

HOMESTAKE MINING COMPANY  
OF CALIFORNIA

GRANTS OFFICE

Alan D. Cox  
Project Manager

30 August 2005

41-8903

Mr. Kevin Myers  
State of New Mexico  
Ground Water Pollution Prevention Section  
Environmental Department  
P.O. Box 26110  
Santa Fe, New Mexico 87502

Re: Grants Reclamation Project  
August 11-12, 2005 Flood Event Damage to Crop Irrigation System  
Followup to Telephone Communication of August 12

Dear Mr. Myers:

This letter is in followup to my telephone call on August 12 regarding damage to our crop irrigation wellfield and piping systems associated with the Lobo Creek / Canyon storm event and resulting flooding in the south Felice Acres area in the SW ¼ of Section 35 and SE ¼ of Section 34, T12N R10W. As you are aware, our wellfield collection system in this area is utilized to collect water from a number of wells to assist in final aquifer "polishing" restoration through blending of collected water with fresh aquifer water from other wells tied into the system.

As indicated in our telephone conversation, it was several days before we could fully investigate piping system damage by foot or by vehicle. In the final analysis, we determined that the piping system was not damaged to the extent originally thought. The only pipeline break to the system that involved water spillage was a two (2) inch line that connects well CW-29 to the main irrigation system line. This determination led to adjusting our calculations regarding the amount of water that could have exited the pipe system between time that the flood damage occurred and the time that we got the entire pumping/collection system shut down. Those calculations are provided below.

Summary of Events:

- 1) Storm flood waters arrive from Lobo Canyon into the Felice Acres area – 9:00 p.m. 8/11/05
- 2) Pump systems completely shut down – 8:00 a.m. 8/12/05
- 3) Two (2) samples taken of flooded standing water areas along the south boundary of Section 34 pasture areas, T12N R10W – 4:30-5:30 p.m. 8/12/05 (See attached field sample collection sheet and preliminary lab analytical results).
- 4) Repair of pipe break at Well CW-29 and moving pipelines back into position for the eastern portion of the wellfield – ongoing at present, expect to have line back in place and turned back on / operational by September 1.

The Grants Reclamation project has a Standard Operating Procedure (SOP) associated with the NMED DP-200 permit and the NRC Radioactive Materials license for determination of what constitutes a reportable spill and related actions to be taken for reporting spill events. This SOP is directed toward any spills that might occur in



NMSS01

our contaminated water collection and evaporation pond systems associated with activities proximal to the tailings pile aquifer remediation / restoration program. While not intended to address our crop irrigation well / piping systems, we determined that it would be prudent to treat the damage to our irrigation pipeline system associated with this flood damage event under the SOP as a mechanism to report our investigation and response to NMED. Via copy of this letter, we are also informing NRC regarding the pipeline damage associated with the flood.

Further investigations of the actual damage to the pipeline, as explained above, was much less than what was initially indicated as a possibility in our telephone conversation with you on August 12. Consequently, we have conservatively re-calculated what the volume of water released from the pipe breaks could be and the resultant amount of Unat (in grams) associated with the line breaks. Calculation results indicate that this is not a reportable event under the SOP, however, we are documenting our approach and actions to assure that NMED and NRC are informed of the circumstances surrounding the pipeline damage and any associated consequences. A copy of the project spill reporting SOP is attached for your review and to provide the reporting rationale associated with a reportable spill determination and triggering of corrective measures. Calculations related to the pipeline system flood damage are as follows:

1) Assumptions:

- a. One (1) pipeline break – 2 inch line connecting well CW-29 to main irrigation line - each side of this break assumed to have flow of 50 gpm each (50 gpm from well pumping; 50 gpm from main line).
- b. Break occurred at 9:00 p.m., system was completely shut down at 8:00 a.m. next day – 11 hours of potential flow.
- c. Last laboratory analysis results for system yielded a Unat concentration of 0.243 mg/L for main irrigation system and 0.161 mg/L for Well # CW-29 (see attached lab analytical sheets)

50 gpm X 60 minutes X 11 hours = 33,000 gallons from well CW-29 pump

50 gpm X 60 minutes X 11 hours = 33,000 gallons from main pipeline

**CW-29 :** 33,000 gallons X 3.785 L/gal = 124,905 Liters; 124,905 Liters X 0.161 mg/l = 20109.71 mg / 1000 = 20.11 grams Unat

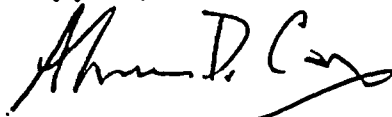
**Main Line:** 33,000 gallons X 3.785 L/gal = 124,905 Liters; 124,905 Liters X 0.243 mg/l = 30351.92 mg / 1000 = 30.35 grams Unat

**Total Unat in water = 50.46 grams**

**SOP reportable quantity = 2,271 grams Unat**

In conclusion, our investigation of the flood damage to our irrigation supply line indicates that the water released from the pipe break is well under the SOP reportable event criteria. We trust that this information provides adequate documentation. If you have any questions, please contact me in our Grants office or via cell phone at (505) 400-2794.

Sincerely yours,



**HOMESTAKE MINING COMPANY**  
Alan D. Cox

Cc: B. vonTill – NRC, Rockville



## **WATER SPILL REPORTING AND RESPONSE**

### **BACKGROUND**

Homestake Mining Company is operating a groundwater restoration program in accordance with its Discharge Plan No. 200 issued by the New Mexico Water Quality Control Commission (WQCC). Unauthorized discharges from the system violate WQCC Reg. 3-104 and must be reported to the New Mexico Environment Department and corrective actions considered. The reporting must follow the guidance in WQCC Reg. 1-203. This regulation requires notification of any spill or release where the quantity is sufficient to injure or be detrimental to human health, animal or plant life, or property, or unreasonably interfere with the public welfare or the use of property.

The groundwater restoration program at the HMC facility is comprised of water wells and water collection systems, treatment, and water reinjection. The most probable release is the release of untreated water through pipe failure as the water is pumped to the treatment facility. Another possible, but not probable, release would be the failure of the water collection ponds or the evaporation ponds.

This Standard Operating Procedure has been developed to comply with the reporting and corrective action requirements in WQCC Regulation 1-203.

### **REPORTING REQUIREMENTS**

The reporting requirements are detailed in WQCC Regulation 1-203. This regulation shall be reviewed upon knowledge of a spill. A summary of some of the requirements and procedures is given below.

Within 24 hours of finding a leak or discharge greater than the action level discussed in Section 5, the manager of the Homestake facility shall prepare an oral report to

Richard Ohrbom, Ground Water Section  
Environmental Department  
New Mexico State Government  
Santa Fe, New Mexico  
Phone 505-827-0219

The following information shall be given:

- a. the name address and telephone number of the person or persons in charge of the facility, as well as of the owner and/or the operator of the facility;

- b. the name and address of the facility;
- c. the date, time, location, and duration of the discharge;
- d. the source and cause of the discharge;
- e. a description of the discharge, including its chemical composition;
- f. the estimated volume of discharge; and
- g. any actions taken to mitigate immediate damage from the discharge.

Within one week after the knowledge of the discharge, a written notification of the discharge shall be submitted to the above. The report shall address the items in the oral presentation with possible clarifications or corrections to the oral report.

### **CORRECTIVE ACTIONS**

As soon as possible after learning of the discharge, HMC shall take such corrective actions as are necessary or appropriate to contain and remove or mitigate the damage caused by the discharge. Attempts should be made to consult with the Ground Water Section personnel, Environmental Department on recommended corrective actions, if any. Actions that will be considered include:

- a. fence or control entry to the affected area;
- b. pump or otherwise remove surface water and containerize or place in an evaporation pond or treatment unit; and
- c. remove and dispose of contaminated soil if found above contamination limits.

Within 15 days after the knowledge of the discharge, a written report shall be submitted to the Groundwater Section personnel, describing any corrective actions taken and/or to be taken relative to the discharge. An extension of time for this report may be requested in writing if required provided there is a justifiable cause or need.

### **ACTION LEVELS**

A discharge to the ground surface by a pipe or system failure has been evaluated in the attached document "Basis for Contaminated Water Spill Reporting". It was concluded that the most significant

impact of a spill would result from animals drinking from standing water. It was suggested that a surface spill of 30,000 gallons of water containing 20 mg/l of natural uranium may result in standing water for a significant period of time. The mass of uranium released in such an event is 2271 grams.

HMC has decided that any discharge that results in the deposition of water on the ground surface containing 2271 grams of uranium will be reported and corrective measures considered. The attached graph shows a curve of uranium in water concentration versus volume discharged that corresponds to 2271 grams of uranium being deposited. The uranium concentration should be estimated from previously taken water samples. If the estimated discharge volume is larger than the corresponding value on the attached graph, a notification shall be made and corrective actions considered.

Since the curve on the attached graph was generated from the equation,

$$CV = 2271 \text{ grams}$$

where: C is the uranium concentration in the water in grams/liter and  
V is the volume of the release in liters,

another method for determining whether the action level has been exceeded is to multiply the measured (or estimated) uranium concentration by the volume of water released and compare it to 2271 grams of uranium. If the product is greater than 2271 grams, the action level has been exceeded and reporting is required and corrective actions must be considered.

If the action level has not been exceeded, the discharge shall be documented clearly showing why a report is not required.

#### REFERENCES

1. New Mexico Water Quality Control Commission Regulations
2. Discharge Plan-200, Homestake Mining Company's Milan Uranium Facility
3. Appendix 1, Basis for Contaminated Water Spill Reporting

#### APPENDIXES

1. Basis for Contaminated Water Spill Reporting

#### REVISIONS


Env. Dept. SOP: EM-4  
Revision: 0  
Issue Date: 2-27-96  
Page 4 of 4

Original 2-27-96

DISTRIBUTION

Resident Manager/Radiation Protection Administrator  
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Project Supervisor

APPROVAL



F. R. Craft  
Resident Manager/Radiation Protection Administrator

Rev'd 12/18/94 - RRC

## **APPENDIX 1**

### **BASIS FOR CONTAMINATED WATER SPILL REPORTING**

## **Appendix 1**

### **Basis for Contaminated Water Spill Reporting**

The following analyses have been developed in order to establish a basis for reporting spills from the water cleanup system at Homestake Mining Company, Grants Project. The analyses address only the radioactive component of the constituents in the water. A recent analysis of the water from the East Brine Pond (attached) has been used as representing a typical worst case situation. Several situations are presented and the consequences assessed as discussed below.

#### **Hazardous Constituents and Standards**

The radiological constituents within the water are uranium, Ra-226, and Ra-228. Since the sum of the Ra-226 and Ra-228 concentrations is less than the 5 pCi/l EPA drinking water standard (40CFR190), radium will not be considered in this analysis. Limits for gross alpha, including Ra-226 but excluding uranium and radon, are given as 15 pCi/l. These limits apply only to community water supplies serving 25 or more people and apply at the tap rather than at the source.

The concentration of natural uranium in the East Brine Pond was reported as 18.67 mg/l. For the analyses that follow a value of 20 mg/l was assumed which is equal to 13,540 pCi/l.

The NRC regulations, 10 CFR Part 20, limit the liquid effluent concentrations of uranium in water to 300 pCi/l, which is equivalent to a radiological effective dose equivalent of 50 mrem/y (the limit for the public is 100 mrem/y from any operating facility). Facilities releasing water to the municipal sewers are allowed a monthly average of 3,000 pCi/l.

For radiation workers, the NRC specifies the Annual Limit on Intake for soluble uranium of 1 microCi. This is equivalent to a Committed Effective Dose Equivalent of 5 rems which is the maximum allowed dose to a radiation worker. If the concentration is 20 mg/l, a worker would have to drink 7.4 liters of the spilled water to reach the limit. An average worker drinks less than 1 liter of water per day at work.

The EPA, under CERCLA, requires the reporting of any inadvertent release of uranium of 0.1 Ci of U-238 or U-234 in any 24-hour period of time. For natural uranium, the reportable quantity (RQ) is approximately 0.2 Ci.

#### **Soil Cleanup Criteria**

Soil cleanup criteria currently being used for natural uranium (U-Nat) is 35 pCi/g above background, averaged over the top six-inch layer of soil and 100 m<sup>2</sup> area. Cleanup criteria for Ra-226 for the



Homestake site has been established by the NRC as 5 pCi/g above background, averaged over a six-inch layer and 100 m<sup>2</sup> area.

### **Comparison with the CERCLA reportable quantities**

The reportable quantity (RQ) for U-Nat is approximately 0.2 Ci if released in a 24-hour period. In order to exceed the RQ for uranium, a total of 3.9 million gallons of water containing 20 mg/l of uranium would be required to be released.

### **Quantity of Water to Contaminate Soil Above the Cleanup Criteria**

For sandy soils similar to those existing around the Homestake site, it is reasonable to postulate that water spilled might saturate the soil, leaving the residual contamination from the water in the pore space. This would then dry leaving the residual contamination in the soil. Assuming a porosity of 0.45 and a dry soil density of 1.6 g/cc, a release of the water containing 20 mg/l of uranium would result in soil uranium contamination of 3.8 pCi/g. In order for saturation to occur, a spill large enough to saturate the soil to a large depth would be required. The concentration of 3.8 pCi/g should be compared to the soil cleanup criterion of 35 pCi/g.

A worst case situation is to assume that a clay pan exists on the surface at the point of spill. If the area of the clay depression were 300 m<sup>2</sup> and the spilled water was contained in the pan until it evaporated, then all of the constituents would reside in the top 6 inches of soil. This could then be averaged over the top 6-inch layer and 300 m<sup>2</sup> and be compared to the cleanup limits. In order to contaminate the top six inch layer to 35 pCi/g of uranium, 620 liters of water would have to be spilled per square meter, or 186,000 liters (49,000 gallons) over the 300 m<sup>2</sup> area. The depth of water would be approximately 2 feet which is probably unrealistic.

The above two situations show that it is highly unlikely that a spill would result in contamination of the surface soils to levels above the cleanup criteria.

### **Ingestion of Water by People and Animals**

The uranium in the water presents a source for chemical toxicity and radiation exposure to people and animals for a very short period of time while the leak is occurring and under most circumstances, for a period of a few days after the spill. The uranium concentration is approximately 50 times the concentration that would result in the maximum allowed dose from effluent, assuming the water was used by individuals for a period of one year. Since water from a spill of reasonable size would be available for use for less than 1/50th of a year, a spill presents little potential health threat to humans from an effluent point of view. As indicated earlier, a spill could result in an on-site worker reaching the maximum allowable radiation dose provided he/she obtained their daily water consumption from the spill for approximately one week. This is of course highly improbable.

The radiological risk to humans from the consumption of uranium is normally considered somewhat higher than the chemical toxicity. Most large animals would be expected to have a higher chemical tolerance for uranium than man. There may, however, be smaller animals that would suffer chemical toxicity from a spill if they derived a large part of their water from the spill.

As indicated above, it is difficult to develop a scenario where a spill of reasonable size would pose a threat to the health of man or large animals. It is reasonable to assume that some insult to humans and animals would occur from drinking this water, especially over long periods of time. However, since a reasonably small spill would quickly evaporate and or move deeper into the local sandy soils, long-term exposure is highly unlikely, even to animals. There is also little or no reason for individuals to use the water from a spill.

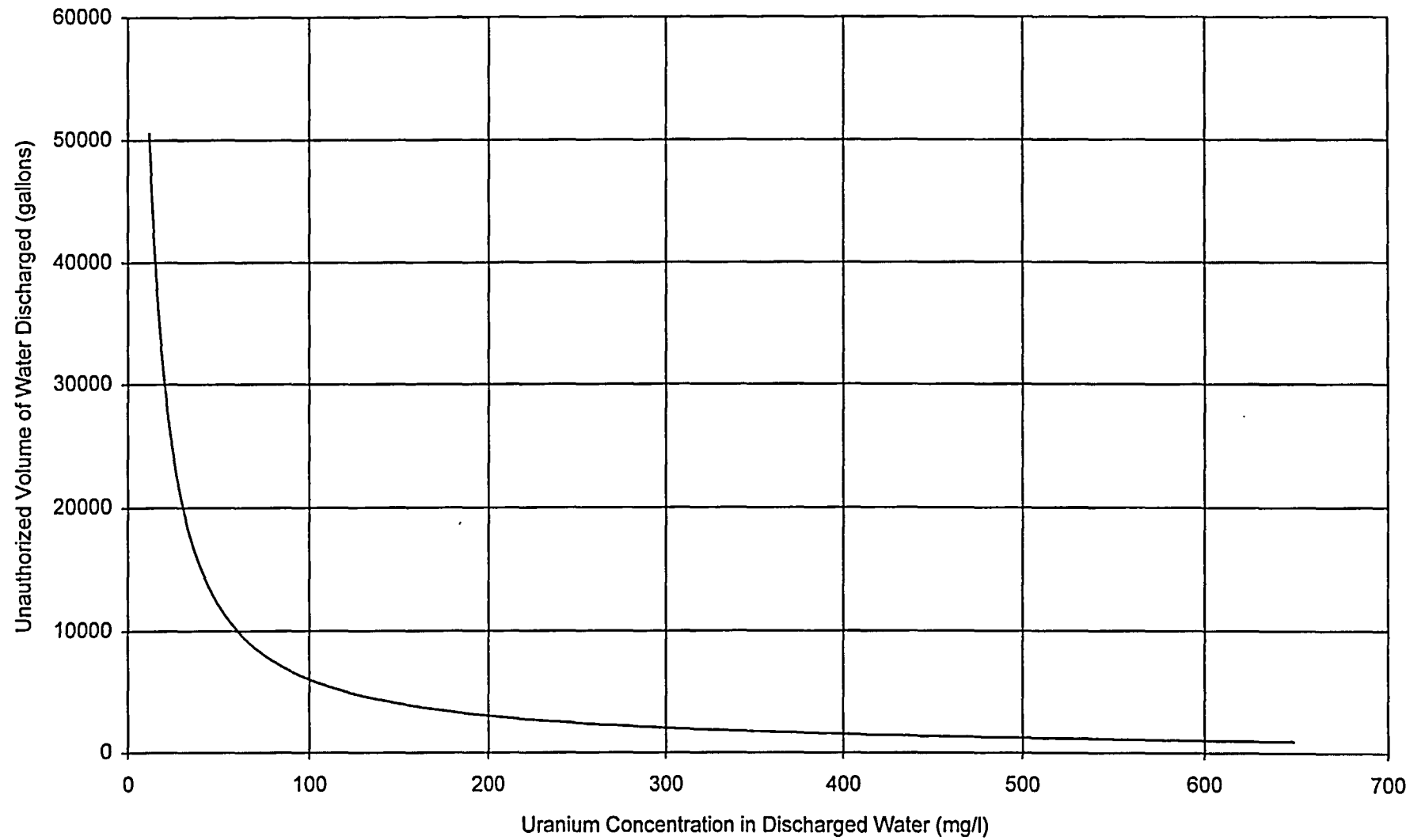
### **Summary and Recommendation**

The above analyses show that the release of 3.9 million gallons of contaminated water would exceed the RQs for CERCLA and a notification would normally be required. The release of approximately 49,000 gallons, if allowed to evaporate in a small area could result in soil contamination that exceeds soil cleanup criteria for unrestricted use of the property.

There does not appear to be a good basis for developing a quantity at which corrective actions and notification of state regulatory agencies should occur, other than the spill should be small enough that water would not stand on the property for long periods of time, exposing small animals to contaminated drinking water that may cause chemical toxicity. Should a spill of that magnitude occur, these analyses also indicate that under certain conditions the surface soils could also become contaminated above cleanup limits.

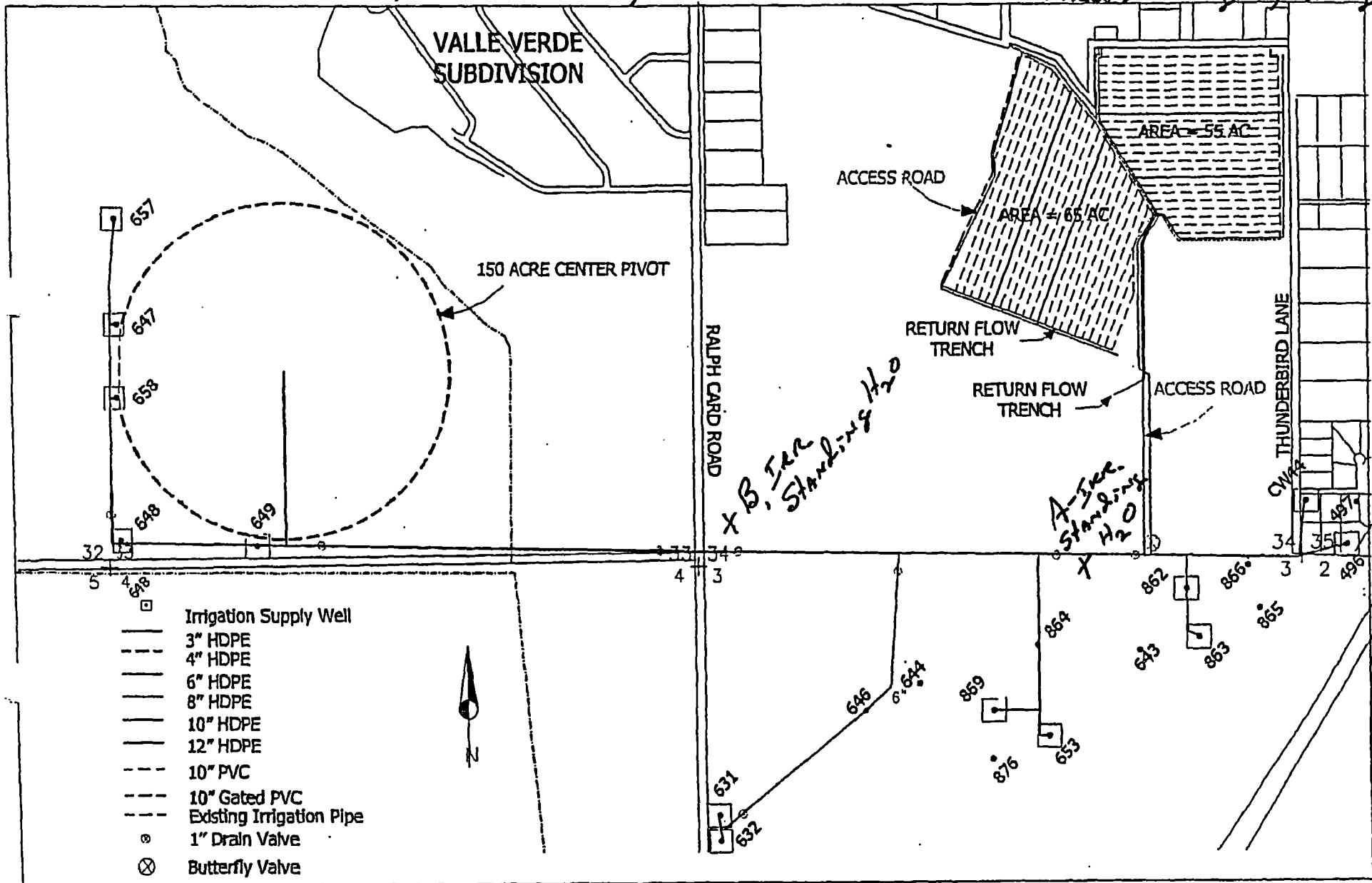
Considering the above, it is inconceivable that a spill of less than 30,000 gallons, occurring over a period of less than one day, could result in significant ponding of contaminated water at the site. We therefore suggest that a limit of 30,000 gallons spilled in a single day be considered a quantity at which management attention is required and the state agencies notified.

Discharge Plan No. 200 Unauthorized Discharge Action Levels  
Homestake Mining Company of California Grants Project



8-12-05

Two Sample taken from CW-29, break in line  
Taken by V. J. 1, Larry Jacks



# FORM-21 - ANALYTICAL SHEET

WELL NAME <b>A IRR S W</b>	COLLECTION DATE <b>8/12/2005</b> MM/DD/YY	COLLECTED BY: <b>ADRIAN VENABLE</b>	WATER LEVEL CODE: 0013	PUMPING RATE (gpm) MEASURED CODE: 0058 FILE
WELL I.D.  <b>Standing water</b>	TIME: <b>1630</b> HR:MIN	TITLE: UTILITY / RAD	FILE	BAIL VOLUME (gal) CODE: 0017 MEASURED FILE
PUMPING OR BAILING DURATION (min) CODE: 0059	Q (totalizer reading) CODE: 0054	CONDUCTIVITY	CODE 0012	CODE 0051
START _____ STOP: _____	REMARK <b>K</b>	TIME _____ TIME _____ TIME <b>1630</b>	TEMP _____ TEMP _____ TEMP <b>22.7</b>	COND _____ COND _____ COND <b>231</b>
PREVIOUS WATER LEVEL: _____	TOTAL DEPTH (FILE): _____ TOTAL DEPTH (MEASURED): _____	ANALYSIS REQUESTED: <b>H. L. L.</b> <b>U-NAT</b> <b>Se</b>		
COMMENTS: <b>A IRR S W</b> <b>8-12-2005</b> <b>1630</b> <b>Down stream from CW-29 Break on Irrigation Line</b> <b>262 yards Down Stream from CW-29</b>				
Name:	Pump Size			
Address:	Casing Diameter:			
Telephone Number:	Usage:			

# FORM-21 - ANALYTICAL SHEET

WELL NAME <u>B IRR S W</u>		COLLECTION DATE <u>8/12/2005</u> MM/DD/YY		COLLECTED BY: ADRIAN VENABLE		WATER LEVEL CODE: 0013		PUMPING RATE (gpm) MEASURED CODE: 0058 FILE	
WELL I.D.  <u>STANDING WATER</u>		TIME: <u>1730</u> HR:MIN		TITLE: UTILITY / RAD		FILE		BAIL VOLUME (gal) CODE: 0017 MEASURED FILE	
PUMPING OR BAILING DURATION (min) CODE: 0059			Q (totalizer reading) CODE: 0054			CONDUCTIVITY			CODE 0012
START _____ STOP: _____			REMARK K			TIME _____ TIME _____ TIME <u>1730</u>			TEMP _____ TEMP _____ TEMP <u>22.9</u>
									COND _____ COND _____ COND <u>226</u>
PREVIOUS WATER LEVEL: _____				TOTAL DEPTH (FILE): _____ TOTAL DEPTH (MEASURED): _____				ANALYSIS REQUESTED: <u>U-104</u> <u>H. Jant</u> <u>SC</u>	
COMMENTS: <u>B - IRR S W</u> <u>8-12-2005</u> <u>1730</u> <u>1/2 mile Down Gradient from CW-29, Break</u>									
Name: _____					Pump Size _____				
Address: _____					Casing Diameter: _____				
Telephone Number: _____					Usage: _____				

## LABORATORY ANALYTICAL REPORT

Client: Homestake Mining Company  
Project: Grants NM Project  
Lab ID: C05080726-001  
Client Sample ID: A-IRR-S-W

Report Date: 08/22/05  
Collection Date: 08/12/05 16:30  
Date Received: 08/16/05  
Matrix: Aqueous

Analyses	Result	Units	Qual	MCL/ RL QCL	Method	Analysis Date / By
MAJOR IONS						
007 Chloride	9	mg/L		1	E200.7	08/18/05 14:28 / ts
039 Nitrogen, Nitrate+Nitrite as N	0.7	mg/L		0.1	E353.2	08/17/05 09:35 / jal
008 Sulfate	26	mg/L		1	E200.7	08/18/05 14:28 / ts
PHYSICAL PROPERTIES						
010 Solids, Total Dissolved TDS @ 180 C	142	mg/L		10	A2540 C	08/17/05 08:40 / jc
METALS - DISSOLVED						
036 Molybdenum	<0.03	mg/L		0.03	E200.8	08/17/05 14:56 / bws
040 Selenium	<0.005	mg/L		0.005	E200.8	08/17/05 14:56 / bws
015 Uranium	0.0044	mg/L		0.0003	E200.8	08/17/05 14:56 / bws
244 Uranium Precision (±)	0.0001	mg/L			E200.8	08/17/05 14:56 / bws
114 Uranium, Activity	3.0E-09	uCi/mL		2.0E-10	E200.8	08/17/05 14:56 / bws
113 Uranium, Activity precision (±)	6.6E-11	uCi/mL			E200.8	08/17/05 14:56 / bws

Report Definitions: RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

## LABORATORY ANALYTICAL REPORT

Client: Homestake Mining Company

Project: Grants NM Project

Lab ID: C05080726-002

Client Sample ID: B-IRR-S-W

Report Date: 08/22/05

Collection Date: 08/12/05 17:30

Date Received: 08/16/05

Matrix: Aqueous

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
MAJOR IONS							
007 Chloride	9	mg/L		1		E200.7	08/18/05 14:31 / ts
039 Nitrogen, Nitrate+Nitrite as N	1.7	mg/L		0.1		E353.2	08/17/05 09:37 / jal
008 Sulfate	24	mg/L		1		E200.7	08/18/05 14:31 / ts
PHYSICAL PROPERTIES							
010 Solids, Total Dissolved TDS @ 180 C	174	mg/L		10		A2540 C	08/17/05 08:40 / jc
METALS - DISSOLVED							
036 Molybdenum	<0.03	mg/L		0.03		E200.8	08/17/05 15:03 / bws
040 Selenium	<0.005	mg/L		0.005		E200.8	08/17/05 15:03 / bws
015 Uranium	0.0034	mg/L		0.0003		E200.8	08/17/05 15:03 / bws
244 Uranium Precision (±)	0.0001	mg/L				E200.8	08/17/05 15:03 / bws
114 Uranium, Activity	2.3E-09	uCi/mL		2.0E-10		E200.8	08/17/05 15:03 / bws
113 Uranium, Activity precision (±)	5.1E-11	uCi/mL				E200.8	08/17/05 15:03 / bws

Report RL - Analyte reporting limit.  
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.





## LABORATORY ANALYTICAL REPORT

Client: Homestake Mining Co  
Project: Not Indicated  
Lab ID: C05050824-003  
Client Sample ID: CW29

Report Date: 06/06/05  
Collection Date: 05/17/05 13:55  
Date Received: 05/23/05  
Matrix: Aqueous

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
MAJOR IONS							
007 Chloride	103	mg/L	D	2		E200.7	06/02/05 15:09 / ts
039 Nitrogen, Nitrate+Nitrite as N	2.3	mg/L		0.1		E353.2	05/26/05 10:42 / jal
008 Sulfate	668	mg/L	D	2		E200.7	06/02/05 15:09 / ts
PHYSICAL PROPERTIES							
010 Solids, Total Dissolved TDS @ 180 C	1450	mg/L		10		A2540 C	05/31/05 16:34 / th
METALS - DISSOLVED							
036 Molybdenum	<0.03	mg/L		0.03		E200.8	05/26/05 04:36 / bws
040 Selenium	0.152	mg/L		0.005		E200.8	05/26/05 04:36 / bws
015 Uranium	0.161	mg/L		0.0003		E200.8	05/26/05 04:36 / bws
244 Uranium Precision (±)	0.0016	mg/L				E200.8	05/26/05 04:36 / bws
114 Uranium, Activity	1.1E-07	uCi/mL		2.0E-10		E200.8	05/26/05 04:36 / bws
113 Uranium, Activity precision (±)	1.1E-09	uCi/mL				E200.8	05/26/05 04:36 / bws

ENTERED JUN 24 2005

Report Definitions: RL - Analyte reporting limit.  
QCL - Quality control limit.  
D - RL increased due to sample matrix interference.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.



**ENERGY LABORATORIES**  
Toll Free 888.235.0515

**ES, INC.** 2393 Salt Creek Highway (82601) - P.C.  
.235.0515 Fax 307.234.1639 casper@energylab.com

3258 Casper, WY 82602  
om www.energylab.com

## LABORATORY ANALYTICAL REPORT

**Client:** Homestake Mining Company  
**Project:** Not Indicated  
**Lab ID:** C05060215-001  
**Client Sample ID:** IRR 33 Flood

**Report Date:** 06/11/05  
**Collection Date:** 06/01/05 12:49  
**Date Received:** 06/06/05  
**Matrix:** Aqueous

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
MAJOR IONS							
007 Chloride	129	mg/L		1		E200.7	06/09/05 18:03 / cp
039 Nitrogen, Nitrate+Nitrite as N	2.7	mg/L		0.1		E353.2	06/07/05 11:36 / jal
008 Sulfate	661	mg/L		1		E200.7	06/09/05 18:03 / cp
PHYSICAL PROPERTIES							
010 Solids, Total Dissolved TDS @ 180 C	1520	mg/L		10		A2540 C	06/07/05 16:56 / th
METALS - DISSOLVED							
036 Molybdenum	<0.03	mg/L		0.03		E200.8	06/07/05 19:17 / bws
040 Selenium	0.064	mg/L		0.005		E200.8	06/07/05 19:17 / bws
015 Uranium	0.243	mg/L		0.0003		E200.8	06/07/05 19:17 / bws
244 Uranium Precision (±)	0.0017	mg/L				E200.8	06/07/05 19:17 / bws
114 Uranium, Activity	1.6E-07	uCi/mL		2.0E-10		E200.8	06/07/05 19:17 / bws
113 Uranium, Activity precision (±)	1.2E-09	uCi/mL				E200.8	06/07/05 19:17 / bws

**Report** RL - Analyte reporting limit.  
**Definitions:** QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.