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Cripple Creek & Victor
Gold Mining Company
P.O. Box 191
100 North 3rd Street
Victor, Colorado 80860

P 719.689.2977
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newmont.com

SENT VIA ELECTRONIC COMMUNICATIONS

August 31, 2023

Mr. Elliott Russell
Environmental Protection Specialist
Colorado Department of Natural Resources
Division of Reclamation, Mining and Safety
Office of Mined Land Reclamation
1313 Sherman Street, Room 215
Denver, Colorado 80203

RE: Permit No. M-1980-244; Cripple Creek & Victor Gold Mining Company; Cresson Project; PoC Monitoring Well Drilling and Installation Report; Technical Revision 129 (TR-129)

Mr. Russell:

As required by the Division of Reclamation, Mining, and Safety (DRMS) third adequacy review to Technical Revision 129 (TR-129), The Cripple Creek and Victor Gold Mining Company (CC&V) hereby provides the Point of Compliance Monitoring Well Drilling and Installation Report.

Please see the attached Point of Compliance Monitoring Well Drilling and Installation Reports for Monitoring Wells PGMW-5 (Attachment A), SGMW-8 (Attachment B), GVMW-26A (Attachment C), and GVMW-26B (Attachment D). Monitoring Well Drilling and Installation Reports include the location maps of installed wells, boring logs, well construction diagrams (with survey coordinates and measurements), well development records, and a narrative of the drilling program.

Should the Division required further information regarding the attached reports, please do not hesitate to contact Antonio Matarrese at 719-851-4185 or Antonio.Matarrese@Newmont.com or me at 719-851-4048 or Katie.Blake@Newmont.com.

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Sincerely,

DocuSigned by:
Katie Blake
5A3D013B629844B...

Katie Blake
Sustainability & External Relations Manager
Cripple Creek & Victor Mine

EC: M. Cunningham – DRMS
P. Lennberg - DRMS
K. Blake - CC&V
A. Matarrese – CC&V
J. Gonzalez – CC&V

File: "C:\Users\19012214\Newmont USA Limited\CC&V – S&ER Environmental - Permits\Technical Revisions\TR 129 - Compliance Wells\Completion Report\Final"

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Attachment A – Poverty Gulch (PGMW-5)

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PITEAU ASSOCIATES
Geotechnical and Water Management Consultants

7921 SouthPark Plaza, Suite 208
Littleton, CO 80120
TEL: +1.720.845.0013
www.piteau.com

FILE: 4454-TM23-01

TECHNICAL MEMORANDUM

DATE: 01 June 2023

TO: Newmont – Cripple Creek & Victor

ATTN: Antonio Matarrese

FROM: Peter Haas
Email: phaas@piteau.com

RE: **2023 Monitoring Wells – Poverty Gulch Monitoring Well (PGMW-5)**

INTRODUCTION

Newmont's Cripple Creek and Victor Gold Mine (CC&V) is a historic gold mine, with placer and underground mining starting in 1891. The mine transitioned to open pit mining methods in the 1970's. As a modern open pit mine operation, the site strives to meet state regulations for monitoring. To this end, CC&V has initiated construction of three additional groundwater monitoring wells to comply with the state of Colorado water monitoring requirements. This memorandum provides a narrative of the drilling, construction, and development of Poverty Gulch Monitoring Well 5 (PGMW-5).

Table 1 provides a summary of the borehole drilling and location with coordinates provided in WGS84 decimal degrees latitude and longitude. Table 2 provides monitoring well construction details. Table 3 provides a summary of the water quality field parameters collected during well drilling. Table 4 provides a summary of water quality field parameters collected during monitoring well development.

Figure 1 illustrates the location of the borehole. Figure 2 provides an as built of the completed monitoring well. Figure 3 provides a hydrogeologic log summarizing the geology, water detection, airlift and well construction. Figure 4 is a picture of the completed borehole well head.

Monitoring well drilling and construction was completed from April 11th to April 13th, 2023.

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Table 1 Summary of PGMW-5 Borehole

Hole ID	Drilling Date	Northing (latitude)	West (Longitude)	Surface Elevation	Azimuth	Dip	TD Measured Depth (ft)	TD Elevation (ft amsl)	Drilling Method	Completion
PGMW-5	04/13/23	105.168125 986111	38.74633441 11111	9526.671	N/A	90	50.7	9476.3	Reverse Circulation	Monitoring Well

Coordinates are provided in WGS84 decimal degrees latitude and longitude

Table 2 Summary of Monitoring well construction PGMW-5

Hole	Units	Water Elevation	Total Depth	Depth to Bedrock	Casing Interval from	Screen Interval	Gravel/Sand Interval	Seal Interval	Cement Interval
PGMW-5	(ft bgs)	47.07	50.7	48.0	0-30.0	30-50	33-50.7	12-33	0 - 12
	(ft amsl)	9479.9	9476.3	9479.0	9527.0-9497.0	9497.0-9477.0	9494.0-9476.3	9515.0-9494.0	9527.0-9515.0

Table 3 Summary of Water Quality Field Parameters during Drilling

Date	Time	Depth	Elapsed Time (min)	Method	Total Airflow Sample	Imhoff Cone (total sample)	Imhoff Cone (Sed)	pH	Temperature	EC
					gal/min	mL/L	mL		(deg. C)	µs/cm
4/13/2023	7:20:00	50.7	N/A	Airlift Bucket Test	0.1	1.3	0.5	4.85	12.78	353

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Table 4 Summary of Field Parameters during Development

Date	Time	Elapsed Time (min)	Method	Airflow-GPM	Depth	Imhoff Cone (Sed)	Imhoff Cone (total sample)	Imhoff Cone	pH	Temperature	EC
					(ft bls)	mL	mL	mL/L		(deg. C)	µs/cm
4/12/2023	15:24	3	Aeration w/ Tremie	<1	50	5.0	400.0	12.5	6.33	16.11	746
4/13/2023	7:10	10	Airlift at 40ft	1	50	ND	ND	ND	4.85	12.78	353
4/13/2023	9:13	21	Aeration w/ Tremie	<1	50	0.5	400.0	1.3	ND	ND	ND
4/13/2023	9:44	52	Aeration w/ Tremie	<1	50	0.3	400.0	0.6	6.92	9.64	82

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NARRATIVE

General Information:

Drilling Contractor: Boart Longyear
Drilling Method: Reverse Circulation
Drill Rig Model: Foremost Apex 55
Well development Method: Aeration with tremie pipe. Manual Bailing.
Water Quality testing: Imhoff cone and Hannah Trimble pH, Temperature and Conductivity meter
Drilling initiated April 11th and monitor well completed April 13th, 2023

Summary Narrative:

April 11th:

- Surface casing drilling reached 25 ft below ground surface (bgs) using a 4.5 inches hammer bit.
- Drillers then reamed the hole from 4.5 to 9 inches and subsequently to 12.25 inches with tricone bits.
- After swapping to the 12.25-inch tricone bit the drillers experienced a mechanical issue involving a solenoid that required a work stoppage, until fixed. However, the drillers were able to drill 10 ft bgs with the 12.25-inch prior to the solenoid issue.
- A 10-inch diameter mild steel surface casing was then placed and cemented using neat cement to surface. Surface casing had 8 inch stick up from surface.

April 12th:

Borehole advanced to bedrock:

- Drilling contractor began drilling past surface casing using 9.875-inch hammer bit.
- A period of no returns for cuttings first occurred at 30 ft bgs. After flushing the discharge hose, pieces of wooden timber and alluvial material returned to surface. The wood is suspected to be from a collapsed tunnel or buried structure from unmapped historic mining activities.
- Groundwater was first noted at ~34 ft with a water level sounder.
- This lack of cutting returns continues until bedrock was reached at roughly 48 ft bgs.
- The borehole was advanced to 50.7 ft, Total Depth (TD) and the depth verified by tagging bottom with drill rods.
- The borehole was then airlifted and allowed to recover for 1 hour. Recovery was found to be slow and after an hour the borehole was sounded with a water level of 47.7 ft bgs (3 ft of water in borehole).
- With water confirmed on the bedrock contact, a decision was made to construct the well.

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Initial Installation April 12th:

- An end cap was secured to the bottom of the first stick of PVC screen and a total of Twenty feet of 4-inch PVC screen was installed with 30 feet of 4-inch PVC blank then placed back to surface.
- Twenty-three ft of very fine gravel (#6 screen, 0.136 inch) was then poured around the installed PVC for the filter pack.
- The borehole was then blown with compressed air to flush out the injected water and settle the filter pack.
- On the second aeration of the borehole, a piece of PVC returned to surface, indicating a breakage downhole.
- Due to the suspected damage to the PVC, the well blank and screen, was then pulled out of the borehole. Upon retrieval of the PVC, it was determined that the endcap had split in two.
- The casing was pulled, and the hammer bit was reattached, and the rig was prepared to drill out the gravel pack for reinstallation the following day.

April 13th:

- The borehole was redrilled to TD
- After redrilling the drillers airlifted the bore hole to clear out recharged water.
- A bucket test was taken to determine flow and check water quality. Groundwater flow was measured at 1 gpm but was not sustained, with 12.78°C, 4.9 pH and 178 ppm TDS.
- After airlifting the PVC was reinstalled in the same manner as the previous day, with a new end cap, 20 ft of 4-inch PVC, screen, and 30 ft of blank.
- The gravel pack was installed to 27 ft bgs (a 23 ft interval).
- The borehole was then airlifted using a metal tremie pipe at 3 ft off bottom to develop the well and settle the filter pack. Airlift was less than 1 gpm and not sustained.
- The hole was developed using this method two more times over an hour until Imhoff cones achieved 0.25 mL of sediment out of 400 mL sample (0.63 ml/l).
- Sodium bentonite pellets were then placed in the hole up to 12 ft bgs (15 ft total).
- One 47 lb bag of sodium bentonite (to prevent cement loss to collapsed void area) and Type IL cement was poured back to surface.
- A manual bailer was used to sample water at TD and encountered muddy water at bottom.
- The borehole was then aerated with a 1-inch tremie pipe to blow out and develop the hole four additional times over the next 1.5 hours.
- Imhoff cone samples at the end still showed ample sediment in the collected samples.

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- Due to the slow recharge and limited water production, it was decided to continue further water development with a submersible pump over multiple days to fully remove all injected water and further develop the well.
- Drillers then moved the rig off to complete the steel monument with cement apron.

Figure 4 is a photograph of the well head completion. Detailed field notes are included in Attachment A.

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LIMITATIONS

This investigation has been conducted using a standard of care consistent with that expected of scientific and engineering professionals undertaking similar work under similar conditions. No warranty is expressed or implied.

This memorandum is prepared for the sole use of Newmont – Cripple Creek & Victor. Any use, interpretation, or reliance on this information by any third party, is at the sole risk of that party, and Piteau Associates accepts no liability for such unauthorized use.

If you have any questions regarding the above, or we can be of further service, please do not hesitate to contact us.

Respectfully submitted,

PITEAU ASSOCIATES USA LTD.

Reviewed by:

Peter Haas
Principle Hydrogeologist

Reviewed by:

Ben Zimmerlund
Principle Hydrogeologist

PH/ BZ/jcb

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FIGURES

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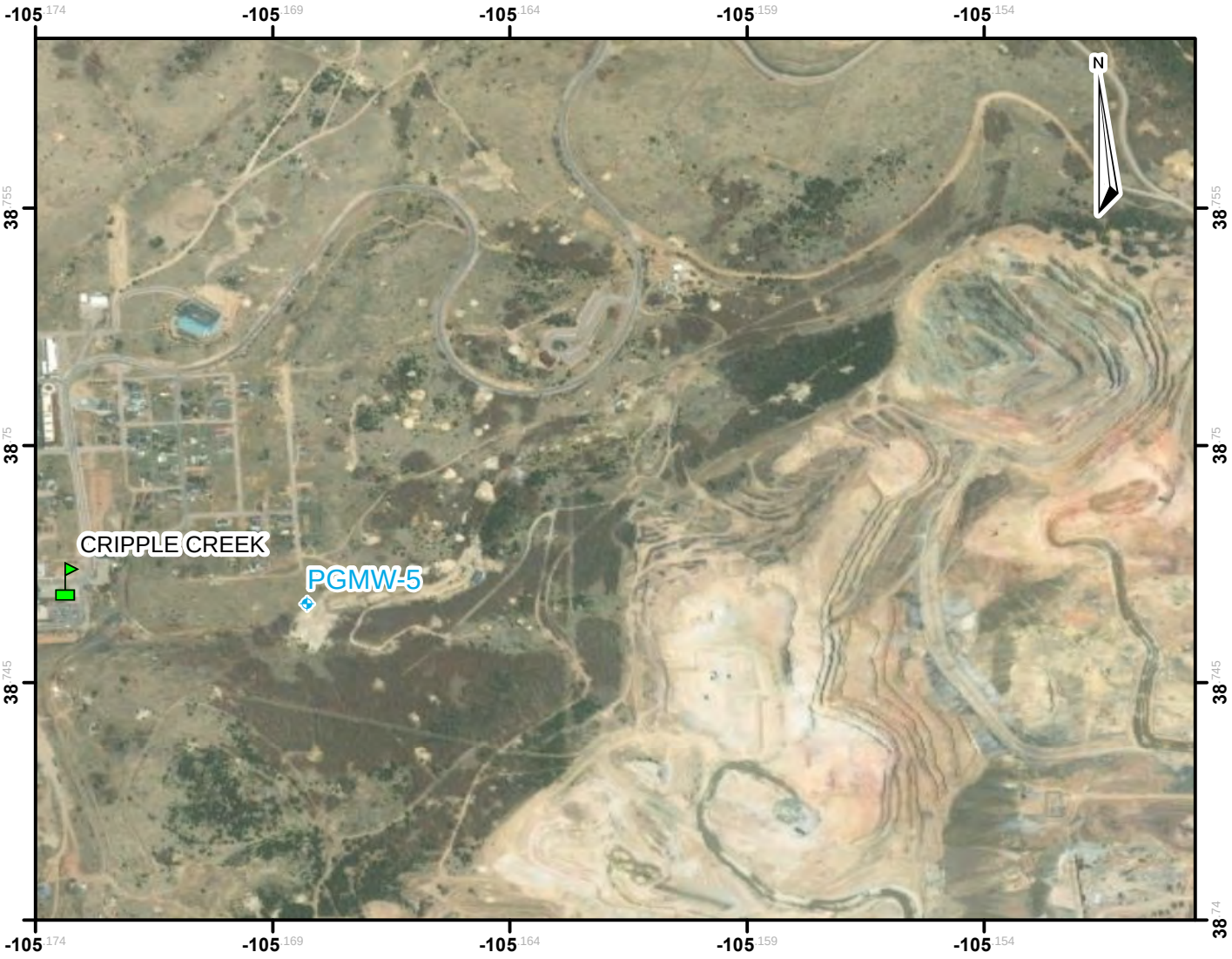

Coordinate System: CC&V Test 5- ry
Projection: Lambert Conformal Conic
Datum: WGS 1984
Units: Decimal Degrees

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Newmont Mining Corporation
Cripple Creek & Victor Mine
Cripple Creek, CO

PITEAU ASSOCIATES
GEOTECHNICAL AND WATER MANAGEMENT CONSULTANTS

PGMW-05 Location Map

BY:	DATE:
CD	MAY 23
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PH	1

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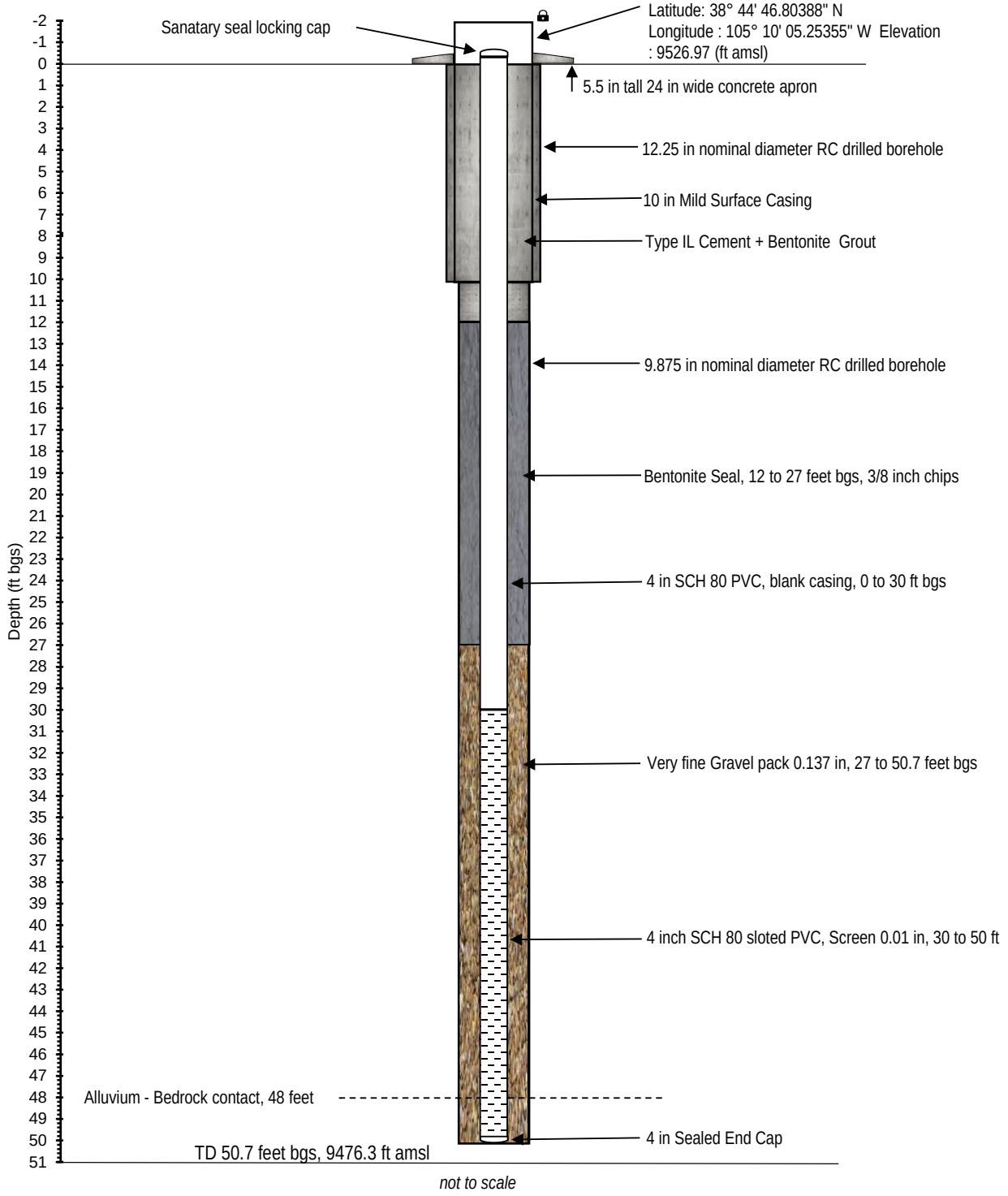

not to scale

Newmont Mining Corporation Cripple Creek & Victor Mine Cripple Creek, CO	PITEAU ASSOCIATES GEOTECHNICAL AND WATER MANAGEMENT CONSULTANTS A TETRA TECH COMPANY

PGMW-5 - As Built Construction

BY:	DATE:
CD	Jun 23
APPROVED:	FIG:
PAH	2

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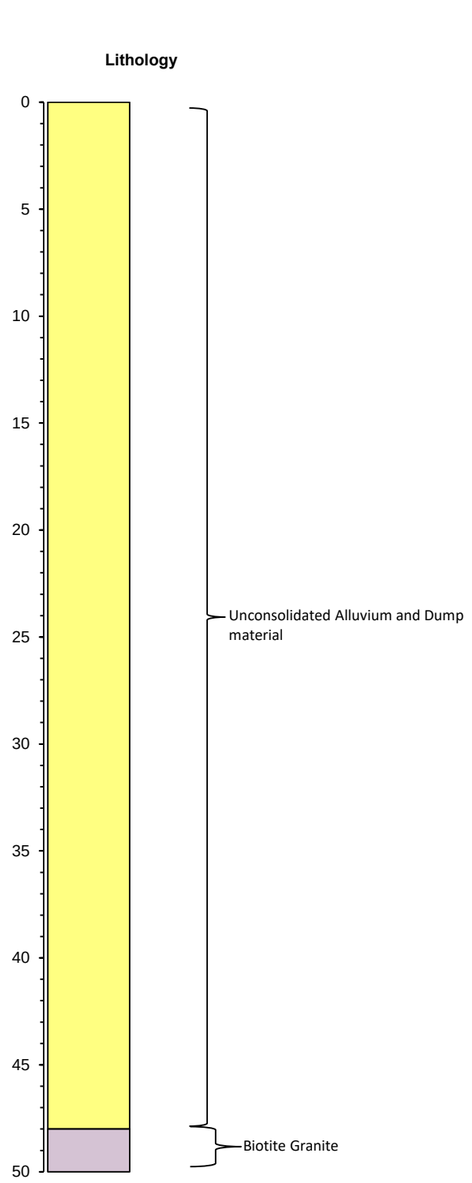

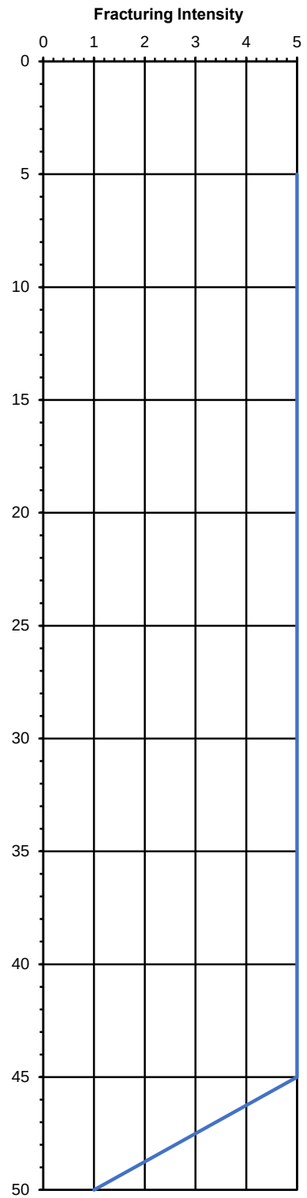

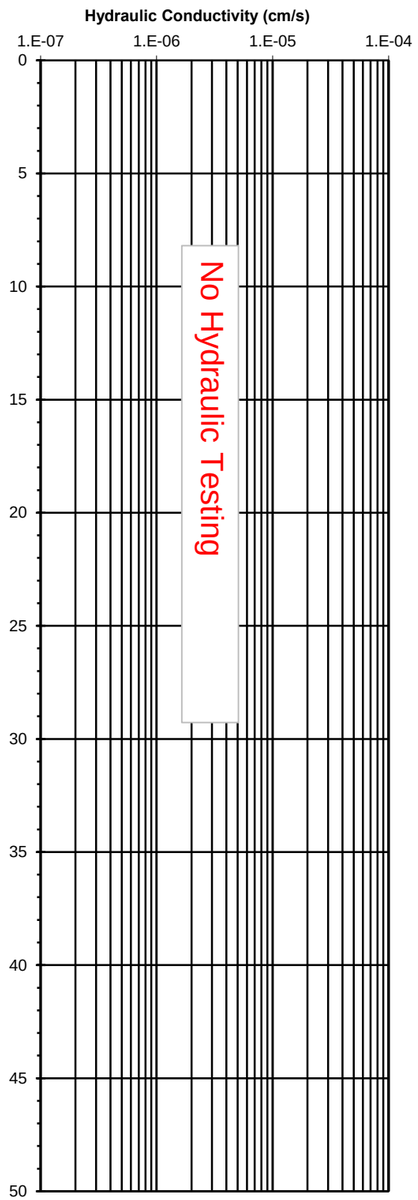

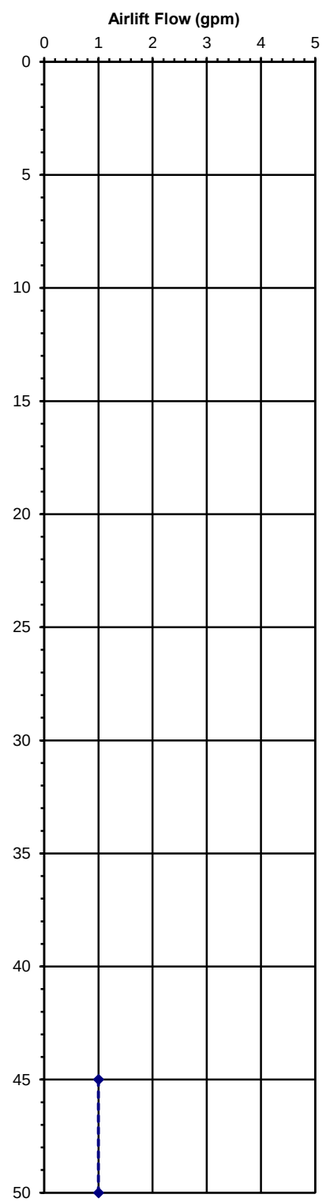

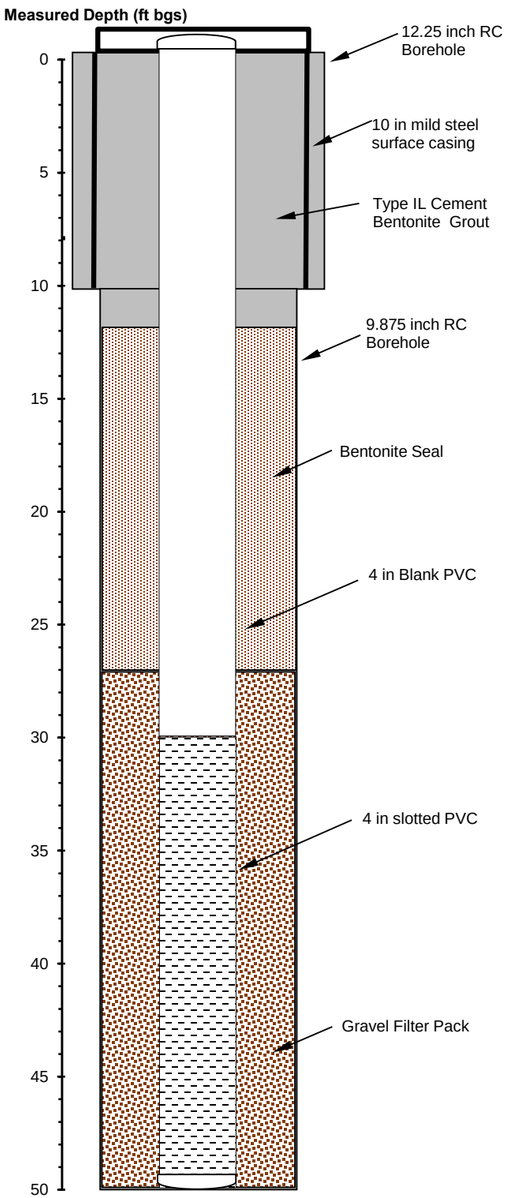

Start date : April 11th, 2023

Finish date : April 13th, 2023

Latitude: 38° 44' 46.80388" N
Longitude : 105° 10' 05.25355" W
Elevation : 9526.97 (ft amsl)

Borehole : PGMW-5
Azimuth : 0
Inclination : 90º
Water Elevation : ~47.07 MD ft bgs

Newmont-CC&V
Monitoring Wells 2023

PITEAU ASSOCIATES
GEOTECHNICAL AND WATER MANAGEMENT CONSULTANTS
A TETRA TECH COMPANY

PGMW-5 Hydrogeology Log

BY:	DATE:
CD	Jun 23
APPROVED:	FIG:
PAH	3

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Newmont Mining Corporation
Cripple Creek & Victor Mine
Cripple Creek, CO

PITEAU ASSOCIATES
GEOTECHNICAL AND WATER MANAGEMENT CONSULTANTS

PGMW-5 - Well Head Completion Photo

BY:	DATE:
CD	JUN 23
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PH	4

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Attachment A
Detailed Daily Field Notes:

April 11th, 2023

12:10 – Drilling of PGMW-5 initiated using 4.5-inch hammer bit.

12:24 - Drilling using 4.5 in hammer bit down to 25 ft below ground surface (bgs)

Cuttings provided from the chips were a gravel to silt sized grains of brown-yellow color combined with oxidized biotite granite from dump material cut out of hillside to make the drill pad. No water detected from the formation. All fluid returns are injected water at this point.

12:25 - Drillers switching from 4.5-inch hammer bit to 9-inch tricone to expand borehole for surface casing.

12:57 – 9-inch tricone bit attached to rod and ready for drilling.

12:59 – Started reaming borehole with 9-inch tricone

13:05 - Drillers reach 10 ft bgs using 9-inch tricone bit

13:08 - Drillers switching 9-inch tricone to 12.25-inch tricone bit

13:15 – 12.25-inch tricone bit attached.

13:16 - Drillers experience solenoid issue with rig and are down for maintenance.

14:30 - Drilling with 12.25-inch tricone begins

14:45 - Drillers reach 10 ft bgs using 12.25-inch tricone bit

15:10 - Drillers begin cutting surface casing to planned length.

15:18 – Start setting surface casing

16:15 – Begin cementing surface casing

16:20 – Leave Site for day to let cement cure around surface casing.

April 12th, 2023

8:39 – Drillers set up to continue drilling using 4.5-inch hammer bit. Injecting minimal water for drilling at 12 psi air pressure.

8:56 – Drillers back at 25 ft bgs.

9:09 - Drillers attach 20 ft rod and start drilling next 20 ft. Drilling pressure at 12 psi.

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9:10 – No returns. Drillers pull rod out and flush. Mud and wood bits come out of rod, appear to have intercepted shallow workings

9:30 – Switch from 4.5 inch to 9.875-inch hammer bit.

10:14 – 9.875-inch Hammer bit attached

10:17 – Start drilling next 20 ft interval.

10:19 – Drilling stopped. Not getting cuttings return from the cyclone. Drillers begin to add cross over sub.

10:24 - Crossover sub added.

10:26 – Drilling resumes

10:31 – Drilling reached 30ft bgs. Not getting any returns.

10:33 – Drilling stops at 34ft bgs. Disconnect drill rod. Discharge hose flushed out. No cuttings come out.

10:38 – Resume drilling. Minor cuttings return with mud.

10:40 - Returns stop at 37 ft bgs. Drillers pressurize rods to flush out borehole.

10:41 - Resume drilling.

10:42 - Drilling at 45 ft bgs. No returns. Drillers disconnect rod and flush discharge hose. Rock cuttings and wood bits come out of discharge hose.

10:54 - Hole sounded. Water encountered at 34.6 ft bgs.

11:00 – Hole sounded again. Water encountered at 33.98 ft bgs.

11:12 – Drillers attach next 20 ft rod and begin drilling past 45 ft.

11:14 – Drilling chatter changes at ~48 ft bgs. Believed to have encountered lithology change.

11: 15 – Drilling reached 50 ft bgs.

11:16 – Start airlifting. Cuttings come out of discharge hose.

Cuttings consist of red-brown oxidized equigranular biotite granite at sand grain size. Cuttings determined to be from local bedrock.

11:23 – Stop airlifting. Pull 20 ft rod off.

11:32 - Attempted hole sounding. Sounder probe not progressing down hole.

Mud believed to prevent progress.

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11:34 – Water is injected and pressurized. Discharge returns mud with rock cuttings.

11:43 - Stop water injection.

11:48 - Drillers pull out 20 ft rod.

11:57 – Hole sounded to total depth. No water encountered.

11:58 - Drillers begin to remove drill rod assembly.

12:10 – Drill rods and hammer bit taken out of hole.

12:16 – Hole sounded. Water encountered at 50 ft bgs.
Waiting to let the hole recover.

12:46 – Hole sounded. Water encountered at 47.08 ft bgs.

13:07 – Sound borehole. Water encountered at 47.08 ft bgs.

13:12 – Drillers add drill rods to tag hole. Hole tagged at 50.7ft bgs.

13:13 – Start assembling PVC for well construction.

PVC: 4-inch x 10 ft, SCH 80 blanks. 4-inch x 10 ft, SCH 80 0.01-inch screen – perforated.

13:49 – Start inserting PVC down borehole.

20 ft of screen at bottom. 30 ft of bank to surface.

14:15 Start pouring gravel for filter pack around PVC.

Gravel size: SRI Supreme #6 Mesh, Avg. 0.132 inch very fine gravel

14:45 – Sound hole. Water at 47.7 ft bgs

15:09 – Insert 1 inch Metal tremie pipe for well development

15:18 – Tremie in PVC. 3 ft off bottom

15:21 – Start Aeration of PVC at ~10 psi

15:24 – Grab water sample from aerated discharge

16.11°C, 6.33 pH, 50.1 mVpH, 371 ppm, 112.6 mVORP, 746 µs/cm

15:31 – Stop aeration

15:35 – Imhoff Cone sample – 3 mL coarse sand, 5 mL fine sand, 120 cm silt

15:41 – Start aeration again

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Piece of end cap comes out of borehole. Stop aeration. Decide to pull the PVC and re-drill to remove the existing gravel pack.

15:48 – Tremie pulled out

16:03 – Pulling out PVC

16:12 – PVC pulled out.

Inspection of end cap shows that it is missing half of end cap. Possible defective cap.

16:32 - Drillers start redrilling to remove gravel pack

16:50 – Drillers trip out of hole

17:00 – One 20 ft rod out of hole

17:07 – Leave site for day

Will reinstall and develop tomorrow

April 13th, 2023

7:10 – Start airlift to flush water out of borehole

7:13 – Start redrilling to remove gravel pack

7:20 – Bucket test of muddy water

1 gpm flow, 12.78°C, 4.85 pH, 126 mVpH, 175.1 mVORP, 353 µ/cm, 262 µ/cm^3, 178 ppm

7:15 – Trip out drill rods + hammer bit

7:48 – Start PVC re-install

7:57 – PVC re-installed

PVC: 4-inch x 10 ft, SCH 80 blanks. 4-inch x 10 ft, SCH 80 0.01-inch screen (perforated). New end cap

20 ft of screen at bottom. 30 ft of bank to surface.

8:00 – Start installing gravel pack

8:16 - gravel tagged to 31 ft bgs

8:50 – Tremie pipe down to 3 ft off bottom.

8:54 – Start aeration with water injection at ~10 psi

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9:13 – Water Sample. Imhoff Cone 0.5 mL sand out of 300 mL sample (1.6mL/L)

9:44 – Second Imhoff Cone sample 0.25 mL sand inch 400 mL sample (0.63 mL/L)

9.64°C, 6.92 pH, 12.5 mV, 194.2 mVORP, 82 µ/cm, 56 µ/cm^3, 41 ppm

9:55 – Stop aeration

9:57 – tag gravel pack at 28.4 ft bgs

10:03 – Blowout remaining water

10:06 – End water blowout. Take out tremie pipe. Place Gravel to 27 ft bgs.

10:16 – Add Sodium Bentonite pellets - Enviroplug® Medium Sodium Bentonite

10:23 – Bentonite pellets set to 12 ft bgs

11:12 – Start cement mixing with Basalite Type IL Cement

11:20 - Start cementing borehole

12:45 – Cemented to surface

12:59 – Bail out water with manual bailer for water test

Muddy water found at bottom

13:10 – Attach tremie for further aeration

13:37 – Start aeration

13:54 – Stop aeration

13:57 – Sound borehole. Water at 48.8 ft bgs, 3.76 ft of water

14:11 – Sound borehole. Water at 47.7 ft bgs,

14:24 – Sound borehole. Water at 45.9 ft bgs

14:34 – Sound borehole. Water at 45.5 ft bgs

14:36 – Start aeration

14:42 – Stop aeration

15:00 – Sound borehole. Water at 48.7 ft bgs

15:12 – Start aeration

15:15 – Stop aeration

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15:37 – Sound hole. Water at 49.2 ft bgs

15:54 – Sound hole. Water at 48.6 ft bgs

15:58 – Start aeration

15:59 – Stop aeration

Well has slow recharge and limited water available to develop. Newmont made the decision to use submersible pump to clean well every week for ongoing well development.

16:02 – Pull out tremie pipe

16:22 – Leave Site

Drillers to move rig and build 2 ft monument and 24-inch concrete apron around the monument

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Newmont
NORTH AMERICA

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Attachment B – Maize Gulch (SGMW-8)

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PITEAU ASSOCIATES
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TEL: +1.720.845.0013
www.piteau.com

FILE: 4454-TM23-02

TECHNICAL MEMORANDUM

DATE: 29 June 2023

TO: Newmont – Cripple Creek & Victor

ATTN: Antonio Matarrese

FROM: Peter Haas
Email: phaas@piteau.com

RE: **2023 Monitoring Wells – Maize Gulch Monitoring Well 8 (SGMW-8)**

INTRODUCTION

Newmont's Cripple Creek and Victor Gold Mine (CC&V) is a historic gold mine, with placer and underground mining starting in 1891. The mine transitioned to open pit mining methods in the 1970's. As a modern open pit mine operation, the site strives to meet state regulations for monitoring. To this end, CC&V has initiated construction of three additional groundwater monitoring wells to comply with the state of Colorado water monitoring requirements. This memorandum provides a narrative of the drilling, construction, and development of Maize Gulch Monitoring Well 8 (SGMW-8).

Table 1 provides a summary of the borehole drilling and location with coordinates provided in WGS84 decimal degrees latitude and longitude. Table 2 provides monitoring well construction details. Table 3 provides a summary of the water quality field parameters collected during well drilling. Table 4 provides a summary of water quality field parameters collected during monitoring well development.

Figure 1 illustrates the location of the borehole. Figure 2 provides an as built of the completed monitoring well. Figure 3 provides a hydrogeologic log summarizing the geology, water detection, airlift and well construction. Figure 4 is a picture of the completed borehole well head.

This monitoring well did not encounter any measurable groundwater and was ultimately completed as a dry well.

Monitoring Well Construction was completed on May 11th, 2023.

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Table 1 Summary of SGMW-8 Borehole

Hole ID	Drilling Date	Latitude	Longitude	Surface Elevation	Azimuth	Dip	TD Measured Depth (ft)	TD Elevation (ft amsl)	Drilling Method	Completion
SGMW-8	05/05/23	38.7234	-105.176	9034.656	0	90	218.7	8815.9	Reverse Circulation	Monitoring Well

Coordinates are provided in WGS84 decimal degrees latitude and longitude

Table 2 Summary of Monitoring Well construction SGMW-8

Hole ID	Units	Water Elevation	Total Depth	Depth to Bedrock	Casing Interval from	Screen Interval	Gravel/Sand Interval	Seal Interval	Cement Interval
SGMW-8	(ft bgs)	N/A	218.7	18	0-198	198-218	188-218	33-188	0-33
	(ft amsl)	N/A	8815.9	9016.6	9034.6-8836.6	8836.6-8816.6	8846.6-8816.6	8983.6-8846.6	9034.6-8983.6

Table 3 Summary of Water Quality Field Parameters during Drilling

Date	Time	Depth	Elapsed Time (min)	Method	Total Airflow Sample	Imhoff Cone (total sample)	Imhoff Cone (Sed)	pH	Temperature	EC
					gal/min	mL/L	mL		(deg. C)	µs/cm
5/5/2023	16:56:00	45	2	Bucket test	<0.1	N/A	N/A	N/A	N/A	N/A

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5/6/2023	6:49:00	45	2	Bucket test	1	N/A	N/A	N/A	N/A	N/A
5/6/2023	6:54:00	45	5	Bucket test	<0.1	N/A	N/A	N/A	N/A	N/A
5/6/2023	13:00:00	85	4	Bucket test	<0.1	N/A	N/A	N/A	N/A	N/A
5/6/2023	17:07:00	105	2	Bucket test	0.3	N/A	N/A	N/A	N/A	N/A
5/8/2023	6:42:00	105	1	Bucket test	2	N/A	N/A	N/A	N/A	N/A
5/9/2023	6:56:00	165	3	Bucket test	<0.1	N/A	N/A	N/A	N/A	N/A
5/9/2023	9:57:00	185	3	Bucket test	<0.1	N/A	N/A	N/A	N/A	N/A
5/9/2023	10:09:00	N/A	N/A	Bucket test	<0.1	N/A	N/A	N/A	N/A	N/A

*Airlift was never sustained for more than a few minutes; no detectable inflow was encountered after clearing the injected water from the bore.

Table 4 Summary of Field Parameters during Development

Date	Time	Elapsed Time (min)	Method	Airflow-GPM	Depth	Imhoff Cone (Sed)	Imhoff Cone (total sample)	Imhoff Cone	pH	Temperature	EC
					(ft bls)	**mL**	**mL**	**mL/L**		**(deg. C)**	**µs/cm**
05/10/23	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*No development was completed due to lack of water production.

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NARRATIVE

General Information:

Drilling Contractor: Boart Longyear
Drilling Method: Reverse Circulation
Drill Rig Model: Foremost Apex 55
Well development Method: N/A – Dry Hole
Water Quality testing: N/A – Dry hole
Drilling initiated May 04th and the Monitoring well was completely constructed on May 11th, 2023

Summary Narrative:

May 5th:

- Surface casing drilling reached 10 ft below ground surface (bgs) using a 4.5-inch hammer bit.
- Drillers then reamed the hole from 4.5 to 12 inches and subsequently to 12.25 inch with tricone and hammer bits.
- A 10-inch diameter mild steel surface casing was then placed 10 ft bgs with a 2 in stickup above ground. Casing was cemented using neat cement back to surface.

Borehole advanced to bedrock:

- Drilling contractor began drilling past surface casing using 9.875-inch hammer bit.
- Bedrock contact encountered at roughly 18 ft bgs.
- The borehole was then advanced to 25 ft. Injection water was stopped and airlifted for 10 minutes. Borehole was sounded with no water encountered to 25 ft bgs.
- The borehole was then advanced to 45ft. Injection water was stopped and airlifted for four minutes until dry. A water sample was taken from the cyclone two minutes into the airlift. Flowrate was measured at 0.03 gal/min but was not sustained and was considered returns of injected water from drilling.
- The borehole was sounded to 45 ft bgs after drillers airlifted hole. No water was encountered during the sounding.
- The drillers then tripped out to install a new 9.875-inch hammer bit.

May 6th:

- Borehole was sounded through the rods in the morning after an overnight recovery period. No water was encountered during the sounding.

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- The borehole was then airlifted, resulting in a 1 gpm flowrate that was not sustained and ran dry several minutes later. A water sample was taken from the flowrate test, but it was considered to be remnant injected water from previous days drilling.
- The borehole was advanced to 105 ft bgs. No noticeable water was encountered.
- Borehole was airlifted at 65 ft with no water injection. Cyclone went from <1 gpm starting to dry in seven minutes. Water was considered to be injection water.
- Borehole was allowed to recover for an hour and sounded through the rods. No water was detected at 63 ft bgs (above the bit and crossover).
- Borehole was airlifted at 85 ft with no water injection. Cyclone went from <1 gpm starting to dry in three minutes. A water sample was taken four minutes into airlifting but was considered to be injected water.
- No water was detected at 83.2 ft bgs (above the bit and crossover) after letting borehole recover for five minutes.
- Borehole was airlifted at 105 ft with no water injection. Cyclone went from <1 gpm starting to dry in four minutes. A water sample was taken two minutes into airlifting but was considered injected water.

May 7th:

- Fatigue day for drillers. No work on the borehole was performed.

May 8th:

- Borehole was sounded in the morning after an overnight recovery period. Water was encountered at 103 ft bgs. Depth to bit interchange was 104.4 ft bgs.
- Borehole was then airlifted for three minutes with muddy water flowing out at 2 gpm in the initial minute with the cyclone coming dry at the end of the three minutes. A water sample was taken within the first minute of airlifting but again was considered injected water that remained in the borehole.
- The borehole was then advanced to 125 ft bgs. The borehole was then airlifted for five minutes. The cyclone went dry at the five-minute mark.
- The drillers had to trip out of after drilling past 125 ft. The borehole was sounded with an open hole with water detected at 122.9 ft bgs out of 125 ft but was considered to be injected water that had accumulated during the tripping out of the rods. The O-rings for the rods were inspected and repaired. The drillers then tripped back in and resumed drilling.

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- The borehole was then advanced to 145 ft bgs. An airlift test was performed for six minutes with the cyclone going dry by the six-minute mark.
- The borehole was allowed to recover for an hour, then sounded to the hammer bit crossover of 143 ft bgs. No water was detected.
- A second airlift was performed after waiting for the borehole to recover from the prior airlift. No water came out of the cyclone.
- The borehole was then advanced to 165 ft for the end of the workday. The borehole was then allowed to recover overnight.

May 9th:

- The borehole was sounded first thing in the morning. Water was detected at 162.4 ft bgs with the bit interchange at 163.7 ft bgs.
- The borehole was airlifted for five minutes with the cyclone going dry at the five-minute mark. A water sample was collected three minutes into the airlift test but was considered accumulated injected water.
- The borehole was then advanced to 185 ft bgs. The borehole was then airlifted for four minutes, after which the cyclone went dry. A water sample was taken from the flowrate test but was considered to be injected water.
- The borehole was then advanced to 205 ft bgs. During drilling water injection ran out and resulted in dry rock chips coming out of the cyclone shortly after. Injection water was restored in three minutes. The borehole was airlifted for nine minutes but was again not sustained
- The borehole was left to recover for the next hour and was sounded but no water detected down to 200 ft bgs at the bit interchange.
- The borehole was then advanced to 218 ft bgs. An airlift test was performed with the cyclone becoming dry after 14 minutes.
- At this point the borehole was called and is considered to be a dry hole. The decision was made to end drilling and start well construction the following day.

May 10th:

- The open borehole was sounded in the morning after letting the hole recover from the prior day. Water was detected at 217.6 ft bgs with the bottom tagged at 218 ft bgs. This small amount of water was likely remnant injected water from the previous day.
- Construction of the well started after sounding the borehole.

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Initial Installation May 10th:

- Borehole materials include:
- Filter pack composed of Gravel size: SRI Supreme #8 Mesh, Avg. 0.132 inch - very fine gravel.
- PVC Blank: 4-inch x 10 ft, SCH 80.
- PVC screen: 4-inch x 10 ft, SCH 80, 0.01-inch slot size.
- Sodium bentonite pellets
- Portland Type II cement
- An end cap was secured to the bottom of the first stick of PVC screen and a total of 20 ft of 4-in PVC screen was installed with 200 ft of 4-in PVC blank then placed back to 2.8 ft above ground surface.
- 29.5 ft of coarse sand was then placed in the annulus of the borehole surrounding the installed PVC as a filter pack. The filter pack was tagged to 188.5 ft bgs.
- Sodium bentonite pellets were then placed as an annular seal on the gravel pack back to 32.8 ft bgs.
- Portland Type II cement was then mixed with water and poured into the borehole annuls around the PVC up to 1 in beneath the surface casing.
- The 2.6 ft of PVC stick up from surface was cut to the level of the installed surface casing to allow the drill rig to move off the drillhole.
- A weather delay prevented the construction of the additional 2 ft of steel casing to be completed to the existing surface casing.
- The cement pad for the monument was also delayed to the following day.

May 11th:

- Drillers moved the rig off to complete the 2 ft steel monument addition, along with a 4 ft (length) by 4 ft (length) by 5.5 in (depth) square cement pad.

Detailed field notes are included in Attachment A.

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LIMITATIONS

This investigation has been conducted using a standard of care consistent with that expected of scientific and engineering professionals undertaking similar work under similar conditions. No warranty is expressed or implied.

This memorandum is prepared for the sole use of Newmont – Cripple Creek & Victor. Any use, interpretation, or reliance on this information by any third party, is at the sole risk of that party, and Piteau Associates accepts no liability for such unauthorized use.

If you have any questions regarding the above, or we can be of further service, please do not hesitate to contact us.

Respectfully submitted,

PITEAU ASSOCIATES USA LTD.

Reviewed by:

Peter Haas
Principle Hydrogeologist

Reviewed by:

Camy Noguera
Senior Hydrogeologist

PH/CN/jcb

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FIGURES

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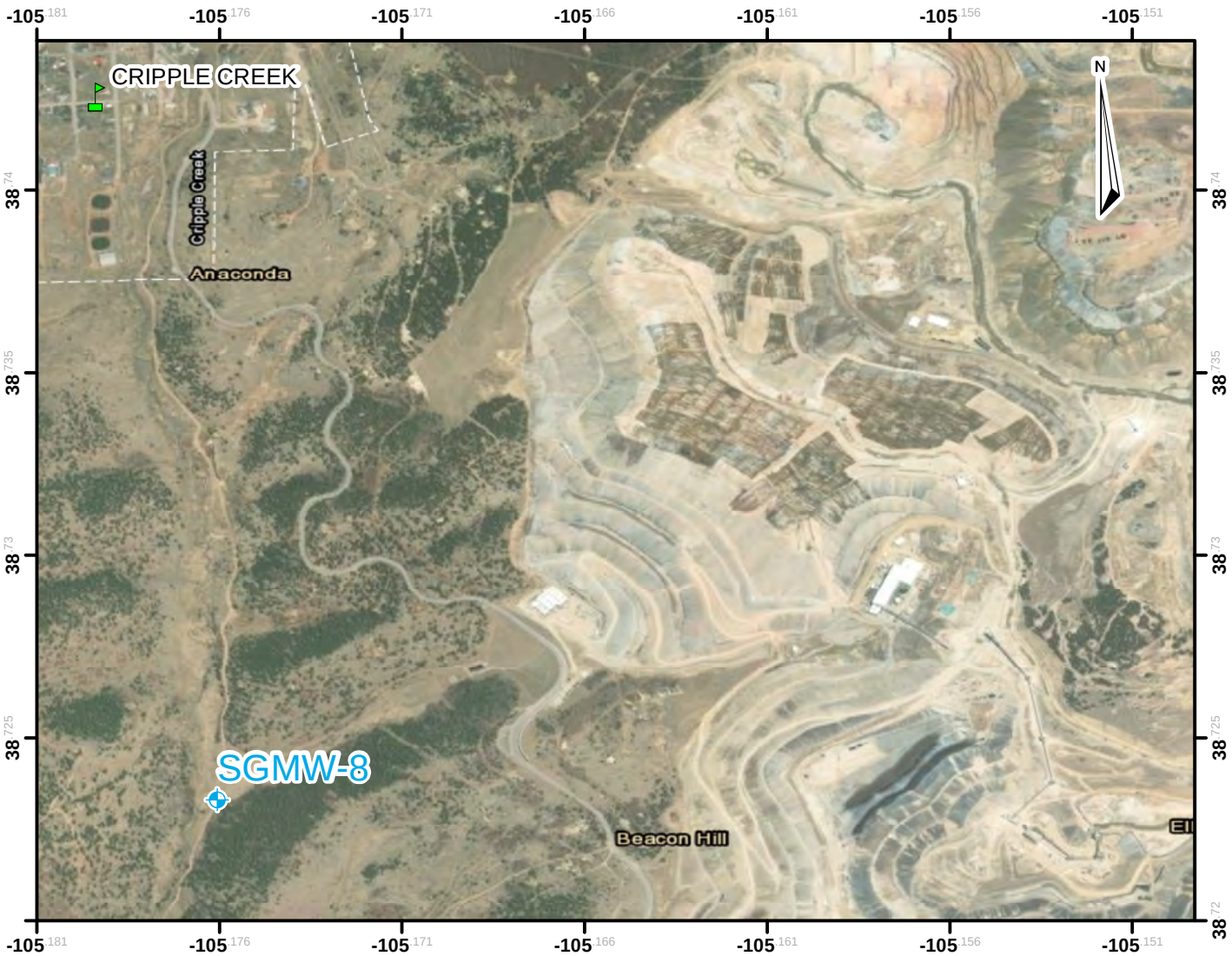

Coordinate System: CC&V Test 5- ry
Projection: Lambert Conformal Conic
Datum: WGS 1984
Units: Decimal Degrees

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Newmont Mining Corporation
Cripple Creek & Victor Mine
Cripple Creek, CO

PITEAU ASSOCIATES
GEOTECHNICAL AND WATER MANAGEMENT CONSULTANTS
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SGMW-8 Location Map

BY:	DATE:
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APPROVED:	FIG:
PH	1

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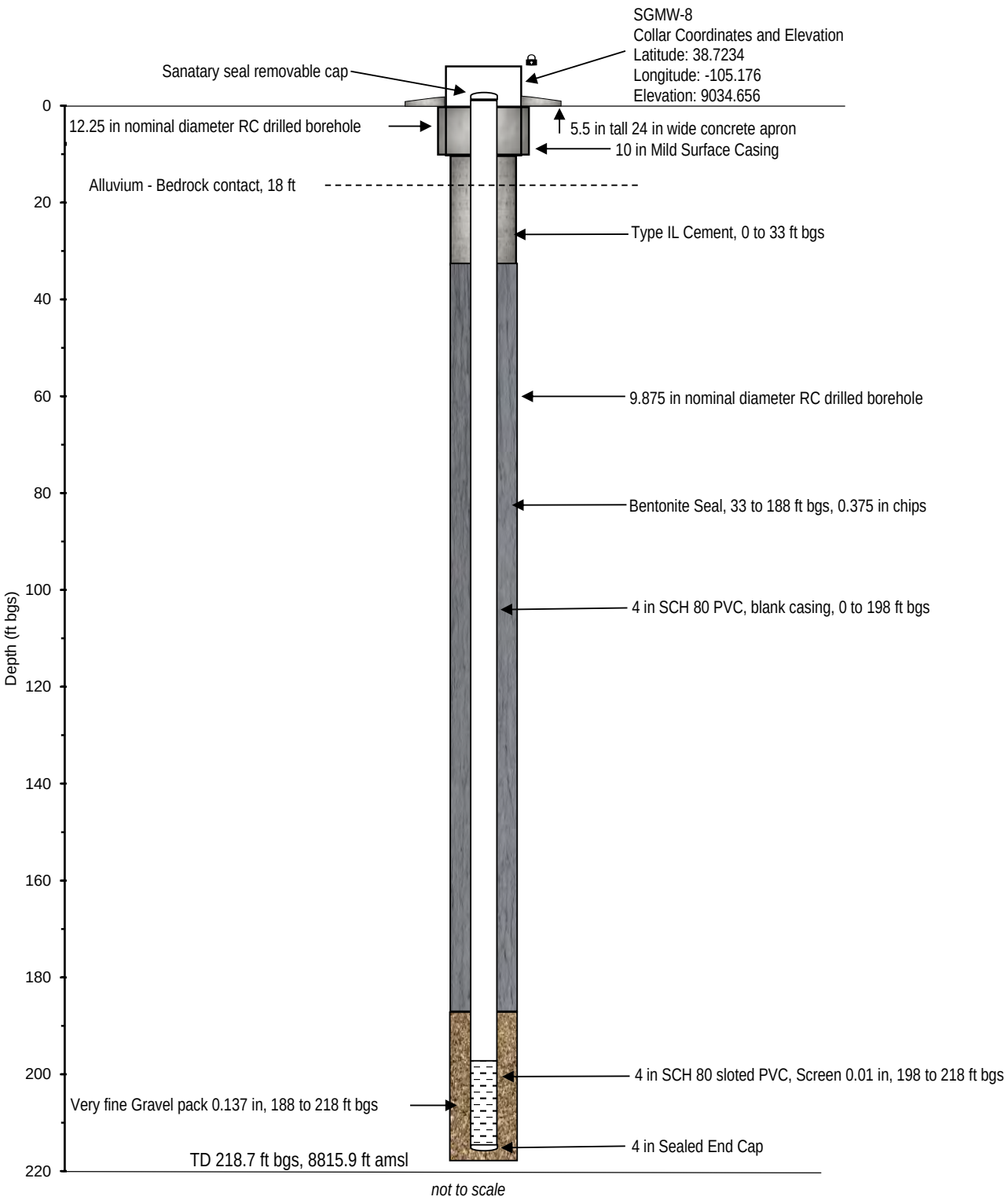

Newmont Mining Corporation
Cripple Creek & Victor Mine
Cripple Creek, CO

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GEOTECHNICAL AND WATER MANAGEMENT CONSULTANTS
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SGMW-8 As Built Construction

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PAH	2

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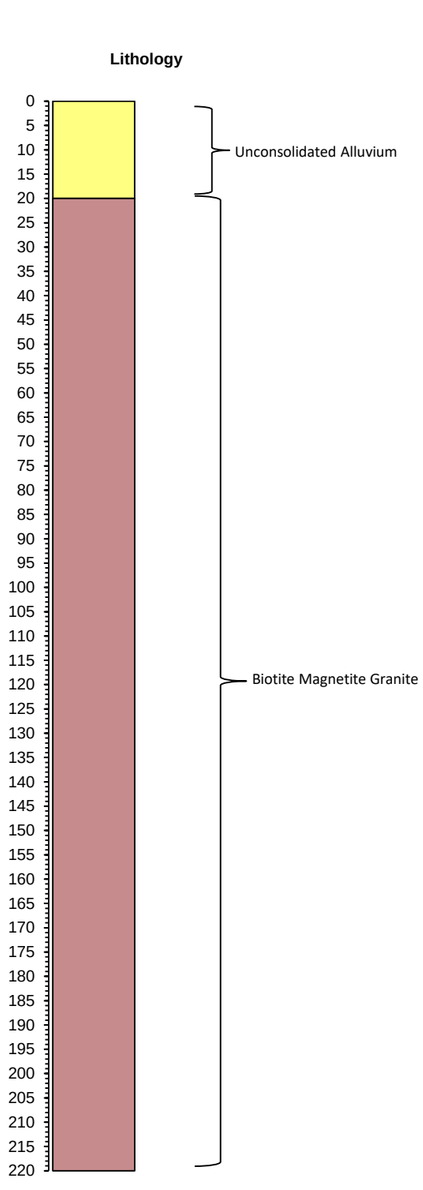

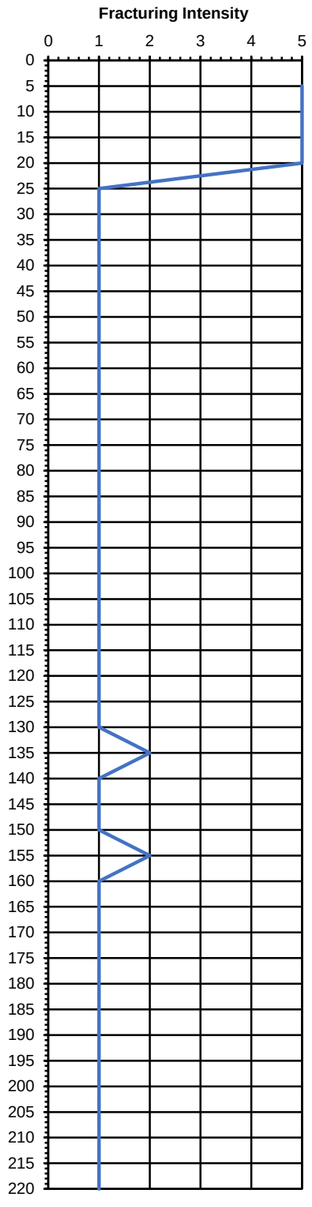

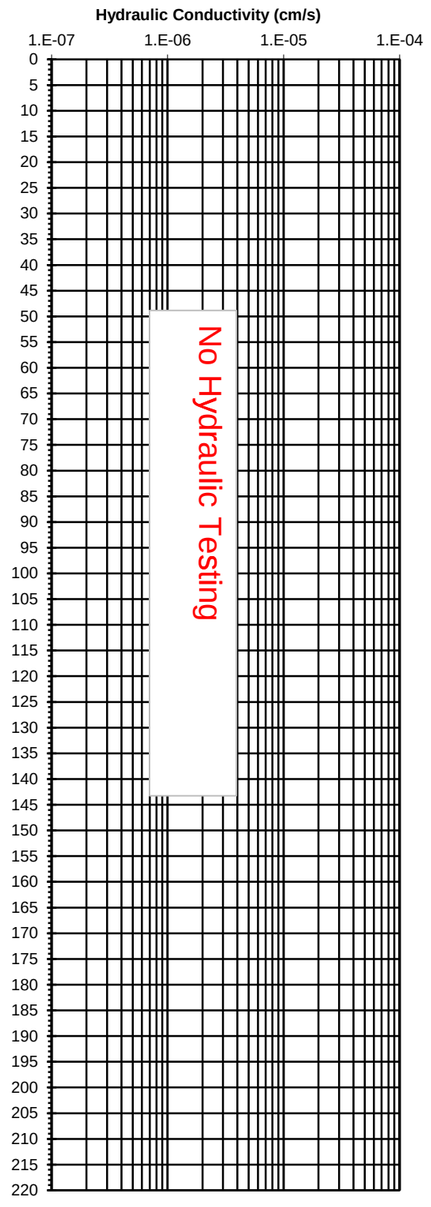

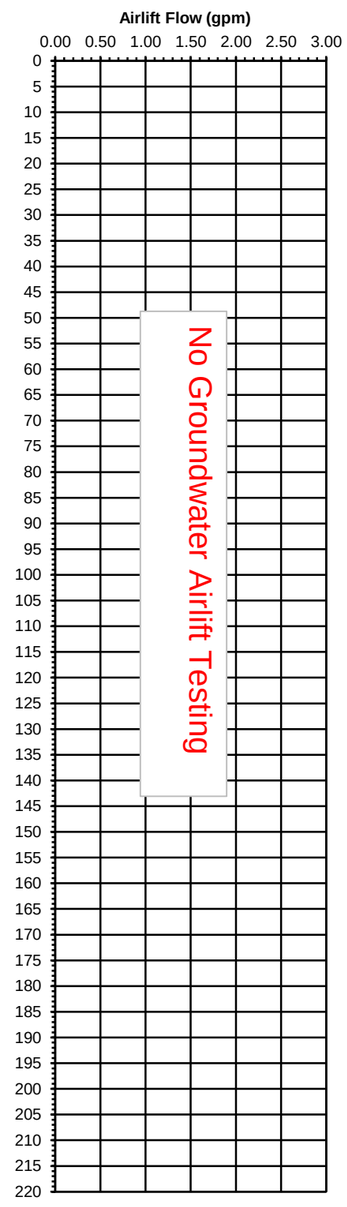

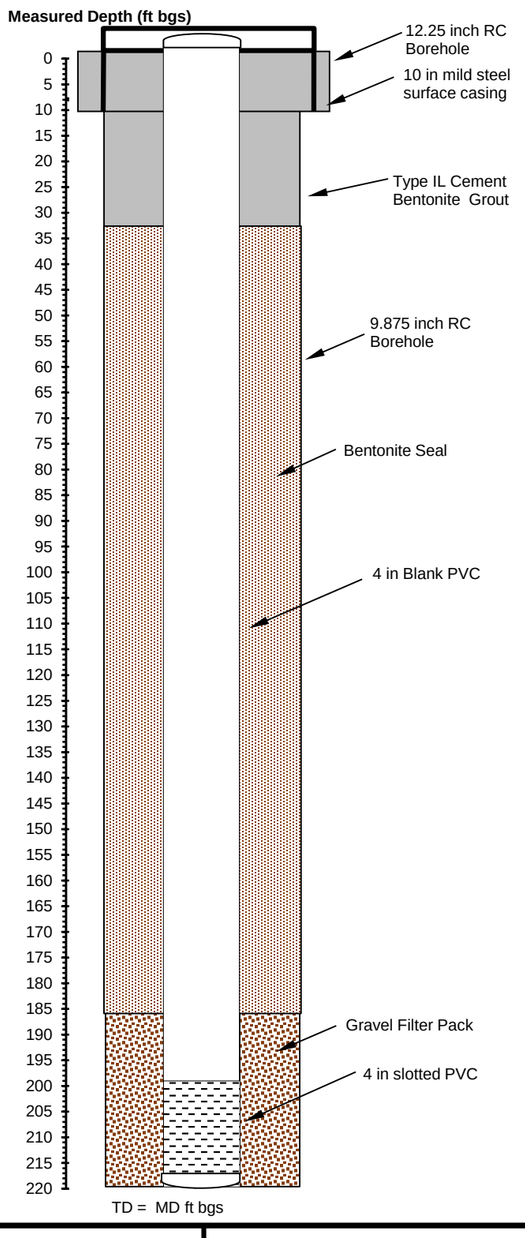

Start date : May 05th, 2023

Finish date : May 11th, 2023

Latitude : 38.7234
Longitude : -105.176
Elevation : 9034.646 (ft amsl)

Borehole : SGMW-8
Azimuth : 0
Inclination : 90º
Water Elevation : N/A

Newmont-CC&V
Monitoring Wells 2023

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SGMW-8 Hydrogeology Log

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PAH	3

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Newmont Mining Corporation
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Cripple Creek, CO

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SGMW-8 Well Head Completion Photo

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ATTACHMENT

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Attachment A
Detailed Daily Field Notes:

May 05th 2023

6:45 – Arrive at Maize Gulch Drill Site #8

7:30 – Start 5 in pilot hole with 9.875 in hammer bit

7:40 – Stop at 10ft below ground surface (bgs). Drilling contractor switching to larger 12 in hammer bit.

7:51 – Start drilling with 12 in hammer bit

7:53 – Stop at 5 ft to add rod to hammer bit.

7:58 – Start drilling 5 – 10 ft with 12 ft hammer bit.

8:00 – Stop at 10 ft bgs.

8:19 – Start drilling with 12.25-inch double tricone bit.

8:37 – Stop at 5 ft to clean dirt off bit.

8:41 – Resume drilling

8:47 – Reached 10 ft bgs.

8:55 – Set 10 ft of 10 in mild steel surface casing into borehole

9:19 – Drillers begin preparing cement to seal up surface casing. Two 47 lb bags W-60 well oil cement, eight 47 lb bags Type II cement.

9:25 – Cement was poured around surface casing. Waited for the cement to cure

10:23 – Drillers attach 9.875 in hammer bit

13:13 – Drillers start drilling with 9.875 in hammer bit.

13:21 – Reached 15 ft bgs. Cuttings become more consistent (red-pink sand grained sized granite)

13:25 – Reached 20 ft bgs. Cuttings become completely consistent with bedrock. (pink-red biotite-magnetite-granite)

13:37 – Take water injection sample.

13:40 – Reached 25 ft bgs.

13:43 – Injection water shutoff. Airlift water out of hole. No groundwater detected.

14:00 – Sound hole. No water encountered.

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14:05 – Start drilling 25-45 ft

14:44 – Reached 30 ft bgs

15:30 – Reached 35

16:12 - Reached 40 ft bgs.

16:54 - Reached 45 ft bgs. Shutoff water injection, begin airlift

16:56 - Bucket Test. 0.03 gal/min flowrate.

17:00 - Completely dry from airlift.

17:06 - Sound hole down to bit crossover. No water encountered.

17:14 - Drillers trip out to put on new 9.875 in bit.

17:34 - old bit taken off.

17:44 - New bit on.

17:47 - trip bit back down hole. Let hole recover overnight

18:03 - Leave Site.

May 06th, 2023

6:25 - At Maize Gulch Drill Site #8.

6:40 - Sound Hole. No water encountered above bit crossover.

6:49 - Pressurize hole- airlift water out of borehole.

6:50 - Bucket Test #1. 1 gpm flowrate taken at beginning of water flow.

6:54 - Bucket Test #2. 0.18 gpm flowrate.

7:45 - Start drilling 45-65 ft rod.

8:04 - Reached 50 ft bgs.

8:22 - Reached 55 ft bgs.

8:49 - Reached 60 ft bgs.

9:15 - Reached 65 ft bgs. shut off injection water, begin airlift

9:22 - Tiny trickle turns to droplets. not enough water to test

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9:25 - Drillers stop airlift. Dry cyclone. No water coming out.

9:45 - Sound borehole. No water encountered to bit crossover. Let hole recover.

10:25 - Sound borehole. No water encountered to bit crossover

10:33 - Pull out sounder.

10:39 - Pressurize hole with air.

10:51 - Start drilling 65 - 85 ft rod.

11:01 – Drillers to stop to fix O-ring issue.

11:09 - Resume drilling.

11:29 - Reached 70 ft bgs.

11:55 - Reached 75 ft bgs.

12:21 - Reached 80 ft bgs.

12:56 - Reached 85 ft bgs. Shutoff water injection - begin airlifting water out of hole.

13:00 - Bucket Test #3. 0.05 gpm flowrate.

13:03 - Cyclone dry. No water coming out of borehole, no water production.

13:08 - Sound borehole. No water encountered to bit crossover.

13:17 - Pressurize hole. Start drilling 85-105 ft rod.

13:45 - Reached 90 ft bgs.

13:59 - Reached 95 ft bgs.

14:39 - Reached 100 ft bgs.

15:55 - Stop to check for rod/bit issue.

16:31 - Resume drilling.

17:01 - Reached 105 ft bgs. Shutoff water injection - begin airlifting water out of borehole.

17:03 - Bucket Test #4. 0.3 gpm flowrate.

17:05 - Cyclone dry. No water coming out of borehole.

17:07 - End drilling for day, not enough time to finish next rod.

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17:44 - Leave Site.

May 07th, 2023

Fatigue day for drillers. No work was done on the borehole this day.

May 08th, 2023

6:11 - At Maize Gulch Drill Site #8.

6:30 - Sound borehole. Water encountered at 103 ft bgs with bit crossover at 104.4 ft bgs.

6:41 - Pressurize hole. Airlift water out of borehole.

6:42 - Bucket Test #5. 2 gpm flowrate.

6:44 - Dry Cyclone. No water coming out of borehole. Assumed accumulated injected water only.

6:53 - Start drilling 105-125 ft bgs.

7:29 - Reached 110 ft bgs.

8:09 - Reached 115 ft bgs.

8:42 - Reached 120 ft bgs.

9:15 - Reached 125 ft bgs. Shut off water injection.

9:20 - Dry Cyclone. No water coming out of borehole.

9:25 - Start drilling 125-145 ft rod.

9:28 - Drilling stopped. Trip out to fix "foot valve" on bit.

10:50 - Sound open hole. Water encountered at 122.9 ft bgs with borehole depth 125 ft bgs hole bottom, appears to be accumulated injection water.

11:47 - Drillers trip back into hole.

12:04 - Resume drilling.

12:34 - Reached 130 ft bgs.

12:45 - Reached 135 ft bgs.

13:01 - Reached 140 ft bgs.

13:31 - Reached 145 ft bgs. shut off water injection

13:37 - Stop airlift. Cyclone had run dry.

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13:43 - Sound hole. No water detected above crossover. Bit bottom at 143.6 ft bgs

14:48 – waited 5 minutes. No water detected. Bit bottom at 143.6 ft bgs

14:51 - Pressurize hole. Airlift water out of borehole.

14:56 - Completely dry cyclone.

14:58 - Start drilling 145-165 ft bgs.

15:26 - Reached 150 ft bgs.

15:53 - Reached 155 ft bgs.

16:27 - Reached 160 ft bgs.

16:52 - Reached 165 ft bgs.

17:04 - Shut off water injection. Begin airlifting water out of borehole.

17:13 – Dry cyclone. No water coming out of borehole.

17:16 – Turn pressurized air off.

17:20 - Leave Site.

May 09th, 2023

6:30 - At Maize Gulch Drill Site #8.

6:35 - Sound Hole. Water encountered at 162.9 ft bgs. 163.7 ft bgs cross over depth with bit on bottom.

6:53 - Pressurize hole. Airlift water out of borehole.

6:42 - Bucket Test #6. 0.08 gpm flowrate.

6:58 - Dry Cyclone. No water coming out of borehole.

6:59 - Start drilling 165-185 rod.

7:52 - Reached 170 ft bgs.

8:31 - Reached 175 ft bgs. Take Imhoff Cone #6 reading.

9:10 - Reached 180 ft bgs.

9:54 - Reached 185 ft bgs. Shut off water injection.

10:03 - Start drilling 185-205 rod.

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10:29 - Injection water stopped. Dry chips coming out without injection water.

10:32 - Injection water returned.

10:35 - Reached 190 ft bgs.

10:52 - Reached 195 ft bgs.

11:28 - Reached 200 ft bgs.

12:10 - Reached 205 ft bgs. Shut off water injection. Start airlifting water out of borehole.

12:19 – Stop airlifting. Dry cyclone.

13:20 - Sound hole. No water detected at bit interchange. Bit bottom at 200.5 ft bgs.

13:23 - Start drilling 205-220 ft rod.

14:23 - Reached 210 ft bgs.

15:11 - Reached 215 ft bgs.

16:33 - Reached 220 ft bgs. Shut off water injection.

16:47 - Dry cyclone. No water coming out of borehole.

16:48 – Stop airlifting.

16:51 - Start Tripping out of borehole.

17:00 - Leave Site.

May 10th, 2023

6:24 - At Maize Gulch Drill Site #8.

6:30 - Sound Hole. Water detected at 218.6 ft bgs out of 219.2 ft bgs bottom. Assumed to be remnant of injected water that had accumulated overnight.

7:06 - Start PVC pipe install.

8:12 - PVC installed. 20 ft of screen. 200ft blank casing. 4-inch diameter.

8:14 - Start very fine gravel/sand install.

8:49 - Tag gravel at 188.5 ft bgs. 29.7 ft of gravel.

9:02 – Drillers add bentonite chips around PVC.

9:35 - Drillers leave to grab more bentonite chips.

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10:35 - Drillers back with more bentonite chips. Added 20 (47 lb) bags of bentonite.

10:56 - Tag bentonite at 108 ft bgs. Resume adding bentonite chips.

11:20 - Tag bentonite at 72 ft bgs. Resume adding bentonite chips.

11:34 - Tag bentonite at 57 ft bgs. Drillers out of bentonite again.

11:45 - Drillers leave for more bentonite.

12:40 - Drillers back with bentonite and cement.

12:59 - Tag bentonite at 32.8 ft bgs. Stop added bentonite.

13:03 – Drillers start cement mixing. Begin to pour cement around PVC.

13:35 - Fully cemented borehole to surface. Start picking up site to move rig.

14:19 - In the red for lightning.

15:11 - Leave site

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Newmont
NORTH AMERICA

Cripple Creek & Victor
Gold Mining Company
P.O. Box 191
100 North 3rd Street
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Attachment C – Grassy Valley (GVMW-26A)

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PITEAU ASSOCIATES
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FILE: 4454-TM23-03

TECHNICAL MEMORANDUM

DATE: 23 August 2023

TO: Newmont – Cripple Creek & Victor

ATTN: Antonio Matarrese

FROM: Peter Haas
Email: phaas@piteau.com

RE: **2023 Monitoring Wells – Grassy Valley Monitoring Well 26A (GVMW-26A)**

INTRODUCTION

Newmont's Cripple Creek and Victor Gold Mine (CC&V) is a historic gold mine, with placer and underground mining starting in 1891. The mine transitioned to open pit mining methods in the 1970's. As a modern open pit mine operation, the site strives to meet state regulations for monitoring. To this end, CC&V has initiated construction of three additional groundwater monitoring wells to comply with the state of Colorado water monitoring requirements. This memorandum provides a narrative of the drilling, construction, and development of Grassy Valley Monitoring Well 26A (GVMW-26A).

Table 1 provides a summary of the borehole drilling and location with coordinates provided in WGS84 decimal degrees latitude and longitude. Table 2 provides monitoring well construction details. Table 3 provides a summary of the water quality field parameters collected during well drilling. Table 4 provides a summary of water quality field parameters collected during monitoring well development.

Figure 1 illustrates the location of the borehole. Figure 2 provides an as built of the completed monitoring well. Figure 3 provides a hydrogeologic log summarizing the geology, water detection, airlift and well construction. Figure 4 is a picture of the completed borehole well head.

Monitoring Well Construction was completed on July 16th, 2023.

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Table 1 Summary of GVMW-26A Borehole

Hole ID	Drilling Date	Latitude	Longitude	Surface Elevation	Azimuth	Dip	TD Measured Depth (ft)	TD Elevation (ft amsl)	Drilling Method	Completion
GVMW-26A	07/11/23	38.73967	-105.11098	9736.8	NA	90	71	9665.8	Reverse Circulation	Monitoring Well

Coordinates are provided in WGS84 decimal degrees latitude and longitude

Table 2 Summary of Monitoring Well construction GVMW-26A

Hole ID	Units	Water Elevation	Total Depth	Depth to Bedrock	Casing Interval from	Screen Interval	Gravel/Sand Interval	Seal Interval	Cement Interval
GVMW-26A	(ft bgs)	N/A	71	27	0 - 50	50 - 70	46 - 71	26 - 46	0 - 26
	(ft amsl)	N/A	9665.8	9709.8	9736.8 - 9686.8	9686.8 – 9666.8	9690.8 – 9665.8	9710.8 – 9690.8	9736.8 – 9710.8

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Table 3 Summary of Water Quality Field Parameters during Drilling

Date	Time	Depth	Elapsed Time (min)	Method	Total Airflow Sample	Imhoff Cone (total sample)	Imhoff Cone (Sed)	pH	Temperature	EC
					GPM	L	mL/L		(deg. C)	µs
6/13/2023	10:23:00	40	5	Bucket test	2.5	N/A	N/A	6.52	24.2	459
6/13/2023	10:52:00	60	5	Bucket test	10	N/A	N/A	7.07	19.6	239
6/13/2023	11:22:00	70	5	Bucket test w/ Imhoff	10	1	22	6.8	21.9	193

Table 4 Summary of Field Parameters during Development

Date	Time	Depth	Elapsed Time (min)	Method	Total Airflow Sample	Imhoff Cone (total sample)	Imhoff Cone (Sed)	pH	Temperature	EC
					GPM	L	mL/L		(deg. C)	µs
6/14/2023	15:26:00	40	26	Bucket test with Imhoff	0.26	1	70	7.94	16.6	292
6/14/2023	16:27:00	60-40	60	Bucket test with Imhoff	0.26	1	50	7.78	16.4	272
6/14/2023	17:00:00	60-40	30	Bucket test with Imhoff	0.26	1	58	7.59	14.5	272

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NARRATIVE

General Information:

Drilling Contractor: Boart Longyear
Drilling Method: Reverse Circulation
Drill Rig Model: Foremost Apex 55
Well development Method: Tremie Pipe + Airlift
Water Quality testing: Imhoff Testing + Multimeter testing
Drilling initiated July 11th and the Monitoring well was completely constructed on July 16th, 2023

Summary Narrative:

July 11th:

- Surface casing drilling reached 10 ft below ground surface (bgs) using a 6.5-inch hammer bit.
- Drillers then reamed the hole from 6.5 to 14.75 inch with larger hammer bits.
- A 10-inch diameter mild steel surface casing was then placed 10 ft bgs with a 2 in stickup above ground. Casing was cemented using neat type IL cement back to surface.

July 12th:

- Fatigue day for drillers. No work on the borehole was performed.

July 13th:

- Drilling contractor began drilling past surface casing using 8.75-inch tricone bit.
- The borehole was then advanced to 22 ft bgs. The “super plug” on top of the discharge hose got melted and was replaced.
- The borehole was sounded, detecting water at the bottom of the borehole. Not enough was detected to airlift.

Borehole advanced to bedrock:

- The borehole was then advanced to 30 ft bgs. Bedrock contact encountered at roughly 27 ft bgs.
- Water injection was stopped. The borehole was airlifted for 5 minutes. No water exited cyclone.

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- The borehole was sounded with water initially being detected at 15.7 ft bgs. This water level rose until it stabilized at 4.2 ft bgs after 18 minutes of recovery.
- The borehole was then advanced to 40 ft bgs. Water injection was stopped. The hole was airlifted for 5 mins. Flowrate was recorded at 2.5 gpm. Multimeter water measurements recorded 6.52 pH, 459 µs, 24.2°C.
- The borehole was then advanced to 60 ft bgs. Water injection was stopped. The borehole was airlifted for one minute. Flowrate was recorded at 10 gpm.
- Another airlift flow measurement was taken 4 minutes later. Flowrate was measured at 10.5 gpm. Multimeter water measurements recorded 7.07 pH, 239 µs, 19.6°C
- Cuttings change from brown to grey-brown at 45-50 ft bgs.
- The borehole was then advanced to 71 ft bgs. Water injection was stopped. The hole was airlifted for 5 minutes. Flowrate was recorded at 10 gpm. Multimeter water measurements recorded 6.8 pH, 193 µs, 21.9°C. Imhoff sample taken.
- The airlift was shut off and the borehole was sounded. Water was initially detected at 60 ft bgs. This water level rose until it stabilized at 14.4 ft bgs after 30 minutes of recovery.
- Imhoff sample settled and was recorded at 22 ml/L.
- The drill bit-rod assembly was lowered to bottom to check for caving. No caving detected
- PVC was prepared for installation into borehole.
- 20 ft of PVC screen and 10 ft of blank PVC pipe lowered into borehole. PVC was blocked at 30 ft bgs.
- PVC assembly was pulled out of the borehole
- Drillers set up mud tank to prepare to “mud up” hole for hole stabilization.
- Drillers pump mud down the hole as they drill out hole again.
- Mud begins to appear at surface 16 ft away from rig.
- Drillers remove bit and sub from hole
- PVC is attempted to put down hole again and again can’t proceed past 30 ft bgs.
- PVC is pulled out of the borehole

July 14th:

- Drillers lower 8.5 in casing system to into the borehole to hold formation open and allow for installation of PVC.

Initial Installation July 14th:

- An end cap was secured to the bottom of the first stick of PVC screen.
- PVC assembly was lowered inside the casing system to the TD of the borehole, 20 ft of PVC screen: 4-inch x 10 ft lengths, SCH 80, 0.01-inch slot size was installed.
- The screen was followed by 50 ft of blank PVC SCH 80, 4-inch x 10 ft lengths.
- The water level was sounded after PVC installation. Water was recorded at 8 ft bgs.

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- Gravel Filter pack composed of: SRI Supreme #8 Mesh, Avg. 0.132 inch - very fine gravel, was then then poured in the annulus of the borehole. The gravel pack was tagged at 49.9 ft bgs with the sounder.
- A 1.5 in tremie pipe was placed in the borehole to airlift develop and settle the gravel pack. Tremie pipe was positioned 40 ft down the borehole initially later moving up and down the borehole over the screen interval.
- An Imhoff sample was taken 28 minutes after development started. Multimeter water measurements recorded 7.49 pH, 292 µs, 16.6°C. Imhoff later recorded 70 ml/L sediment.
- A second Imhoff sample was taken 100 minutes after start of development. Multimeter water measurements recorded 7.78 pH, 272 µs, 16.4°C. Imhoff later recorded 50 ml/L.
- A third Imhoff sample was taken at 133 minutes after start of development. Multimeter water measurements recorded 7.59 pH, 272 µs, 14.5°C. Imhoff later recorded 58 ml/L.
- Development was stopped. Gravel pack was retagged at 46 ft bgs and decided to leave gravel pack at this depth.
- Bentonite chips were then added to the borehole, whilst pulling 20 ft 8.5 in casing out for borehole. Bentonite chips were later tagged at 26 ft bgs.
- Portland Type IL cement was then mixed with water and added to the borehole above the bentonite seal using a 1.5 in tremie pipe.
- 36 bags of cement were added down the borehole from 26 ft bgs to surface level. 8.5 in casing symmetry system fully removed.
- The 2.6 ft of PVC stick up from surface was cut to the level of the installed surface casing to allow the drill rig to move off the drillhole.

July 16th:

- Drill rig moved off GVMW-26B back on to GVMW-26A.
- Drillers installed tremie pipe down hole to develop.
- Drillers started developing well.
- First Imhoff sample taken 277 minutes into development. Multimeter water measurements recorded 7.68 pH, 299 µs, 25.4°C. Imhoff later recorded 0.5 ml/L sediment.
- Second Imhoff sample taken 360 minutes into development. Multimeter water measurements recorded 7.62 pH, 284 µs, 19.6°C. Imhoff later recorded 0.1 ml/L sediment (only clay/silt).
- Development was stopped after 385 minutes of development time.
- Two feet mild steel monuments welded to top of 10 ft casing. 1.8 ft of PVC added to top of blank casing.

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- Tops of monuments were taped over with gorilla tape until the locking caps can be installed.

Figure 4 is a photograph of the well head completion. Detailed field notes are included in Attachment A.

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LIMITATIONS

This investigation has been conducted using a standard of care consistent with that expected of scientific and engineering professionals undertaking similar work under similar conditions. No warranty is expressed or implied.

This memorandum is prepared for the sole use of Newmont – Cripple Creek & Victor. Any use, interpretation, or reliance on this information by any third party, is at the sole risk of that party, and Piteau Associates accepts no liability for such unauthorized use.

If you have any questions regarding the above, or we can be of further service, please do not hesitate to contact us.

Respectfully submitted,

PITEAU ASSOCIATES USA LTD.

Reviewed by:

Peter Haas
Principle Hydrogeologist

Reviewed by:

Camy Noguera
Senior Hydrogeologist

PH/CN/jcb

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FIGURES

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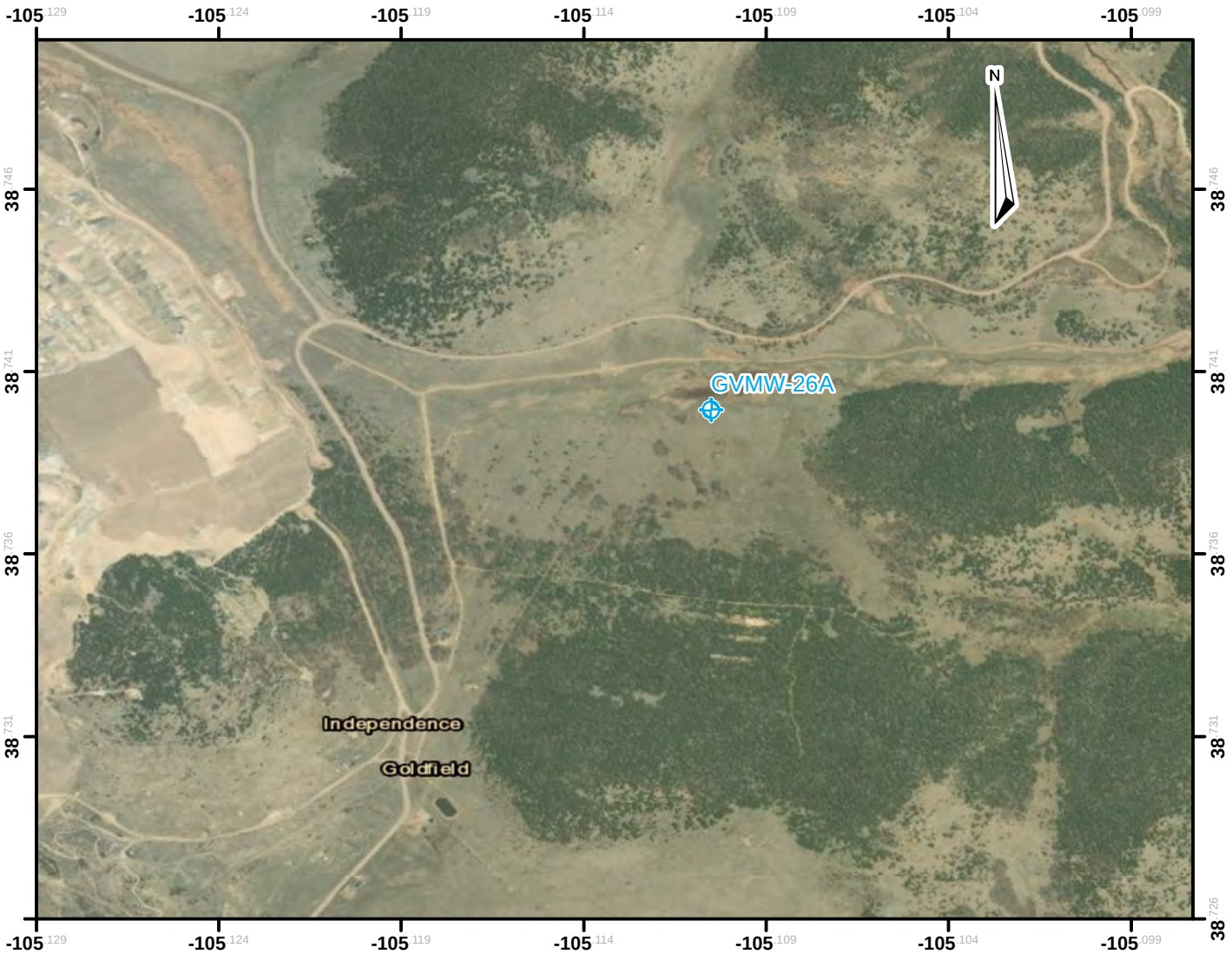

MonitoringWell-GVMW-26A

Towns

0 0.125 0.25 0.5 Miles

Coordinate System: CC&V Test 5- ry
Projection: Lambert Conformal Conic
Datum: WGS 1984
Units: Decimal Degrees

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Newmont Mining Corporation
Cripple Creek & Victor Mine
Cripple Creek, CO

PITEAU ASSOCIATES
GEOTECHNICAL AND WATER MANAGEMENT CONSULTANTS
A TETRA TECH COMPANY

GVMW-26A Location Map

BY:	DATE:
CD	AUG 23
APPROVED:	FIG:
PH	1

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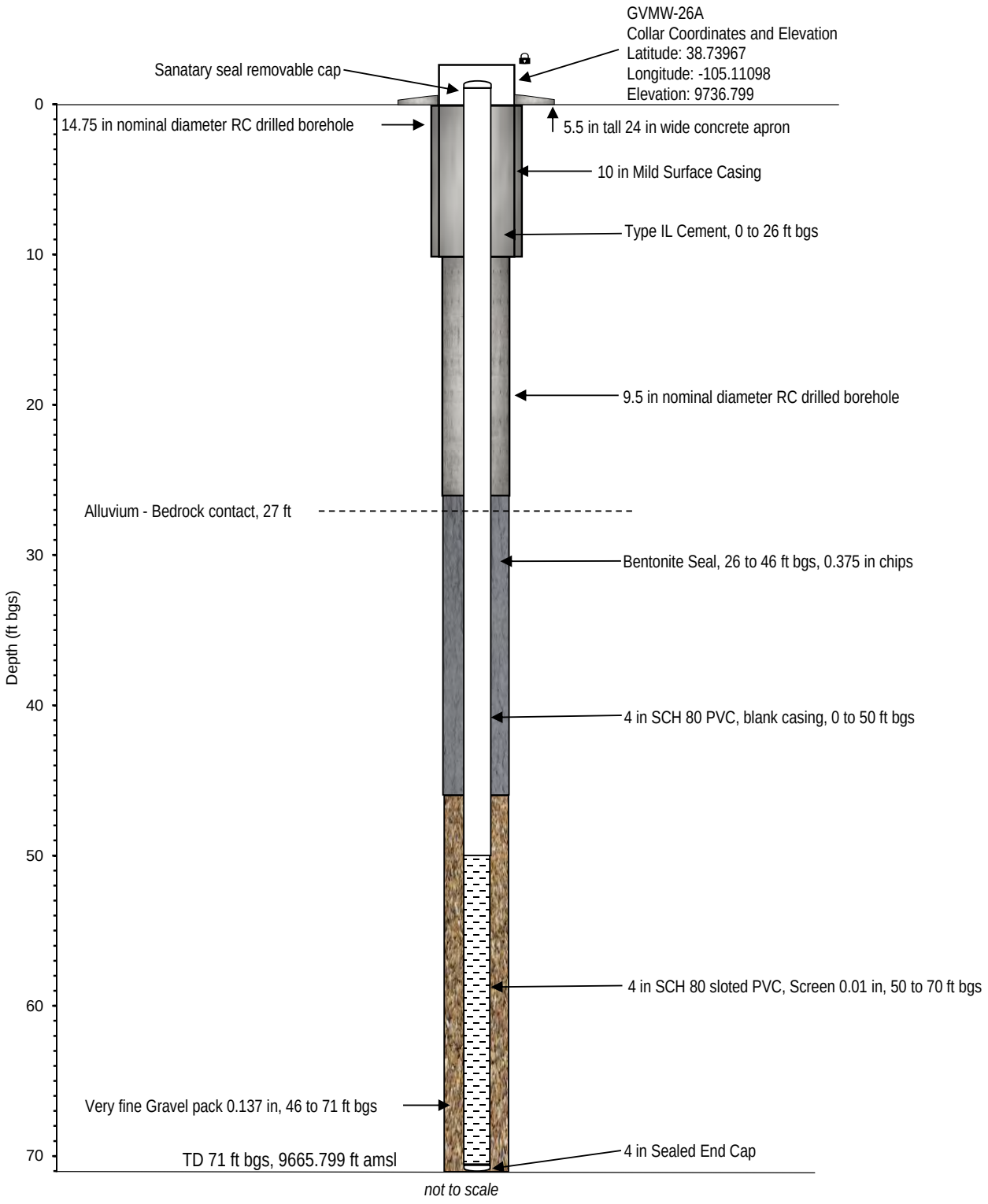

Newmont Mining Corporation
Cripple Creek & Victor Mine
Cripple Creek, CO

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GVMW- 26A - As Built Construction

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CD	Aug 23
APPROVED:	FIG:
PAH	2

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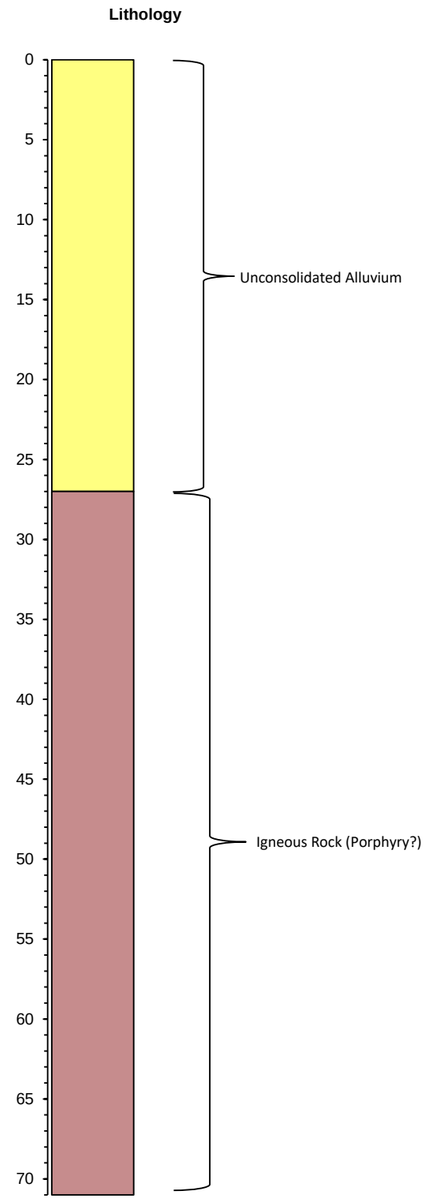

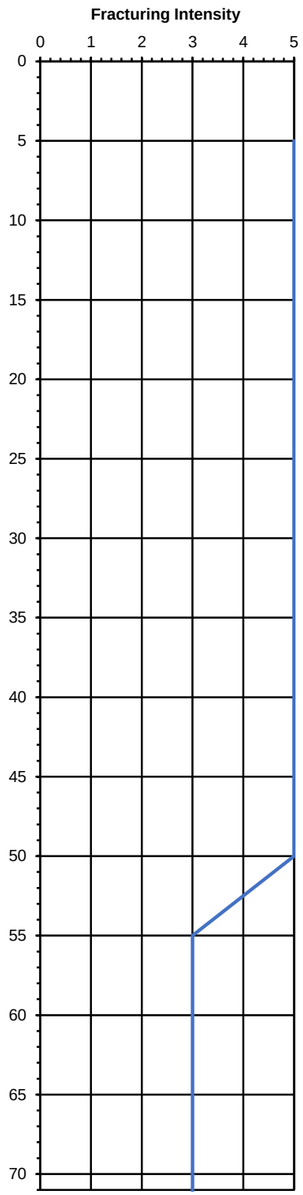

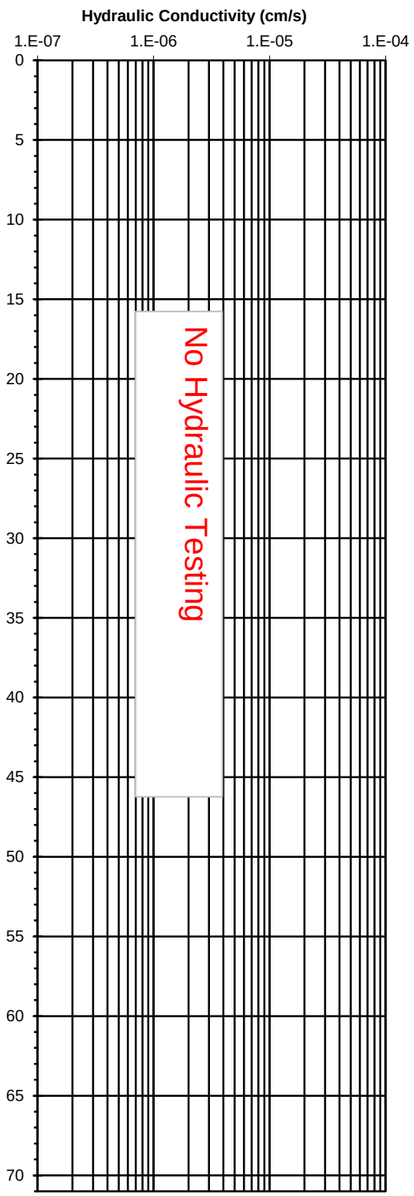

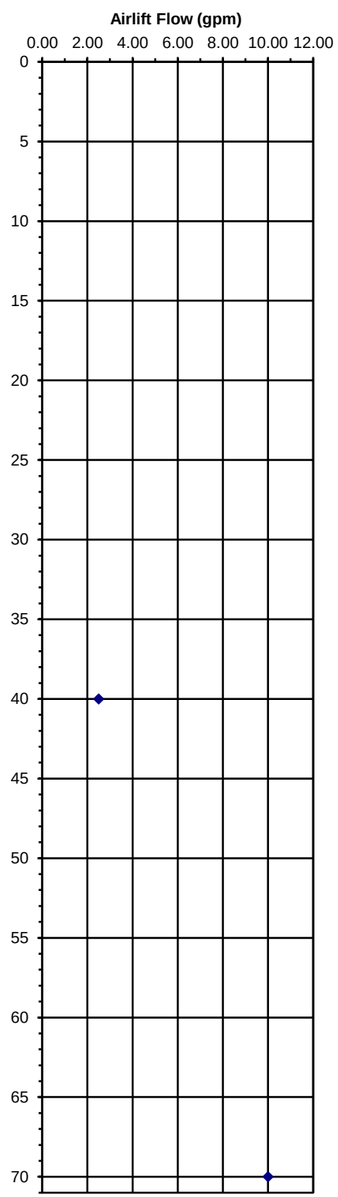

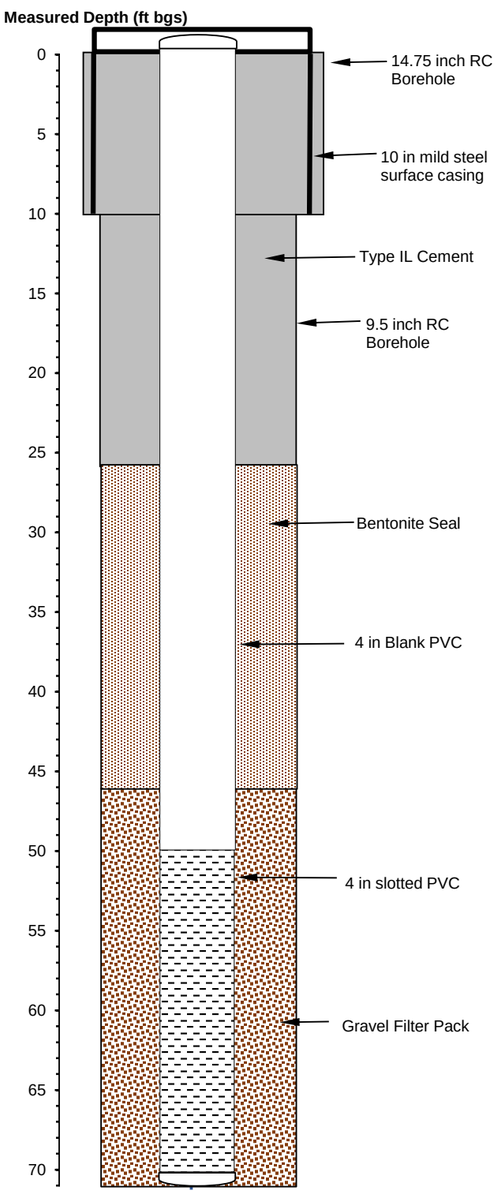

Start date : July 11th, 2023

Finish date : July 16th, 2023

Latitude : 38.73967
Longitude : -105.11098
Elevation : 9736.799 (ft amsl)

Borehole : GVMW-26A
Azimuth : 0
Inclination : 90°
Water Elevation : ~14.4 bgs

Newmont-CC&V
Monitoring Wells 2023

PITEAU ASSOCIATES
GEOTECHNICAL AND WATER MANAGEMENT CONSULTANTS
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GVMW-26A Hydrogeology Log

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CD	AUG 23
APPROVED:	FIG:
PAH	3

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GVMW-26A Well Head Completion Photo

BY:	DATE:
CD	AUG 23
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PH	4

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Attachment A
Detailed Daily Field Notes:

July 11th, 2023

6:11 Morning meeting with drillers

6:20 Drillers went to get gear to set up on hole

7:41 Site specific meeting

7:47 Start drilling 6.5 in pilot hole

7:49 Attach 20 ft rod. Drill to 10 ft depth.

7:57 Prepare to lower 10" casing

8:16 Attach larger bit to ream out hole

8:22 Attach 20 ft rod. Ream out hole

8:28 Pull out rod - check hole

8:32 Attach 20 ft rod. Drill to 10ft. No soft material at bottom. Materials are damp alluvial material.

8:58 Pull out rod - check hole

9:00 Pull out bit - clean bit. Clayey material with gravel on bit.

9:20 Cut 10ft of casing

9:37 Push down 10ft of 10 in diameter casing down hole

9:59 Prepare to cement the annulus around casing

10:05 Pour cement into annulus. Two bags of W-60 combined with six bags of Portland type IL.

10:11 Clean drum and mixing apparatus. Let cement cure.

11:50 Drillers informed that screens are not on site. Stop until screens arrive on site.

July 13th, 2023

6:48 Drillers on-site with PVC screen

6:55 Start safety meeting.

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7:10 Prepare to switch bit. Switch sub from 8.75 to attach tricone bit.

7:38 Bit on top of hole

7:40 Attach rod #1

7:50 Attach lock adaptor to top of casing

7:51 Start drilling in RC. 58 psi.

8:10 Finish drilling rod #1. Hole depth 22 ft bgs.

8:22 Change the super plug on top of the discharge hose.

8:28 Sounded bottom of hole. Depth at 12.4 ft bgs. Some water encountered, but not enough to airlift and test.

8:40 Attach rod #2 and continue drilling first rod. Hole is airlifted at end of first rod. No water encountered. Alluvium in chip trays.

8:55 Start seeing signs of bedrock in chips at 27 ft bgs. Drilling penetration slows down.

9:05 Cut water injection. Airlift for 5 min. No water comes out of cyclone.

9:06 Begin sounding hole. Water encountered at 15.7 ft bgs.

9:06 Water at 13.7 ft bgs. 12 seconds later.

9:06 Water at 12.7 ft bgs

9:08 Water at 10.7 ft bgs

9:09 Water at 9.7 ft bgs

9:10 Water at 8.7 ft bgs

9:11 Water at 7.7 ft bgs

9:20 Water at 4.2 ft bgs – stabilized

9:25 Decision made to continue drilling and make this the bedrock well

9:39 Add rod #3

9:55 Start drilling from 30ft

10:14 Reached 40 ft bgs. Shut off water injection.

10:17 Airlift results in 2.5 gpm. 6.52 pH, 459 µs, 24.2°C

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10:23 Continue drilling. Bedrock color changes from brown to grey-brown @ 45-50 ft. 50-55ft brown grey.

10:49 Drill to 60ft bgs

10:51 Reached 60ft bgs. Cut water circulation. Airlift returns 10 gpm.

10:52 Airlift test results in 10 gpm

10:55 Airlift test results in 10-11 gpm. 7.07 pH, 239 µs, 19.6°C

11:00 Add rod #4. Continue drilling

11:09 Reached 70 ft bgs

11:17 Cut water injection. Start airlifting.

11:22 Airlift test results in 10 gpm

11:25 Take Imhoff sample. 6.8 pH, 193 µs, 21.9°C

11:32 Begin sounding hole.

11:34 Water at 60 ft bgs

11:34:11 Water at 57 ft bgs

11:34:22 Water at 56 ft bgs

11:36 Water at 51 ft bgs

11:37 Water at 48 ft bgs

11:38 Water at 44 ft bgs

11:40 Water at 39 ft bgs

11:43 Water at 33 ft bgs

11:49 Water at 26 ft bgs

11:56 Water at 21 ft bgs

12:07 Water at 17 ft bgs

12:08 Water at 14.4 ft bgs

12:09 Lower bit to see if there is any caving. No caving detected. Bit comes out clean.

12:13 Start pulling out the rods

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12:30 Rods + Bit out of hole. Imhoff sample has 22 ml/L sediments. Water still muddy/murky

12:34 Prepare to lower PVC.

12:39 Install 20 ft of screen with end cap at bottom

12:45 Attach blank PVC 1-and start lowering into hole

13:06 At ~30 ft the PVC will not continue. Hole caved in.

13:11 Pull out PVC blanks + screen

13:26 Set up bit + sub to drill out hole.

13:30 Set up mud circulation

14:25 Start pumping bentonite mud to stabilize hole. Begin drilling.

14:38 Add rod #2 and continue drilling

14:51 Some mud bubbles out of ground ~16 ft from rig

14:55 Mix second batch of bentonite mud

14:58 Start pumping down bentonite mud

15:00 Stop pumping

15:06 Pull out one rod and keep pumping down mud. Fill up hole from bottom to top.

15:10 Start pumping mud down. Mud at ~35 for Viscosity. 8.5 density.

15:11 Stop pumping mud down

15:15 Start pumping

15:16 Stop pumping mud down. Remove one rod. Mud appears at surface at another location~20ft away.

15:29 Sub + bit removed out of hole

15:35 Start lowering 20ft of screen down hole

15:41 Attach 20 ft of blank PVC

15:47 Fill blank PVC with water to equilibrate pressure

15:50 Attach 3rd blank section. PVC gets stuck and does not go down any further.

16:14 Pull out all PVC. End work for day.

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July 14th, 2023

8:00 Driller's welding 8.5 in casing to set down hole

8:34 Start lowering the assembled casing + bit

9:08 Change rig table grip and start setting casing down

10:30 Finish drilling mud and lowering casing. 70 ft of 8.5 in casing down borehole.

11:00 Remove all rods+ bit+ sub

11:21 Start installing PVC pipe

11:36 20 ft of screen down hole

11:42 Attach blanks

11:55 50 ft of blanks down hole. 70 ft of PVC down hole total.

11:59 Sound water level. Water encountered at 8 ft bgs.

12:25 Start pouring very fine gravel pack bag #1

12:53 Pull 8.5 in of casing out of hole. Gravel tagged at 69.3 ft bgs.

12:58 Pour gravel bag #2

13:05 Gravel tagged at 67.7ft bgs

13:12 Gravel tagged at 70.5ft bgs

13:16 Gravel tagged at 69.2ft bgs

13:22 Gravel tagged at 66.2 ft bgs. Pull out another casing rod.

13:30 Gravel tagged at 70.2 ft bgs

13:36 Gravel tagged at 65.6 ft bgs

13:53 Continue removing casing

13:59 Gravel tagged at 58.7 ft bgs

14:13 Gravel tagged at 49.9 ft bgs

14:31 Add tremie pipe

14:48 Start developing at 40 ft bgs

15:16 Imhoff sample taken. 7.49 pH, 292 µs, 16.6°C

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15:39 Tremie pipe down 55ft bgs

15:55 Tremie pipe down at 68 ft bgs

16:05 Tremie pipe moved 20 ft back and forth

16:17 Imhoff sample results. 70 ml/L sediment.

16:27 Second Imhoff sample taken. 7.78 pH, 272 µs, 16.4°C

17:00 Third Imhoff Sample taken. 7.59 pH, 272 µs, 14.5°C

17:27 Second Imhoff sample results. 50 ml/L

17:35 Gravel tagged to 46 ft bgs

17:38 Start pouring bentonite chips down hole

17:41 Pull out 20 ft of casing

17:56 Bentonite tagged at 44.4 ft bgs

18:36 Bentonite at 26 ft bgs. Pull out additional casing.

19:12 Start pumping cement through tremie pipe

19:20 Pump in second batch of cement

20:00 Finish pumping cement. 36 bags total. Third Imhoff sample results - 58 ml/L.

July 16th, 2023

6:30 Drill rig moved to GVMW-26A. Begin developing well.

11:07 Take Imhoff Cone Sample #1

11:40 Craig Desbrow arrives on site

12:23 Test Imhoff Sample #1. 0.5 ml/L, 7.68 pH, 299 µs, 25.4°C. Milky appearance

12:30 Take Imhoff Cone Sample #2.

12:45 Test Imhoff Sample #2. 0.1 ml/L, 7.62 pH, 19.6°C. Milky appearance.

12:46 End development of well.

12:49 Drillers start pulling tremie pipe

12:55 Tremie pipe pulled out

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13:18 Drill Rig moves off pad

13:41 Start Welding monuments to well casing tops

13:52 26B monument welded on + PVC top added

14:06 26A monument welded on + PVC top added

15:06 Drillers leave to move rig and supplies

15:28 Inform Peter Haas of development

15:51 Back at GV monitoring wells. Tape top of well monuments.

16:18 Leave GVMW-26 monitoring wells

16:50 At Cripple Creek. Wait for completion of base pad.

17:02 Sign out

19:58 Get pictures of completed base pads.

20:28 Close gates.

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Newmont
NORTH AMERICA

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Attachment D – Grassy Valley (GVMW-26B)

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FILE: 4454-TM23-04

TECHNICAL MEMORANDUM

DATE: 23 August 2023

TO: Newmont – Cripple Creek & Victor

ATTN: Antonio Matarrese

FROM: Peter Haas
Email: phaas@piteau.com

RE: **2023 Monitoring Wells – Grassy Valley Monitoring Well 26B (GVMW-26B)**

INTRODUCTION

Newmont's Cripple Creek and Victor Gold Mine (CC&V) is a historic gold mine, with placer and underground mining starting in 1891. The mine transitioned to open pit mining methods in the 1970's. As a modern open pit mine operation, the site strives to meet state regulations for monitoring. To this end, CC&V has initiated construction of three additional groundwater monitoring wells to comply with the state of Colorado water monitoring requirements. This memorandum provides a narrative of the drilling, construction, and development of Grassy Valley Monitoring Well 26B (GVMW-26B).

Table 1 provides a summary of the borehole drilling and location with coordinates provided in WGS84 decimal degrees latitude and longitude. Table 2 provides monitoring well construction details. Table 3 provides a summary of the water quality field parameters collected during well drilling. Table 4 provides a summary of water quality field parameters collected during monitoring well development.

Figure 1 illustrates the location of the borehole. Figure 2 provides an as built of the completed monitoring well. Figure 3 provides a hydrogeologic log summarizing the geology, water detection, airlift and well construction. Figure 4 is a picture of the completed borehole well head.

Monitoring Well Construction was completed on July 16th, 2023.

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Table 1 Summary of GVMW-26B Borehole

Hole ID	Drilling Date	Latitude	Longitude	Surface Elevation	Azimuth	Dip	TD Measured Depth (ft)	TD Elevation (ft amsl)	Drilling Method	Completion
GVMW-26B	07/15/23	38.73966	-105.11105	9737.11	0	90	24	9713.106	Reverse Circulation	Monitoring Well

Coordinates are provided in WGS84 decimal degrees latitude and longitude

Table 2 Summary of Monitoring Well construction GVMW-26B

Hole ID	Units	Water Elevation	Total Depth	Depth to Bedrock	Casing Interval from	Screen Interval	Gravel/Sand Interval	Seal Interval	Cement Interval
GVMW-26B	(ft bgs)	N/A	24	>24	0 - 14	14 – 24	11.6 - 24	8.6 – 11.6	0 – 8.6
	(ft amsl)	N/A	9713.11	>9713.106	9713.11 – 9723.11	9723.11 – 9723.11	9725.51 – 9723.11	9728.51 – 9725.51	9713.11 – 9728.51

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Table 3 Summary of Water Quality Field Parameters during Drilling

Date	Time	Depth	Elapsed Time (min)	Method	Total Airflow Sample	Imhoff Cone (total sample)	Imhoff Cone (Sed)	pH	Temperature	EC
					GPM	L	mL/L		(deg. C)	µs
6/15/2023	11:14:00	20	8	Bucket test	1 – 1.5	N/A	N/A	6.65	24.7	202
6/15/2023	11:50:00	24	10	Bucket test	<1	N/A	N/A	7.4	23.9	206

Table 4 Field Parameters during Development

Date	Time	Depth	Elapsed Time (min)	Method	Total Airflow Sample	Imhoff Cone (total sample)	Imhoff Cone (Sed)	pH	Temperature	EC
					GPM	L	mL/L		(deg. C)	µs
6/15/2023	14:09:00	24	90	Imhoff	N/A	1	2.5	7.9	15.8	144

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NARRATIVE

General Information:

Drilling Contractor: Boart Longyear
Drilling Method: Reverse Circulation
Drill Rig Model: Foremost Apex 55
Well development Method: Tremie Pipe + Airlift
Water Quality testing: Imhoff Testing + Multimeter testing
Drilling initiated July 15th and the Monitoring well was completely constructed on July 16th, 2023

Summary Narrative:

July 15th:

- Surface casing drilling reached 10 ft below ground surface (bgs) using a 6.5-inch hammer bit.
- Drillers then reamed the hole from 6.5 to 14.75 inch with hammer bits.
- A 10-inch diameter mild steel surface casing was then placed 10 ft bgs with a 2 in stickup above ground. Casing was cemented using Type IL neat cement back to surface.
- Drillers install casing lock and deflector.
- Drillers then used a tricone bit to continue drilling past 10 ft bgs.
- Drillers advance to 20 ft bgs.
- A bucket test was performed after airlifting for 7 minutes. Flowrate was measured at 1 – 1.5 GPM. Multimeter water testing gave results of 6.65 pH, 202 µs, 24.7°C.
- Drillers then advanced to 24 ft bgs, where signs of bedrock appeared in the collected cuttings. It was decided to stop drilling past this point. Note: The adjacent bedrock well was drilled first to define the general location of the contact in advance, thereby allowing for easier detection of the contact for the alluvial well during drilling.
- A bucket test was performed after airlifting for 14 minutes. Flowrate was measured at <1 gpm at start, with it eventually leading to a flowrate of 0.1 gpm at the end of the test. Multimeter water testing gave results of 7.4 pH, 206 µs, 23.9°C.

Initial installation July 15th

- The drill rods and bit were then removed from the hole. PVC was prepared for install.
- An end cap was secured to the bottom of the first stick of PVC screen: 4-inch x 10 ft, SCH 80, 0.01-inch slot size and a total of 10 ft was installed with
- 10 ft of 4-in PVC SCH 80 blank was installed to ground surface.

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- Several bags of very fine gravel filter - SRI Supreme #8 Mesh, Avg. 0.132 inch, was then placed in the annulus of the borehole surrounding the installed PVC. The filter pack was tagged to 11.6 ft bgs.
- Sodium bentonite pellets were then placed as an annular seal on the gravel pack back to 8.6 ft bgs.
- Portland Type II cement was then mixed with water and poured into the borehole annuls around the PVC up to 4 in below the surface casing.
- A 1.5 in tremie pipe was then placed in the well casing to start development.
- Imhoff sample #1 was collected after 36 minutes of development. Sample resulted in 2.5 ml/L sediments. Multimeter water testing gave results of 7.9 pH, 144 µs, 15.8°C
- Imhoff sample #2 was collected after 180 minutes of development. Multimeter water testing gave results of 8.03 pH, 140 µs, 13.4°C.
- Development was stopped after 230 minutes of development.
- Drillers then removed the tremie pipe from the borehole.
- The 2.6 ft of PVC stick up from surface was cut to the level of the installed surface casing to allow the drill rig to move off the drillhole.
- The cement pad for the monument was completed the following day.

July 16th:

- 2 ft of steel casing were placed around the PVC
- The cement pad was then poured around the steel casing

Figure 4 is a photograph of the well head completion. Detailed field notes are included in Attachment A.

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LIMITATIONS

This investigation has been conducted using a standard of care consistent with that expected of scientific and engineering professionals undertaking similar work under similar conditions. No warranty is expressed or implied.

This memorandum is prepared for the sole use of Newmont – Cripple Creek & Victor. Any use, interpretation, or reliance on this information by any third party, is at the sole risk of that party, and Piteau Associates accepts no liability for such unauthorized use.

If you have any questions regarding the above, or we can be of further service, please do not hesitate to contact us.

Respectfully submitted,

PITEAU ASSOCIATES USA LTD.

Reviewed by:

Peter Haas
Principle Hydrogeologist

Reviewed by:

Camy Noguera
Senior Hydrogeologist

PH/CN/jcb

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FIGURES

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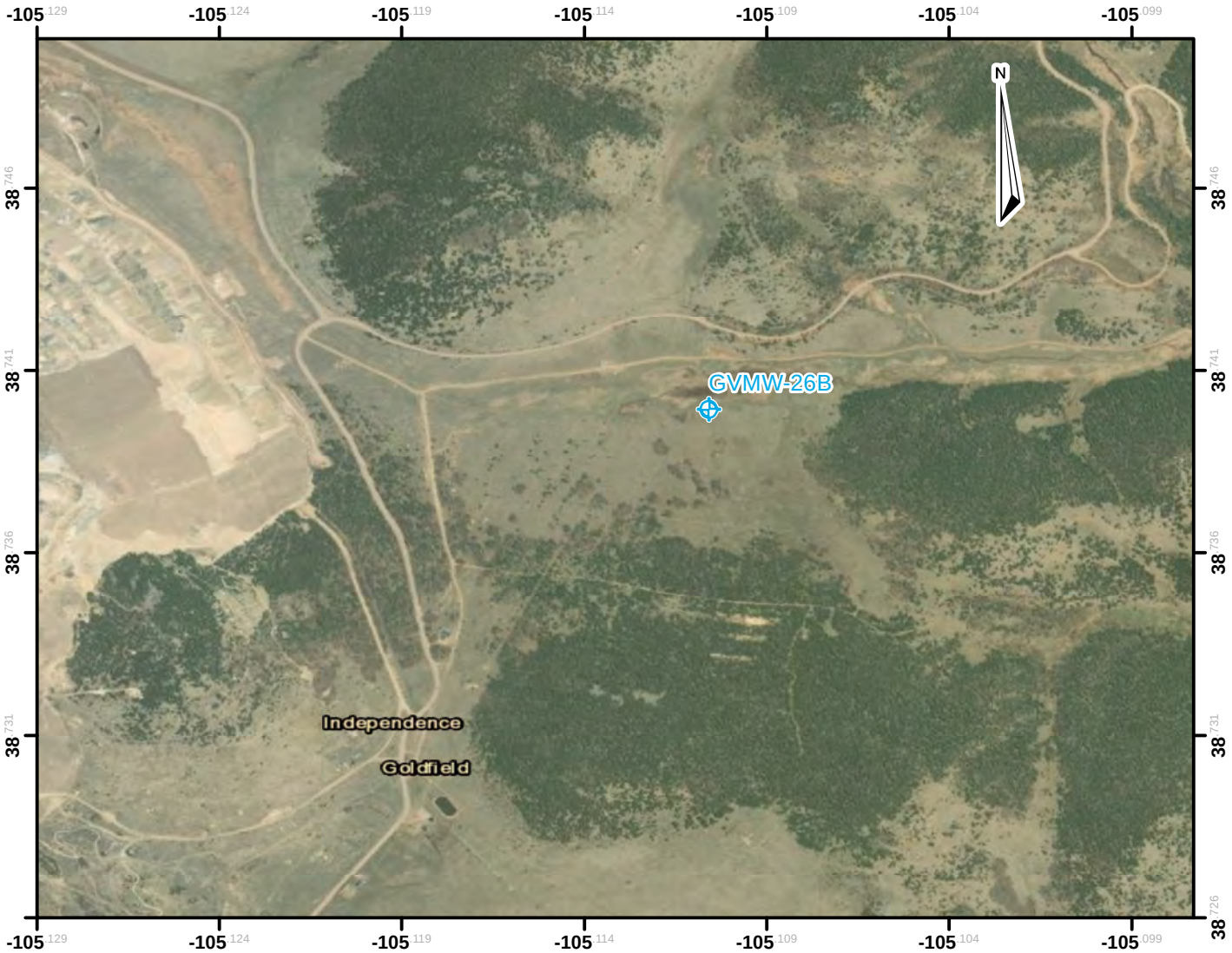

MonitoringWell-GVMW-26B

Towns

0 0.125 0.25 0.5 Miles

Coordinate System: CC&V Test 5- ry
Projection: Lambert Conformal Conic
Datum: WGS 1984
Units: Decimal Degrees

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Newmont Mining Corporation
Cripple Creek & Victor Mine
Cripple Creek, CO

PITEAU ASSOCIATES
GEOTECHNICAL AND WATER MANAGEMENT CONSULTANTS
A TETRA TECH COMPANY

GVMW-26B Location Map

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APPROVED:	FIG:
PH	1

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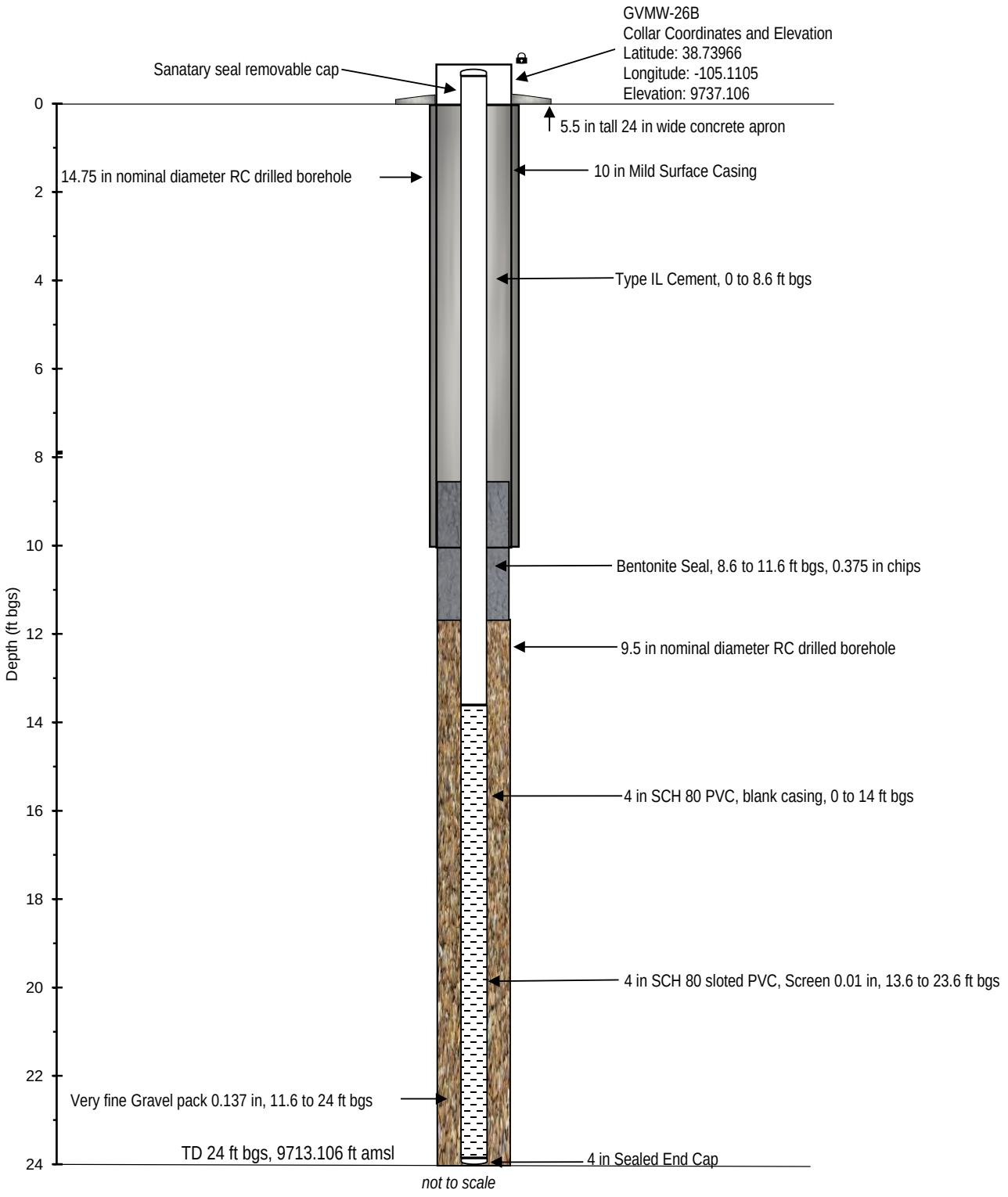

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Cripple Creek & Victor Mine
Cripple Creek, CO

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GVMW - 26B - As Built Construction

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APPROVED:	FIG:
PAH	2

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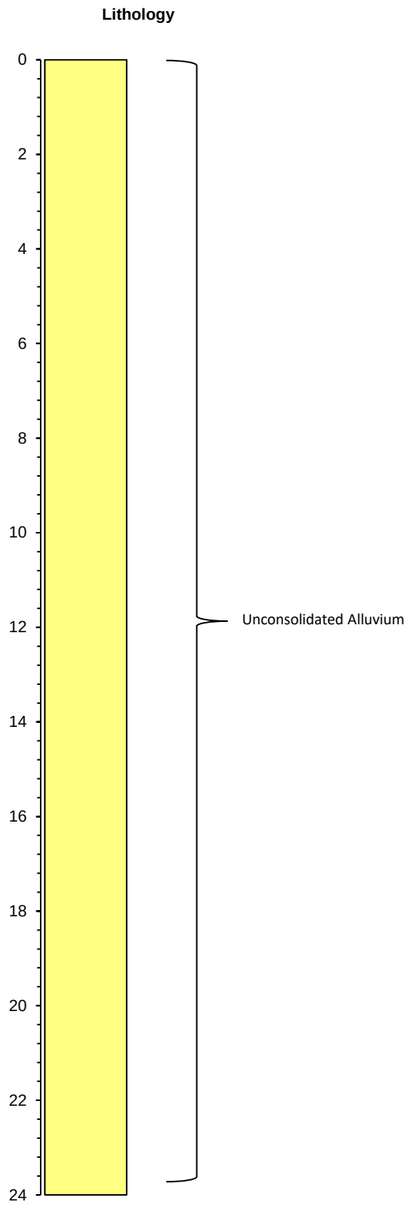

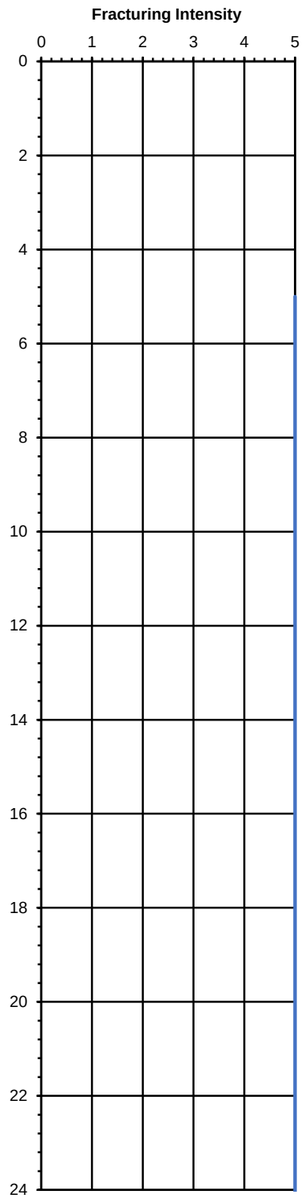

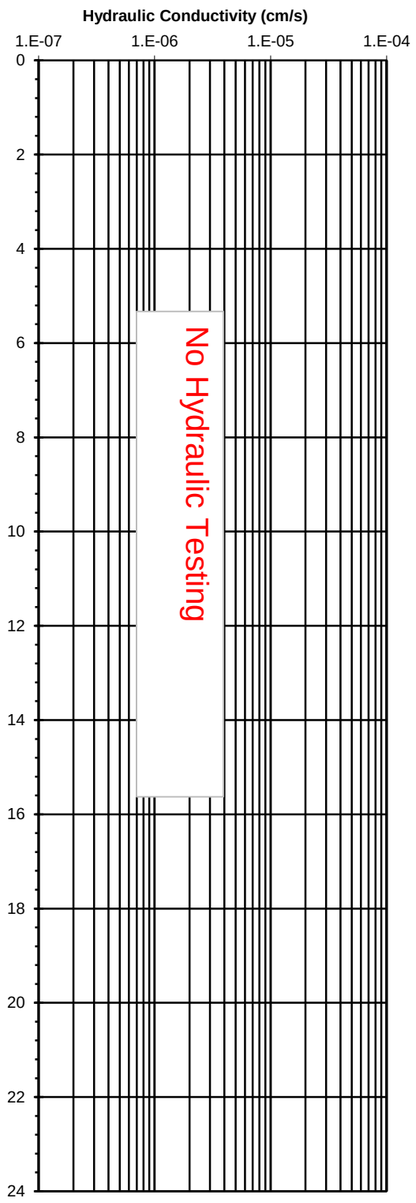

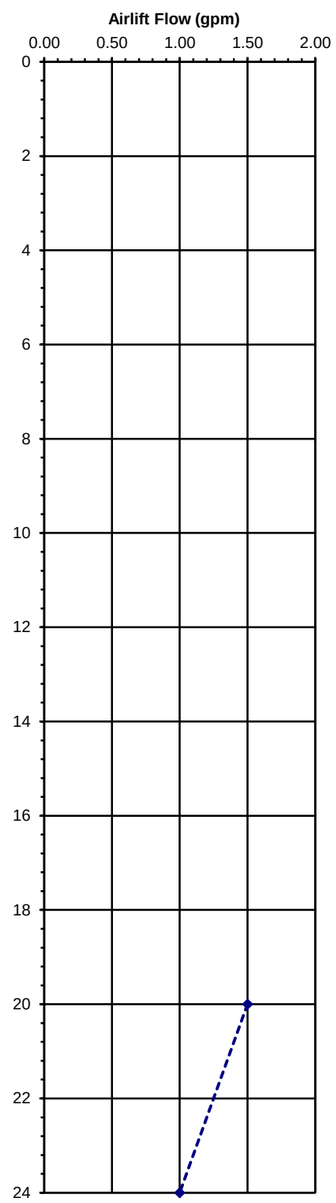

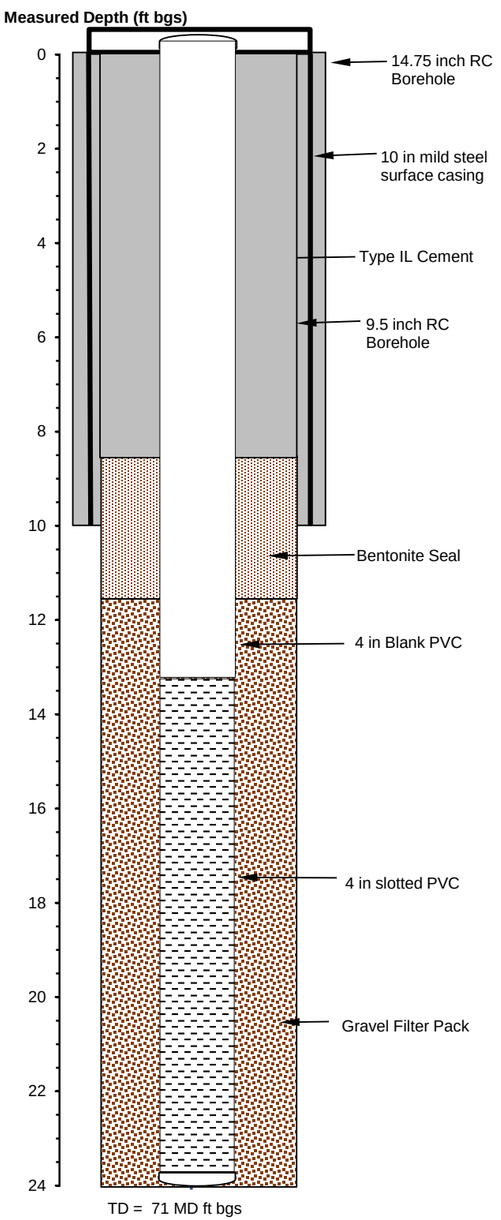

Start date : July 15th, 2023

Finish date : July 15th, 2023

Latitude : 38.73966
Longitude : -105.11105
Elevation : 9737.106 (ft amsl)

Borehole : GVMW-26B
Azimuth : 0
Inclination : 90º
Water Elevation : ~4.5 bgs

Newmont-CC&V
Monitoring Wells 2023

PITEAU ASSOCIATES
GEOTECHNICAL AND WATER MANAGEMENT CONSULTANTS
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GVMW-26B Hydrogeology Log

BY:	DATE:
CD	Aug 23
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PAH	3

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GVMW-26B Well Head Completion Photo

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PH	4

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Attachment A
Detailed Daily Field Notes:

July 15th, 2023

6:00 Drillers set rig on GVMW-26B

8:16 Driller's rig set up on GVMW-26B

8:16 Start drilling

8:22 Attach rod#1

8:38 Drill to open hole. Pull out and ream hole repeatedly

9:04 Remove rod and bit

9:11 Install 10ft surface casing Prepare to cement

9:25 Pour cement down annulus

10:15 Install casing lock and deflector

10:33 Attach tricone bit and rod#1

10:47 Start drilling with tricone

11:07 Drilled 20 ft bgs

11:14 Airlift test resulted in 1 - 1.5 gpm. Results: 6.65 pH, 202 µs m, 24.7°C

11:36 Drilled to 24 ft bgs. Start encountering bedrock.

11:50 Water sounded at 4.8 ft bgs. Get sample. <1 gpm. 7.4 pH, 206 µs, 23.0°C

12:13 Remove rod + bit

12:17 10ft of PVC screen in hole

12:25 PVC blanks in total PVC 23.6 ft. 10ft of screen. 13.6 ft of blanks. Start adding gravel.

12:42 Gravel tagged at 11.6 ft bgs

12:44 Bentonite tagged at 8.6 ft bgs

12:49 Start mixing cement

13:00 Pump cement to surface

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13:19 Installing 1.5 ft of tremie pipe to develop well

13:29 Start developing

14:09 Collect Imhoff sample #1. Results:2.5 ml/L, 7.9 pH, 144 µs, 15.8°C

16:24 In the red for lightning

16:31 Collect Imhoff sample #2. Results: 8.03 pH, 140 µs, 13.4°C

17:20 Stop developing.

17:28 Pull out tremie pipe.