

**EXPERT REPORT OF
BENJAMIN COSTELLO**

This report presents the opinions of Benjamin Costello in the matter of the corrective actions and closure plans to be performed at the ASARCO El Paso Smelter (“the Facility”), inclusive of the Agreed Order (Docket Number 96-0212-MLM-E) between ASARCO Incorporated (ASARCO) and the Texas Commission on Environmental Quality (formerly the Texas Natural Resource Conservation Commission) dated August 28, 1996, and subsequent directives arising out of the original order for investigation and remediation of the Facility. This report is submitted to TCEQ in support of the bankruptcy proceeding in re: ASARCO LLC, et al. Case No. 05-21207.

Definition of Assignment

I have been retained by the Texas Commission on Environmental Quality (TCEQ) to provide expert opinions regarding the scope and expected cost of measures necessary to complete corrective action and closure plans at the Facility addressing identified environmental concerns, inclusive of provisions contained in the Agreed Order and subsequent directives issued by the TCEQ. The purpose of my opinion in this matter is to determine whether planned near-term and long-term site activities and associated costs presented in documents prepared to date for the Facility are reasonable to meet Facility corrective action and closure plan objectives, inclusive of conditions in the Agreed Order, and subsequent directives issued by TCEQ.

Summary of Opinions

My opinions are based on a review of documents supplied by TCEQ, personal interviews with TCEQ personnel, personal interviews with ASARCO personnel, personal inspection of the Facility, review of investigation, cleanup, disposal and cost documents provided by TCEQ; review of the chronology of the events and environmental investigations at the Facility, and review of documents, correspondence, reports, and analytical data, other materials reviewed and my general experience and training.

My opinions in this matter, and the bases for them, are as follows:

1. I have reviewed the remedial activities proposed by TCEQ for the Facility to include:
 - a. Demolition of designated Facility structures;
 - b. Design, construction and 50-years operation and maintenance (O&M) of a ground water control system comprised of a 3,000 foot slurry wall, ground water extraction well system, ground water treatment system, 800 foot deep injection well, and monitoring well abandonment;
 - c. Capping total area comprising approximately 76 acres with asphalt, including 16 acres of designated Class II material;
 - d. Design, construction and placement of designated Class I material within an on-site waste containment cell;
 - e. Installation and maintenance of perimeter fencing; and
 - f. TCEQ oversight, general maintenance, repairs, monitoring, and performance reporting on Facility remedy in perpetuity.
2. TCEQ has devoted efforts to understand site-specific conditions and the character, nature, and extent of the environmental concerns at the Facility and upon review, I believe the remedial activities proposed by TCEQ for implementation at the Facility are reasonable to address identified environmental issues inclusive of corrective action contained in the Agreed Order and subsequent TCEQ directives.
3. Information relied upon by the TCEQ in the formation of proposed corrective action and closure plans at the Facility was obtained from site-specific inspections performed by TCEQ and site-specific investigations performed by ASARCO, for the purpose of assessing the nature and extent of environmental conditions at the Facility. TCEQ applied generally accepted remediation practices for

addressing the environmental concerns found to occur at the Facility, conditions contained in the Agreed Order and subsequent TCEQ directives, and overall site closure plans.

4. I have reviewed TCEQ's "ASARCO El Paso Smelter – Cost Estimate Waste Management [Present Value Calculation] Site-wide Evaluation – June 2008 El Paso Texas" (Facility Cost Estimate), and believe the cost to implement proposed remedial activities in the approximate amount of \$52 million are within the expected range of costs for a project of this scope and duration, exclusive of any bid and scope contingency. The cost identified by TCEQ for the various remedial components comprising the Facility corrective action and closure plans, inclusive of the Agreed Order, were developed from contractor estimates and general knowledge of the scope of activity involved with design, construction, operation and maintenance of these components.
5. Projected cost for demolition of designated structures at the Facility in the amount of \$8.88 million was developed by TCEQ from an estimate obtained from a contractor that inspected the Facility, and is experienced in the demolition and disposition of structures similar in construction to those occurring at the Facility. Upon review, the structure demolition cost estimate is considered reasonable for the number, size, and construction type of buildings and structures observed at the Facility.
6. Projected cost for design and construction of the Facility ground water control system in the amount of \$7.09 million was developed by TCEQ from an estimate obtained from a contractor experienced in the construction of systems similar to that considered necessary for control of Chemicals of Concern (COCs) in ground water found to occur at the Facility. The cost for design and construction of the ground water control system is considered reasonable based on my involvement in the management of projects of similar scope. Costs developed independently by ASARCO for similar elements of this remedial activity are consistent with this assessment.
7. Projected operation and maintenance (O&M) cost for the ground water control system in the amount of \$14.77 million is based on TCEQ application of internal knowledge of annual O&M costs for ground water control systems at other remediation sites for a 50-year period and use of a 3% present discount rate factor to fund long-term activity. The projected annual ground water control system O&M cost is considered reasonable based on my involvement in the long-term management of ground water systems with similar components. The 50-year operation period is not considered to be unreasonable using proposed ground water removal rates and extent of affected aquifer targeted for clean-up, and the present value factor used to estimate long-term O&M funding is considered to be within a reasonable range.
8. Projected cost for preparing and paving the 76 acres designated at the Facility to meet corrective action and closure provisions in the amount of \$9.81 million was developed by TCEQ from unit cost per acre data obtained from Texas Department of Transportation. Upon review, the asphalt paving cost estimate is considered reasonable for the scope of work necessary to complete this component of the corrective action.
9. Projected cost for designing and installing perimeter security fence at the Facility, covering an additional distance of 2,800 feet, in the amount of \$68K was developed by TCEQ from unit cost per foot estimate. Upon review, the perimeter fence cost estimate is considered reasonable for the scope of work necessary to complete this component of the corrective action, based on my involvement in the completion of similar work at other sites.
10. Projected cost for designing and constructing disposal cell, and excavation and relocation of estimated 303,000 cubic yards of bulk materials from designated areas at the Facility in the new disposal area in the amount of \$5.84 million was developed by TCEQ from estimates obtained from contractor that has performed construction, excavation and material handling activity similar in scope. Upon review, the disposal cell design and construction, and excavation and material handling cost estimate is considered reasonable for the scope of work necessary to complete this component of the Facility corrective action

and closure. Costs developed independently by ASARCO for this remedial activity support this assessment.

11. Projected long-term project management cost consisting of annual inspections, monitoring and sampling, general repairs to the fence and asphalt cap, remedy performance reporting, and TCEQ oversight in the amount of \$3.28 million is based on TCEQ application of internal knowledge, and contractor estimate for like activity and use of 3% present value factor to fund long-term site operation and maintenance activity. The projected annual cost for long-term site management activity is considered reasonable based on my involvement in the long-term management of remediation projects with similar components, and the present value factor used to estimate funding for long-term management elements of the site corrective action and closure plan is considered to be within a reasonable range.
12. Remedial investigation activities and site inspections conducted at the Facility identified an area of approximately 55 acres on a portion of the Facility property referred to as Andesite Mountain. Environmental concerns on this Facility parcel are to be addressed under the Facility corrective action and closure plans, at an estimated cost of \$966K, which is additive to the \$52 million previously identified by the TCEQ for Facility corrective action and closure. The cost estimate for the selected remedial activity on this parcel, which involves soil washing, capture, and treatment of waste residuals, was developed by TCEQ, based on general knowledge and the Means Facilities Construction Cost Data Book for effort involving similar type of activity. Upon review, I believe the cost estimate developed for the proposed remedial activity on the 55 acre parcel is reasonable for the scope of work to be performed.

I have successfully managed environmental remediation efforts at several sites with elements, complexity, and duration similar to the corrective action identified for the Facility. Given the site conditions, scope of the environmental issues identified at the Facility, and timeframe involved in remedy implementation and Facility closure, the projected costs for completing corrective action and closure plans at the Facility, inclusive of the Agreed Order and subsequent TCEQ directives arising out of the original order, are considered to be reasonable.

My opinions in this matter are based on the documentation that was made available to me, inspections of the facilities, and interviews with parties knowledgeable of the activities related to the development and implementation of the response actions and my experience and training.



Benjamin Costello
President, Nationwide Environmental Services, Inc.

April 20, 2009
Dated

Attachment 1 List of Documents Relied Upon
Attachment 2 Curriculum vitae of Benjamin Costello