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November 2, 2020

Amy Yeldell
Colorado Division of Reclamation, Mining, and Safety
1313 Sherman St, Rm 215
Denver, CO 80203

RE: 23 ¼ West Pit, File No. M-2020-035,
112c Construction Materials Reclamation Permit Application
Adequacy Review #2 – Applicant Response

Ms. Yeldell

Attached to this letter you will find a response to Items 2, 4-6 of the November 2, 2020 adequacy review of the 23 ¼ West Pit application. The revised Exhibit A and Exhibit J were provided to the Division via email to address Item 1 & 3.

Please contact me if you have any further questions or concerns.

Sincerely,

Ben Langenfeld, P.E.
Greg Lewicki and Associates

ADEQUACY RESPONSE

Exhibit G

1. *No approval to use Orchard Grove's discharge permit has been secure yet. In phone discussions with the consultant, using a sediment pond on the north side of Area 2 which routes water into the Wilsea Drain was mentioned. The revised Exhibit G does not mention alternative dewatering options if approval from CDPHE cannot be secured. Either include the CDPHE approval or write a secondary dewatering plan that does not rely on Orchard Grove.*

See the revised page G-7, which now mentions the alternate discharge point for Area 2, as shown on Map G-1.

Exhibit L

2. *Table L-1 does not account for the maximum backfill deficit of 100,000 CY required for Area 2 overburden backfill.*

3. *Table L-1 does not include the maximum of 1500 LF of 20' tall highwall grading in Area 1.*

4. *Response summary sheet says 22 ac-ft is the maximum lake amount needing dewatered in Area 2. Table L-1 states that all of Area 1 lake 20.7 ac- dewatered to 13 ft (269.1 ac-ft) as the max. If mining is to occur simultaneously in both areas with 10 ac max disturbance what is the maximum amount of lake to be dewatered?*

Exhibit L has been revised to include the 100,000 CY of backfill and the highwall knockdown.

The maximum water surface to be dewatered is at the end of Area 1 mining. Area 2 will be backfilled to above the water table prior to this time, and the last backfill required in Area 2 will create more water surface exposure in Area 1, leading to the eventual maximum of 20.7 acres.

Table of Attachments

Document	Map
Page G-7	
Exhibit L	

EXHIBIT A LEGAL DESCRIPTION

For the 23 1/4 West Pit site, the legal description for the permit boundary (Permit Boundary) is identical to the legal description for the affected area. The legal description of the Permit Boundary and affected area is as follows:

Located entirely within the SW1/4SW1/4 of Section 5, the N1/2SE1/4 of Section 5, and the N1/2NW1/4 of Section 8, Township 1 South, Range 1 West of the Ute P.M.:

Area 1
With the south line of Section 5 with a basis of bearing of S 88°07 '11 " E
from the southwest corner of Section 5 which is the point of beginning;
thence N 81°27'07" E a distance of 57.6 ft;
thence S 82°34'09" E a distance of 265.4 ft;
thence N 65°13'19" E a distance of 380.7 ft;
thence N 02°09'18" E a distance of 91.6 ft;
thence N 02°09'18" E a distance of 223.3 ft;
thence N 35°10'15" E a distance of 129.6 ft;
thence N 34°55'57" E a distance of 789.6 ft;
thence S 88°05'42" E a distance of 144.2 ft;
thence S 02°07'55" W a distance of 993.4 ft;
thence S 01°47'54" W a distance of 330.1 ft;
thence S 02°03'11" W a distance of 558.8 ft;
thence S 77°42'59" W a distance of 35.0 ft;
thence S 75°47'47" W a distance of 35.0 ft;
thence S 73°52'38" W a distance of 35.0 ft;
thence S 71°57'28" W a distance of 35.0 ft;
thence S 70°02'18" W a distance of 35.0 ft;
thence S 68°07'06" W a distance of 35.0 ft;
thence S 66°11'56" W a distance of 35.0 ft;
thence S 64°16'47" W a distance of 35.0 ft;
thence S 62°21'37" W a distance of 35.0 ft;
thence S 60°26'26" W a distance of 35.0 ft;
thence S 58°31'16" W a distance of 35.0 ft;
thence S 56°36'04" W a distance of 35.0 ft;
thence S 54°40'56" W a distance of 35.0 ft;
thence S 52°45'45" W a distance of 35.0 ft;
thence S 50°50'35" W a distance of 35.0 ft;
thence S 48°55'23" W a distance of 35.0 ft;
thence N 42°21'44" W a distance of 228.2 ft;
thence N 41°54'13" W a distance of 908.5 ft;
thence N 87°17'24" W a distance of 29.9 ft;
thence N 02°12'27" E a distance of 86.3 ft;
which is the point of beginning,

having an area of 31.8± acres

Area 2
With the south line of Section 5 with a basis of bearing of S 88°07 '11 " E
from the south quarter corner of Section 5 N 88°107'11" W a distance of 24.2 ft, thence N 02°03'34" E a distance of 687.0 ft along the westerly property line of 23 ½ Road, to the point of beginning;
thence N 88°08'24" W a distance of 1283.3 ft;
thence N 02°12'00" E a distance of 474.3 ft;
thence S 88°06'18" E a distance of 641.0 ft;
thence N 01°50'11" E a distance of 468.5 ft;
thence S 54°37'42" E a distance of 769.3 ft;
thence S 02°03'34" W a distance of 517.7 ft;
which is the point of beginning,
having an area of 17.7± acres

The combined permit and affected area is 49.5± acres.

The main entrance to the mine site is located at 39.09456° N, 108.62213° W. Coordinates are in the WGS84 datum.

8.1.2 Area 2

Pit dewatering will intercept groundwater from the alluvial aquifer of the Colorado River that is onsite and route it back towards the river via the exposed groundwater ponds on the Orchard Grove Industrial Pit or discharged from a sediment pond on the north side of Area 2. This process is common among sand and gravel pits along the rivers and waterways of Colorado. The layout of the dewatering process can be found on Map C-3, including the typical location of the pit pump, its typical installation, and dewatering path. The pit pump will be a mobile pump with and accompanying diesel generator. This generator will have an onboard fuel tank with secondary containment. It will typically be located at the southwest end of the pit, to allow for the shortest pipe length. The pump will be located, typically, two feet below the active pit floor. It will also be surrounded by a gravel filter. This configuration minimizes the amount of sediment that is collected by the pumped water.

The groundwater will take water from the pit pump and allow settling time to remove remaining sediment while also allowing the pumped water to return to the aquifer. This system of dewatering is proven to move the water out of the way of mining operations while trapping sediment on site.

EXHIBIT J VEGETATION INFORMATION

1. Existing Vegetation Community

The existing vegetation on site consists of rangeland forbs and grasses commonly found in this area with occasional trees and shrubs (Figure J-2). Most of the grasses and forbs are no more than 18-24 inches in height. Vegetation cover is between 40 and 70%, depending on the year. A review of historical aerials shows periods clearing of vegetation and soil disturbance. Trees onsite are 20-30 foot in height. 2-4 foot talk shrubs can be found in some areas.

Trees are found concentrated in the southwest corners of the site, closest to the Wilsea Drain and around the old farm buildings at the site entrance on the north end (Figure J-1).

There is no correlation of the vegetation types to the NRCS soil types found onsite.

Figure J-1. Trees Around Buildings Near Site Entrance

Figure J-2. Typical Rangeland Vegetation Onsite

2. Estimated Carrying Capacity

The final land use for the site will be a lake with surrounding rangeland. Since the lake is the vast majority of the site area, the rangeland is not anticipated to be used for grazing. Based on previous grazing in the area, Area 2 is estimated to have a carrying capacity of 50 head of cattle.

EXHIBIT L RECLAMATION COSTS

1. Introduction

This section details the cost of fully reclaiming the 23 ¼ West Pit site at the point in time where the most land is disturbed, and the resultant reclamation costs are the highest. This scenario would be near the end of the mine life, where the entire groundwater lake would need to be dewatered to accommodate topsoiling and revegetation. At this point in mining and reclamation, Area 2 backfill of 100,000 CY is assumed at this stage as well.

Temporary facilities onsite to support mining activity, such as the pumpset, fuel tanks, and portable toilets will all be removed during final reclamation. All of these facilities are portable. All equipment onsite is mobile.

Elam will not phase the bond. Bond tasks are described below and the bond cost is summarized in Table L-1 .

1. Mobilize and demobilize equipment.
2. Remove of facilities including pumpset, fuel tanks, and portable toilets.
3. Dewatering of a 20.7 acre ground water lake. Lake depth is anticipated to be 13 feet.
4. Knockdown 1500 feet of 20 foot tall highwall to final slope conditions.
5. Backfill remaining portion of Area 2 with 100,000 CY.
6. Topsoil surfacing of 10-acres around the outside of the lake. For Area 1, a front end loader will load topsoil from a stockpile into a haul truck that drives an average of 800 feet prior to dumping. For Area 2, a haul truck will bring topsoil from Area 1 stockpile areas a distance of 1100 feet prior to dumping it in place. A bulldozer will then spreads topsoil to final thickness.
7. Topsoil preparation. Disking of soil with a tractor.
8. Rangeland seeding and mulching. Assuming a 50% failure rate.

Table L-1. 23 ¼ West Pit Reclamation Task and Cost Estimate

Reclamation Task	Flat Cost	Unit Cost	Units	Task Cost
Mobilization of equipment	$3000			3000
Removal of portable facilities.	$2500			2500
Dewatering of groundwater lake		$88.3/acre-ft	269.1 acre-ft	23762
Highwall knockdown in Area 1		$0.23/CY	8333 CY	1916
Area 2 maximum backfill		$0.75/cy	100,000 CY	75000
Topsoiling of rangeland surrounding		$0.23/CY	16132 CY	3710
Area 1			*8066 CY*	
Area 2			*8066 CY*	
Topsoil/Seedbed preparation (total)		$150/acre	10 acres	1500
Area 1			*5 acres*	
Area 2			*5 acres*	
Rangeland seeding and mulching		$1269/acre	10 acres	12690
Area 1			*5 acres*	
Area 2			*5 acres*	
Subtotal				$124,078
DRMS Costs (28% of direct costs)				$34,742
Total Bond Amount				**$**158,820

The total bond for 23 ¼ West Pit will be $158,820.