STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

Norman H. Bangerter, Governor
Dee C. Hansen, Executive Director
Dianne R. Nielson, Ph.D., Division Director

355 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

July 5, 1985

TO: Lowell Braxton, Administrator

Thru: Susan Linner, Permit Supervisor

FROM: Dave Cline, Reclamation Hydrologist DJC

RE: Water Monitoring at the Blazon #1 Mine, ACT/007/021, Folder No. 7, Carbon County, Utah

The Division is in receipt of North American Equities letter of June 19, 1985 requesting that the requirement to monitor water at the Blazon #1 Mine be waived. The following is a response to that letter.

The Division cannot release NAE from fulfilling the requirements of their approved monitoring plan until an alternate plan is approved. The approved monitoring plan includes monitoring stream sites B-1, B-2, B-3, B-4, B-5, B-6 and G-6, sampling point of effluent from Clear Creek Mine, three times annually. These measurements will be taken during the first two weeks of June, last two weeks of July, and the last two week of September. Groundwater sites G-1, G-2, G-3, G-4, G-5, and G-7 will be sampled once monthly for a year commencing the first week of April of 1985, to obtain necessary baseline data. After completing collection of baseline data, sites will be sampled on a schedule approved by DOGM.

The Reclamation Plan submitted by NAE on May 29, 1985 has not been approved by the Division and therefore, the mine site is not considered to be in the reclamation stage at this time. Since mining operations have been suspended at the mine, the Division considers the Blazon #1 Mine to be in a state of suspended operations until the Reclamation Plan has been approved and implemented.

However, the Division does concur that the monitoring program should reflect the current state of suspended operations and therefore will approve a monitoring program that is less extensive than the approved program. The sampling of the approved aforementioned sites must still be performed three times annually as per the approved monitoring plan; the first two weeks of June, the last two weeks of July, and the last two weeks of September.

The deletion of some of the sampling sites may be approved by the Division if a justificaiton is provided as to the reason NAE feels they are not necessary. Additionally, the water quality parameters that need to be analyzed at the time of each sampling can be reduced to the operational category of the water monitoring guidelines prepared by DOGM. The enclosed attachment outlines both the field and lab measurements that are required.

In order to expedite the approval of NAE's Reclamation Plan it is prudent to address the monitoring program required by the Division during the reclamation construction and post-mining periods. Operational monitoring must be continued for a period of two years after the reclamation activities have ceased. In addition to the operational monitoring program a monitoring plan must be submitted and approved by the Division that will demonstrate that Total Suspended Solids (TSS) and Settleable Solids (SS) will not impact the existing conditions in Mud Creek and Clear Creek during reclamation construction. This plan must continue for a period of time sufficient to determine that TSS and SS will not impact the existing hydrologic regime after construction has ceased. Frequency of sampling for TSS and SS during the construction period and period immediately following should be performed weekly with the results forwarded to the Division immediately after analysis.

A plan for post-mining monitoring (beginning two years after reclamation activities have ceased) must also be submitted and approved by the Division. The enclosed attachment outlines the frequency and chemical parameters that are required for post-mining monitoring. The duration of the monitoring must continue until termination of bonding.

NAE should also be aware that UMC 817.46(u) requires that sedimentation ponds shall not be removed until the disturbed area has been restored and the vegetation requirements of Sections UMC 817.111-.117 are met and the drainage entering the pond has met the applicable State and Federal water quality requirements for the receiving stream.

The fact that the June 19, 1985 letter from NAE to the Division states that water monitoring for the month of June will not be performed pending a response from DOGM does not relieve NAE from their responsibility for the month of June.

Please call me if you have any questions.

jvb
0363R-1

TABLE 1

SURFACE WATER BASELINE AND OPERATIONAL
WATER QUALITY PARAMETER LIST

Field Measurements:

*	-	Water Levels or Flow
*	-	pH
*	-	Specific Conductivity (umhos/cm)
*	-	Temperature (C^o)
*	-	Dissolved Oxygen (ppm)

Laboratory Measurements: (mg/l)

#	*	-	Total Settleable Solids
#	*	-	Total Suspended Solids
	*	-	Total Dissolved Solids
	*	-	Total Hardness (as $CaCO_3$)
		-	Aluminum (Al)
		-	Arsenic (As)
		-	Barium (Ba)
		-	Boron (B)
	*	-	Carbonate (CO_3^{-2})
	*	-	Bicarbonate (HCO_3^-)
		-	Cadmium (Cd)
	*	-	Calcium (Ca)
	*	-	Chloride (Cl^-)
		-	Chromium (Cr)
		-	Copper (Cu)
		-	Fluoride (F^-)
	*	-	Dissolved Iron (Fe)
		-	Lead (Pb)
	*	-	Magnesium (Mg)
	*	-	Manganese (Mn)
		-	Mercury (Hg)
		-	Molybdenum (Mo)
		-	Nickel (Ni)
		-	Nitrogen: Ammonia (NH_3)
		-	Nitrite (NO_2)
		-	Nitrate (NO_3^-)
	*	-	Potassium (K)
		-	Phosphate (PO_4^{-3})
		-	Selenium (Se)
	*	-	Sodium (Na)
	*	-	Sulfate (SO_4^{-2})
		-	Sulfide (S^-)
		-	Zinc (Zn)
	*	-	Oil and Grease
	*	-	Cation-Anion Balance

-Baseline
*Operational
#Construction

TABLE 2 SURFACE WATER SAMPLING

	Baseline	Operational	Postmining
Type of Sampling Site	Surface Water Bodies	Surface Water Bodies	Surface Water Bodies
Field Measurements (see Table 1)	Performed during water level/flow measurements.	Performed during water level/flow measurements.	Performed during water level/flow measurements.
Sample Frequency	Quarterly for lakes, reservoirs and impoundments (water level and quality); monthly flow measurements and quarterly water quality measurements (one sample at low flow and high flow each) for perennial streams. Monthly flow and water quality measurements during period of flow for intermittent streams. Sampling for ephemeral streams determined at pre-design conference.	Quarterly for lakes, reservoirs and impoundments (water level and quality); monthly flow measurements and quarterly water quality measurements (one sample at low flow and high flow each) for perennial streams. Monthly flow and water quality measurements during period of flow for intermittent streams. Sampling for ephemeral streams determined at pre-design conference.	Two per annum for perennial streams (high & low flow); two per annum during snowmelt and rainfall for intermittent streams.
Sampling Duration	Two years (one complete year of data before submission of PAP.	Yearly until two years after surface reclamation activities have ceased.	Yearly until termination of bonding.
Type of Data Collected and Reported	Flow and/or water levels and water quality.	Flow and/or water levels and water quality.	Flow and/or water levels and water quality per operational parameters.
Comments	All field measurements should be performed concurrently with water level/flow measurements.	All field measurements should be performed concurrently with water level/flow measurements.	All field measurements should be performed concurrently with water level/flow measurements

TABLE 2 (continued)

	Baseline	Operational	Postmining
Comments		For every fifth year preceding repermitting, one sample at low flow and high flow each should be taken for baseline water quality parameters. The construction monitoring program will be conducted on a site-specific basis in addition to the operational monitoring.	

TABLE 3

GROUND WATER BASELINE AND OPERATIONAL
WATER QUALITY PARAMETER LIST

Field Measurements:

*	-	Water Levels or Flow
*	-	pH
*	-	Specific Conductivity (umhos/cm)
*	-	Temperature (C^{O})

Laboratory Measurements: (mg/l)

*	-	Total Dissolved Solids
*	-	Total Hardness (as $CaCO_3$)
	-	Aluminum (Al)
	-	Arsenic (As)
	-	Barium (Ba)
	-	Boron (B)
*	-	Carbonate (CO_3^{-2})
*	-	Bicarbonate (HCO_3^{-})
	-	Cadmium (Cd)
*	-	Calcium (Ca)
*	-	Chloride (CL^{-})
	-	Chromium (Cr)
	-	Copper (Cu)
	-	Fluoride (F^{-})
*	-	Dissolved Iron (Fe)
	-	Lead (Pb)
*	-	Magnesium (Mg)
*	-	Manganese (Mn)
	-	Mercury (Hg)
	-	Molybdenum (Mo)
	-	Nickel (Ni)
	-	Nitrogen: Ammonia (NH_3)
	-	Nitrite (NO_2)
	-	Nitrate (NO_3^{-})
*	-	Potassium (K)
	-	Phosphate (PO_4^{-3})
	-	Selenium (Se)
*	-	Sodium (Na)
*	-	Sulfate (SO_4^{-2})
	-	Sulfide (S^{-})
	-	Zinc (Zn)

-Baseline
*Operational

TABLE 4 GROUND WATER SAMPLING

	Baseline	Operational	Postmining
Type of Sampling Site	Spring, In-Mine, borehole, Observation Well	Spring, In-Mine, Borehole, Observation Well	Spring, Observation Well
Field Measurements (see Table 1)	Yes	Yes	Yes
Sampling Frequency Each Site	Four total at monthly increments per annum.	Quarterly for in-mine; four total at monthly increments per annum for other sites.	One per annum; springs at low flow.
Sampling Duration	Two years (one complete year of data before submission of MRP).	Yearly until two years after surface reclamation activities have ceased.	Yearly until termination of bonding.
Type of Data Collected and Reported	Water levels and/or flow and water quality.	Water levels and/or flow; one water quality sample at low flow.	Water levels and/or flow and water quality per operational parameters.
Comments	Spring and seep inventory taken fall and spring the first year and every fifth year preceding repermitting.	Every fifth year preceding re-permitting; one water quality sample at low flow per baseline parameters.	