Newmont
CRIPPLE CREEK & VICTOR

Newmont Mining Corporation
Cripple Creek & Victor Gold Mining Company
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November 11, 2020

ELECTRONIC DELIVERY

Elliott Russell
Environmental Protection Specialist
Colorado Department of Natural Resources
Division of Reclamation, Mining and Safety
Office of Mined Land Reclamation
1313 Sherman Street, Room 215
Denver, Colorado 80203

Re: Permit No. M-1980-244; Cripple Creek & Victor Gold Mining Company; Cresson Project; – Technical Revision 123 – Squaw Gulch Valley Leach Facility – Phase 2B Part 1 Record of Construction Report, Supplemental Adequacy Review Response

Dear Mr. Russell:

On October 16, 2020, Newmont Corporation's Cripple Creek and Victor Gold Mining Company (CC&V) received the Division of Reclamation, Mining and Safety's (DRMS's) adequacy review of Technical Revision (TR) 123, which includes the Phase 2B Part 1 Record of Construction report dated September 2020, to which CC&V responded on October 28, 2020. In order to address additional adequacy review questions received via email from DRMS on November 4, 2020, CC&V has issued this supplemental adequacy review response. Below are DRMS comments in italics followed by CC&V's responses in bold.

A) *Panels with horizontal layout configuration concerns are: P3323 (west 1/2), P3325 (west 1/2), P3326 (full), P3333 (full), P3336 (west 1/2), P3337 (west 1/3) & P3338 (full). The Division is looking for an acknowledgement that this set of panels in part or whole, have not been deployed parallel to the line of maximum slope. Additionally, we are looking for a statement that additional strain is not expected to be significant with the current orientation of the panels.*

   The panels P3323 (west ½), P3325 (west ½), P3326 (full), P3333 (full), P3336 (west ½) and P3338 (full) are all located within an area of the pad which has a grade of less the 20% and are not at risk of additional strain due to the orientation of the panels to the slope.

B) *The gradation for DCF ore was changed in the adequacy response to 97% passing the 2-inch sieve. It is now consistent across all tables with the new specification, but now none of the gradation samples in Appendix H.5 meet the specification. The Division is requesting a correction to the typo in the specification to be 97 - 100% passing the 2-inch sieve and update Table 8 & Ap H.5 to be consistent.*

Attached is the updated Earthworks Specifications, Table 8, and Appendix H.5, which all show the Specification for the 2-inch sieve as 97-100%.

Additionally, CC&V commits to revise the Reclamation Permit to include the following for any Leak Detection Systems constructed in the future, including those associated with Amendment 13:

1. The leak detection trenches are to be constructed at a minimum of 1% slope across 100' segments, with an allowable deviation down to 0.5% for localized grading conditions as approved by the EOR.
2. Sections constructed at slope of less than 0.5% or with a reverse gradient will not be accepted.
3. A deviation to a 0.5% slope is to be documented in the deviation section of the CQA report.
4. Update and revise all text associated with the design and specifications to reflect the above listed items.

Should you require further information please do not hesitate to contact Katie Blake at 719.689.4048 or myself at 719.689.4042 or Justin.Raglin@newmont.com.

Sincerely,

PP Kathryn Blake

Justin Bills
Sustainability and External Relations Manager
Cripple Creek & Victor Gold Mining Co

JR/kb
Ec: T. Cazier – DRMS
R. Means – DRMS
M. Cunningham – DRMS
E. Russell – DRMS
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J. Bills – CC&V
K. Blake – CC&V

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ATTACHMENT

NewFields	CLIENT Newmont - Cripple Creek & Victor Gold Mine	PROJECT NO 475.0106.006
PROJECT: Squaw Gulch VLF		
TITLE: TECHNICAL SPECIFICATIONS –EARTHWORKS		**SPECIFICATION NO.** **02200**

REV	DATE	PAGES	APPROVALS			REMARKS
			AUTHOR	REVIEW	CLIENT	
1	04/07/2016	21	JNM	RMS		Issued for Client Review
2	06/15/2016	21	JNM	RMS		Issued for Construction
3	3/12/2020	21	JNM	KCW		Issued for Construction
4	3/17/2020	21	JNM	KCW		Issued for Construction

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SECTION 02200.0 EARTHWORKS

1. PART 1: GENERAL

1.1. Summary

This SPECIFICATION describes site preparation, excavation, stockpiling of soils for earthwork if necessary, and placement of Structural Fill, Select Structural Fill, Coarse Shaft Backfill, Underdrain Fill, Low Volume Solution Collection Fill, Bedding Fill, Leak Detection Fill, Soil Liner Fill, Drain Cover Fill, Fine Shaft Backfill, Pipe Bedding Material, and Granular Filter Material for the valley leach facility.

1.2. Related Sections

Refer to the following Sections for related work:

- Section 01050.0 - Staking and Construction Certification Documentation
- Section 02776.0 - Geomembrane
- Section 02777.0 - Geotextile

1.3. Tolerances

A. Limits of excavation, Structural Fill, Select Structural Fill, Coarse Shaft Backfill, Underdrain Fill, Low Volume Solution Collection Fill, Bedding Fill, Leak Detection Fill, Soil Liner Fill, Drain Cover Fill, Fine Shaft Backfill, Pipe Bedding Material, and Granular Filter Material for the valley leach facility are defined by the lines and elevations shown on the DRAWINGS. All fill shall be placed to the minimum thicknesses shown on the DRAWINGS.

B. Finished grades shown on the DRAWINGS are given in feet, and shall slope uniformly between given spot and contour elevations, without sag or humps. All grades shall provide for natural runoff.

C. The Soil Liner Fill and Bedding Fill shall have a minimum thickness of 1.0 foot.

D. The Low Volume Solution Collection Fill will have a minimum thickness of 3.0 feet at all times, and the Drain Cover fill will have a minimum thickness of 2.0 feet at all times.

E. Clearance of pipes with respect to regulated boundaries will be checked by **MANAGER**. If clearances are inadequate, **CONTRACTOR** shall backfill trenches to compaction SPECIFICATIONS and relocate trenches at **CONTRACTOR**'s expense.

F. Correction of over-excavation and backfilling shall be to **CONTRACTOR**'s account.

1.4. Quality Assurance

A. All work shall be monitored and tested in compliance with the requirements of the CQA Plan.

B. **CONTRACTOR** shall be aware of all testing activities outlined in the CQA Plan, and shall account for these activities in the construction schedule.

C. All CQA soils testing (both field and laboratory testing) will be the responsibility of **CERTIFYING ENGINEER**, as identified in the Earthworks CQA plan. **CONTRACTOR** shall be responsible for cooperating with CQA Monitor during all testing activities. **CONTRACTOR** shall provide equipment and labor to assist CQA Monitor in sampling, if requested, and shall also provide access to all areas requiring testing activities. Quality Control testing shall be the responsibility of the **CONTRACTOR**.

D. All excavation, backfill, and grading operations shall be carried out under the observation of MANAGER and CERTIFYING ENGINEER.

E. Any work found unsatisfactory or any work disturbed by subsequent operations before acceptance is granted shall be corrected by **CONTRACTOR**, at its sole cost.

2. PART 2: PRODUCTS

2.1. Materials

A. Fill materials will be soils, gravels, or rock fill approved by **MANAGER** and **CERTIFYING ENGINEER**. The materials shall be free of organic matter, debris, frozen material, and other deleterious materials, and shall be excavated, as required, as follows:

1. Structural Fill - material as approved by **MANAGER** and **CERTIFYING ENGINEER** conforming to the following SPECIFICATION:

U.S. Standard Sieve Size	Percent Passing by Dry Weight
24 – inch	100
No. 200	0 – 25
Plasticity Index: 30 maximum	

2. Select Structural Fill - well graded granular soil or sound, hard, durable, rockfill excavated on-site or supplied from off-site mine waste rock with a maximum particle size of 3 inches as approved by **MANAGER** and **CERTIFYING ENGINEER**.

3. Underdrain Fill - granular, material approved by **MANAGER** and **CERTIFYING ENGINEER** conforming to the following SPECIFICATION.

U.S. Standard Sieve Size	Percent Passing by Dry Weight
12-inch	100
No. 200	0 – 6
Point load tensile strength:	> 300 psi
Plasticity Index: Non Plastic	

4. Leak Detection Fill - material approved by **MANAGER** and **CERTIFYING ENGINEER** conforming to the following SPECIFICATION:

U.S. Standard Sieve Size	Percent Passing by Dry Weight
1-inch	100
⅜-inch	40 – 70
No. 4	5 – 50
No. 40	0 – 20
No. 200	0 – 10
Plasticity Index: Non Plastic	

5. Low Volume Solution Collection Fill and Bedding Fill - material approved by **MANAGER** and **CERTIFYING ENGINEER** conforming to the following SPECIFICATION:

U.S. Standard Sieve Size	Percent Passing by Dry Weight
1-inch	100
⅜-inch	40 – 70
No. 4	5 – 55
No. 200	0 – 10
Plasticity Index: Non Plastic	

6. Soil Liner Fill - processed materials as approved by **MANAGER** and **CERTIFYING ENGINEER**, conforming to the following SPECIFICATION:

U.S. Standard Sieve Size	Percent Passing by Dry Weight
2-inch	100
No. 200	15 – 65
Point load tensile strength:	> 300 psi
Plasticity Index: 10 Minimum Hydraulic Conductivity 1×10-6 cm/s maximum	

7. Drain Cover Fill - material approved by **MANAGER** and **CERTIFYING ENGINEER** conforming to the following SPECIFICATIONS:

U.S. Standard Sieve Size	Percent Passing by Dry Weight
1½-inch	100
¾-inch	70 – 100
No. 4	5 – 50
No. 200	0 – 8
Plasticity Index: Non Plastic	

The **MANAGER** substitute crushed ore as Drain Cover Fill. The crushed ore material shall conform to the following SPECIFICATIONS:

U.S. Standard Sieve Size	Percent Passing by Dry Weight
3-inch	100
2-inch	97 - 100
¾-inch	40 – 100
No. 4	5 – 35
No. 200	0 – 8
Plasticity Index: Non Plastic	

8. Select Drain Cover Fill – material as approved by **MANAGER** and **CERTIFYING ENGINEER** conforming to the following SPECIFICATIONS:

U.S. Standard Sieve Size	Percent Passing by Dry Weight
1½-inch	100
¾-inch	70 – 100
No. 4	5 – 50
No. 200	0 – 8
Plasticity Index: Non Plastic	

9. Coarse Shaft Backfill - material as approved by **MANAGER** and **CERTIFYING ENGINEER** conforming to the following SPECIFICATIONS:

U.S. Standard Sieve Size	Percent Passing by Dry Weight
12-inch	100
No. 200	0 – 15
Plasticity Index: Non Plastic	

10. Fine Shaft Backfill - material as approved by **MANAGER** and **CERTIFYING ENGINEER** conforming to the following SPECIFICATIONS:

U.S. Standard Sieve Size	Percent Passing by Dry Weight
2-inch	100
¾-inch	70 – 100
No. 40	20 – 50
No. 200	2 – 15
Plasticity Index: 15 maximum	

11. Pipe Bedding Material - material as approved by **MANAGER** and **CERTIFYING ENGINEER** conforming to the following SPECIFICATIONS:

U.S. Standard Sieve Size	Percent Passing by Dry Weight
2-inch	100
No. 4	30 – 100
No. 200	5 – 20
Plasticity Index: 15 maximum	

12. Granular Filter Material - material as approved by **MANAGER** and **CERTIFYING ENGINEER** conforming to the following SPECIFICATIONS:

U.S. Standard Sieve Size	Percent Passing by Dry Weight
3-inch	100
2-inch	75 – 100
No. 200	0 – 15
Plasticity Index: 15 maximum	

Acceptance of non-conforming materials: In cases where non-conformance to these material specifications occur the Design Engineer in tandem with the Manager can approve the material for use, if in their opinion, the specification deviation does not diminish functionality of a given design element and/or compromise the design intent. If non-conforming materials are accepted by the Design Engineer and Manager for use during construction, the DRMS will be contacted to alert them to the acceptance and rationale behind acceptance of non-conforming materials.

3. PART 3: EXECUTION

3.1. Clearing and Grubbing

A. Clearing and grubbing shall be done within the footprint of the limits of the construction area, as delineated on the DRAWINGS. Clearing shall extend a maximum of 15 feet and a minimum of 10 feet outside of the construction limits or as directed by **MANAGER**. Areas for clearing shall be released to **CONTRACTOR** by **MANAGER**. No pioneering of roads across undisturbed areas shall be allowed without prior approval of **MANAGER**

B. No clearing shall be performed until written permission is given by **MANAGER** and until the **CONTRACTOR** has provided construction staking for the proposed work. Clearing shall consist of cutting brush to the ground level, removing such material, along with wood, rubbish, tree stumps, and any other vegetation with roots in excess of 1-inch diameter, and other deleterious materials, and disposing of all such material in the accepted manner described below.

C. In areas designated to be stripped of unsuitable or objectionable material, said materials shall be stripped to the full depth of organic or other unsuitable material as determined by **MANAGER** and **CERTIFYING ENGINEER**, whichever is greater.

D. Stripped and grubbed vegetation shall be removed and disposed in stockpiles or other approved methods in an area designated by **MANAGER**.

3.2. Topsoil Removal

Topsoil is defined as an acceptable growth medium as approved by **MANAGER** and **CERTIFYING ENGINEER** that has no chemical or physical characteristics, which will exclude its use as such.

A. Stripping of the topsoil shall be done within the entire area of the stripping limits.

B. **CONTRACTOR** shall excavate and remove topsoil in a manner that will minimize contamination with other soil horizons, and will take such measures as are necessary to ensure that the removal of topsoil does not result in erosion or excessive sedimentation.

C. **CONTRACTOR** shall stockpile topsoil at locations designated by **MANAGER**. Stored topsoil shall not be disturbed by mining, leaching operations, or construction activities, and shall be protected from wind and water erosion, compaction, and contamination.

D. **CONTRACTOR** shall grade topsoil stockpiles to prevent erosion and ponding of precipitation in the stockpile areas. The maximum topsoil stockpile height will be approved by **MANAGER**. The **CONTRACTOR** shall protect stockpiled topsoil by an effective cover of non-noxious, quick- growing, annual, and perennial plants, approved by **MANAGER**, which shall be seeded or planted during the first appropriate growing season after removal.

3.3. Waste Removal

Waste material is defined as material too wet, too dry, frozen or containing ice or snow, containing organic or other deleterious matter, having poor characteristics of grading or compaction, having other characteristics that may result in undesirable settlement or other movement of the fill, or within the fill, or otherwise not meeting the requirements of the SPECIFICATIONS, provided that this definition permits drying, water, and any other processing or reprocessing to make the material stable and suitable prior to incorporating it into the fill as permitted in the SPECIFICATIONS or by the **MANAGER** and **CERTIFYING ENGINEER**.

A. **CONTRACTOR** shall excavate and remove waste in a manner that will minimize contamination with other soil horizons.

B. **CONTRACTOR** shall stockpile removed waste at locations designated by **MANAGER**

3.4. Excavation

A. **CONTRACTOR** shall perform excavation to the lines and grades shown on the DRAWINGS or as directed by **MANAGER**. No excavation shall begin until the **CONTRACTOR** has provided construction staking for the proposed work.

B. **CONTRACTOR** shall prevent the disturbance of surrounding areas during excavation. Where selective excavations are required to obtain materials for Structural Fill and Select Structural Fill, the material removed from the excavations shall be taken directly to the fill areas or, if required, stockpiled by material types. The stockpiles shall be approved by **MANAGER**.

C. **CONTRACTOR** shall grade all excavations to ensure grades are maintained to provide adequate drainage at all times. Work shall be suspended by **CONTRACTOR** when, in the

opinion of **MANAGER** and **CERTIFYING ENGINEER**, the site is overly wet, muddy, or otherwise unsuitable for proper maintenance, until directed otherwise by **MANAGER**, at no cost to **CC&V**.

D. In excavations where Structural Fill or Select Structural Fill is to be placed on slopes steeper than 3H:1V, horizontal benches shall be excavated into the slope to allow fill to be placed in horizontal lifts. The **CONTRACTOR** shall continuously bench and key embankment material into the existing material a minimum of 2 feet.

E. The **CONTRACTOR** will be responsible for the safety of temporary construction slopes. **CONTRACTOR** shall inspect all temporary and permanent open-cut excavations on a regular basis for signs of instability. Should signs of instability be noted, **CONTRACTOR** shall immediately undertake remedial measures and shall notify **MANAGER** immediately. Permanent cut slopes shall be left in smooth, safe, and stable condition at the end of the workday.

F. **CONTRACTOR** shall final grade excavations within the valley leach facility to establish positive drainage to the Pregnant Solution Storage Area. In no case will depressions or bowls be permitted in the valley leach facility area.

G. **CONTRACTOR** shall conduct all excavation and shoring operations in compliance with applicable MSHA, Colorado State and Federal government laws and regulations.

3.5. Subgrade

A. The **MANAGER** and **CERTIFYING ENGINEER** will inspect and approve the exposed subgrade prior to any fill or Soil Liner being placed. CQA Monitor will confirm that the surface of the subgrade is smooth and free of debris, grade stakes, angular rocks, roots, branches, vegetation, mud, ice, or frozen material. If the subgrade is determined to be frozen, using the criteria identified in Item 3.06.10 of Section 2200, the **CONTRACTOR** may either remove and replace the frozen subgrade or wait until subsequent temperature monitoring indicates the fill is unfrozen, at no cost to **CC&V**. The subgrade shall have no sudden sharp or abrupt changes in grade.

B. **CONTRACTOR** is responsible for maintaining subgrades in a condition satisfactory to **CERTIFYING ENGINEER**. **CONTRACTOR** shall protect prepared subgrades, including previously approved subgrade, from weather, construction equipment, or other factors as outlined in Part 3.06 of the SPECIFICATIONS. Subgrade surfaces, including previously approved subgrade, that become softened or otherwise unsuitable for placement of fill, shall be repaired to **CERTIFYING ENGINEER's** and **MANAGER's** satisfaction, at no cost to **CC&V**.

C. Prior to placement of fill materials, **CONTRACTOR** shall scarify all in-situ materials to a depth of 6-inches, moisture condition, and recompact the subgrade. Compactive effort shall be adequate to obtain a minimum of 95 percent of maximum dry density as determined by the standard Proctor test (ASTM D698) for the particular fill material.

Moisture conditioning shall be adequate to achieve a uniform moisture and density. In rock areas, the **CONTRACTOR** shall prepare the subgrade by removing loose rock fragments until competent foundation material is encountered as approved by **CERTIFYING ENGINEER**.

D. If the underlying material is unsuitable to permit proper compaction of the subgrade, **CONTRACTOR** shall loosen, aerate (or excavate and remove), and recompact the subgrade until the top layer can be compacted as required. The recompacted surface shall then be scarified, as needed, to provide a good bond between the foundation and fill materials.

3.6. Fill Placement

A. The following general guidelines shall be followed except as noted elsewhere in this Section.

1. No fill materials shall be placed until the foundation and subgrade preparations have been completed as specified herein, in Article 3.05 of this Section. The procedures for fill placement shall be approved by **MANAGER** and **CERTIFYING ENGINEER** prior to start of fill placement.

2. No brush, roots, sod, frozen material, or other deleterious or unsuitable materials shall be incorporated in the fills. The suitability of all materials intended for use in the fill shall be subject to approval by **MANAGER** and **CERTIFYING ENGINEER**. Fill placement shall be temporarily stopped by **CONTRACTOR** due to weather conditions, if materials and installation do not meet the SPECIFICATIONS, at no cost to **CC&V**. Fill shall not be placed upon frozen material, such as snow or ice.

3. If the surface of the prepared foundation or the surface of any layer of the fill is too dry or too smooth to bond properly with the layer of material to be placed thereon, it shall be moisture-conditioned and/or worked with harrow, scarifier teeth, disc, or other suitable equipment to provide a satisfactory bonding surface before fill material is placed thereon. If the surface of the prepared foundation or the rolled surface of any layer is excessively wet for fill materials to be placed thereon, it shall be removed and allowed to dry or worked with a harrow, scarifier teeth, disc, or other suitable equipment to reduce the moisture content to an acceptable level or meet project specifications as determined by **MANAGER** and **CERTIFYING ENGINEER**. It shall then be compacted before the next layer of fill material is placed. Determination of such dry or wet conditions shall be made by **CERTIFYING ENGINEER**.

4. The distribution of materials shall be such that the fill is free from voids, lenses, pockets, streaks, or layers of material differing substantially in texture or gradation from the surrounding material. The material of a fill shall be as described in Article 2.01 of this Section.

5. Unless otherwise approved by **MANAGER** and **CERTIFYING ENGINEER**, the entire fill surface shall be at or near the same elevation at all times during construction. At all times during construction, the surface of the fill shall be graded and maintained by the **CONTRACTOR** to prevent ponding of water and to allow for storm water drainage.
6. Except as otherwise specified or approved by **MANAGER** and **CERTIFYING ENGINEER**, the **CONTRACTOR** shall dump and spread fill in such a manner so that no excessive gaps are left between successively dumped loads of materials. The fill shall be leveled prior to compaction by means of a dozer or grader, or other suitable approved equipment, to obtain a surface free from depressions.
7. Except in areas approved by **MANAGER** and **CERTIFYING ENGINEER** where space is limited or otherwise specified, **CONTRACTOR** shall place fill by routing the hauling and spreading units approximately parallel to the axis of the fill. As far as practical, hauling units shall be so routed that they do not follow in the same paths, but split their tracks evenly across the surface of the fill to enhance compaction.
8. **CONTRACTOR** shall apply water required for moisture conditioning on the fill or in the borrow areas.

   CONTRACTOR shall maintain fill materials within the moisture content range required to permit proper compaction to the specified density with the equipment being used. The moisture content of the fill materials, prior to and during compaction, shall be uniform throughout each layer of the material.

   Prior to mixing of wet and dry material on the fill to obtain the proper moisture content, approval shall be obtained from **CERTIFYING ENGINEER**. Mixed material shall have a uniform distribution of the moisture content prior to placement on the subsequent lift.

   When materials spread on the fill are too dry for proper compaction, **CONTRACTOR** shall spray water on each layer of the fill and shall work the moisture into the fill by harrowing or other approved means, until a uniform distribution of moisture is obtained. Material that is too wet for proper compaction, as determined by **CERTIFYING ENGINEER**, shall be removed from the fill and/or spread out and permitted to dry, assisted by disking and harrowing or mixing in dry material when permitted by **CERTIFYING ENGINEER**, if necessary, until the moisture content is reduced to an amount suitable for obtaining the specified degree of compaction, at no cost to **CC&V.**
9. After each layer of fill material has been placed, spread, and moisture-conditioned, the layer shall be compacted by passing compaction equipment over the entire surface of the layer a sufficient number of times to obtain the required density, as specified herein. Compaction shall be accomplished with equipment and by methods approved by **CERTIFYING ENGINEER**. If such equipment or methods are found

unsatisfactory for the intended use, **CONTRACTOR** shall replace the unsatisfactory equipment with other types or adjust methods until proper compaction is achieved. Prior to placement of a subsequent lift, the previous lift shall be thoroughly scarified to a nominal depth of 2-inches to provide good bonding between lifts. Scarification shall be accomplished by disking, raking with a grader, or an alternative method approved by **CERTIFYING ENGINEER**.

10. The CQA Monitor will measure the ambient air temperature on an hourly basis. If the ambient air temperature is less than thirty-two degrees Fahrenheit for more than one hour over the preceding twenty-four (24) hours, the CQA Monitor will measure the temperature of the fill to determine if the fill is frozen. "Frozen" is defined as a mean temperature of thirty-two degrees Fahrenheit (32°F) or less. The CQA Monitor will measure the temperature at a depth of three (3) inches and six (6) inches, recording the lower of the two. Six (6) measurements will be taken per acre, and if the average is below thirty-two degrees Fahrenheit (32°F), the fill will be considered frozen. If the fill is determined to be frozen the CONTRACTOR may either remove and replace the frozen fill or wait until subsequent temperature monitoring indicates the fill is unfrozen at no cost to CC&V.

11. Overburden slopes shall be compacted using a method specification and graded to meet the grades and dimensions shown on the DRAWINGS. The Bedding Fill subgrade surface will be prepared as identified in Section 2200 of the SPECIFICATIONS.

B. Structural Fill

1. Areas to receive Structural Fill will include, but are not limited to, slope reductions, and miscellaneous site grading.

2. **CONTRACTOR** shall condition Structural Fill to a moisture content that allows compaction to the required density and that results in a firm, unyielding surface capable of allowing the movement of vehicles and equipment over the surface without causing rutting or other deleterious effects.

3. **CONTRACTOR** shall place Structural Fill materials with less than 30 percent rock materials above 3/4-inch size in maximum 12-inch loose lifts, and compact to 95 percent of maximum dry density (ASTM D698).

4. **CONTRACTOR** shall condition, place and compact Structural Fill containing more than 30 percent rock materials above 3/4-inch size(rock fill) by a method compaction technique. The compaction equipment shall consist of a minimum 10-ton (static drum weight) vibratory smooth-drum compactor. The number of passes and loose lift thickness shall be subject to **CERTIFYING ENGINEER's** approval, at no additional cost to **CC&V**. The method SPECIFICATIONS may be changed at any time, at the discretion of **CERTIFYING ENGINEER**, based upon changes in material characteristics, field conditions, and/or compaction equipment.

5. Maximum rock size for rock fill shall be two-thirds of the compacted lift thickness, unless otherwise approved by **MANAGER**, **DESIGN ENGINEER,** and **CERTIFYING ENGINEER**. **CONTRACTOR** shall remove oversize materials from fills at no additional cost to **CC&V**.

C. Select Structural Fill

1. Select Structural Fill shall be placed for miscellaneous site grading as required by the MANAGER and CERTIFYING ENGINEER.
2. **CONTRACTOR** shall condition Select Structural Fill to a moisture content that allows compaction to the required density and that results in a firm, unyielding surface capable of allowing the movement of vehicles and equipment over the surface without causing rutting or other deleterious effects.
3. **CONTRACTOR** shall place Select Structural Fill materials with less than 30 percent rock materials above 3/4-inch size in maximum 12-inch loose lifts, and compacted to 95 percent of maximum dry density (ASTM D698).
4. **CONTRACTOR** shall condition and place Select Structural Fill containing more than 30 percent rock materials above 3/4-inch size (rock fill) in maximum 12-inch loose lifts and compact by a method compaction technique. The compaction equipment shall consist of a minimum ten 10-ton (static drum weight) vibratory smooth-drum compactor. The number of passes shall be subject to **CERTIFYING ENGINEER's** approval, at no additional cost to **CC&V**. The method SPECIFICATIONS may be changed at any time, at the discretion of **CERTIFYING ENGINEER**, based upon changes in material characteristics, field conditions, and/or compaction equipment.

D. Underdrain Fill

1. Underdrain Fill shall be placed in the Underdrains as shown in the DRAWINGS.
2. **CONTRACTOR** shall condition Underdrain Fill that results in a firm, unyielding surface capable of allowing the movement of vehicles and equipment over the surface without causing rutting or other deleterious effects.
3. **CONTRACTOR** shall condition, place and compact Underdrain Fill by a method compaction technique. The compaction equipment shall consist of a minimum 10-ton (static drum weight) vibratory smooth-drum compactor. The number of passes and loose lift thickness shall be subject to **CERTIFYING ENGINEER's** approval, at no additional cost to **CC&V**. The method SPECIFICATIONS may be changed at any time, at the discretion of **MANAGER**, based upon changes in material characteristics, field conditions, and/or compaction equipment.
4. Provisions shall be made by **CONTRACTOR** for removal of oversize materials from fills, at no additional cost to **CC&V**.
5. The **MANAGER** will minimize the amount of traffic over the Underdrain Fill.

E. Leak Detection Fill

1. Leak Detection Fill shall be placed in the Leak Detection Trenches as shown on the DRAWINGS.
2. **CONTRACTOR** shall condition Leak Detection Fill to allow a surface that does not cause rutting or other deleterious effects.

F. Low Volume Solution Collection Fill

1. Low Volume Solution Collection Fill shall be placed over the geomembrane in the locations shown on the DRAWINGS.
2. **CONTRACTOR** shall condition Low Volume Solution Collection Fill to allow a surface that does not cause rutting or other deleterious effects.
3. **CONTRACTOR** shall place Low Volume Solution Collection Fill around the Low Volume Solution Collection Vertical Riser Pipes in maximum 12-inch loose lifts and compact using a hand operated vibratory plate compactor to the satisfaction of the **MANAGER** and **CERTIFYING ENGINEER**. Low Volume Solution Collection Fill shall be worked under the Low Volume Solution Collection Rise pipe haunches by hand to provide uniform support of the pipe.
4. Prior to placing the Low Volume Solution Collection Fill, **CONTRACTOR** shall verify by visual inspection that the underlying geosynthetics are free of holes, tears, wrinkles, or foreign objects. **MANAGER** and **CERTIFYING ENGINEER** will inspect the geosynthetic for wrinkles prior to placement of Low Volume Solution Collection Fill. As instructed by **MANAGER**, **CONTRACTOR** shall "work out" wrinkles to the satisfaction of **MANAGER** and **CERTIFYING ENGINEER** prior to placement of the Low Volume Solution Collection Fill. In all cases, wrinkles shall not be of a size that they could fold back on themselves. Wrinkles greater than one foot shall be removed and repaired by the **INSTALLER**.
5. **CONTRACTOR** shall place Low Volume Solution Collection Fill in a single 36-inch loose lift. The tracked equipment shall operate only over previously placed Low Volume Solution Collection Fill. **CONTRACTOR** shall not operate equipment directly on geosynthetics. Only a dozer with a ground pressure not exceeding 14.7 psi can be used to place Low Volume Solution Collection Fill. Equipment used for placement will not be allowed to pivot on one track (i.e., no abrupt or sharp turns). There shall be no downhill placement on slopes steeper than 4H:1V. Material can be placed along contours if buttressed from below.
6. Rubber tired construction equipment shall not be allowed to travel over the geomembrane or on top of Solution Collection piping unless a thickness of at least 45 inches of Low Volume Solution Collection Fill has been placed over the geomembrane and on top of Solution Collection piping. The **CONTRACTOR** will be required to demonstrate to the **MANAGER, DESIGN ENGINEER** and **CERTIFYING**

ENGINEER that the equipment and procedures used are not detrimental to the geomembrane and piping, at no cost to **CC&V**. Off road haul truck traffic shall require a minimum of 60 inches for Cat 773 (or equivalent) of Low Volume Solution Collection Fill placed over the geomembrane and solution collection piping, and a minimum of 120 inches for CAT 777 (or equivalent) of Low Volume Solution Collection Fill placed over the geomembrane and solution collection piping.

7. When placing Low Volume Solution Collection Fill the maximum acceptable drop height is 3 feet.
8. **CONTRACTOR** shall operate equipment in a manner that is protective of underlying geosynthetics. If **MANAGER** or **CERTIFYING ENGINEER** suspects the occurrence of any damage to the underlying geosynthetics, **MANAGER** will instruct **CONTRACTOR** to remove Low Volume Solution Collection Fill to expose the geosynthetics. **CONTRACTOR** shall uncover, repair any observed damage of the underlying geosynthetics, in accordance with the repair requirements of Sections 02776.0 and 02777.0 of these SPECIFICATIONS, and recover, at no cost to **CC&V**.
9. **CONTRACTOR** shall place Low Volume Solution Collection Fill at a rate such that no single area of 350,000 square feet of geomembrane liner is exposed to ultraviolet light for more than 180 days.
10. **CONTRACTOR** shall provide close continuous monitoring at the point of placement during the placement of the Low Volume Solution Collection Fill over geosynthetics.
11. **CONTRACTOR** shall verify the final thickness of Low Volume Solution Collection Fill to determine compliance with this SPECIFICATION. **CONTRACTOR** shall record verification location, elevation, and thickness. CQA Monitor shall witness all verification measurements. **CONTRACTOR** will submit a method of verifying Low Volume Solution Collection Fill depth to **MANAGER** for approval. Grade markers shall be placed on a 50- by-50-foot grid with additional points required for breaks in grade. **CONTRACTOR** shall remove all grade markers under supervision of CQA Monitor after verification measurements have been approved by **MANAGER** and **CERTIFYING ENGINEER** and will backfill holes with Low Volume Solution Collection Fill. Areas with deficient thickness shall be reworked by **CONTRACTOR**, until acceptable measurements are obtained. If **MANAGER** or **CERTIFYING ENGINEER** suspects the occurrence of any damage to the underlying geosynthetics, **MANAGER** will instruct **CONTRACTOR** to remove Low Volume Solution Collection Fill to expose the geosynthetics. **CONTRACTOR** shall uncover, repair any observed damage of the underlying geosynthetics, in accordance with the repair requirements of Sections 02776.0 and 02777.0 of these SPECIFICATIONS and recover, at no cost to **CC&V**.
12. **CONTRACTOR** will provide adequate illumination as approved by **MANAGER**, if Low Volume Solution Collection Fill placement is carried out at night. A minimum of 2-foot candles measured at the synthetic liner, shall be used when Low Volume Solution Collection Fill placement is carried out at night.

G. Soil Liner Fill

1. Soil Liner Fill shall be placed within the limits of the valley leach facility as shown on the DRAWINGS and shall begin only after completion of all, or **MANAGER** and **CERTIFYING ENGINEER** approved portion of, excavation and Structural Fill placement in the valley leach facility.
2. **CONTRACTOR** shall process, place and compact the Soil Liner Fill to achieve a coefficient of permeability of less than $1x10^{-6}$ cm/sec, measured according to ASTM Method D5084, Method D. Any Soil Liner Fill not meeting the permeability specification shall be removed and replaced with material meeting the permeability specification, at no additional cost to **CC&V**.
3. **CONTRACTOR** shall place and compact the Soil Liner Fill in loose lifts such that the compacted lift thickness is a minimum of 12-inches.
4. **CONTRACTOR** shall compact the Soil Liner Fill to at least 95 percent of the maximum dry density as determined by the Standard Proctor density test (ASTM D698). The moisture content shall be within +3% to -2% of the optimum moisture content. Both moisture and density shall be uniform throughout the lift. If the Soil Liner Fill cannot be conditioned to meet the placement specifications, the material shall be removed and replaced with new Soil Liner Fill at the **CONTRACTOR's** expense. The **CONTRACTOR** shall reduce the clod size of the soil liner fill to a size that is acceptable to the **CERTIFYING ENGINEER**, the method by which will be approved by **CERTIFYING ENGINEER** and **MANAGER** prior to implementation.
5. The moisture content of the Soil Liner Fill shall be uniform throughout prior to and during compaction of the material. **CONTRACTOR** shall be responsible for meeting moisture content and compaction SPECIFICATIONS. If the Soil Liner Fill cannot be conditioned to meet the placement SPECIFICATIONS, the material shall be removed and replaced with new Soil Liner Fill at no additional cost to **CC&V**. **MANAGER** may require **CONTRACTOR** to moisture condition Soil Liner Fill at stockpile at least 24 hours prior to the Soil Liner Fill being placed.
6. **CONTRACTOR** shall place Soil Liner Fill to form a continuous monolithic material. If a lift of compacted Soil Liner Fill dries out during placement operations, **CONTRACTOR** shall scarify, moisture condition the dry soil and recompact the lift. If a lift of compacted Soil Liner Fill becomes overly wet due to precipitation or over watering, **CONTRACTOR** shall allow the wet soil to dry to the specified moisture content range before recompaction of fill and placement of geosynthetic materials.
7. **CONTRACTOR** shall assist CQA Monitor in obtaining soil samples for CQA testing. Soil Liner Fill sampling shall be scheduled by CQA Monitor with **CONTRACTOR** to facilitate CQA field testing.
8. **CONTRACTOR** shall maintain Soil Liner Fill stockpile areas in a free-draining condition. The **CONTRACTOR** will maintain Soil Liner Fill stockpiles and Soil Liner Fill

placed within the limits of the valley leach facility to prevent the drying out of the surface.

9. **CONTRACTOR** shall compact corners and other areas inaccessible to driven compaction equipment using hand-operated 500-pound vibratory plate or vibratory smooth-drum compaction equipment approved by **MANAGER** and **CERTIFYING ENGINEER**.
10. **CONTRACTOR** shall trim the surface of the Soil Liner Fill to the design grades shown on the DRAWINGS.
11. **CONTRACTOR** shall roll the surface of the Soil Liner Fill with a smooth drum roller to remove ridges and surface irregularities greater than 0.5 inches in height. **CERTIFYING ENGINEER** shall determine if surface preparation is sufficient to place geomembrane. On areas with slopes steeper than 3H:1V, **CONTRACTOR** shall adopt methods as necessary to obtain the same final surface preparations that would be obtained by the passage of a smooth-drum roller on flat or level ground. Pushing of compaction equipment by tracked equipment shall not be performed. Wheel ruts on the surface of the Soil Liner Fill from grading equipment shall be repaired by **CONTRACTOR** prior to placement of the geomembrane by rolling the surface as approved by CQA Monitor.
12. **CONTRACTOR** will remove angular protruding rocks greater than 3/4 inches in diameter from the compacted Soil Liner Fill surface. Indentations left in the Soil Liner Fill Surface after removal of the rocks shall be filled with Soil Liner Fill or other suitable fill approved by CQA Monitor, and compacted to achieve final grade. Areas of the Soil Liner Fill surface with concentrated gravelly areas will have suitable fill approved by CQA Monitor placed on top and compacted to achieve final grade. A maximum thickness of 0.5 inches of suitable fill will be placed on the Soil Liner Fill.
13. **MANAGER** and **CERTIFYING ENGINEER** will identify any areas of significant desiccation, crusting, or erosion of a lift surface. Soil Liner Fill surfaces found to have desiccation cracks greater than 0.25-inches in width or depth, or which exhibit swelling, heaving or other similar conditions shall be replaced or reworked by **CONTRACTOR** to remove such defects. Desiccation cracks on the Soil Liner Fill surface less than 0.25-inches in width or depth shall be compacted with a smooth drum roller. **CONTRACTOR** shall take whatever steps necessary to prepare Soil Liner Fill surface to the satisfaction of **MANAGER** and **CERTIFYING ENGINEER**, at no additional cost to **CC&V**.
14. **CONTRACTOR** shall maintain the Soil Liner Fill surface in a condition suitable for geomembrane installation as specified in these SPECIFICATIONS and in the CQA Plan until the surface is covered. **CONTRACTOR** shall repair all weather related damage to Soil Liner Fill surfaces or other portions of the Work that have or have not been covered by geomembrane, at no additional cost to **CC&V** If any moisture is allowed to collect under the geomembrane prior to or after final seaming and softens the Soil

Liner Fill, the geomembrane shall be removed and **CONTRACTOR** shall recondition and recompact the Soil Liner Fill to meet all placement and trimming SPECIFICATIONS, at no additional cost to **CC&V**.

15. **CONTRACTOR** shall remove all hubs and survey stakes in the Soil Liner Fill and backfill all holes with **MANAGER** and **CERTIFYING ENGINEER** approved moisture-conditioned Soil Liner Fill or bentonite. Compact with a Proctor hammer or other suitable device that will achieve a kneading type of compaction and will achieve the required density.
16. **CONTRACTOR** shall verify the final thickness of Soil Liner Fill to determine compliance with this SPECIFICATION. Thickness verification shall be performed at a minimum frequency of two measurements per acre using a soil-coring device, unless directed otherwise by **MANAGER**. **CONTRACTOR** shall record as part of the as-built documentation the location, elevation, and thickness of each Soil Liner Fill verification test. CQA Monitor will witness all verification measurements. **CONTRACTOR** shall backfill all holes with **MANAGER** and **CERTIFYING ENGINEER** approved moisture- conditioned Soil Liner Fill compacted with a Proctor hammer or other suitable device that will achieve a kneading type of compaction and will achieve the required density, or bentonite. Areas with deficiencies shall be reworked by **CONTRACTOR**, until acceptable measurements are obtained at no additional cost to **CC&V**.
17. If tests indicate the Work does not meet the requirements of the SPECIFICATIONS, **MANAGER** and **CERTIFYING ENGINEER** will establish the extent of the nonconforming area. The nonconforming area shall be reworked by **CONTRACTOR** until acceptable test results are obtained at no additional cost to **CC&V**
18. Prior to any geosynthetics being placed on Soil Liner Fill, the area will be tested by CQA Monitor. No geosynthetics will be allowed to be placed on frozen material, as defined in Section 3.06, without the area in question being retested by the CQA Monitor.

H. Drain Cover Fill

1. Drain Cover Fill shall be placed over the geomembrane in the locations shown on the DRAWINGS.
2. Prior to placing the Drain Cover Fill, **CONTRACTOR** shall verify by visual inspection that the underlying geosynthetics are free of holes, tears, wrinkles, or foreign objects. **MANAGER** and **CERTIFYING ENGINEER** will inspect the geosynthetic for wrinkles prior to placement of Drain Cover Fill. As instructed by **MANAGER**, **CONTRACTOR** shall "work out" wrinkles to the satisfaction of **MANAGER** and **CERTIFYING ENGINEER** prior to placement of the Drain Cover Fill. In all cases, wrinkles shall not be of a size that they could fold back on themselves. Wrinkles greater than one foot shall be removed and repaired by the **INSTALLER**.

3. **CONTRACTOR** shall place Drain Cover Fill in a single 24-inch loose lift. The tracked equipment shall operate only over previously placed Drain Cover Fill. **CONTRACTOR** shall not operate equipment directly on geosynthetics. Only a dozer with a ground pressure not exceeding 8.7 psi can be used to place Drain Cover Fill. A CAT 12G motor grader, or equivalent approved by **CERTIFYING ENGINEER,** can be used for Drain Cover Fill final grading. Equipment used for placement will not be allowed to pivot on one track (i.e. no abrupt or sharp turns). There shall be no downhill placement on slopes steeper than 4H:1V. Material can be placed along contours if buttressed from below. Motor graders shall not be allowed to make abrupt turns, brake suddenly, or dig blade in which results in the tires spinning on the Drain Cover Fill surface.
4. Highway compatible Rubber tired construction equipment shall not be allowed to travel over the geomembrane or on top of Solution Collection piping unless a thickness of at least 45 inches of Drain Cover Fill has been placed over the geomembrane and on top of Solution Collection piping. The **CONTRACTOR** will be required to demonstrate to the **MANAGER, DESIGN ENGINEER** and **CERTIFYING ENGINEER** that the equipment and procedures used are not detrimental to the geomembrane and piping, at no cost to **CC&V**. Off road haul truck traffic shall require a minimum of 60 inches for Cat 773 (or equivalent) of Drain Cover Fill placed over the geomembrane and solution collection piping, and a minimum of 120 inches for CAT 777 (or equivalent) of Drain Cover Fill placed over the geomembrane and solution collection piping.
5. When placing Drain Cover Fill the maximum acceptable drop height is 3 feet.
6. **CONTRACTOR** shall operate equipment in a manner that is protective of underlying geosynthetics. If **MANAGER** or **CERTIFYING ENGINEER** suspects the occurrence of any damage to the underlying geosynthetics, **MANAGER** will instruct **CONTRACTOR** to remove Drain Cover Fill to expose the geosynthetics. **CONTRACTOR** shall uncover, repair any observed damage of the underlying geosynthetics, in accordance with the repair requirements of Sections 02776.0 and 02777.0 of these SPECIFICATIONS, and recover, at no cost to **CC&V**.
7. **CONTRACTOR** shall place Drain Cover Fill at a rate such that the geomembrane liner is not exposed to ultraviolet light for more than 180 days.
8. **CONTRACTOR** shall provide close continuous monitoring at the point of placement during the placement of the Drain Cover Fill over geosynthetics.
9. **CONTRACTOR** shall verify the final thickness of Drain Cover Fill to determine compliance with this SPECIFICATION. **CONTRACTOR** shall record verification location, elevation, and thickness. CQA Monitor shall witness all verification measurements. **CONTRACTOR** will submit a method of verifying Drain Cover Fill depth to **MANAGER** for approval. Grade markers shall be placed on a 50-by-50-foot grid with additional points required for breaks in grade. **CONTRACTOR** shall remove all grade markers under supervision of CQA Monitor after verification measurements have been

approved by **MANAGER** and **CERTIFYING ENGINEER** and will backfill holes with Drain Cover Fill. Areas with deficient thickness shall be reworked by **CONTRACTOR**, until acceptable measurements are obtained. If **MANAGER** or **CERTIFYING ENGINEER** suspects the occurrence of any damage to the underlying geosynthetics, **MANAGER** will instruct **CONTRACTOR** to remove Drain Cover Fill to expose the geosynthetics. **CONTRACTOR** shall uncover, repair any observed damage of the underlying geosynthetics, in accordance with the repair requirements of Sections 02776.0 and 02777.0 of these SPECIFICATIONS and recover, at no cost to **CC&V**.

10. **CONTRACTOR** will provide adequate illumination as approved by **MANAGER**, if Drain Cover Fill placement is carried out at night. A minimum of 2-foot candles measured at the synthetic liner shall be used when Drain Cover Fill placement is carried out at night

I. Pipe Bedding Material

1. Pipe bedding material shall be placed around the CSP as shown on the drawings.
2. For piping external to the valley leach facility, **CONTRACTOR** shall compact the Pipe Bedding Material requiring compaction to at least 95 percent of the maximum dry density as determined by the Standard Proctor density test (ASTM D698), and a moisture content 3 percent below and 3 percent over the optimum moisture content.
3. **CONTRACTOR** shall place Pipe Bedding Material in maximum 12-inch loose lifts. Pipe Bedding Material will be worked under pipe haunches by hand to provide uniform support of the CSP.
4. Native material used for backfilling CSP excavation shall be placed in 12-inch to 18-inch loose lifts, and compacted by wheel rolling with light, rubber tired or other light compaction equipment, as approved by **CERTIFYING ENGINEER.**

J. Granular Filter Material

1. Granular Filter Material shall be placed beneath the Riprap as shown on the drawings.

K. Bedding Fill

1. Bedding Fill shall be placed within the limits of the valley leach facility as shown on the DRAWINGS.
2. **CONTRACTOR** shall place and compact the Bedding Fill in loose lifts such that the compacted lift thickness is a minimum of 12-inches. **CONTRACTOR** shall condition the Bedding Fill to allow a surface that does not cause rutting or other deleterious effects. The moisture content and density shall be uniform throughout the lift. If a lift of compacted Bedding Fill dries out during placement operations, **CONTRACTOR** shall scarify, moisture condition the dry soil and recompact the lift. If a lift of

compacted Bedding Fill becomes overly wet due to precipitation or over watering, **CONTRACTOR** shall allow the wet soil to dry to the specified moisture content range before recompaction of fill and placement of geosynthetic materials.

3. **CONTRACTOR** shall assist CQA Monitor in obtaining soil samples for CQA testing. Bedding Fill sampling shall be scheduled by CQA Monitor with **CONTRACTOR** to facilitate CQA field testing.
4. **CONTRACTOR** shall trim the surface of the Bedding Fill to the design grades shown on the DRAWINGS.
5. **CONTRACTOR** shall roll the surface of the Bedding Fill with a smooth drum roller to remove ridges and surface irregularities greater than 0.5 inches in height. **CERTIFYING ENGINEER** shall determine if surface preparation is sufficient to place geomembrane. On areas with slopes steeper than 3H:1V, **CONTRACTOR** shall adopt methods as necessary to obtain the same final surface preparations that would be obtained by the passage of a smooth-drum roller on flat or level ground. Pushing of compaction equipment by tracked equipment shall not be performed. Wheel ruts on the surface of the Bedding Fill from grading equipment shall be repaired by **CONTRACTOR** prior to placement of the geomembrane by rolling the surface as approved by CQA Monitor. **CONTRACTOR** shall take whatever steps necessary to prepare Soil Liner Fill surface to the satisfaction of **MANAGER** and **CERTIFYING ENGINEER**, at no additional cost to **CC&V**.
6. **CONTRACTOR** shall maintain the Bedding Fill surface in a condition suitable for geomembrane installation as specified in these SPECIFICATIONS and in the CQA Plan until the surface is covered. **CONTRACTOR** shall repair all weather related damage to Bedding Fill surfaces or other portions of the Work that have or have not been covered by geomembrane, at no additional cost to **CC&V**.

   If any moisture is allowed to collect under the geomembrane prior to or after final seaming and softens the Bedding Fill, the geomembrane shall be removed and **CONTRACTOR** shall recondition and recompact the Soil Liner Fill to meet all placement and trimming SPECIFICATIONS, at no additional cost to **CC&V**.
7. **CONTRACTOR** shall remove all hubs and survey stakes in the Bedding Fill and backfill all holes with **MANAGER** and **CERTIFYING ENGINEER** approved material.
8. **CONTRACTOR** shall verify the final thickness of Bedding Fill to determine compliance with this SPECIFICATION. **CONTRACTOR** shall record as part of the as-built documentation the location, elevation, and thickness of each Bedding Fill verification test. CQA Monitor will witness all verification measurements. Areas with deficiencies shall be reworked by **CONTRACTOR**, until acceptable measurements are obtained at no additional cost to **CC&V**. If tests indicate the Work does not meet the requirements of the SPECIFICATIONS, **MANAGER** and **CERTIFYING ENGINEER** will establish the extent of the nonconforming area. The nonconforming area shall be

reworked by **CONTRACTOR** until acceptable test results are obtained at no additional cost to **CC&V**

9. Prior to any geosynthetics being placed on Bedding Fill, the area will be tested by CQA Monitor. No geosynthetics will be allowed to be placed on frozen material, as defined in Section 3.06, without the area in question being retested by the CQA Monitor.

3.7. Equipment

CONTRACTOR may use any type of earthmoving or excavating equipment unless otherwise noted in the SPECIFICATIONS, provided the equipment is in a satisfactory condition, complies with applicable rules and regulations, is of such capacity that the construction schedule can be maintained as planned by **CONTRACTOR**, and is approved by **MANAGER.**

Table 8
Cripple Creek & Victor Gold Mining Company
Squaw Gulch Valley Leach Facility
Phase 2B Part 1 Record of Construction
CQA Earthworks Testing Summary - Drain Cover Fill (Crushed Ore)

SAMPLE NUMBER	DATE SAMPLED	LOCATION		ELEVATION (FT)	NATURAL MOISTURE (%)	GRAIN SIZE DISTRIBUTION - PERCENT PASSING														USCS	ATTERBERG LIMITS		
						3"	2"	1.5"	1.0"	0.75"	0.5"	0.375"	#4	#10	#16	#40	#50	#100	#200		PLASTIC LIMIT	LIQUID LIMIT	PLASTIC INDEX
						SPECIFICATION - PERCENT PASSING															SPECIFICATION		
		PHASE	LINER PANEL NUMBER			100	97-100	-	-	40-100	-	-	5-35	-	-	-	-	-	0-8		-	-	NP
DCFO-5-R	6/24/2020	2B	P-3285	FG	-	100	97.8	88.3	60.1	41.6	11.3	7.2	5	2.6	2.4	1.9	1.7	1.3	1.1	GP	NP	NV	NP
DCFO-6-R	6/30/2020	2B	P-3307	FG	-	100	100	97.1	71.2	44.9	29.7	21.3	13.2	8.4	6.6	4.2	3.5	2.5	1.9	GW	NP	NV	NP
DCFO-7-R	7/6/2020	2B	P-3325	FG	-	100	100	96.6	73.5	59.9	44.4	37	24.1	14.1	10.5	6.6	5.7	4.4	3.4	GW	NP	NV	NP
DCFO-8-R	7/23/2020	2B	P-3421	FG	-	100	100	98.5	85.7	71.8	54.3	46.1	32	19.9	15.3	9.5	8	6	4.7	GW	NP	NV	NP
DCFO-9-R	8/4/2020	2B	P-3459	FG	-	100	100	97.2	83.6	69.2	54.7	47.4	35	25.8	20.5	13.4	11.5	8.7	6.7	GP-GM	NP	NV	NP

1. Samples with a Plasticity Index less than 5 are reported as Non Plastic 2. Samples DCFO-1 thru DCFO-4 were documented in a previous report.

R - Record Sample; FG - Finished Grade
NP - Non Plastic; NV - No Value

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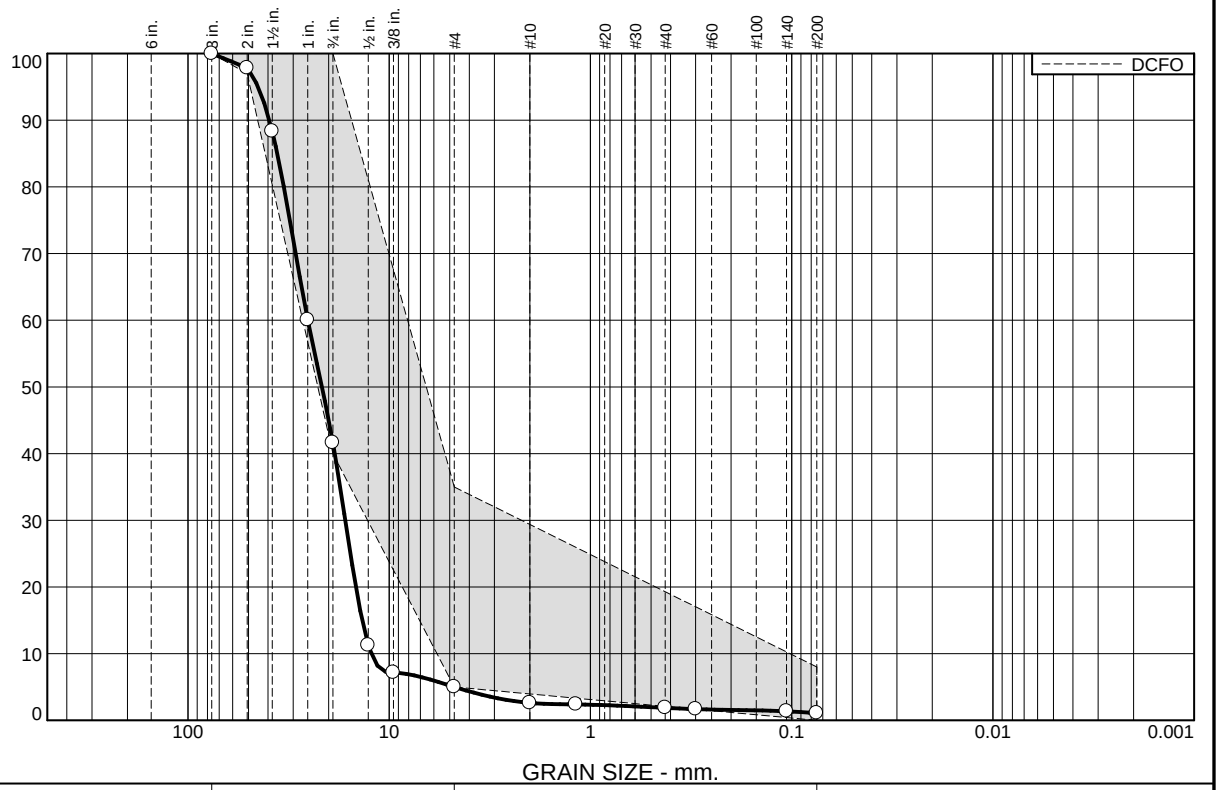
Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	58.4	36.6	2.4	0.7	0.8	1.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3	100.0	100.0	
2	97.8	97.0 - 100.0	
1.5	88.3		
1	60.1		
.75	41.6	40.0 - 100.0	
.5	11.3		
.375	7.2		
#4	5.0	5.0 - 35.0	
#10	2.6		
#16	2.4		
#40	1.9		
#50	1.7		
#140	1.3		
#200	1.1	0.0 - 8.0	

* DCFO

Material Description

Grey well-graded gravel

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 39.3697 D_{85}= 35.9831 D_{60}= 25.3806
D_{50}= 21.5996 D_{30}= 16.5231 D_{15}= 13.6188
D_{10}= 12.2942 C_u= 2.06 C_c= 0.87

Classification

USCS= GP AASHTO= A-1-a

Remarks

Location: P-3285
Sample Number: DCFO-5-R **Depth:** FG **Date:** 6/24/2020

NewFields

Client: CC&V Gold Mining Company
Project: VLF Phase 2B

Project No: 475.0106.032 **Figure** DCFO-5-R

Tested By: DC **Checked By:** TW

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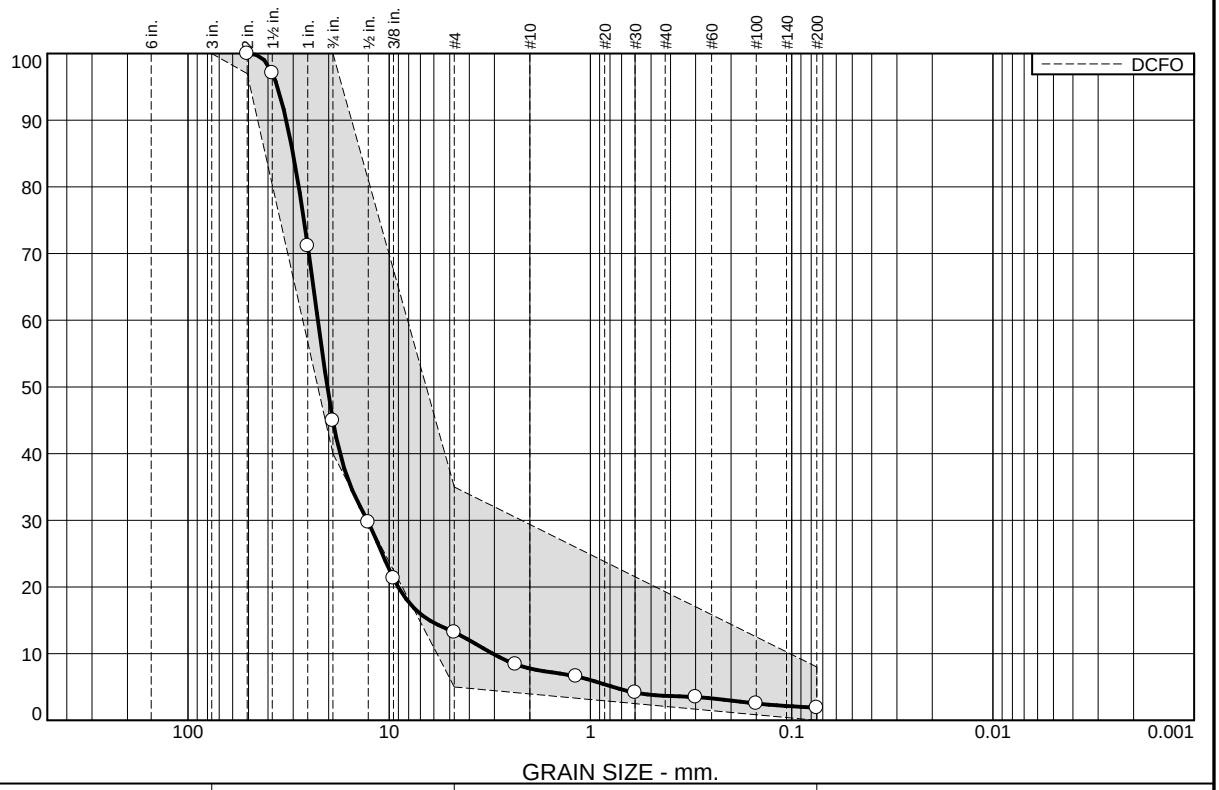
Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	55.1	31.7	5.4	4.1	1.8	1.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2	100.0	97.0 - 100.0	
1.5	97.1		
1	71.2		
.75	44.9	40.0 - 100.0	
1/2"	29.7		
.375	21.3		
#4	13.2	5.0 - 35.0	
#8	8.4		
#16	6.6		
#30	4.2		
#50	3.5		
#100	2.5		
#200	1.9	0.0 - 8.0	

* DCFO

Material Description

Gray well-graded gravel

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 32.4663 D_{85}= 30.0510 D_{60}= 22.6343
D_{50}= 20.3187 D_{30}= 12.8363 D_{15}= 6.3061
D_{10}= 3.0544 C_u= 7.41 C_c= 2.38

Classification

USCS= GW AASHTO= A-1-a

Remarks

Location: P-3307
Sample Number: DCFO-6-R **Depth:** FG **Date:** 6/30/2020

NewFields

Client: CC&V Gold Mining Company
Project: VLF Phase 2B

Project No: 475.0106.032 **Figure** DCFO-6-R

Tested By: DC **Checked By:** TW

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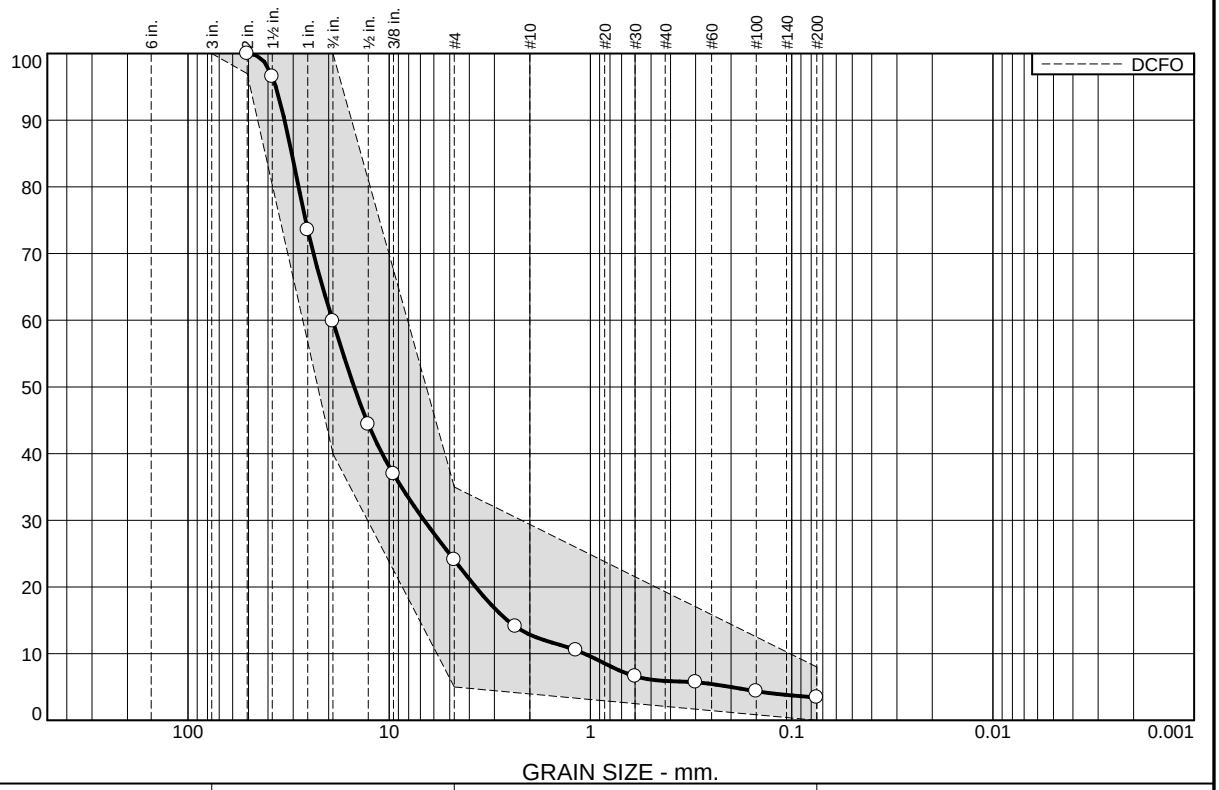
Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	40.1	35.8	11.3	6.9	2.5	3.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2	100.0	97.0 - 100.0	
1-1/2"	96.6		
1"	73.5		
3/4"	59.9	40.0 - 100.0	
1/2"	44.4		
3/8"	37.0		
#4	24.1	5.0 - 35.0	
#8	14.1		
#16	10.5		
#30	6.6		
#50	5.7		
#100	4.4		
#200	3.4	0.0 - 8.0	

* DCFO

Material Description

Light brown well-graded gravel with sand

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 33.1038 D_{85}= 30.4851 D_{60}= 19.1073
D_{50}= 14.9233 D_{30}= 6.7076 D_{15}= 2.5856
D_{10}= 1.0713 C_u= 17.84 C_c= 2.20

Classification

USCS= GW AASHTO= A-1-a

Remarks

Location: P-3325
Sample Number: DCFO-7-R **Depth:** FG **Date:** 7/6/2020

NewFields

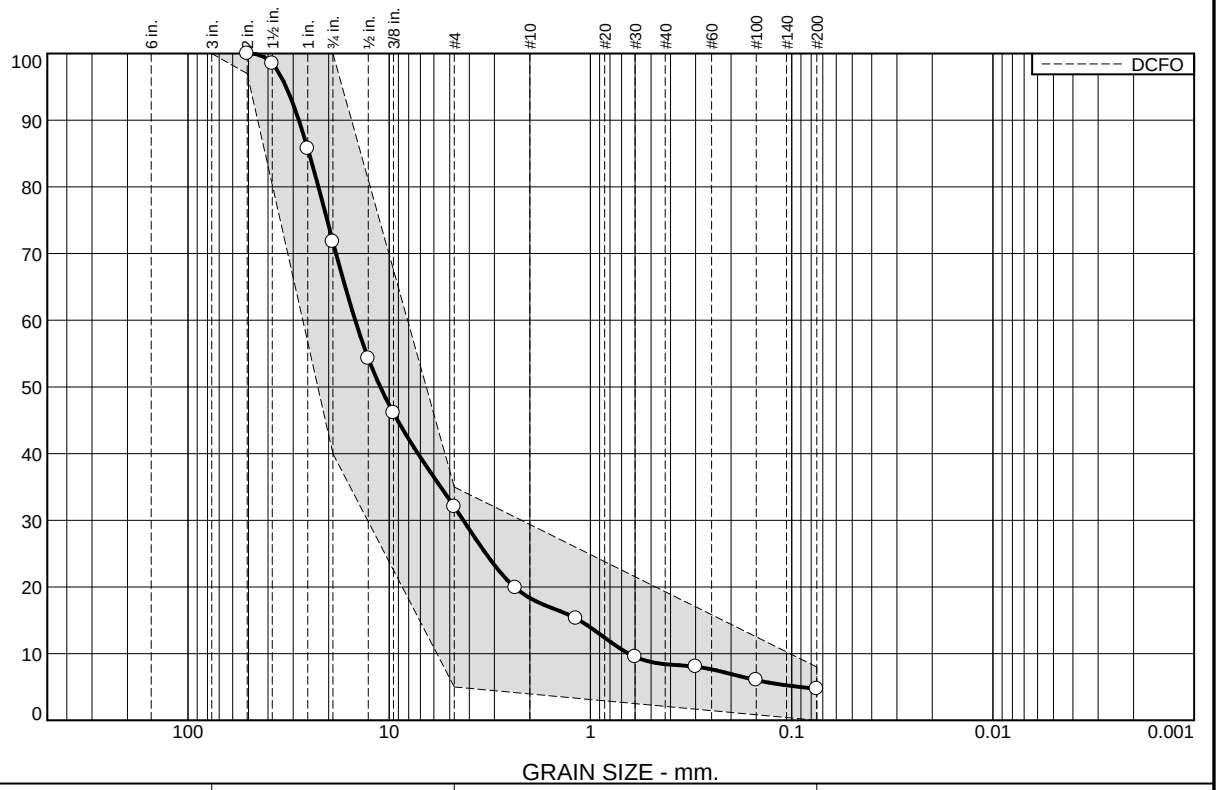
Client: CC&V Gold Mining Company
Project: VLF Phase 2B

Project No: 475.0106.032 **Figure** DCFO-7-R

Tested By: DC **Checked By:** TW

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	28.2	39.8	13.7	9.9	3.7	4.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2	100.0	97.0 - 100.0	
1.5	98.5		
1	85.7		
.75	71.8	40.0 - 100.0	
1/2"	54.3		
3/8"	46.1		
#4	32.0	5.0 - 35.0	
#8	19.9		
#16	15.3		
#30	9.5		
#50	8.0		
#100	6.0		
#200	4.7	0.0 - 8.0	

* DCFO

Material Description

Gray well-graded gravel with sand

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 28.1053 D_{85}= 24.9873 D_{60}= 14.7479
D_{50}= 11.0783 D_{30}= 4.2814 D_{15}= 1.1350
D_{10}= 0.6453 C_u= 22.85 C_c= 1.93

Classification

USCS= GW AASHTO= A-1-a

Remarks

Location: P-3421
Sample Number: DCF0-8-R **Depth:** FG **Date:** 7/23/2020

NewFields

Client: CC&V Gold Mining Company
Project: VLF Phase 2B

Project No: 475.0106.032 **Figure** DCFO-8-R

Tested By: DC **Checked By:** TW

STATE OF COLORADO

Russell - DNR, Elliott <elliott.russell@state.co.us>

RE: M-1980-244 TR Supplemental 123 Adequacy Review Response

Katie Blake <Katie.Blake@newmont.com> Wed, Nov 4, 2020 at 4:44 PM
To: "michaela.cunningham@state.co.us" <michaela.cunningham@state.co.us>, Tim Cazier - DNR <tim.cazier@state.co.us>, "elliott.russell@state.co.us" <elliott.russell@state.co.us>
Cc: Patrick Lennberg - DNR <patrick.lennberg@state.co.us>, Justin Raglin <Justin.Raglin@newmont.com>, Justin Bills <Justin.Bills@newmont.com>, "Bowles - DNR, Brock" <brock.bowles@state.co.us>, Russ Means - DNR <russ.means@state.co.us>

Good Afternoon,

Please see the attached supplemental adequacy review response and contact us if you have any questions.

Thank you, Katie

Katie Blake

Sustainability & External Relations

Cripple Creek and Victor Gold Mining Co.

T 719.689.4048

M 719.237.3442

From: Katie Blake
Sent: Wednesday, October 28, 2020 11:13 AM
To: michaela.cunningham@state.co.us; Tim Cazier - DNR <tim.cazier@state.co.us>; elliott.russell@state.co.us; Russ Means - DNR <russ.means@state.co.us>
Cc: Patrick Lennberg - DNR <patrick.lennberg@state.co.us>; Justin Raglin (Justin.Raglin@newmont.com) <Justin.Raglin@newmont.com>; Justin Bills <Justin.Bills@newmont.com>; Bowles - DNR, Brock <brock.bowles@state.co.us>
Subject: M-1980-244 TR 123 Adequacy Review Response

All,

Thank you again for your time this morning. As discussed, please see the attached extension request for TR 123 and contact us if you have any questions.

Newmont
CRIPPLE CREEK & VICTOR

Katie Blake

SENIOR ENVIRONMENTAL COORDINATOR

Cripple Creek & Victor Gold Mining Company

Victor, CO 80860

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