



Homestake Mining Company of California

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August 5, 2022

Mr. Ian Hewitt
Office of the State Engineer, District I
5550 San Antonio Dr., NE
Albuquerque, New Mexico 87109-4127

**RE: Homestake Mining Company - Grants Reclamation Project Well 986 (B-700)
Abandonment Variance**

Mr. Hewitt,

Homestake Mining Company (HMC) is requesting a variance from the previously approved plugging plan for Well 986 (B-700). The approved plugging plan required perforations to be placed from 355' to 415' below ground level (bgl) following the placement of cement from the bottom of the borehole up to 420' bgl. This variance request proposes that no additional perforations be placed from 400' to 355' bgl and that the casing be perforated from 85' to 45' bgl followed by placement of neat cement via tremie pipe to the surface. No change to the approved neat cement mixture is proposed as part of this variance. As articulated in the following paragraphs, the proposed variance would achieve the primary goal of effectively sealing off the San Andreas Glorieta (SAG) aquifer from overlying water-bearing formations.

On July 27, 2022, HMC started the process of abandoning Well 986 (B-700). Fifty-three gallons of neat cement, 2 total batches, were placed via tremie pipe set initially at 460' bgl. Following the cement placement, the depth to the top of the cement was measured at 432' bgl on July 28, 2022. During the initial perforations from 420' to 400' bgl, the air pressure from engaging the perforator forced air and water up through the annulus of the borehole to the surface and started to wash out the soil around the casing. Following concerns with the stability of the drill rig next to a collapsing hole, on August 2, 2022, 724 gallons of grout mixed to specification in 28 batches was placed into the annulus via tremie pipe at a depth of 23 feet to provide solid footing for the rig to finish the perforations. No grout was observed at the surface as the result of placing grout in the annulus. On August 3, 2022, the total depth in the 5" casing was measured at 88' bgl.

The attached well record shows an original annulus size of 8" and a casing size of 5". It also does not indicate whether the annulus above the gravel packed screen was grouted or not. Assuming a cylindrical borehole, the theoretical volume of grout needed for the 5" casing from 432' to 88' bgl is 350 gallons. The theoretical volume necessary to fill an 8" borehole with grout from 432' to 88' bgl is 897 gallons. The difference between volume placed and the theoretical volume for the 8" borehole is likely explained by volume taken up by 5" steel casing and any grout or gravel placed between the annulus and casing.

As shown in the attached lithologic log for the well, the top of the SAG formation is encountered at 434' bgl. Thus, the requested variance still provides a perforated and

grouted interval above the contact between the SAG and the overlying Chinle formation and would be protective from potential impacts from the alluvial aquifer. The additional perforations from 85' to 45' bgl would ensure that a quality seal is placed across the contact of alluvium and the Chile formation, which according to the log is at 65' bgl.

Thank you for your time and attention on this matter. If you have any questions, please contact me via e-mail at bbingham@homestakeminingco.com or via phone at 505.290.8019.

Respectfully,



Brad R. Bingham
Closure Manager
Homestake Mining Company, Grants, New Mexico
Office: 505.287.4456 x35 | Cell: 505.290.8019

Attachment

ec: Document Control Desk, NRC, Washington, DC
R. Linton, NRC, Rockville, Maryland
M. Purcell, Region VI EPA, Dallas, Texas
A. Maurer, NMED, Santa Fe, NM
W. Frazier, DOE, Grand Junction, Colorado

Attachment 1 – Well Record for Well 986 (B-700)

STATE ENGINEER OFFICE
WELL RECORD

235980

Section 1. GENERAL INFORMATION

(A) Owner of well Federal National Mortgage Assoc. Owner's Well No. _____
 Street or Post Office Address Two Galleria Tower Suite 600 13455 Noel Rd.
 City and State Dallas, Texas 57240-5003
 Atten, Mary Thrash

Well was drilled under Permit No. B-700 and is located in the:

- a. SW $\frac{1}{4}$ NW $\frac{1}{4}$ $\frac{1}{4}$ of Section 34 Township 12N Range 10W N.M.P.M.
- b. Tract No. 1 of Map No. _____ of the La Siembra Estates
- c. Lot No. _____ of Block No. _____ of the _____
 Subdivision, recorded in Cibola County.
- d. X= _____ feet, Y= _____ feet, N.M. Coordinate System _____ Zone in the _____ Grant.

(B) Drilling Contractor Garner Drilling Co. License No. WD-595
 Address Box 3146 Milan, N.M. 87021

Drilling Began 3-22-88 Completed 4-1-88 Type tools Rotary Size of hole 8 in.

Elevation of land surface or _____ at well is _____ ft. Total depth of well 467 ft.

Completed well is shallow artesian. Depth to water upon completion of well 102 ft.

Section 2. PRINCIPAL WATER-BEARING STRATA

Depth in Feet		Thickness in Feet	Description of Water-Bearing Formation	Estimated Yield (gallons per minute)
From	To			
434	467	33	frac. yellow sandstone	150+

Section 3. RECORD OF CASING

Diameter (inches)	Pounds per foot	Threads per in.	Depth in Feet		Length (feet)	Type of Shoe	Perforations	
			Top	Bottom			From	To
5	10.78	weld	+1	467	468	open	420	467
Well is Gravel laced								

Section 4. RECORD OF MUDDING AND CEMENTING

Depth in Feet		Hole Diameter	Sacks of Mud	Cubic Feet of Cement	Method of Placement
From	To				

Section 5. PLUGGING RECORD

Plugging Contractor _____
 Address _____
 Plugging Method _____
 Date Well Plugged _____
 Plugging approved by: _____
 State Engineer Representative

No.	Depth in Feet		Cubic Feet of Cement
	Top	Bottom	
1			
2			
3			
4			

STATE ENGINEER OFFICE
 DISTRICT 1, N. MEX.
 ALBUQUERQUE, N. MEX.
 APR 25 9:06

FOR USE OF STATE ENGINEER ONLY

Date Received April 23, 1988

Quad _____ FWL _____ FSL _____

File No. B-700 Use Done Location No. 12.10.34.130 (Abela)

