DES
DEPARTMENT OF ENVIRONMENT AND SUSTAINABILITY
air quality desert conservation PROGRAM sustainability

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PART 70
TECHNICAL SUPPORT DOCUMENT
(STATEMENT of BASIS)

APPLICATION FOR:
Part 70 Operating Permit Renewal with Reopening for Cause

SUBMITTED BY:
Trinity Consultants

FOR:
J.R. Simplot Company
dba Simplot Silica Products
Source ID: 138

SIC code 1446, "Industrial Sand Mining"
NAICS code 212322, "Industrial Sand Mining"

TSD Date: October 26, 2022

EXECUTIVE SUMMARY

JR Simplot Company (Simplot) operates a silica pit and mill plant in Overton, Nevada. The operation produces a high (>98% SiO_2) silica sand for use in glass manufacturing. General activities include mining and conveying of the slurry at the pit, and processing, dewatering, drying, and shipping of the silica product from the plant. Other activities include periodic blasting, stockpiling and management of waste piles, and occasional dredging of settling ponds. The Part 70 source is located within the Moapa Valley air shed (HA 220), which is in attainment for all regulated air pollutants.

Simplot is a major source for nitrogen oxide (NO_x) and a synthetic minor source for particulate matter equal to or less than 10 microns in aerodynamic diameter (PM_{10}). It is a minor source for all other criteria pollutants. It is not a categorical source and, for the purpose of PSD applicability, is below the 250 tpy thresholds for all pollutants.

The following table summarizes the source's PTE for each regulated air pollutant from all source emission units addressed in this Part 70 OP.

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

	PM_{10}	$PM_{2.5}$	NO_x	CO	SO_2	VOC	HAP	H_2S	Pb	GHG[1]
Process	47.45	40.74	233.38	6.77	22.90	1.82	0.10	0	0	43,434.91
Fugitives	69.30	6.86	1.98	10.24	0	0	0	0	0	0
PTE	**116.75**	**47.60**	**235.36**	**17.01**	**22.90**	**1.82**	**0.10**	**0**	**0**	**43,434.91**
Title V Source Thresholds	100	100	100	100	100	100	10/25	---	---	---
Major Stationary Source (PSD) Thresholds	250	250	250	250	250	250	10/25	---	---	---

[1]GHG s expressed as CO_2e are for information purposes only.

The Clark County Department of Environment and Sustainability's Division of Air Quality (DAQ) has been delegated the authority to implement the requirements of the Part 70 operating permit program.

Simplot submitted an application to renew its Part 70 OP on September 18, 2020. The application was timely. The renewal application was deemed complete on November 17, 2020. On October 15, 2020 and April 26, 2021, supplemental information about the baghouses was submitted along with miscellaneous information. On February 9, 2022, additional information was received about the baghouse pressure drops.

Based on the information submitted by the applicant and a technical review performed by DAQ staff, DAQ proposes a renewal of the Part 70 OP for Simplot.

The coal-fired sand dryer is subject to the requirements of 40 CFR Part 60, Subpart UUU. The facility also has a gasoline dispensing operation subject to 40 CFR Part 63, Subpart CCCCCC and a 78-hp water pump subject to 40 CFR Part 60, Subpart IIII. By complying with 40 CFR Part 60, Subpart IIII, this water pump meets the requirements of 40 CFR Part 63, Subpart ZZZZ.

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I. ACRONYMS

Table I-1: Acronyms and Abbreviations

Acronym	Term
AQR	Clark County Air Quality Regulation
ATC	Authority to Construct
ATC/OP	Authority to Construct/Operating Permit
BH	baghouse
CAM	Compliance Assurance Monitoring
CFR	Code of Federal Regulations
CO	carbon monoxide
CO_2	carbon dioxide
DAQ	Division of Air Quality
DES	Clark County Department of Environment and Sustainability
DOM	date of manufacture
EPA	U.S. Environmental Protection Agency
EU	emission unit
g/dscm	gram per standard cubic meter of dry gas
gr/dscf	grain per standard cubic foot of dry gas
H_2S	hydrogen sulfide
HAP	hazardous air pollutant
hp	horsepower
LP	Landplaster
MMBtu	Millions of British thermal units
NAICS	North American Industry Classification System
NO_X	nitrogen oxides
OP	Operating Permit
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
PM_{10}	particulate matter less than 10 microns in diameter
PTE	potential to emit
SO_2	sulfur dioxides
STMP	sodium trimetaphosphate
tpy	tons per year
VMT	vehicle miles traveled
VOC	volatile organic compound

II. SOURCE INFORMATION

A. General

Permittee	J.R. Simplot Company
Address (Mailing/Billing):	P.O. Box 308 Overton, Nevada 89040
Source Name:	Simplot
Source Address:	665 Simplot Road Overton, Nevada 89040
Responsible Official: Telephone Number:	Rex Simpson (702) 397-0021
Contact: Telephone Number: Cell Number:	Mike Uri (702) 397-0027 (702) 379-8490

B. Description of Process

Simplot purchased the Overton Silica mining operation in 1955; the mine has been in operation since the early 1930s. The major activities at this source are the mining, screening, drying, and loading of silica sand. The sand is mined from a pit, screened and transported via a series of conveyer belts, and mixed with water to form a slurry. The sand slurry is pumped and passed through a floatation mill, where size reduction and classification are carried out. The sized sand slurry is then pumped through a four-mile pipeline to the main processing plant, where the wet sand is stockpiled for draining.

The drained water is pumped to a tailing pond and reused after clarification. The damp sand is fed into a coal-fired counter-current rotary dryer for drying. The moisture content of the sand is reduced to 0.25% by weight in the drying process, and the dried sand is then screened and transferred to elevated storage bins prior to shipment. The high purity silica sand mined at the site is primarily used in the manufacture of glass.

Periodically, blasting is used to start the mining process by breaking apart the sandstone formation. Simplot mines the sandstone with a dozer (front-end loader) and transports the mined material with haul trucks and/or front-end loaders to a mine hopper/scalping screen.

Coal is received via a hopper, transported by conveyor to a feed bin, and pulverized in an ABB Raymond mill. A 30-hp coal fan pneumatically transports the pulverized coal to the combustion chamber. The pulverized coal is fed to a COEN coal scroll, combined with combustion chamber air supplied by a 75-hp centrifuge fan, and subsequently combusted in the combustion chamber. The sulfur content in the coal burned is limited to 0.8%. Auxiliary propane fuel is used for coal-fired sand dryer startup/heat-up purposes, and as a supplementary fuel to boost production rates.

The coal-fired sand dryer off-gases are collected in the dryer plenum; entrained solids are removed in a refractory lined stainless steel cyclone. Both the ducting from the dryer plenum to the cyclone and the cyclone itself are refractory lined stainless steel due to the abrasive nature of the entrained silica sand. From the cyclone, the off-gases are further cleaned in a Dustex baghouse. The baghouse fines/dust are transported via two small screw conveyors to a small slurry tank where the baghouse fines are slurried with process water. The slurry is pumped through a 4-inch PVC line to one of two settling ponds. The cleaned gases from the baghouse are ventilated using a 350-hp dryer exhaust fan. All ducting (from the cyclone to the baghouse to the fan and from the fan to the exhaust stack) are stainless steel. This ducting is currently insulated. The baghouse has a 2-inch layer of insulation for personnel protection and to prevent condensation of corrosive process gases.

The hot sand from the coal-fired sand dryer runs through a grizzly screen in the dryer plenum and collects on a high-temperature conveyor (rated at 400°F). The temperature of sand exiting from the coal-fired sand dryer typically runs at 250–300°F. This sand mixes with the collected cyclone solids and then is sent to a series of four Tyler screens. Fluidization air is supplied to the cooler by a multi-stage, 250-hp centrifuge compressor.

C. Permitting Actions

Table II-C-1: Permitting Actions Since Last Title V Operating Permit Renewal

Application Date	Action	Action Summary
08/11/2015	502(B)(10)	Like-in-kind belt conveyor.
04/13/2016	Minor Revision	To remove existing equipment and install new equipment. The source presented more representative emission factors for the replacement of the existing equipment. Therefore, these new emission factors were to be incorporated throughout the facility to provide the source new facility-wide emissions for PM_{10} and $PM_{2.5}$.
To be incorporated with this action:		
10/31/2019	Minor Revision	– New system for the truck loadout and rail loadout. – Increase of the following hourly capacities: EUs: A22, A24, and A24a, from 200 tph to 400 tph; EUs: A29, A32, A34, A36, from 200 tph to 250 tph; EU: A33b from 4 tph to 5 tph; EUs: A36, A36a, and A39, from 192 tph to 250 tph; EU: A40 from 192 tph to 250 tph; EU: A42 from 8 tph to 10 tph; and EU: A123 from 10 tph to 100 tph. – Updates to process descriptions. – Removal of EUs: A41 and A49.
08/03/2020	Minor Revision	Repurposed existing process equipment at the facility. New emission units for the following: transfer from low-side conveyor to stockpile conveyor, transfer from stockpile conveyor to stockpile. Modified EU: A123 process.
05/18/2021	Site Visit	After an inspection, Compliance and Permitting scheduled a site visit to verify if moisture sampling is required in the permit and confirm the categorization of the facility processes.

<u>Permitting Actions Addressed with this Renewal</u>

The current permit expires on March 24, 2021. The source submitted a timely application to renew the Part 70 OP on September 18, 2020. The renewal application was deemed complete on November 17, 2020. On October 15, 2020, supplemental information was submitted in regard to the baghouses. Additional information was received on February 9, 2022 regarding the baghouse pressure drops.

The renewal will address the following:

- incorporating the minor revision application submitted to DAQ on October 31, 2019
- incorporating the minor revision application submitted to DAQ on August 3, 2020
- revision to the following operating limits:
    - Source requested A09b moisture content to 15% not 1.5% - During the permitting action all references of percentage of moisture were removed.
    - Source requested A10a to 1.5% and A28 not 15% - During the permitting action all references of percentage of moisture were removed.
    - Source requested an increase for A36 to 1,200,000 from 1,152,000 – accepted change.
    - Source requested emission changes to A10a, A28, and A36 – accepted changes.

- Source requested to revert the indicator range for baghouses back to the previous ranges that were with the previous permit. This request is being denied. In this case CAM parameters cannot be the same as the manufacturer's specifications. The source also requested to change the language in the footnote to Table III-C-1 (now Table 4.2) in the permit.
- Source requested to increase the CAM elements for the monitoring frequency of the indicators from every four hours to every fifteen minutes when combusting coal from - the change reflected is as followed - collected every five minutes when operating (or one reading per day if monitoring equipment is inoperable)
- Source requested to change the baghouse data collection procedures from instantaneous readings of indicator 2 (pressure differential) at least once every four hours to one in every fifteen minutes to derive a daily average when combusting coal. This request was later revised. The revised data collection procedures and averaging periods are included in the permit. The indicator 2 values are recorded every 5 minutes, then averaged every 8 hours when combusting coal.
- Source requested the CAM elements averaging period be change to daily instead of instantaneous (one reading per day, as per the current permit). This request was revised and the proposed permit incorporates the following:
  - Elements of the Baghouse CAM indicator 2 will be addressed as follows:
    - Monitoring and data collection will be every 5 minutes
    - Averaging will be every 8 hours
  - Elements of Scrubber CAM will be addressed as follows:
    - Monitoring and data collection will be every 8 hours
  - Excursions were re-evaluated for the baghouse in the Baghouse CAM and updated from 10 to 20 based on the following analysis:

    (3 averages/day * 260 days/year/2*5%) = (3*130*5%) = 19.5 or 20 excursions

    The operation of the dryer typically runs 5 days per week, excluding holidays, plus a few extra days on the weekends (254 days). DAQ used 260 days in the equation above. CAM addresses coal combustion, therefore using the historical data of the dryer's operations is a better representation of these excursions.

- Administrative updates
- supplemental information received on November 11, 2021 to increase A04a from 2 acres to 5 acres
- Round trip miles changed to 12 instead of 2.
- New blasting and drilling control conditions (16 (a), (b) and (g)) are added to Section 2.2 in the permit with a clarification "as safety and operational conditions allow". Some existing permitting conditions are updated in this action for the drilling and blasting activities.

Reopening for Cause

The U.S. Environmental Protection Agency finalized the implementation of National Ambient Air Quality Standards (NAAQS) for $PM_{2.5}$ on July 29, 2016. Upon finalization of the implementation rule, DAQ began including $PM_{2.5}$ emissions in permits. However, given relatively low $PM_{2.5}$ emissions from source types that are more typically associated with coarse particulate matter (e.g., mineral processing, gypsum board manufacturing, and concrete batching) and the scarcity of $PM_{2.5}$ data available for potential to emit (PTE) calculations, DAQ did not require sources to incorporate $PM_{2.5}$ into permits for operations other than those associated with combustion and chemical processes.

A recent assessment showed that this Title V permit needs additional $PM_{2.5}$ emissions evaluations for activities relating to processing, transporting, and/or sorting solid materials. Therefore, DAQ is initiating a reopening of the permit for cause to address this issue. DAQ's $PM_{2.5}$ EF memo was utilized for each emission unit and activity related to stockpiles, haul roads, and char handling operations to incorporate the $PM_{2.5}$ emissions into the Title V Operating Permit.

$PM_{2.5}$ emissions have been revised in this permitting action.

Reopening for Cause

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 emission statement has been included in the permit.

Reopening for Cause – September 2, 2021

This source is an existing major source that has a Title V operating permit. The Division of Air Quality (DAQ) had sent a letter to the source notifying a reopening for cause to revise 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".

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.

AQR 92 conditions only apply to unpaved parking lots and storage areas located in Hydrographic Areas 212, 216, or 217. Therefore, AQR 92 is not applicable to the source. The source submitted a letter to the Director to look at the regulation for applicability in stationary sources. DAQ is in the process of revising the regulation for clarification on applicability for stationary sources. Therefore, the source's permit has not been revised at this time to include AQR 94 fugitive dust requirements.

The renewal Part 70 OP Comments were received on October 21, 2021 and November 5, 2021 to address the draft permit. All comments have been addressed in the permit. Source was informed to discuss compliance with permits conditions in question in the permit with DAQ compliance.

On November 4, 2021, DAQ requested that the source provide historical baghouse pressure drop data. This data was received on November 16, 2021. DAQ reviewed the data and sent Simplot an approach to establish pressure drop ranges. DAQ and Simplot met to discuss DAQ's approach for the pressure drops. Simplot requested to re-evaluate the discussion from the meeting. Simplot then proposed that they were going to have a third party look at DAQ's approach for the pressure drops. Simplot submitted additional information on February 9, 2022 to be used for pressure drops instead of DAQ's approach for the pressure drops. DAQ will incorporate the third party pressure drops analyses into the permit.

This OP will require the permittee to monitor or keep records of the sulfur content, cetane index, or aromatic content of the diesel fuel used in its engine(s).

The source's permit has been revised to include control, monitoring, and recordkeeping requirements.

D. Alternative Operating Scenario

No alternative operating scenarios have been identified for this source.

III. EMISSIONS INFORMATION

A. Total Source Potential to Emit

The source's PTE for pollutants is reflected in Table III-A-1.

Table III-A-1: Source PTE (tpy)

EU	Process Description	Condition	PM_{10}	$PM_{2.5}$	NO_X	CO	SO_2	VOC	HAP
A01a, A03a, A05a, A06a, A08a	Mining and Screening	2,400,000 tpy	5.41	0.88	0.00	0.00	0.00	0.00	0.00
A09a, A09b, A11a	Wet Screening	2,400,000 tpy	0	0	0.00	0.00	0.00	0.00	0.00
A12	Floatation	2,400,000 tpy	0	0	0.00	0.00	0.00	0.00	0.00
A22, A24, A24b	Dewatering	1,200,000 tpy	0	0	0.00	0.00	0.00	0.00	0.00
A32	Sand Dryer	12,708 ton (coal) 500,000 gal (propane)	37.67	37.67	231.12	3.98	22.89	0.83	0.08
A29, A32, A33b, A34, A36, A36a, A42, A123	Drying Process	1,200,000 tpy	3.82	1.73	0.00	0.00	0.00	0.00	0.00
A39, A40, A40a, A112a,A124, A125, A126, A127	Final Product Processing	1,152,000 tpy	0.38	0.29	0.00	0.00	0.00	0.00	0.00
D05	Diesel Engine (78 hp)	8,760 hours	0.17	0.17	2.26	2.79	0.01	0.86	0.01
E01	Gasoline Storage Tank	20,000 gal	0.00	0.00	0.00	0.00	0.00	0.13	0.01
	Subtotal 1		*47.45*	*40.74*	*233.38*	*6.77*	*22.90*	*1.82*	*0.10*
	Fugitives								
C01	Hauls Roads	122,206 VMT	46.25	4.69	0	0	0	0	0
C02	Blasting	50 blasts	11.87	0.68	0	0	0	0	0
C02	Blasting	600 tons (ANFO)	0	0	1.98	10.24	0	0	0
C03	Drilling	4,000 holes	1.36	0.08	0	0	0	0	0
A04a, A10a, A28, A50, A112, B01	Stockpiles	15.8 acres	9.82	1.41	0	0	0	0	0
	Subtotal 2		*69.30*	*6.86*	*1.98*	*10.24*	*0*	*0*	*0*
	Source PTE Totals		**116.75**	**47.60**	**235.36**	**17.01**	**22.90**	**1.82**	**0.10**

B. Emission Units and PTE

Table III-B-1: List of Emission Units

EU	Description	SCC	Throughput	Control Method
Mining and Screening				
A01a	Mining	30502513	500	Moisture
A03a	Loader to Grizzly Screen/Hopper	30502511	500	
	Grizzly Screen		500	
	Grizzly Screen/Hopper to Feed Conveyor #1		500	
	Grizzly Screen to Bunker		21	
	Grizzly Screen Bunker to Oversize Stockpile		21	
A04a	Grizzly Scalping Screen Oversize Stockpile	30502507	5.0 acres	Moisture
A05a	Feed Conveyor #1 to Incline Conveyor #1	30502503	500	Moisture
A06a	Incline Conveyor #1 to Scalping Screen	30502511	500	
	Scalping Screen		500	
	Scalping Screen to Feed Conveyor #2		500	
	Scalping Screen to Bunker		41	
	Scalping Screen to Oversize Stockpile		41	
	Scalping Screen Oversize Stockpile			
A08a	Feed Conveyor #2 to Incline Conveyor #2	30502503	500	Moisture
Wet Screening				
A09a	Incline Conveyor #2 to Wet Screen Turning Box (Chute)	30502503	500	>10% Moisture
	Wet Screen Turning Box to Wet Screen			
A09b	Wet Screen	30502511	500	>10% Moisture
	Wet Screen to Oversize Conveyor		25	
	Oversize Conveyor to Wet Screen Stockpile		25	
A10a	Wet Screen Stockpile	30502507	2.0 acres	Moisture
A11a	Wet Screen to Slurry Hopper, Slurry Hopper to Product Slurry Line, and Tailing Line	30502503	500	>10% Moisture
Floatation Process				
A12	Floatation and Tailings (4 Hydrosizers)	30502999	500	>10% Moisture
Dewatering				
A22	Product Slurry Line to Dewatering Plant	30502503	400	>10% Moisture
A24	Dewatering Screens #1 - #4	30502511	400	
	Dewatering Screens Discharge to Short Conveyor			
A24b	Short Conveyor to 70 Stacker	30502505	400	
	70 Stacker to Dewatering Stockpiles		400	
A28	Dewatering Stockpiles	30502507	6.0 acres	Moisture
Drying Process				
A29	Wet Stockpile Sand Loading to Sand Feed Hopper	30502503	250	Inherent Moisture
	Sand Feed Hopper to Sand Feed Belt			
	Sand Feed Belt to Sand Feed Weigh Belt			

EU	Description	SCC	Throughput	Control Method
A32	Coal-Fired Sand Dryer	30502508	50 MMBtu/hr	Baghouse/Scrubber
	Sand Feed Weigh Belt to Dryer Sand Feed Chute		250	Inherent Moisture
	Dryer Discharge to Dryer Discharge Belt			Main Baghouse
	Cyclone Discharge to Cyclone Discharge Belt			
A33b	Cyclone Discharge Belt to Short Belt	30502503	5	
A34	Dryer Discharge Belt to Screen Feed Belt	30502503	250	
A36	Screen Feed Belt to (4) Polishing Screens	30502511	250	Screen Baghouse
	(4) Polishing Screens			
	(4) Polishing Screens to Screen Return Conveyor			
A36a	Screen Oversize to West Reject Belt	30502503	250	Main Baghouse
	Transfer West/East Reject Conveyor to Sand Piles			
	#1 Stacker to 8 Storage Bins			Stacker Baghouse
A42	Screen Oversize to East Reject Belt	30502503	10	Inherent Moisture
	Screen Oversize to West Reject Belt			
	West Reject Conveyor to Sand Pile to Oversize and Reject Stockpile			
	Transfer West/East Reject Conveyor to Sand Piles			
A123	Hopper Loading	30502503	200	Inherent Moisture
	Hopper			
	Transfer Belt			
Final Product Processing				
A39	8 Storage Bins	30502502	250	Bin Baghouse
A40	Transfer From Storage Bin #1 - #4 to Low Side Conveyor to Loadout Conveyor Transfer From Storage Bin #5 - #8 to High Side Conveyor to Loadout Conveyor	30502503	400	Stacker Tail Pulley Baghouse to Loadout conveyor Tail Baghouse
A40a	Transfer From The Low Side Conveyor (EU A40) to Stockpile Conveyor	30502503	400	Inherent Moisture
A112a	Transfer From Stockpile Conveyor to EU A112 Stockpile	30502503	400	Stockpile Conveyor Head Pulley Baghouse
A112	Product Stockpile	30502507	1.0 acre	Moisture
A124	Transfer From Loadout Conveyor to Truck Spout	30502506	400	Loadout Belt Head Baghouse
	Transfer From Loadout Conveyor to Rail Loadout Conveyor			
	Transfer From Truck Spout to Truck			
A125	Transfer From Rail Loadout Conveyor to Rail Spout	30502506	400	Belt Head Ventilation Module
A126	Transfer From Rail Spout to Railcar	30502506	400	Loadout Compact Filter Module
A127	Transfer From Loadout Conveyor to Reject Bunker	30502506	200	Inherent Moisture
	Transfer From Reject Bunker			
A50	Oversize Stockpile	30502507	1.0 acre	Moisture
B01	Coal Stockpile	30502507	0.8 acre	Moisture

EU	Description	SCC	Throughput	Control Method
C01	Operations Haul Roads	30502504		
	Pit Unpaved Haul Roads		12 miles RT	
C02	Blasting	30502514		
C03	Drilling	30502514		
D05	Deutz 78 Hp	20200102		
E01	500 Gallon Aboveground Storage Tank	40400302		

The source also operated the following insignificant units and activities.

Table III-B-2: Insignificant Units and Activities

EU	Capacity
Diesel Dispensing Tanks (3)	<40,000 gallons each
Portable Gasoline Tanks	<500 gallons
Internal Combustion Engines Powering Portable Light Plants (3)	2 - 4,000 watts each 1 – 6,000 watts
Gasoline-Powered Portable Welders	N/A
Slurry Tank	N/A
Coal/Ash Handling System	N/A
Portable Conveyor – 1,000 tons/year	
Booster Pump Stations (2)	

C. Control Technology

No new control technology analyses were triggered by any of the permitting actions initiated after issuance of the previous Title V OP renewal and modifications to this Title V OP.

Table III-C-1: Summary of Increases (tpy)

Thresholds	PM_{10}	$PM_{2.5}$	NO_X	CO	SO_2	VOC	HAPs
AQR 12.2 (major source PSD for non-categorical sources)	250	N/A	250	250	250	250	
AQR 12.4 (major Part 70 source req'ts)	100	100	100	100	100	100	10/25
Source PTE After Revisions	116.75	47.60	235.36	17.01	22.90	1.80	0.10
Previous Source PTE	90.24	45.93	236.95	18.34	23.62	2.29	0.01
Change of Emissions[1]	26.51	1.67	-0.59	-1.37	-0.72	-0.49	0.09
Corrected PTE Increase[2]	19.47	0.47	0	0	0	0	0
Emissions Increase[3]	7.04	1.20	0	0	0	0	0
AQR 12.4 (minor NSR, significant levels)	7.5	5	20	50	20	20	-
Applicable Control Technology	N/A	N/A	N/A	N/A	N/A	N/A	N/A

[1] Obtained as the difference between New Source PTE and Previous Source PTE.
[2] This increase was corrected due to a material mistake in the calculations where the moisture content was applied when it should not have been to a controlled emission factor.
[3] Based on new equipment and stockpile changes.

The emission increase for this action indicates in Table III-C-1 that the significance threshold was not triggered with the addition of new equipment and changes to several permitting conditions; therefore, a RACT analysis was not necessary.

The operating specifications and control requirements of each baghouse and bin vent are presented in Table III-C-2.

Table III-C-2: Summary of Add-On Control Devices

Control Device		Description	Typical DP or Sp[4] (in. H_20)	ΔP Range (in. H_20)	Corresponding Emission Unit
Number	Type				
BH01	Baghouse[1]	Sand Dryer/Main	4.2	3.0 – 8.0	A32, A33b, A34, A36a
BH02	Baghouse[2]	Screen	0.90	0.1 – 3.1	A36
BH03	Baghouse[2]	#1 Stacker	10.0	8.0 – 12.0	A36a
BH04	Baghouse[2]	Binvent 1	7.4	6.0 – 10.0	A39
		Binvent 2	7.4	6.0 – 10.0	A39
		Binvent 3	10.5	8.5 – 12.5	A39
		Binvent 4	10.0	8.5 – 12.5	A39
		Binvent 5	8.2	6.0 – 10.0	A39
		Binvent 6	10.7	8.5 – 12.5	A39
		Binvent 7	10.0	8.5 – 12.5	A39
		Binvent 8	8.0	6.0 – 10.0	A39
BH05	Baghouse[2]	Loadout Conveyor Tail	5.3	4.0 – 8.0	A40
BH14	Baghouse[2]	Loadout Conveyor Head	3.5	0.2 – 5.8	A124
BH16	Filter[2]	Belt Head Ventilation Module	7.0	5.0 – 9.0	A125
BH15	Filter[2]	Loadout Compact Filter Module	8.3	6.5 – 10.5	A126
BH17	Baghouse[3]	Stockpile Conveyor Head Pulley	6.0	4.0 – 8.0	A112a

[1]CAM applicable.
[2]Finch Environmental data, received on 01/29/2022 as supplemental information.
[3]Manufacturers data.
[4]Please note: The column that indicates (DP) = Differential Pressure or (Sp.) Static Pressure specifies how the process typically operates under that static pressure. Utilizing static pressure as a baseline number for proper operation is still a very valid troubleshooting tool, (just as DP is utilized) but it must be understood that the baseline or average numbers will not be typical filter differential pressure across filter media ranges.

All control devices specified in Table III-C-2 are subject to 20% opacity, except BH01.

Table III-C-3: Control Requirements (CAM Applicable)

EU	Device	Description	NSPS/AQR Applicability	Compliance Standard
A32	BH01	Sand Dryer	40 CFR 60, Subpart UUU	0.092 g/dscm (0.025 gr/dscf)
A33b, A34, A36a	BH01	Conveyors	40 CFR 60, Subpart UUU	10% opacity
A32	SC01	Sand Dryer	40 CFR 60, Subpart UUU	10% opacity

Existing BACT for Coal-Fired Sand Dryer (EU: A32)

Two BACT analyses were performed and accepted by the Air Pollution Control Division (now DAQ). Fuels such as natural gas and liquefied petroleum gas were not available in Overton when these analyses were performed; the fuels were considered to be economically infeasible, so were not included in the BACT analysis. The use of low sulfur coal (0.6–0.8% sulfur) with a caustic or lime scrubber constituted BACT for SO_2, and baghouse controls constituted BACT for $PM_{10}/PM_{2.5}$.

Existing BACT for Internal Combustion Engines

Simplot identified four potential control technologies for controlling NO_x, VOC, and $PM_{10}/PM_{2.5}$ emissions from internal combustion engines: (1) injection timing retardation, (2) lean burn combustion, (3) selective catalytic reduction, and (4) turbocharging/aftercooling. All of the control technologies identified are considered technically feasible. Simplot analyzed the costs of implementing SCR and demonstrated that this control technology was uneconomic. Therefore, DAQ concludes that injection timing retardation, lean-burn combustion, and turbocharging/aftercooling are considered BACT for all criteria pollutants emitted by the generators.

Existing BACT for Unpaved Haul Roads

Unpaved haul roads are present from the mining pit area to the dryer area. The unpaved haul roads are a source of fugitive $PM_{10}/PM_{2.5}$ emissions generated from vehicle traffic. Simplot identified three control technologies to consider for reducing $PM_{10}/PM_{2.5}$ emissions: (1) pave, (2) apply a dust palliative, or (3) water. Simplot rejected paving the haul roads as technically infeasible because the routes used by vehicles at the source change as the quarrying locations change; previous haul road routes may be quarried in the future, requiring previously paved roads to be torn apart to extract product. However, the remaining control technologies are considered technically feasible.

Dust palliatives applied to unpaved roads reduce fugitive $PM_{10}/PM_{2.5}$ emission by binding the soil particles together so there are no free particles to be picked up by winds or vehicles. Water also binds the soil particles together. As the use of dust palliatives is not technically feasible, watering unpaved haul roads is considered BACT.

Existing BACT for the Mining and Production Areas

Since fugitive $PM_{10}/PM_{2.5}$ emissions are generated when sand is dropped on to or off of the emission units, the amount of fugitive emissions is tied to the amount of material processed through the system. Simplot identified three potential control technologies associated with these emission units: enclosures, baghouses/bin vents, and increased moisture content in the sand. Additionally, Simplot proposed a combination of increased moisture and a baghouse as an option for a control technology. However, this was ruled out as technically infeasible because Simplot believes that significant operational difficulties would result from this combination.

Enclosures, baghouses/bin vents, and increased moisture content in the sand are all technically feasible. Therefore, Simplot prepared a cost-effective analysis for these options and will utilize these options throughout its processes.

Existing BACT for the Blasting

Emissions from blasting events are controlled by restricting the number of blasting events and the amount of blasting agents. Blasting events shall not exceed 50 shots per year, utilizing no more than 500 tons of ANFO per year. Any new condition added in the permit as part of this renewal are not based on a BACT/RACT analysis.

The permittee shall comply with other operational and control requirements listed in the permit during blasting events.

D. Performance Testing

The performance testing is subject to DAQ's *Guidelines on Performance Testing* (9/19/19). The required performance testing will be conducted using the methods listed in Table III-D-1.

Table III-D-1: Performance Testing Protocol Requirements[1]

EU	Description	NSPS	Compliance Standard	Performance Test	Frequency
A32	Coal-fired Sand Dryer: Main Baghouse	Permit Conditions	7.34 lb/hour SO_2 @ 1.84 TPH minimum feed rate	Method 6, 6A, 6B, or 6C	Every 3 years
			10.30 lb/hour (0.025gr/dscf) filterable PM_{10} @ 1.84 TPH minimum feed rate	Method 5 or Method 17	Every 3 years
			1.80 lb/hour condensable PM_{10} @ 1.84 TPH minimum feed rate	Method 202	Every 3 years
A33b, A34, A36a		NSPS UUU	10% opacity	Method 9	Every 3 years
A32	Coal-fired Sand Dryer: Scrubber	CAM Plan	360 gpm/7.5 pH	Verification	Every 3 years

[1]Source is required to verify scrubber flow and pH during the performance test when burning coal.

E. Emissions Monitoring

The diesel water pump (EU: D05) shall comply with the emission standards from 40 CFR 89.112 for the same model year and maximum engine power, as provided by Table III-E-1. *[40 CFR Part 60.4202]*

Table III-E-1: Emission Standards (g/kW-hr)

EU	PM_{10}	NO_X	CO
D05	0.40	4.7	5.0

The engines at this source are subject to 40 CFR Part 60, Subpart IIII and 40 CFR Part 63, Subpart ZZZZ, so must meet the fuel requirements referenced therein from 40 CFR Part 80.510(b) (Subpart I) for nonroad diesel fuel. The source must purchase diesel fuel that meets the per-gallon standard of 15 ppm maximum sulfur content, a minimum cetane index of 40, or a maximum aromatic content of 35 volume percent. Therefore, this OP will require the permittee to monitor or keep records of the sulfur content, cetane index, or aromatic content of the diesel fuel used in its engine.

The moisture sampling and the minimum moisture content of 1.5% requirements have been removed during this permitting action. The controlled emission factor from AP-42 that was used in the calculations provides a range for moisture.

The moisture contents of >10% for EUs: A09a, A09b, A11a, A12, A22, A24, and A24b presume that these processes are saturated with water and have no visible emissions. This requirement will be incorporated in the permit.

The processes before and after the drying process indicate inherent moisture where an uncontrolled emission factor from AP-42 was used for the emission calculations.

Compliance Assurance Monitoring (CAM)

40 CFR Part 64, "Compliance Assurance Monitoring," is intended to provide monitoring requirements to assess if the control equipment is operating properly and to establish compliance with emission limitations. CAM requirements apply only to emission units that have some type of emission limitation, use a control device to comply with the limitation, and have a pre-control potential emission that exceeds the major source threshold for the particular pollutant controlled. Certain exemptions may apply for emission units subject to other regulatory programs. In some cases, a device used as a control device for some processes may in fact be integral to another process in other cases and exempt for that reason as well. CAM requirements include the development of a monitoring program for a selection of parameters indicative of control device operability and performance and, therefore, compliance with an applicable emission limitation.

The control devices associated with a coal-fired sand dryer include a baghouse used to control $PM_{10}/PM_{2.5}$ emissions and a caustic or lime scrubber used to control SO_2. The pre-control emissions of PM_{10} and SO_2 for this source exceed 100 tpy, and are therefore subject to the CAM rule. The opacity limit that originated in NSPS Subpart UUU is separately subject to CAM. The source will be monitoring visible emissions and the pressure drop from the baghouse for opacity and PM_{10}, respectively, and the liquor flow rate and liquor pH from the caustic or lime scrubber for SO_2 through the CAM plan. Compliance with the 40 CFR Part 60, Subpart UUU standards, along with the PM_{10} and the SO_2 emissions limits at specified minimum feed rate, will be demonstrated through the performance testing specified in the permit. Table III-E-2 lists the emission units at the source that are subject to the CAM rule.

Table III-E-2: Emission Units Subject to CAM

EU	Description	Control Device	Pre-control Emissions (tpy)	
			PM_{10}	SO_2
A32	Coal-Fired Sand Dryer	Baghouse and caustic or lime scrubber	376.70	252.88

Table III-E-3: Monitoring Approach for Baghouse - Opacity

CAM Element	Indicator
Indicator	Visible emission for opacity.
Measurement Approach	Visible emission (VE) checks are Method 22 conducted on a daily basis when process equipment is operating and combusting coal
Indicator Range	The presence of visible emissions monitored when combusting coal. If the presence of visible emissions are observed, a Method 9 shall be conducted to demonstrate compliance at 7% opacity when combusting coal. Excursions trigger an investigation, corrective actions, and a reporting requirement.
Excursion	Defined as opacity outside the specified range of 7%.
QIP Threshold	7 excursions in a six-month period when combusting coal.
Performance Criteria	
Data Representation	Observations are performed at the caustic or lime scrubber exhaust downstream of the baghouse while the baghouse is operating.
Verification of Operational Status	N/A
Quality Assurance and Control Practices	VE checks do not have to be conducted by a certified Method 9 observer.
	Method 22 observers need to have the knowledge of observing emissions and the process when combusting coal. Method 9 must be conducted by a certified observer.
Monitoring Frequency	VE checks and/or Method 9 are conducted daily while combusting coal.
Data Collection Procedures	VE checks and/or Method 9 are documented by the observer and recorded daily.
Averaging Period	VE checks are 6 minutes
	Method 9 is one 6-minute average

Table III-E-4: Monitoring Approach for Baghouse – PM_{10}

CAM Element	Indicator
Indicator	Pressure drop across baghouse.[1]
Measurement Approach	Pressure drop is monitored with a Magnehelic differential pressure gauge (or equivalent).
Indicator Range	Baghouse pressure drop will be monitored for compliance and stay between 3.0–8.0 inches H_2O when the dryer is operating when combusting coal. Excursions trigger an investigation, corrective actions, and a reporting requirement.
Excursion	Defined as a pressure drop outside the specified range of 3.0–8.0 H_2O when combusting coal.
QIP Threshold	20 excursions in a six-month period when combusting coal.
Performance Criteria	
Data Representation	Pressure gauge shall be installed, calibrated, and operated per the manufacturer's recommendations.
Verification of Operational Status	N/A
Quality Assurance and Control Practices	Differential pressure gauge calibration shall be checked annually.
Monitoring Frequency	Pressure drop across baghouse is measured with a calibrated device.

CAM Element	Indicator
Data Collection Procedures	Pressure drop is collected every five minutes when operating (or one reading per day if monitoring equipment is inoperable)
Averaging Period	Values are recorded every 5 minutes, then averaged every 8 hours when combusting coal.

[1] This indicator range for CAM was verified using the February 2015 performance test results, which demonstrated compliance with the PM_{10} emissions to be below the permitted required limitations and in which the pressure drop readings ranged between 5.0–6.0 in H_2O and operating data.

Table III-E-5: Monitoring Approach for Scrubber – SO_2

CAM Element	Indicator 1	Indicator 2
Indicator	Caustic or lime scrubber liquor inlet flow rate.[1]	Caustic or lime scrubber liquor outlet pH.[2]
Measurement Approach	The liquid inlet flow rate is monitored with an inline digital flow meter.	The pH probes are installed at the caustic or lime scrubber outlet and have a minimum accuracy of ±0.1 pH.
Indicator Range	A liquid inlet flow rate greater than or equal to 360 gpm while combusting coal.[1]	A caustic or lime scrubber pH greater than or equal to a value of 7.5 when combusting coal.[2]
Excursion	Defined as a liquid inlet flow rate below 360 gpm when combusting coal.	Defined as a caustic or lime scrubber pH of less than 7.5 when combusting coal.
QIP Threshold	18 excursions in a six-month period when combusting coal.	18 excursions in a six-month period when combusting coal.
Performance Criteria		
Data Representation	Flow meter is installed at the caustic or lime scrubber liquid inlet and has a minimum accuracy of ±0.5%.	The pH probes are installed at the caustic or lime scrubber outlet and have a minimum accuracy of ±0.1% pH.
Verification of Operational Status	N/A	N/A
Quality Assurance and Control Practices	Flow meter calibration shall be checked monthly (zero check).	Calibration of each electrode shall be checked monthly.
Monitoring Frequency	Caustic or lime scrubber pH and flow of caustic or lime scrubber liquor are monitored once every 8 hours when combusting coal..	
Data Collection Procedures	Caustic or lime scrubber pH and flow of caustic or lime scrubber liquor are collected and recorded once every 8 hours when combusting coal.	
Averaging Period	An 8 hour average of all instantaneous values collected when combusting coal.	

[1]This range for CAM was verified using the July 2014 performance test results, which demonstrated compliance with the SO_2 emissions to be below the permitted required limitations and in which the flow rates readings ranged from 490-495 gpm.
[2]This range for CAM was verified using the July 2014 performance test results, which demonstrated compliance with the SO_2 emissions to be below the permitted required limitations and in which the pH readings averaged 8.5.

The permittee shall follow monitoring approaches described in Tables III-E-3, III-E-4, and III-E-5 of the CAM plan that incorporates the following requirements:

1. Upon detecting an excursion, the owner or operator shall restore operation of the pollutant-specific emission unit (including the control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable and in accordance with good air pollution control practices for minimizing emissions.

2. Once the source exceeds the maximum excursions allowed in a six-month calendar period, as defined in the CAM Plan in its Part 70 OP, the owner or operator must develop and implement a written Quality Improvement Plan (QIP) within 30 days.

3. The QIP shall include procedures for evaluating the control performance problems. Based on the results of the evaluation procedures, the owner or operator shall modify the plan to include procedures for conducting one or more of the following actions, as appropriate:

    a. Improved preventive maintenance practices.

    b. Process operation changes.

    c. Appropriate improvements to control methods.

    d. Other steps appropriate to correct control performance.

    e. More frequent or improved monitoring, as allowed by the Part 70 OP.

4. The QIP shall be maintained on-site and shall be submitted to DAQ in the next semiannual report.

5. Reporting and recordkeeping is required in accordance with 40 CFR Part 64.9.

The requirements of the QIP have been incorporated into the permit.

F. Increment

J.R. Simplot Company is a major source in HA 220 (the lower Moapa Valley). Permitted emission units include one dryer, one generator, and mineral processing. Since minor source baseline dates for PM_{10} (May 28, 1985) and SO_2 (May 28, 1985) have been triggered, a PSD increment analysis is required.

DAQ modeled the source using AERMOD to track the increment consumption. The facility was established in the 1930s. Baseline PM_{10} emissions of 74.32 tons were included in the model. Stack data submitted by the applicant were supplemented with information available for similar emission units, and five years (2011 to 2015) of meteorological data from the McCarran Station were used in the model. U.S. Geological Survey National Elevation Dataset terrain data were used to calculate elevations. Table III-F-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 III-F-1: PSD Increment Consumption

Pollutant	Averaging Period	Source's PSD Increment Consumption (µg/m³)	Location of Maximum Impact	
			UTM X (m)	UTM Y (m)
SO_2	3-hour	25.98[1]	730475	4044404
SO_2	24-hour	17.96[1]	730420	4044472
SO_2	Annual	3.45	730420	4044472
PM_{10}	24-hour	18.95[1]	730420	4044472
PM_{10}	Annual	2.59	730420	4044472

[1] Highest Second High Concentration.

IV. REGULATORY REVIEW

This section of the TSD is limited to the regulatory review applicable to the emission units addressed in this permitting action.

A. Local Regulatory Requirements

DAQ has determined that the following public laws, statutes, and associated regulations are applicable:

1. Portions of the AQR included in the state implementation plan (SIP) for Clark County, Nevada. SIP requirements are federally enforceable. All requirements from ATC permits issued by DAQ are federally enforceable because these permits were issued pursuant to SIP-included sections of the AQR; and

2. Portions of the AQR not included in the SIP. These locally applicable requirements are locally enforceable only.

B. Federally Applicable Regulations

1. CAAA (authority: 42 U.S.C. § 7401, et seq.);

2. Title 40 of the CFR, including 40 CFR Part 70 and others;

3. Chapter 445 of the NRS, Sections 401 through 601;

40 CFR Part 60 (NSPS), Subpart A—General Provisions

40 CFR Part 60.7: Notification and recordkeeping.

Discussion: This regulation requires notification to DAQ of modifications, opacity testing, records of malfunctions of process equipment and/or the continuous monitoring device, and performance test data. These requirements are contained in Section III of the Part 70 OP. DAQ requires records be maintained for five years, a more stringent requirement than the two years required by 40 CFR Part 60.7.

40 CFR Part 60.8: Performance tests.

Discussion: Notice of intent to test, applicable test methods, acceptable test method operating conditions, and the requirement for three runs are outlined in this regulation. These requirements are contained in Section III.D of the Part 70 OP. DAQ requirements for initial performance testing are identical to 40 CFR Part 60.8, but DAQ may require subsequent performance testing on emission units. DAQ also requires periodic performance testing on emission units based upon throughput or usage. Section VI of this TSD, "Compliance," provides more information.

40 CFR Part 60.11: Compliance with standards and maintenance requirements.

Discussion: Simplot is subject to the NSPS standard, i.e., 40 CFR Part 60, Subpart UUU, "Standards of Performance for Mineral Processing Utilizing Calciners and Dryers."

40 CFR Part 60.12: Circumvention.

Discussion: This prohibition is addressed in the Part 70 OP as well as a local rule, AQR 80.1.

40 CFR Part 60.13: Monitoring requirements.

Discussion: This section requires that the continuous emissions monitoring system (CEMS) meet this regulation's Appendix B and Appendix F standards of operation, testing, and performance criteria. Section III.C of the Part 70 OP contains the appropriate CEMS conditions, with citations to Appendix B and F. In addition, the quality assurance plan approved for the CEMS follows the requirements outlined, including span time, recording time, Relative Accuracy Test Audit waivers, and malfunctions.

40 CFR Part 60, Subpart UUU—Standards of Performance for Mineral Processing Utilizing Calciners and Dryers

Discussion: Simplot is subject to the provisions of this rule for EU: A32.

40 CFR Part 60.730: Applicability and designation of affected facility.

Discussion: 40 CFR Part 60, Subpart UUU does not apply to the kettle calciners, which were constructed before the applicability date of April 26, 1986.

40 CFR Part 60.732: Standards for particulate matter.

Discussion: Each owner or operator of any affected facility that is subject to the requirements of this subpart shall comply with the emission limitations set forth in this section on and after the date on which the initial performance test required by Part 60.8 is completed, but not later than 180 days after the initial startup, whichever date comes first. No emissions shall be discharged into the atmosphere from any affected facility that:

a. Contains particulate matter in excess of 0.092 g/dscm (0.040 gr/dscf) for calciners and for calciners and dryers installed in series, and in excess of 0.057 g/dscm (0.025 gr/dscf) for dryers; and

b. Exhibits greater than 10% opacity, unless the emissions are discharged from an affected facility using a wet scrubbing control device.

40 CFR Part 60.734(a): Monitoring of emissions and operations.

Discussion: The owner or operator of an affected facility subject to the provisions of this subpart who uses a dry control device to comply with the mass emission standard shall install, calibrate, maintain, and operate a continuous monitoring system to measure and record the opacity of emissions discharged into the atmosphere from the control device.

40 CFR Part 60.734(c): Monitoring of emissions and operations.

Discussion: The owner or operator of a ball clay rotary dryer, a diatomite rotary dryer, a feldspar fluid bed dryer, a fuller's earth rotary dryer, a gypsum rotary dryer, a gypsum flash calciner, gypsum kettle calciner, an industrial sand rotary dryer, a kaolin rotary dryer, a kaolin multiple hearth furnace, a perlite expansion furnace, a talc flash dryer, a talc rotary dryer, a titanium dioxide direct or indirect rotary dryer or a vermiculite expansion furnace who uses a dry control device is exempt from the monitoring requirements of this section.

40 CFR Part 60.735(a): Recordkeeping and reporting requirements.

Discussion: Records of the measurements required in 40 CFR Part 60.734 shall be retained for at least 2 years.

40 CFR Part 60.736: Test methods and procedures.

Discussion:

a. In conducting the performance tests required in 40 CFR Part 60.8, the owner or operator shall use the test methods in Appendix A of this part or other methods and procedures as specified in this section, except as provided in Part 60.8(b).

b. The owner or operator shall determine compliance with the particulate matter standards in Part 60.732 as follows:

   i. Method 5 shall be used to determine the particulate matter concentration. The sampling time and volume for each test run shall be at least 2 hours and 1.70 dscm.

   ii. Method 9 and the procedures in Part 60.11 shall be used to determine opacity from stack emissions.

40 CFR Part 63, Subpart CCCCCC—National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities

Discussion: Simplot is subject to the provisions of this rule for EU: E01.

Requirements for facilities with monthly throughput of less than 10,000 gallons of gasoline apply to Simplot. The source is responsible for following the provisions for notification, monitoring, recordkeeping, and management practices required by this rule.

40 CFR Part 60, Subpart IIII—Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

40 CFR Part 60.4200: Applicability determination.

Discussion: The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary compression ignition (CI) internal combustion engines (ICE) with a displacement of less than 30 liters per cylinder where the model year is (1) 2007 or later for engines that are not fire pumps, and (2) July 1, 2006, for ICE certified by National Fire Protection Association as fire pump engines. This subpart applies to EU: D05.

40 CFR Part 60.4202: Emission standards for owners and operators.

Discussion: The operator of the stationary CI ICE must provide the manufacturer's certification of the emission standards specified in this subpart. These requirements are addressed in the Part 70 OP.

40 CFR Parts 60.4206 and 60.4211: Compliance requirements.

Discussion: The operator of the stationary CI ICE must operate and maintain CI ICE that achieve the emission standards, according to the manufacturer's written instructions and procedures developed by the owner or operator and approved by the engine manufacturer, over the entire life of the engine. These requirements are addressed in the Part 70 OP.

40 CFR Part 60.4214: Reporting and recordkeeping requirements.

Discussion: The operator of the CI ICE shall keep records that include (1) engine information, including make, model, engine family, serial number, model year, maximum engine power, and engine displacement; (2) emission control equipment; and (3) fuel used. If the stationary CI ICE is a certified engine, the owner or operator shall keep documentation from the manufacturer that the engine is certified to meet the emission standards. These requirements are addressed in the Part 70 OP.

40 CFR Part 63, Subpart ZZZZ—National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

40 CFR Part 63.6585: Applicability determination.

Discussion: The provisions of this subpart are applicable to owners and operators of stationary reciprocating internal combustion engines at major or area sources of HAP. The 78-hp engine (EU: D05) meets the requirements of 40 CFR Part 63, Subpart ZZZZ by complying with 40 CFR Part 60, Subpart IIII.

40 CFR Part 64—Compliance Assurance Monitoring

40 CFR Part 64.2: Applicability.

Discussion: EU: A32 is subject to CAM and has specified monitoring requirements for the opacity, baghouse, and scrubber in the permit.

V. PERMIT SHIELD

No permit shield has been identified in this permitting action.

VI. COMPLIANCE

A. Compliance Certification

Recordkeeping requirements are to be met for all limitations specified in this permit.

Requirements for Reporting: AQR 12.5.2.8, "Requirements for Compliance Certification"

a. Regardless of the date of issuance of this Part 70 OP, the permittee shall follow the schedule for the report submittal to DAQ in Table VI-A-1.

Table VI-A-1: Reporting Schedule

Required Report	Applicable Period	Due Date
Semiannual report for 1st six-month period	January, February, March, April, May, June	July 30 each year[1]
Semiannual report for 2nd six-month period; any additional annual records required.	July, August, September, October, November, December	January 30 each year[1]
Annual Compliance Certification Report	Calendar year	January 30 each year[1]
Annual Emissions Inventory Report	Calendar year	March 31 each year[1]
Annual Emissions Statement[2]	Calendar year	March 31 each year[1]

Required Report	Applicable Period	Due Date
Notification of Malfunctions, Startup, Shutdowns, or Deviations with Excess Emissions	As required	Within 24 hours of the permittee learning of the event
Report of Malfunctions, Startup, Shutdowns, or Deviations with Excess Emissions	As required	Within 72 hours of notification
Deviation Report without Excess Emissions	As required	Along with semiannual reports[1]
Performance Testing	As required	Within 60 days from end of test[1]

[1]If the due date falls on a Saturday, Sunday, or federal or Nevada holiday, then the submittal is due on the next regularly scheduled business day.

[2] Required only for stationary sources that emit 25 tons or more of nitrogen oxide (NO_X) and/or emit 25 tons or more of volatile organic compounds (VOC) during a calendar year.

The regulation also requires the following:

b. A statement of methods used for determining compliance, including a description of monitoring, recordkeeping, and reporting requirements and test methods.

c. A schedule for submission of compliance certifications during the permit term.

d. A statement indicating the source's compliance status with any applicable enhanced monitoring and compliance certification requirements of the Clean Air Act.

Table VI-A-2: Summary of Monitoring for Compliance

EU	Process Description	Monitored Pollutants	Applicable Subsection Title	Requirements	Compliance Monitoring
A01a, A03a, A05a, A06a, A08a	Mining/Loading, Grizzly Screen, Conveyor, Scalping Screen, Conveyor, Wet Screening Turning Box	PM_{10}	AQR 26	20% or less opacity for periods aggregating more than 6 consecutive min.	Daily visual observation checks. Recordkeeping is required for compliance demonstration.
A09a, A09b	Wet Screening	PM_{10}	Permit Condition	Maintaining >10% moisture content. 0% opacity	Daily visual observation checks. Recordkeeping is required for compliance demonstration.
A11a	Slurry Hopper	PM_{10}	Permit Condition	Maintaining >10% moisture content. 0% opacity	Daily visual observation checks. Recordkeeping is required for compliance demonstration.
A22, A24, A24b	Slurry Conveyors Dewatering Screens Conveyors	PM_{10}	Permit Condition	Maintaining >10% moisture content. 0% opacity	Daily visual observation checks. Recordkeeping is required for compliance demonstration.
A29, A32	Sand Feed Process, Sand Dryer Feed	PM_{10}	AQR 26	20% or less opacity for periods aggregating more than 6 consecutive min.	Daily visual observation checks. Recordkeeping is required for compliance demonstration.

EU	Process Description	Monitored Pollutants	Applicable Subsection Title	Requirements	Compliance Monitoring
A32, A33b A34 A36a	Coal-Fired Sand Dryer, 50 MMBtu/hour Main Baghouse Scrubber	PM_{10}, SO_2	NSPS UUU and permit condition	10% or less opacity opacity for periods aggregating more than 6 consecutive min. 360 gpm, 7.5 pH Stack emissions less than 0.025 gr/dscf	CAM Plan, daily visual observation checks, 3-yr testing. CAM Plan, daily monitoring, 3-yr testing 3-yr testing Recordkeeping, including main baghouse opacity, pressure drop and caustic or lime scrubber pH, and flow rate of lime scrubber liquor, required for compliance demonstration.
A36, A36a A39 A40, A124, A125, A126, A112a	Polishing Screens, Conveyors, Storage Bins, Low Side and High Side Loadouts, Rail and Truck Loadout Process	PM_{10}	Permit condition AQR 26	20% or less opacity for periods aggregating more than 6 consecutive min.	Daily monitoring of pressure drop across baghouse with the pressure differential gauge. Daily visual observation checks of baghouse or stack discharge. Recordkeeping is required for compliance demonstration.
A42	Conveyors and Screen	PM_{10}	AQR 26	20% or less opacity for periods aggregating more than 6 consecutive min.	Daily visual observation checks. Recordkeeping is required for compliance demonstration.
A04a, A10a, A28, A50, A112, B01	Stockpiles	PM_{10}	AQR 26	20% or less opacity for periods aggregating more than 6 consecutive min.	Daily visual observation checks. Recordkeeping is required for compliance demonstration.
A123	Hopper Loading, Hoppers, and Conveying	PM_{10}	AQR 26	20% or less opacity for periods aggregating more than 6 consecutive min..	Daily visual observation checks. Recordkeeping is required for compliance demonstration.
C01	Haul Roads	PM_{10}	AQR 26	20% or less opacity for periods aggregating more than 6 consecutive min. Watered or treated with chemical or organic dust suppressant.	Daily visual observation checks. Recording is required for compliance demonstration. Recordkeeping is required for compliance demonstration.

EU	Process Description	Monitored Pollutants	Applicable Subsection Title	Requirements	Compliance Monitoring
C02	Blasting	PM_{10}	Permit Condition	Limited number of blasts and square footage per blast.	Recordkeeping is required for compliance demonstration.
C02	Blasting	CO, NO_x	Permit Condition	Limited tons of ANFO used to blast	Recordkeeping is required for compliance demonstration.
C03	Drilling	PM_{10}	Permit Condition	Limited number of holes drilled.	Recordkeeping is required for compliance demonstration.
D05	Water pump	N/A	Permit Conditions	15 ppm sulfur content	Monitoring and recordkeeping is required for compliance demonstration.
Various	Various	Various	Permit Conditions	Limited throughputs	Recordkeeping is required for compliance demonstration.

VII. ATTACHMENTS

Table VII-A-1: Applicability Totals (tons/yr)

EU	Process Description	PM_{10}	$PM_{2.5}$	NO_X	CO	SO_2	VOC	HAPs
A01a, A03a, A05a, A06a, A08a	Mining and Screening	55.76	7.14	0.00	0.00	0.00	0.00	0.00
A09a, A09b, A11a	Wet Screening	0	0	0.00	0.00	0.00	0.00	0.00
A12	Floatation	0	0	0.00	0.00	0.00	0.00	0.00
A22, A24, A24b	Dewatering	0	0	0.00	0.00	0.00	0.00	0.00
A32	Sand Dryer	37.67	37.67	231.12	3.98	22.89	0.83	0.08
A29, A32, A33b, A34, A36, A36a, A42, A123	Drying Process	25.84	20.20	0.00	0.00	0.00	0.00	0.00
A39, A40, A40a, A112a,A124, A125, A126, A127	Final Product	17.34	14.58	0.00	0.00	0.00	0.00	0.00
D05	Diesel Engine (78 hp)	0.17	0.17	2.26	2.79	0.01	0.86	0.01
E01	Gasoline Storage Tank	0	0	0	0	0	0.13	0.01
Source SDE Totals		**136.78**	**79.76**	**233.38**	**6.77**	**22.90**	**1.82**	**0.10**

Table VII-A-2: Applicability Sand Calculations (tons/yr)

EU	Description	Throughput (ton/hr)	$PM_{2.5}$ EF (lb/ton)	PM_{10} EF (lb/ton)	Control Method	$PM_{2.5}$	PM_{10}	$PM_{2.5}$	PM_{10}
Mining and Screening									
A01a	Mining/Loading	500	0.000178	0.00117	Moisture	0.39	2.56		
A03a	Loader to Grizzly Screen/Hopper	500	0.00031	0.0011	Moisture	0.68	2.41		
	Grizzly Screen	500	0.00059	0.0087		1.29	19.05		
	Grizzly Screen/Hopper to Feed Conveyor #1	500	0.00031	0.0011		0.68	2.41		
	Grizzly Screen to Bunker	21	0.000178	0.00117		0.02	0.11		
	Grizzly Screen Bunker to Oversize Stockpile	21	0.000178	0.00117		0.02	0.11		
A05a	Feed Conveyor #1 to Incline Conveyor #1	500	0.00031	0.0011		0.68	2.41		
A06a	Incline Conveyor #1 to Scalping Screen	500	0.00031	0.0011		0.68	2.41		
	Scalping Screen	500	0.00059	0.0087		1.29	19.05		
	Scalping Screen to Feed Conveyor #2	500	0.00031	0.0011		0.68	2.41		
	Scalping Screen to Bunker	41	0.000178	0.00117		0.03	0.21		
	Scalping Screen to Oversize Stockpile	41	0.000178	0.00117		0.03	0.21		
A08a	Feed Conveyor #2 to Incline Conveyor #2	500	0.00031	0.0011		0.68	2.41	7.14	55.76
Wet Screening									
A09a	Incline Conveyor #2 to Wet Screen Turning Box	500	Wet Process		>10% Moisture	0.00	0.00		
	Wet Screen Turning Box to Wet Screen					0.00	0.00		
A09b	Wet Screen	500	Wet Process		>10% Moisture	0.00	0.00		
	Wet Screen to Oversize Conveyor	25				0.00	0.00		
	Oversize Conveyor to Wet Screen Stockpile	25				0.00	0.00		
A11a	Wet Screen to Slurry Hopper, Slurry Hopper to Product Slurry Line, and Tailing Line	500	Wet Process		>10% Moisture	0.00	0.00	0.00	0.00
Floatation									
A12	Floatation and Tailings Line (4 Hydrosizers)	500	Wet Process		>10% Moisture	0.00	0.00	0.00	0.00

EU	Description	Throughput (ton/hr)	$PM_{2.5}$ EF (lb/ton)	PM_{10} EF (lb/ton)	Control Method	$PM_{2.5}$	PM_{10}	$PM_{2.5}$	PM_{10}
Dewatering									
A22	Product Slurry Line to Dewatering Plant	400	Wet Process		>10% Moisture	0.00	0.00		
A24	Dewatering Screens	400				0.00	0.00		
	Dewatering Screens Discharge to Short Belt					0.00	0.00		
A24b	Short Belt to Stacker	400				0.00	0.00		
	Stacker to Dewatering Stockpile	400				0.00	0.00	0.00	0.00
Drying Process									
A29	Dewatering Stockpile Loading to Sand Feed Hopper	250	0.00031	0.0011	Inherent Moisture	0.34	1.20		
	Sand Feed Hopper to Sand Feed Belt		0.00031	0.0011		0.34	1.20		
	Sand Feed Belt to Sand Feed Weigh Belt		0.00031	0.0011		0.34	1.20		
A32	Coal-Fired Sand Dryer	50 MMBtu/hr	See Table III-C-3		Baghouse/Scrubber	37.67	37.67		
	Sand Feed Weigh Belt to Dryer Sand Feed Chute	250	0.00031	0.0011	Inherent Moisture	0.34	1.20		
	Dryer Discharge to Dryer Discharge Belt		0.0011	0.0011	Main Baghouse	1.20	1.20		
	Cyclone Discharge to Cyclone Discharge Belt		0.0011	0.0011		1.20	1.20		
A33b	Cyclone Discharge Belt to Short Belt	5	0.0011	0.0011		0.02	0.02		
A34	Dryer Discharge Belt to Screen Feed Belt	250	0.0011	0.0011		1.20	1.20		
A36	(4) Polishing Screens to Screen Return Belt	250	0.0011	0.0011	Screen Baghouse	1.20	1.20		
	(4) Polishing Screens	250	0.0087	0.0087		9.53	9.53		
A36a	Screen Oversize to West Reject Belt	250	0.0011	0.0011	Main Baghouse	1.20	1.20		
	Transfer West/East Reject Conveyor to Sand Pile		0.0011	0.0011		1.20	1.20		
	#1 Stacker to 8 Storage Bins		0.0011	0.0011	Stacker Baghouse	1.20	1.20		
A42	Screen Oversize to East Reject Belt	10	0.00031	0.0011	Inherent Moisture	0.01	0.05		
	Screen Oversize to West Reject Belt		0.00031	0.0011		0.01	0.05		
	Transfer West/East Reject Conveyor to Sand Piles		0.00031	0.0011		0.01	0.05		

EU	Description	Throughput (ton/hr)	$PM_{2.5}$ EF (lb/ton)	PM_{10} EF (lb/ton)	Control Method	$PM_{2.5}$	PM_{10}	$PM_{2.5}$	PM_{10}
A123	Hopper Loading	200	0.00031	0.0011	Inherent Moisture	0.27	0.96		
	Hopper		0.00031	0.0011		0.27	0.96		
	Transfer Belt		0.00031	0.0011		0.27	0.96	20.20	25.84
Final Product Processing									
A39	8 Storage Bins	250		Included in A36a	Bin Baghouse	--	--		
A40	Transfer from storage Bin #1–4 to Low Side Conveyor to Loadout Conveyor; Transfer from storage Bin #5–8 to High Side Conveyor to Loadout Conveyor	400	0.0011	0.0011	Stacker Tail Pulley Baghouse to Loadout conveyor Tail Baghouse	1.93	1.93		
A40a	Transfer from the Low Side Conveyor (EU A40) to Stockpile Conveyor	400	0.00031	0.0011	Inherent Moisture	0.54	1.93		
A112a	Transfer from Stockpile Conveyor to EU A112	400	0.0011	0.0011	Stockpile Conveyor Head Pulley Baghouse	1.93	1.93		
A124	Transfer from Loadout Conveyor to Truck Spout	400	0.0011	0.0011	Loadout Belt Head Baghouse	1.93	1.93		
	Transfer from Loadout Conveyor to Rail Loadout Conveyor		0.0011	0.0011		1.93	1.93		
	Transfer from Truck Spout to Truck		0.0011	0.0011		1.93	1.93		
A125	Transfer from Rail Loadout Conveyor to Rail Spout	400	0.0011	0.0011	Belt Head Ventilation Module	1.93	1.93		
A126	Transfer from Rail Spout to Railcar Loading	400	0.0011	0.0011	Loadout Compact Filter Module	1.93	1.93		
A127	Transfer from Loadout Conveyor to Reject Bunker		0.00031	0.0011	Inherent Moisture	0.27	0.96		
	Transfer from Reject Bunker		0.00031	0.0011		0.27	0.96	14.58	17.34
					$PM_{2.5}$/PM_{10} Subtotal	**73.97**	**90.20**		
					–Dryer	36.30	52.53	36.30	52.23

Table VII-A-3: Dryer Emissions

EU	Description	SCC	Pollutant	Emission factor	(lb/hr)	(ton/yr)
A32	Coal-fired Sand Dryer, 50 MMBtu/hr, 2.04 tons/hr coal, 12,708 tons/yr coal, 180 gallons/hr propane, 500,000 gallons/yr propane	30502508	**PM_{10}[1]**	Included in Sand Emissions	12.10	37.67
			NO_x[2]	36 lb/ton coal	73.44	228.74
				0.019 lb NO_x/gallon propane	3.42	4.75
			CO	0.50 lb/ton coal	1.02	3.18
				0.0032 lb CO/gallon propane	0.58	0.80
			SO_2	(Feed rate-lb/hr)(% S in coal) (conversion of S to SO_2)(efficiency)	7.34	22.86
				1.8 E-5 pounds SO_2/gallon propane	0.01	0.03
			VOC	0.11 lb/ton coal	0.22	0.70
				0.0005 pounds VOC/gallon propane	0.09	0.13
			Total HAPs	0.01 lb/ton coal	0.02	0.06
				7.75 E-5 pounds HAPs/gallon propane	0.01	0.02

[1]Maximum PM_{10} emissions from propane combustion are 0.01 lb/hr and 0.01 tons/yr based on 500,000 gal/yr and 0.6 lb PM_{10}/1,000 gallons.
[2] Simplot has requested a cap of 231.12 tons per year for this emission unit.

Table VII-A-4: Controlled PM_{10} from the Coal-fired Sand Dryer[1]

	Condensable PM_{10}	Filterable PM_{10}[1]	Total Dryer PM_{10}
pounds/hour	1.80	10.30	**12.10**
tons/year	5.61	32.06	**37.67**

[1]The filterable PM_{10} is based on the maximum grain loading concentration of 0.025 gr/dscf at 48,000 scfm flow. The emission rates include the contributions from all combustion sources and sand emissions as a result of the drying process.

Table VII-A-5: Coal-fired Sand Dryer

	PM_{10}[1]	NO_x[2]	CO[2]	SO_2[2]	VOC[2]	HAP[2]
pounds/hour	12.10	76.86	1.60	7.35	0.31	0.03
tons/year	37.67	233.49	3.98	22.89	0.83	0.08

[1]PM_{10} emission rates include total filterable and condensable PM_{10} from coal and propane combustion.
[2]NO_x, CO, SO_2, VOC, and HAP emission rates include the combustion of coal and propane.

Table VII-A-6: Coal-fired Sand Dryer HAPs

Pollutant	CAS#	Total Emissions (lb/yr)	Total Emissions (ton/yr)
Acetaldehyde	75070	1.16E-03	3.62E-03
Acetophenone	98862	3.06E-05	9.53E-05
Acrolein	107028	5.92E-04	1.84E-03
Benzene	71432	2.65E-03	8.26E-03
Benzly Chloride	100447	1.43E-03	4.45E-03
Bis (2-ethylhexyl) phthalate (DEHP)	117817	1.49E-04	4.64E-04
Bromoform	75252	7.96E-05	2.48E-04
Carbon Disulfide	75150	2.10E-04	6.54E-04
2-Chloroacetophenone	532274	1.43E-05	4.45E-05
Chlorobenzene	108907	4.49E-05	1.40E-04
Chloroform	67663	1.20E-04	3.75E-04
Cumene	98828	1.08E-05	3.37E-05
2,4-Dinitrotoluene	121142	5.71E-07	1.78E-06
Dimethyl Sulfate	77781	9.79E-05	3.05E-04

Pollutant	CAS#	Total Emissions (lb/yr)	Total Emissions (ton/yr)
Ethylbenzene	100414	1.92E-04	5.97E-04
Ethyl Chloride	75003	8.57E-05	2.67E-04
Ethylene Dichloride	107062	8.16E-05	2.54E-04
Ethylene Dibromide	106934	2.45E-06	7.62E-06
Formaldehyde	50000	4.90E-04	1.52E-03
Hexane	110543	1.37E-04	4.26E-04
Isophorone	78591	1.18E-03	3.69E-03
Methyl Bromide	74839	3.26E-04	1.02E-03
Methyl Chloride	74873	1.08E-03	3.37E-03
Methyl Ethyl Ketone	78933	7.96E-04	2.48E-03
Methyl Hydrazine	60344	3.47E-04	1.08E-03
Methyl Methacrylate	80626	4.08E-05	1.27E-04
Methyl Tert Butyl Ether	1634044	7.14E-05	2.22E-04
Methyl Chloride	75092	5.92E-04	1.84E-03
Phenol	108952	3.26E05	1.02E-04
Propionaldehyde	123386	7.75E-04	2.41E-04
Tetrachloroethylene	127184	8.77E-05	2.73E-04
Toluene	108883	4.90E-04	1.52E-03
1,1,1-Trichloroethane	79005	4.08E-05	1.27E-04
Styrene	100425	5.10E-05	1.59E-03
Xylenes	1330207	7.55E-05	2.35E-04
Vinyl Acetate	10054	1.55E-05	4.83E-05
Antimony	--	3.67E-05	1.14E-04
Arsenic	--	8.36E-04	2..16E-03
Beryllium	--	4.28E-05	1.33E-04
Cadmium	--	1.04E-04	3.24E-04
Chromium	--	5.30E-04	1.65E-03
Cobalt	--	2.04E-04	6.35E-04
Manganese	--	1.00E-03	3.11E-03
Mercury	--	1.69E-04	5.27E-04
Nickel	--	5.71E-04	1.78E-03
Selenium	--	2.65E-03	8.26E03
Total HAP Emissions		**2.06E-02**	**6.41E-02**

Table VII-A-7: Engine Calculations

							Emission Factor	Potential Emissions		
EU#	D05		**Horsepower:**	78			(lb/hp-hr)	lb/hr	lb/day	ton/yr
Make:			**Hours/Day:**	24.0		**PM10**	4.85E-04	0.04	0.91	0.17
Model:			**Hours/Year**	8760		**NOx**	6.61E-03	0.52	12.38	2.26
S/N:						**CO**	8.16E-03	0.64	15.27	2.79
						SO_2	1.21E-05	0.01	0.02	0.01
Manufacturer Guarantees						**VOC**	2.51E-03	0.20	4.71	0.86
PM10	0.22	g/hp-hr				**HAP**	2.71E-05	0.01	0.05	0.01
NOx	3	g/hp-hr								
CO	3.7	g/hp-hr								
SO_2		g/hp-hr								
VOC		g/hp-hr								
Engine Type:	Diesel					Diesel Fuel Sulfur Content is 15 ppm (0.0015%)				

Table VII-A-8: GDO Calculations

VOC and HAP PTEs for GDOs with ORVR

Emission Factor (EF) Components	No control	Units		
UST submerged filling*	0.0073	lbs/gallon		
UST breathing & emptying or "working"	0.001	lbs/gallon		0.000598523
Refueling emission Factors (w/ ORVR)	0.0040	lbs/gallon		
Spillage	0.0007	lbs/gallon		
Total VOC EF	**0.0130**	**lbs/gallon**	**0.0000065**	tons/gallon

HAP Emission Factors

Constituent	% VOC	EF		Units		
Benzene	0.9		1.17E-04	lbs/gallon	**5.85E-08**	tons/gallon
Ethyl Benzene	0.1		1.30E-05	lbs/gallon	**6.5E-09**	tons/gallon
Hexane	1.6		2.08E-04	lbs/gallon	**1.04E-07**	tons/gallon
Toluene	1.3		1.69E-04	lbs/gallon	**8.45E-08**	tons/gallon
Trimethyl Pentane	0.8		1.04E-04	lbs/gallon	**5.2E-08**	tons/gallon
Xylenes	0.5		6.50E-05	lbs/gallon	**3.25E-08**	tons/gallon
Total	**5.2**		**0.000676**	**lbs/gallon**	**3.38E-07**	tons/gallon

HAP Speciation as a Percentage of VOC	
	Gasoline
Benzene	0.9
Ethyl Benzene	0.1
Hexane	1.6
Toluene	1.3
Trimethyl Pentane	0.8
Xylenes	0.5
Total (%)	**5.2**

	Throughput	EF	PTE	
VOC	20,000	0.0000065	0.13	**TPY**
HAP	20,000	3.38E-07	0.01	**TPY**

[1] HAP Fraction of VOC emissions for gasoline is based on '*Gasoline Marketing (Stage I and Stage II), Volume III: Chapter 11*', prepared by Eastern Research Group, Inc, Prepared for Emissions Inventory Improvement Program (EIIP), January 2001.

Table VII-A-9: PTE Sand Calculations (tons/yr)

EU	Description	Throughput (ton/yr)	$PM_{2.5}$ (lb/ton	PM_{10} (lb/ton)	Control Method	$PM_{2.5}$	PM_{10}	$PM_{2.5}$	PM_{10}
Mining and Screening									
A01a	Mined Material	2,400,000	0.000178	0.00117	Moisture	0.21	1.40		
A03a	Loader to Grizzly Screen/Hopper	2,400,000	0.00031	0.0011	Moisture	0.37	1.32		
	Grizzly Screen	2,400,000	0.00005	0.00074		0.06	0.89		
	Grizzly Screen/Hopper to Feed Conveyor #1	2,400,000	0.000013	0.000046		0.02	0.06		
	Grizzly Screen to Bunker	180,000	0.000178	0.00117		0.02	0.11		
	Grizzly Screen Bunker to Oversize Stockpile	180,000	0.000178	0.00117		0.02	0.11		
A05a	Feed Conveyor #1 to Incline Conveyor #1	2,400,000	0.000013	0.000046	Moisture	0.02	0.06		
A06a	Incline Conveyor #1 to Scalping Screen	2,400,000	0.000013	0.000046	Moisture	0.02	0.06		
	Scalping Screen	2,400,000	0.00005	0.00074		0.06	0.89		
	Scalping Screen to Feed Conveyor #2	2,400,000	0.000013	0.000046		0.02	0.06		
	Scalping Screen to Bunker	360,000	0.000178	0.00117	Moisture	0.03	0.21		
	Scalping Screen Oversize Stockpile	360,000	0.000178	0.00117		0.03	0.21		
A08a	Feed Conveyor #2 to Incline Conveyor #2	2,400,000	0.000013	0.000046		0.02	0.06	0.88	5.41
Wet Screening									
A09a	Incline Conveyor #2 to Wet Screen Turning Box	2,400,000	Wet Process		>10% Moisture	0.00	0.00		
	Wet Screen Turning Box to Wet Screen	2,400,000				0.00	0.00		
A09b	Wet Screen	2,400,000	Wet Process		>10% Moisture	0.00	0.00		
	Wet Screen to Oversize Conveyor	220,000				0.00	0.00		
	Oversize Conveyor to Wet Screen Stockpile	220,000				0.00	0.00		
A11a	Wet Screen to Slurry Hopper, Slurry Hopper to Product Slurry Line, and Tailing Line	2,400,000	Wet Process		>10% Moisture	0.00	0.00	0.00	0.00
Floatation									
A12	Floatation and Talings Line (4 Hydrosizers)	2,400,000	Wet Process		>10% Moisture	0.00	0.00	0.00	0.00
Dewatering									
A22	Product Slurry Line to Dewatering Plant	1,200,000	Wet Process		>10% Moisture	0.00	0.00		
A24	Dewatering Screens	1,200,000				0.00	0.00		
	Dewatering Screens Discharge to Short Belt					0.00	0.00		

EU	Description	Throughput (ton/yr)	$PM_{2.5}$ (lb/ton	PM_{10} (lb/ton)	Control Method	$PM_{2.5}$	PM_{10}	$PM_{2.5}$	PM_{10}
A24b	Short Belt to Stacker	1,200,000				0.00	0.00		
	Stacker to Dewatering Stockpile	1,200,000				0.00	0.00	0.00	0.00
Drying Process									
A29	Dewatering Stockpile Loading to Sand Feed Hopper	1,200,000	0.00031	0.0011	Inherent Moisture	0.19	0.66		
	Sand Feed Hopper to Sand Feed Belt		0.00031	0.0011		0.19	0.66		
	Sand Feed Belt to Sand Feed Weigh Belt		0.00031	0.0011		0.19	0.66		
A32	Coal-Fired Sand Dryer	12,708 tons coal	See below		Baghouse/ Scrubber	37.67	37.67		
	Sand Feed Weigh Belt to Dryer Sand Feed Chute	1,200,000	0.00031	0.0011	Inherent Moisture	0.19	0.66		
	Dryer Discharge to Dryer Discharge Belt		0.00011	0.00011	Main Baghouse	0.07	0.07		
	Cyclone Discharge to Cyclone Discharge Belt		0.00011	0.00011		0.07	0.07		
A33b	Cyclone Discharge Belt to Short Belt	24,000	0.00011	0.00011		0.01	0.01		
A34	Dryer Discharge Belt to Screen Feed Belt	1,200,000	0.00011	0.00011	Main Baghouse	0.07	0.07		
A36	(4) Polishing Screens to Screen Return Belt	1,200,000	0.00011	0.00011	Screen Baghouse	0.07	0.07		
	(4) Polishing Screens	1,200,000	0.00087	0.00087		0.52	0.52		
A36a	Screen Oversize to West Reject Belt	1,152,000	0.00011	0.00011	Main Baghouse	0.06	0.06		
	Transfer West/East Reject Conveyor to Sand Pile		0.00011	0.00011		0.06	0.06		
	#1 Stacker to 8 Storage Bins		0.00011	0.00011	Stacker Baghouse	0.06	0.06		
A42	Screen Oversize to East Reject Belt	62,400	0.00031	0.0011	Inherent Moisture	0.01	0.03		
	Screen Oversize to West Reject Belt		0.00031	0.0011		0.01	0.03		
	Transfer to West/East Reject to Sand Piles		0.00031	0.0011		0.01	0.03		
A123	Hopper Loading	100,000	0.00031	0.0011	Inherent Moisture	0.01	0.06		
	Hopper		0.00031	0.0011		0.01	0.06		
	Transfer Belt		0.00031	0.0011		0.01	0.01	1.81	3.89
Final Product Processing									
A39	8 Storage Bins, Bin Baghouse Control	1,152,000		Included in A36a	Bin Baghouse	--	--		

EU	Description	Throughput (ton/yr)	$PM_{2.5}$ (lb/ton	PM_{10} (lb/ton)	Control Method	$PM_{2.5}$	PM_{10}	$PM_{2.5}$	PM_{10}
A40	Transfer from storage Bin #1–4 to Low Side Conveyor to Loadout Conveyor Transfer from storage Bin #5–8 to High Side Conveyor to Loadout Conveyor	1,152,000	0.00011	0.00011	Stacker Tail Pulley Baghouse to Loadout Conveyor Tail Baghouse	0.06	0.06		
A40a	Transfer from the Low Side Conveyor (EU A40) to Stockpile Conveyor	100,000	0.00031	0.0011	Inherent Moisture	0.02	0.06		
A112a	Transfer from Stockpile Conveyor to EU A112	100,000	0.00011	0.00011	Stockpile Conveyor Head Pulley Baghouse	0.01	0.01		
A124	Transfer from Loadout Conveyor to Truck Spout	1,152,000	0.00011	0.00011	Loadout Belt Head Baghouse	0.06	0.06		
	Transfer from Loadout Conveyor to Rail Loadout Conveyor								
	Transfer from Truck Spout to Truck								
A125	Transfer from Rail Loadout Conveyor to Rail Spout	1,152,000	0.00011	0.00011	Belt Head Ventilation Module	0.06	0.06		
A126	Transfer from Rail Spout to Railcar Loading	1,152,000	0.00011	0.00011	Loadout Compact Filter Module	0.06	0.06		
A127	Transfer from Loadout Conveyor to Reject Bunker	60,000	0.00031	0.0011	Inherent Moisture	0.01	0.03		
	Transfer from Reject Bunker		0.00031	0.0011		0.01	0.03	0.29	0.38
					$PM_{2.5}$/PM_{10} Subtotal	**40.65**	**47.35**		
					–Dryer	2.98	9.68	2.98	9.38

Table VII-A-10: Stockpiles (tons/year)

EU	Description	Throughput	$PM_{2.5}$ EF	PM_{10} EF	$PM_{2.5}$	PM_{10}
A04a	Grizzly/Scalping Screen	5.0 acres	0.5 lb/acre-day	3.5 lb/acre-day	0.46	3.19
A10a	Wet Screen	2.0 acres	0.5 lb/acre-day	3.5 lb/acre-day	0.18	1.28
A28	Dewatering	6.0 acres	0.5 lb/acre-day	3.5 lb/acre-day	0.55	3.83
A50	Oversize	1.0 acre	0.5 lb/acre-day	3.5 lb/acre-day	0.09	0.64
A112	Final Product	1.0 acre	0.5 lb/acre-day	3.5 lb/acre-day	0.09	0.64
B01	Coal	0.8 acre	0.25 lb/acre-day	1.66 lb/acre-day	0.04	0.24
				$PM_{2.5}$/PM_{10} Total	**1.41**	**9.82**

In Table VII-A-10, the controlled emission factor accounts for moisture control of 1.5%.

Eq. 1: Emission Factor = 1.7 (s/1.5) (365-p/235) (f/15)

where:

s = 2.6 [silt content %]

p = 30 [number of days with >0.01 inches of precipitation per year] {from AP-42, Figure 13.2.2-1}

f = 25 [percentage of time that wind speed exceeds 5.4 m/s at mean pile height] {based on Reid-Gardner, Moapa windrose}

E = 3.5 [lb PM_{10} per day per acre] {using PM_{10} to PM ratio of 0.5 from EPA-450/3-88-008}

Table VII-A-11: Drilling and Blasting

Proposed limit (holes/yr)	PM_{10} EF (lb/hole)	Potential PM_{10} (tpy)	$PM_{2.5}$ EF (lb/hole)	Potential $PM_{2.5}$ (tpy)
4000	0.68	**1.36**	0.04	**0.08**

Table VII-A-11a: Drilling and Blasting

Horizontal Area (ft^2/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)
162,000	50	474.68	**11.87**	27.39	**0.68**
EPA AP-42 EF TSP <30 [Table 11.9-1]		0.000014(A)^1.5 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		

Table VII-A-11b: Drilling and Blasting

Proposed ANFO (tons/yr)	CO EF (lb/ton)	Potential CO (tpy)	NO_x EF (lb/ton)	Potential NO_x (tpy)
500	40.97	**10.24**	7.92	**1.98**

Source: National Institute of Safety and Health, "A Technique for Measuring Gasses produced by Blast Agents" (1997).

Table VII-A-11c: Haul Road\

EU	Description	Throughput	$PM_{2.5}$ EF	PM_{10} EF	Control Method	$PM_{2.5}$ (ton/hr)	PM_{10} (ton/yr)
C01	Operations Haul Roads Pit Unpaved Haul Roads	122,206 VMT/year	0.767 lb/VMT	7.57 lb/VMT	90.0% Control	4.69	46.25
					$PM_{2.5}/PM_{10}$ Total	4.69	46.25