COLORADO DIVISION OF RECLAMATION, MINING AND SAFETY
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.

MINE NAME: Pueblo East Pit	**MINE/PROSPECTING ID#:** M-1986-015	**MINERAL:** Sand and gravel	**COUNTY:** Pueblo
INSPECTION TYPE: Monitoring	**INSPECTOR(S):** Tyler V. O'Donnell	**INSP. DATE:** May 13, 2014	**INSP. TIME:** 09:45
OPERATOR: Continental Materials Corporation	**OPERATOR REPRESENTATIVE:** Mark Klune, Bill Pope, Bud Herskind, Andre Laroche, and Jerry Schnable	**TYPE OF OPERATION:** 112c - Construction Regular Operation	

REASON FOR INSPECTION: Citizen Complaint	**BOND CALCULATION TYPE:** None	**BOND AMOUNT:** $2,288,004.00
DATE OF COMPLAINT: 10/29/2013	**POST INSP. CONTACTS:** None	**JOINT INSP. AGENCY:** None
WEATHER: Cloudy	**INSPECTOR'S SIGNATURE:** Tyler O'Donnell	**SIGNATURE DATE:** May 29, 2014

The following inspection topics were identified as having Problems or Possible Violations. OPERATORS SHOULD READ THE FOLLOWING PAGES CAREFULLY IN ORDER TO ASSURE COMPLIANCE WITH THE TERMS OF THE PERMIT AND APPLICABLE RULES AND REGULATIONS. If a Possible Violation is indicated, you will be notified under separate cover as to when the Mined Land Reclamation Board will consider possible enforcement action.

INSPECTION TOPIC: Sediment Control

PROBLEM/POSSIBLE VIOLATION: Problem: The Phase 2 overburden/topsoil stockpile does not have established vegetation on it and is therefore susceptible to erosion. Rule 3.1.9(1) states if topsoil is not replaced into the backfill area within a time short enough to avoid deterioration of the topsoil, vegetative cover or other means shall be employed so that the stockpile is protected from wind and water erosion.

CORRECTIVE ACTIONS: A) The operator shall implement an Erosion and Fugitive Dust Control Plan on all the stockpiles using an Erosion and Fugitive Dust Control Plan submitted as part of the approved Reclamation Plan. If no Erosion and Fugitive Dust Control Plan has been provided, the operator shall submit an Erosion and Fugitive Dust Control Plan for approval as a technical revision to the permit along with the appropriate $216 revision fee to the Division by the corrective action date. The Operator shall demonstrate compliance by submitting bills of sale or photographs of erosion control activities. The Operator may also request a follow up inspection.
B) The operator has committed to removing and/or relocating the Phase 2 stockpile beginning in the January-February 2014 time frame. The operator has agreed to completing the removal/relocation by May 30, 2014. The operator shall notify the DRMS it has begun the removal/relocation on or before 2/28/2014 and provide photographic documentation by June 7, 2014 that the process is complete.

CURENT CORRECTIVE ACTION DUE DATE: 6/27/2014

OBSERVATIONS

This inspection was conducted by Tim Cazier, TC Wait and Tyler O'Donnell of the Division of Reclamation, Mining and Safety (Division/DRMS). This inspection was conducted as a follow-up to a citizen complaint about cracks and sinkholes appearing on the adjacent landowner's property, owned by Melanie Cooper. The Division received the initial written complaint from Ms. Cooper on October 29, 2013. The complaint stated that cracks and sinkholes in the soil have been developing on Ms. Cooper's property adjacent to the Pueblo East Mine. Continental Materials Corporation A.K.A. Transit Mix of Pueblo, The Operator, was represented by Mark Klune, Bill Pope, Bud Herskind, Andre Laroche, and Jerry Schnable during the inspection. Melanie Cooper was present during the inspection.

This inspection was conducted as a follow-up to an inspection conducted by the Division on November 15, 2013. This inspection was conducted to investigate the cracks and sinkholes that have developed on Ms. Cooper property. The investigation on Ms. Cooper's property was lead by the Division's geotechnical expert Ms. Wait. Ms. Wait has provided a synopsis of the Division's investigation, Ms. Wait's findings are attached to this inspection report. In addition to the investigation on Ms. Cooper's property the Division conducted an inspection of portions of phase 2.

Revegetation:
The Operator's representative discussed their concerns about establishing vegetative cover. In general the Division has seen success establishing vegetation using a cover-crop. A wide variety of cover-crops could be used, including: wheat, oats, barley, millet, and sorghum. The Divisions would advise the Operator to consult with the local soil conservation district and establish an improved seed mix and/or re-vegetation plan. The Operator may want to develop test plots and find a seed mix and/or re-vegetation plan that yields long term success. If the Operator develops a seed mix and/or re-vegetation plan that varies from the approved reclamation plan the Operator shall revise the approved reclamation plan through a technical revision.

Storm Water MGT Plan:
The Operator's representatives wanted to discuss their concerns about storm water control in the northwest corner of phase 2. One of the Operator's representatives stated that the property north of the mine site might be developed. If the property is developed the storm water might be routed into the mine site's current storm water ditch around phase 2. The storm water diversion ditch is not incorporated in the approved reclamation plan and reclamation plan map. If the diversion ditch remains as a permanent structure after final reclamation, The Operator shall submit a technical revision with an updated reclamation plan and reclamation plan map, that incorporate the storm water diversion ditch and design. The diversion ditch shall be sufficiently designed to prevent damage to the slurry wall, surrounding structures and the diversion ditch out flow. The Division would recommend that the Operator armor the out flow of the diversion ditch.

Topsoil:
The Division observed the progress being made to move the overburden/topsoil stockpile during the inspection. It appears that the Operator has moved approximately half of the stockpile. The Operator's representative stated that they will not be able to move the stockpile by the current corrective action deadline. On May 27, 2014 the Division received a request to extend the corrective action deadline to June 27, 2014. The Division has granted the Operator's request. The new corrective action deadline is June 27, 2014. Please submit photographic evidence to the Division by July 7, 2014.

GENERAL INSPECTION TOPICS

The following list identifies the environmental and permit parameters inspected and gives a categorical evaluation of each

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

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

Inspection Contact Address
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Enclosure: Summary of Soils Investigation

CC: Tom Kaldenbach, DRMS
Tim Cazier, DRMS
TC Wait, DRMS

Melanie Cooper
401 25th Lane
Pueblo, Colorado 81001

Judy Winters
409 25th Lane
Pueblo, Colorado 81001

COLORADO
Division of Reclamation, Mining and Safety
Department of Natural Resources

1313 Sherman Street, Room 215
Denver, CO 80203

May 23, 2014

To: Tyler O'Donnell, DRMS
From: TC Wait, DRMS
Re: Summary of Soils Investigation 5-13-14: Cooper Property/M-1986-015

On May 13, 2014, Tim Cazier, Tyler O'Donnell, and TC Wait of the Division of Reclamation, Mining and Safety met with Mark Klune, Bill Pope, Bud Herskind, Andre Laroche, and Jerry Schnable of Transit Mix to further investigate ground conditions at Ms. Cooper's property (401 25th Lane). This investigation was in follow-up to the initial complaint that was filed in October 2013 (see DRMS inspection report from Nov. 15, 2013). Ms. Cooper agreed to allow Transit Mix to access her property with a wheeled excavator to explore the subsurface around some of the cracks and holes that have appeared on her property. Ms. Cooper was present during the investigation.

Multiple open fissures and open holes were noted on the property, both around the residence and in the open land south and west of the residence. The openings appear to trend generally east-west, as does the vegetation (trees and weed growth) on the site. A secondary set of cracks were noted trending north-south across the property in several locations. Ms. Cooper's family has owned the land since the 1970s. Ms. Cooper stated that the land had historically been irrigated until about 10 years ago (~2004) and that she started to notice the openings appearing about 3-4 years ago (~2010/2011 - present).

Figure 1: Open holes and fissures trending east-west.

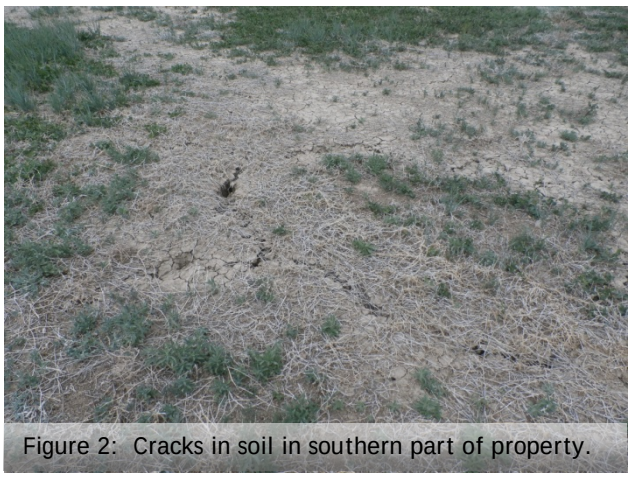


Figure 2: Cracks in soil in southern part of property.

Two trenches were excavated during the investigation. Trench 1 was located in the northwestern quarter of Ms. Cooper's property where a deep fissure was noted during the November 2013 investigation. The opening was approximately 6 inches in diameter and 7 feet deep along a trend of small east-west openings. Trench 1 was opened north-south across the opening to a total depth of approximately 10.5 feet bgs.

Trench 2 was located in the southwest quarter of Ms. Cooper's property over the middle sinkhole-like depression along an east-west trend of depressions. The opening was approximately 3-4 feet in diameter, and 18 inches deep. Trench 2 was opened north-south across the hole to a depth of approximately 8 feet bgs.

Figure 3: General location of property and trenches.

Geologic Background:

Based on available maps and resources through USGS, CGS, and the National Soil Survey, the site is underlain by eolian (windblown) clayey silt loess and colluvial deposits from historic

debris flow events stemming from the two drainages north of the site over post-piney creek alluvium. The alluvium is approximately 15-20 feet bgs. Bedrock is the Pierre Shale, which is approximately 30-40 feet below ground surface. The surface soils in this area are known to be very water sensitive with hydrocompactive silts and clay deposits that can settle suddenly with the presence of water. Additionally, the clays in this area are expansive, and experience shrink-swell cycles depending on the presence of water.

The site is located within the historic physiographic flood plain of the Arkansas River, as well as at the confluence of two drainages north of the site. (It should be noted that the property is no longer considered to be within the FEMA 100-year flood plain, due to river channel alterations (FEMA FIRM map 0801470245B, September 1989). Deposits from historic flooding and debris flow events were noted in the northern trench with several 2-4 inch thick beds of sub-angular, poorly sorted sands and gravels observed between 3 and 6 feet below ground surface.

According to the Colorado Geological Survey publication Collapsible Soils of Colorado (EG-14, 2008), several case histories and noted collapsible soils hazards have been reported in the vicinity of the property, most notably at the Pueblo Memorial Airport, north of Ms. Cooper's property.

Field Observations:

Trench 1. The open hole observed at the surface was excavated to a depth of approximately 7 feet bgs. The top 2 feet of soil was loose clayey silts and easily excavated. Below about 2 feet, the soil was stiffer, with greater clay content, and hard. The subsurface clay was compacted to the point that the excavator had some difficulty keeping the foot pads from dragging. Vertical fracture patterns were observed between about 3 and 7 feet bgs. As noted above, small, discontinuous lenses of poorly sorted sands and gravels, about 2-4 inches thick were found at approximately 3 feet bgs and 6 feet bgs. The void emanating from the deep fissure observed at the surface appeared to be oriented along this vertical fracturing, with two primary open areas joining at a depth of approximately 6.5 feet bgs to an opening that was about 12-18 inches across. Below the bottom of the open void, the clay was again stiff and included classic micro-piping voids in hand samples. As soluble material is dissolved from the soils (i.e. from prolonged irrigation), voids in the soil structure are left behind. At approximately 8 feet bgs, the clay had higher moisture content and was less compact. Hand samples had high clay content and plastic deformation characteristics. Based on conversations with Transit Mix, the depth to groundwater in this area is about 20-28 feet bgs. Total depth of the trench was approximately 10.5 feet bgs.

Figure 4: Setting up Trench 1 over open hole (under bucket).

Figure 5: Vertical fractures and open void (left and at yard stick).

Figure 6: Hand sample from ~7 feet bgs showing soil structure and open micro-piping voids typical of hydrocompactive soil.

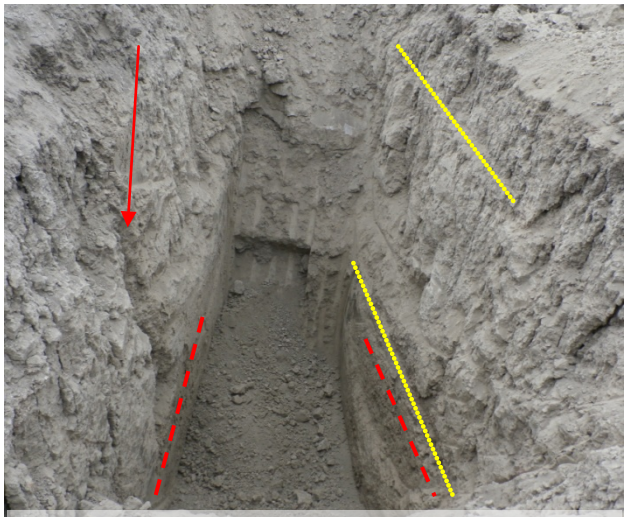
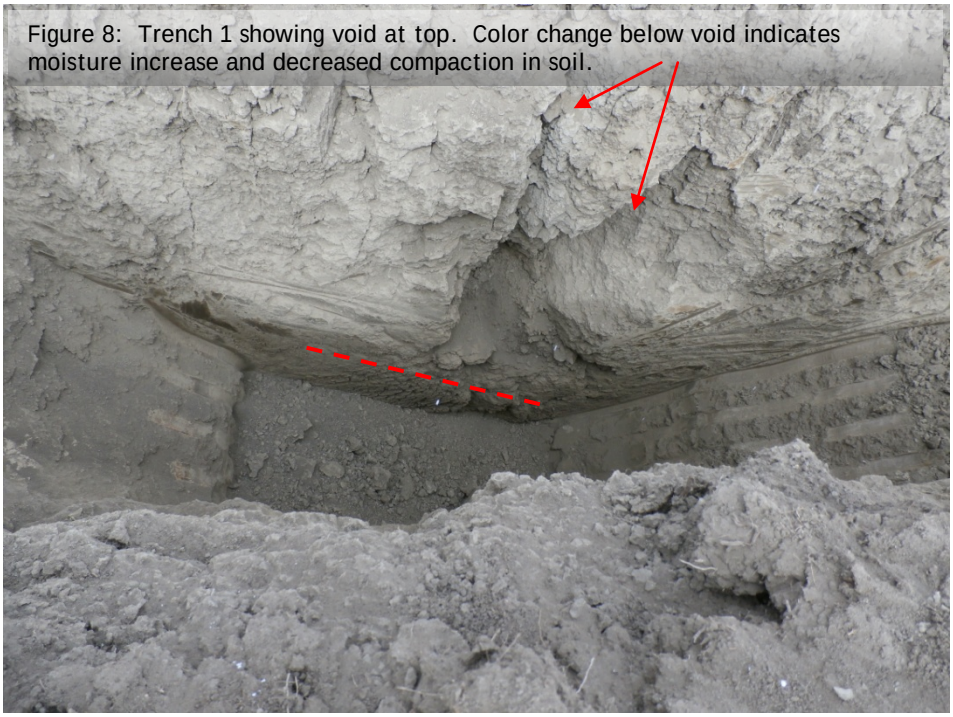


Figure 7: Trench 1 showing void on left. Color change below void indicates moisture increase and decreased compaction in soil. Yellow lines indicate likely historic flood/debris deposits.

Figure 8: Trench 1 showing void at top. Color change below void indicates moisture increase and decreased compaction in soil.



Trench 2. This trench was located over a 3-4 ft diameter, 18 inches deep "sinkhole" type opening that was in the center of a line of relatively larger openings trending east-west on the south side of Ms. Cooper's property. Several trees and weed growth were also aligned with this location. The trench was excavated from south to north across the center of the opening. The subsurface conditions were somewhat different from those in Trench 1, primarily due to fewer vertical cracks in the hard-packed clay. As with Trench 1, the excavator had some difficulty keeping the foot pads from dragging initially, due to the compacted clay. Vertical fracturing was apparent at the boundary of the sinkhole feature, and soil was looser within the opening. Unlike Trench 1, no large open voids were observed. Wetter clay was found about 3 feet bgs in the vicinity of the opening and stayed moist to the bottom of the hole, at 8 feet bgs. Preferential root growth from weeds to a depth of 3-4 feet bgs was observed within the area of the opening.

Figure 9: "Sinkhole" feature of Trench 2.

Figure 10: Trench 2 showing alignment of trees, vegetation, and other openings (red arrows).

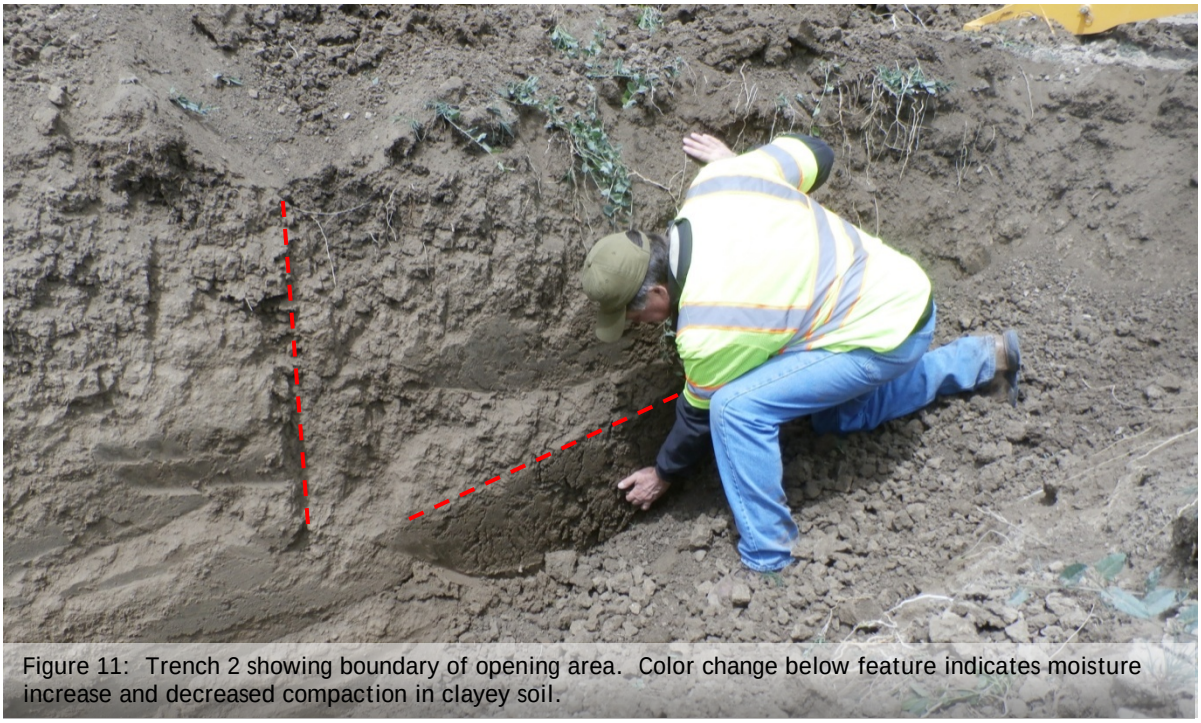


Figure 11: Trench 2 showing boundary of opening area. Color change below feature indicates moisture increase and decreased compaction in clayey soil.

Other Features. In addition to Ms. Cooper's property, DRMS toured areas both west and east of the property to observe recent openings as noted by Transit Mix. On the northwest side of Phase 2 of the Pueblo East pit, several small openings and piping were found both in the swale north and adjacent to the slurry wall in the vicinity of MW103, and also the un-graded ground north of the swale. These features were noticed in the past couple of weeks by Transit Mix personnel.

Figure 12: Openings in Phase 2 swale near MW103.

Figure 13: Proximity of openings to MW103.

Figure 14: Openings in ground in unworked ground north of Phase 2.

Figure 15: Deep openings in ground in unworked ground north of Phase 2.

In the area northwest of Phase 1 of the Pueblo East pit, on and below the slope east of the Moore property, several openings were also observed, including piping and salt deposits on the slope. There is an old irrigation ditch that runs through this area that appears to be abandoned. The ditch was dry and full of sediment and weeds.

Figure 16: Openings in ground northwest of Phase 1.

Figure 17: Openings on the slope northwest of Phase 1.

Mark Klune will have Transit Mix personnel do an opening inventory on other property locations to document any fissures, depressions, or holes that may be present. This inventory had not yet been done at the time of this report.

Investigation Findings:

The subsurface geologic conditions in the area make for a complex system. The presence of extremely water-sensitive soils, both expansive and hydrocompactive, make any change of water conditions a primary factor in soil behavior. Over the past several years, there have been many factors that could contribute to changes of moisture conditions in the subsurface soils that could lead to the formation of the openings: termination of irrigation in the field, regional drought and river water level reduction, surface water drainage patterns, and groundwater fluctuations all likely affect the soils to some extent. This location may be particularly influenced based on the relatively thick clay deposits at the confluence of the two drainages to the north. The associated basin area for these drainages is approximately 900 acres.

The depth to groundwater in the vicinity is around 20-28 feet bgs. The depth of the openings observed in the field and trenched during this investigation were less than 8 feet

deep. No open voids were found below either of the features trenched. Based on our observations, it is not likely that there are large openings at depth. It is not clear to what extent potential groundwater fluctuations may have on the current fissure opening conditions, given the depths involved at this location and the low porosity of the clay deposits.

The general trend of fissures, openings, and vegetation along an east-west direction, and secondarily along a north-south direction may indicate fractures from the drying out of subsurface clays and subsequent shrinking following the termination of long-term irrigation and ongoing regional drought. The east-west alignment may be related to water level decrease in the Arkansas River, since their orientation roughly parallels the river in this location. These fractures may be acting as a conduit for water to enter the deeper soils both from the surface, and also from subsurface capillary "wicking" and cause linear collapse within the deeper soil column that has now reached the surface.

The potential impact of the mining activity was not directly evident from the investigation. The openings appear to be occurring roughly 15-20 feet above the current groundwater level and 6-11 feet above the alluvium. General groundwater gradient appears to be to the east, southeast. Reviewing available aerial photography back to 1995, there appear to be several old oxbow channels of the Arkansas River surrounding the 25th Lane area that likely influence groundwater flow direction through those alluvial beds. Depending on the recharge ability of these channels and the permeability of the clay deposits, adjacent mining activity may potentially impact the groundwater levels. It would be more likely that dewatering in the Phase 1 area could impact groundwater under Ms. Cooper's location than dewatering in the more recent Phase 2 area.

Suggested Course of Action:

There are two concerns for ongoing damage to Ms. Cooper's property and adjacent properties: 1) damage to structures and utilities, and 2) continued openings on the land surface that could pose a risk to humans and livestock. It should be noted that the water sensitive soils are a regional issue, and will continue to pose a potential risk for differential swelling or settlement.

To minimize damage to structures and utilities, it is important to ensure that all surface water is directed well away from foundations and utility corridors. This includes the use of gutters, downspouts with extensions, positive grading for soil and cement work to slope away from foundations, and preventing water from ponding around structures or infiltrating

soils near foundations. Homeowners may wish to consider hiring a geotechnical consultant to evaluate their foundations and provide recommendations to stabilize them from further damage, such as underpinning or reinforcement. Damage to roads or utilities (such as gas lines) should be reported to Pueblo County.

To minimize risk from openings on the land, controlling moisture infiltration from the surface is important. A consistent wetting front across the property will reduce the chances of localized settlement along fractured zones. It would be advantageous to work the soils to a depth of 3-4 feet bgs or greater to break up some of the fractured clays, regrading the property, then planting the area with a drought-resistant deep-rooted cover that will further act to break up the near-surface clays and allow surface water to infiltrate across the entire site. Since it is not possible to work the entire soil column, there may still be some fractures that appear that water can get into. Using drainage swale construction to rapidly remove surface water from the neighborhood may be another consideration. This would require grading the properties so that runoff water flows into lined swales that would then lead away from structures and property. This method may require County approval to drainage water discharge.

Future soil openings, fissures, or holes should be inventoried and reported to DRMS or Pueblo County if public access or utilities are involved.

Continued monitoring of groundwater levels in residential wells as well as adjacent monitoring wells (MW4, MW4r, MW5, MW6, MW7, and MW105) should be done and reported to DRMS seasonally, and during times of activity that may alter groundwater conditions (i.e. dewatering or filling ponds).

Any further development of this area should include a geotechnical evaluation and remedial work to address the soils prior to building.