RESOLUTION

WHEREAS, American Smelting and Refining Company and its predecessors operated a smelter located in El Paso, Texas, from 1888 to 2004;

WHEREAS, the smelter employed thousands of hard-working El Pasoans throughout its years of its operation;

WHEREAS, the smelter employees supported their families well, leaving a legacy of tens of thousands of El Paso citizens who are fully engaged in every segment of our community to this day;

WHEREAS, the smelter owners through the years made important contributions to the growth and development of our community, not the least of which included supporting the establishment of the Texas State School of Mines and Metallurgy, later Texas Western College, now known as the University of Texas at El Paso;

WHEREAS, the combined economic power of a large industrial facility and a dedicated and competent workforce drove El Paso's economy and prosperity for decades, placing us at the top of the mountain of cities of the Southwest through much of the 20th Century;

WHEREAS, by the turn of the 21st Century, the location of the smelter was no longer compatible with the health and safety of the community at large, for which reason the City of El Paso and many of its citizens protested against the smelter continuing to operate with an air permit from the Texas Commission on Environmental Quality ("TCEQ");

WHEREAS, despite the determined efforts of the TCEQ to approve the air permit needed for the smelter to continue operating, the City of El Paso and its citizens prevailed, successfully ensuring that the smelter would close and never again operate at its historical location;

WHEREAS, the long struggle to close the smelter caused a significant amount of social turmoil in El Paso, sometimes dividing households that wanted both good jobs and environmental quality;

WHEREAS, the closing of the smelter has not fully healed the rift in the community caused by the struggle to protect the environment while keeping good jobs;

WHEREAS, the City of El Paso wishes to create a monument to the citizens of the region affected and to the ex-Asarco workers who gave so much of themselves in order to support their families and create a safe, healthy and economically vibrant community;

WHEREAS, the premises of the closed smelter facility contain certain historically, architecturally and culturally significant structures which would form the perfect physical component of a monument to the workers of the smelter, including two chimneys, one of which measures 826 feet in height;

WHEREAS, the Remedial Trust charged with remediating the smelter properties has the authority to determine whether the significant structures on-site are destroyed or preserved for posterity and, as of now, has chosen important but low-stature structures to preserve in perpetuity;

WHEREAS, the TCEQ is the Trustor of the property in question and therefore exercises supervisory control over the actions of the Remedial Trust and its Trustee;

WHEREAS, the Trustee has announced his intention to demolish the chimneys on the premises unless certain specific conditions are met on or before December 4, 2012, including finding a proposed owner for the chimneys, indemnifying the Trustee for liability attached to them, proving them to be architecturally and structurally sound, and financing their preservation and maintenance in perpetuity;

WHEREAS, the community of El Paso has engaged to meet the Trustee's conditions, but despite diligent efforts has found certain of the conditions to be unreasonable and unfeasible;

WHEREAS, the efforts of the Save The Stacks non-profit organization have shown that the long-term cost of preserving and maintaining the chimneys is much less than the Trustee's initial estimate of cost indicated it would be, which initial estimate was not based on accurate scientific or engineering data, and thereby contributed to the confusion in the community over what investment would be required in order to preserve the chimneys; and

WHEREAS, prior to the confusion caused by the initial estimate of cost, a poll of interested El Pasoans showed that 75 percent favored preserving the chimneys.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF EL PASO:

1. That the City of El Paso announces its intention to receive ownership in fee simple of the historically, architecturally and culturally significant chimneys and a small area of land to provide access to the site and parking spaces, for the purpose of creating a monument to the many workers who populated the plant through its productive life-cycle;

2. That the City of El Paso requests the TCEQ and the Remedial Trust and its Trustee use all means in their power to facilitate the City's goal of creating a monument to all the affected citizens of the region and ex-Asarco workers of the smelter, including the chimneys, such means to include: removing the December

4, 2012 deadline for the community to meet reasonable conditions to ensure the preservation of these significant structures; allowing Trust resources to be spent on performing due diligence and actual work on the structures in insuring the structural soundness of the chimneys; engaging the community in a dialogue to determine the highest and best use of the entire site, incorporating a site map indicating other significant structures on the site; the Trust using all budgeted resources now earmarked for demolition and associated control, abatement and remediation (direct and related, immediate and long term) instead for stabilization, remediation, preservation and beautification of the monument site; and working with the City of El Paso staff to transfer the significant assets to the City once the site remediation has been completed;

3. That the City of El Paso calls upon its legislative partners to assist in promoting the message of this Resolution within the offices of the TCEQ; and

4. That the City of El Paso resolves to work closely with the University of Texas at El Paso, the Save the Stacks organization, and other appropriate organizations and individuals to create a regional monument of the first quality that honors our past, preserves our history, serves as a beacon to our community for the millions of visitors who travel through the pass every year, and challenges our citizenry and leaders to create a better future for our region.

APPROVED THIS ____ day of _____, 2012.

CITY OF EL PASO

_____
John F. Cook
Mayor

ATTEST:

_____
Richarda Duffy Momsen
City Clerk

APPROVED AS TO FORM:

_____
Sylvia Borunda Firth
City Attorney

November 16, 2012

PROJECT NO: 09-131

The Honorable John Cook
Mayor of the City of El Paso
2 Civic Center Plaza
El Paso, Texas 79901

VIA E-MAIL

RE: Proposed City Council Resolution regarding the stacks on the former ASARCO Smelter Site property (the "Property")

Dear Mayor Cook:

The Trust has been provided with a copy of the Proposed Resolution to be presented to the City Council by the Save the Stacks group (the "Proposed Resolution"). The Trust understands that the City Council will be voting on adopting the Proposed Resolution during the November 27, City Council meeting. The Trust feels that it would be helpful to the City Council to hear the Trust's initial reactions to the language of the Proposed Resolution before making their decision whether to adopt such resolution.

1) ***The suggested "requirement" that the Trust use its funds to repair and maintain the stacks violates the Environmental Custodial Trust Agreement (the "Trust Agreement") and the Court's Order approving the Trust Agreement***

The Trust was created by a Court Order entered by the United States Bankruptcy Court in the ASARCO bankruptcy. That Court Order approved the Trust Agreement which specifically addresses the obligations of the Trustee and the use of Trust money. The Trust Agreement does not allow the Trust money to be spent on rehabilitating the structural integrity of the stacks or the costs of ongoing maintenance as demanded by the Save the Stacks group. Any Trust money spent for that purpose would be a direct violation of the Court Order. The Trust Agreement specifically requires that the Trust money be spent first and foremost on the remediation and cleanup of the hazardous wastes found at the Property in a manner that will be protective of human health and the environment. In addition to the money spent on remediation and cleanup, the Trust Agreement also permits the Trustee to take any actions it feels appropriate in order to maximize the sale price of the Property to help pay for the remediation and cleanup cost. Lastly, the Trust Agreement permits the Trustee to spend money on administrative efforts to effectuate these primary purposes of the Trust – remediation and cleanup of hazardous wastes and the sale of the Property. There is no other Court approved use of Trust money, and the Trustee cannot be required to spend Trust money for any other purpose.

Project Navigator, Ltd.
One Pointe Drive, Suite 320
Brea, CA 92821

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www.recastingthesmelter.com

2) The City's costs of acquiring the Property, structurally bringing the Stacks up to appropriate Codes and annual maintenance thereafter, and lost tax revenues.

If the City Council should decide that it wants to adopt the Proposed Resolution, with the understanding that the Trust cannot fund the suggested structural and environmental repairs and ongoing maintenance costs, then it will be the City who will have to pay for those costs and for the acquisition of the Property.

(a) **Costs of acquiring the Property.**

The Trust has retained the services of a national brokerage firm to market the former Asarco properties (including the Property) taking into account the City's Dover Kohl vision or such properties. The brokerage firm has contacted several parties who have acquired other remediated industrial sites (several of which were smelter sites that were successfully remediated and developed) who are interested in the Asarco properties (including the Property). It is the brokerage consultants' opinion that if the stacks remain, those parties will no longer be interested in the Property. Based on these discussions, it is the brokerage consultants' opinion that the Property will be difficult, if not impossible, to market if the stacks remain on the Property. Thus, should the City resolve to acquire the stacks, the City will also need to acquire the Property (the main smelter site) at a purchase price at least equal to what the Trustee could have received from other interested parties who were willing to purchase the Property without the stacks.

(b) **Costs to bring the Stacks up to code and continuing annual maintenance.**

The Engineers retained by the Trust have estimated that the cost of bringing the stacks up to current code standards and the annual ongoing maintenance of the stacks for the next fifty years is approximately $14 Million. The Save the Stack group has suggested that this cost is not correct and that it should only cost $4 Million. Either way, this is a cost that the City will have to plan on expending now and in the future. If the Save the Stack group is correct, the cost will be less, but unfortunately, you will not know the exact amount until those costs are actually incurred. Thus, the City should plan for the costs the Trust's experts have outlined. Please note that the technical reports prepared by the Save the Stacks group have not undergone peer review by the Trust. The Trust only received the reports two days ago, and is not currently in a position to agree or disagree with the conclusions put forward by the Save the Stacks group. Additionally, it would seem prudent for the City to have its own experts perform an independent review of the technical documents prior to any decision's being made by the City.

(c) **Loss of Future Tax Revenues.**

As mentioned above, it is the opinion of the Trust's brokerage firm that if the stacks remain, it will be difficult, if not impossible to sell the Property. If the City were to acquire the Property in order to save the stacks from demolition, this would be a tremendous loss of potential tax revenue for the City since the property would not be developed. Based on our consultants' reasonable assumptions and analysis, they project that the value of the land and potential improvements that could be constructed thereon would generate approximately $5,000,000 to $5,500,000 in annual tax revenues for the City. If the City purchases the Property to save the stacks, not only will the City be spending the money to acquire the Property, spending money to restore/refurbish the stacks, and spending money for the ongoing maintenance obligations of the stacks, but they will also not collect these additional future tax revenues. This does take into account the money the City has already spent on the Dover Kohl analysis for the former ASARCO properties and the future vision that is no longer viable with the stacks.

3) The City's liability for personal injury and property damage claims

(a) **Personal injury claims**

Should the City acquire the Property, the City will also have to plan to assume the costs of liability for any personal injury claims under Texas premises liability law for injuries (or death) that any person might incur due to: 1) exposure to contaminates from the stack, or 2) injuries or death associated with some total or partial failure of the stacks which results in injuries to any person.

(b) **Property damage claims**

The fact that the City has governmental immunity from any claims for property damages caused by a partial or total failure of the stacks, is another basis for the brokerage consultants' opinion that the sale of the Property with the stacks on it will result in the Property being unmarketable.

Finally, although not required to do so, the Trust has taken important steps to preserve the historical significance of the Site, as summarized below:

1. The Trust has given ASARCO historical documents, maps and photographs to the University of Texas, El Paso to incorporate into their archives for educational and research purposes.
2. The Trust has allowed a professional photographer access to the Site so that all buildings, stacks and offices would be recorded in their pre-demolition condition.
3. The Trust provided ledgers, work materials and other ASARCO related memorabilia to the City which was incorporated into an excellent ASARCO exhibit at the El Paso History museum this past spring.
4. The Trustee also plans to leave the oldest building on the Site – the administration building, which dates back to the 1880s.

To suggest that the Trustee has not taken steps to preserve the cultural and historical importance of the Site is simply inaccurate.

The Trust encourages the City Council to consider these facts in regards to the Proposed Resolution.

Very truly yours,

Roberto Puga, P.G.
Trustee

cc: El Paso City Council Members
Ms. Sylvia Firth, El Paso City Attorney
Ms. Joyce Wilson, El Paso City Manager
Ms. Caroline Sweeney, TCEQ
Mr. Carlos Sanchez, EPA
Ms. Mary Koks, Trust Counsel

ETZOLD CO LLC
Commercial Real Estate Brokers and Consultants

ASARCO-El Paso Properties

Pricing by Geographic Parcel Groups

ver 11.21.12

Property Group	Name	PID#	Geo ID#	Tax Roll Acreage	Surveyed Acreage	Market Price/SF	Market Value	Legal Description	Comments
1	***Mountain Properties***			**23.50**	**23.49**				
		410409	X224-999-0000-0301	5.00	5.00			Tracts 3, 4 and 8, F W Brown Survey #224	Crazy Cat/Palisades Area
		71256	X445-999-0000-2100	18.50	18.49			Tract 2, Noyes Rand Survey #131	Crazy Cat Quarry
2	***East I-10***			**241.97**	**248.07**	**$1.25**	**$13,507,412**		Mixed Use Residential Community
		292737	X010-999-0000-0200	241.97	248.07			Tract 2-A, John Barker Survey #10	UTEP Campus Expansion Area
3	***Cemetery-La Calavera***			**47.98**	**39.40**	**$1.50**	**$2,574,396**		
		195877	X010-999-0000-0230	47.98	39.40			Tract 2-A-1, John Barker Survey #10	Cemetery & La Calavera Area
4-A	***Smeltertown - North***			**4.40**	**4.40**	**$4.00**	**$766,656**		
	2650 West Paisano-lot	295166	X054-999-000D-0100	2.07	2.07			J F Harrison Survey #54	Fenced lot w/ 2650 Whse
	2650 West Paisano-whse	34214	X054-999-000D-0200	1.27	1.27			J F Harrison Survey #54	Blue Whse/Office: pkg sale to IBWC
	2700 West Paisano	163827	X054-999-000D-0300	1.06	1.06			J F Harrison Survey #54	Whse and yard on North
4-B	***Smeltertown - South***			**9.32**	**12.36**	**$3.50**	**$1,884,970**		
		375774	X054-999-000A-0100	8.48	9.38			J F Harrison Survey #54	Two Surveyed Parcels (Exhibit C Parcels 1 & 2)
		330644	X054-999-000A-5000	0.84	0.84			J F Harrison Survey #54	"
		?	?		2.15			J F Harrison Survey #54	Old School Site
5	***Main Site***			**126.31**	**153.71**	**$1.50**	**$10,043,411**		
		113601	X010-999-0000-0250	100.63				Tract 2-A-2, John Barker Survey #10	Plant & Slag Area
		345792	X010-999-0000-0220	0.28				Tract 2-C-1, John Barker Survey #10	
		190288	X010-999-0000-2500	3.72				Tract 25, John Barker Survey #10	
		102563	X010-999-999-2400	0.50				Tract 24, John Barker Survey #10	
		194947	X054-999-000E-0700	21.18				J F Harrison Survey #54	Main Stacks along Paisano
6	***Executive Access***			**0.77**	**0.77**				
	(SOLD)	43384	X010-999-0000-1780	0.77	0.77			Tracts 17-C & 17-D-1, John Barker Survey #10	Rio Bravo Extension
	Slivers and Misc				**5.91**				
	Exhibit H	?	?		1.66			Ptn Tract 2A1, John Barker Survey No. 10	Light Rail Terminal site, btwn UP Lines near Paisano
	Tract 24	?	?		0.46			Tract 24, John Barker Survey No. 10	Convey to TXDoT or BNSF
	Tract 25	?	?		3.79			Tract 25, John Barker Survey No. 10	Convey to TXDoT or IBWC
	TOTAL ACREAGE:			**444.93**	**488.11**	**VALUE:**	**$28,776,845**	**AVERAGE PRICE PER SQUARE FOOT:**	**$1.35**

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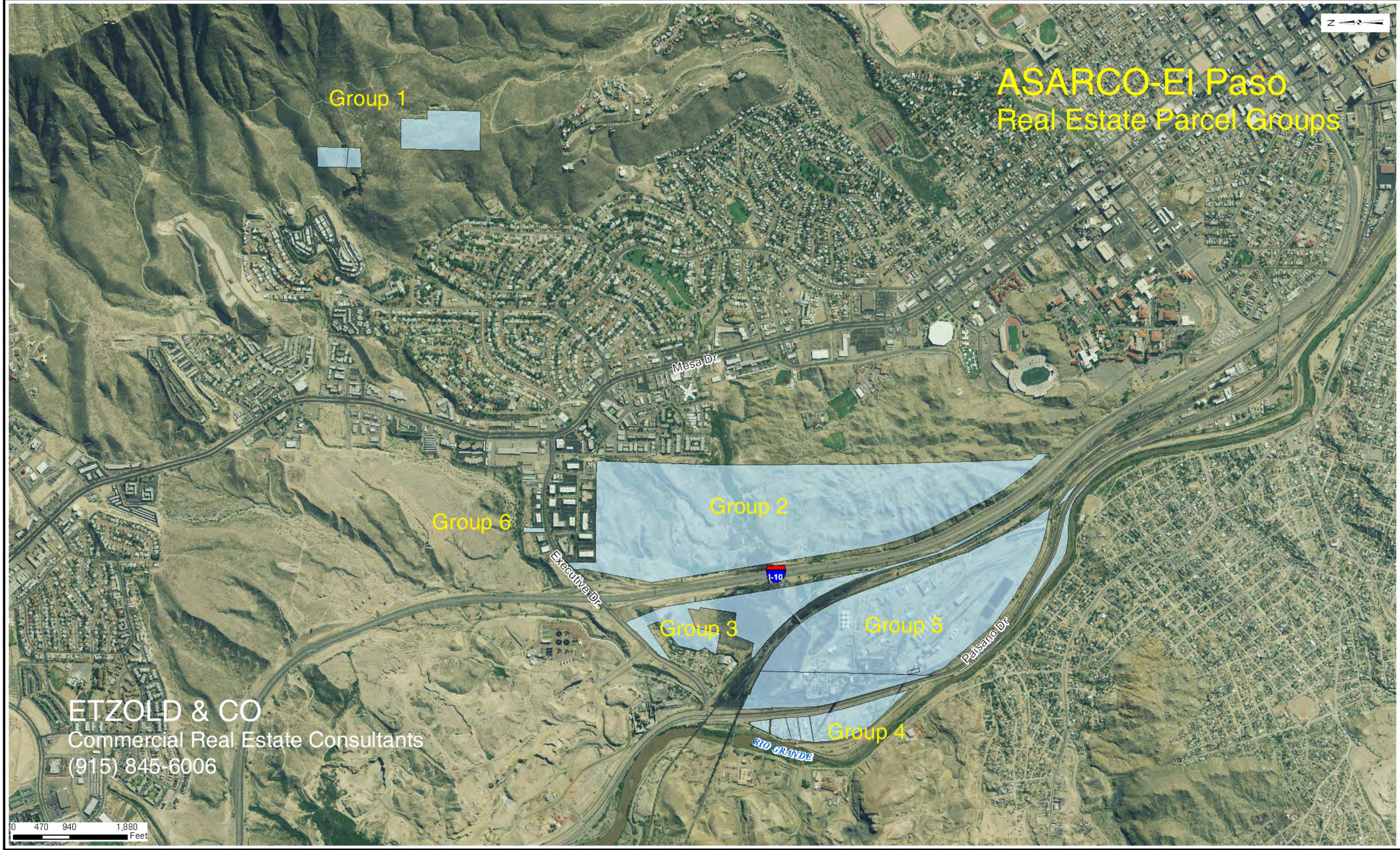

MALCOLM PIRNIE

El Paso Smelter

ASARCO Property

ASARCO Texas Custodial Trust Parcels

MALCOLM PIRNIE, INC.

June 2010

FIGURE 1

Map Document: (S:\GIS_Resources\Standards_Guidelines\MapTemplates\GIS_TEMPLATES_2005\11x17_Landscape.mxt)
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REVIEW OF STS ASARCO CHIMNEY STRUCTURAL INVESTIGATION

818 FT. TALL REINFORCED CONCRETE CHIMNEY

ASARCO SMELTING PLANT

EL PASO, TEXAS

Prepared by Chimney Consultants Inc.
November 20, 2012

Introduction

The 818 ft. tall ASARCO Smelting Plant chimney located in El Paso, Texas was constructed in 1966 by the M.W. Kellogg Company. A recent structural investigation was performed by HKN Engineers to assess the chimney's structural capacity and its ability to meet the strength requirements of ACI 307-08.

We have reviewed HKN's investigation and have the following comments:

1) Across-wind loading per ACI 307-08 Section 4.2.3 has not been properly addressed.

2) Circumferential bending due to radial wind pressure per ACI 307-08 Section 4.2.4 has not been considered.

3) The impact of the existing reinforcing steel splice lengths on the computed capacity has not been considered.

Discussion & Findings

Across-wind

HKN has incorrectly determined that the chimney is not sensitive to across-wind load. ACI 307-08 Section R4.2.3 provides direction for assessing across-wind loads when the outside shell diameter at one third of the height is not less than 1.6 times the top outside diameter. Across-wind load does need to be addressed.

Circumferential Bending

HKN has not addressed circumferential bending, which for the ASARCO chimney is critical since it contains only one curtain of reinforcing steel throughout the upper 600 ft. of the structure. Our investigation has determined that the upper 600 ft of the chimney shell does not meet the strength requirements for circumferential bending in accordance with ACI 307-08. The demand/capacity ratio ranges from 2.38 to 3.74 over this region. In essence, the upper 600 ft of the chimney possess only 27% to 42% of the strength required to resist circumferential bending due to wind load.

Splice Length

The bending capacity of the concrete chimney shell and lining is a function of the reinforcing steel size and spacing. In addition, when computing the bending capacity of the existing structure, the splice length of the existing reinforcing steel needs to be considered and the capacity of the structure should be reduced in those regions where the existing splice length does not meet current design code requirements. Based on our findings, the computed axial bending capacity throughout the lower 688 ft. of the chimney shell is reduced by approximately 20% when taking into account the insufficient splice length. In addition, the computed axial bending capacity throughout a total of 550 vertical feet of the chimney lining should also be reduced to account for insufficient splice length.

Conclusions

Across-wind loads need to be considered.

The lack of sufficient circumferential bending capacity is a serious structural deficiency and it should be noted that catastrophic failure of a reinforced concrete chimney resulting from insufficient circumferential bending capacity is not unprecedented.

The existing reinforcing steel splice lengths need to be accounted for when determining capacity.

Calculations

Circumferential Bending:

Wind speed = 90 mph 3 sec. gust in accordance with ACI 307-08
I = 1.15
f'c = 4000 psi
fy = 40000 psi

Definition of terms used in calculations:

OD = Outside diameter of concrete shell (ft)

Thk = Thickness of concrete shell wall (in)

HORIZ Outside H (c/c spc in.) = c/c spacing of outside face horizontal rebar (in)

HORIZ Outside H bar size = Bar size of outside face horizontal rebar (#)

HORIZ Inside H (c/c spc in.) = c/c spacing of inside face horizontal rebar (in)

HORIZ Inside H bar size = Bar size of inside face horizontal rebar (#)

p(z) = as defined by ACI 307-08 Eq. (4-5)

Gr(z) = as defined by ACI 307-08 Eq. (4-32)

pr(z) = as defined by ACI 307-08 Eq. (4-31)

Mi(z) = circumferential wind moment as defined by ACI 307-08 Eq. (4-29)

Mo(z) = circumferential wind moment as defined by ACI 307-08 Eq. (4-30)

1.4 Mi(z) = factored circumferential wind moment producing tension on inside face

1.4 Mo(z) = factored circumferential wind moment producing tension on outside face

M(ti) Capacity = bending capacity with tension on inside face

M(to) Capacity = bending capacity with tension on outside face

M(ti) Dem/Cap = demand / capacity for circumferential bending with tension on inside face

M(to) Dem/ Cap = demand / capacity for circumferential bending with tension on outside face

Chimney geometry & circumferential reinforcing size and spacing.

Elevation (ft)	OD (ft)	Thk (in)	HORIZ. Outside H (c/c spc in.)	HORIZ. Outside H bar size	HORIZ. Inside H (c/c spc in.)	HORIZ. Inside H bar size
818	31.25	9.00	6.00	3	-	-
787	32.43	9.00	6.00	3	-	-
762	33.39	9.00	6.00	3	-	-
738	34.31	9.00	6.00	3	-	-
713	35.26	9.00	6.00	3	-	-
688	36.22	9.00	5.50	3	-	-
664	37.13	9.13	5.50	3	-	-
639	38.09	9.25	5.50	3	-	-
615	39.01	9.38	5.50	3	-	-
590	39.96	9.50	5.50	3	-	-
565	40.92	9.50	5.50	3	-	-
541	41.83	9.63	5.50	3	-	-
516	42.79	9.75	5.50	3	-	-
492	43.70	9.88	5.50	3	-	-
467	44.66	10.00	5.50	3	-	-
443	45.58	10.25	7.50	4	-	-
418	46.53	10.50	7.50	4	-	-
393	47.49	11.00	7.50	4	-	-
369	48.40	12.00	7.50	4	-	-
344	49.36	12.50	7.50	4	-	-
320	50.28	13.50	6.00	4	-	-
295	51.23	15.00	6.00	4	-	-
270	52.19	16.00	6.00	4	-	-
246	53.10	17.00	5.50	4	-	-
221	54.06	17.50	5.50	4	-	-
197	54.97	18.50	5.00	4	12.00	4
172	55.93	19.00	5.00	4	12.00	4
148	56.85	20.00	5.00	4	12.00	4
123	57.80	21.00	6.00	5	12.00	4
98	58.76	21.50	6.00	5	12.00	4
74	59.67	26.00	6.00	6	12.00	4
49	60.63	36.00	6.00	6	12.00	4
25	61.54	36.00	6.00	6	12.00	4
0	62.50	36.00	6.00	6	12.00	4

Calculation of circumferential bending moments due to radial wind pressure.

Elevation (ft)	p(z) (psf)	Gr(z)	pr(z) (psf)	Mi(z) (ft-lb/ft)	Mo(z) (ft-lb/ft)
818	25.84	1.67	64.73	4667	4064
787	25.54	1.68	64.48	5016	4369
762	25.28	1.69	42.84	3537	3081
738	25.04	1.71	42.70	3726	3246
713	24.77	1.72	42.55	3927	3421
688	24.50	1.73	42.39	4132	3599
664	24.23	1.74	42.22	4329	3771
639	23.95	1.76	42.05	4538	3952
615	23.67	1.77	41.87	4741	4129
590	23.37	1.78	41.67	4955	4316
565	23.06	1.80	41.47	5174	4506
541	22.75	1.81	41.26	5383	4689
516	22.42	1.83	41.03	5603	4880
492	22.10	1.85	40.80	5814	5064
467	21.75	1.86	40.54	6035	5257
443	21.39	1.88	40.28	6244	5438
418	21.02	1.90	39.99	6461	5627
393	20.62	1.92	39.68	6670	5809
369	20.22	1.95	39.36	6855	5970
344	19.79	1.97	39.00	7057	6146
320	19.36	2.00	38.63	7232	6299
295	18.88	2.02	38.21	7397	6443
270	18.37	2.05	37.75	7565	6588
246	17.85	2.09	37.26	7713	6718
221	17.27	2.12	36.69	7867	6852
197	16.67	2.16	36.08	7983	6953
172	15.99	2.21	35.36	8093	7048
148	15.26	2.26	34.55	8153	7101
123	14.42	2.33	33.57	8173	7118
98	13.44	2.41	32.36	8138	7088
74	12.33	2.50	30.88	7914	6893
49	10.86	2.65	28.75	7400	6446
25	8.83	2.88	25.43	6756	5884

Note that pr(z) is increased by 50% for a distance 1.5d(h) from the top

Circumferential bending Demand / Capacity using 1.4W per ACI 307-08 Section 5.3.2.

Elevation (ft)	1.4 Mi(z) (ft-lb/ft)	1.4 Mo(z) (ft-lb/ft)	M(ti) Capacity (ft-lb/ft)	M(to) Capacity (ft-lb/ft)	M(ti) Dem/Cap	M(to) Dem/Cap
818	6533	5690	2078	3726	3.14	1.53
787	7023	6117	2078	3726	3.38	1.64
762	4952	4313	2078	3726	2.38	1.16
738	5217	4544	2078	3726	2.51	1.22
713	5498	4789	2078	3726	2.65	1.29
688	5785	5038	2259	4057	2.56	1.24
664	6061	5279	2259	4147	2.68	1.27
639	6353	5533	2259	4237	2.81	1.31
615	6637	5781	2260	4327	2.94	1.34
590	6937	6042	2255	4415	3.08	1.37
565	7244	6309	2255	4415	3.21	1.43
541	7537	6564	2260	4507	3.33	1.46
516	7844	6832	2260	4597	3.47	1.49
492	8140	7090	2260	4687	3.60	1.51
467	8449	7359	2260	4777	3.74	1.54
443	8742	7614	2974	6572	2.94	1.16
418	9045	7878	2974	6812	3.04	1.16
393	9338	8133	2975	7292	3.14	1.12
369	9597	8359	2975	8252	3.23	1.01
344	9879	8605	2976	8732	3.32	0.99
320	10125	8819	3672	12067	2.76	0.73
295	10356	9020	3673	13867	2.82	0.65
270	10590	9224	3674	15067	2.88	0.61
246	10798	9405	3984	17722	2.71	0.53
221	11013	9592	3984	18377	2.76	0.52
197	11176	9734	13150	23230	0.85	0.42
172	11330	9868	13450	23950	0.84	0.41
148	11415	9942	14050	25390	0.81	0.39
123	11442	9966	15706	33976	0.73	0.29
98	11393	9923	16006	34906	0.71	0.28
74	11080	9650	20515	60295	0.54	0.16
49	10361	9024	26515	86695	0.39	0.10
25	9459	8238	26515	86695	0.36	0.10

Sample calculation of circumferential bending capacity at elevation 713 ft in accordance with ACI 307-08 Appendix A pages 28 ~ 29.

Circumferential Bending Capacity - ACI 307-08 Elevation 713 ft.

Strength reduction factor (phi)	**0.90**	
Thermal load factor	**1.2**	
Temperature differential Tx (F deg)	**0**	
Fc (psi)	**4000**	
Shell wall thickness (inches)	**9.00**	
CL distance outside steel to outside face of conc	**3.25**	
Outside steel Fy (psi)	**40000**	
As outside (in\2 / ft of height)	**0.22**	
Inside steel Fy (psi)	**40000**	
As inside (in\2 / ft of height)	**0**	
Sum V = 0 eq A-6	**0.0018**	
a (Tension Outside)	**0.0239652**	***a (Ten. Outside) check OK***
Phi Mn = Mu (ft-lb/ft) Tension Outside	**3724**	
Sum V = 0 eq A-6	**0.0018**	
a (Tension Inside)	**0.0239652**	***a (Ten. Inside) check OK***
Phi Mn = Mu (ft-lb/ft) Tension Inside	**2074**	
Coefficient of Exp	0.0000065	
Es (psi)	29000000	
Ec (psi)	3604997	
B1	0.85	
n	8.0444	
Y1	0.0000	
Y2	0.6389	
p'	0.002037	
c1	-0.01639	
c2	0.00027	
c3	0.02094	
c'	0.12924	
Fstc (psi)	0	
F''ctc (psi)	0	
fy'c for outside steel (psi)	40000	
fy'c for inside steel (psi)	40000	
fc''c (psi)	4000	

a (Tension Outside)	0.0239652	
fcs eq A-1	-1027289	compression steel - inside
fcs (must not be > fy'c)	-40000	compression steel - inside
Pcs eq A-3	0	compression steel (lb)
fts eq A-2	1884435	tension steel - outside
fts (must not be > fy'c)	40000	tension steel - outside
Pts eq A-4	733	tension steel (lb)
Pcb eq A-5	733	compression block (lb)
Sum V = 0 eq A-6	0.0018	
Mn	4138	
Mu (Outside) = Phi Mn (ft-lb/ft)	3724	

a (Tension inside)	0.0239652	
fcs eq A-1	-1027289	compression steel - outside
fcs (must not be > fy'c)	-40000	compression steel - outside
Pcs eq A-3	-733	compression steel (lb)
fts eq A-2	1884435	tension steel - inside
fts (must not be > fy'c)	40000	tension steel - inside
Pts eq A-4	0	tension steel (lb)
Pcb eq A-5	733	compression block (lb)
Sum V = 0 eq A-6	0.0018	
Mn	2304	
Mu (Inside) = Phi Mn (ft-lb/ft)	2074	

Splice Length:

Per M.W. Kellogg Company Drw. No. 6127-9ED, the splice lengths are designated as follows:

Bar Size	Splice (in)
3	15
4	15
5	19
6	23
7	27
8	30
9	34
10	39
11	43

Vertical reinforcement splice lengths in accordance with ACI 307-08 are as follows:

ACI 318-05

Fy (psi)	60000
Fc (psi)	4000

VERTICAL Bar Size	Concrete Cover to edge of bar (in)	Minimum c/c bar spacing (in)	VERTICAL Development (inch)	VERTICAL Splice (inch)
4	2.50	8.00	12.00	15.60
5	2.50	8.00	14.23	18.50
6	2.50	8.00	17.08	22.20
7	2.50	8.00	24.90	32.37
8	2.50	8.00	28.46	37.00
9	2.50	8.00	32.10	41.73
10	2.50	8.00	36.61	47.59
11	2.50	8.00	44.14	57.38

Ratio of existing splice to required splice:

Bar Size	Existing Splice (in)	Required Splice (in)	Existing/ Required
3	15	15.60	0.962
4	15	15.60	0.962
5	19	18.50	1.027
6	23	22.20	1.036
7	27	32.37	0.834
8	30	37.00	0.811
9	34	41.73	0.815
10	39	47.59	0.819
11	43	57.38	0.749

ASARCO El Paso

458-acre Redevelopment Project

Smokestack Disposition Overview

Fall Zone Site Impact:

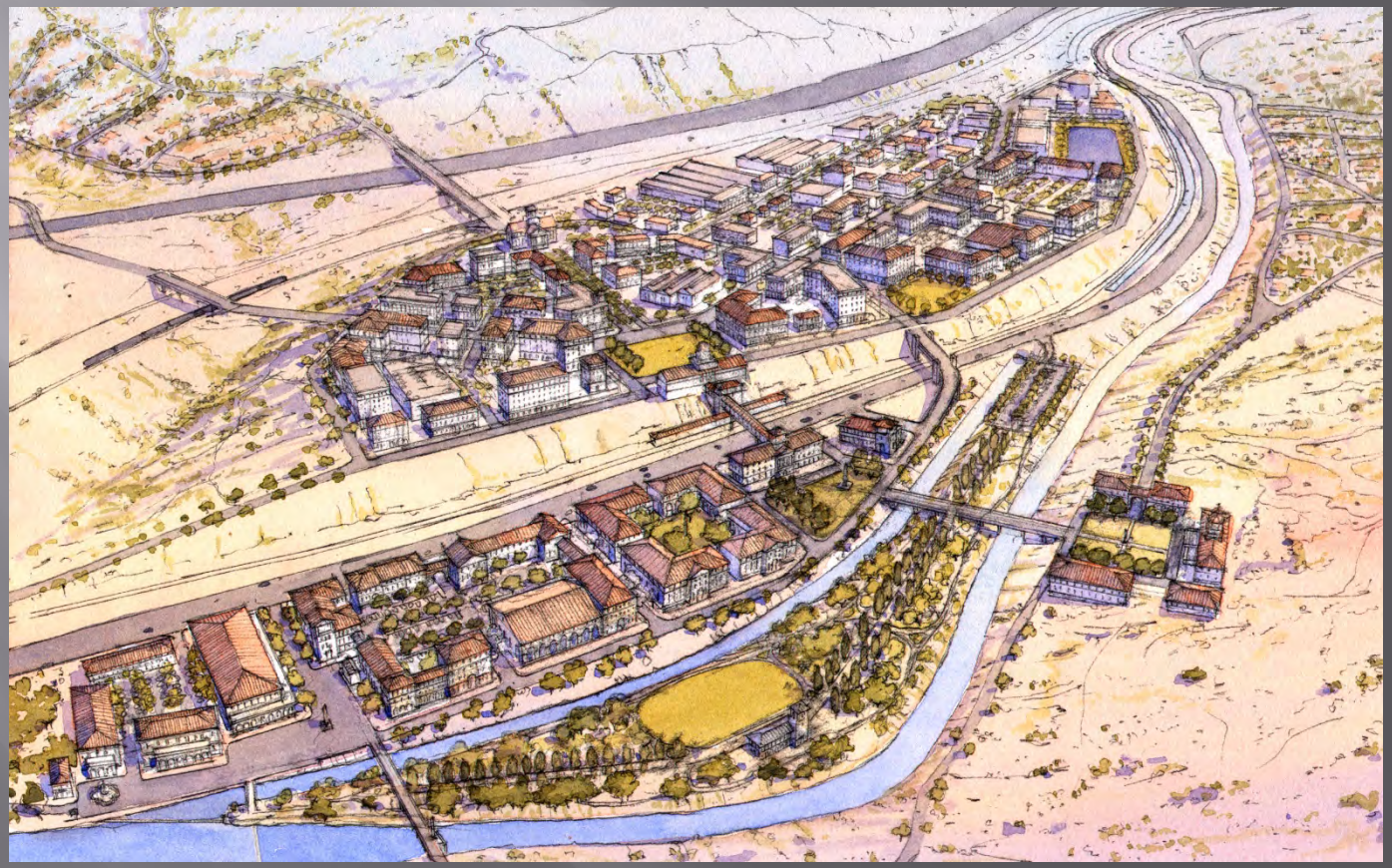
Safety and Liability Concerns:

- Two Fall Zones around stacks
- Public Liability Within Fall Zones
  - US Highway 85 (Paisano Drive) traffic
  - BNSF and UP Rail Lines and traffic
  - IBWC Facility and personnel

Main Plant Site Devaluation:

- Stacks preclude the development of the Dover Kohl vision approved and **paid for by the City** in 2010
- **Assumption of Risk** by a developer would prevent the sale of the main plant site
- A **loss of property tax revenue** projected to be generated by that future development is estimated at **$5,500,000+/yr**

The vision created by the City of El Paso and Dover Kohl & Partners of a clean slate for a new vibrant community:



Murray City former ASARCO site:

Before

After

- Developed New Tax Base $517,000,000
- New Annual Property Taxes $1,100,000

Omaha former ASARCO Site:

Before **After**