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Parcel #: 303-33-013A
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PIMA COUNTY
DEPARTMENT OF ENVIRONMENTAL QUALITY
33 N. Stone Avenue, Suite 700
Tucson, Arizona 85701-1429
www.deq.pima.gov

Ursula Kramer, P.E.
Director

(520) 243-7400
FAX (520) 838-7432

January 11, 2013

CERTIFIED MAIL
Return Receipt Requested

ASARCO LLC – Mission Complex
Attn: Thomas H. Phillips, General Manager
4201 W. Pima Mine Road
Sahuarita, AZ 85629

Permit #: 2026

NOTICE OF VIOLATION # PC 1212-045

The Pima County Department of Environmental Quality (PDEQ) has reason to believe that ASARCO LLC – Mission Complex (Asarco) located at 4201 W. Pima Mine Road, Sahuarita, Arizona, has violated requirements of rules within the Pima County Code (PCC) and an applicable permit/license. The alleged violations were determined after reviewing a notification of excess emissions report submitted by Asarco, dated December 14, 2012, a related citizen's complaint and documentation from the on-site inspection conducted by an authorized PDEQ representative on December 13, 2012. The findings of the complaint inspection were reported to Mr. Tom Klempel, Site Manager and Mr. Jamie Ekholm, Environmental Engineer. A complaint inspection report and subsequent compliance determination report are attached.

I. ALLEGED VIOLATIONS – APPEALABLE AGENCY ACTIONS

FINDINGS OF FACT

VIOLATION #1

Permit Condition, Part "B", I.C.2
PCC 17.16.040.A and 17.16.050.B

2. No person shall cause or permit the effluent from a single emission point, multiple emission points, or fugitive emissions source to have an average optical density greater than 20 percent subject to the following provisions: [SIP Rule 321, PCC 17.16.040, and PCC 17.16.050.B]
 - a. Opacities (optical densities) of an effluent shall be measured by a certified visible emissions evaluator with his natural eyes, approximately following the procedures which were used during his certification, or by an approved and precisely calibrated in-stack monitoring instrument.

- b. A violation of an opacity standard shall be determined by measuring and recording a set of consecutive, instantaneous opacities, and calculating the arithmetic average of the measurements within the set unless otherwise noted herein. The measurements shall be made at approximately fifteen-second intervals for a period of at least six minutes, and the number of required measurements shall be 25. Sets need not be consecutive in time, and in no case shall two sets overlap. If the average opacity of the set of instantaneous measurements exceeds the maximum allowed by any rule, this shall constitute a violation.

Findings

On December 13, 2012, Asarco permitted fugitive emissions from Tailings Impoundment #8 to have an average optical density greater than 20 percent as reported to PDEQ via an Excess Emissions Report and EPA Method 9 visible emission observation conducted by Asarco personnel. PDEQ confirmed the reported average opacity as 84%.

Requested Corrective Actions

- Employ control measures to prevent visible emissions in excess of 20% opacity from the Asarco tailings impoundments.

VIOLATION #2

Permit Condition, Part “B”, I.C.3 PCC 17.16.050.D

3. No person shall cause, suffer, allow, or permit diffusion of visible emissions, including fugitive dust, beyond the property boundary line within which the emissions become airborne, without taking reasonably necessary and feasible precautions to control generation of airborne particulate matter. Sources may be required to cease temporarily the activity or operation which is causing or contributing to the emissions until reasonably necessary and feasible precautions are taken.
 - a. Sources required to obtain an air quality permit under ARS § 49-426, § 49-480 or Rule 17.12.470 may request to have the actions constituting reasonably necessary and feasible precautions approved and included as permit conditions. Compliance with such permit conditions shall be considered compliance with this provision.
 - b. This subsection shall not apply when wind speeds exceed twenty-five (25) miles per hour (using the Beaufort Scale of Wind-Speed Equivalents, or as recorded by the National Weather Service). This exception does not apply if control measures have not been taken or were not commensurate with the size or scope of the emission source.
 - c. This Condition shall not apply to the generation of airborne particulate matter from undisturbed land.

Findings

On December 13, 2012, Asarco permitted diffusion of fugitive emissions from the surface of Tailings Impoundment #8 beyond the property boundary of Helmet Peak Road without taking reasonably necessary and feasible precautions to control wind-blown dust commensurate with the conditions of the impoundment in stand-by mode.

Requested Corrective Actions

- Employ control measures commensurate with the conditions of tailings impoundments in stand-by mode to prevent diffusion of visible emissions beyond the property boundary line.

II. CITATION OF AUTHORITY

ARS § 49-471 et seq

17.28.010, PCC Title 17, Violations and Order of Abatement

III. REQUESTED COMPLIANCE DOCUMENTATION

Asarco shall submit a written response to PDEQ within **thirty (30)** calendar days of receipt of this notice. The response shall include:

- Documentation of response actions taken to stabilize the surface of Tailings Impoundment #8 following the excess emissions event of December 13, 2013.
- Submit planned dust control measures for Tailings Impoundment #8 including any changes in operation or monitoring to prevent future violations of this type.

The above documentation shall be deemed "submitted" when received by PDEQ at the following address:

Pima County Department of Environmental Quality
Air Program
Attn: James M. Jones
33 N. Stone Avenue, Suite 700
Tucson, AZ 85701-1429

Or email to: Air.Permits@pima.gov with Subject: NOV PC 1212-045

IV. STATEMENT OF CONSEQUENCES

Failure to achieve compliance or enter into a Consent Order will result in PDEQ initiating a unilateral enforcement action. Achieving compliance does not preclude PDEQ from seeking civil penalties. A unilateral enforcement action may result in a civil penalty. A civil penalty may be imposed for each violation for the entire non-compliance period.

PDEQ believes that alleged violations identified in a Notice of Violation (NOV) are significant and advises you they may be used to determine a pattern of non-compliance or used to determine civil penalties pursuant to ARS § 49-513. As such, PDEQ believes that an NOV is an appealable agency action as defined in ARS § 49-471(4).

A person whose legal rights, duties or privileges were determined by an appealable agency action or who will be adversely affected by an appealable agency action and who exercised any right to comment on the action provided by law, rule or ordinance may appeal the action to the air pollution hearing board established pursuant to ARS § 49-478.

V. ADMINISTRATIVE INFORMATION

OFFER TO MEET

PDEQ personnel are willing to schedule a meeting to discuss the NOV and corrective action. If you would like to meet, please contact me at (520) 243-7400. Before meeting, please submit the following:

- An agenda that specifies the objectives you wish to discuss.
- The names and affiliations of the participants that will be accompanying you.

COMPLIANCE ASSISTANCE

PDEQ personnel are also willing to help you achieve and maintain compliance. If you need assistance complying with the regulations please contact our department at (520) 243-7400.

NOTICE OF NON-DISCRIMINATION

The Pima County Department of Environmental Quality does not discriminate on the basis of race, color, national origin, sex, disability religion, or age in its programs or activities in accordance with applicable laws and regulations. Further, any person who is in need of special services (e.g., written material in large type, signer for the hearing impaired, or for free assistance in Spanish), please contact PDEQ's Environmental Justice Program Manager, Beth Gorman, 33 N. Stone Avenue, Suite 700, Tucson, Arizona, 85701, Phone (520) 243-7446, email beth.gorman@deq.pima.gov.

AVISO DE NO DISCRIMINACIÓN

El Departamento del Condado de Pima de Calidad Ambiental no discrimina en base de la raza, el color, el origen nacional, el sexo, la religión, discapacidad, o la edad en sus programas o actividades de acuerdo con leyes y regulaciones aplicables. Además, cualquier persona que esté necesitando los servicios especiales (e.g., material escrito en letra grande, intérpretes de lenguaje con señas, o para obtener asistencia gratuita en español), por favor contacte a la encargada del Programa de Justicia Ambiental del Departamento Calidad Ambiental del Condado de Pima, Beth Gorman, 33 N. Stone Avenue, Suite 700, Tucson, Arizona, 85701, teléfono (520) 243-7446, email beth.gorman@deq.pima.gov.

Sincerely,



James M. Jones, CEA
Compliance Inspector
Air Program

 Attachment: Compliance Determination Report

cc: Permit File #: 2026



**PIMA COUNTY DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR PROGRAM**

33 N. STONE AVENUE, SUITE 700
TUCSON, ARIZONA 85701-1429
PHONE (520) 243-7400 FAX (520) 838-7432
www.deq.pima.gov

Compliance Determination Report

Tracking ID: PC 1212-045 / 2026-19D

Permit #: 2026
Source: ASARCO LLC - Mission Complex
Location: 4201 W. Pima Mine Road, Sahuarita AZ
Compliance Status: Non-Compliant

I. BACKGROUND

The Pima County Department of Environmental Quality (PDEQ) Air Program Compliance Manager, Dustin Fitzpatrick, received notification by telephone from Jamie Ekholm of ASARCO LLC – Mission Complex (Asarco) at approximately 12:40 pm on December 13, 2012, notifying excess emissions from Tailings Impoundment #8 documented by an EPA Method 9 observation conducted between 11:24 am to 11:30 am. Asarco later submitted a written notification dated December 14, 2012, for the excess emissions (Attachment 1). PDEQ received a series of complaints concerning emissions of particulate matter and dust from the Asarco mine tailings located west of La Canada Drive and Sahuarita Road on December 13, 2012. PDEQ dispatched a compliance inspector to conduct an investigation and site inspection of the Asarco facility (Attachment 2). Photos of an excess emissions event were taken offsite around 10:30 am by an Assistant Town Engineer for the Town of Sahuarita and were submitted to PDEQ as documentation of the fugitive dust visible emissions (Attachment 3).

The notification of excess emissions and the complaint investigation evidence have been reviewed by PDEQ management. Applicable conditions in the air quality permit have been outlined and findings and deficiencies for which an enforcement action will be taken have been determined and are listed below.

II. REVIEW OF APPLICABLE PERMIT CONDITIONS

Permit Condition:

Part "B": SPECIFIC CONDITIONS

I. Emission Limitations and Standards.

C. Requirements for Open Areas, Roadways, Streets, Material Handling, Storage Piles, and Tailings.

2. No person shall cause or permit the effluent from a single emission point, multiple emission points, or fugitive emissions source to have an average optical density greater than 20 percent subject to the following provisions:

- a. Opacities (optical densities) of an effluent shall be measured by a certified visible emissions evaluator with his natural eyes, approximately following the procedures which were used during his certification, or by an approved and precisely calibrated in-stack monitoring instrument.
- b. A violation of an opacity standard shall be determined by measuring and recording a set of consecutive, instantaneous opacities, and calculating the arithmetic average of the measurements within the set unless otherwise noted herein. The measurements shall be made at approximately fifteen-second intervals for a period of at least six minutes, and the number of required measurements shall be 25. Sets need not be consecutive in time, and in no case shall two sets overlap. If the average opacity of the set of instantaneous measurements exceeds the maximum allowed by any rule, this shall constitute a violation.

Findings:

An Asarco employee observed fugitive dust emissions on December 13, 2012, from the surface of Tailings Impoundment #8 and conducted an EPA Reference Method 9 visible emissions observation. The opacity was measured from 11:24 am to 11:30 am and averaged 84% as documented in Asarco's excess emission notification dated December 14, 2012.

Deficiency:

Pursuant to Permit Condition Part B, I.C.2, Pima County Code (PCC) 17.16.040.A and 17.16.050.B, Asarco permitted the emissions from Tailings Impoundment #8 to exceed the 20% opacity limit.

Permit Condition:

Part "B": SPECIFIC CONDITIONS

I. Emission Limitations and Standards.

C. Requirements for Open Areas, Roadways, Streets, Material Handling, Storage Piles, and Tailings.

3. No person shall cause, suffer, allow, or permit diffusion of visible emissions, including fugitive dust, beyond the property boundary line within which the emissions become airborne, without taking reasonably necessary and feasible precautions to control generation of airborne particulate matter. Sources may be required to cease temporarily the activity or operation which is causing or contributing to the emissions until reasonably necessary and feasible precautions are taken.
 - a. Sources required to obtain an air quality permit under ARS § 49-426, § 49-480 or Rule 17.12.470 may request to have the actions constituting reasonably necessary and feasible precautions approved and included as permit conditions. Compliance with such permit conditions shall be considered compliance with this provision.
 - b. This subsection shall not apply when wind speeds exceed twenty-five (25) miles per hour (using the Beaufort Scale of Wind-Speed Equivalents, or as recorded by the National Weather Service). This exception does not apply if control measures have not been taken or were not commensurate with the size or scope of the emission source.
 - c. This Condition shall not apply to the generation of airborne particulate matter from undisturbed land.

Findings:

Asarco submitted a notification of excess emissions dated December 14, 2012, documenting observation of a constant dust plume from the surface of Tailings Impoundment #8 blowing in a north to northeasterly direction across Asarco's property line on December 13, 2012. The notification relayed that visible emissions were observed from Tailings Impoundment #8 at approximately 10:30 am and an EPA Method 9 visual emissions observation was taken between 11:24 am and 11:30 am. A PDEQ inspector observed visible emissions from the Tailings

Impoundment #8 blow north across Helmet Peak Road at approximately 1:10 pm on December 13, 2012. PDEQ received photographs from Sheila Bowen, taken from approximately 10:26 pm to 10:28 pm looking west from I-19 and Sahuarita Road, of particulate matter emissions from Tailings Impoundment #8 that diffused north across Helmet Peak Road. The photographs demonstrate extensive dust emissions originating from Tailings Impoundment #8, with a background and foreground absent of fugitive dust emissions.

In their response dated March 20, 2012 to a previous Notice of Violation (NOV PC 1202-94) for excess emissions Asarco documented placing Tailings Impoundment #8 in stand-by mode and conveyed to PDEQ that surface dust emissions would be controlled with magnesium chloride and/or acrylic polymer dust suppressant application instead of wet tailings application to stabilize the surface. Asarco further stated that the surface would be inspected on a monthly basis and that maintenance applications would be made as necessary. Asarco also conveyed in the NOV response that although in stand-by mode, Tailings Impoundment #8 and the associated equipment would be maintained for tailings deposition in the event of an emergency. In the Notification of Excess Emissions dated December 14, 2012 Asarco states that an inspection of the surface of Tailings Impoundment #8 was conducted on November 29, 2012 and no issues were observed. Fourteen days later on December 13, 2012, the first day wind speeds exceeded 14 mph since the November 29, 2012 inspection, multiple subject areas on Tailings Impoundment #8 were observed by PDEQ to be compromised.

PDEQ asserts that the dust control measures taken by Asarco to prevent diffusion of dust beyond the property boundary were not commensurate with the size and scope of Tailings Impoundment #8 based upon the duration and extent of the emissions and the surface condition as observed on December 13, 2013.

Deficiency:

Pursuant to Permit Condition Part B, I.C.3 and PCC 17.16.050.D, Asarco permitted the diffusion of visible emissions on December 13, 2012, from the surface of Tailings Impoundment #8 beyond the property boundary of Helmet Peak Road without taking reasonably necessary and feasible precautions to control wind-blown dust that were commensurate with the conditions of the impoundment.

III. COMPLIANCE DETERMINATION

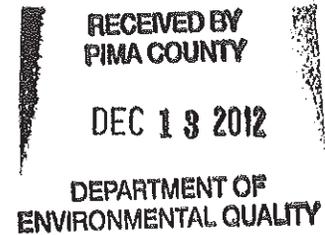
Upon review of the excess emission notification report, the complaint inspection, and compliance history for this source, PDEQ has determined that a Notice of Violation will be issued to Asarco for the above listed deficiencies.

Attachments:

- 
1. Asarco Notification of Excess Emissions Report dated December 14, 2012
 2. PDEQ Complaint Investigation Report dated December 13, 2012
 3. Photo Log of submitted photographs dated December 13, 2012
 4. Asarco Response to NOV, PC 1202-094

ATTACHMENT 1

Asarco Notification of Excess Emissions Report dated December 14, 2012



December 14, 2012

Mr. Richard Grimaldi
Deputy Director, Environmental Quality Division
Pima County Department of Environmental Quality
33 North Stone Avenue, Suite 700
Tucson, Arizona 85701

RE: ASARCO LLC -- Mission Complex
Notification of Excess Emissions -- Tailings Impoundment #8

Dear Mr. Grimaldi:

This letter constitutes ASARCO LLC -- Mission Complex's (Asarco's) notification of excess emissions required by Permit 2026, Part "A", section XIII.B. The permit's excess emissions reporting requirements require the source to provide a notification by facsimile or telephone within 24 hours of the time the owner or operator first learned of the occurrence of excess emissions. Permit 2026, Part "A", section XIII.B.1.a. The owner or operator is then required to supply a detailed written notification by submission of an "excess emissions report" within 72 hours of the 24-hour notification. Permit 2026, Part "A", section XIII.B.1.b. Both reports are to contain the information outlined in Permit 2026, Part "A", section XIII.B.2.

An initial report was made via phone to Dustin Fitzpatrick, Pima County Department of Environmental Quality's Compliance Manager, at approximately 12:15 PM on December 13, 2012.

Background.

Fugitive dust emissions from Asarco's tailings impoundments are controlled by a protective crust formed by deposition of wet tailings or by application of an acrylic copolymer. High winds can cause damage to the protective crust on these tailings impoundments by scouring away this crust. Prior bi-weekly observations as required by Asarco's Visual Observation Plan have shown no incidence of emissions.

On December 13, 2012, Asarco environmental personnel were completing a visual survey of all tailings impoundments. At approximately 10:30 AM, Asarco's Environmental Engineer, Jamie Ekholm noted visible emissions from Tailings

Impoundment #8 from the Mission Administration Building. He traveled to Tailings Impoundment #8 and conducted an EPA Method 9 observation from the top of Tailings Impoundment #8. The dust plume was constant and the 6-minute average opacity reading was 84%. Winds were moving in a south to southwest to north to northeast direction. Although wind measurements were not taken at the time, the wind appeared to average between 20 to 25 mph with gusts approaching 35 mph. This was consistent with the weather band accessible on Asarco's radios that reported 26 mph winds and gusts up to 39 mph at the Tucson International Airport around the time of the observation. During the observation period, sustained wind gusts would generate a dust plume that would travel in a north to northeasterly direction across the impoundment. No emissions were observed from other tailings dams, as a result, no other Method 9 observations were taken.

Asarco Mission Complex hereby submits the information required by Permit 2026, Part "A", sections XIII.B.2 as follows:

a. The identity of each stack or other emission point where the excess emissions occurred:

Excess emissions were detected from Tailings Impoundment #8. Asarco's Environmental Engineer, Jamie Ekholm, completed an EPA Method 9 observation and the 6 minute average was 84%.

b. The magnitude of the excess emissions expressed in the units of the applicable emission limitation and the operating data and calculations used in determining the magnitude of the excess emissions;

From approximately 10:30 AM to 12:00 PM on December 13, Jamie Ekholm conducted a visual survey of emissions for all tailings dams and noted visible emissions from Tailings Impoundment #8 with an instantaneous observation of 20%. Mr. Ekholm completed an EPA Method 9 observation from the top of the western portion of Tailings Impoundment #8 and the 6-minute average was 84%. During the observation period, sustained wind gusts would generate a dust plume that would travel in a north to northeasterly direction across the impoundment. Wind speeds were estimated at 20 to 25 mph with gusts exceeding 30 mph. The plume crossed Asarco's property line after leaving the surface of Tailings Impoundment #8.

c. The time and duration or expected duration of the excess emissions.

When high winds were noticed on December 13, Mr. Ekholm completed a visual survey of all tailings impoundments with Tailings Impoundment #8 being the only with significant emissions. Mr. Ekholm observed the surface of Tailings Impoundment #8 from approximately 11:00 AM until 12:00 PM.

At approximately 12:30 PM, Mr. Ekholm and Asarco's Environmental Manager, Mr. Tom Klempel escorted PDEQ inspector Mr. James Jones to the surface of Tailings Impoundment #8. At the time of the inspection, the dust plume had become more dispersed and intermittent. Due to the angle of the sun and the direction the plume was traveling, Mr. Jones was unable to complete a Method 9 observation.

Mr. Ekholm observed Tailings Impoundment #8 from Interstate 19 at approximately 3:30 PM and no dust plumes were observed.

d. The identity of the equipment from which the excess emissions emanated.

The excess emissions occurred from Tailings Impoundment #8.

e. The nature and cause of the emissions.

In March 2012, Asarco made a number of administrative and operational changes dealing with how tailings impoundments are managed. Beginning on March 20, 2012, Asarco hired a private contractor (Environmental Products and Applications, Inc. or EP & A) to place Tailings Impoundment #8 into a stand-by mode by spraying the surface with an acrylic co-polymer dust suppressant. EP & A completed spraying the majority of the surface by April 27, 2012. Those portions not sprayed were later sprayed by Asarco's newly formed Tailings Management Group once the area was stable enough for equipment to reach.

Once spraying was complete, Asarco's Environmental Department completed monthly spot checks of the surface to determine the overall stability of the tailings surface, with the most recent spot check being conducted on November 29. No major issues were noted during any of these monthly spot checks. Asarco experienced frequent high wind episodes after the dust suppressant application and these resulted in no fugitive dust emissions. Monsoon rains during the summer also did little to compromise the surface.

In preparation for higher winds during the autumn and winter months, Asarco's Tailings Management Group began reapplying the acrylic co-polymer dust suppressant beginning on September 21, 2012 and concluding on November 2, 2012.

On November 6, 2012, Jamie Ekholm received an alert e-mail from ADEQ for a forecasted high wind day on Friday, November 9. This information was relayed to both Management as well as the Tailings Management Group. Winds on this day did gust over 30 mph and yet no fugitive dust issues were observed on or leading up to this day. Asarco's other Environmental Engineer, Mark Eddy,

completed an inspection of the surface of the impoundment on November 29 and he did not observe any issues with the surface.

During the December 13 wind event an inspection of the surface of Tailings Impoundment #8 appeared to show compromised areas. It is difficult to ascertain why these certain small sections of the surface were compromised. As these sections were the cause of the fugitive dust event, Asarco took immediate action to spray these sections with water. Three trucks were used on December 13 to respond to the event and approximately 175,000 gallons of water was applied. Large sections were still in very good shape and showed no evidence of being compromised.

Asarco believes the small areas of broken crust and associated wind gusts on December 13th were the cause of the excess emissions as described above.

f. The steps taken, if the excess emissions were the result of a malfunction, to remedy the malfunction and the steps taken or planned to prevent the recurrence of the malfunction.

It does not appear that the excess emissions were the result of a malfunction.

g. The steps that were or are being taken to limit the excess emissions.

Over the previous months, Asarco has taken many steps to limit excess emissions on Tailings Impoundment #8 as well as all of its active and inactive tailings impoundments.

- Asarco formed a Tailings Management Group in March 2012 to focus and dedicate resources specifically to tailings management. The group consists of one supervisor and a designated crew concentrating on all aspects of tailings management (environmental and operations).
- Asarco began an alternative operating scenario by discontinuing its past practice of operating Tailings Impoundment #7 and #8 simultaneously. Instead, Asarco placed Tailings Impoundment #8 in "Stand-by Mode" and sealed the surface with an acrylic co-polymer dust suppressant.
- As soon as the individuals from the Tailings Management Group noticed dust emissions from the surface of Tailings Impoundment #8, they immediately dispatched water/polymer trucks to the surface. As it was much quicker to fill the trucks with water, the decision was made to hold off on the use of the acrylic co-polymer dust suppressant until the group was able to gain control of the fugitive dust event. Three trucks were used on December 13 to respond to the event and approximately 175,000 gallons of water was applied.

- The recent rain event during the evening of December 13 and the morning of December 14 coupled with forecasted cooler weather has greatly reduced the chances of fugitive dust emissions.
- Beginning on Monday, December 17, Asarco will begin the reapplication of the acrylic co-polymer dust suppressant to those areas of Tailings Impoundment #8 where the surface has broken down or shows evident signs of being compromised.
- Beginning on Monday, December 17, Asarco will begin staging a fleet of earth movers at Tailings Impoundment #8 for use in capping the surface with at least 6 inches of alluvial material. The alluvial material was used with great success on Asarco's reclaimed Tailings Impoundments #1, #2, and #3 located on the Tohono O'odham Nation land north of Pima Mine Road. Until the surface has been completely capped with the alluvial material, Asarco will continue the use of the acrylic co-polymer dust suppressant on the surface.

h. If the source's permit contains procedures governing source operation during periods of startup or malfunction and the excess emissions resulted from startup or malfunction, a list of the steps taken to comply with the permit procedures.

It does not appear at this time that the dust was the result of a malfunction.

* * *

Asarco believes it has acted in a proactive manner to control fugitive dust emissions from Tailings Impoundment #8. If you have additional questions or concerns, please let me know.

In accordance with Part "A", Section VIII of Air Quality Operating Permit No. 2026, I certify that based on information and belief formed after reasonable inquiry of Asarco staff, the statements and information in this compliance certification and attached documents are true, and complete

Signature 
Responsible Official/Authorized Representative

Printed Name and Title: Thomas H. Phillips, General Manager

Date: 12-14-12

VISIBLE EMISSION OBSERVATION FORM

COMPANY NAME: Asarco LLC - Mission Complex

STREET ADDRESS: 4201 W. Pima Mine Rd

CITY: Sahuarita STATE: AZ ZIP: 85629

PHONE (KEY CONTACT): (520) 393-4471 SOURCE ID NUMBER: Tailings #8

PROCESS EQUIPMENT: Tailings #8 OPERATING MODE: not operating

CONTROL EQUIPMENT: Polymer (Enviro Tac II) OPERATING MODE: operating

DESCRIBE EMISSION POINT: surface Tailings #8

HEIGHT ABOVE GROUND LEVEL: 80+ ft. HEIGHT RELATIVE FROM OBSERVER: 0 ft.

DISTANCE FROM OBSERVER: 100+ ft. DIRECTION FROM OBSERVER: ENE

DESCRIBE EMISSION: Particulate matter

EMISSION COLOR: white IF WATER DROPLET PLUME: N/A

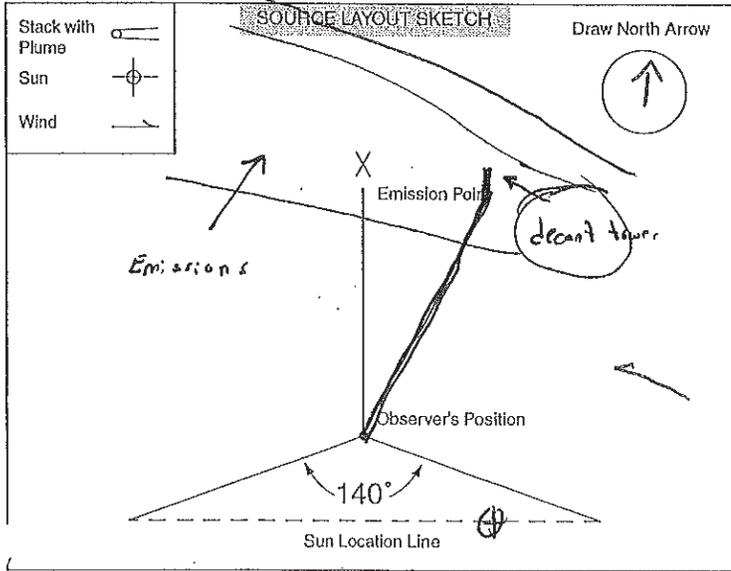
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED: North of decant tower

DESCRIBE PLUME BACKGROUND: Sky, Santa Rita mtn's

BACKGROUND COLOR: Blue dark grey SKY CONDITIONS: mostly clear

WIND SPEED: 10-20 mph gusts 30 mph WIND DIRECTION: SSW

AMBIENT TEMP: 65°F WET BULB TEMP: _____ RH. percent: 25%



ADDITIONAL INFORMATION

OBSERVATION DATE		START TIME				END TIME
12/13/12		11:24				11:30
MIN	SEC	0	15	30	45	COMMENT
1	90	95	90	90		
2	100	90	85	85		
3	80	80	85	80		
4	70	70	65	70		
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OBSERVER'S NAME (PRINT): Tomie E. Phelan

OBSERVER'S SIGNATURE: [Signature] DATE: 12/13/12

ORGANIZATION: Asarco LLC - Mission Complex

CERTIFIED: ASU/ADEQ DATE: 8/20/12

CONTINUE ON VEO FORM NUMBER

ATTACHMENT 2
PDEQ Complaint Investigation Report dated December 13, 2012



**PIMA COUNTY DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR PROGRAM**

33 N. STONE AVENUE, SUITE 700
TUCSON, ARIZONA 85701-1429
PHONE (520) 243-7400 FAX (520) 838-7432
www.deq.pima.gov

Complaint Investigation Report

Tracking ID: PC 1212-045

Permit #: 2026

Source: ASARCO LLC - Mission Complex

Location: 4201 W. Pima Mine Road, Sahuarita, AZ

Date: December 13, 2012

Spoke With: Mr. Tom Klempel

Arrival Time: 12:45 PM

Mr. Jamie Ekholm

Departure Time: 2:30 PM

Phone #: (520) 648-4588

Inspector: James Jones

Reason for Inspection: Complaints

I. PRE-INSPECTION NARRATIVE

On December 13, 2012, the Pima County Department of Environmental Quality (PDEQ) received a series of complaints concerning emissions of particulate matter and dust from the ASARCO LLC – Mission Complex (Asarco) mine tailings located west of La Canada Drive and Sahuarita Road. I drove to Asarco to conduct a complaint investigation.

II. INSPECTION NARRATIVE

I drove to the Pima Mine Road exit from I-19 and while en-route I observed emissions in the distance south of Asarco Tailings Impoundment #4. I exited on Pima Mine Road, photographed the conditions and measured a wind speed of 20 mph (max) at the time (Attachment 1, Photos 1-5). The conditions were partly cloudy with winds from the south at the time.

I then drove to the north plant entrance west on Pima Mine Road from I-19, entered the premises and initiated an on-site inspection at 12:45 pm. I met with Mr. Thomas Klempel, Environmental Manager, and Mr. Jamie Ekholm, Environmental Engineer. I initiated inspection rights protocol and Mr. Ekholm signed the Notification of Inspection Rights Form (Attachment 2). I informed Mr. Klempel and Mr. Ekholm that PDEQ had received complaints of particulate emissions from Tailings Impoundments #7 and #8, and that I had observed emissions in the distance south of Tailings Impoundment #4 when I was driving to Asarco.

Mr. Ekholm informed me that that he had just called PDEQ to report an emissions exceedance from Tailings Impoundment #8. During the course of the inspection, Mr. Ekholm informed me that he had initial reports of the emissions around 10:30 am and that he had documented an opacity exceedance from particulate emissions plume generated from the surface of Tailings

Impoundment #8 in the area east of the decant tower. Mr. Ekholm indicated that the emissions were generated from the surface of Tailings Impoundment #8 and that he had not noted excess emissions from Tailings Impoundment #7 or #4. I requested to be taken to the top of Tailings Impoundment #8 to inspect the condition on the surface of the impoundment.

I drove with Mr. Klempel and Mr. Ekholm to the Sahuarita Road exit from I-19 and to the top of Tailings Impoundment #8. While driving to Tailings Impoundment #8, and during the course of my inspection, I did not observe any substantial particulate emissions from the any other tailings impoundments.

At approximately 1:10 pm, while driving to Tailings Impoundment #8 with Mr. Klempel and Mr. Ekholm, I observed particulate emissions blowing from the northeast corner area of the top of the tailings impoundment that diffused north across the property boundary at Helmet Peak Road. The emissions were brief lasting only a few minutes and were not continuous at the time.

We drove to the top of the tailings impoundment and I observed the surface from the pier and roadway on the west side of the tailings impoundment that ends near the decant tower. I observed two water trucks operating out on the surface of the impoundment applying water to the northeast and southeast areas of the surface of the impoundment and another water truck departing to refill. I observed tire patterns on the surface that were representative of apparent older and more recent control application activity. I observed some brief emission plumes from the impoundment surface at a distance near the north and southeast central areas of the surface. The plumes were brief and sporadically formed and diminished. Because of their locations and emission direction relative to the sun angle and intermittent nature, I did not perform an EPA Method 9 observation. At the time I measured the wind speed from the south side of the pier at 25 mph (max) with my Kestrel gauge (Attachment 1, Photo No.'s 6-9).

I requested to be driven to the northeast corner area so I could examine the impoundment and surface in this area. As we approached the northeast corner of the impoundment on the roadway below the upper lift, I observed buildup of particulate on the leeward side of the north slope and the roadway below the slope. While climbing the north slope near the northeast corner I observed a brief emission plume approximately a minute or two in duration and also a few small plumes that developed while examining the impoundment surface (Attachment 1, Photo No.'s 10-12).

I walked out and examined the condition of the tailings surface in parts of the northeast area of the tailings impoundment where I had observed some of the plumes. I observed sizeable areas where the surface exhibited relatively low encrustation and appeared weathered. These areas were easily damaged under the weight of my footsteps. Blue green coloration was observed throughout the areas I walked indicating the areas had been treated with polymer in the past. The polymer was interspersed in non-uniform patterns in these areas. Prior to leaving the impoundment I measured a wind speed of 19 mph and the winds appeared to be diminishing (Attachment 1, Photo No.'s 13-22).

I later returned to the Asarco offices with Mr. Klempel and Mr. Ekholm and interviewed them on the current and previous efforts to monitor and control emissions from Tailing Impoundment #8 since notification was received by PDEQ in March 2012 that it was placed in "Stand-by Mode".

Mr. Ekholm indicated that Asarco has regular meetings with a tailings management team and mine managers to discuss, plan, and coordinate activities including methods and control measures to control emissions. Mr. Ekholm affirmed that he would include summaries of the control measures taken today and the long term control measures taken to control particulate emissions from the surface of Tailings Impoundment #8 since placing the impoundment in stand-by mode in the excess emission report.

III. EXIT INTERVIEW

I informed Mr. Klempel and Mr. Ekholm that I observed emissions diffusing across the property boundary of Helmet Peak Road around 1:10 pm from the surface of Tailings Impoundment #8. I informed them that I observed that they were applying water on areas of the surface in order to mitigate and control emissions at the time of my inspection and that PDEQ would review the excess emissions report and site inspection findings and make a compliance determination. I thanked them for their cooperation and concluded the inspection.

Attachments:

- 
1. Inspection Photos
 2. Notification of Inspection Rights Form

ATTACHMENT 1
Inspection Photos

Site Location: ASARCO LLC – Mission Complex 4201 W. Pima Mine Road, Sahuarita, AZ	Photographer: J. M. Jones	Tracking #: PC 1212-045
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Photo No. 1
Date: 12/13/2012
Photo Description: View of the roadway and Tailings Impoundment #4 to the left at a pullout near the I-19/Pima Mine Road intersection.



Photo No. 2
Date:
Photo Description: View of Tailings Impoundment #4 looking toward the southwest.



<p>Photo No. 3</p>	
<p>Date: 12/13/2012</p>	
<p>Photo Description: View of background and horizon looking northeast toward Tucson.</p>	

<p>Photo No. 4</p>	
<p>Date: 12/13/2012</p>	
<p>Photo Description: View of background and horizon looking toward the southeast.</p>	

<p>Photo No. 5</p>	
<p>Date: 12/13/2012</p>	
<p>Photo Description:</p> <p>View of background and horizon looking toward the south. Fugitive dust can be observed on the horizon in the direction of the telephone pole on the right. This is in the direction of Tailings Impoundments #7 and #8.</p>	

<p>Photo No. 6</p>	
<p>Date: 12/13/2012</p>	
<p>Photo Description:</p> <p>View of Tailings Impoundment #8 surface looking toward the northeast. A water truck can be observed on the right.</p>	

<p>Photo No. 7</p>	
<p>Date: 12/13/2012</p>	
<p>Photo Description:</p> <p>View of Tailings Impoundment #8 surface looking toward the east. The decant tower is to the left.</p>	

<p>Photo No. 8</p>	
<p>Date: 12/13/2012</p>	
<p>Photo Description:</p> <p>View of a second water truck on the impoundment surface looking toward the southeast.</p>	

<p>Photo No. 9</p>	
<p>Date: 12/13/2012</p>	
<p>Photo Description:</p> <p>View of the impoundment surface looking toward the southeast from the pier. Old and new tire tracks were observed from vehicles traveling on the impoundment surface. Wet areas from recent water applications were also observed.</p>	

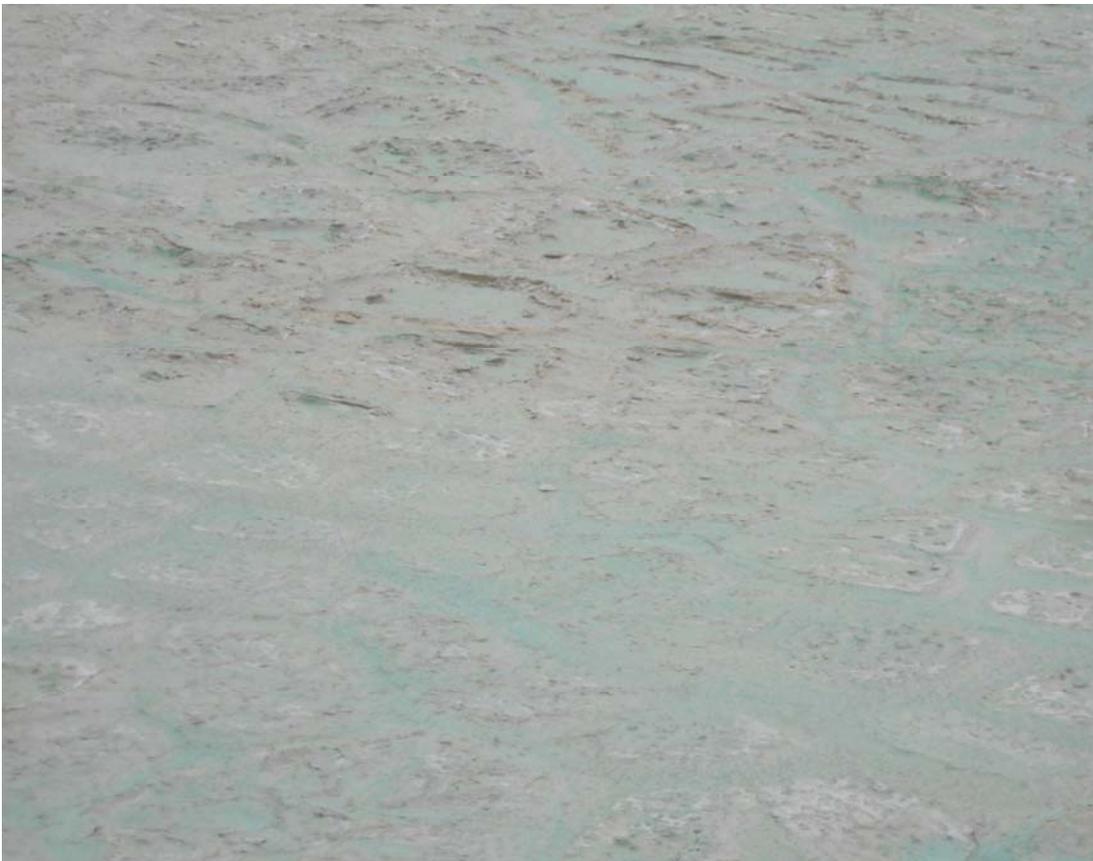
<p>Photo No. 10</p>	
<p>Date: 12/13/2012</p>	
<p>Photo Description:</p> <p>View of a dust emission plume over the north slope near the northeast area of the tailings impoundment.</p>	

<p>Photo No. 11 a, b</p>	
<p>Date: 12/13/2012</p>	
<p>Photo Description: Another view of the dust emissions plumes observed while on the northeast impoundment area.</p>	

<p>Photo No. 12</p>	
<p>Date: 12/13/2012</p>	
<p>Photo Description: View of a brief emission plume generated while examining the surface conditions in the northeast area of the impoundment looking towards the south/southwest.</p>	

Photo No. 13	
Date: 12/13/2012	
Photo Description: View of the impoundment surface in the direction where a dust plume was observed originating.	

Photo No. 14	
Date: 12/13/2012	
Photo Description: View of the surface near the area where dust emissions were occurring at the time.	

<p>Photo No. 15</p>	
<p>Date: 12/13/2012</p>	
<p>Photo Description:</p> <p>View of polymer interspersed on the impoundment surface.</p>	

<p>Photo No. 16</p>	
<p>Date: 12/13/2012</p>	
<p>Photo Description:</p> <p>View of the surface pattern and condition. The smooth areas have a relatively hard crust. The coarser areas are softer yielding under foot pressure.</p>	

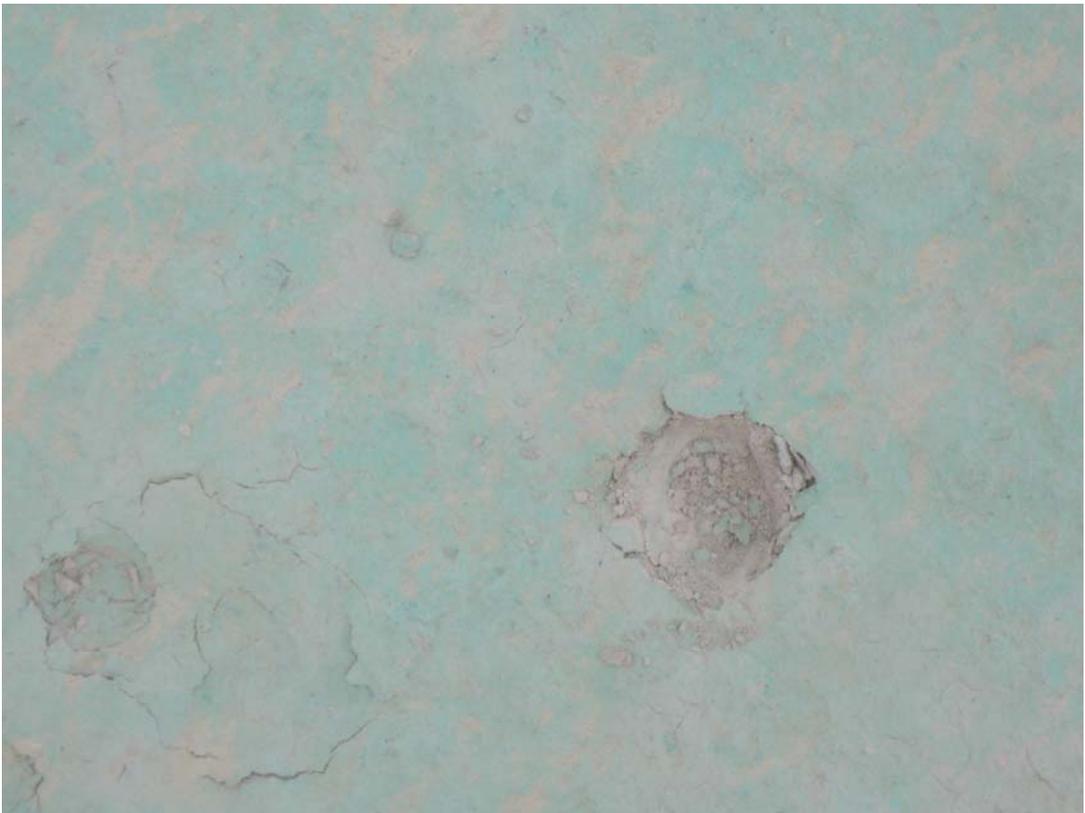
Photo No. 17	
Date: 12/13/2012	
Photo Description: Another view of the predominant surface condition observed in the northeast looking towards the southeast.	

Photo No. 18	
Date: 12/13/2012	
Photo Description: Close up view of surface pattern and condition.	

Photo No. 19	
Date: 12/13/2012	
Photo Description: Close up view.	

Photo No. 20	
Date: 12/13/2012	
Photo Description: View of a different surface texture and condition observed in another part of the northeast area.	

Photo No. 21	
Date: 12/13/2012	
Photo Description: A Close up view.	

Photo No. 22	
Date: 12/13/2012	
Photo Description: View of one of the coarser areas depicted in photo No. 16. The material exhibited a thin crust. The area on the right was made with slight thumb pressure.	

ATTACHMENT 2
Inspection Rights



PIMA COUNTY DEPARTMENT OF ENVIRONMENTAL QUALITY

33 N. Stone Avenue, Suite 700

Tucson, Arizona 85701-1429

Phone (520) 243-7400 Fax (520) 838-7432

www.deq.pima.gov

NOTIFICATION OF INSPECTION RIGHTS

REGULATED PERSON INFORMATION (Company, Agency, Organization or Individual)

Regulated Person ASARCO, LLC Permit # 2026
On-site Representative Title
Site Location 4201 W. Pima Mine Rd.
Site Contact Phone
Mailing Address

PDEQ INFORMATION

Inspector Name James M. Jones Phone 243-7348
Inspection Date 12/13/2012 Time 12:45
Accompanied by N/A

INSPECTION RIGHTS

Upon entry to the premises, the Pima County Department of Environmental Quality (PDEQ) inspector(s) met with the regulated person or authorized on-site representative, presented photo identification indicating that they are a PDEQ employee(s) and explained:

- The purpose of the inspection is to determine compliance with Air Quality Regulations or Pima County Code (PCC) Title 17. The inspection is being conducted pursuant to Arizona Revised Statutes (A.R.S.) §49-471 et seq. and PCC 17.20.050.
Inspection fee: \$ or [] A portion of Activity Permit Fee or [X] A portion of your annual emission fee
Regulated person or on-site representative may accompany the PDEQ inspector(s) on the premises, except during confidential interviews.
The regulated person has the right to have on request: copies of any original documents taken by PDEQ during the inspection, a split of any samples taken during the inspection if the split of any samples would not prohibit an analysis from being conducted or render an analysis inconclusive, copies of any analysis performed on samples taken during the inspection, and copies of any documents relied on to determine compliance with licensure or regulatory requirements.
Each person interviewed during the inspection will be informed that statements made by the person may be included in the inspection report.
Each person whose conversation is tape recorded will be informed that the conversation is being tape recorded.
Administrative hearing rights to appeal an administrative order or permit decision that was made as a result of the inspection are set forth in A.R.S. §49.511, 49.490, 49.496 and 49.497 et seq. Rights relating to an appeal of a final agency decision are found in A.R.S. §49.480.02 and 49.482 et seq.

Questions or comments on these procedures, your inspection and due process rights or this form may be directed to the Pima County Department of Environmental Quality (PDEQ) inspector listed on this form at (520) 243-7400.

While you have the right to decline to sign this form, the PDEQ representative(s) may still proceed with the inspection pursuant to PCC 17.20.050.

[X] I have read this notification and discussed any questions or concerns with the PDEQ inspector(s).

Signature [Signature] Date 12/13/12

[] refused to sign the Notification.

[] Authorized on-site representative is not present at the facility.

ATTACHMENT 3
Photo Log of Photographs submitted to PDEQ dated December 13, 2012

Site Location:

ASARCO LLC – Mission Complex
4201 W. Pima Mine Road, Sahuarita, AZ

Photographer:

Sheila M. Bowen, P.E.

Tracking #:

PC 1212-045

Photo No. 1

Date/Time:
12/13/2012
10:26 AM

Photo Description:

View of the Sahuarita Road looking west at Tailings Impoundment #8.



Photo No. 2

Date/Time:
12/13/2012
10:26 AM

Photo Description:

View of the Sahuarita Road looking west at Tailings Impoundment #8.



Photo No. 3	
Date/Time: 12/13/2012 10:27 AM	
Photo Description: View from northbound on ramp to I-19 looking west at Tailings Impoundment #8.	

Photo No. 4	
Date/Time: 12/13/2012 10:28 AM	
Photo Description: View from northbound on ramp to I-19 looking west at Tailings Impoundment #8.	

ATTACHMENT 4
Asarco Response to NOV PC 1202-094



RECEIVED BY
PIMA COUNTY

MAR 26 2012

DEPARTMENT OF
ENVIRONMENTAL QUALITY

March 20, 2012

Pima County Department of Environmental Quality
Air Program
Attn: Sarah L. Walters
33 North Stone Avenue, Suite 700
Tucson, AZ 85701

Re: Response to NOV No. PC 1202-094
ASARCO LLC—Mission Complex, Permit No. 2026

Dear Ms. Walters:

This letter constitutes the response of ASARCO LLC—Mission Complex (“Asarco”) to the Notice of Violation (NOV) No. 1202-0094 issued by the Pima County Department of Environmental Quality (“PDEQ”) on March 1, 2012. Asarco’s general response and explanation of its actions and corrective actions taken to ensure compliance is addressed first, followed by the allegation in the NOV and Asarco’s specific response to the allegation.

General Response and Explanation of Actions that Led to Alleged Violations and Corrective Actions Taken to Ensure Compliance

Asarco believes that it had taken reasonable precautions on the day in question. Asarco was smearing the surface of Tailings Dam #8 prior to and at the time of the opacity excursion.

As of September 12, 2011, Asarco began actively injecting algae in to the tailings line that supplies tailings to both Tailings Impoundment #8 as well as Tailings Impoundment #7. This \$125,000 project was implemented to further enhance Asarco’s dust suppression capabilities. Asarco believes three potential benefits will be realized from the use of algae as a dust suppressant:

- The algae should disperse throughout the tails slurry. Asarco anticipates, once deposited, the algae will continue to grow within and on the surface of the slurry and eventually form a matrix within the tails. This matrix or “biocrust” will potentially reduce the chances of the tailings crust from breaking down which can lead to fugitive dust emissions.

- The formation of a biocrust on the surface of the tails may also potentially minimize the rate of evaporation from the tails surface. Reducing the rate of evaporation means the tails will retain moisture for longer periods of time and dry at a much slower rate.
- The biocrust is anticipated to cover the entire surface of the tailings dam over time. In the event portions of the center of a dam begin to dry, the biocrust may function as an effective dust suppressant. This is important as these are areas Asarco's polymer tanker trucks generally cannot reach without the possibility of becoming mired in wet tails.

Despite Asarco's precautions, excess emissions were observed from the Tailings Impoundment #8 on February 2, 2012. As mentioned previously, Asarco was in the process of applying tailings slurry to Tailings Impoundment #8 in the days leading up to the excess emissions event. Asarco also attempted to use water and dust suppressant application on the section of tailings where dust was observed. Due to the majority of the surface being recently smeared with wet tailings, it was not feasible to dispatch water or polymer trucks to the surface of Tailings Impoundment #8. However, Asarco continued to attempt to control emissions from the access road directly below the tailings dam using the truck's spray monitors.

Asarco believes that its continuous program of inspection, periodic visual observation monitoring, active smearing with wet tailings, and use of algae as a dust suppressant meets the regulatory requirement that Asarco take "reasonable precautions" to prevent blowing tails.

Response to Specific Alleged Violations in NOV PC 1202-094

Alleged Violation

PCC 17.16.050.A

Permit Condition, Part "B", Section I.C.2

2. No person shall cause or permit the effluent from a single emission point, multiple emission points, or fugitive emissions source to have an average optical density greater than 20 percent subject to the following provisions: [SIP Rule 321, PCC 17.16.040, and PCC 17.16.050.B]

- a. Opacities (optical densities) of an effluent shall be measured by a certified visible evaluator with his natural eyes, approximately following the procedures which were used during his certification, or by an approved and precisely calibrated instack monitoring instrument.
- b. A violation of an opacity standard shall be determined by measuring and recording a set of consecutive, instantaneous opacities, and calculating the arithmetic average of the measurements within the set unless otherwise noted herein. The measurements shall be made at approximately fifteen-second intervals for a period of at least six minutes, and the number of required measurements shall be 25. Sets need not be consecutive in time, and in no case shall two set overlap. If the average opacity of the set of instantaneous measurements exceeds the maximum allowed by any rule, this shall constitute a violation.

Findings (NOV PC 1202-094):

On February 2, 2012, Asarco permitted fugitive emissions from Tailings Impoundment #8 to have an average optical density greater than 20 percent as reported to PDEQ via an Excess Emissions report and EPA Method 9 visible emission observation conducted by Asarco personnel. PDEQ calculated the reported average opacity as 31%.

Requested Corrective Action(s)

- › Employ control measures to prevent visible emissions in excess of 20% opacity from the Asarco tailings impoundments.

Asarco's Response to the Alleged Violation

Asarco believes that it took all reasonably necessary and feasible precautions to prevent and control fugitive emissions from its property. As stated in the General Response above, Asarco had implemented the following reasonable precautions:

- Asarco was in the process of smearing the surface of Tailings Impoundment #8 prior to date of the alleged violation. Smearing the surface of the impoundment provides both moisture early on as well as a protective crust to prevent dust entrainment.
- Asarco completed a visual observation each week as required by Asarco's Visual Observation Plan. No fugitive dust emissions were noted in the weeks leading up to the alleged violation.
- There were no opacity issues in the weeks after the alleged violation. In fact, high winds predicted on February 27, 2012 produced no emissions from any of Asarco's tailings impoundments.
- Asarco had implemented the use of algae as a dust suppressant for Tailings Impoundment #8 and Tailings Impoundment #7 prior to the alleged violation. Asarco continued to use both water trucks and polymer trucks to attempt to suppress fugitive dust on the day of the alleged violation by using the truck monitors.

The success of Asarco's efforts is seen in the absence of excess emissions from the tailings dams generally and specifically from Tailings Impoundment #8. High winds on February 27, 2012 showed no emissions from the surface of any of the tailings dams and specifically from Tailings Impoundment #8.

Additionally, Asarco believes that it has developed all necessary measures to prevent a recurrence. Asarco's description of these measures is found below.

Asarco's Plan to Prevent Future Recurrences

Asarco is in the process of creating a Comprehensive Dust Management Plan (Plan) that will be implemented upon approval from PDEQ. The Plan will incorporate both operational as well as equipment improvements. The most noteworthy near-term improvements for the management of fugitive dust from tailings impoundments include:

- Asarco will begin an alternative operating scenario by discontinuing its current practice of operating Tailings Impoundment #7 and Tailings Impoundment #8 simultaneously; but instead will focus on operating only Tailings Impoundment #7 to focus on improved

tailings impoundment management. Tailings Impoundment #8 will be placed in stand-by mode and coated/capped with magnesium chloride and/or polymer to stabilize the surface. Maintenance applications will be made as necessary. The surface will be inspected and evaluated by Asarco personnel on a monthly basis. Although in stand-by mode Asarco will maintain Tailings Impoundment #8 along with the associated equipment for tailings deposition in the event of an emergency; reapplication of the dust suppressant will be made to stabilize the surface where tailings have been added during an emergency event. Asarco believes this reduction in exposed surface area will significantly improve its ability to manage fugitive dust emissions.

- Asarco is in the process of forming a Tailings Management Group that will focus and dedicate resources specifically to tailings management. The group will consist of a supervisor and designated crew concentrating on all aspects of tailings management (environmental and operational). The crew will be resourced with equipment that is better designed for Asarco's tailings application and manpower dedicated to minimize environmental issues.
- Asarco will procure "ultra-low" ground pressure equipment that includes either tracked or balloon-tired vehicles with extremely low surface area pressure to access impoundment areas currently inaccessible to water and polymer application trucks.
- Blue-green algae will continue to be injected into the tailings slurry to aid in the formation of an erosion resistant crust. Although results were inconclusive at a similar mine site, Asarco believes the algae system will ultimately prove successful in reducing windblown tailings. Asarco's algae injection system differs for two reasons. The first being a higher ratio of algae to tailings is being used. The second being the use of growth tanks that reduces the environmental variability that might be seen in open growth ponds.
- Asarco is evaluating the adequacy of its current fleet of water and polymer trucks. In purchasing replacement units, Asarco will focus on reliability and parts availability to minimize maintenance and repair downtime. Similar to Asarco's efforts to get critical spares on its dust collectors into the warehouse inventory, Asarco will implement a similar program with respect to its spare parts for its polymer trucks and water trucks.

If you have any questions, please contact Jamie Ekholm at (520) 393-4671.

I certify that based on information and belief formed after reasonable inquiry of Asarco staff, the statements and information in this document are true and complete.

Sincerely,



Thomas H. Phillips
General Manager, Asarco Mission Complex