



TECHNICAL MEMORANDUM

To: Michael Jackson
[company]
[address]
[city, state + zip]
Project No. 32700182

By: Jordan Laughlin, WSP USA Environment & Infrastructure Inc.
Reviewed by: Richard Weber, CEM, WSP USA Environment & Infrastructure Inc.

Date: November 18, 2022

Re: MGP Enterprise A-4 Well Pad 2022 Reseeding

INTRODUCTION

This memo provides the information from observations conducted during additional seeding activities at the Enterprise MGP A-4 well pad. The MGP Enterprise A-4 well pad is located approximately 20 miles west of Trinidad, Colorado. WSP USA Environment & Infrastructure Inc. (WSP) conducted observations during reseeded activity between November 1 and November 7. The reseeded effort is a result of observed erosion following the monsoon season (August – September 2022) in the areas.

In consultations with BP, USA Environment, RK Hydro Seeding, and WSP, a plan was developed to stabilize the slopes prior to winter. The plan included repair of existing straw wattles and hydroseeding with a mixture of winter wheat and a mountain meadow seed mixture. The winter wheat will provide a cover during the winter months, until the species in the mountain meadow seed mix germinate in the spring. In addition, two soil amendments (Promatrix and Flexterra) were added to the hydroseed mixture. The mountain meadow seed mix included the following species:

- Rye
- Perennial ryegrass
- Kentucky bluegrass
- Mountain brome
- Orchardgrass
- Timothy
- Alsike clover

WATER USE

Water was needed for the hydroseeding of the area. WSP confirmed with the Hall Ranch (Mike Powell) that water from the Hall Ranch Pond could be used under the previously agreed upon cost. During seeding operations, a representative from the District 19 Water Commission arrived on-site and indicated that an administrative approval from the Water Commission would be needed to use the water from the pond. Mr. Jeff Montoya, the lead water commissioner from District 19, indicated that Hall Ranch does not have complete water rights for the pond water, and thus approval was needed. WSP sent Mr. Montoya an email requesting administrative approval for up to 40,000 gallons. A response from Mr. Montoya has not been received to date. A follow-up email requesting additional water usage will be sent to Mr. Montoya as the final water usage was measured at 49,800 gallons.

Water was pulled from the pond located at the north end of the property closest to Highway 12. The pull point from this pond was located at coordinates 37° 7'10.95"N, 104°46'32.13"W. USA Environment, the construction company, used two water trucks to transport water from the pond to the project site. Water was measured by using the maximum fill of each of the trucks and counting the number of loads. Table 1 provided the calculated water use per day.

Table 1: Water Accounting by Day

DAY	USAGE (GALLONS)
Tuesday	3600
Wednesday	8300



DAY	USAGE (GALLONS)
Thursday	15200
Friday	0
Saturday	18600
Sunday	4100
TOTAL	49800

DAILY ACTIVITY

TUESDAY 11/1/2022

- Initial safety meeting, explanation to contractors of safety guidelines, accountability for safety
 - Working at heights
- Repairs made to water trucks
 - Missing caps, unable to prime pump
- Seed, Flexterra, and Promatrix delivered to site
- Top wattle on the west and south slopes replaced
- Replaced wattle on west slope where existing wattle was damaged

WEDNESDAY 11/2/2022

- Safety meeting
- Hydroseeded entirety of west slope
- Hydroseeded well pad
- Hydroseeded top part of southern slope

THURSDAY 11/3/2022

- Flexterra placed on both slopes
- Hydroseed redone on the bottom part of the west slope and on the south slope
- Met with Mr. Montoya from the Water Commissioner, Request for administrative approval sent to Mr. Montoya

FRIDAY 11/4/2022

- No progress on-site due to snow
- USA Environment and RK Hydroseeding visited site in late afternoon to assess roads and ensure that work would be able to continue Saturday

SATURDAY 11/5/2022

- Finished placing Flexterra on west and south slopes, covered patches that were uneven
- Flexterra placed on the top part of the road leading to the well pad
- Promatrix placed on well pad and slopes

SUNDAY 11/6/2022

- Covered well pad with Flexterra, Promatrix, and seed again to ensure complete coverage
- Completed coverage of road leading to the well pad
- Began clean-up process
- Dumpster removed from site
- Subcontractor, RK Hydroseeding, materials removed from the site
- USA Environment called equipment company to organize removal of their equipment

MONDAY 11/7/2022

- USA Environment had skid steer, water truck, and pump removed from site
- Site completed and all equipment removed



SUMMARY

- The west and south slopes, the road, and the well pad were hydroseeded with winter wheat and a mountain meadow seed mix
- The same areas were covered with Promatrix, and Flexterra to provide nutrients and a tackifier to hold the seed in place
- Wattles were installed along the top of the slopes and on the west slope to replace damaged wattles. Damaged wattles were replaced, as well as a wattle in the middle of the west aspect slope
- Water use was calculated at 49,800 gallons
- The site will be monitored every two months
- The site reclamation will be reassessed in the spring and, if needed, additional work will be conducted. Depending on the assessment from the monitoring additional work may include topsoil placement, grading, additional seeding, and installation of additional erosion controls

Sincerely,

WSP USA Environment & Infrastructure, Inc.

A handwritten signature in blue ink, appearing to read 'Jordan Laughlin'.

Jordan Laughlin
Staff Biologist

A handwritten signature in blue ink, appearing to read 'Richard Weber'.

Richard Weber
Project Manager

PHOTOGRAPH LOG



**MGP Enterprise A-4 Well Pad 2022
Reseeding**

WSP Project No.: 32700182

Date of Site Visit: November
2022



Photo 1: Top wattles before replacement. 11/1/2022



Photo 2: Pumping water from pond. 11/1/2022

PHOTOGRAPH LOG



**MGP Enterprise A-4 Well Pad 2022
Reseeding**

WSP Project No.: 32700182

Date of Site Visit: November
2022



Photo 3: West aspect hill from northwest. 11/1/2022



Photo 4: West aspect hill from southwest. 11/1/2022

PHOTOGRAPH LOG



**MGP Enterprise A-4 Well Pad 2022
Reseeding**

WSP Project No.: 32700182

Date of Site Visit: November
2022



Photo 5: South aspect slope. 11/1/2022



Photo 6: Application of Promatrix onto west aspect slope. 11/2/2022

PHOTOGRAPH LOG



**MGP Enterprise A-4 Well Pad 2022
Reseeding**

WSP Project No.: 32700182

Date of Site Visit: November
2022



Photo 7: West aspect slope after being covered with Promatrix. 11/2/2022



Photo 8: West aspect slope after being covered with Promatrix. 11/2/2022

PHOTOGRAPH LOG



**MGP Enterprise A-4 Well Pad 2022
Reseeding**

WSP Project No.: 32700182

Date of Site Visit: November
2022



Photo 9: South aspect slope after being covered with Promatrix. 11/2/2022



Photo 10: West aspect slope after being covered with Flexterra. 11/3/2022

PHOTOGRAPH LOG



**MGP Enterprise A-4 Well Pad 2022
Reseeding**

WSP Project No.: 32700182

Date of Site Visit: November
2022



Photo 11: South aspect slope after being covered with Flexterra. 11/3/2022



Photo 12: West aspect slope after being covered with Flexterra from northwest. 11/5/2022

PHOTOGRAPH LOG



**MGP Enterprise A-4 Well Pad 2022
Reseeding**

WSP Project No.: 32700182

Date of Site Visit: November
2022

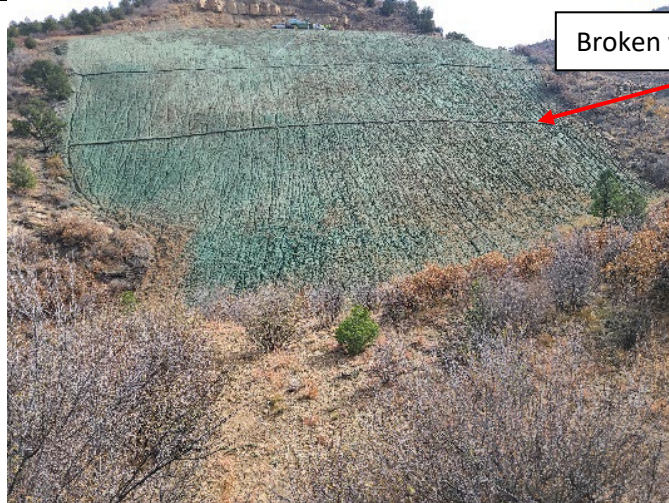


Photo 13: West aspect slope after being covered with Flexterra. 11/5/2022



Photo 14: Top part of road after being covered by Flexterra. 11/5/2022

PHOTOGRAPH LOG



**MGP Enterprise A-4 Well Pad 2022
Reseeding**

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Date of Site Visit: November
2022



Photo 15: South aspect slope after being covered with Flexterra. 11/5/2022



Photo 16: Bottom section of road after being covered by Flexterra and Promatrix. 11/6/2022

PHOTOGRAPH LOG



**MGP Enterprise A-4 Well Pad 2022
Reseeding**

WSP Project No.: 32700182

Date of Site Visit: November
2022



Photo 17: West aspect slope one day after completion of covering. 11/6/2022



Photo 18: South aspect slope one day after completion of covering. 11/6/2022