July 05, 2007

Electronic Mail

Ms. Barbara Cenalmor
Pinal County Air Quality Control District
P.O. Box 987
Florence, AZ 85232

Re: ASARCO LLC—Ray Operations Title V Air Quality Permit Revision
Permit #V20600.R04
Transfer House Supplemental

Dear Barbara:

This letter updates the prior letter of June 18, 2007 to add a new piece of equipment required for installation of the new crusher (CR4) at the Ray mine. Changes in the June 18, 2007 letter as a result of this change are reflected in **bold face** type. Otherwise, the letter is unchanged. As before, Asarco is setting forth its understanding of the proposed project, including additional limitations designed to assure that the project is minor after incorporating the District's previous comments.

Statement of the Project

Asarco proposes to add two new pieces of major process equipment, plus ancillary equipment, at the Ray Mine. The first piece of equipment is a new Near-Pit Crusher ("CR4") that will replace the existing In-Pit Crusher ("CR3"). The new Near-Pit Crusher consists of **four** emission points: (1) a dump pocket, controlled by water sprays, assigned a 70% overall control efficiency in prior District correspondence, which Asarco is using in this calculation; (2a) the top of the crusher, controlled by water sprays, which Asarco has assigned a 90% overall control efficiency; (2b) the bottom of the crusher, controlled by a scrubber, which Asarco has assigned an overall 95% control efficiency; (3) a **drop point where the 40' transfer conveyor deposits ore onto a 690' overland conveyor (clarification, not a change)**, controlled at the drop point by either the same or a separate wet or dry scrubber, which Asarco has assigned a 95% control efficiency; **and (4) a drop point where the 690' overland conveyor deposits ore into a hopper at the**

transfer house, controlled by a water spray, which Asarco has assigned an 80% control efficiency. The remaining equipment is already permitted and in place e.g., existing conveyor transfer points, CR1, etc. Asarco also proposes to limit throughput through CR4 and ancillary equipment to 22 million tons per year.

As part of its compliance planning, Asarco proposes to permit 50 hours of uncontrolled operation for CR4 to reflect power and/or water loss to the new near-pit crusher and its ancillary equipment. This small amount of operating time will allow clearing the crusher in the event of water or power loss, lessening wear and tear and potential damage to the equipment. This brief period of allowable uncontrolled emission is separately accounted for below.

The second new piece of equipment is a portable screen. The screen is uncontrolled. Asarco proposes to limit the screen to 3000 hours operation per year.

As part of the project, Asarco will permanently retire **following testing and certification of CR4 equipment,** the existing CR3 system and **the hopper located at the transfer house (#325)**.

<u>NNSR Applicability Review</u>

NNSR is triggered if there is an increase in PM_{TSP} emissions of 25 tons per year (tpy) or more or if there is an increase of PM_{10} or $PM_{2.5}$ emissions of 15 tons per year or more. The attached appendices and following table sets forth the proposed emissions increase. Because CR4 (and ancillary equipment) and the portable screen are both new units, Asarco has used the potential to emit method in calculating emissions.

Calculating Project PTE

Appendix A provides uncontrolled and controlled emissions estimates for the new Near-pit crusher (CR4). Base emissions are derived from AP-42. The following assumptions and proposed limits were used: (1) limit of 22,000,000 tons of ore processed per year; (2) application of water sprays at dump pocket (emission point (EP1) below); (3) application of additional water sprays at top of crusher (EP2a below); (4) application of a wet or dry scrubber at the bottom of the crusher where it transfers to the conveyor system (EP2b below); (5) application of the same or an additional wet or dry scrubber to the 40' transfer conveyor (EP3 below); **and (6) a new 690' overland conveyor to the transfer house, with water sprays (EP4 below)**. Fifty (50) hours of uncontrolled emissions at maximum feed rate were used to account for clearing the crusher in the

event of power or water loss. Fifty hours is proposed as the limit. Control efficiencies are determined as follows:

- Dump pocket (EP1). Control efficiency of 70% selected based on AP-42 water spray control efficiency range of 70 to 95%, large size of area to be controlled and batch dump nature of process. The 70% control for this application of water sprays was previously approved by PCAQCD.
- Crusher top (EP2a): Control efficiency of 90% selected based on AP-42 water spray control efficiency range of 70 to 95%, small, confined size of area to be controlled, and prior wetting in the dump pocket in addition to these sprays. Ore is thus considerably moister than in the dump pocket, adding to the level of control.
- Crusher bottom (EP2b): Control efficiency of 95% selected based on AP-42 for wet and dry scrubber systems, discussions with manufacturers, small size of area to be controlled and enclosure. This estimate includes consideration of capture.
- Crusher combined efficiency: (EP2): Overall control efficiency for the crusher was based on averaging the control efficiencies for EP2a and EP2b, giving a combined efficiency of 92.5%.
- 40' conveyor transfer (EP3): Control efficiency of 95% selected based on AP-42 for wet and dry scrubber systems, discussions with manufacturers, small size of area to be controlled and enclosure. This estimate includes consideration of capture. This may be the same unit as used for EP2b or an additional unit.
- **690' overland conveyor transfer point (EP4): Control efficiency of 80% selected based on AP-42 for high moisture ore (>4%), discussions with manufacturer, and prior wetting at the dump pocket, crusher, and 40' conveyor transfer point. This estimate includes consideration of capture.**

Appendix B provides uncontrolled emissions for the new Portable Screen unit. The following assumptions and proposed limits were used: (1) 3000 hours of operation; and (2) 500 tph maximum production rate.

The following tables summarize the information presented in Appendices A and B.

Table 1. Uncontrolled and Controlled TSP PTE, tpy

Crusher Constituent	Uncontrolled PTE, tpy	Control, Type	Control, %	Controlled PTE, tpy
Dump pocket (EP1)	16.64	Water spray	70	4.99
Crusher, top (EP2a)	220.0	Water spray	90	16.47

Crusher, bottom (EP2b)		Scrubber	95	
Crusher, conveyor (EP3)	110.00	Scrubber	95	5.50
Crusher, conveyor (EP4)	**110.00**	**Water spray**	**80**	**22.00**
Crusher, uncontrolled	n/a	n/a	0	1.26
Crusher, TOTAL				**50.22**
Portable Screen				
Portable Screen, Total	4.82	Uncontrolled	0	4.82
PROJECT TOTAL				**55.04**

Table 2. Uncontrolled and Controlled $PM_{10}/PM_{2.5}$ PTE, tpy

Crusher Constituent	**Uncontrolled PTE, tpy**	**Control, Type**	**Control, %**	**Controlled PTE, tpy**
Dump pocket (EP1)	7.87	Water spray	70	2.36
Crusher, top (EP2a)	99.0	Water spray	90	7.41
Crusher, bottom (EP2b)		Scrubber	95	
Crusher, conveyor (EP3)	44.0	Scrubber	95	2.20
Crusher, conveyor (EP4)	**44.0**	**Water spray**	**80**	**8.80**
Crusher, uncontrolled	n/a	n/a	0	0.57
Crusher, TOTAL				**21.34**
Portable Screen				
Portable Screen, Total	2.03	Uncontrolled	0	2.03
PROJECT TOTAL				**23.37**

*Asarco has treated $PM_{2.5} = PM_{10}$ an extremely conservative assumption

Project NNSR Review

NNSR review consists of two steps: first, determining whether the project itself is significant; and second, determining whether there is a "significant net increase" in emissions at the source as a whole. If the first step is not met, no further analysis is required. NNSR review is required for PM_{10} and potentially for its surrogate, PM.

TSP. Total potential TSP emissions from the new Near-Pit Crusher CR4 and new Portable Screen are **55.04** tpy, which exceeds the NNSR significant threshold of 25 tpy. NNSR review will be triggered unless there is no "significant net emissions increase."

PM_{10}. Total potential PM_{10} emissions from new Near-Pit Crusher CR4 and the new Portable Screen equal **23.37** tpy, which does exceed the NNSR significant threshold of 15 tpy. NNSR review will be triggered unless there is no "significant net emissions increase."

Significant Net Emissions Increase

In the second step of NNSR review, the emissions increase from the project are added to contemporaneous emissions increases and contemporaneous emissions decreases to determine whether there is a "significant net emissions increase" from the source as a whole.

Table 3 sets forth the contemporaneous emissions increases and Table 4 sets forth contemporaneous decreases observed at the facility.

Table 3a. Contemporaneous TSP Decreases

System Removed (includes dump pocket, feeder, crusher…)	2005 actuals (tpy)	2006 actuals (tpy)	Average (tpy)
Existing in-pit crusher (CR3)	23.72	29.76	26.74
Secondary crusher	0	0	0
Existing conveyor transfer house (#325)	11.86	14.88	13.37
TOTAL			40.11

Table 3b. Contemporaneous $PM_{10}/PM_{2.5}$ Decreases

System Removed (includes dump pocket, feeder, crusher…)	2005 actuals (tpy)	2006 actuals (tpy)	Average (tpy)
Existing in-pit crusher (CR3)	10.98	14.78	12.88
Secondary crusher	0	0	0
Existing conveyor transfer house (#325)	4.72	5.9	5.31
TOTAL			18.19

Table 4a. Contemporaneous TSP Increases

Modification	Year	Allowable Emission Increase (tpy)
Asbestos landfill	2006	0.9

Open burn	2005	0.9
TOTAL		**1.8**

Table 4b. Contemporaneous $PM_{10}/PM_{2.5}$ Increases

Modification	**Year**	**Allowable Emission Increase (tpy)**
Asbestos landfill	2006	0.9
Open burn	2005	0.9
TOTAL		**1.8**

Netting Equation

The netting equation sums the emissions from the proposed project, in this case the addition of the new near-pit crusher (CR4) and the portable screen, the increase in emissions from contemporaneous emissions increases, in this case the asbestos landfill and open burning (total of 1.8 tpy), and subtracts contemporaneous emissions decreases, in this case the shut down of the existing in-pit crusher (CR3), secondary crusher **and the existing conveyor transfer house**. Because the secondary crusher has not operated within the contemporaneous period, its emissions are treated as "zero" for netting purposes.

This equation gives the following result for TSP:

NET INCREASE = project emissions + cont. increase - cont. decrease
NET INCREASE = (CR4 + port. screen) + (landfill + burn) - (in-pit crusher **+ sec crusher + exist conveyor transfer house**)
NET INCREASE = (**50.22** + 4.82) + (0.9 + 0.9) - (26.74 +0+**13.37**)
NET INCREASE = **55.04** + 1.8 - **40.11** = 16.73
NET INCREASE < 25 tpy NNSR significant threshold

Based on this analysis for TSP, after considering the limits Asarco has proposed (e.g., for CR4: 22,000,000 tons of ore per year, water sprays on dump pocket and crusher top, scrubber on crusher bottom, scrubber on 40' conveyor transfer point, 50 hours of uncontrolled operation; and for Portable Screen: 3000 hours of operation), the proposed project nets out of NNSR review. Therefore, no further NNSR review is

required and lowest achievable emissions rate (LAER), offsets, and the NNSR compliance demonstration are not required.

This equation gives the following result for $PM_{10}/PM_{2.5}$:

NET INCREASE = project emissions + cont. increase – cont. decrease
NET INCREASE = (CR4 + port. screen) + (landfill + burn) – (in-pit crusher + **sec crusher + exist conveyor house)**
NET INCREASE = (**21.34** + 2.03) + (0.9 + 0.9) – (12.88 +0+**5.31**)
NET INCREASE = **23.37** + 1.8 – **18.19** = 6.98
NET INCREASE < 15 tpy NNSR significant threshold

Based on this analysis for $PM_{10}/PM_{2.5}$, after considering the limits Asarco has proposed (e.g., for CR4: 22,000,000 tons of ore per year, water sprays on dump pocket and crusher top, scrubber on crusher bottom, scrubber on 40' conveyor transfer point, 50 hours of uncontrolled operation; and for Portable Screen: 3000 hours of operation), the proposed project nets out of NNSR review. Therefore, no further NNSR review is required and lowest achievable emissions rate (LAER), offsets, and the NNSR compliance demonstration are not required.

Asarco hopes that this letter clarifies the basis on which this project may be permitted as a minor modification. Please contact Steve Sexton at (520) 356-2215 if you have any further questions or concerns.

Sincerely,

Richard Rhoades
General Manager

Emission calculations attached

Emissions Inventory Asarco Ray Complex

E2 Crusher

300 Operation ID: Ray Concentrator Operations
396 Equipment ID: New Near-pit Crusher - CR4* & Apron Feeder (SCC 3-03-024-06)

Emissions Calculations: AP-42, 11.24 Metallic Minerals Processing, Table 11.24-2 Primary Crushing

E (TSP) =	0.02	lb/ton
E (PM10) =	0.009	lb/ton
E($PM_{2.5}$)** =	0.009	lb/ton

Throughput 22,000,000 TPY

Emission Point 2
Uncontrolled:

E (TSP) =	220	TPY
E (PM_{10}) =	99	TPY

Emission Point 2a 90% (wet material)
Controlled with water sprays =

TSP with water control =	22.00	TPY
PM_{10} with water control =	9.90	TPY

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Emission Point 2b
Controlled with Scrubber =
95% (100% capture efficiency with 95% removal efficiency)

TSP with Scrubber =	10.94	TPY
PM_{10} with Scrubber =	4.92	TPY

Emission Point 2 ((2a + 2b)/2)

TSP combined =	16.47	TPY
PM_{10} combined =	7.41	TPY

50-Hour Uncontrolled Operation

TSP without Scrubber =	1.26	TPY***
PM_{10} without Scrubber =	0.57	TPY***

Total TSP =	17.72	TPY
Total PM_{10} =	7.98	TPY

Assumptions:
*Apron Feeder (40-115') is integral to a Crusher
**PM2.5 emission calculations were not made; Pinal County doesn't regulate PM2.5
***50 hours per 8760 hours of operation
High moisture ore

Emissions Inventory Asarco Ray Complex

E3 Converyor Transfer

300 Operation ID: Ray Concentrator Operations
396 Equipment ID: New Near-pit Crusher - CR4* & Apron Feeder (SCC 3-03-024-06)

Emissions Calculations: AP-42, 11.24 Metallic Minerals Processing, Table 11.24-2 Primary Crushing

E (TSP) = 0.01 lb/ton
E (PM10) = 0.004 lb/ton
E($PM_{2.5}$)** = 0.004 lb/ton

Throughput 22,000,000 TPY

Emission Point 3
Uncontrolled:
E (TSP) = 110 TPY
E (PM_{10}) = 44 TPY

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Emission Point 3
Controlled with Scrubber = 95%
E (TSP) = 5.50 TPY
E (PM_{10}) = 2.20 TPY

Total TSP = 5.50 TPY
Total PM_{10} = 2.20 TPY

Assumptions:
*Apron Feeder (40-115') is integral to a Crusher
**PM2.5 emission calculations were not made; Pinal County doesn't regulate PM2.5
***50 hours per 8760 hours of operation
High moisture ore

Emissions Inventory Asarco Ray Complex

E4 Transfer House

300 Operation ID: Ray Concentrator Operations
326 Equipment ID: 690-foot Conveyor to Transfer House

Emissions Calculations: AP-42, 11.24 Metallic Minerals Processing, Table 11.24-2 Primary Crushing

E (TSP) =	0.01	lb/ton
E (PM10) =	0.004	lb/ton
$E(PM_{2.5})$** =	0.004	lb/ton

Throughput 22,000,000 TPY

Emission Point 4

Uncontrolled:

E (TSP) =	110	TPY
E (PM_{10}) =	44	TPY

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Emission Point 4

Controlled with water sprays = 80%

E (TSP) =	22.00	TPY
E (PM_{10}) =	8.80	TPY

Assumptions:

*Apron Feeder (40-115') is integral to a Crusher
**PM2.5 emission calculations were not made; Pinal County doesn't regulate PM2.5
***50 hours per 8760 hours of operation
High moisture ore

Summary

Emission Point 1

TSP Uncontrolled =	16.64 TPY	PM10 with water control =	4.99 TPY
PM10 Uncontrolled =	7.87 TPY	PM10 with water control =	2.36 TPY

Emission Point 2

TSP Uncontrolled -	220 TPY	Total TSP w/combined contr	16.47 TPY
PM10 Uncontrolled =	99 TPY	Total PM10 w/combined con	7.41 TPY

Emission Point 3

TSP Uncontrolled =	110 TPY	Total TSP w/scrubber	5.5 TPY
PM10 Uncontrolled =	44 TPY	Total PM10 w/scrubber	2.20 TPY

Emission Point 4

TSP Uncontrolled =	110 TPY	Total TSP w/scrubber	22 TPY
PM10 Uncontrolled =	44 TPY	Total PM10 w/scrubber	8.80 TPY

Total PTE CR4 E1-4	**TPY**	**TPY Increase**
TSP =	456.64 TPY	48.96 TPY
PM10 =	194.87 TPY	20.77 TPY

Emissions from Uncontrolled 50 hours of operation

TSP =	1.26 TPY	1.26 TPY
PM10 =	0.57 TPY	0.57 TPY

Total PTE CR4 E1-4 (w/uncontrolled 50 hours operation)

TSP =	457.9 TPY (already included in above)	50.22 TPY
PM10 =	195.44 TPY (already included in above)	21.34 TPY

Total PTE Portable Screening Plant

TSP =	4.82 TPY	4.82 TPY
PM10/2.5 =	2.03 TPY	2.03 TPY

Contemporaneous Emissions Increases and Decreases

Actual Emissions Decreases		
Secondary	0 TPY	
CR3, TSP	26.74 TPY	
CR3, PM10/2.5	12.88 TPY	
Transfer House Hopper (CR3 overland conveyor to Transfer House hopper), TSP	13.37 TPY	Average of 2005 and 2006 Actual PM10 emis
Transfer House Hopper (CR3 overland conveyor to Transfer House hopper)	5.31 TPY	Emissions Inventory for each year, Equ
Total Decrese	**58.3 TPY**	
Actual Emissions -Increases		
Asbestos Landfill, TSP & PM10/2.5	0.9 TPY	
Burn Permit, TSP, PM10/2.5	0.9 TPY	

NETTING TOTAL

TSP =	16.73 TPY
PM10/2.5 =	6.98 TPY