Project No.
3586.002.023

October 5, 2023

Wiedemann Ranch GHAD Board of Directors
Chair Candace Andersen
Vice Chair Federal D. Glover
Board Member John M. Gioia
Board Member Diane Burgis
Board Member Ken Carlson

Wiedemann Ranch Geologic Hazard Abatement District
651 Pine Street, Room 107
Martinez, CA 94553-1229

Subject: Henry Ranch
San Ramon, California

GEOLOGIC HAZARD ABATEMENT DISTRICT MONITORING – FALL 2023

Dear Chair Andersen and Board Members:

ENGEO is pleased to submit this monitoring report for the Henry Ranch development within the Wiedemann Ranch Geologic Hazard Abatement District (GHAD). As described in the Wiedemann Ranch Plan of Control (Reference 1), the purpose of this monitoring is to observe and report the conditions on the open space and associated improvements within the Henry Ranch development and adjacent easement. This monitoring event was completed on September 25, 2023.

SCOPE

Site monitoring included observation of the following features.

- Common area and open-space slopes, debris benches, and swales located adjacent to improvements
- Access roadways
- Drainage courses
- Subdrain outlets installed during the mass grading
- Concrete-lined surface drainage ditches
- Storm drain inlets
- Detention basin

In 2009, the Wiedemann Ranch GHAD acquired a 3.52-acre easement area from Philip and Pamela Henry (Figure 1). The Easement Area is located at the western end of Winding Creek Way and allows the GHAD access to the slope below 16 and 18 Winding Creek Way. As provided in the Access and Maintenance Easement Agreement, the GHAD is responsible for providing monitoring and maintenance on the improvements shown on the Contra Costa County approved plan dated June 1, 2005, and revised December 19, 2006, and specifically includes debris walls,

retaining walls, concrete- and riprap-lined drainage ditches, the storm drain system, and mechanically stabilized earth retaining walls. In addition, the GHAD responsibilities include monitoring and maintenance of the slopes, subdrains, and subdrain outfalls, and mitigation of erosion, landslides, or other geologic hazards if conditions outlined in the Plan of Control are met. Although outside of the limits of the GHAD, reporting of the conditions within the maintenance easement are included in this monitoring report.

COMMON AREA AND OPEN-SPACE SLOPES, DEBRIS BENCHES, AND SWALES

The common area and open-space slopes, debris benches, and swales were observed for evidence of slope instability, including landslides, mudflows, erosion, diverted drainage, or standing water. During this monitoring event, we observed that the site slopes in some locations were severely disturbed from animal burrowing activity (Figure 1). This activity has resulted in bare soil and surface voids. We will continue to monitor these disturbed areas for instability in the future. There are a number of unrepaired landslides within the ungraded portions of the HOA-owned parcels. These landslides moved in the past and will likely do so in the future when wet conditions occur. The landslides within the ungraded portion of the site appeared to be in a similar condition to that described during development of the site.

We previously noted that the slopes adjacent to the gravel-surfaced access road within the easement area were in an oversteepened condition and subject to shallow slope instability. Retaining walls and debris walls were constructed to protect the road from unstable materials from the uphill slope. During this monitoring event, we observed erosion on portions of the slope behind the debris walls (Site Conditions A.1 and A.2, Appendix A, Figure 1) that appeared to be unchanged from our last monitoring event. We also observed debris wall distress (Site Condition B, Appendix B, Figure 1). The GHAD will continue to monitoring the slope and wall conditions and remove, as needed, soil materials that collect behind the debris walls to maintain the catchment capacity.

We noted in spring 2020 that the rear fence at 6025 Westside Drive was tilted in the downslope direction, which is an indication of soil creep. Fluctuations in moisture regimes of expansive soil may result in movement of soil related to shrinkage and swelling, which may result in adverse impact to overlying improvements. Soil creep involves the downslope movement of expansive soil due to wetting and drying of the soil. At the time of this site visit, the condition of the fence appeared to be in a similar condition as observed during our last monitoring event (Site Condition C, Appendix A, Figure 1). We observed the soil creep to be localized directly adjacent to and along the fence alignment and common area irrigation/sprinkler line. Fences are not a GHAD-maintained improvement. The GHAD will continue to monitor this condition.

During our spring 2018 monitoring event, we noted several areas were significantly disturbed with saturated soil adjacent to the rear property fences along Henry Ranch Drive. During our fall 2020 monitoring event, we noted that new extensive damage to the slopes was inflicted by rooting pigs. Irrigation lines and sprinklers were broken resulting in excessive water expelled and saturation of the slopes. We noted during our spring 2022 monitoring that the irrigation lines were repaired, and the slopes had partially revegetated, but the damage of the slopes from pig rooting activity remained the same. During this site monitoring, we observed that the damage to the slopes does not appear to be impacting the nearby improvements. Areas disturbed due to pig rooting are shown in Figure 1. We will continue to monitor these slopes for evidence of instability and will repair the slopes, as needed.

ACCESS ROADWAYS

We observed the condition of the gravel-surfaced maintenance roadways within the easement area, detention basin, and between Westside Drive and the planned extension of Henry Ranch Drive. The gravel-surfaced roadways appeared to be in good condition with minor vegetation growth. As noted during previous monitoring events, minor gravel has eroded and partially exposed geogrid beneath the gravel section at the western end of the basin maintenance road. During this monitoring event, we observed erosional rills within the gravel section of the maintenance road between Westside Drive and the planned extension of Henry Ranch Drive (Site Condition D.1 through D.3, Appendix A, Figure 1). The rills did not appear to impede vehicle access. The GHAD will continue to monitor the conditions of the maintenance roadways in future monitoring events, and consider any repairs, as needed. Annual vegetation removal from the gravel-surface access roadways is completed during scheduled routine GHAD maintenance.

DRAINAGE COURSE

An unnamed tributary of South San Ramon Creek crosses the extreme southern portion of the development. In general, the creek has a moderately incised channel with a moderate to dense vegetation cover. The creek banks, which are oversteepened due to previous down cutting, are generally in an unstable condition. We expect that creek bank failures will continue to occur in the future as the creek banks adjust to lowered creek bed levels. As stated in the Plan of Control, the creek channels will be allowed to mature naturally except where this poses a threat to site improvements. In general, we did not observe areas of the creek channel with the potential to impact site improvements. Since our fall 2019 monitoring, the creek slope below Subdrain Outlet SL-2 appeared to be eroded. During this monitoring event, we observed minor progression of the slope erosion (Site Condition E, Appendix A, Figure 1). If the erosion does threaten GHAD maintained improvements, such as the subdrain pipe, the GHAD will consider repairing the erosion. The area will continue to be monitored in the future.

SUBDRAIN OUTLETS

The following subdrain outlets were observed and monitored during the site visit. Discharge levels flowing from the subdrain outlets are summarized on Table 1.

TABLE 1: Subdrains

LABEL	FLOW (gallons/day)	COMMENTS
S-1	11.4	EST, UTA, outlet visible in storm drain catch basin
SK-2	0	Dry
SK-2A	342.4	EST, UTA, outlet visible in storm drain catch basin
SK-3	0	Dry
SK-8	2.3	
SK-8A	0	Dry
SK-9	0	Dry
SL-1	296.7	Combined flow of three outlet pipes
SL-2	1,483.6	

LEGEND
EST - Estimate
UTM – Unable to monitor
UTA – Unable to access

CONCRETE-LINED SURFACE DRAINAGE DITCHES

The concrete-lined drainage ditches were checked for accumulation of debris/sediment and for obvious distress, such as cracking or shifting of the concrete. As shown in Figure 1, there are approximately 8,600 lineal feet of concrete-lined drainage ditch within the Henry Ranch development. During this monitoring event, we observed that the concrete-lined ditches need clearing of soil and vegetation at some locations. We also observed some minor cracks and off sets in the concrete ditches. The minor cracks and off sets do not appear to compromise the integrity of the ditches. As part of the routine maintenance, the minor cracks will be resealed and filled, as needed, to maintain drainage ditch integrity, and soil and vegetation will be cleaned as part of the routine GHAD maintenance.

As noted in our previous monitoring reports, we observed significant damage to the top of the concrete-lined drainage ditch within the easement area (Site Condition F, Appendix A, Figure 1). The damaged concrete appeared to be unchanged from our last monitoring event. The drainage ditch will continue to be monitored and will be repaired, as needed, to allow for proper function of the drainage ditch.

During our spring 2018 monitoring event, we noted some cracking was located around the storm drain inlet and sidewalk at the end of the concrete-lined drainage ditch located at the northern end of Lone Tree Lane. At the time of this monitoring event, the cracking did not appear to be impacting the drainage ditch or storm drain inlet (Site Condition G, Appendix A, Figure 1). The sidewalk, which is not a GHAD-maintained improvement, should be repaired to prevent a potential trip hazard.

During our fall 2019 monitoring event, we noted that there is a significant void underneath a portion of drainage ditch at the northern end of Lone Tree Lane (Site Condition H, Appendix A, Figure 1). During this monitoring event, we were able to observe the condition of the void to be unchanged, and the drainage ditch did not appear to show significant distress. The GHAD will have the maintenance contractor backfill the void to prevent the void from continued enlargement. This area will continue to be monitored in future monitoring events.

STORM DRAIN INLETS

Storm drain inlets within the open space area of the GHAD appear to be in relatively good condition. During this monitoring event, we observed some storm drain inlets had accumulated sediment and overgrown vegetation in and around the inlets. As part of routine GHAD maintenance, the storm drain inlets will be cleared of soil and vegetation.

DETENTION BASIN

A detention basin is located adjacent to Winding Creek Way (Figure1). Monitoring of the detention basin was conducted as part of the open space monitoring. The observed conditions for the detention basin are described in the attached Henry Ranch Detention Basin Site Monitoring and Maintenance Form. Contracted ongoing routine maintenance within the water quality/detention basin currently includes roadway maintenance and woody vegetation removal. As noted in our previous reports, vegetation within the detention basin includes grasses, cattails, and willow trees. Although vegetation aids in trapping of sediment, the GHAD has removed and will continue to remove regrowth of the willow trees and other vegetation in and adjacent to the storm drain facilities (inflow and outflow structures) to allow for proper function of the basin.

PLANNED SPORTS FIELD PARK

Surface drainage from a planned sports field park, located west of Henry Ranch Drive, flows to a detention basin and then through an above-ground plastic storm drain pipe into a storm drain inlet. Drainage from the access road to the planned sports park, an unpaved extension of Henry Ranch Drive, is captured along a series of berms that drain through 6-inch-diameter above-ground drainage pipes. Surface drainage around the berms has resulted in some minor erosion along the unsurfaced access road. In addition, we observed some damage to and disconnected segments of the 6-inch-diameter pipes. The City of San Ramon indicated that there are no immediate plans to develop the park into its final planned configuration. Currently, no capital improvement project funds have been allocated for the project through Fiscal Year 2023/24. As needed, the GHAD will reconnect and repair the drain pipes to help maintain proper drainage.

We look forward to continuing our services on this monitoring program. If you have any questions concerning the observations made during this reconnaissance, please do not hesitate to contact us.

Sincerely,

ENGEO Incorporated

Greg Hudson

Jeffrey A. Adams, PhD, PE

gh/jaa/ca

Attachments: Selected References
Figure 1 – Site Plan
Appendix A – Site Condition Summary with Photographs
Monitoring Report - Detention Basin Site Monitoring and Maintenance Form

SELECTED REFERENCES

1. ENGEO. 2002. Amendment 1 to the Wiedemann Ranch Geologic Hazard Abatement District (GHAD), Plan of Control. February 1, 2000, Revised July 12, 2002. Project No. 4412-W3.

2. ENGEO. 2023. Geologic Hazard Abatement Monitoring – Spring 2023, Henry Ranch, San Ramon, California. May 4, 2023. Project No. 3586.002.022.

3. ENGEO. 2009. Operations and Maintenance Facilities for Detention Basin Facilities, Wiedemann Ranch Geologic Hazard Abatement District – Henry Ranch Detention Basin, San Ramon, California. April 3, 2009. Project No. 3586.120.001.

FIGURE 1 – Site Plan

EXPLANATION

ALL LOCATIONS ARE APPROXIMATE

- GHAD BOUNDARY
- EASEMENT
- PARCELS

DISTURBED SOIL

- PIG ROOTING
- ANIMAL BURROW

EMERGENCY VEHICLE ACCESS/MAINTENANCE ROAD

- GRAVEL SURFACE
- CONCRETE-LINED DRAINAGE DITCH
- (A) SITE CONDITION (FALL 2023)
- BASIN INLET/OUTLET
- SUBDRAIN OUTLET

STORM DRAIN INLET/OUTLET

- CULVERT

BASEMAP SOURCE: NEARMAPS 2023

ENGEO Expect Excellence

SITE PLAN

WIEDEMANN RANCH GHAD - HENRY RANCH

DUBLIN, CALIFORNIA

PROJECT NO. :003586.002.023	FIGURE NO. 1
SCALE: AS SHOWN	
DRAWN BY: CMG	CHECKED BY: JA

PATH: G:\DRAFTING\PROJECTS\3586\3586002023\SITE_PLAN\003586002023_WIEDEMANN_RANCH_GHAD_HENRY_RANCH_SITE_PLAN_092023_REVIEW.APRX
LAYOUT: SITE PLAN 11X17 LANDSCAPE USER: CGUERIN

ORIGINAL FIGURE PRINTED IN COLOR

APPENDIX A

Site Condition Summary with Photographs

Appendix A

Site Condition Summary with Photographs

Wiedemann - Henry Ranch

Site Condition:	A.1
Observation Date:	09/25/2023
Description:	Oversteepened slope with erosion and sloughing on slope above debris wall.
Recommendation:	Continue to monitor.
Field Representative:	GH

Site Condition:	A.2
Observation Date:	09/25/2023
Description:	Oversteepened slope with erosion and sloughing on slope above debris wall.
Recommendation:	Continue to monitor.
Field Representative:	GH

Site Condition:	B
Observation Date:	09/25/2023
Description:	Debris wall distress.
Recommendation:	Continue to monitor.
Field Representative:	GH

Site Condition:	C
Observation Date:	09/25/2023
Description:	Tilted/leaning fence and localized soil creep due to irrigation.
Recommendation:	Continue to monitor.
Field Representative:	GH

Appendix A

Site Condition Summary with Photographs

Wiedemann - Henry Ranch

Site Condition:	D.1
Observation Date:	09/25/2023
Description:	Erosional rill within gravel maintenance road.
Recommendation:	Continue to monitor and backfill if vehicle access is impeded.
Field Representative:	GH

Site Condition:	D.2
Observation Date:	09/25/2023
Description:	Erosional rill within gravel maintenance road.
Recommendation:	Continue to monitor and backfill if vehicle access is impeded.
Field Representative:	GH

Site Condition:	D.3
Observation Date:	09/25/2023
Description:	Erosional rill within gravel maintenance road.
Recommendation:	Continue to monitor and backfill if vehicle access is impeded.
Field Representative:	GH

Site Condition:	E
Observation Date:	09/25/2023
Description:	Slope erosion below subdrain outlet.
Recommendation:	Continue to monitor.
Field Representative:	GH

Appendix A

Site Condition Summary with Photographs

Wiedemann - Henry Ranch

Site Condition:	F
Observation Date:	09/25/2023
Description:	Damaged concrete-lined drainage ditch within Easement Area
Recommendation:	Continue to monitor.
Field Representative:	GH

Site Condition:	G
Observation Date:	09/25/2023
Description:	Offset/cracked sidewalk concrete.
Recommendation:	Continue to monitor.
Field Representative:	GH

Site Condition:	H
Observation Date:	09/25/2023
Description:	Void beneath concrete-lined drainage ditch.
Recommendation:	Backfill void.
Field Representative:	GH

MONITORING REPORT

Detention Basin Site Monitoring and Maintenance Form

3586.002.023
October 5, 2023

MONITORING REPORT

Henry Ranch Development
San Ramon, CA

DETENTION BASIN OPERATIONS AND MAINTENANCE
SITE MONITORING AND MAINTENANCE
REPORT FORM

Inspector: Greg Hudson Date: September 25, 2023
Weather Conditions: Sunny
Days since last rainfall: 142 Dry season? X Wet season?
Basin Water Level: 0 inches
Noteworthy Sediment Accumulated since Last Monitoring Event: No

MONITORED CONTROL	YES	NO	N/A	COMMENTS/ SUGGESTED MAINTENANCE
1. Are inlet and outlet structures functioning properly, allowing the basin to drain and are they in satisfactory condition?	X			Basin inlet partially obstructed by sediment and vegetation. Inlet should be cleared during routine maintenance.
2. Are access roads in satisfactory condition?	X			At the western end of the maintenance road, some soil has eroded and exposed geogrid under the maintenance road. The GHAD will continue to monitor the condition of the exposed geogrid in future monitoring events, and consider any repairs, as needed.
3. Is all perimeter fencing in good condition without breaks, gaps, or damage?	X			
4. Is the emergency outlet grate free of debris and is it in good condition?	X			

MONITORED CONTROL	YES	NO	N/A	COMMENTS/ SUGGESTED MAINTENANCE
5. Is the embankment surrounding the basin in good condition without rills or failures?	X			Minor animal burrowing.
6. Is emerging woody vegetation less than 5 feet in height?	X			Willows up to approximately 20 feet in height grew within the detention basin. As provided in the Operations and Maintenance Manual, willows have not significantly impacted basin capacity; however, the GHAD routinely removes willow trees adjacent to the basin inlet.
7. Are embankment slopes protected with mulch or vegetation?	X			Animal burrowing activity has exposed bare soil in small areas.
8. Has water removal been undertaken in the last 3 months? If so, describe procedure.		X		
9. Has sediment removal been undertaken in the last 3 months?		X		

MONITORED CONTROL	YES	NO	N/A	COMMENTS/ SUGGESTED MAINTENANCE
10. If so, has it been tested as required in the Maintenance Manual?			X	
11. Is there evidence of chemical sheen or odor, contaminated runoff, litter or blowing debris in or near the basin?		X		
12. Do any pond devices require maintenance to provide more effective function?		X		
13. Are there signs of leaking irrigation systems?			X	
14. Are there any signs of vandalism?		X		

MONITORED CONTROL	YES	NO	N/A	COMMENTS/ SUGGESTED MAINTENANCE
15. Are mosquitoes evident?		X		
16. Has mosquito abatement been undertaken since the last monitoring event?		X		
17. Are there other remedial/repair tasks that should be undertaken in the near future?		X		
18. Is there any evidence or information received in the last 3 months to indicate a lengthy drain time?		X		

"No" answers to Items 1-7 or "Yes" answers to Items 8-18 may require a corrective action.