

ASARCO LLC – Mission Complex
Permit Revision Application
Permit No. 2026
South Mill 105 Belt Upgrade



Submitted to:
Pima County Department of Environmental Quality
Air Quality Division
May 15, 2019

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Acronyms and Abbreviations

Name	Description
CAM	Compliance assurance monitoring
dscf	Dry standard cubic foot
PDEQ	Pima County Department of Environmental Air Quality
PTE	Potential to emit
scfm	Standard cubic feet per minute
tph	Tons per hour
tpy	Tons per year

1. INTRODUCTION

ASARCO LLC (Asarco) owns and operates the Mission Complex at 4201 W. Pima Mine Road, Sahuarita, Arizona, Pima County. The Mission Complex operates under Class I Permit No. 2026 (Class I Permit) issued by the Pima County Department of Environmental Air Quality (PDEQ) on December 21, 2018.

Asarco is submitting this application to modify the Class I Permit to support an upgrade to the existing South Mill Radial Stacker (Equipment ID 10-105). The information included in the application is in accordance with the requirements of PDEQ regulations at 17.12.010, and includes all the applicable information required by the Permit Application Checklist included as Appendix A and the Standard Permit Application Form provided as Appendix B.

A summary of where specific information is located in this permit application, is provided below.

1. **Section 1 - Introduction** - This section summarizes the reason for submitting this permit modification application, and includes a summary of the information provided in each section of the application. The section is intended to provide an overview of the application content and provide PDEQ the ability to easily navigate the application and locate specific information.
2. **Section 2 - Project Description** - This section describes the proposed project at the Radial Stacker (10-105). The section includes a description of the proposed changes to the Radial Stacker (10-105) belt and provides specific information regarding the project to include the location of the project, affected equipment, and associated emission points.
3. **Section 3 - Emissions Review** - This section provides a summary of the change in the potential to emit (PTE) for criteria air pollutants from the affected emission points.
4. **Section 4 - Air Quality Regulatory Requirements** - This section includes a summary of PDEQ air quality requirements applicable to the emission points associated with the Radial Stacker (10-105). The section includes a summary of the air quality requirements that are currently applicable to the emission points and how the facility currently complies with the existing applicable requirements. Additionally, the section includes a summary of the new requirements that will be applicable to the emission points associated with the Radial Stacker (10-105) upon completion of the proposed project.
5. **Section 5 - Changes to Class I Permit** - A description of any proposed changes to the existing Class I permit due to the proposed project are provided in this section. The proposed changes are intended to include, within the Class I Permit, any new compliance requirements that would be effective upon completion of the proposed project.
6. **Section 6 - Permit Application Processing** - Asarco is submitting this application under the provisions of PDEQ regulation 17.12.110 - Minor permit revisions for Class I permits. Therefore, this section summarizes requirements as provided in 17.12.110, and demonstrates that the proposed project meets the minor permit revision provision.
7. **Appendices** - Appendices included in this application are:
 - Appendix A - Permit Application Completeness Checklist for Class I Source
 - Appendix B - Standard Permit Application Form for Class I Sources
 - Appendix C - Facility Plot Plan
 - Appendix D - Potential to Emit Calculations

2. PROJECT DESCRIPTION

Asarco is proposing to increase the actual hourly ore throughput rate for South Primary Crusher Radial Stacker (10-105). The proposed increase will be achieved by replacing the existing motor on the South Primary Crusher Radial Stacker (10-105) that has a current nameplate rated capacity of 3,300 tons per hour (tph), with a new motor that could potentially support a rated capacity of up to 4,500 tph. The proposed project is intended to support an efficient transfer of ore from the South Primary Crusher to the coarse ore stockpile, thereby minimizing any haul truck downtime at the primary crusher. The project is not intended to support any annual increases in coarse ore throughput at the primary crushing circuit or the south mill.

A plot plan for the South Primary Crushing circuit is included as Appendix C. The plot plan shows the location of the radial stacker (10-105) relative to the South Primary Crusher (10-101) and the South Primary Coarse Ore Stockpile (WFOPS-1). The Mission Mine uses haul trucks to transfer ore to the South Primary Crusher (10-101). Crushed ore from the primary crusher (10-101) is transferred through the apron feeders (10-102) to a 54" picking belt (10-103). Ore from the picking belt (10-103) is then transferred to the radial stacker (10-105). Ore from the radial stacker (10-105) is then transferred to the south mill coarse ore stockpile (WFOPS-1).

Particulate emissions from the transfer of the ore from picking belt (10-103) to the radial stacker (10-105) are currently controlled by the existing wet scrubber (SSOPS-2). Particulate emissions from the transfer of ore to the coarse ore stockpile are currently controlled by water sprays (HFOPS-2).

The existing motor for the radial stacker (10-105) currently limits the actual hourly ore throughput rate to the stockpile to an estimated 2,800 tph. With the proposed replacement of the motor for the radial stacker (10-105) to a motor with a rated capacity of 4,500 tph, Asarco is anticipating an increase to the maximum hourly ore throughput rate for the radial stacker (10-105). Asarco is not proposing any physical changes or modifications to the existing crusher (10-101), apron feeders (10-102), or picking belt conveyer (10-103). Additionally, in this application, Asarco is not proposing any increase to the permitted annual ore throughput limit for the South Mill. Part B, Section 6.I.A.3 of the Class I permit limits the ore throughput at the South Mill crushing circuit to 12.5 million ton per year (tpy). After replacing the motor at radial stacker (10-105), the South Mill will continue to operate under this existing annual throughput limit.

3. EMISSIONS REVIEW

A summary of the PTE for criteria air pollutants for emission points SSOPS-2 and HFOPS-2 associated with the radial stacker (10-105) are provided in Table 1. The PTE is provided for reference purposes only. Part B, Section 6.I.A.3 of the Class I permit limits the ore throughput at the South Mill crushing circuit to 12.5 million tpy. After replacing the belt motor at radial stacker (10-105), the South Mill will continue to operate under this existing annual throughput limit.

Table 1: South Primary Crusher Radial Stacker Potential to Emit

Emission Point	PTE (pre-modification)		PTE (post-modification)		Change In PTE	
	PM10 (tpy)	PM2.5 (tpy)	PM10 (tpy)	PM2.5 (tpy)	PM10 (tpy)	PM2.5 (tpy)
SSOPS-2	1.68	1.68	1.68	1.68	0.00	0.00
HFOPS-2	4.99	0.36	4.99	0.36	0.00	0.00

Note:

The PTE for SSOPS-2 is based on an estimated exhaust flow rate of 4,471 scfm and a maximum estimated particulate grain loading of 0.01 grains/dscf.

The PTE for HFOPS-2 is based on the permitted annual ore throughput of 12.5 million tons of ore.

Detailed calculations for the PTE for SSOP-2 and HFOPS-2 are included as Appendix D.

4. REGULATORY REVIEW

4.1 Existing Requirements

A summary of the existing air quality requirements applicable to emission points SSOPS-2 and HFOPS-2 associated with the radial stacker (10-105), the regulatory citation of the requirements, and the associated compliance method used by Asarco are provided in Table 2. The facility will continue to comply with the applicable requirements upon implementation of the proposed project.

Table 2: Existing Requirements Applicable to Belt 10-105

Emission Point	Requirement	Regulatory Citation	Compliance Method
SSOPS-2 HFOPS-2	Limit the Maximum Allowable Average Opacity to 20%	17.16.040 17.16.130	Bi-weekly visible emissions observations are performed in accordance with Part B, Section 6.I.B.1.b of the Class I permit.
SSOPS-2	$E = 17.31P^{0.16}$ <u>Where:</u> E = the maximum, allowable particulate emission rate in pounds-mass per hour. P = the process weight rate in tons-mass per hour.	17.16.360	The maximum, allowable particulate emission rate is estimated to be 66.50 lb/hr. The maximum emission rate for stack SSOPS-2 is estimated to be 0.38 lb/hr. Detailed emissions calculations are provided in Appendix D.
HFOPS-2	$E = 17.31P^{0.16}$ <u>Where:</u> E = the maximum, allowable particulate emission rate in pounds-mass per hour. P = the process weight rate in tons-mass per hour.	17.16.360	The maximum, allowable particulate emission rate is estimated to be 66.50 lb/hr. The maximum emission rate for HFOPS-2 is estimated to be 3.60 lb/hr. Detailed emissions calculations are provided in Appendix D.
SSOPS-2	Compliance Assurance Monitoring (CAM)	40 CFR Part 64	Upon implementing the proposed project, SSOPS-2 will continue to comply with the existing requirements for CAM as provided in Part B, Section 10 of the Class I Permit. Specific CAM requirements for SSOPS-2 are included in CAM Plan 6, as referenced in the Class I Permit.

4.2 Proposed Requirements

Upon implementing the proposed project to increase the short-term ore throughput for the radial stacker (10-105), the existing emission point SSOPS-2 will be considered an affected source under 40 CFR 60 Subpart LL - NSPS for Metallic Mineral Processing Plants. A summary of the applicable emission limits, monitoring, testing, recordkeeping, and reporting requirements as referenced from 40 CFR 60 Subpart LL are provided in Table 3. SSOPS-2 will meet the requirements in Table 3 upon implementation of the proposed project.

Table 3: Proposed Requirements Applicable to Belt 10-105

Requirement	Regulatory Citation	Emission/Operational Limit	Compliance Method
Opacity Limit (process fugitive emissions only)	40 CFR 60.382(b)	10%	Bi-weekly visible emissions observations are performed by certified observers in accordance with the existing requirements of the Class I Permit.
Monitoring Requirement	40 CFR 60.384(a)	Install, calibrate, maintain, and operate a monitoring device for the continuous measurement of the change in pressure of the gas stream through the scrubber. The monitoring device must be certified by the manufacturer to be accurate within ± 250 Pascals (± 1 inch water) gauge pressure and must be calibrated on an annual basis in accordance with manufacturer's instructions.	The facility has installed a differential pressure gauge to measure the change in the gas stream pressure across the scrubber. The differential pressure gauge meets the accuracy requirements and is calibrated annually.
	40 CFR 60.384(b)	Install, calibrate, maintain, and operate a monitoring device for the continuous measurement of the scrubbing liquid flow rate to a wet scrubber. The monitoring device must be certified by the manufacturer to be accurate within ± 5 percent of the design scrubbing liquid flow rate and must be calibrated on at least an annual basis, in accordance with manufacturer's instructions.	The facility has installed a flow meter to measure the scrubber liquid flow rate. The flow meter meets the accuracy requirements and is calibrated annually.
Testing	40 CFR 60.385(a)	Conduct a performance test.	An initial performance test will be completed and results of the test will be provided to PDEQ.
Recordkeeping	40 CFR 60.385(b)	Record weekly the change in pressure of gas stream across the scrubber and scrubbing liquid flow rate.	A weekly record of the change in pressure of the gas stream across the scrubber and the scrubber liquid flow rate will be maintained by the facility.

Requirement	Regulatory Citation	Emission/Operational Limit	Compliance Method
Reporting	40 CFR 60.385(c)	Report when the scrubber pressure loss (or gain) or liquid flow rate differ by more than ± 30 percent from the average obtained during the most recent performance test.	A report when the scrubber pressure loss (or gain) or liquid flow rate differ by more than ± 30 percent from the average obtained during the most recent performance test will be submitted to PDEQ for each semi-annual operating period.

5. CHANGES TO CLASS I PERMIT

Upon completion of the proposed project, SSOPS-2 will be considered an affected source under NSPS Subpart LL. A summary of the changes proposed to the Class I permit to reflect the proposed new requirements applicable to SSOPS-2 provided in Section 4.2 of this application are included in Table 4. The proposed requirements and the associated changes to the Class I Permit will be effective upon startup of Belt 10-105 after the completion of the proposed project.

Table 4: Proposed Changes to Class I Permit

Permit Condition	Description of Proposed Change
Part B, Page 17	Update the description for SSOPS-2 as follows: "SSOPS-2 (NSPS)."
Part B, Section 6 (Summary Table)	Update the description for SSOPS-2 as follows: "SSOPS-2 (NSPS)."
Part B, Section 6.I.B.1	<p>The permit section provides the existing emissions limitations and standards applicable to SSOPS-2. Update the section to include the opacity standard for process fugitive emissions as follows:</p> <p>"The Permittee shall not cause to be discharged into the atmosphere from an affected facility any process fugitive emissions that exhibit greater than 10 percent opacity. Process fugitive emissions are emissions from an affected facility that are not collected by a capture system."</p>
Part B, Section 6.II.B.4	<p>The permit section provides the existing monitoring requirements for SSOPS-2. Update the section to include the monitoring for the opacity standard for process fugitive emissions as follows:</p> <p>"If the observer sees any process fugitive emissions from an affected facility using wet scrubber SSOPS-2 that, on an instantaneous basis, appears to exceed 10% opacity, then the Permittee shall take an EPA Reference Method 9 observation of the plume."</p>
Part B, Section 6.II.B.4	<p>The permit section provides the existing monitoring requirements for SSOPS-2. Update the section to include the monitoring as required by NSPS Subpart LL at 40 CFR §60.384(a) as follows:</p> <p>"The Permittee shall install, calibrate, maintain, and operate a monitoring device for the continuous measurement of the change in pressure of the gas stream through wet scrubber SSOPS-2 emission control device. The monitoring device must be certified by the manufacturer to be accurate within ±250 Pascal's (±1 inch water) gauge pressure and must be calibrated on an annual basis in accordance with manufacturer's instructions."</p>
Part B, Section 6.II.B.4	<p>The permit section provides the existing monitoring requirements for SSOPS-2. Update the section to include the monitoring as required by NSPS Subpart LL at 40 CFR §60.384(b) as follows:</p> <p>"The Permittee shall install, calibrate, maintain, and operate a monitoring device for the continuous measurement of the scrubbing liquid flow rate to wet scrubber SSOPS-2 emission control device. The monitoring device must be certified by the manufacturer to be accurate within ±5 percent of design scrubbing liquid flow rate and must be calibrated on at least an annual basis in accordance with manufacturer's instructions."</p>

Permit Condition	Description of Proposed Change
Part B, Section 6.III	<p>Update the permit section to include the recordkeeping requirements for SSOPS-2 as required by NSPS Subpart LL at 40 CFR §60.385(b) as follows:</p> <p>"At least weekly, the owner or operator shall record the measurements of both the change in pressure of the gas stream across the scrubber and the scrubbing liquid flow rate for wet scrubber SSOPS-2."</p>
Part B, Section 6.IV	<p>Update the permit section to include the reporting requirements for SSOPS-2 as required by NSPS Subpart LL at 40 CFR §60.385(c) as follows:</p> <p>"The owner or operator shall submit semi-annual reports to the Control Officer of occurrences when the measurements of the scrubber pressure loss (or gain) or liquid flow rate differ by more than ±30 percent from the average obtained during the most recent performance test."</p>
Table 3 to Class I Permit	Update the "Design Capacity" for Radial Stack (10-105) from 3,300 tph to 4,500 tph.
Table 3 to Class I Permit	Update the "NSPS Applicability" column to "Y" as SSOPS-2 will be subject to NSPS Subpart LL upon completion of the proposed project.

6. PERMIT APPLICATION PROCESSING

Asarco is submitting this permit application under the provision of PDEQ regulation 17.12.110 - Minor Permit Revisions for Class I Permits. A summary of the requirements from 17.12.110 to qualify as a minor permit revision and associated information included in the application is provided below. Based on the information included in Sections 1 through 5 of this application, the proposed project satisfies the requirements below to be processed as a minor permit revision to the Class I Permit.

1. Upon implementation of the proposed project, the facility will not violate any applicable requirement.
2. The project does not involve substantive changes to existing monitoring, reporting, or recordkeeping requirements in the permit.
3. The project does not require or change a case-by-case determination of an emission limitation or other standard, or a source specific determination of ambient impacts, or a visibility or increment analysis.
4. The facility will continue to operate under existing requirements of the permit. The project does not seek to establish or change a permit term or condition for which there is no corresponding underlying applicable requirement. Asarco is not taking an enforceable permit limit to trigger major modifications or be listed as a major source for HAPs.
5. The proposed project is not considered a modification under any provision of Title I of the Act (Air Pollution Prevention and Control).
6. There are no changes in fuels proposed as part of the project.
7. There is no increase in the PTE for particulate matter associated with the proposed project.
8. The application is not required to be processed as a significant revision under Section 17.12.120.

APPENDIX A PERMIT APPLICATION COMPLETENESS CHECKLIST

**PIMA COUNTY DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY PERMIT APPLICATION COMPLETENESS CHECKLIST FOR CLASS I**

SOURCE/ APPLICANT: ASARCO LLC – (MISSION COMPLEX)

PERMIT# 2026

NEW SOURCE

RENEWAL

REVISION X

* - To be used with Standard Permit Application Form Filing Instructions

REFERENCE	REQUIREMENT	MEETS REQUIREMENT?			REMARK #	REVIEWER
		Y	N	NA		
App Form	Has the Standard Application Form been completed?	X				
App Form	Has the responsible official signed the application form?	X				
PCC 17.12.510	Have the appropriate application fees been included with the application, if required?			X		
PCC 17.12.160(h)	Has a Certification of Truth, Accuracy and Completeness been included?	X				
Filing Instructions 1.	Has a description of each process unit been included?	X				
Filing Instructions 2.	Has a product and raw material description been included?	X				
Filing Instructions 3 & 4.	Has a complete description of Alternate Operating Scenarios and products been included? (if applicable)			X		
Filing Instructions 5.	Has a Flow Diagram for all processes been provided?			X		
Filing Instructions 6.	Has a Material Balance been included (optional, only if emission calculations are based on material balance)?			X		
Filing Instructions 7.	Has the Emission Sources form been completed and does it include potential emissions of regulated air pollutants (including fugitives)?	X				
Filing Instructions 8.	Have all applicable SIP requirements been identified?	X				
Filing Instructions 8.	Have all applicable NSPS requirements been identified?	X				
Filing Instructions 8.	Have all applicable NESHAP requirements been identified?			X		
Filing Instructions 8.	Have all applicable Installation/Operating Permit requirements been identified?	X				
Filing Instructions 9.	Have any proposed exemptions and insignificant activities been included (if applicable)? If so, has the applicant provided sufficient evidence?			X		
Filing Instructions 10.a, 10.c	Have the maximum annual and hourly process rates for each piece of equipment which generates air emissions been included?	X				

REFERENCE	REQUIREMENT	MEETS REQUIREMENT?			REMARK #	REVIEWER
		Y	N	NA		
Filing Instructions 10.b, 10.d	Have the maximum annual and hourly process rates for the whole plant been included?			X		
Filing Instructions 10.e	Has the fuel type and maximum usage (hourly and annual) information been included?			X		
Filing Instructions 10.f	Has the raw material maximum hourly, monthly or quarterly and annual usage information been included?			X		
Filing Instructions 10.g	Have the Operating Schedules (hour/day, days/year, days/week, % annual production by season) been included?			X		
Filing Instructions 10.h	Have any limitations on operations and work practice standards affecting emissions been included (if applicable)?	X				
Filing Instructions 11	Does the application include an equipment list with the type, name make, model, serial number, and date of manufacture?			X		
Filing Instructions 12	Does the application include the necessary stack information including: stack identification, description, exit height, inside dimensions, exit gas temperature and velocity, and building dimensions?			X		
Filing Instructions 13	Does the application include a site diagram which includes: property boundaries, adjacent streets/roads, directional arrow, elevation, equipment layout, location of emission points, emission areas and air pollution control equipment and the closest distance between emissions and property boundary?			X		
Filing Instructions 14.a	Have the applicable test methods for determining compliance been included?	X				
Filing Instructions 14.b	Does the application include an identification, location and description of Pollution Controls?	X				
Filing Instructions 14.c	Has the rated and operating efficiency of pollution controls been included?	X				
Filing Instructions 14.d	Has the data used to establish efficiency been provided?			X		
Filing Instructions 14.e	Has evidence that the new or modified source will not violate any Ambient Air Quality Standards or PSD increments been provided?			X		
Filing Instructions 16.a-d (ACID RAIN)	Has a Compliance Plan been included? (The compliance plan must address acid rain provisions, if applicable – 17.12.365 & Title IV of CAA)			X		
Filing Instructions 16.a	Does the application include a description of the Compliance Status of the source with respect to all applicable requirements (for constructed/operating sources)?			X		
Filing Instructions 16.a 16.b	Has a description of how the new source or alteration will comply with applicable requirements been included (for new sources or modifications to existing sources)?	X				
Filing Instructions 16.b.i	Does the application include a statement that the source will continue to comply with the applicable requirements with which they currently comply? (for constructed/operating sources)	X				

REFERENCE	REQUIREMENT	MEETS REQUIREMENT?			REMARK #	REVIEWER
		Y	N	NA		
Filing Instructions 16.b.ii	Has a statement that the source will meet requirements which become effective before or after permit issuance been included?	X				
Filing Instructions 16.b.iii	Has a compliance schedule with remedial measures, and an enforceable sequence of actions with milestones leading to compliance been included for applicable requirements with which the source does not currently comply?			X		
Filing Instructions 16.c	Has a Schedule for Submission of Progress Reports (at least every 6 months) been included? (for sources required to have a compliance schedule)			X		
Filing Instructions 17	Has a Compliance Certification by a responsible official been included?			X		
Filing Instructions 17.a.i	Does the application include an identification of the applicable requirements which are the basis of the certification?			X		
Filing Instructions 17.a.ii	Has a Statement of Methods Used to Determine Compliance been included?			X		
Filing Instructions 17.a.iii	Has a Schedule for Submission of Compliance Certifications (at least annually) been provided?			X		
Filing Instructions 17.a.iv	Does the application include a statement indicating the compliance status with respect to any applicable enhanced monitoring and compliance certification requirements? (if applicable)			X		
Filing Instructions 17.b	Does the application include an acid rain compliance plan? (if applicable)			X		
Filing Instructions 19	Have the calculations on which all information is based been included in the application?	X				

**SUPPLEMENTAL CHECKLIST
FOR NEW MAJOR SOURCES OR MAJOR MODIFICATIONS
TO SOURCES LOCATED IN NON-ATTAINMENT AREAS**

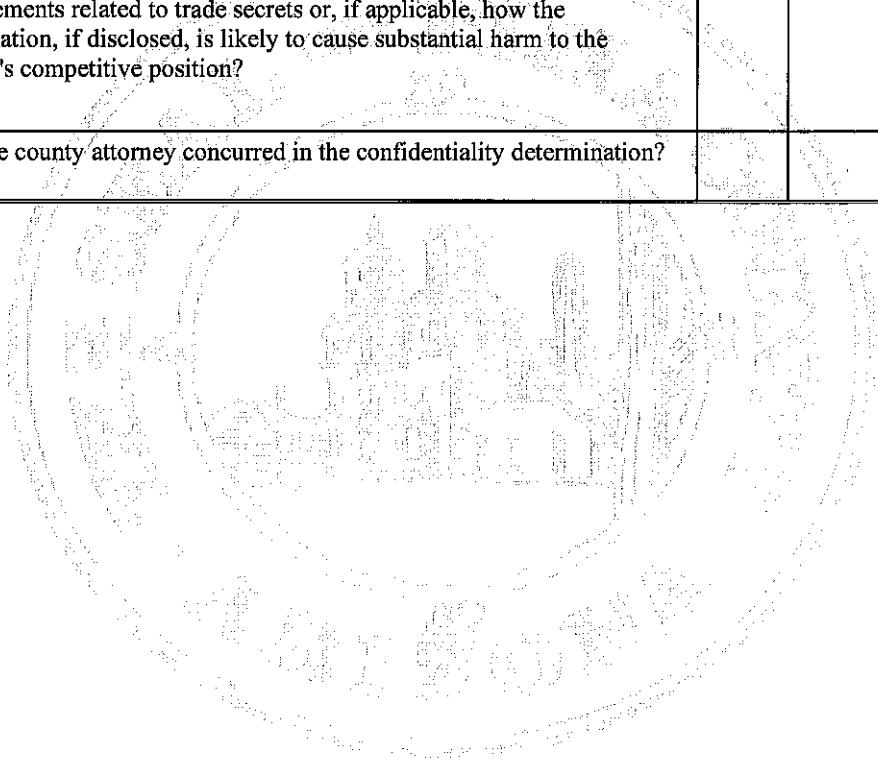
REFERENCE	REQUIREMENT	MEETS REQUIREMENT?			REMARK #	REVIEWER
		Y	N	NA		
Filing Instructions 18.a.i	Does the application include a LAER (Lowest Achievable Emission Rate) determination and the data and information used to determine LAER?			X		
Filing Instructions 18.a.ii	Has a certification pursuant to 17.16.560.A.2 been included? Such certification should list and describe all existing major sources owned and operated by the applicant and a statement of compliance.			X		
Filing Instructions 18.a.iii	For sources subject to the offset requirements of 17.16.560.A.3, does the application include a demonstration of the manner in which the source or modification meets the requirements of 17.16.570?			X		
Filing Instructions 18.a.iv	Does the application include the analysis described in 17.16.560.B, if required (only for VOC or CO sources in photochemical oxidant or CO Non-attainment areas)?			X		

**SUPPLEMENTAL CHECKLIST
FOR NEW MAJOR SOURCES OR MAJOR MODIFICATIONS
TO SOURCES LOCATED IN ATTAINMENT AREAS**

REFERENCE	REQUIREMENT	MEETS REQUIREMENT?			REMARK #	REVIEWER
		Y	N	NA		
Filing Instructions 18.b.i	Does the application include a demonstration of the manner in which the new source or modification will meet the requirements of 17.16.590?			X		
Filing Instructions 18.b.ii	Does the application include a BACT (Best Available Control Technology) determination and the data and information used to determine BACT?			X		
Filing Instructions 18.b.iii	Does the application include an air impact analysis as per 17.16.590 and 17.16.600?			X		
Filing Instructions 18.b.iv	If the applicant seeks an exemption from any of the requirements of 17.16.590, does the application include sufficient information to demonstrate compliance with the requirements of the subsections under which an exemption is sought?			X		

**SUPPLEMENTAL CHECKLIST
FOR APPLICATIONS WHICH INCLUDE A NOTICE OF CONFIDENTIALITY**

REFERENCE	REQUIREMENT	MEETS REQUIREMENT?			REMARK #	REVIEWER
		Y	N	NA		
PCC 17.12.170	Does the notification precisely identify information in the application which is to be considered confidential?			X		
PCC 17.12.170	Does the notification contain sufficient supporting information to allow the Control Officer to evaluate whether the information satisfies the requirements related to trade secrets or, if applicable, how the information, if disclosed, is likely to cause substantial harm to the person's competitive position?			X		
PCC 17.12.170	Has the county attorney concurred in the confidentiality determination?			X		



COMPLETENESS REVIEW CHECKLIST REMARKS

REMARK #	REMARKS	RVWD BY
1		

APPENDIX B STANDARD PERMIT APPLICATION FORM

STANDARD PERMIT APPLICATION FORM FOR CLASS I SOURCES

(As required by A.R.S. § 49-480, and Title 17 of the Pima County Code)

1. Permit to be issued to (Arizona Corporate Commission Registered Name): Asarco LLC

2. Mailing Address: 4201 W Pima Mine Road
City: Sahuarita State: AZ ZIP: 85629

3. Plant Name (if different than item #1): Mission Complex

4. Name (or names) of Owner or Operator: Asarco LLC
FAX #: 520-648-0802 Phone: 520-648-2500
Email: _____

5. Name of Owner's Agent: Thomas H. Phillips
FAX #: 520-625-9632 Phone: 520-648-4528

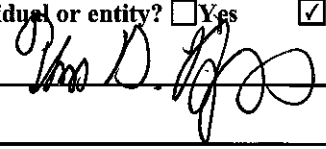
6. Plant/Site Manager/Contact Person: Jamie Ekholm
FAX #: 520-648-0802 Phone: 520-393-4671
Email: jekholm@asarco.com

7. Proposed Equipment/Plant Location Address: Same as above
City: _____ State: _____ ZIP: _____
Indian Reservation (if applicable): _____ T/R/S, Lat/Long, Elev: 31 59' 50.35"N / 111 02' 58.95" W, 3,123 ft.

8. General Nature of Business: Mining
Standard Industrial Classification Code: 1021 State Permit Class: Class I

9. Type of Organization: Corporation Individual Owner Partnership Government Entity Other

10. Permit Application Basis (Check all that apply): New Source General Permit
 Renewal Revision: Administrative Minor Significant Existing Permit # 2026
Date of Commencement of Construction or Modification: To Be Determined
Is any of the equipment to be leased to another individual or entity? Yes No

11. Signature of Responsible Official of Organization: 
Official Title of Signer: General Manager

12. Typed or Printed Name & E-mail of Signer: Thomas H. Phillips tphillips@asarco.com
Date: 5-15-19 Telephone Number: 520-648-4528

EQUIPMENT LIST

The following table should include all equipment utilized at the facility and be complete with all data requested. The date of manufacture must be included in order to determine if portions of the facility are subject to NSPS. Make additional copies of this form if necessary.

Type of Equipment	Maximum Rated Capacity	Make	Model	Serial Number	Equipment ID Number	Date of Manufacture
Radial Stacker	4,500 tph	Barber Greens	G.O. 201008	N/A	10-105	1/72

EMISSION SOURCES

COMPANY NAME: Asarco LLC

Estimated "Potential to Emit" per 17.04.340.A.164.
Review of applications and issuance of permits will be expedited by supplying all necessary information on this Table.

PAGE _____ OF _____
DATE _____

REGULATED AIR POLLUTANT DATA					EMISSION POINT DISCHARGE PARAMETERS									
EMISSION POINT [1]		CHEMICAL COMPOSITION OF TOTAL STREAM	REG. AIR POLLUTANT EMISSION RATE		UTM COORDINATES OF EMISSION POINT [5]			STACK SOURCES [6]					NONPOINT SOURCES [7]	
NUMBER	NAME	REGULATED AIR POLLUTANT NAME [2]	#/HR [3]	TONS/YEAR [4]	ZONE	EAST (Mtrs)	NORTH (Mtrs)	HEIGHT ABOVE GROUND (ft)	HEIGHT ABOVE STRUC. (ft)	EXIT DATA			LENGTH (ft)	WIDTH (ft)
										DIA. (ft)	VEL (fps)	TEMP. (°F)		
SSOPS-2	Wet Scrubber	PM/PM10/PM2.5	0.38	1.68	12 R	494090.35	3537919.1	9' 3"		2	24	Ambient		
HFOPS-2	Radial Stacker	PM	3.60	4.99	12 R	494169.11	3537941.87							
		PM10	1.70	2.36	12 R	494169.11	3537941.87							
		PM2.5	0.26	0.36	12 R	494169.11	3537941.87							

GROUND ELEVATION OF FACILITY ABOVE MEAN SEA LEVEL _____ feet. PDEQ STANDARD CONDITIONS ARE 293K AND 101.3 KILOPASCALS (17.04.340.A.210)

General Instructions:

- Identify each emission point with a unique number for this plant site, consistent with emission point identification used on plot plan, previous permits, and Emissions Inventory Questionnaire. Include fugitive emissions. Limit emission point number to eight (8) character spaces. For each emission point use as many lines as necessary to list regulated air pollutant data. Typical emission point names are: heater, vent, boiler, tank, reactor, separator, baghouse, fugitive, etc. Abbreviations are O.K.
- Components to be listed include regulated air pollutants as defined in 17.04.340.A.182. Examples of typical component names are: Carbon Monoxide (CO), Nitrogen Oxides (NO_x), Sulfur Dioxide (SO₂), Volatile Organic Compounds (VOC), particulate matter (PM), particulate less than 10 microns (PM₁₀), etc. Abbreviations are O.K.
- Pounds per hour (#/HR) is maximum potential emission rate expected by applicant.
- Tons per year is annual maximum potential emission expected by applicant, which takes into account process operating schedule.
- As a minimum applicant shall furnish a facility plot plan as described in the filing instructions. UTM coordinates are required only if the source is a major source or is required to perform refined modeling for the purposes of demonstrating compliance with ambient air quality guidelines.
- Supply additional information as follows if appropriate:
 - Stack exit configuration other than a round vertical stack. Show length and width for a rectangular stack. Indicate if horizontal discharge with a note.
 - Stack's height above supporting or adjacent structures if structure is within 3 times the "stack height above the ground" of stack.
- Dimensions of nonpoint sources as defined in 17.04.34.A.147.

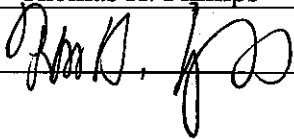
Certification of Compliance with all Applicable Requirements

Permit Number (If existing source) 2026

This certification must be signed by a Responsible Official. Applications without a signed certification will be deemed incomplete.

The responsible official is defined as a person who is in charge of principal business functions or who performs policy or decision making functions for the business. This may also include an authorized representative for such persons. For a complete definition, see Pima County Air Quality Control, Title 17, Section 17.04.340(A)(200).

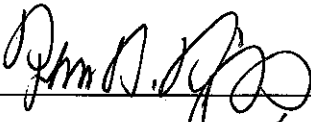
I certify that I have knowledge of the facts herein set forth, that the same are true, accurate and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Pima County Department of Environmental Quality (PDEQ) as public record. I also attest that I am in compliance with the applicable requirements and will continue to comply with such requirements and any future requirements that become effective during the life of my permit. I will present a certification of compliance to PDEQ no less than annually and more frequently if specified by PDEQ. I further state that I will assume responsibility for the construction, modification, or operation of the source in accordance with the requirements of Title 17 of the Pima County Code and any permit issued thereof.

Name (Print/Type): Thomas H. Phillips Title: General Manager
(Signature):  Date: 5-15-19

Certification of Truth, Accuracy, and Completeness

17.12.010(H) - Certification of Truth, Accuracy, and Completeness. Any application form, report, or compliance certification submitted pursuant to this Chapter shall contain certification by a responsible official of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the documents are true, accurate, and complete.

By my signature I,(Name) Thomas H. Phillips, hereby certify that based on information and belief formed after reasonable inquiry, the statements and information in this document are true, accurate, and complete.

Signature of Responsible Official of Organization: 
Title: General Manager Date: 5-15-19

AIR PERMIT FEE SCHEDULE

EFFECTIVE NOVEMBER 1, 2017

TITLE V PERMIT FEES (Class I Source – Individual Permit):

Type of Application	Application Fee
New permit application	None
Billable permit action (Permit processing fee)	\$125.70/hr
Accelerated permit application	\$15,000.00
Permit renewal (Once every five years)	None

Title V Source Category	Annual Administrative Fee¹
Aerospace	\$18,500.00
Cement Plant	\$56,640.00
Combustion/Boiler	\$13,770.00
Compressor Station	\$11,320.00
Copper or Nickel Mine	\$13,330.00
Copper Smelter	\$56,640.00
Electronics	\$18,220.00
Expandable Foam	\$13,060.00
Foundry	\$17,360.00
Gold Mine	\$13,330.00
Landfill	\$14,180.00
Lime Plant	\$53,060.00
Mobile Home Manufacturing	\$13,200.00
Other	\$14,180.00
Other with Continuous Emissions Monitoring	\$18,220.00
Paper Coater	\$13,770.00
Paper Mill	\$18,210.00
Petroleum Products Terminal Facility	\$20,220.00
Polymeric Fabric Coater	\$18,210.00
Reinforced Plastics	\$13,770.00
Semiconductor Fabrication	\$23,960.00
Utility: Fossil Fuel Except Natural Gas	\$28,960.00
Utility: Natural Gas	\$14,620.00
Vitamin/Pharmaceutical Manufacturing	\$14,050.00
Wood Furniture	\$13,770.00

ANNUAL EMISSIONS FEE:

Title V facilities reporting 2016 emissions \$ 16.85/ton¹

NON-TITLE V PERMIT FEES (Class II Source – Individual Permit):

Type of Application	Annual Administrative Fee¹
Application Fee	None
Billable Permit Action (Permit Processing Fee)	\$125.70/hr
Accelerated Permit Application Fee	\$15,000.00
Area Source	\$640.00
NSPS/NESHAP (Boilers or Generators)	\$2,970.00
NSPS/NESHAP True Minor Sources	\$7,180.00
NSPS/NESHAP Synthetic Minor Sources	\$13,120.00

PERMIT RENEWAL FEE:

(Once every five years) None

¹ Denotes fees adjusted November 1 of each year, to reflect changes in the Consumer Price Index (in accordance with Pima county Code 17.12.510.F). Thus the fees listed in this schedule covering November 1, 2017 through October 31, 2018 will differ somewhat different to those listed in the rule itself.

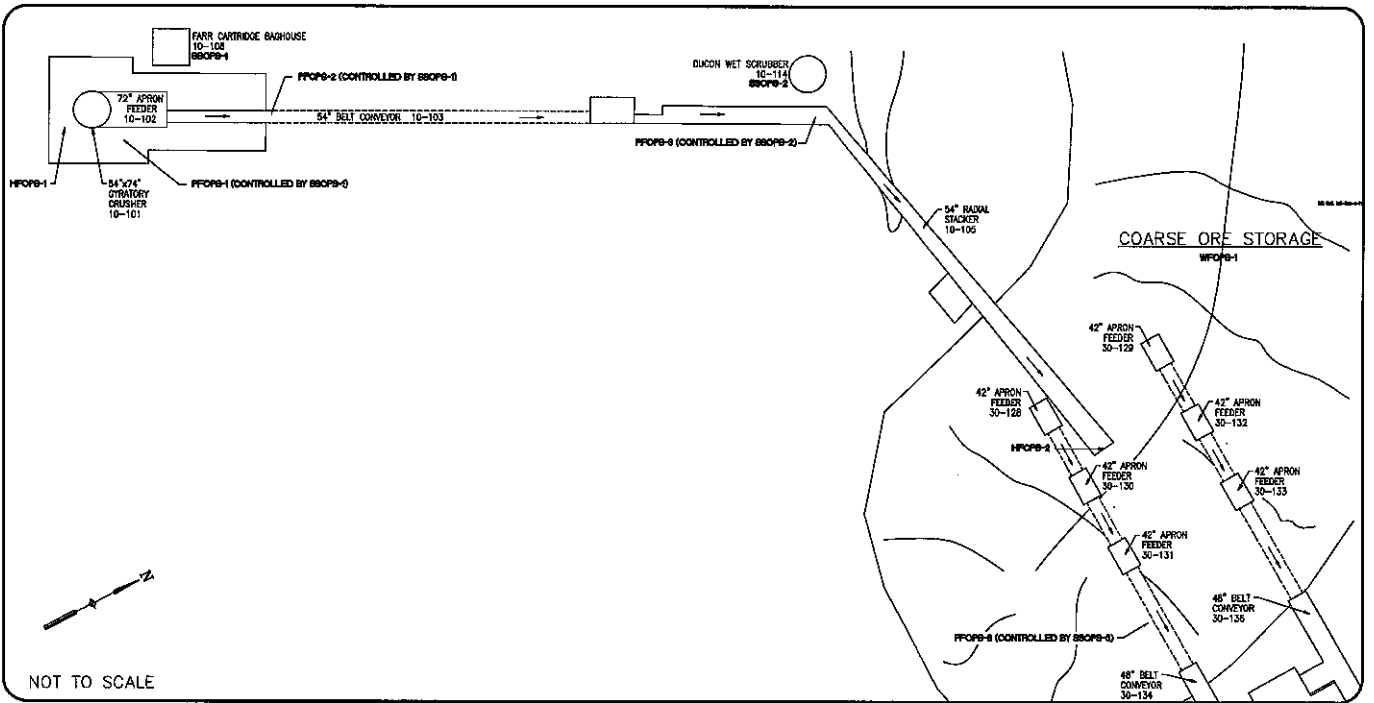
<u>NON-TITLE V PERMIT FEES (Class III Source – Individual Permit):</u>	
Type of Application	Annual Administrative Fee¹
Application Fee	None
Billable Permit Action	\$125.70/hr
Non NSPS/NESHAP True Minor Sources	\$2,330.00
Non NSPS/NESHAP (Boilers & Generators)	\$2,330.00
Non NSPS/NESHAP Synthetic Minor Sources	\$4,660.00
Permit Transfer	\$125.70/hr
<u>PERMIT RENEWAL FEE:</u>	
(Once every five years)	None

<u>GENERAL PERMIT FEES (Class II Source):</u>	
Type of Application	Annual Administrative Fee¹
Application Fee	\$540.00
Billable Permit Action – (Authorization to Operate Revision - Excluding Administrative Permit Amendments)	\$125.70/hr
Permit Transfer	\$125.70/hr
Area Source	\$540.00
PDEQ Plating, Anodizing and Polishing Facilities (Area Source) Permit #6144	\$540.00
PDEQ Gasoline Dispensing Facilities Permit #6096	\$540.00
PDEQ Perchloroethylene Dry Cleaners Permit #6099	\$540.00
PDEQ Fuel Burning Equipment (Boilers, Heaters, Generators) Permit #301 and #6205	\$2,970.00
PDEQ Non-Metallic Material Handling Facilities Permit #6210	\$2,970.00
ADEQ Concrete Batch Plant with NSPS/NESHAP Generator or Boiler	\$3,250.00
ADEQ Hot Mix Asphalt Plant	\$3,250.00
ADEQ Crushing and Screening Plants	\$3,250.00
Other Class II General Permit	\$2,970.00
<u>PERMIT RENEWAL FEE:</u>	
(Once every five years)	\$540.00

<u>GENERAL PERMIT FEES (Class III Source):</u>	
Type of Application	Annual Administrative Fee¹
Application Fee	\$540.00
Billable Permit Action – (Authorization to Operate Revision - Excluding Administrative Permit Amendments)	\$125.70/hr
Permit Transfer	\$125.70/hr
PDEQ Human and Animal Crematories	\$1,085.00
PDEQ Non-Metallic Material Handling Facilities Permit #6210	\$1,085.00
PDEQ Non NSPS/Non-NESHAP Fuel Burning Equipment (Boilers, Heaters, Generators)	\$1,085.00
ADEQ Concrete Batch Plant without NSPS/NESHAP Generator or Boiler	\$1,085.00
Other Class III General Permit	\$1,085.00
<u>PERMIT RENEWAL FEE:</u>	
(Once every five years)	\$540.00

<u>DEFINITIONS:</u>	
Area Source:	Those sources that emit less than 10 tons annually of a single hazardous air pollutant or less than 25 tons annually of a combination of hazardous air pollutants.
Minor	A source that is not major.
True Minor	Those sources that do not have the physical or operational capacity to emit major amounts (even if the source owner and regulatory agency disregard any enforceable limitations.
Synthetic Minor	Those sources that have the physical and operational capability to emit major amounts, but are not considered major sources because the owner or operator has accepted an enforceable limitation.
Title V Source	A major source has actual or potential emissions that meet or exceed the major source threshold. The major source threshold for any "criteria air pollutant" is 100 tons. Major source thresholds for "hazardous air pollutants" (HAP) are 10 tons/year for a single HAP or 25 tons/year for any combination of HAP.
Non-Title V	A minor source with enforceable limits on the source's potential emissions to maintain the source's minor operating permit status i.e. Synthetic Minor.
Major Source	Any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit considering controls, in the aggregate, 10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants. The Administrator may establish a lesser quantity, or in the case of radionuclides different criteria, for a major source than that specified in the previous sentence, on the basis of the potency of the air pollutant, persistence, potential for bioaccumulation, other characteristics of the air pollutant, or other relevant factors.

APPENDIX C PLOT PLAN – SOUTH PRIMARY CRUSHER



NOT TO SCALE

EPN's: SSOPS-1
 SSOPS-2
 HFOPS-1
 HFOPS-2
 WFOPS-1

MISSION AIR PERMIT

Mission South Primary Crusher and Stockpile - Equipment Location

Drawn By:

Checked By:

Date: June 2018

APPENDIX D POTENTIAL TO EMIT

Annual Ore Throughput Limit = 12,500,000 tpy
 Maximum Hourly Ore Throughput Rate = 4,500 tph

(1) SSOPS-2

Emission Point	Emission Rate	Exhaust Flow	Process Weight Emission Rate	Hourly Emissions			Annual Emissions		
				PM	PM10	PM2.5	PM	PM10	PM2.5
	(gr/dscf)	(scfm)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(ton/yr)	(ton/yr)	(ton/yr)
SSOPS-2	0.01	4,471	66.50	0.38	0.38	0.38	1.68	1.68	1.68

Note:

(1) Process Weight Emission Rate (E) is based on equation $E = 17.31P^{0.16}$, where P = the process weight rate in tons-mass per hour (4,500 tph).

(2) HFOPS-2

Emission Factor (TSP) = $k * 0.0032 * [(U/5)^{1.3} / ((M/2)^{1.4})]$ (Ref: AP-42, Chapter 13.2.4)

Where:

k = 0.74 for PM
 k = 0.35 for PM10
 k = 0.053 for PM2.5
 U = Mean Wind Speed = 10 miles/hr. (Estimated for PTE purposes)
 M = Moisture Content = 3.5 %

Emission Factor (TSP) = 0.0027 lb/ton
 Emission Factor (PM10) = 0.0013 lb/ton
 Emission Factor (PM2.5) = 0.0002 lb/ton
 Control Efficiency = 70% percent (water sprays)

Emission Point	Process Weight (lb/hr)	Hourly			Annual Emissions		
		PM (lb/hr)	PM10 (lb/hr)	PM2.5 (lb/hr)	PM (ton/yr)	PM10 (ton/yr)	PM2.5 (ton/yr)
HFOPS-2	66.50	3.60	1.70	0.26	4.99	2.36	0.36

Note:

(1) Process Weight Emission Rate (E) is based on equation $E = 17.31P^{0.16}$, where P = the process weight rate in tons-mass per hour (4,500 tph).