APPENDIX B

DESIGN CHANGES/CLARIFICATIONS – FEB 6, 2014 LETTER TO TCEQ
February 6, 2014

Ms. Eleanor Wehner, P.G.
Texas Commission on Environmental Quality
Remediation Division
VCP-CA Section, Mail Code MC-127
Post Office Box 13087
Austin, Texas 78753

Re: Texas Custodial Trust
Former ASARCO Smelter Site, El Paso, Texas

Subject: Construction Status and Design Changes for Cell 3 Cover System

Dear Ms. Wehner:

This letter provides a status of the completed activities and submits three design changes and one design clarification for the Cell 3 Cover System. The approved design was submitted to the Texas Commission on Environmental Quality (TCEQ) on October 10, 2013 and approved for construction on October 28, 2013. We request your approval of these design changes.

To date the following activities have been completed:

1. The existing temporary cover of Cell 3 has been removed.
2. The Category I materials identified for removal have been relocated to Cell 4.
3. One foot of foundation layer material has been placed as an interim cover over the Category I material.

The remaining activity for Cell 3 is installing the additional components of the cover system. The following changes are made to the design:

1. The geosynthetic clay liner (GCL) material, Bentomat CLT, specified in Attachment A of the October 10, 2013 letter will be replaced with Bentomat DN. Bentomat DN is the same material as was originally used for the bottom liner of Cell 3. Attachment A includes the specifications for the Bentomat DN.
2. The cover system will extend beyond and below the 3,788 elevation and terminate in a new anchor trench located approximately 3 feet outboard of the existing top liner anchor trench. Details are shown in Sheet 1 in Attachment A. This is needed to extend the new geomembrane beyond the limits of Cell 3 since the condition of the existing geomembrane does not comply with our specifications.
3. The double-sided geocomposite will be replaced with a 12 oz. nonwoven cushion geotextile (see Attachment A for specifications). The reason for replacement of the
geocomposite is because it originally was designed to temporarily convey any infiltrating precipitation to a perimeter drain at the toe of Cell 3. The perimeter drain is no longer needed as part of the overall site drainage system due to future plans for a final soil cover system. Cell 3 will be covered with additional soil preventing infiltration and have other surface drainage components managing runoff in this area. The nonwoven geotextile will cushion and protect the geomembrane liner from potential damage during installation of the clean soil cover.

In addition, the following clarification is provided:

1. The 18-inch foundation layer will be comprised of select unscreened material from the East Borrow Source and due diligence will be taken during excavation and placement to minimize the amount of rock that exceeds 1-inch in size. After the first 12-inch lift is placed and compacted with a smooth drum compacter, the surface will be inspected to determine if this methodology is acceptable to continue for the final 6-inch lift. If the material is deemed acceptable and the methodology to place additional material (of similar composition) remains the same for the subsequent 6-inch lift, the lift will be placed and compacted with the final surface inspected by the field engineer to identify any rocks that exceed 1-inch in size to be removed and replaced with compacted 1-inch minus sand/gravel. The repaired final surface will be inspected by the field engineer and approved prior to commencing GCL installation.

The Cell 3 cover system will be monitored for erosion and maintained until the final plant site cover system is installed.

If you have any questions regarding this submittal please contact me at 602-797-4536 or by email at scott.brown@arcadis-us.com.

Sincerely,

Scott M. Brown, P.E.      John Sparks, P.E.
Project Manager      Engineer of Record
cc:  Roberto Puga, Mike Berry, Bill Sabatka, Steve Richey, Ej Suardini

Attachment A:
GCL specifications
Sheet 1(revised)
Nonwoven geotextile specifications
ATTACHMENT A

- GCL Specifications
- Sheet 1(revised)
- Nonwoven Geotextile Specifications
BENTOMAT® DN CERTIFIED PROPERTIES

<table>
<thead>
<tr>
<th>MATERIAL PROPERTY</th>
<th>TEST METHOD</th>
<th>TEST FREQUENCY</th>
<th>REQUIRED VALUES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bentonite Swell Index¹</td>
<td>ASTM D 5890</td>
<td>1 per 50 tonnes</td>
<td>24 mL/2g min.</td>
</tr>
<tr>
<td>Bentonite Fluid Loss¹</td>
<td>ASTM D 5891</td>
<td>1 per 50 tonnes</td>
<td>18 mL max.</td>
</tr>
<tr>
<td>Bentonite Mass/Area²</td>
<td>ASTM D 5993</td>
<td>40,000 ft² (4,000 m²)</td>
<td>0.75 lb/ft² (3.6 kg/m²) min</td>
</tr>
<tr>
<td>GCL Grab Strength³</td>
<td>ASTM D 4632</td>
<td>200,000 ft² (20,000 m²)</td>
<td>150 lbs (660 N) MARV 37.5 lbs/in (66 N/cm) MARV</td>
</tr>
<tr>
<td>GCL Peel Strength³</td>
<td>ASTM D 4632</td>
<td>40,000 ft² (4,000 m²)</td>
<td>15 lbs (65 N) min 2.5 lbs/in (4.4 N/cm) min</td>
</tr>
<tr>
<td>GCL Index Flux⁴</td>
<td>ASTM D 5887</td>
<td>Weekly</td>
<td>1 x 10⁻⁸ m³/m²/sec max</td>
</tr>
<tr>
<td>GCL Hydraulic Conductivity⁴</td>
<td>ASTM D 5887</td>
<td>Weekly</td>
<td>5 x 10⁻⁹ cm/sec max</td>
</tr>
<tr>
<td>GCL Hydrated Internal Shear Strength⁵</td>
<td>ASTM D 5321</td>
<td>Periodic</td>
<td>500 psf (24 kPa) typical @ 200 psf 6,500 psf (311 kPa) typical @ 10,800 psf</td>
</tr>
</tbody>
</table>

Bentomat DN is a reinforced GCL consisting of a layer of sodium bentonite between two nonwoven geotextiles, which are needlepunched together.

Notes
1 Bentonite property tests performed at a bentonite processing facility before shipment to CETCO’s GCL production facilities.
2 Bentonite mass/area reported at 0 percent moisture content.
3 All tensile strength and peel strength testing is performed in the machine direction using 4 inch grips per modified ASTM D 4632. Results are reported as minimum average roll values unless otherwise indicated. Upon request, tensile strength can be reported per ASTM D 6768 and peel strength can be reported per ASTM D 6496.
4 Index flux and permeability testing with deaired distilled/deionized water at 80 psi (551kPa) cell pressure, 77 psi (531 kPa) headwater pressure and 75 psi (517 kPa) tailwater pressure. Reported value is equivalent to 925 gal/acre/day. This flux value is equivalent to a permeability of 5x10⁻⁹ cm/sec for typical GCL thickness. Actual flux values vary with field condition pressures. The last 20 weekly values prior the end of the production date of the supplied GCL may be provided.
5 Peak values measured at 200 psf (10 kPa) and 10,800 psf (517 kPa) normal stress for a specimen hydrated for 48 hours. Site-specific materials, GCL products, and test conditions must be used to verify internal and interface strength of the proposed design.

CETCO has developed an edge enhancement system that eliminates the need to use additional granular sodium bentonite within the overlap area of the seams. We call this edge enhancement, SuperGroove™, and it comes standard on both longitudinal edges of Bentomat® DN. It should be noted that SuperGroove™ does not appear on the end-of-roll overlaps and recommend the continued use of supplemental bentonite for all end-of-roll seams.
GSE Nonwoven Geotextiles

GSE Nonwoven Geotextiles are a family of staple fiber needlepunched geotextiles. The geotextiles are manufactured using an advanced manufacturing and quality system to produce the most uniform and consistent nonwoven needlepunched geotextile currently available in the industry. GSE combines a fiber selection and approval system with an in-line quality control and a state-of-the-art laboratory to ensure that every roll shipped meets customer specifications.

**Product Data Sheet**

**Product Characteristics**

<table>
<thead>
<tr>
<th>Tested Property</th>
<th>Test Method</th>
<th>Frequency</th>
<th>Minimum Average Roll Value</th>
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<tr>
<td></td>
<td></td>
<td>NW4</td>
<td>NW6</td>
</tr>
<tr>
<td>AASHTO M288 Class</td>
<td>ASTM D 5261</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Mass per Unit Area, oz/yd²</td>
<td>ASTM D 4632</td>
<td>90,000 ft²</td>
<td>4</td>
</tr>
<tr>
<td>Grab Tensile Strength, lb</td>
<td>ASTM D 4632</td>
<td>90,000 ft²</td>
<td>120</td>
</tr>
<tr>
<td>Grab Elongation, %</td>
<td>ASTM D 4632</td>
<td>90,000 ft²</td>
<td>50</td>
</tr>
<tr>
<td>Puncture Strength, lb</td>
<td>ASTM D 4833</td>
<td>90,000 ft²</td>
<td>60</td>
</tr>
<tr>
<td>Trapezoidal Tear Strength, lb</td>
<td>ASTM D 4533</td>
<td>90,000 ft²</td>
<td>50</td>
</tr>
<tr>
<td>Apparent Opening Size, Sieve No. (mm)</td>
<td>ASTM D 4751</td>
<td>540,000 ft²</td>
<td>70</td>
</tr>
<tr>
<td>Permittivity, sec⁻¹</td>
<td>ASTM D 4491</td>
<td>540,000 ft²</td>
<td>1.80</td>
</tr>
<tr>
<td>Water Flow Rate, gpm/ft²</td>
<td>ASTM D 4491</td>
<td>540,000 ft²</td>
<td>135</td>
</tr>
<tr>
<td>UV Resistance % retained after 500 hours</td>
<td>ASTM D 4355</td>
<td>per formulation</td>
<td>70</td>
</tr>
</tbody>
</table>

**TYPICAL ROLL DIMENSIONS**

| Roll Length (ft) | 850 | 850 | 600 | 500 | 400 | 300 |
| Roll Width (ft)  | 15  | 15  | 15  | 15  | 15  | 15  |
| Roll Area (ft²)  | 12,750 | 12,750 | 9,000 | 7,500 | 6,000 | 4,500 |

**NOTES:**

- The property values listed are in weaker principal direction. All values listed are Minimum Average Roll Values except apparent opening size in mm and UV resistance. Apparent opening size (mm) is a Maximum Average Roll Value. UV is a typical value.
- Roll lengths and widths have a tolerance of ±1%.

**GSE is a leading manufacturer and marketer of geosynthetic lining products and services. We’ve built a reputation of reliability through our dedication to providing consistency of product, price and protection to our global customers.**

Our commitment to innovation, our focus on quality and our industry expertise allow us the flexibility to collaborate with our clients to develop a custom, purpose-fit solution.

**DURABILITY RUNS DEEP**

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February 19, 2014

Mr. Roberto Puga, P.G.
Trustee, Texas Custodial Trust
Project Navigator, Ltd.
One Pointe Drive, Suite 320
Brea, CA 92821

RE: TCEQ Approval of Construction Status and Design Changes for Cell 3 Cover System, dated February 6, 2014
Former ASARCO Smelter site, El Paso, Texas
TCEQ SWR No. 31235; EPA ID No. TXD990757668; Customer No. CN603597782;
Regulated Entity No. RN100219021

Dear Mr. Puga:

The Texas Commission on Environmental Quality (TCEQ) and the US Environmental Protection Agency (USEPA) has reviewed the above referenced submittal dated February 6, 2014, providing a status update of completed activities and proposed changes and/or clarifications to the existing design for the Cell 3 cover system. The Cell 3 cover system design was submitted to the TCEQ on October 10, 2013 and approved for construction by the TCEQ on October 28, 2013. The February 6, 2014 submittal proposes the following design changes to the approved cover system:

- use of Bentomat DN as opposed to Bentomat CLT as the geosynthetic clay liner (GCL) material as originally specified in the October 10, 2013 Cell 3 cover system design submittal;
- extension of the cover system beyond and below the 3,788 elevation and to terminate in a new anchor trench located approximately 3 feet outboard of the existing top liner anchor trench; and,
- replacement of the geocomposite with a 12 oz. nonwoven cushion geotextile.

The February 6, 2014 submittal also provided additional clarification of the source and due diligence/inspection protocols supporting the construction of the 18-inch foundation layer. The TCEQ understands that Cell 3 will be deed restricted such that buildings cannot be constructed over Cell 3 and the existing cover system will be monitored for erosion and maintained until the final plant site soil cover system is installed. Based on our review, the TCEQ, with concurrence from the USEPA, hereby approves the implementation of the design changes proposed in the February 6, 2014 submittal.

As previously stated in the TCEQ's October 28, 2013 letter the TCEQ and EPA requires the submittal of a final report within sixty (60) days of completion of the cover system installation activities for Cell 3. In addition, please be aware that submittal of proof of recordation in the...
Mr. Roberto Puga, P.G.
Page 2
February 19, 2014
TCEQ SWR No. 31235

county deed records of all industrial solid waste or municipal hazardous waste disposed on
the
above referenced site in a landfill(s) must be submitted to the TCEQ in accordance with 30
Texas Administrative Code (TAC) §335.5(b).

Questions concerning this letter should be directed to me at (512) 239-6542. Please use Mail
Code MC-127 when responding by mail.

Sincerely,

Eleanor T. Wehner

Eleanor T. Wehner, P.G.
Project Manager
VCP-CA Section
Remediation Division

ETW/mdh

cc: Mr. Scott M. Brown, P.E., Project Manager, Malcolm Pirnie, Inc., 410 N. 44th Street, Suite
1000, Phoenix, AZ 85008
Mr. Charles Fisher, Superfund Division, U.S. EPA Region 6 (Mail Code 6SF-RA), 1445
Ross Ave, Dallas, TX 75202
Ms. Lorinda Gardner, Regional Director, TCEQ Region 6 Office, El Paso