




**MINERALS PROGRAM INSPECTION REPORT**  
**PHONE: (303) 866-3567**

The Division of Reclamation, Mining and Safety has conducted an inspection of the mining operation noted below. This report documents observations concerning compliance with the terms of the permit and applicable rules and regulations of the Mined Land Reclamation Board.

<b>MINE NAME:</b> Henderson Development	<b>MINE/PROSPECTING ID#:</b> M-1980-110	<b>MINERAL:</b> Sand and gravel	<b>COUNTY:</b> Adams
<b>INSPECTION TYPE:</b> Monitoring	<b>WEATHER:</b> Clear	<b>INSP. DATE:</b> September 27, 2023	<b>INSP. TIME:</b> 09:30
<b>OPERATOR:</b> E-470 Public Highway Authority	<b>OPERATOR REPRESENTATIVE:</b> Derek Slack	<b>TYPE OF OPERATION:</b> 112c - Construction Regular Operation	
<b>REASON FOR INSPECTION:</b> Normal I&E Program	<b>BOND CALCULATION TYPE:</b> None	<b>BOND AMOUNT:</b> \$0.00	
<b>DATE OF COMPLAINT:</b> NA	<b>POST INSP. CONTACTS:</b> None	<b>JOINT INSP. AGENCY:</b> None	
<b>INSPECTOR(S):</b> Nikie Gagnon Amy Eschberger	<b>INSPECTOR'S SIGNATURE:</b> 	<b>SIGNATURE DATE:</b> November 28, 2023	

**GENERAL INSPECTION TOPICS**

This list identifies the environmental and permit parameters inspected and gives a categorical evaluation of each. No problems or possible violations were noted during the inspection. The mine operation was found to be in full compliance with Mineral Rules and Regulations of the Colorado Mined Land Reclamation Board for the Extraction of Construction Materials and/or for Hard Rock, Metal and Designated Mining Operations. Any person engaged in any mining operation shall notify the office of any failure or imminent failure, as soon as reasonably practicable after such person has knowledge of such condition or of any impoundment, embankment, or slope that poses a reasonable potential for danger to any persons or property or to the environment; or any environmental protection facility designed to contain or control chemicals or waste which are acid or toxic-forming, as identified in the permit.

(AR) RECORDS----- <u>Y</u>	(FN) FINANCIAL WARRANTY----- <u>N</u>	(RD) ROADS----- <u>N</u>
(HB) HYDROLOGIC BALANCE----- <u>Y</u>	(BG) BACKFILL & GRADING----- <u>Y</u>	(EX) EXPLOSIVES----- <u>N</u>
(PW) PROCESSING WASTE/TAILING---- <u>N</u>	(SF) PROCESSING FACILITIES----- <u>N</u>	(TS) TOPSOIL----- <u>N</u>
(MP) GENL MINE PLAN COMPLIANCE- <u>N</u>	(FW) FISH & WILDLIFE----- <u>N</u>	(RV) REVEGETATION---- <u>Y</u>
(SM) SIGNS AND MARKERS----- <u>N</u>	(SP) STORM WATER MGT PLAN---- <u>N</u>	(RS) RECL PLAN/COMP-- <u>Y</u>
(ES) OVERBURDEN/DEV. WASTE----- <u>N</u>	(SC) EROSION/SEDIMENTATION-- <u>N</u>	(ST) STIPULATIONS----- <u>N</u>
(AT) ACID OR TOXIC MATERIALS----- <u>N</u>	(OD) OFF-SITE DAMAGE----- <u>N</u>	

Y = Inspected / N = Not inspected / NA = Not applicable to this operation / PB = Problem cited / PV = Possible violation cited

## **OBSERVATIONS**

This inspection was conducted as part of the Division of Reclamation, Mining and Safety's (Division or DRMS) routine monitoring program for permitted operations. Nikie Gagnon and Amy Eschberger, with the Division, conducted the inspection. Derek Slack, representing E-470 Public Highway Authority (Operator) accompanied the Division during the inspection.

### **Backfilling and Grading:**

The Henderson Development/Sandy Acres Pit is an unlined reclaimed gravel pit. According to the permit records, DRMS approved Amendment No. 6 in 2014 and Technical Revision No. 3 in 2015 permitting the Operator to backfill the pit with washed fines from an adjacent mining site. Backfilling and grading was completed in July 2016. During this inspection, the Division observed vegetated slopes graded to 3H:1V or flatter around the perimeter of the pit, consistent with the approved reclamation plan. The approved post mining land use is pastureland and the site is surrounded by roads on all sides.

### **Revegetation**

According to Division records, the entire site was reseeded in the fall of 2017. The Division observed desirable species of grass on the southern end of the permit area, including wheatgrass, sideoats grama, and switchgrass, consistent with the seed mix modification approved in Technical Revision 4 (2019). Some bare patches of ground were noted near the entrance. On the north end of the permit area, dense patches of Russian thistle were observed, along with annual sunflowers and some field bindweed. Very little grass was observed in the northern portion of the permit area and patches of bare ground were observed. The Division reminds the Operator to continue to conduct weed control and reseed as necessary per the approved revegetation plan and Technical Revision 4.

### **Hydrologic Balance:**

During this inspection, the Division observed exposed groundwater in the former pit. The water depth was estimated to be 2-3 feet in the bottom of the pit, which runs north/south across the site. Wetland vegetation (primarily cattails) was observed growing in the bottom of the pit. Ponded water has been an ongoing concern at this site. The Operator has taken steps to address the ponding issue, including installing six monitoring wells in 2020, within and around the property, to investigate the groundwater system. Most recently, in January 2022, the Division approved Technical Revision 5 for the installation of a perimeter passive subsurface drainage system to transport groundwater around the site. The initial test drainage system consisted of a trench on the north end of the permit area and 1000 feet of perforated pipe and rock to direct flow into undisturbed alluvium. During this inspection, the Operator stated that the passive drainage system is not adequately draining water from the site and they continue to make adjustments to the system, including digging the trench deeper and extending the inlet pipes to keep them from clogging up with algae. The Operator and the Division discussed the possibility that the low permeability fill material may be contributing to the perched groundwater, and the potential for groundwater mounding associated with slurry walls around adjacent pits.

Based on observations during this inspection, the Operator is not in compliance with Section 34-32.5-116(4)(h) of the Colorado Revised Statutes and 3.1.6(1)(a) of the Construction Materials Rules and Regulations governing injury to existing water rights. The Division recommended that the Operator hire a consultant to help determine the source of the exposed groundwater and submit the groundwater report to the Division for review.

Additionally, since the proposed passive drainage system is not adequately working, the Operator will need to submit a Technical Revision with a new mitigation plan to address the exposed groundwater on site.

The Operator has a Substitute Water Supply Plan (SWSP) through September 2024 with the Colorado Division of Water Resources (DWR) that covers lagged depletions prior to backfilling in 2016. Following this inspection, the Operator and DRMS contacted Ms. Ioana Comaniciu with DWR to discuss the ongoing groundwater exposure. Ms. Comaniciu encouraged the Operator to continue its evaluation of the exposed groundwater source and potential mounding impacts from slurry walls on adjacent properties. Once the groundwater evaluation is complete, DWR, along with DRMS, will review the analyses and supporting data, including the water level data collected over the last few years, and determine if the SWSP should be amended to address groundwater exposure after 2016 (post-backfill).

This concludes the Division's Inspection Report; a subset of photographs taken during the time of the inspection are included below. If you need additional information or have any questions, please contact me at the Division of Reclamation, Mining and Safety, 1313 Sherman Street, Room 215, Denver, CO 80203, by telephone at 303-866-3567 x8126, or by email at [nikie.gagnon@state.co.us](mailto:nikie.gagnon@state.co.us).



**PHOTOGRAPHS**



Photo 1: View looking at the south end of the pit.



Photo 2: View looking northeast across the pit from the south end of the permit area.





Photo 3: Looking down into the pit at the south end of the permit area. Cattails observed growing in the pit.



Photo 4: Close up of vegetation density on the side slopes of the pit.





Photo 5: View looking towards the south end of the permit area from the entrance. Desirable grasses and forbs observed growing in this area.



Photo 6: View looking south from the north end of the pit. Patches of Russian thistle cover this area, very few patches of desirable grasses observed.





Photo 7: View looking west from the east side of the pit.



Photo 8: Looking southwest at the passive drainage inlet.





Photo 9: Close up of passive drainage inlet pipes on the north end of the permit area.



Photo 10: View looking south from the northwest corner of the permit area.





Photo 11: Bare patches of ground and field bindweed observed on the north end of the permit area.



Photo 12: Looking west towards the entrance at Monitoring Well #1.





Photo 13: View looking northwest along the northern boundary of the permit area. Dense patches of thistle in this area.



Photo 14: View looking south across the permit area from the highway.



**Inspection Contact Address**

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