frac{day}{year} = 157.1 \frac{lb}{year} (TPH; unabated)$$

Table 1 – S-1 SSD System Emissions

Pollutant	Influent vapor concentration [µg/m <sup>3</sup> ]	Influent vapor concentration [ppmv]	Unabated Emission [lb/day]	Unabated Emission [lb/yr]
Benzene	22	0.01	0.00	0.2
Toluene	24	0.01	0.00	0.2
Ethyl Benzene	6	0.00	0.00	0.1
Xylene	31	0.01	0.00	0.3
MTBE	41	0.01	0.00	0.4
Naphthalene	8	0.00	0.00	0.1
TPH	16,000	4.35	0.43	157.1
<b>Total</b>	<b>16,132</b>	<b>4.38</b>	<b>0.43</b>	<b>158.4</b>

Table – 2 S-1 Criteria Emissions

Pollutant	lb/day	lb/yr	TPY
POCs	0.43	158.4	0.08

### Cumulative Increase

Table 3 – Plant Cumulative Emissions

Compound	Current Permitted Emissions, Post 4/5/91 (TPY)	New Emission Increase with A/N 30427 (TPY)	Cumulative Emissions (TPY)
NPOCs	0.0	0.08	0.08

### Toxic Risk Screening

Table 4 – S-1 Toxic Review

Toxic Pollutant	Unabated Emission (lb/hr)	Unabated Emission (lb/yr)	Acute Trigger lb/hr	Chronic Trigger lb/yr	HRA required
Benzene	2.47E-05	2.16E-01	0.06	2.90E+00	N
Toluene	2.69E-05	2.36E-01	82.0	1.20E+04	N
Ethyl Benzene	6.84E-06	5.99E-02	-	3.30E+01	N
Xylene	3.48E-05	3.04E-01	49.0	2.70E+04	N
MTBE	4.61E-05	4.04E-01	-	1.60E+02	N
Naphthalene	9.30E-06	8.15E-02	-	2.40E+00	N

The proposed project is not expected to exceed toxic trigger levels in Table 2.5.1.

### **New Source Review**

The proposed project will not emit more than 10 lb/day of any criteria pollutant. Facility not subject to Reg 2-2-301. Offsets are not applicable for this application, as emissions do not exceed 10 tons/yr. Facility not subject to Reg 2-2-302.

### **CEQA**

The project is considered to be ministerial under the Districts proposed CEQA Regulation 2-1-311 and therefore is not subject to CEQA review. The engineering review for this project requires only the application of standard permit conditions and standard emission factors and therefore is not discretionary as defined by CEQA. This project is in compliance with Chapter 9.2 of the permit handbook.

### **Compliance**

Based on the information submitted, this operation is to be exempt of Regulation 8-47-30 requirements per Regulation 8-47-113. The operation is expected to be in compliance with 8-47-302.

This project is within 1,000 ft of Aspire Golden State College Prep Academy and Aurum Preparatory Academy. Therefore, the facility is subject to the public notification requirements of Regulation 2-1-412. PSD, NSPS, and NESHAPS are not triggered.

### **Permit Conditions**

Permit Condition # XXXXX

1. S-1 shall consist up to two blowers. The owner/operator shall not exceed 150 scfm for each single blower located at S-1. In no event shall the Toxic Air Contaminants (TACs) emissions to the atmosphere from S-1 exceed the respective chronic trigger levels in District's Regulation 2-5, Table 2-5-1. [Basis: Cumulative Increase, Regulation 2-5].
2. The owner/operator of this source shall maintain the following records for each month of operation of the source:
  - a. The hours and times of operation.
  - b. Each monitor reading or analysis result for the day of operation they are taken.
  - c. Total throughput of soil vapor from source S-1 in Standard Cubic Feet.

All measurements, records and data required to be maintained by the owner/operator shall be retained and made available for inspection by the District for at least two years following the date the data is recorded. [Basis: Regulation 1-523]

3. The owner/operator of S-1 shall report any non-compliance with these conditions to the Compliance and Enforcement Division at the time that it is first discovered. The owner/operator of S-1 shall detail the corrective action taken and include the data showing the exceedance as well as the time of occurrence in the submittal. [Basis: Cumulative Increase, Regulation 2-5]

4. The owner/operator if S-1 shall maintain a file containing all measurements, records and other data that are required to be collected pursuant to the various provisions of this conditional Authority to Construct/Permit to Operate. All measurements, records and data required to be maintained by the owner/operator shall be retained for at least two years following the date the data is recorded. [Basis: Regulation 1-523]
5. Upon final completion of the remediation project, the operator of Source S-1 shall notify the Engineering Division within two weeks of decommissioning the operation. [Basis: Cumulative Increase, Regulation 2-5, TBACT]

### **Recommendation**

The District has reviewed the material contained in the permit application for the proposed project and has made a preliminary determination that the project is expected to comply with all applicable requirements of District, state, and federal air quality-related regulations. The preliminary recommendation is to issue an Authority to Construct for the equipment listed below. However, the proposed source is located within 1000 feet of a school, which triggers the public notification requirements of District Regulation 2-1-412.6. After the comments are received from the public and reviewed, the District will make a final determination on the permit.

I recommend that the District initiate a public notice and consider any comments received prior to taking any final action on issuance an Authority to Construct for the following source

#### **S-1 Sub-Slab Depressurization System consisting of two 150 scfm Obar Blowers**

by \_\_\_\_\_  
Ali Roohani

June 2, 2020