DES
DEPARTMENT OF ENVIRONMENT AND SUSTAINABILITY

4701 W. Russell Rd Suite 200
Las Vegas, NV 89118-2231
Phone (702) 455-5942
Fax (702) 383-9994

PART 70 OPERATING PERMIT TECHNICAL SUPPORT DOCUMENT
(STATEMENT of BASIS)

APPLICATION FOR:
Reopening for Causes

SUBMITTED BY:
Initiated by DES

FOR:
Blue Diamond Hill Gypsum
Source ID: #17286

LOCATION:
8360 Nevada Highway 159
Blue Diamond, Nevada 89004

SIC code 1499, "Miscellaneous Nonmetallic Minerals, Except Fuel"
NAICS code 212399, "All Other Nonmetallic Mineral Mining"

TSD Date: January 24, 2022

EXECUTIVE SUMMARY

Blue Diamond Hill Gypsum is gypsum processing operation located in the Las Vegas Valley Area, hydrographic basin 212, which is currently designated as attainment for all pollutants except ozone. It was designated a marginal nonattainment area for ozone on August 3, 2018. The designation has not imposed any new requirements at this time. The source is not a categorical source as defined in AQR 12.2.2(j).

The source consists of screens, crushers, conveyors, an overburden process, blasting, stockpiles, paved and unpaved haul roads, continuous-duty diesel engines, and a continuous-duty diesel water pump. The source also has 13 hp diesel light stands that are designated as insignificant activities. The initial Part 70 OP was issued November 13, 2017, with a significant revision issued on November 14, 2019, and an administrative revision on September 8, 2020. Blue Diamond Hill Gypsum is also a source of GHG pollutants.

The following table summarizes the source potential to emit for each regulated air pollutant from all emission units addressed by this Part 70 Operating Permit:

Pollutant	PM_{10}	$PM_{2.5}$	NO_X	CO	SO_2	VOC	HAPs	GHG[2]
Gypsum Processing	43.26	11.37	78.98	12.33	0.10	4.28	0.10	6932.05
Fugitives	99.36	11.15	2.38	12.29	0	0	0	0
Tons/year	142.62	22.52	81.36	24.62	0.10	4.28	0.10	6932.05
Major Source Thresholds (Title V)	100	100	100	100	100	100	10/25[1]	-
Major Stationary Source Thresholds (PSD)	250	250	250	250	250	250	10/25[1]	-
Major Stationary Source Threshold (Nonattainment)			100			100		

[1]Ten tons for any individual hazardous air pollutant, or 25 tons for the combination of all hazardous air pollutants.
[2]Metric tons per year, CO2e.

DAQ will continue to require the sources to estimate their GHG potential to emit in terms of each individual pollutant (CO_2, CH_4, N_2O, CF_6, etc.). The TSD includes these PTEs for informational purposes.

This gypsum processing operation is subject to 40 CFR Part 60, Subpart OOO, 40 CFR Part 60, Subpart IIII, and 40 CFR Part 63, Subpart ZZZZ. The engines subject to 40 CFR Part 60, Subpart IIII satisfies the requirements of 40 CFR Part 63, Subpart ZZZZ through compliance with 40 CFR Part 60, Subpart IIII.

TABLE OF CONTENTS

LIST OF TABLES

I. ACRONYMS

Table I-1: List of Acronyms

Acronym	Term
ANFO	ammonium nitrate-fuel oil
AQR	Clark County Air Quality Regulation
ATC	Authority to Construct
BLM	Bureau of Land Management
CF	control factor
CFR	Code of Federal Regulations
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CD	control device
DAQ	Division of Air Quality
DES	Department of Environment and Sustainability
DOM	date of manufacture
EF	emissions factor
EPA	U.S. Environmental Protection Agency
EU	emission unit
g/dscm	gram per dry standard cubic meter
gr/dscf	grains per dry standard cubic feet
GHG	greenhouse gas
HA	Hydrographic Area
HAP	hazardous air pollutant
hp	horsepower
kW	kilowatts
NAAQS	National Ambient Air Quality Standard
NAICS	North American Industry Classification System
NO_X	nitrogen oxide(s)
$PM_{2.5}$	particulate matter less than 2.5 microns in aerodynamic diameter
PM_{10}	particulate matter less than 10 microns in aerodynamic diameter
PSD	prevention of significant deterioration
PTE	potential to emit
RACT	Reasonably Achievable Control Technology
SCC	Source Classification Code
SIC	Standard Industrial Classification
SO_2	sulfur dioxide
SOP	standard operating procedure
TPH	tons per hour

UTM	Universal Transverse Mercator
VGF	vibrating grizzly feeder
VMT	vehicle miles traveled
VOC	volatile organic compound

II. SOURCE INFORMATION

A. GENERAL

Permittee:	Gypsum Resources LLC
Mailing Address:	8360 Nevada Highway 159, Blue Diamond, Nevada 89004
Responsible Official:	James Rhodes
Phone Number:	702-493-8111

B. DESCRIPTION OF PROCESS

Blue Diamond Hill Gypsum is a gypsum mining and processing operation. It is a synthetic major source for PM_{10} and NO_x and true minor for all other air pollutants in the Las Vegas Valley Area 212 hydrographic basin. The source consists of screens, crushers, a surge bin, conveyors, an overburden process, drilling, blasting, stockpiles, paved and unpaved haul roads, continuous-duty diesel engines, and a continuous-duty diesel water pump. The source also has eight 13-hp diesel light stands that are designated as insignificant activities.

Table II-B-1 lists the emission units covered by this operating permit. The gypsum processing plant's emission units in this table are affected by the reopening for cause for $PM_{2.5}$.

Table II-B-1: Summary of Emission Units

EU	Description	Capacity (tons/hr)	Manufacturer	Model #	Serial #	SCC
Gypsum Processing Plant						
A00	Truck Unloading to Stockpile from Mining					30504025
A01	Loader to VGF VGF (VGF to VGF Underbelt)	800				30504020
A02	VGF Underbelt (VGF Underbelt to Reject Conveyor)					30504021
A03	Reject Conveyor (Reject Conveyor to Screen)					30504021
A39	Reject Screen (8' x 20')	350	Terex	LJ-TSH8203-32		30504034
A04	Screen Underbelt (Screen Underbelt to Recirc Conveyor #1)					30504021
A06	Recirc Conveyor (Recirc Conveyor to VGF)					30504021
A09	Reject Underbelt (Reject Underbelt to Reject Stacker)					30504021
A33	Reject Stacker (Reject Stacker to Stockpile)					30504025

EU	Description	Capacity (tons/hr)	Manufacturer	Model #	Serial #	SCC
A05	HSI Crusher (VGF to HSI Crusher)	800	Terex	1316	TRX1316BV OKCC0391	30504030
	HSI Underbelt					
A07	HSI Underbelt to Surge Bin					30504021
A10	Surge Bin (Surge Bin to West Conveyor)					30504099
A11	West Conveyor (West Conveyor to West Screen)					30504021
A08	West Screen (8' x 20')	800	Terex	LJ-TSH8203-32		30504034
A12	West Underbelt (West Underbelt to Cone Conveyor)					30504021
A48	Cone Conveyor (Conveyor to Cone Crusher)					30504021
A34	Cone Crusher	250	Terex	MVP 450x		30504031
	Cone Underbelt					
A35	Cone Underbelt (Cone Underbelt to Recirc Conveyor #2)					30504021
A40	Recirc Conveyor #2 (Recirc Conveyor #2 to West Screen)					30504021
A36	Belt Conveyor #1– #7					30504021
A38	Stacker 2"					30504025
A41	Belt Conveyor #8– #14					30504021
A79	Stacker 1/8"					30504025
Truck Loading						
E01	Loader to Hopper					30504099
E02	Conveyor to Conveyor					30504021
	Conveyor to Truck					
E03	Loader to Hopper					30504099
E04	Conveyor to Conveyor					30504021
	Conveyor to Truck					
F01[1]	Loader to Hopper					30504099
F02[1]	Conveyor to Conveyor					30504021
	Conveyor to Truck					

EU	Description	Capacity (tons/hr)	Manufacturer	Model #	Serial #	SCC
Miscellaneous Activities						
A001	Blasting	25,000 ft^2				30504001
A002	Overburden Removal	880				30504024
A003	Drilling	154 hole/day				20504002
A32	Stockpiles	25.0 Acres				30504025
B01	Unpaved – BLM Rd	4 Miles R.T.				30504099
B02	Paved – On-site	1 Mile R.T.				30504099
B03	Paved – Overburden	0.8 Miles R.T.				30504099
B04	Unpaved – Material Hauling Rd	1.2 Miles R.T.				30504099
Internal Combustion Engines						
C01	Continuous-duty Diesel Engine	2,206 hp	Caterpillar; DOM 2007	XQ1500	G4W00376	20300101
	Genset	1500 kW	Caterpillar	3512	EBG00282	
C05	Continuous-duty Diesel Engine	173 hp	Isuzu; DOM 2007	BI-4HK1X	4HK1XDIBA-01	20300101
	Genset	100 kW	Whisperwatt	DCA125SSIU	7510150	
C06	Continuous-duty Diesel Engine	99 hp	John Deere; DOM 2011	4045TF285E	N/A	20300101
	Genset	63 kW	Mecc Alte	ECO 32-L/4	0001440549	
C07	Continuous-duty Diesel Engine	80 hp	John Deere; DOM 1998	4045DF150	N/A	20300101
	Water Pump	60 kW	Power Prime	98DV150	372870	
C08	Continuous-duty Diesel Engine	107 hp	John Deere; DOM 2012	4045HFG92	PE4045015497	20300101
	Genset	56 kW	Atlas Copco	QAS70	N/A	

[1]This process covers the front end loader to truck loading operation.

C. PERMITTING HISTORY

The following represents permitting activities prior to this permitting action:

Table II-C-1: Permit History

Issue Date	Description
11/13/2017	Part 70 permit issued
08/17/2018	Significant Revision Permit Application
11/14/2019	Significant Revision Issued
09/08/2020	Administrative revision issued

D. CURRENT PERMITTING ACTION

Reopening for Cause – January 28, 2021

A reopen for cause was opened on January 28, 2018, to address $PM_{2.5}$ emissions for all emission units with particulate emission potential. No response was received from the source to DAQ's Notification to reopen the Title V Operating Permit; therefore, DAQ's $PM_{2.5}$ EF memo was utilized for each emission unit and activity related to processing, transporting, and/or sorting materials to incorporate the $PM_{2.5}$ emissions into the Title V Operating Permit for the stockpiles, haul roads, and char handling operations.

$PM_{2.5}$ emissions for the gypsum processing operations have been revised in this permitting action.

Reopening for Cause – August 9, 2021

The Department of Environment and Sustainability, Division of Air Quality (DAQ) has identified this source as possibly emitting 25 tons or more of actual emissions for oxides of nitrogen (NO_X) and/or volatile organic compounds (VOCs) in any calendar year. Clark County was required to implement Section 182(a)(3)(B) of the Clean Air Act (CAA) which requires all ozone nonattainment areas to have in place a program that requires emissions statements from stationary sources of NO_X and/or VOCs.

Section 12.9.1 of the Clark County Air Quality Regulations (AQRs) codifies this requirement for Clark County and states the following:

a. The Responsible Official of each Stationary Source that emits 25 tons or more of NO_X and/or VOC shall submit an Annual Emissions Statement (Statement) to the department for the previous calendar year.
b. Pursuant to CAA Section 182, the Statement must include all actual emissions for all NO_X and VOC emitting activities.
c. The Statement shall be submitted to and received by the department on or before March 31 of each year or other date, upon prior notice by the Control Officer, and shall include a certification that the information contained in the Statement is accurate to the best knowledge of the individual certifying the Statement.

A condition requiring submittal of annual emissions statement has been included in the permit.

Reopening for Cause – September 2, 2021

This source is an existing major source that has a potential to emit of fugitive particulate emissions. The Division of Air Quality (DAQ) is revising the permit pursuant to Sections 12.5.2.15 of the Clark County Air Quality Regulations (AQR), which maintain that the Control Officer may reopen and revise a permit "to assure compliance with the applicable requirements." This permit is revised to include recently promulgated fugitive dust requirements for stationary sources.

AQR Sections 92 (Fugitive Dust from Unpaved Parking Lots and Storage Areas) and 94 (Permitting and Dust Control for Construction Activities) were recently revised to address fugitive dust at stationary sources. The revised regulations became effective on August 17, 2021. Subsections 92.1(c) and 94.1.1(a) require that the control measures and stabilization standards therein be made enforceable by the terms and conditions of the stationary source permit.

The source's operating permit has been revised to include the fugitive dust emission limits and control requirements.

Control, monitoring, and recordkeeping requirements were added to the permit for engines that burn diesel fuel to restrict the maximum sulfur content to 15 ppm.

E. ALTERNATE OPERATING SCENARIO

None proposed.

III. EMISSIONS INFORMATION

A. SOURCE-WIDE PTE

There are changes to the source-wide PTE due to the reopenings for cause.

Blue Diamond Hill Gypsum is a Title V source for PM_{10} and a minor source for all other air pollutants, including greenhouse gases (GHGs).

Table III-A-1: Source-wide PTE (tons per year)

Pollutant	PM_{10}	$PM_{2.5}$	NO_X	CO	SO_2	VOC	HAPs	GHG[1]
Gypsum Processing	43.26	11.37	78.98	12.33	0.10	4.28	0.10	6932.05
Fugitives	99.36	11.15	2.38	12.29	0	0	0	0
Tons/year	142.62	22.52	81.36	24.62	0.10	4.28	0.10	6932.05

[1]Metric tons per year, CO2e.

B. ALLOWABLE EMISSIONS CALCULATIONS

There are changes to the emission units PTE due to the reopening for cause for $PM_{2.5}$.

C. OPERATIONAL LIMITS

There are no changes to the operational limits due to these reopenings for cause.

D. CONTROL TECHNOLOGY

In the past DAQ did not require sources to incorporate $PM_{2.5}$ into permits for operations other than those associated with combustion and chemical processes. A reopening for cause of the Title V operating permit was initiated because the permit needed additional $PM_{2.5}$ emissions evaluations for activities relating to processing, transporting, and/or sorting solid materials. These emissions were existing but they were not adequately addressed in the permit. Therefore, these additional emissions are excluded from the NSR applicability analysis.

The small increase in PM_{10} and decrease in HAP are due to correction errors in the calculation table.

There are no changes to the control technology due to these reopenings for cause.

Table III-D-1: Emission Increase (tons per year)

Activity	PM_{10}	$PM_{2.5}$	NO_X	CO	SO_2	VOC	HAPs	H_2S	Pb
Proposed PTE	142.62	22.52	81.36	24.62	0.10	4.28	0.10	0	0
Existing PTE	142.59	1.50	81.36	24.62	0.10	4.28	0.21	0	0
Difference	0.03	21.02	0	0	0	0	-0.11	0	0
Excluded Emissions	0	21.02	0	0	0	0	0	0	0
EI for NSR Applicability	0.03	0	0	0	0	0	-0.11	0	0
Minor NSR Significance	7.5	5.0	20	50	20	20	-	5	-
Significance Triggered	No	No	No	No	No	No	No	N/A	N/A
RACT Triggered	No	No	No	No	No	No	No	N/A	N/A

E. MONITORING

Control, monitoring and recordkeeping requirements were added in this permit to monitor diesel sulfur content. Emission limitations and control requirements were added to the permit for fugitive dust emissions.

F. PERFORMANCE TESTING

None required due to this permitting action.

G. RACT ANALYSIS

There are no RACT analysis triggered by these reopenings for cause.

H. PUBLIC PARTICIPATION

Pursuant to AQR 12.5.2.17, the Control Officer should provide for public notice, comment, and an opportunity for a hearing on initial permit issuances, significant revisions, reopenings for cause, and renewals in accordance with the procedures outlined in the regulation. Given the broad range of changes that can be addressed through a reopening of the permit, including those that typically do not require public participation, DAQ relied on the other criteria for public participation to ascertain whether it should be initiated for this reopening of the permit. As the updates addressed in this reopening qualify as neither an initial permit issuance nor a renewal of the Title V permit, the criteria for a significant permit revision was used to determine whether public participation is warranted. Even though the calculated emission increase does not trigger significance for NSR evaluation, there is a significant $PM_{2.5}$ PTE increase due to this reopening for cause. Therefore, initiation of a public participation process can be adequately supported.

IV. REGULATORY REVIEW

There are no new regulatory review triggered by these reopen for causes.

V. COMPLIANCE

Added the emissions statement to the reporting table.

VI. EMISSION REDUCTION CREDITS (OFFSETS)

None.

VII. MODELING

Blue Diamond Hill Gypsum is a major source in Hydrographic Area 212 (Las Vegas Valley). Permitted emission units include gypsum processing operations. Since minor source baseline dates for NO_X (October 21, 1988) and SO_2 (June 29, 1979) have been triggered, Prevention of Significant Deterioration (PSD) increment analysis is required.

Air Quality modeled the source using AERMOD to track the increment consumption. Stack data submitted by the applicant were supplemented with information available for similar emission units. Five years (2011 to 2015) of meteorological data from the McCarran Station were used in the model. United States Geological Survey (USGS) National Elevation Dataset (NED) terrain data was used to calculate elevations. Table VII-1 shows the location of the maximum impact and the potential PSD increment consumed by the source at that location. The impacts are below the PSD increment limits.

Table VII-1: PSD Increment Consumption

Pollutant	Averaging Period	Source's PSD Increment Consumption (µg/m^3)	Location of Maximum Impact	
			UTM X (m)	UTM Y (m)
SO_2	3-hour	0.35[1]	643750	3993183
SO_2	24-hour	0.09[1]	643750	3993333
SO_2	Annual	0.02	644312	3994272
NO_X	Annual	5.63	644312	3994272

[1] Highest Second High Concentration.

VIII. ATTACHMENTS

See attachments in next page

Applicability

Gypsum Processing:										
EU	**Rating**	**PM_{10}**	**$PM_{2.5}$**	**NO_x**	**CO**	**SO_2**	**VOC**	**HAPs**	**H_2S**	**Pb**
A00	800 tph	280.32	42.05	0	0	0	0	0	0	0
A01	800 tph	280.32	42.04	0	0	0	0	0	0	0
A02	350 tph	15.33	4.60	0	0	0	0	0	0	0
A03	Included in A39			0	0	0	0	0	0	0
A39	350 tph	122.64	9.20	0	0	0	0	0	0	0
A04	350 tph	15.33	4.60	0	0	0	0	0	0	0
A06	Included in A01			0	0	0	0	0	0	0
A09	350 tph	15.33	4.60	0	0	0	0	0	0	0
A33	350 tph	61.32	16.86	0	0	0	0	0	0	0
A05	800 tph	455.52	87.60	0	0	0	0	0	0	0
A07	800 tph	35.04	10.51	0	0	0	0	0	0	0
A10	800 tph	35.04	10.51	0	0	0	0	0	0	0
A11	Included in A08			0	0	0	0	0	0	0
A08	800 tph	280.32	21.02	0	0	0	0	0	0	0
A12	250 tph	10.95	3.29	0	0	0	0	0	0	0
A48	Includedn in A34			0	0	0	0	0	0	0
A34	250 tph	142.35	27.38	0	0	0	0	0	0	0
A35	250 tph	10.95	3.29	0	0	0	0	0	0	0
A40	Included in A08			0	0	0	0	0	0	0
A36/A41[1]	800 tph	245.28	73.58	0	0	0	0	0	0	0
A38/A79[1]		140.16	38.54	0	0	0	0	0	0	0
E01[2]	800 tpph	140.16	21.02	0	0	0	0	0	0	0
E02[2]		70.08	21.02	0	0	0	0	0	0	0
E03[2]		In E01 and E02		0	0	0	0	0	0	0
E04[2]				0	0	0	0	0	0	0
F01[2]				0	0	0	0	0	0	0
F02[2]				0	0	0	0	0	0	0
		2356.44	**441.71**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Engines:										
C01	2206 hp	0.85	0.85	140.17	18.53	0.12	3.41	0.11	0	0
C05	173 hp	0.22	0.22	3.24	1.37	0.01	1.91	0.02	0	0
C06	99 hp	0.13	0.13	2.93	1.64	0.01	1.09	0.01	0	0
C07	80 hp	0.77	0.77	10.86	2.34	0.01	0.88	0.01	0	0
C08	8,760 hrs/yr	0.01	0.01	2.00	0.08	0.01	0.01	0.01	0	0
		1.98	**1.98**	**159.20**	**23.96**	**0.16**	**7.30**	**0.16**	**0.00**	**0.00**

Insignificant Activities:										
Units		PM_{10}	$PM_{2.5}$	NOx	CO	SO_2	VOC	HAP	H_2S	Pb
IA: LP01	Light Plant	0.01	0.01	0.23	0.03	0.01	0.07	0.01	0	0
IA: LP02	Light Plant	0.01	0.01	0.23	0.03	0.01	0.07	0.01	0	0
IA: LP03	Light Plant	0.01	0.01	0.23	0.03	0.01	0.07	0.01	0	0
IA: LP04	Light Plant	0.01	0.01	0.23	0.03	0.01	0.07	0.01	0	0
IA: LP05	Light Plant	0.01	0.01	0.23	0.03	0.01	0.07	0.01	0	0
IA: LP06	Light Plant	0.02	0.02	0.23	0.09	0.01	0.07	0.01	0	0
IA: LP07	Light Plant	0.02	0.02	0.23	0.09	0.01	0.07	0.01	0	0
IA: LP08	Light Plant	0.02	0.02	0.23	0.09	0.01	0.07	0.01	0	0
	Total:	**0.11**	**0.11**	**1.84**	**0.42**	**0.08**	**0.56**	**0.08**	**0.00**	**0.00**
	Facility Total:	2358.53	443.80	161.04	24.38	0.24	7.86	0.24	0.00	0.00

Gypsum Processing:

EU	Description	Capacity	Maximum Throughput	Emissions (PM_{10})	Emissions ($PM_{2.5}$)	EF PM_{10}	EF $PM_{2.5}$		
		tons/hr	tons/yr	tons/yr	tons/yr	(lbs/ton)	(lbs/ton)		
A00	Truck Unloading to Stockpile from Mining	800	7,008,000	280.32	42.05	0.08	0.012	280.32	42.05
A01	Loader to VGF	800	7,008,000	140.16	21.02	0.04	0.006	140.16	21.02
	VGF (VGF to VGF Underbelt)	800	7,008,000	140.16	21.02	0.04	0.006	140.16	21.02
A02	VGF Underbelt (VGF Underbelt to Reject Conveyor)	350	3,066,000	15.33	4.60	0.01	0.003	15.33	4.60
A03	Reject Conveyor (Reject Conveyor to Screen)	Emissions included in A39							
A39	Reject Screen (6" x 20")	350	3,066,000	122.64	9.20	0.08	0.006	122.64	9.20
A04	Screen Underbelt (Screen Underbelt to Recir Conveyor #1)	350	3,066,000	15.33	4.60	0.01	0.003	15.33	4.60
A06	Recir Conveyor (Recir Conveyor to VGF)	Emissions included in A01							
A09	Reject Underbelt (Reject Underbelt to Reject Stacker)	350	3,066,000	15.33	4.60	0.01	0.003	15.33	4.60
A33	Reject Stacker (Reject Stacker to Stockpile)	350	3,066,000	61.32	16.86	0.04	0.011	61.32	16.86
A05	HSI Crusher (VGF to HSI Crusher)	800	7,008,000	455.52	87.60	0.13	0.025	455.52	87.60
	HSI Underbelt								
A07	HSI Underbelt to Surge Bin	800	7,008,000	35.04	10.51	0.01	0.003	35.04	10.51
A10	Surge Bin (Surge Bin to West Conveyor)	800	7,008,000	35.04	10.51	0.01	0.003	35.04	10.51
A11	West Conveyor (West Conveyor to West Screen)	Emissions included in A08							
A08	West Screen (8" x 20")	800	7,008,000	280.32	21.02	0.08	0.006	280.32	21.02
A12	West Underbelt (West Underbelt to Cone Conveyor)	250	2,190,000	10.95	3.29	0.01	0.003	10.95	3.29
A48	Cone Conveyor (Conveyor to Cone Crusher)	Emissions included with A34							
A34	Cone Crusher	250	2,190,000	142.35	27.38	0.13	0.025	142.35	27.38
	Cone Underbelt								
A35	Cone Underbelt (Cone Underbelt to Recir Conveyor #2)	250	2,190,000	10.95	3.29	0.01	0.003	10.95	3.29
A40	Recir Conveyor #2 (Recir Conveyor #2 to West Screen)	Emissions included with A08							
A36	Belt Conveyor #1	800	7,008,000	245.28	73.58	0.07	0.021	245.28	73.58
	Belt Conveyor #2								
	Belt Conveyor #3								
	Belt Conveyor #4								
	Belt Conveyor #5								
	Belt Conveyor #6								
	Belt Conveyor #7								
A38	Stacker 2"	800	7,008,000	140.16	38.54	0.04	0.011	140.16	38.54
A41	Belt Conveyor #8	800	7,008,000	245.28	73.58	0.07	0.021		
	Belt Conveyor #9								
	Belt Conveyor #10								
	Belt Conveyor #11								
	Belt Conveyor #12								
	Belt Conveyor #13								
	Belt Conveyor #14								
A79	Stacker 1/8"	800	7,008,000	140.16	38.54	0.04	0.011		
E01	Loader to Hopper	800	7,008,000	140.16	21.02	0.04	0.006	140.16	21.02
E02	Conveyor to Conveyor	800	7,008,000	70.08	21.02	0.02	0.006	70.08	21.02
	Conveyor to Truck								
E03	Loader to Hopper	800	7,008,000	140.16	21.02	0.04	0.006		
E04	Conveyor to Conveyor	800	7,008,000	70.08	21.02	0.02	0.006		
	Conveyor to Truck								
F01	Hopper	800	7,008,000	140.16	21.02	0.04	0.006		
F02	Conveyor to Conveyor	800	7,008,000	70.08	21.02	0.02	0.006		
	Conveyor to Truck								
Subtotal $PM_{10/2.5}$								**2356.44**	**441.71**

Allowables

Gypsum Processing:										
EU	**Condition**	**PM_{10}**	**$PM_{2.5}$**	**NO_x**	**CO**	**SO_2**	**VOC**	**HAPs**	**H_2S**	**Pb**
A00	1,280,000 tons/yr	5.12	0.77	0	0	0	0	0	0	0
A01	1,280,000 tons/yr	2.82	0.42	0	0	0	0	0	0	0
A02	560,000 tons/yr	2.80	0.84	0	0	0	0	0	0	0
A03	Emission in A39			0	0	0	0	0	0	0
A39	560,000 tons/yr	0.22	0.02	0	0	0	0	0	0	0
A04	560,000 tons/yr	2.80	0.84	0	0	0	0	0	0	0
A06	Emission in A01			0	0	0	0	0	0	0
A09	560,000 tons/yr	0.52	0.16	0	0	0	0	0	0	0
A33	560,000 tons/yr	2.07	0.57	0	0	0	0	0	0	0
A05	1,280,000 tons/yr	0.83	0.16	0	0	0	0	0	0	0
A07	1,280,000 tons/yr	0.06	0.02	0	0	0	0	0	0	0
A10	1,280,000 tons/yr	0.06	0.02	0	0	0	0	0	0	0
A11	Emission in A08			0	0	0	0	0	0	0
A08	1,280,000 tons/yr	0.51	0.04	0	0	0	0	0	0	0
A12	400,000 tons/yr	2.00	0.60	0	0	0	0	0	0	0
A48	Emission in A34			0	0	0	0	0	0	0
A34	400,000 tons/yr	0.26	0.05	0	0	0	0	0	0	0
A35	400,000 tons/yr	2.00	0.60	0	0	0	0	0	0	0
A40	Emission in A08			0	0	0	0	0	0	0
A36/A41[1]	1,280,000 tons/yr	8.29	2.49	0	0	0	0	0	0	0
A38/A79[1]		4.74	1.30	0	0	0	0	0	0	0
E01[2]	1,280,000 tons/yr	4.74	0.71	0	0	0	0	0	0	0
E02[2]		2.37	0.71	0	0	0	0	0	0	0
E03[2]		0.00	0.00	0	0	0	0	0	0	0
E04[2]		0.00	0.00	0	0	0	0	0	0	0
F01[2]		0.00	0.00	0	0	0	0	0	0	0
F02[2]		0.00	0.00	0	0	0	0	0	0	0
	Total Gypsum Processing	**42.21**	**10.32**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Engines:										
C01	4,200 hrs/yr	0.41	0.41	67.20	8.89	0.06	1.63	0.05	0	0
C05	6,500 hrs/yr	0.16	0.16	2.40	1.02	0.01	1.41	0.02	0	0
C06	6,500 hrs/yr	0.10	0.10	2.17	1.22	0.01	0.81	0.01	0	0
C07	4,200 hrs/yr	0.37	0.37	5.21	1.12	0.01	0.42	0.01	0	0
C08	8,760 hrs/yr	0.01	0.01	2.00	0.08	0.01	0.01	0.01	0	0
		1.05	**1.05**	**78.98**	**12.33**	**0.10**	**4.28**	**0.10**	**0.00**	**0.00**
	Gypsum/Engines:	**43.26**	**11.37**	**78.98**	**12.33**	**0.10**	**4.28**	**0.10**	**0.00**	**0.00**

Fugitives:

A001	25,000 ft^2/200 blasts/yr	2.88	0.17	2.38	12.29	0	0	0	0	0
A002	3,400,000 tons/yr	13.60	2.04	0	0	0	0	0	0	0
A003	14,000 holes	4.76	0.28	0	0	0	0	0	0	0
A32	25.0 Acres	7.57	1.14	0	0	0	0	0	0	0
B01	128,0000 VMT	48.45	4.91	0	0	0	0	0	0	0
B02	32,000 VMT	2.42	0.36	0	0	0	0	0	0	0
B03	68,000 VMT	5.15	0.78	0	0	0	0	0	0	0
B04	38,400 VMT	14.53	1.47	0	0	0	0	0	0	0
	Total Fugitives:	**99.36**	**11.15**	**2.38**	**12.29**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

	Total Facility:	**142.62**	**22.52**	**81.36**	**24.62**	**0.10**	**4.28**	**0.10**	**0.00**	**0.00**

Gypsum Processing:

EU	Description	Limitation	EF PM_{10}	EF $PM_{2.5}$	CF	Emissions (PM_{10})	Emissions ($PM_{2.5}$)		
		tons/yr	(lbs/ton)	(lbs/ton)		tons/yr	tons/yr		
A00	Truck Unloading to Stockpile from Mining	1,280,000	0.08	0.012	0.10	5.12	0.77		
A01	Loader to VGF	1,280,000	0.04	0.006	0.01	0.26	0.04		
	VGF (VGF to VGF Underbelt)				0.1	2.56	0.38		
A02	VGF Underbelt (VGF Underbelt to Reject Conveyor)	560,000	0.01	0.003	1.000	2.80	0.84	10.74	2.03
A03	Reject Conveyor (Reject Conveyor to Screen)	Emission included in A39							
A39	Reject Screen (6" x 20")	560,000	0.08	0.006	0.01	0.22	0.02		
A04	Screen Underbelt (Screen Underbelt to Recir Conveyor #1)	560,000	0.01	0.003	1.000	2.80	0.84	3.02	0.86
A06	Recir Conveyor (Recir Conveyor to VGF)	Emissions includes in A01							
A09	Reject Underbelt (Reject Underbelt to Reject Stacker)	560,000	0.01	0.003	0.185	0.52	0.16		
A33	Reject Stacker (Reject Stacker to Stockpile)	560,000	0.04	0.011	0.185	2.07	0.57		
A05	HSI Crusher (VGF to HSI Crusher)	1,280,000	0.13	0.025	0.01	0.83	0.16		
	HSI Underbelt								
A07	HSI Underbelt to Surge Bin	1,280,000	0.01	0.003	0.01	0.06	0.02		
A10	Surge Bin (Surge Bin to West Conveyor)	1,280,000	0.01	0.003	0.01	0.06	0.02	3.54	0.92
A11	West Conveyor (West Conveyor to West Screen)	Emissions includes in A08							
A08	West Screen (8" x 20")	1,280,000	0.08	0.006	0.01	0.51	0.04		
A12	West Underbelt (West Underbelt to Cone Conveyor)	400,000	0.01	0.003	1.000	2.00	0.60	2.51	0.64
A48	Cone Conveyor (Conveyor to Cone Crusher)	Emissions included with A34							
A34	Cone Crusher	400,000	0.13	0.025	0.01	0.26	0.05		
	Cone Underbelt								
A35	Cone Underbelt (Cone Underbelt to Recir Conveyor #2)	400,000	0.01	0.003	1.000	2.00	0.60	2.26	0.65
A40	Recir Conveyor #2 (Recir Conveyor #2 to West Screen)	Emissions included in A08							
A36	Belt Conveyor #1	1,280,000	0.07	0.021	0.185	8.29	2.49		
	Belt Conveyor #2								
	Belt Conveyor #3								
	Belt Conveyor #4								
	Belt Conveyor #5								
	Belt Conveyor #6								
	Belt Conveyor #7								
A38	Stacker 2"	1,280,000	0.04	0.011	0.185	4.74	1.30	13.03	3.79
A41	Belt Conveyor #8	1,280,000	0.07	0.021	0.185	8.29	2.49		
	Belt Conveyor #9								
	Belt Conveyor #10								
	Belt Conveyor #11								
	Belt Conveyor #12								
	Belt Conveyor #13								
	Belt Conveyor #14								
A79	Stacker 1/8"	1,280,000	0.04	0.011	0.185	4.74	1.30		
E01	Loader to Hopper	1,280,000	0.04	0.006	0.185	4.74	0.71		
E02	Conveyor to Conveyor	1,280,000	0.02	0.006	0.185	2.37	0.71		
	Conveyor to Truck							7.11	1.42
E03	Loader to Hopper	1,280,000	0.04	0.006	0.185	4.74	0.71		
E04	Conveyor to Conveyor	1,280,000	0.02	0.006	0.185	2.37	0.71		
	Conveyor to Truck								
F01	Hopper	1,280,000	0.04	0.006	0.185	4.74	0.71		
F02	Conveyor to Conveyor	1,280,000	0.02	0.006	0.185	2.37	0.71		
	Conveyor to Truck								
A001	Blasting	200 blasts/yr	See Blasting Form			2.88	0.17	2.88	0.17
A002	Overburden	3,400,000	0.08	0.012	0.10	13.60	2.04	13.60	2.04
A003	Drilling	14,000 holes	See Drilling Form			4.76	0.28	4.76	0.28
A32	Stockpiles	25 Acres	1.66 lbs/acre-day	0.25 lbs/acre-day		7.57	1.14		
B01	BLM Haul Road; Unpaved	128,000	7.57	0.767	0.10	48.45	4.91		
B02	On-Site Haul Road; Paved	32,000	7.57	1.14	0.02	2.42	0.36		
B03	Overburden Haul Road; Paved	68,000	7.57	1.14	0.02	5.15	0.78		
B04	Material Haul Road; Unpaved	38,400	7.57	0.77	0.10	14.53	1.47	78.12	8.66
					Subtotal (PM_{10})	**168.82**	**28.09**	141.58	21.46
								141.58	21.46

Drilling

Proposed limit (holes/yr)	PM_{10} EF (lb/hole)	Potential PM_{10} (tpy)	$PM_{2.5}$ EF (lb/hole)	Potential $PM_{2.5}$ (tpy)
14000	0.68	**4.76**	0.04	**0.28**

Blasting

Horizontal Area (ft2/blast)	Proposed Blasts (blasts/yr)	PM_{10} EF (lb/blast)	Potential PM_{10} (tpy)	$PM_{2.5}$ EF (lb/blast)	Potential $PM_{2.5}$ (tpy)
25000	200	28.78	**2.88**	1.66	**0.17**

EPA AP-42 EF TSP <30 Table 11.9-1 0.000014(A)^1.5 lb/blast where A = horizontal area

EPA AP-42 EF <10 scaling factor Table 11.9-1 0.52

EPA AP-42 EF <2.5 scaling factor Table 11.9-1 0.03

Proposed ANFO (tons/yr)	CO EF (lb/ton)	Potential CO (tpy)	NO_x EF (lb/ton)	ANFO only Potential NO_x (tpy)
600	40.97	**12.29**	7.92	**2.38**

National Institute of Safety and Health: A Technique for Measuring Gasses produced by Blast Agents, 1997

For combustion calculation, see 17286_20191114_TSD.