DRAFT ENGINEERING EVALUATION

Facility ID No. 23819
Certified Blue Recycling, Inc
2075 Williams Street, San Leandro, CA 94577
Application No. 32163

Background

Certified Blue Recycling, Inc (CBR) has applied for an Authority to Construct and/or Permit to Operate seeking an increase in waste received at their construction demolition and inert (CDI) waste recycling facility in San Leandro, CA. The project includes the following emissions sources and equipment.

S-1 Comingled and Separated Construction, Demolition, and Inert waste stockpiles
350 tons/day; 85,000 tons/year
Abated by A-1, part of facility wide water spray system

S-2 Portable Tub Grinder; Wood waste, 100 tons/hr rated capacity; 1,000 tons/day; 21,750 tons/year, registered under DOORS program
Abated by A-2, part of facility wide water spray system

S-3 Wood waste stockpiles
350 tons/day; 21,750 tons/year
Abated by A-3, part of facility wide water spray system

A-1, A-2 and A-3 Facility wide spray system; 140 gallons per minute with city water

Certified Blue Recycling, Inc recently received their Large Volume Transfer and Processing Permit from CalRecycle allowing the facility to process up to 350 tons per day of construction and demolition debris. The new permit represents a 101% increase from their former Medium Volume permit that allowed 174 tons per day and was permitted with the District under application 28509. All the material accepted at the facility meets the definition of CDI debris in CCR Title 14, Division 7, Chapter 3, article 5.9, section 17381. Other waste potentially found in incidental amounts such as mattresses, waste tires, municipal solid waste, putrescible wastes, friable (and non-friable) asbestos, clean out, junk, e-waste, universal waste, household hazardous wastes, used paint and green waste, may only be accepted at the facility if it is incidental and part of construction and demolition work. They also accept source separated wood waste such as spent crate material. All stockpiles of incoming comingled, source separated, or onsite separated CDI waste are permitted under S-1.

The wood waste received is chipped and ground by a portable tub grinder that operates onsite for a maximum of 10 hours a day. The grinder is permitted as S-2 but note that CBR does not own a portable grinder. The portable tub grinder is rented and may not be the same grinder in every instance. It will be powered by a portable diesel engine that is registered as an off-road diesel vehicle through CARB's DOORS program. The grinder that was considered as an example is registered under EIN AP7W64. The segregated wood waste stockpiles intended to be chipped and the chipped wood product resulting from S-2 are both permitted as S-3. All inbound trucks and outbound trucks are weighed at the site.

The wood waste is not destined for biofuel. The processed wood has been used to produce Alternative Daily Cover (ADC). In the past, CBR has shipped ADC to both the Hay Road landfill in Vacaville and the Fink Road Landfill in Crows Landing. ADC approval letters from these facilities are contained in appendix A of the Solid Waste Permit.

In this application, the facility proposes an increase in throughput to S-1 from 40,000 tons/year to 85,000 tons of CDI including a maximum throughput of 10,675 tons per year of concrete (12.6% of total CDI) and 12,810 tons of gypsum (15.1% of total CDI). S-2 and S-3 will have an increase from 20,000 tons/year to 21,750 tons/year of wood waste.

This evaluation report will discuss compliance of the proposed changes with all applicable rules and regulations.

Emissions

Particulate emissions will be the primary pollutant generated from vehicle traffic and the unloading, storage, processing and reloading of waste materials. These emissions are characterized as PM10 and Total Suspended Particles (TSP or PM30). No or negligible VOC emissions are expected from the sources.

Particulate emissions from S-1 and S-2 are based on the methodology described in BAAQMD permit Handbook Chapter 11.7 while particulate emissions from S-2 are based on Chapter 11.13. Emissions from the proposed sources will come from a combination of material transfer/drop points, wind erosion, road dust from vehicle traffic and grinding action as appropriate.

Table 1 summarizes the uncontrolled PM emission factors used for each source.

Table 1: Uncontrolled PM_{10} and PM_{30} (TSP) emission factors for S-1, S-2, and S-3

Source Description	Emission factor equation*	Uncontrolled Emission factor (PM_{10})	Uncontrolled Emission factor (PM_{30})	Units	Reference	Control Efficiency+
S-1: CDI Stockpiles (**1.3 acres** and with **5 drop points**)	$E1 = k1 * 0.0032 * (U/5)\text{^}1.3 \div (M/2)\text{^}1.4$ Material transfer emission per drop	0.0016	0.0033	lb/ton/drop point	Equation 1, AP-42 Chapter 13.2.4	70%
	$E2 = k2 * sL\text{^}0.91 * (W)\text{^}1.02$ Paved road dust emissions	0.333	1.665	lb/VMT	Equation 1, AP-42 Chapter 13.2.1	
	$E3 = 1.7\ or\ 3.5$ Wind erosion emissions	1.7	3.5	lb/acre/day	Table 8.19.1-1 of EPA AP-42, Fourth Edition, Chapter 8.19.1	
S-2: Tub Grinder (with **2 drop points**)	$E1 = k1 * 0.0032 * (U/5)\text{^}1.3 \div (M/2)\text{^}1.4$ Material drop point emissions	0.0009	0.0019	lb/ton/drop point	Equation 1, AP-42 Chapter 13.2.4	50%
	$E2 = 0.0144\ or\ 0.024$ Grinding emissions	0.0144	0.024	lb/ton	BAAQMD Permit Handbook Chapter 11.13	
S-3: Wood stockpile (**0.2 acres** and with **5 drop points**)	$E1 = k1 * 0.0032 * (U/5)\text{^}1.3 \div (M/2)\text{^}1.4$ Material transfer emission per drop	0.0005	0.001	lb/acre/day	Equation 1, AP-42 Chapter 13.2.4	70%
	$E2 = k2 * sL\text{^}0.91 * (W)\text{^}1.02$ Paved road dust emissions	0.333	1.665	lb/VMT	Equation 1, AP-42 Chapter 13.2.1	
	$E3 = 1.7\ or\ 3.5$ Wind erosion emissions	1.7	3.5	lb/acre/day	Table 8.19.1-1 of EPA AP-42, Fourth Edition, Chapter 8.19.1	

+Abatement efficiency assumed for S-1 and S-3 by watering stockpiles/roads without chemical dust suppressants. S-2 for water suppression of grinding operation.
* Equation parameters are described in Table 2. The material transfer and wind factors would be multiplied by the number of drop points & acreage.

Note: S-1 and S-3 have 5 drop points i.e., (1) from truck to stockpile, (2) stockpile to off-road equipment, (3) offroad equipment to separated stockpile, (4) separated stockpile to offroad equipment and (5) offroad equipment to outbound truck. S-2 has 2 drop points i.e., (1) from excavator into grinder and (2) from tub grinder conveyor onto chipped wood stockpile. The controlled emission factors are obtained from the uncontrolled factors reduced by the control efficiency.

Calculation example for uncontrolled material transfer/drop emission factor

An example using S-1: $= 0.35 * 0.0032 * \left(\frac{8.2}{5}\right)^{1.3} \div \frac{2.5}{2}^{1.4} = \frac{0.0016\ lb\ PM\ 10}{ton\ material\ transferred\ per\ drop\ point}$

Calculation example for uncontrolled paved road dust emission factor

An example using S-1: $= 0.0022 * 7.4^{0.91} * (\ 23\ )^{1.02} = (\frac{0.33\ lb\ PM10}{VMT})$

Table 2: Parameters used in the emission factor equations

Parameters		Units	$PM_{2.5}$	PM_{10}	PM_{30}	Reference/Basis
Particle Size Multiplier, drop points	k1	unitless	0.053	0.35	0.74	AP-42, Chapter 13.2.4
Particle Size Multiplier, road dust	k2	lb/VMT	0.00054	0.0022	0.011	AP-42, Table 13.2.1-1
Silt Loading Factor	sL	g/m^2	7.4	7.4	7.4	AP-42, Table 13.2.1-3
Mean truck fleet weight	W	tons	23	23	23	Applicant provided data
Wind speed	U	MPH	8.2	8.2	8.2	BAAQMD Permit Handbook Chapter 11.7
Moisture content, CDI waste	M	%	2.5	2.5	2.5	Applicant provided data
Moisture content, wood waste	M	%	6	6	6	Applicant provided data

Table 3: Fleet weight details provided by applicant

Equipment type	Loaded weight (tons)	Unloaded weight (tons)	Volumetric capacity	Daily Number to facility
Inbound to S-1	13.2	10	1-90 yards	184
Outbound from S-1	30.6	17.3	10-90 yards	42
Inbound to S-3	12.1	9.9	1-90 yards	22
Outbound from S-3	35.5	16.3	10-90 yards	8

Table 4: Onsite mobile equipment details provided by applicant

Onsite mobile equipment	Loaded weight (tons)	Unloaded weight (tons)
Bobcat loader 1	3.1	2.7
Bobcat loader 2	5	4
Caterpillar loader	4.2	3.7
Kawasaki loader	22.3	20.8
Caterpillar material handler	27.2	26.2
Volvo excavator	24.7	23.7
The average capacity of onsite mobile equipment is 0.9 tons/truck		

Hourly Emissions:

Hourly emissions for S-1 are based on the post-project, peak-hourly, inbound traffic of 18 trucks, and load capacity of 3.2 tons per inbound truck as derived from table 2, equating to a throughput of 57.6 tons per hour.

Hourly emissions for S-2, and S-3 are based on the maximum rated capacity of 100 tons per hour for grinder. Hourly emissions for S-3 are based on the assumption that the chopped wood stockpile will be formed at the same rate material is chipped in S-2.

Daily Emissions:

The solid waste permit limits the combined throughput of all types of waste streams. (S1 and S3) at the facility to 350 tons per day. However, the worst maximum daily (worst case) emissions for S-1 are based on 350 tons per day as it is possible to have all waste received on a day to be entirely composed of CDI waste i.e. (S-1 =350 tons/day, S-3 = 0 tons/day) or wood i.e., (S-1 =0 tons/day, S-3 = 350 tons/day). Although, the applicant anticipates wood waste to take up a miniscule amount of inbound waste. Maximum daily emissions for S-2 are based on the maximum rated capacity of the grinder at 100 tons per day and maximum operating time of 10 hours/day.

Annual Emissions:

Annual emissions for S-1 and S-3 are based on the proposed throughput of 85,000 tons per year and 21,750 tons per year respectively.

Annual emissions for S-2 are based on the throughput of 21,750 tons per year as limited by S-3.

Onsite Vehicle and Equipment Travel Emissions

These emissions from vehicles and equipment travel on the paved onsite roads are based on the quantity of material hauled, truck capacities and trip distances summarized in table 5.

Table 5: Parameters used to estimate vehicle trip numbers for S-1 and S-3

Equipment	Truck load*	Round trip per truck+	Reference
Inbound	3.2 tons/truck to S-1 2.2 tons/truck to S-3	0.5 miles	Applicant submitted data and Google Earth
Outbound	13.3 tons/truck from S-1 19.2 tons/truck from S-3	0.5 miles	Applicant submitted data and Google Earth
Onsite mobile equipment	0.9 tons/truck	0.033 miles	Applicant submitted data and Google Earth

*Difference between inbound truck weight and outbound truck load to each source.

+Onsite distance is a conservative estimate

Bulk density from guidance: https://epa.gov/sites/production/files/2016-04/documents/volume_to_weight_conversion_factors_memorandum_04192016_508fnl.pdf

i.e., average bulk density of CDI waste = 484 lb/CY and average bulk density of wood chips, dry = 243 lb/CY

Table 6: Vehicle Trips and Vehicle Miles Travelled (VMTs) by source.

Frequency	Source	Inbound trips*	Outbound trips**	Onsite hauling trips***	VMTs =∑ (Trips x roundtrip distance) by vehicle type	Maximum VMTs
Hourly+	S-1	18	4.3	64	13.29 miles	**43 miles/ hour**
	S-3	45.5	5.2	111.1	29.01 miles	
Daily++	S-1	109.4	26.3	388.9	80.73 miles	**183 miles/ day**
	S-3	159.1	18.2	388.9	101.55 miles	

Frequency	Source	Inbound trips*	Outbound trips**	Onsite hauling trips***	VMTs =∑ (Trips x roundtrip distance) by vehicle type	Maximum VMTs
Annual+++	S-1 & S-3	60,000	12,000	118,612	39,932 miles	**39,932 miles/ year**

+Hourly tonnage= 49. ++Daily tonnage=350. +++Annual tonnage=85,000 for S-1 and 21,750 for S-2 and S-3.
*Vehicle trips=Total tonnage divided by truck load i.e. S-1 and S-3 having 3.2 tons and 2.2 ton loads respectively.
**Vehicle trips=Total tonnage divided by truck load i.e. S-1 and S-3 with 13.3 tons and 19.2 ton loads respectively.
***Vehicle trips=Total tonnage divided by average truck load i.e. S-1 and S-3 trucks with 0.9 tons loads.

Emissions from wind erosion of stockpiles

The average exposed surface areas for S-1 and S-3 were estimated to be 1.3 acres and 0.2 acres respectively. The exposed surface areas were estimated based on the footprint area from the site plan. Note that the wind erosion emission factor of 1.7 lb PM_{10}/acre-day and 3.5 lb PM_{30}/acre-day is most applicable to finer material such as sand, gravel and crushed stone so using it for S-1 and S-3 would overestimate emissions since the CDI and wood waste are heavier and less susceptible to wind agitation/erosion.

Total Emissions

Table 7 summarizes total uncontrolled PM_{10} emissions for all sources while Table 8 summarizes total controlled PM_{10} emissions.

Table 7: Total uncontrolled PM_{10} emissions for S-1, S-2, and S-3.

Source	Description	Hourly emissions (lbs/hr)	Daily emissions (lbs/day)	Annual emissions (tons/year)
S-1	Construction Demolition and inert waste (CDI)	4.96	31.82	7.38
S-2	Tub Grinder	1.53	15.32	0.17
S-3	Wood waste	9.90	34.95	0.09
TOTAL		16.40	82.09	7.64

Calculation example for daily total uncontrolled PM_{10} emissions using S-1
S-1: $= (0.333 * 80.7) + (0.0016 * 5 * 350) + (1.7 * 1.3) = 31.8\ lbs/day$

Table 8. Total controlled PM_{10} emissions for S-1, S-2, and S-3.

Source	Description	Control Efficiency	Hourly emissions (lbs/hr)	Daily emissions (lbs/day)	Annual emissions (tons/year)
S-1	Construction, Demolition, and inert waste (CDI)	70%	1.49	9.55	2.21
S-2	Tub Grinder	50%	0.77	7.66	0.08
S-3	Wood waste	70%	2.97	10.49	0.03
TOTAL			**5.23**	**27.69**	**2.32**

More information on emissions calculations is available in the application file.

Plant Cumulative Increase

Table 9 summarizes the cumulative increase in criteria pollutant emissions resulting from this project. The preexisting cumulative emissions are from when the plant was first permitted, and this project represents emissions resulting from the increased throughput at S-1, S-2, and S-3.

Table 9. Plant Cumulative Emissions Increase, Post 4/5/91

Pollutant	Existing Emissions Post 4/5/91 (tons/year)	Application Emissions Change (tons/year) *	Cumulative Emissions (tons/year)
NOx	0	0	0
POC	0	0	0
CO	0	0	0
PM_{10}	0.717	1.607	2.324
$PM_{2.5}$	0.232	0.395	0.627
SO_2	0	0	0

* The difference between the post project cumulative emissions and the pre-existing emissions at the plant.

Best Available Control Technology (BACT)

Per Regulation 2-2-301, an Authority to Construct and/or Permit to Operate for a new source shall require BACT to control emissions of a District BACT pollutant as defined in Regulation 2-2-210 if the source will have the potential to emit that pollutant in an amount of 10.0 or more pounds on any day, as defined in Regulation 2-2-301.1.

Table 7 shows the uncontrolled emissions for each source S-1, S-2, and S-3 exceed 10.0 lb/day. However, as defined under Regulation 2-1-217, the controlled emissions summarized in table 8 constitute the Potential to Emit (PTE) of the sources. S-1 and S-2 have a PTE less than 10 lbs/day so the BACT requirement for PM_{10} is not triggered for these sources. S-3 has a PTE of 10.49 lbs/day thus requires a BACT review.

Per Air District Regulation 2-2-202, BACT is defined as the most stringent emissions limitation, control device, or control technique that is technologically feasible and cost-effective (BACT 1) or is achieved in practice at other similar sources (BACT 2). BACT 1 is the more stringent level of BACT control and refers to the most effective control devices or techniques that are commercially available, demonstrated effective and reliable, and shown to be cost-effective on a dollar per ton of pollutant removed basis. If a potential BACT 1 control is determined to be technologically feasible and cost-effective, then it will constitute BACT for the source(s) in question. If potential BACT 1 control(s) are determined to be not feasible or not cost-effective, then BACT 2 control(s) will constitute BACT and therefore must be implemented. BACT 2 applies to the most effective emission control technology or most stringent emission limit that is achieved in practice for the type and capacity of equipment/operation comprising the source under review. To be categorized as BACT 2, the control technology or emission limit must be demonstrated to be achieved in practice for the source type under review operating under similar conditions (e.g. similar process throughput, material usage, hours of operation, site-specific limitations or opportunities, etc.). If a control technology or emission limit is achieved in practice under unsimilar conditions for the source in question, it will be considered under the category of BACT 1 for the BACT analysis.

The control technology proposed by the facility is water spray/wet suppression at all transfer points and watering of the stockpiles. The facility already possesses and operates a water spray system to abate particulate emissions at the entire facility --not just S-3. Water spray will be considered BACT 2 and satisfies the BACT requirement for S-3. The use of the facility wide water spray system (A-1, A-2, and A-3) will be required by enforceable permit conditions, it is considered a part of the physical and operational design of the sources.

Health Risk Assessment (HRA) and TBACT

Pursuant to Regulation 2-5, all TAC emissions from new and modified sources are subject to risk assessment review, if the emissions of any individual Toxic Air contaminant (TAC) exceed either the acute or chronic emissions thresholds defined in Regulation 2-55, Table 2-5-1.

No TAC emissions are expected from the wood waste stockpiles and their grinding operation. However, these emissions from the CDI stockpile and fugitive dust from truck operations will depend on the composition of the material accepted onsite – particularly heavy metals and crystalline silica. From this project, the emission rate for **arsenic and crystalline silica** exceeds the toxic trigger levels set forth in Table 2-5-1 therefore, a Health Risk Analysis was carried out.

A health risk assessment (HRA) was completed for the above referenced permit application. The HRA estimates the health risk resulting from toxic air contaminant (TAC) emissions from an increase of throughput at the facility. The increased emissions include Permitted Source S-1 and the plant wide Fugitive Dust source. Results from the HRA indicate that the project cancer risk is **0.29 in a million**, the project chronic hazard index (HI) is **0.62**, and the project acute HI is **0.060**.

Best Available Control Technology for Toxics (TBACT)

In accordance with District Regulation 2-5-301, TBACT is triggered because the estimated source risk is greater than a cancer risk of 1.0 in a million and/or a chronic HI of 0.20. Specifically, the Fugitive Dust source individually contributes a **chronic HI of 0.57** (91.8% of the Worker chronic HI). Since TBACT is triggered for the site roads of this project, the cost of controls is not considered. Only feasibility and effectiveness are considered.

Water spray with chemical suppressants will not be considered TBACT because chemical suppressants that control dust from roadways are designed to work on unpaved roads. The combination of paving roads, water flushing, restricting vehicle speeds and regular street sweeping are more effective at controlling PM emissions from site roads.

In order to meet TBACT for road dust, limiting visible emissions to 10% opacity, continued use of the facility wide water spray system and limiting onsite vehicle traffic to 15 mph is proposed. These will be reflected in enforceable permit conditions.

Since the estimated project cancer risk does not exceed 6.0 in a million and hazard indices do not exceed 1.0, this project complies with the District's Regulation 2-5-302 project risk requirements for projects located within an Overburdened Community as defined in Regulation 2-1-243.

Hourly and annual emission rates of Toxic Air contaminants (TAC) based on PM_{30} are summarized in Table 10.

Note that the basis for TSP (PM_{30}) to calculate metallic toxics from particulate sources is the CARB Emission Inventory Criteria and Guidelines document (Hearing date November 19, 2020 and approved by OAL on March 21, 2022) for the AB2588 Air Toxics Hot Spots Act:https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2020/hotspots2020/eicgfro.pdf; particularly on page 59, Section VIII.H.

Table 10. TAC emissions from S-1 as based on PM_{30}.

S-1: CDI Stockpile	Maximum Hourly emissions (Acute) lbs/hr	Annual emissions (Chronic) lbs/yr	Acute Trigger level	Is the Acute HRA triggered?	Chronic Trigger level	Is the Chronic HRA triggered?
Antimony (Sb)	0.00E+00	0.00E+00	---	No	---	No
Arsenic (As)	5.23E-07	1.76E-04	8.80E-05	No	1.60E-03	No
Beryllium	1.05E-08	3.53E-06	---	No	3.40E-02	No
Cadmium (Cd)	1.46E-09	4.95E-07	---	No	1.90E-02	No
Hex Chromium (Cr+6)*	4.39E-08	1.48E-05	---	No	5.10E-04	No
Cobalt (Co)	0.00E+00	0.00E+00	---	No	1.10E-02	No
Copper (Cu)	0.00E+00	0.00E+00	4.40E-02	No	---	No
Crystalline Silica[1a]	5.41E-02	1.83E+01	---	No	1.20E+02	No
Crystalline Silica[2a]	1.63E-03	6.59E-01	---	No	1.20E+02	No
Elemental Carbon (EC)	0.00E+00	0.00E+00	---	No	---	No
Lead (Pb)	1.55E-07	5.23E-05	---	No	2.90E-01	No
Manganese (Mn)	2.62E-06	8.85E-04	---	No	3.50E+00	No
Mercury (Hg)	6.70E-10	2.26E-07	2.70E-04	No	2.10E-01	No
Nickel (Ni)	5.10E-07	1.72E-04	8.80E-05	No	3.10E-01	No
Phosphorus (P)	0.00E+00	0.00E+00	---	No	---	No
Selenium (Se)	1.12E-07	3.79E-05	---	No	8.00E+00	No
Vanadium (V)	0.00E+00	0.00E+00	1.30E-02	No	---	No

* Based on Hex Chromium fractions taken as 9% average of Total Chromium in concrete. Refer to Application 30122.

[1a] Respirable crystalline silica emissions from concrete; Based on wt% in PM4 and normalized to PM10; it is assumed to be the same in PM30. Refer to Previous application 28509 at same facility and AN 30122

[2a] Based on attached Safety Data Sheet from SHEETROCK Brand Gypsum boards stating 0.56% respirable crystalline silica and 85% Gypsum overall i.e. 0.56%*85%

Table 11. TAC emissions from facility wide fugitive road dust based on PM_{30}.

Plant wide fugitive dust	Maximum Hourly emissions (Acute) lbs/hr	Annual emissions (Chronic) lbs/yr	Acute Trigger level	Is the Acute HRA triggered?	Chronic Trigger level	Is the Chronic HRA triggered?
Antimony (Sb)	0.00E+00	0.00E+00	---	No	---	No
Arsenic (As)	3.23E-05	3.83E-03	8.80E-05	No	1.60E-03	No
Beryllium	6.46E-07	7.66E-05	---	No	3.40E-02	No
Cadmium (Cd)	9.06E-08	1.07E-05	---	No	1.90E-02	No
Hex Chromium (Cr+6)*	2.72E-06	3.22E-04	---	No	5.10E-04	No
Cobalt (Co)	0.00E+00	0.00E+00	---	No	1.10E-02	No
Copper (Cu)	0.00E+00	0.00E+00	4.40E-02	No	---	No
Crystalline Silica[1a]	3.35E+00	3.97E+02	---	No	1.20E+02	Yes
Crystalline Silica[2a]	1.01E-01	1.43E+01	---	No	1.20E+02	No
Elemental Carbon (EC)	0.00E+00	0.00E+00	---	No	---	No
Lead (Pb)	9.59E-06	1.14E-03	---	No	2.90E-01	No
Manganese (Mn)	1.62E-04	1.92E-02	---	No	3.50E+00	No
Mercury (Hg)	4.15E-08	4.91E-06	2.70E-04	No	2.10E-01	No
Nickel (Ni)	3.15E-05	3.74E-03	8.80E-05	No	3.10E-01	No
Phosphorus (P)	0.00E+00	0.00E+00	---	No	---	No
Selenium (Se)	6.94E-06	8.23E-04	---	No	8.00E+00	No
Vanadium (V)	0.00E+00	0.00E+00	1.30E-02	No	---	No

* Based on Hex Chromium fractions taken as 9% average of Total Chromium in concrete. Refer to Application 30122.

[1a] Respirable crystalline silica emissions from concrete; Based on wt% in PM4 and normalized to PM10; it is assumed to be the same in PM30. Refer to Previous application 28509 at same facility and AN 30122

[2a] Based on attached Safety Data Sheet from SHEETROCK Brand Gypsum boards stating 0.56% respirable crystalline silica and 85% Gypsum overall i.e. 0.56%*85%

Table 11. Total TAC emissions from S-1 and fugitive road dust based on PM_{30}.

Total TACs	Maximum Hourly emissions (Acute) lbs/hr	Annual emissions (Chronic) lbs/yr	Acute Trigger level	Is the Acute HRA triggered?	Chronic Trigger level	Is the Chronic HRA triggered?
Antimony (Sb)	0.00E+00	0.00E+00	---	No	---	No
Arsenic (As)	3.28E-05	4.01E-03	8.80E-05	No	1.60E-03	Yes
Beryllium	6.57E-07	8.01E-05	---	No	3.40E-02	No
Cadmium (Cd)	9.20E-08	1.12E-05	---	No	1.90E-02	No
Hex Chromium (Cr+6)	2.76E-06	3.37E-04	---	No	5.10E-04	No
Cobalt (Co)	0.00E+00	0.00E+00	---	No	1.10E-02	No
Copper (Cu)	0.00E+00	0.00E+00	4.40E-02	No	---	No
Crystalline Silica	3.50E+00	4.30E+02	---	No	1.20E+02	Yes
Elemental Carbon (EC)	0.00E+00	0.00E+00	---	No	---	No
Lead (Pb)	9.74E-06	1.19E-03	---	No	2.90E-01	No
Manganese (Mn)	1.65E-04	2.01E-02	---	No	3.50E+00	No
Mercury (Hg)	4.21E-08	5.14E-06	2.70E-04	No	2.10E-01	No
Nickel (Ni)	3.20E-05	3.91E-03	8.80E-05	No	3.10E-01	No
Phosphorus (P)	0.00E+00	0.00E+00	---	No	---	No
Selenium (Se)	7.05E-06	8.61E-04	---	No	8.00E+00	No
Vanadium (V)	0.00E+00	0.00E+00	1.30E-02	No	---	No

Offsets

Emission offset requirements for POC, or NOx are set out in Regulation 2, Rule 2, Section 302. POC and NOx offsets are required for new or modified sources at a facility that emits or will be permitted to emit 10 tons per year or more of that pollutant. Offsets for POC and NOx are not required for this application.

Emission offset requirements for $PM_{10,}$ $PM_{2.5}$, and SOx are specified in Regulation 2, Rule 2, Section 303. Per Section 303, $PM_{10,}$ $PM_{2.5}$, and SOx emission offsets are required for any new or modified source that is a major facility for $PM_{10,}$ $PM_{2.5}$, or SOx emissions. As per Regulation 2-6-212, Certified Blue Recycling is not a major facility for $PM_{10,}$ $PM_{2.5}$, and SOx emissions.

As shown in Table 12, the facility wide, post project permitted emissions will not exceed 10 tons per year for NOx or POC. Therefore, offsets for NOx or POC are not required for this application.

Table 12. Total Facility emissions and Offset requirement.

Pollutant	Existing Annual Emissions (TPY)	Application Annual Emissions (TPY)	Adjusted Facility Emissions (TPY)	Offset Requirement (TPY)	Offset Required
NOx	0	0	0	>10	NO
POC	0	0	0	>10	NO
CO	0	0	0	-	NO
PM_{10}	0.717	2.324	2.324	≥100	NO
$PM_{2.5}$	0.232	0.627	0.627	≥100	NO
SO_2	0	0	0	≥100	NO

Statement of Compliance

The owner/operator is expected to comply with all applicable requirements. Key requirements are listed below:

Regulation 6-1 (*Particulate Matter – General Requirements*)

S-1, S-2 and S-3 are subject to regulation 6-1 that limits visible emissions from any source to Ringelmann No.1. Regulation 6-1-302 limits emissions from any source to 20% opacity. Regulation 6-1-305 prohibits emissions of visible particles on real property other than that of the person responsible for the emissions. Compliance of sources S-1 through S-3 with the above standards will be confirmed by the Districts' Compliance & Enforcement staff during their routine inspections.

Section 6-1-307 regulates visible emissions within and from Regulated Bulk Material Sites subject to District permitting. A Regulated Bulk Material Site is defined as a site which produces, handles, loads, unloads, stores, or uses more than 10 tons per year of bulk materials (unpackaged solids less than 2 inches in length or diameter, such as sand, soil, gravel, construction materials). This project includes handling, loading, and unloading of more than 10 tons per year of bulk material and is subject to the requirements in this section. Section 307.1 limits visible dust emissions and Section 307.2 regulates clean-up of bulk material spills. These requirements will be included in the permit conditions for this project.

S-2, Grinder, is subject to Regulation 6-1-310, Total Suspended Particulate (TSP) Concentration Limits. It will likely comply with the limit in Section 6-1-310.1 of 0.15 grains/dscf of exhaust gas volume. It is not subject to the lower limits in Section 3-1-310.2 because it will emit less than 1,000 kg/yr of TSP.

S-1 and S-3, Stockpiles are not subject to 6-1-310 because they do not have an exhaust or vent.

S-2 is subject to Regulation 6-1-311. The process weight rate is over 25,000 kg/hr where the emissions rate is not to exceed 18.1 kg/hr or 40 lbs/hr per Table 6-1-311.1 in Regulation 6-1-311.

S-2 will comply as shown below.

Source	Process Weight Rate (kg/hr)	PTE (lbs/hr)	TSP Emission Limit (lbs/hr)
S-2	100,000	1.3	40

$$Hourly\ PTE\ for\ S-2 = \left(100\ tons \times 2.59E^{-2}\frac{lbs}{ton}, TSP\right) * 50\% = 1.3\frac{lbs}{hr}, TSP$$

$$Annual\ PTE\ for\ S-2 = \left(2{,}1750\ tons \times 2.59E^{-2}\frac{lbs}{ton}, TSP\right) * 50\% = 0.141\frac{tons}{yr}, TSP = 141\frac{kgs}{yr}, TSP$$

S-2 has an annual PTE of 0.141 tons TSP /yr or 141 kgs/yr so it is not subject to the limit in Section 3-1-311.2 because it will emit less than 1,000 kg TSP/yr has shown above.

S-1 and S-3 are not subject to Regulation 6-1-311 because they are not considered processes.

Regulation 6-1-401 requires the operator to have the means to always know the appearance of emissions from the operations. Most of the emissions from S-1 through S-3 will occur during active manned operation, hence these emissions will be always visible to the equipment operators and will be addressed by them as and when they occur.

Section 6-1-506 specifies monitoring and recordkeeping for Regulated Bulk Material Sites. Monitoring is required once to twice per day under Section 6-1-506.1. Records of this monitoring must be maintained for at least 2 years. These requirements have been included in the permit conditions for this project.

Per District's Compliance and Enforcement staff recommendation, permit condition shall be imposed to suspend all activities including loading and unloading at each source when the average wind speed exceeds 20 miles per hour because wind speeds above 20 mph, abatement of dust by watering is practically ineffective.

Regulation 6, Rule 6, Trackout

Regulation 6, Rule 6 was adopted to limit particulate matter emissions through control of trackout of solid materials onto paved public roads outside the boundaries of Large Bulk Material Sites, Large Construction Sites, and Large Disturbed Surface sites including landfills. Note that this rule applies when such sites are more than 1 acre. Certified Blue Recycling's site has 2 stockpiles with an estimated combined size of about 1.5 acres and is therefore subject to this rule.

Section 6-6-301 requires cleanup of trackout onto paved roadways or shoulders in excess of 25 linear feet within 4 hours of identification and limits remnants of trackout after cleaning to no more than 1 quart. Section 6-6-302 prohibits emissions with opacity of 20% or more for more than 3 minutes in any hour during cleanup of trackout. Section 6-6-501 requires monitoring of trackout at least twice daily and maintaining records of monitoring and cleanup activities for at least 2 years. These standards will be included as permit conditions for the project.

PERP, Regulation to Establish a Statewide Portable Equipment Registration Program

Registration under this statewide program allows for the operation of portable engines and engine-associated equipment (portable engines and equipment units) throughout the State of California as authorized through the Executive Officer of the Air Resources Board, except in the circumstances specified in the regulations.

The PERP registration is not valid for this use because Section 2453(m)(4)(B) of CARB's PERP regulation states that equipment "that is determined by the district to qualify as part of a stationary source" does not have a valid registration to operate at that location. CBR has had permitted sources since 2017, and this is an ongoing operation. The operation of PERP equipment without District authorization will be prohibited at CBR's site as it would be part of the operation of a stationary source.

California Environmental Quality Act (CEQA)

Certified Blue Recycling (CBR) received a Mitigated Negative Declaration from the City of San Leandro for this project (PLN19-057) on May 7, 2020, thus satisfies the CEQA review requirements as per Regulation 2-1-310. This declaration resolved that the project would have a low environmental impact and comply with CEQA guidelines.

CBR has also submitted an Appendix H "Environmental Information Form" to the District, in accordance with Regulation 2-1-312. The facility obtained a conditional use permit to operate as a Large Volume Transfer/Processing Facility with the increase in C&D/inert debris material received from 174 tons/day to 350 tons/day. In addition, the facility provided a transfer/process report prepared and submitted to the Alameda County Department of Environmental Health (ACDEH) in May 2020 that details all permits obtained that encompass this project.

New Source Performance Standards (NSPS)
There are several federal regulations that apply to the manufacturing or processing of various products i.e., Portland cement, asphalt, non-metallic and nonmetallic products but these regulations do not apply to the recycling of these materials.

Hence, there is no applicable NSPS to the proposed sources.

National Emissions Standards for Hazardous Air Pollutants (NESHAP)
There are no subparts under 40CFR61 or 40CFR63 that apply to CDI waste handling/processing operations hence there is no applicable NESHAP.

Prevention of Significant Deterioration (PSD)
PSD requirements in Regulation 2-2-304 apply to new major facilities and major modifications at a major facility. CBR is not a major facility, and this application is not part of a PSD project as defined in Regulation 2-2. Therefore, the PSD requirements do not apply.

California Health & Safety Code §42301.6
Pursuant to California Health & Safety Code §42301.6(a), prior to approving an application for a permit to construct or modify a source, which is located within 1,000 feet from the outer boundary of a school site, the District shall prepare a public notice as detailed in §42301.6. §42301.9(a) defines a "school" as any public or private school used for the purposes of the education of more than 12 children in kindergarten or any grades 1 to 12, inclusive, but does not include any private school in which education is primarily conducted in private homes.

The source is located greater than 1,000 feet from the nearest school. The requirements of the California Health & Safety Code §42301.6(a) do not apply.

Public Notice, Schools & Over-Burdened Communities (Regulation 2-1-412)
Using the GreatSchools.org website and searching with Google Maps, it has been determined that the sources will not be located within 1,000 feet of the outer boundary of any K-12 school site. However, this project **is in an overburdened community** and an HRA was required because Arsenic and crystalline silica emissions exceed the trigger limit set forth in Table 2-5-1 of Regulation 2-5. Therefore, this project is subject to the public notification requirements of Regulation 2-1-412(ii).
A 30-day public notice will be sent to all residents and businesses within 1,000 feet of the facility.

Permit Conditions

Permit Condition 26536

Established in Application 28509, Amended by Application 32163; Applies to S-1 through S-3; each abated by A-1 through A-3:
S-1 Comingled and Separated Construction, Demolition, and Inert Debris Stockpiles
S-2 Portable Tub Grinder
S-3 Wood Waste Stockpiles
A-1, A-2, and A-3 Facility-wide water spray system, System capacity of 140 gpm using city water

1. The owner/operator shall ensure that the combined quantities of comingled and/or source separated construction, demolition, and inert debris, including wood waste, accepted at BAAQMD Plant #23819 (herein after referred to as site) does not exceed 350 tons per day. The surface area of the comingled and/or source separated construction, demolition, and inert debris stockpiles, S-1 will not exceed 1.3 acres.
[Basis: Cumulative Increase, Regulation 2-2-301]

2. The owner/operator shall not accept, store, and/or ship out more than 85,000 tons of comingled and/or source separated construction, demolition, and inert debris, excluding wood waste, in any consecutive 12 month period at S-1.
[Basis: Cumulative Increase]

3. The owner/operator shall not process more than 21,750 tons of wood waste in any consecutive 12-month period at S-2.
[Basis: Cumulative Increase]

4. The owner/operator shall not accept, store, process, and/or ship out more 21,750 tons of wood waste, in any consecutive 12-month period at S-3. The footprint area of the wood waste stockpiles, S-3 shall not exceed 0.2 acres on any day. Incoming wood and/or green waste will be stored no longer than 7 days and processed within 7 days, and any extension granted through the Solid Waste Permit shall be reported to the Air District.
[Basis: Cumulative Increase, Regulation 2-2-301]

5. The owner/operator shall ensure that the construction, demolition, and inert debris accepted, processed, and/or shipped out at S-1 does not contain more than 12,800 tons of gypsum waste or 10,675 tons of concrete in any consecutive 12-month period or any hazardous waste, regulated asbestos containing materials, or any other materials that will result in emissions of toxic air contaminants in excess of an acute or chronic trigger level identified in Regulation 2, Rule 5, Table 2-5-1, during storage, handling, or recycling of these materials.
[Basis: Regulation 2-5]

6[Reserved]

7. The owner/operator shall not operate S-2 for more than 10 hours during any calendar day-during any consecutive 12-month period.
[Basis: Cumulative Increase, Regulation 2-2-301]

8. The owner/operator shall abate all sources and all areas exposed to wind erosion and dust re-suspension with the Facility wide Water Spray System comprising of A-1, A-2, and A-3 at the following frequency:
a. S-1 and S-3 stockpiles: As needed to prevent visible emissions violations.
b. S-1 and S-3 haul trucks and offroad equipment travel surface: Whenever trucks and/or off-road equipment travel onsite
c. S-2: At all times the source is operated.
If there is a malfunction of any dust suppression equipment, the owner/operator shall cease loading, unloading and/or processing of all materials until such time the dust suppression equipment is repaired, replaced, or is restored back to normal operation.
[Basis: Cumulative Increase, Regulations 2-2-301, 2-5 and 6-1]

9. The owner/operator may only use PERP registered equipment for the purposes allowed under the regulation except as when considered part of a stationary source such as S-2 or determined to cause a public nuisance as defined in Health and Safety Code Section 41700. Any registered equipment will require a written notification to the District within two working daysand following the instructions prescribed in the regulation.
[Basis: CARB PERP Regulation Section 2453(m)(4)(A), Section 2453(m)(4)(B), Section 2459]

10. The owner/operator shall maintain dated records of the following on a daily basis to demonstrate compliance with:
a. Part 1: Total quantity of comingled and/or source separated construction, demolition, and inert debris, including wood, received at the site (tons/day all material types combined);
b. Part 2: Quantity of materials shipped out from the site by material type at S-1 (tons/day by material type);
c. Part 3: Quantity of wood waste processed at S-2 (tons/day of wood waste
d. Part 4: Quantity of wood shipped out from the site or from S-3 (tons/day of wood waste);
e. Part 5: Quantities of gypsum waste, concrete or any hazardous waste, regulated asbestos containing materials, or any other materials that will result in emissions of toxic air contaminants shipped out from the site or from S-1 (tons/day by material type).
f. Part 6: Number of on road haul trucks delivering inbound/raw materials to the site (trucks/day)
g. Part 7: Number of on road haul trucks carrying outbound/processed materials from the site (trucks/day).
h. Date and time S-2 and/or any other portable tub grinder enters and exits the site.
i. Daily hours of operation of S-2 (hours/calendar day).
j. Part 8: Record the frequency of water spray applications for each operating day.

The owner/operator shall sum the daily records on a consecutive12-month basis. The owner/operator shall keep these records in a District approved log and shall retain them for two years from the date of entry and shall make them available for inspection by District staff upon

request. These recordkeeping requirements shall not replace the recordkeeping requirements contained in any applicable District Regulations.
[Basis: Cumulative Increase, Regulation 2-1-403]

11. The owner/operator shall ensure that any fugitive dust emissions from the operation of this facility do not exceed 10% opacity and/or Ringelmann 0.5 for a total of three (3) or more minutes in any 60-minute period, nor shall any particulate emissions result in fallout on adjacent property in such quantities as to cause public nuisance per District Regulation 1-301. The owner/operator shall limit the truck traffic to a speed of 15 miles per hour in addition to operating the facility wide water spray system as needed to abate particulate emissions. The owner/operator shall visually observe all operations associated with the facility and shall immediately initiate corrective actions, as necessary to maintain compliance with this part of this condition.
[Basis: Regulation 1-301, 2-5-205, TBACT, 6-1]

12. Cleanup of Spills and Trackout onto Public Roads:
The owner/operator shall check for bulk material spills and trackout of material onto public roadways at least every 3 hours on days when vehicles are entering or exiting the site. The owner/operator shall immediately cleanup any material trackout and cleanup any spill in accordance with Regulation 6-1-307.2 and Regulation 6-6-301. Cleanup of all trackout and spills shall also occur at the end of each operating day. The owner/operator shall ensure that all cleanup is abated by water spray to ensure zero visible dust emissions. After cleanup events, the owner/operator shall ensure that no more than 1 quart of trackout remains on the exit from the operation onto a public roadway.
[Basis: Regulation 6-1-307, Regulation 6-6]

13. The owner/operator shall maintain the following records:
a. Monitor the extent of the trackout at each active exit from the site onto a paved public road at least twice during each workday, at times when vehicle traffic exiting the site is most likely to create an accumulation of trackout, or as otherwise specified by the APCO;
b. Document the active exit locations monitored each workday;
c. Document each occasion when the trackout exceeds cumulative 25 linear feet and all trackout control and cleanup actions initiated as a result of monitoring Part a of this condition; and
d. Maintain the records required by Part b and Part c of this condition for two years, in electronic, paper hard copy or logbook format, and make them available to the APCO upon request.
[Basis: Regulation 6-6-501]

14. Visible Dust Monitoring, Limits, and Record keeping:
The owner/operator shall comply with Regulation 6, Rule1, Section 307 visible emission limits for bulk material stockpiles and bulk material spills and shall comply with the cleanup requirements by the end of each operating day. At least once per operating day, or more frequently if required by Regulation 6-1-506, the owner/operator shall monitor for visible dust emissions from each operation when the potential for visible emissions is at its highest and shall record the monitoring results and any emission mitigation measures taken.

The owner/operator shall keep these records in a District-approved log and shall retain them for at least two years from the date of entry and shall make them available for inspection by District staff upon request. These record-keeping requirements shall not replace the record-keeping requirements contained in any applicable District Regulations.
[Basis: Regulation 6-1-307 and 506]

15. Wind Monitoring and Operation Suspension in High Winds:
The owner/operator shall monitor windspeed projections for the project area prior to commencing operation each day and continuously monitor actual wind speeds on any operating day. The owner/operator shall immediately suspend all operation activities if wind speed reaches or exceeds 8.9 meters per second (20.0 miles per hour). The operation may recommence when the windspeed has dropped below 8.9 meters per second for at least 1 hour.
[Basis: Cumulative increase, Regulation 2-5, BACT]

16. The mean vehicle fleet weight for all vehicles traveling on the site shall not exceed 23 tons. The mean vehicle fleet weight (MVFW) is a weighted average calculated by multiplying the average vehicle weight for each vehicle type (AVWi) times the number of vehicle trips per day for that vehicle type (DVTi), summing AVWi*DVTi for all vehicle types, and dividing the resulting sum by the total number of vehicle trips for that day (DVT). Mean vehicle fleet weights shall also be recalculated whenever new vehicle types are added to a vehicle fleet.
[Basis: Cumulative Increase, Regulation 2-1-301]

17. The owner/operator shall ensure that the following on-site vehicle travel distance limits for each vehicle type are not exceeded:

a. Inbound trucks: 128 VMT per day and 30,000 vehicle-miles traveled (VMT), per consecutive 12-month period.
b. Outbound trucks: 22.5 VMT per day and 6,000 vehicle-miles traveled (VMT), per consecutive 12-month period
c. Onsite mobile equipment trucks: 25.8 VMT per day and 3,931 VMTs, per consecutive 12-month period.

[Basis: Cumulative Increase, Regulation 2-2-301, Regulation 2-5]

18. In order to demonstrate compliance with Parts 16 and 17, the owner/operator shall maintain the following records in an APCO approved log book:

a. Maintain records of vehicle trip data (in vehicle miles traveled per day, VMT/day) for vehicles inbound, outbound and onsite mobile equipment, and vehicle fleet weights.
b. Maintain daily records of the number of trucks and mobile equipment that travel on-site.
c. For each type of vehicle fleet (inbound vehicles, outbound vehicles, onsite mobile equipment) maintain a list of all the types of vehicles in the fleet. For each vehicle type, record the empty vehicle weight, maximum load weight, and average vehicle weight (average of full and empty weights). This list shall be reviewed annually and updated whenever necessary to ensure that the list accurately reflects the types of vehicles that may be present at the facility during any calendar year.
d. The owner/operator shall determine (using odometer measurements, maps, or other appropriate means) the maximum round trip distance traveled on-site by each vehicle

type in the fleet on the roads (VMT per roundtrip per vehicle type). This distance shall be determined at least once per calendar year and whenever significant changes to travel routes have occurred.

For purposes of determining inbound and outbound vehicle roundtrip distance, the facility may opt to use a maximum roundtrip distance of 0.5 miles for the inbound and outbound vehicle fleets unless significant changes to travel routes have occurred. The daily VMTs shall be summarized for each calendar month and for each calendar year. These records shall be kept at site for at least 2 years from the date the data is entered and shall be made available to the District staff for inspection.

[Basis: Cumulative Increase, Regulation 2-1-301]

19. The owner/operator shall provide a copy of all reports showing an analysis of physical contaminants and heavy metals performed on a sample of chipped and ground material from S-3 as specified by the facility's Solid Waste Permit. Any toxic air contaminant shall not exceed the respective trigger levels contained in Regulation 2-5. This record must be maintained for a period of 2 years from the date the data is obtained and shall be made available to District staff for inspection

[Basis: Regulations 2-1-403, 2-5]

End of Conditions

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 sources will be located within an Overburdened Community which triggers the public notification requirements of District Regulation 2-1-412. After the comments are received 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 of an Authority to Construct to change permit conditions for the following:

S-1 Comingled and Separated Construction, Demolition, and Inert waste stockpiles
350 tons/day; 85,000 tons/year
Abated by A-1, part of facility wide water spray system

S-2 Portable Tub Grinder; Wood waste, 100 tons/hr rated capacity; 1,000 tons/day; 21,750 tons/year, registered under DOORS program
Abated by A-2, part of facility wide water spray system

S-3 Wood waste stockpiles
350 tons/day; 21,750 tons/year
Abated by A-3, part of facility wide water spray system

A-1, A-2 and A-3 Facility wide spray system; 140 gallons per minute with city water

By: _____ Date: _____
MK
AQE