CONTACT INFORMATION
Mining Records Curator
Arizona Geological Survey
416 W. Congress St., Suite 100
Tucson, Arizona 85701
602-771-1601
http://www.azgs.az.gov
inquiries@azgs.az.gov

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EXXON CHEMICALS

MINING CHEMICALS

7977 E. Speedway Blvd., Suite 202, Tucson, AZ 85710
(602) 886-8261

WATER ANALYSIS REPORT

COMPANY		DATE
BUDGE MINING LTD.		1/11/90
PROPERTY	**COUNTY**	**STATE**
Vulture Mine	Maricopa	AZ
TYPE SAMPLE	**TYPE TEST**	
Water	Water Analyses	

RESULTS

	Barren Solution	Preg. Solution	Fresh Water
pH	11.9	11.6	7.7
Calcium mg/l	588	568	48
Hydroxide mg/l	Ø	Ø	Ø
Carbonate mg/l	480	204	Ø
Bicarbonate mg/l	Ø	122	268
TDS mg/l	4,400	3,700	300
Chloride mg/l	660	480	--
Magnesium mg/l	Ø	5	--
Iron mg/l	1.5	1.8	--
Sulfate mg/l	2,375	2,250	--

REMARKS & RECOMMENDATIONS:

Scale indices remain at 3.05 and 3.20 !

TECHNICAL REPRESENTATIVE	FRED McFARREN	OFFICE PHONE	(602) 886-8261
TESTED BY	RD. Holliday	DATE	1/12/90

EXXON MINING CHEMICALS
EXXON CHEMICAL AMERICAS

SCALING TENDENCIES OF WATERS FOR MINING APPLICATIONS

COMPANY: BUDGE MINING LTD.
SAMPLE POINT: BARREN SOLUTION
LOCATION: PROCESS WATER
DATE: 1/11/90

WATER ANALYSIS (MG/L):

SODIUM	2925.0
CALCIUM	588.0
MAGNESIUM	0.0
CHLORIDE	660.0
SULFATE	2375.0
CARBONATE	480.0
BICARBONATE	0.0
HYDROXIDE	0.0
IRON	1.5
BARIUM	0.0

PH: 11.9
IONIC STRENGTH = 0.1558

INDEX VALUES GREATER THAN ZERO INDICATE SCALING CONDITIONS
INDEX VALUES OF ZERO OR LESS INDICATE A STABLE WATER

TEMP.	CALCITE INDEX	GYPSUM INDEX	ANHYDRITE INDEX	BARITE INDEX
60	3.20	-0.05	-0.30	-41.21
80	3.31	-0.08	-0.22	-41.35
100	3.43	-0.09	-0.14	-41.47
120	3.57	-0.09	-0.05	-41.57
140	3.73	-0.07	0.06	-41.66
160	3.91	-0.05	0.17	-41.72
180	4.10	-0.02	0.29	-41.77
200	4.32	0.02	0.42	-41.80
220	4.56	0.06	0.56	-41.81
240	4.83	0.10	0.71	-41.79
260	5.11	0.14	0.88	-41.73

EXXON MINING CHEMICALS
EXXON CHEMICAL AMERICAS

SCALING TENDENCIES OF WATERS FOR MINING APPLICATIONS

COMPANY: BUDGE MINING LTD.
SAMPLE POINT: PREG.SOLUTION
LOCATION: PROCESS WATER
DATE: 1/11/90

WATER ANALYSIS (MG/L):

SODIUM	2483.0
CALCIUM	568.0
MAGNESIUM	5.0
CHLORIDE	480.0
SULFATE	2250.0
CARBONATE	204.0
BICARBONATE	122.0
HYDROXIDE	0.0
IRON	1.8
BARIUM	0.0

PH: 11.6
IONIC STRENGTH = 0.1392

INDEX VALUES GREATER THAN ZERO INDICATE SCALING CONDITIONS
INDEX VALUES OF ZERO OR LESS INDICATE A STABLE WATER

TEMP.	CALCITE INDEX	GYPSUM INDEX	ANHYDRITE INDEX	BARITE INDEX
60	3.05	-0.05	-0.30	-41.17
80	3.16	-0.08	-0.23	-41.31
100	3.28	-0.09	-0.14	-41.43
120	3.42	-0.09	-0.05	-41.53
140	3.57	-0.07	0.06	-41.62
160	3.75	-0.05	0.17	-41.68
180	3.94	-0.02	0.29	-41.73
200	4.15	0.02	0.42	-41.76
220	4.38	0.06	0.56	-41.76
240	4.64	0.10	0.72	-41.74
260	4.92	0.14	0.88	-41.68

EXXON CHEMICALS
MINING CHEMICALS
7977 E. Speedway Blvd., Suite 202, Tucson, AZ 85710
(602) 886-8261

WATER ANALYSIS REPORT

COMPANY		DATE
BUDGE MINING LTD.		9/20/89
PROPERTY	**COUNTY**	**STATE**
Vulture Mine	Maricopa	AZ
TYPE SAMPLE	**TYPE TEST**	
Water	Water Analyses	

RESULTS

	Preg. Sol'n.	Barren Sol'n.	Fresh Water
pH	11.5	10.9	7.5
Calcium mg/l	560	320	28
Hydroxide mg/l	10	Ø	Ø
Carbonate mg/l	252	156	Ø
Bicarbonate mg/l	Ø	85	256
TDS mg/l	3,850	2,400	300

REMARKS & RECOMMENDATIONS:

Scale index remains at approximately +3.0 in barren. Maintain adequate treatment with S487.

I have enclosed a product bulletin about DIKLOR for cyanide detoxification.

TECHNICAL REPRESENTATIVE	FRED McFARREN	OFFICE PHONE	(602) 886-8261
TESTED BY	RD. Holliday	DATE	9/22/89

EXXON CHEMICALS

MINING CHEMICALS

PRODUCT INFORMATION

DIKLOR

GENERAL INFORMATION

DIKLOR is a powerful oxidant capable of removing cyanide and other toxic compounds from the effluents of precious metal and mineral processing plants. DIKLOR is effective in both effluent water and pulp slurries. DIKLOR can eliminate free and WAD cyanide and will substantially reduce the total cyanide level.

DIKLOR can be used alone to eliminate cyanide from a waste stream or, in conjunction with other cyanide destruction techniques. As a "polishing agent" DIKLOR can be used to insure conformance with environmental regulations and permitting requirements.

DIKLOR requires no special processing equipment to treat mill streams and treatment rates can be easily regulated by simple pump adjustments.

DIKLOR can also be used to detoxify abandoned heaps and tailings.

TYPICAL PHYSICAL PROPERTIES

Specific Gravity at 68°F.....1.250
Density, lb/gal.....10.41
Flash Point, °F (PMCC).....above 200
Pour Point, °F.....-5
pH, Product.....9.1

CHEMICAL DESCRIPTION

DIKLOR is a solution of stabilized chlorine dioxide.

APPLICATIONS

DIKLOR is recommended for the following applications:

1. Removal of cyanide from mill streams.
2. Removal of sulfides and mercaptans from mill streams.
3. Oxidation of phenols and other complex organics in mill streams.
4. Removal of heavy metal contamination in effluent streams.

TREATING RECOMMENDATIONS

Continuous injection of DIKLOR is recommended in all applications. Treatment should be applied at a point just upstream of the problem location if possible. The injection system must be dedicated to DIKLOR and should be at least 316L stainless steel although, under certain conditions, 318 stainless steel or Inconel 625 is recommended.

Treating rate will depend on many variables that are specific to each plant or operations. Generally, a continuous application of 12 to 16 ppm of DIKLOR per ppm of cyanide will totally remove the cyanide. It is often advantageous to inject DIKLOR via a quill to insure proper mixing in the effluent stream

PRECAUTIONS

DIKLOR should be used to destroy cyanide only in systems having a pH of 10 or greater.

Undiluted DIKLOR is moderately toxic to fish and should not be discharged into lakes, ponds, streams or public waters. Do not contaminate water by cleaning of equipment or disposal of waste.

Diluted DIKLOR, at typical treating rates for cyanide destruction is not expected to interact with other chemicals in the system. However, compatibility studies should be made on each system to be treated with DIKLOR.

As with any powerful oxidant, the concentrated DIKLOR should not be mixed with any other or other chemicals such as (1) acids and alkaline materials, (2)

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of our knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty or guarantee is made as to its accuracy, reliability and completeness. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use. We do not accept liability for any loss or damage that may occur from the use of this information nor do we offer any warranty against patent infringement.

other oxidizing and reducing agents, or (3) organic or inorganic materials. Mixing with any of the above mentioned materials may cause a highly exothermic reaction as well as the evolution of irritating gas.

Should an injection package be converted to/from DIKLOR, all equipment must be thoroughly flushed with water prior to introduction of the succeeding product.

STORAGE AND HANDLING

Store in a cool, dry place. Dispose of spilled material by flushing with large quantities of water.
Chemical drums should be set over a drip tray at the use location, should any leakage of chemical occur.

CORROSIVE. Causes eye damage. Wear goggles, rubber gloves and an apron when handling. Do not get in eyes, on skin or clothing. Avoid breathing fumes. May cause burns to broken skin. Wash hands after handling.

FIRST AID

EXTERNAL. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes; for eyes, call a physician. Remove and wash contaminated clothing before reuse.

INTERNAL. If swallowed and the person is conscious, give large quantities of milk or water, if milk is not available. Do not induce vomiting. Call a physician immediately.

If vapors are inhaled, move the person to fresh air. If the person is not breathing, administer artificial respiration, preferably mouth-to-mouth. If breathing is difficult, administer oxygen.

PACKAGING AND AVAILABILITY

DIKLOR is packaged in 55-gallon drums and in bulk. The product is available from EXXON Chemicals Service Centers and EXXON Chemicals Plant in Houston, Texas.

835-0014K (XCC002)

EXXON CHEMICAL AMERICAS

EXXON CHEMICAL

STANDARD TERMS AND CONDITIONS OF SALE
ACKNOWLEDGMENT OF PURCHASE ORDER

DATE SEPTEMBER 23 , 1989

SEND INVOICE TO

A. F BUDGE MINING, LTD.
4301 N. 75TH ST STE 101
SCOTTSDALE AZ 85251

SHIP TO WICKENBURG
AZ

(Buyer)

Thank you for your purchase order No. VERBAL O/N=666973 for the following

PRODUCT NAME	APPROXIMATE QUANTITY	ESTIMATED SHIP DATE	APPROXIMATE QUANTITY	ESTIMATED SHIP DATE
BAROCHEM S 487	110G	SEPT 22 , 89		

which is accepted subject to the terms and conditions of sale hereinafter stated:

1. ACCEPTANCE

The acceptance of your order by Exxon Chemical Americas, a division of EXXON CHEMICAL COMPANY, a division of EXXON CORPORATION, (Seller") is EXPRESSLY MADE CONDITIONAL UPON BUYER'S ASSENT TO THE TERMS AND CONDITIONS HEREIN SET FORTH and these constitute the only binding contract terms and conditions between the parties in the absence of a written agreement as provided in Paragraph 12.

2. PRICE AND QUANTITY

With the exception of Paragraph 12 below, WRITTEN AGREEMENT, anything herein and any course of dealing between the parties to the contrary notwithstanding, (1) Seller shall not be obligated to sell or deliver any quantity of the product(s) covered by this acknowlegment beyond the amount, if any, which in Seller's sole judgement, is available for such purpose at the date of proposed shipment of such product(s) to the Buyer. (2) The price of any product(s) to be supplied hereunder shall be Seller's price for such product(s) as of the date of shipment thereof. (3) Seller reserves the right to set minimums and/or premiums or to reject orders for unusual configurations; sizes and folds. (4) Overrun or underrun of 10% in filling orders shall constitute full compliance with all orders. (5) Any freight allowances shall be those specified by Seller as of the date of shipment thereof.

3. TAXES

Any tax, excise or other governmental charge imposed upon the production, value added, sale or transportation of or to any material sold hereunder which Seller may be required to pay, shall be paid by Buyer to Seller in addition to the purchase price. Buyer shall provide Seller, on request, with properly completed exemption certificates for any tax from which Buyer claims exemption.

4. TITLE: RISK OF LOSS

Title to the product and risk of loss shall pass to Buyer upon delivery to a carrier or into Buyer's transport.

(See additional terms and conditions on reverse side)

5. LIMITED WARRANTY

THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF, AND SELLER MAKES NO WARRANTY, EXPRESS OR IMPLIED, OF FITNESS FOR PARTICULAR USE OR OTHERWISE WITH RESPECT TO THE PRODUCTS, WHETHER USED SINGLY OR IN COMBINATION WITH OTHER SUBSTANCES OR IN ANY PROCESS, EXCEPT THAT THE PRODUCTS SOLD HEREUNDER SHALL BE OF MERCHANTABLE QUALITY AND SHALL CONFORM TO SELLER'S STANDARD SPECIFICATIONS.

6. INSPECTION AND LIMITATION OF LIABILTY

Buyer shall inspect and test the products delivered hereunder for damage, defect or shortage immediately upon receipt at Buyer's plant or such other location as determined by Buyer and provide Seller notice of any such damage, defect or shortage within ten (10) days of receipt. All claims for any cause whatsoever, whether based in contract, negligence or other tort, strict liability, breach of warranty or otherwise, shall be deemed waived unconditionally and absolutely unless Seller receives written notice of such claim not later than ninety (90) days after Buyer's receipt of the products as to which such claim is made.

Defective or nonconforming products shall be replaced by Seller without additional charge, or in lieu thereof, at Seller's option, Seller may refund the purchase price upon return of the products at Seller's expense. NOTWITHSTANDING THE ABOVE AND REGARDLESS OF THE CIRCUMSTANCES, SELLER'S TOTAL LIABILITY TO BUYER FOR ANY AND ALL CLAIMS, LOSSES OR DAMAGES ARISING OUT OF ANY CAUSE WHATSOEVER, WHETHER BASED IN CONTRACT, NEGLIGENCE OR OTHER TORT, STRICT LIABILITY, BREACH OF WARRANTY OR OTHERWISE, SHALL IN NO EVENT EXCEED THE PURCHASE PRICE OF THE PRODUCTS IN RESPECT TO WHICH SUCH CAUSE AROSE. IN NO EVENT SHALL SELLER BE LIABLE FOR SPECIAL, INCIDENTAL, CONSEQUENTIAL OR EXEMPLARY DAMAGES. Any cause of action that Buyer may have against Seller and which may arise under this contract must be commenced within one year after the cause of action has accrued.

7. SAFETY, HEALTH AND INDEMNITY

Seller shall furnish to Buyer Material Safety Data Sheets, including warnings and safety and health information concerning the products and/or the containers for such products sold hereunder. Buyer agrees to disseminate such information so as to give warning of possible hazards to persons who Buyer can reasonably foresee may be exposed to such hazards, including but not limited to Buyer's employees, agent, contractors or customers. If Buyer fails to disseminate such warnings and information, Buyer agrees to defend and indemnify Seller against any and all liability arising out of or in any way connected with such failure, including but not limited to liability for injury, sickness, death and property damage; provided, however, that if Seller in this instance has contributed to such liability, Buyer's indemnity to Seller shall be reduced by the proportion in which Seller contributed to such liability. Seller will provide Buyer with reasonable notice and opportunity to defend in the event any claim or demand is made on Seller as to which such indemnity relates.

8. TOXIC SUBSTANCES CONTROL ACT – INVENTORY COMPLIANCE

Seller has properly reported all manufactured substances to the U.S. Environmental Protection Agency in accordance with the Section 8 (b) Inventory Reporting provisions of the Toxic Substances Control Act. In addition, all process chemicals used in the production or formulation of our products have been verified by our suppliers to have been properly reported on said inventory.

9. CARS, TRUCKS AND BARGES

Buyer agrees to unload railroad cars, trucks, and barges furnished by Seller within the free time specified by Tariffs on file with applicable regulatory bodies and to pay any charges resulting from its failure in this regard directly to the common carrier upon receipt of invoice thereof. Buyer agrees to pay Seller's daily charges for trip-leased tank cars for tank cars held longer than seven (7) days from constructive placement. Buyer assumes full responsibility for use and condition of cars, trucks and barges while in Buyer's possession and agrees to (1) compensate Seller for loss or damage to Seller's property and (2) indemnify and save Seller harmless from any loss or damage to property other than Seller's and from any injuries to persons relating in any way to the use of such car(s), truck(s) and barge(s) while such are in Buyer's possession. Buyer further agrees to report to Seller promptly any damage which may be sustained by the car(s). truck(s) or barge(s) in Seller's possession.

10. FORCE MAJEURE

No liability shall result to either party from delay in performance or non-performance in whole or in part caused by circumstances beyond the control of the party affected.

11. MISCELLANEOUS

No waiver by either party or any breach of any of the terms and conditions herein contained shall be construed as a waiver of any succeeding breach of the same or other term and condition.

This agreement shall be construed and enforced under the laws of the State of Texas.

Cancellation and changes in orders can be accepted only if the order is not in actual production.

12. WRITTEN AGREEMENT

In the event there is an executed written sales contract in effect between Buyer and Seller covering your purchase order, the terms and conditions of that contract shall prevail over any conflicting term of the acknowledgment.

13. STANDARD TERMS OF SALE

Unless otherwise specified by separate contract, written notice or agreement, Seller's standard terms of sale are net 30 days from date of shipment.

14. SECURITY

If the financial responsibility of Buyer becomes impaired or unsatisfactory to Seller, advance cash payments or satisfactory security shall be given by Buyer upon demand by Seller, and shipments may be withheld until such payment or security is received.

NALCO

PERSONAL SERVICE REPORT

Water Treatment

Plant of A. F. Budge (Mining) Limited Date April 7, 1989

Address 4301 North 75th Street, Suite 101 Plant No. Vulture Mine

City Scottsdale, State Arizona Zip 85251

Attention: Mr. Dale Allen

Copies to: Mr. Harry Kling

Copies to:

Nalco copies to: R. Tuka, G. Wortley, M. Strominger, Central & District Files, DWA

SUMMARY AND RECOMMENDATIONS

Analysis of your heap leach circuit shows the water to be highly scale forming. A scaling index of below 6.0 suggests a water with scale forming tendencies. The 20 ppm drop in dissolved calcium between the barren pump and the drip system on the heap suggests that some scale may presently be forming in this area. We welcome the opportunity to test 2 drums of NALCO 7818 scale control chemical and look forward to working with you. I will phone the week of April 24, 1989 to arrange a time for my next visit.

Readings Are Reported in Parts Per Million Unless Otherwise Indicated

Water Sample	HARDNESS			ALKALINITY							Conductivity umhos	Scaling Index
	Total (Acid)	Total (Sol.)	Calcium (Sol.)	P	M	O	HCO_3^-	$CO_3^=$	OH^-	pH		
Barren Pump			1140	710	1120		0	820	300	11.5	4500	1.0
Barren @ Heap			1120	710	1120		0	820	300	11.5	4500	1.0
Preg Pond Inlet			1210	720	1080		0	720	360	11.5	4900	1.0
Preg, Plant Feed			1160	610	980		0	740	240	11.5	4500	1.0
Barren Pond Inlet			1160	610	980		0	740	240	11.5	4500	1.0

PRESENT DOSAGES

Treatment Applied to	Flowrate	XXXX EXXON S-487 Feedrate Measured	Recommened	Comments	Material on Hand
Barren Pump		8 cc/min			1-1/2 drums
Preg Pump		2 cc/min			

Copy left with Mr. Dale Allen Signed Daniel W. Andrews District D53

ADV-240

IRON KING ASSAY INC.

30-Jun-89

LAB JOB #: AFB04013

ATTN: Carole A. O'Brien

Client name: A. F. Budge Mining Ltd.

No. Samples: 41
Date Received: 06-17-89
Submitted by: D. Allen

Billing address: 4301 N. 75th St. #101
Scottsdale, AZ.
85251-3504

Phone number: 945-4630

INVOICE ATTACHED

ANALYTICAL REPORT

Client ID	Lab ID		FA/AA Au oz/ton	FA Ag oz/ton
AFB04013				
Vulture Line Samples				
03-16-89	4013	1	0.062	0.29
03-17-89	4013	2	0.534	1.44
03-29-89	4013	3	0.138	0.47
03-30-89	4013	4	0.062	0.17
04-03-89	4013	5	0.048	0.10
04-04-89	4013	6	0.226	0.64
04-05-89	4013	7	0.034	0.11
04-07-89	4013	8	0.032	<.10
04-10-89	4013	9	0.032	<.10
04-11-89	4013	10	0.030	<.10
04-12-89	4013	11	0.060	<.10
04-13-89	4013	12	0.090	0.28
04-17-89	4013	13	0.068	0.23
04-18-89	4013	14	0.052	<.10
04-19-89	4013	15	0.082	0.18
04-20-89	4013	16	0.054	<.10

Robert G Crook
6-30-89

Client ID AFB04013	Lab ID		FA/AA Au oz/ton	FA Ag oz/ton
04-21-89	4013	17	0.028	<.10
04-24-89	4013	18	0.064	0.13
04-25-89	4013	19	0.060	0.12
04-26-89	4013	20	0.016	<.10
04-27-89	4013	21	0.100	0.19
04-28-89	4013	22	0.042	0.21
05-01-89	4013	23	0.024	0.17
05-02-89	4013	24	0.037	0.21
05-03-89	4013	25	0.070	0.28
05-08-89	4013	26	0.118	0.29
05-09-89	4013	27	0.046	0.18
05-10-89	4013	28	0.042	0.12
05-11-89	4013	29	0.039	0.29
05-12-89	4013	30	0.090	0.25
05-15-89	4013	31	0.046	0.17
05-16-89	4013	32	0.039	0.16
05-17-89	4013	33	0.028	0.11
05-18-89	4013	34	0.035	0.12
05-19-89	4013	35	0.039	0.10
05-23-89	4013	36	0.036	0.16
05-24-89	4013	37	0.041	0.15
05-25-89	4013	38	0.028	0.12
05-30-89	4013	39	0.027	<.10
05-31-89	4013	40	0.028	0.13
06-01-89	4013	41	0.039	0.10

4. A reconnaissance line has been marked about 300' south of the Vulture Mine road as a significant step to sample the down stream section presently being trenched. Sample points at 200' intervals would define the bed rock profile and related placer gold concentrations for this initial phase.

5. Trenching in the southern portion of the stripped area has indicated that bed rock becomes progressivly deeper westward towards the unmined tailings. This area will require dozer trenching following possible tailings removal.

6. A second paleo-tributaty is indicated (my 1984 report) northwest of the stripped area underlying unmined tailings. This area will also require dozer trenching to access back hoe trench depths. Again I must defer to tailings removal plans.

7. A long trench line has been planned for the 1984 Trench 15-16 area. A dozer is definatly required to cut through the dense caliche encountered in previous back hoe excivations. Similar parallel lines 400' to the north and south will provide the geometry required for preliminary evaluation and would require marking in the field following dozer cutting of the first line. Sampling will be at 200' spacings along these three lines.

8. Trench surveying would be required at the commencement of sampling to provide grid and elevation references for geological and sample control. I will require the services of a three man crew for a six day work week commencing on March 6 th.

It is apparent that multiple excivations will be required in some areas. It might become time and cost effective to employ a reverse circulation drill to sample these problem areas. This would be specially true where premature tailings excivation would not coincide with planned heap leach production schedules and also sampling adjacent to the historic buildings. The requirement for a drill would be evident during the sampling program.

I would be pleased to discuss the above with you at any time to ensure that current mine projects would operate smoothly and adhere to your production schedule. It is my objective to commence economic evaluation of the placers at the earliest possible date.

Sincerely yours,

Jim

EXXON CHEMICALS

MINING CHEMICALS

7977 E. Speedway Blvd., Suite 202, Tucson, AZ 85710
(602) 886-8261

WATER ANALYSIS REPORT

COMPANY: A.H. BUDGE MINING LTD.		DATE: 3/15/89
PROPERTY: VULTURE MINE PROJECT	COUNTY: MARICOPA	STATE: AZ
TYPE SAMPLE: WATER	TYPE TEST: WATER ANALYSES	

RESULTS

	Fresh Water	Preg. Sol'n.	Barren Sol'n.
pH	7.99	12.46	12.28
Calcium ppm	44	612	424
Hydroxide ppm	Ø	190	167
Carbonate ppm	Ø	168	228
Bicarbonate ppm	232	Ø	Ø
Sulfate ppm	25	1,750	1,250
Chloride ppm	40	320	440
TDS ppm	300	4,500	3,800

RECEIVED MAR 17 1989

REMARKS & RECOMMENDATIONS

Chemical line was disconnected from chemical feeder today. Barren pH and Preg pH have both increased. Watch emitters closely for scale. With onset of warmer weather, you may want to increase S487 at Barren to 8-10 mls/min. If you have any questions, please call, Fred.

TECHNICAL REPRESENTATIVE	FRED McFARREN	OFFICE PHONE	(602) 886-8261
TESTED BY	RD. Holliday	DATE	3/16/89

NALCO

PERSONAL SERVICE REPORT

Water Treatment

Plant of A F Budge (Mining) Ltd. Date May 17, 1989

Address 4301 North 75th Street, Suite 101 Plant No. Vulture Mine

City Scottsdale, State Arizona Zip 85251

Attention: Mr. Dale Allen

Copies to: Mr. Harry Kling

Copies to:

Nalco copies to: R. Tuka, G. Wortley, M. Strominger, Central & District Files, DWA

SUMMARY AND RECOMMENDATIONS

The mill water circuit has become slightly less scale forming since the NALCO 88DS075 agglomeration aid test began a week ago. We will do water tests again next week to see if the trend continues. The use of the retractable scaling coupon in the barren line was begun today and will be inserted next week. As soon as you open the second drum of NALCO 7818 we recommend you order two additional drums to allow sufficient lead time for delivery. On your next order request NALCO 7817 which is the same as NALCO 7818 only slightly more dilute and less viscous which will solve your plumbing problem. We will visit again on Wednesday, May 24, 1989. Thanks.

Readings Are Reported in Parts Per Million Unless Otherwise Indicated

Water Sample	HARDNESS			ALKALINITY								Conductivity µmhos
	Total (Acid)	Total (Sol.)	Calcium (Sol.)	P	M	O	HCO_3^-	$CO_3^=$	OH^-	pH		
Barren Pump			880	464	760		0	592	168	11.3		4300
Barren @ Heap			880	462	756		0	588	168	11.3		4300
Preg Pond Inlet			1160	508	816		0	616	200	11.6		5200
Preg Plant Feed			1160	510	820		0	620	200	11.6		5200
Barren Pond Inlet			1160	510	820		0	620	200	11.6		5200

PRESENT DOSAGES

Treatment Applied to	Flowrate	Nalco 7818 Feedrate Measured *	Recommened	Comments	Material on Hand
Barren Pump		20 cc/min	20 cc/min		1¼ drums
Preg Pump		5 cc/min	5 cc/min		
*50/50 NALCO 7818/Water Solution					

Copy left with Mr. Harry Kling Signed Daniel W. Andrews District D53

ADV-240

Certificate of Analysis

CERTIFICATE NO. 89-125-C
PROJECT NO. 1122
DATE 3-21-89

MOUNTAIN STATES
R & D INTERNATIONAL, INC.

MSRD NO.	SAMPLE IDENTIFICATION			Au Oz/T	Ag Oz/T				
5808	0-6.5	-1/8		0.005	ND				
5809	6.5-11.5	"		0.006	ND				
5810	11.5-16.5	"		0.001	ND				
5811	16.5-21.5	"		ND	0.05				
5812	0-6.5	+1/8-½		0.001	0.03				
5813	6.5-11.5	"		0.001	0.03				
5814	11.5-16.5	"		ND	0.02				
5815	16.5-21.5	"		ND	0.02				
5816	0-6.5	+½		ND	0.07				
5817	6.5-11.5	"		ND	0.08				
5818	11.5-16.5	"		ND	0.04				
5819	16.5-21.5	"		ND	0.09				
5820	10-15	-1/8		0.002	0.15				
5821	15-20	"		ND	0.06				
5822	20-26.5	"		ND	0.07				
5823	10-15	+1/8-½		0.007	ND				
5824	15-20	"		0.004	0.06				
5825	20-26.5	"		ND	0.09				
5826	10-15	+½		0.001	0.01				
5827	15-20	"		0.002	0.01				

STATEMENT OF CHARGES. INVOICE WILL FOLLOW.

20 Fire Assay Au&Ag @ $16.00 : $ 320.00
20 Sample Prep @ $ 4.00 : $ 80.00
@ $____ : $____
@ $____ : $____

400.00

@ $____ : $____

REGISTERED ASSAYER CERTIFICATE NO. 12210 MARVIN D. SCHLOATMAN DATE SIGNED 3/21/89 Arizona, U.S.A.

ND (None Detected)

Marvin D. Schloatman
Registered Assayer

EXXON CHEMICALS

MINING CHEMICALS

7977 E. Speedway Blvd., Suite 202, Tucson, AZ 85710
(602) 886-8261

WATER ANALYSIS REPORT

COMPANY		DATE
A.F. BUDGE MINING LTD.		7/13/89
PROPERTY	**COUNTY**	**STATE**
Vulture Mine	Maricopa	AZ
TYPE SAMPLE	**TYPE TEST**	
Water	Water Analyses	

RESULTS

	Barren Sol'n.	Preg. Sol'n.	Fresh Water
pH	11.4	11.5	7.7
Calcium ppm	388	488	36
Hydroxide ppm	41	Ø	Ø
Carbonate ppm	336	240	Ø
Bicarbonate ppm	Ø	61	256
Sulfate ppm	825	1,925	--
TDS ppm	3,250	3,700	300

REMARKS & RECOMMENDATIONS:

Scale Index remains extremely HIGH in Barren and Preg waters. Recommend S487 at 15mls/min based upon 100gpm to Barren Pump.

Maintain 4mls/min to Preg Pump. If scale problem shows up, please increase to 6-8mls/min. Any questions or problems, please call Fred. Thank You.

TECHNICAL REPRESENTATIVE	FRED McFARREN	OFFICE PHONE	(602) 886-8261
TESTED BY	RD. Holliday	DATE	7/13/89

EXXON MINING CHEMICALS
EXXON CHEMICAL AMERICAS

SCALING TENDENCIES OF WATERS FOR MINING APPLICATIONS

COMPANY: BUDGE MINING/VULTURE MINE
SAMPLE POINT: BARREN SOLUTION
LOCATION: BARREN LINE
DATE: 7/13/89

WATER ANALYSIS (MG/L):

SODIUM	725.0
CALCIUM	388.0
MAGNESIUM	149.0
CHLORIDE	60.0
SULFATE	825.0
CARBONATE	336.0
BICARBONATE	0.0
HYDROXIDE	41.0
IRON	0.0
BARIUM	0.0

PH: 11.4
IONIC STRENGTH = 0.0682

INDEX VALUES GREATER THAN ZERO INDICATE SCALING CONDITIONS
INDEX VALUES OF ZERO OR LESS INDICATE A STABLE WATER

TEMP.	CALCITE INDEX	GYPSUM INDEX	ANHYDRITE INDEX	BARITE INDEX
60	3.09	-0.43	-0.68	-40.93
80	3.21	-0.47	-0.61	-41.08
100	3.33	-0.48	-0.53	-41.20
120	3.45	-0.48	-0.44	-41.29
140	3.59	-0.47	-0.34	-41.36
160	3.74	-0.44	-0.23	-41.42
180	3.90	-0.42	-0.12	-41.46
200	4.08	-0.38	0.03	-41.48
220	4.27	-0.35	0.17	-41.48
240	4.48	-0.31	0.32	-41.46
260	4.70	-0.27	0.48	-41.41

EXXON MINING CHEMICALS
EXXON CHEMICAL AMERICAS

SCALING TENDENCIES OF WATERS FOR MINING APPLICATIONS

COMPANY: BUDGE MINING/VULTURE MINE
SAMPLE POINT: PREG SOLUTION
LOCATION: PREG LINE
DATE: 7/13/89

WATER ANALYSIS (MG/L):

SODIUM	1648.0
CALCIUM	488.0
MAGNESIUM	170.0
CHLORIDE	80.0
SULFATE	1925.0
CARBONATE	240.0
BICARBONATE	61.0
HYDROXIDE	0.0
IRON	0.0
BARIUM	0.0

PH: 11.5
IONIC STRENGTH = 0.1179

INDEX VALUES GREATER THAN ZERO INDICATE SCALING CONDITIONS
INDEX VALUES OF ZERO OR LESS INDICATE A STABLE WATER

TEMP.	CALCITE INDEX	GYPSUM INDEX	ANHYDRITE INDEX	BARITE INDEX
60	3.00	-0.14	-0.39	-41.12
80	3.11	-0.17	-0.31	-41.26
100	3.23	-0.18	-0.23	-41.38
120	3.37	-0.18	-0.14	-41.48
140	3.52	-0.16	-0.04	-41.56
160	3.68	-0.14	0.08	-41.62
180	3.87	-0.11	0.20	-41.66
200	4.07	-0.08	0.33	-41.69
220	4.29	-0.05	0.47	-41.69
240	4.54	-0.01	0.62	-41.67
260	4.80	0.04	0.78	-41.61

PERSONAL SERVICE REPORT

Water Treatment

Plant of A F Budge (Mining) Ltd. Date May 17, 1989

Address 4301 North 75th Street, Suite 101 Plant No. Vulture Mine

City Scottsdale, State Arizona Zip 85251

Attention: Mr. Dale Allen

Copies to: Mr. Harry Kling

Copies to:

Nalco copies to: R. Tuka, G. Wortley, M. Strominger, Central & District Files, DWA

SUMMARY AND RECOMMENDATIONS

The mill water circuit has become slightly less scale forming since the NALCO 88DS075 agglomeration aid test began a week ago. We will do water tests again next week to see if the trend continues. The use of the retractable scaling coupon in the barren line was begun today and will be inserted next week. As soon as you open the second drum of NALCO 7818 we recommend you order two additional drums to allow sufficient lead time for delivery. On your next order request NALCO 7817 which is the same as NALCO 7818 only slightly more dilute and less viscous which will solve your plumbing problem. We will visit again on Wednesday, May 24, 1989. Thanks.

Readings Are Reported in Parts Per Million Unless Otherwise Indicated

Water Sample	HARDNESS			ALKALINITY								Conductivity µmhos
	Total (Acid)	Total (Sol.)	Calcium (Sol.)	P	M	O	HCO_3^-	$CO_3^=$	OH^-	pH		
Barren Pump			880	464	760		0	592	168	11.3		4300
Barren @ Heap			880	462	756		0	588	168	11.3		4300
Preg Pond Inlet			1160	508	816		0	616	200	11.6		5200
Preg Plant Feed			1160	510	820		0	620	200	11.6		5200
Barren Pond Inlet			1160	510	820		0	620	200	11.6		5200

PRESENT DOSAGES

Treatment Applied to	Flowrate	Nalco 7818* Feedrate Measured	Feedrate Recommened	Comments	Material on Hand
Barren Pump		20 cc/min	20 cc/min		1¼ drums
Preg Pump		5 cc/min	5 cc/min		
*50/50 NALCO 7818/Water Solution					

Copy left with Mr. Harry Kling Signed Daniel W. Andrews District D53

ADV-240

IRON KING ASSAY INC.
P.O. Box 56
Humboldt, Arizona 86329

PRESCOTT VALLEY AZ
PM
OCT 22
1989

Bread Wagon 1880s
25 USA

Dale Allen
P.O. Box 20878
Wickenburg, Az ~~85345~~

IRON KING ASSAY INC.

21-Oct-88

LAB JOB #: AFB03239

ATTN: Carole A. O'Brien

Client name: A. F. Budge Mining Ltd.

No. Samples: 6
Date Received: 10-17-88
Submitted by: D. Allen

Billing address: 4301 N. 75th St.
Suite #101
Scottsdale, AZ 85251-3504

Phone number: 945-4630

INVOICE ATTACHED

ANALYTICAL REPORT

Client ID AFB03239	Lab ID		FA/AA Au oz/ton	Fire Assay Ag oz/ton
VULTURE Line Samples				
10/6	3239-	1	0.052	0.15
10/7	3239-	2	0.043	0.23
10/10	3239-	3	0.047	0.17
10/11	3239-	4	0.053	0.11
10/12	3239-	5	0.036	0.11
10/14	3239-	6	0.040	0.10

REGISTERED ASSAYER CERTIFICATE NO. 14315 ROBERT G. CROOK Date Signed 10-21-88 ARIZONA, U.S.A.

IRON KING ASSAY INC.
P.O. Box 56
Humboldt, Arizona 86329

PRESCOTT VALLEY, AZ
PM
NOV 17
1988

Dale Allen
P.O. Box 20878
Wickenburg, Az
85358

IRON KING ASSAY INC.

15-Nov-88

LAB JOB #: MSC03363

ATTN: Carole A. O'Brien

Client name: A. F. Budge Mining Ltd.

No. Samples: 11
Date Received: 11-10-88

Billing address: 4301 N. 75th St.
Suite #101
Scottsdale, AZ 85251-3504

Submitted by: D. Allen

Phone number: 945-4630/376-9056

INVOICE ATTACHED

ANALYTICAL REPORT

Client ID AFB03363	Lab ID	FA/AA Au oz/ton	Fire Assay Ag oz/ton
Vulture Line Samp.			
Oct.20	3363- 1	0.065	0.50
Oct.21	3363- 2	0.048	0.17
Oct.24	3363- 3	0.067	0.32
Oct.25	3363- 4	0.039	0.24
Oct.26	3363- 5	0.051	0.31
Oct.27	3363- 6	0.060	0.36
Oct.28	3363- 7	0.051	0.26
Oct.31	3363- 8	0.033	0.26
Nov.1	3363- 9	0.050	0.25
Nov.2	3363- 10	0.040	0.15
Nov.3	3363- 11	0.012	<.10

A.F. Budge (Mining) Limited, Arizona
Dore Bars poured

Sample No.	Date	Weight of Bar after sampling gms	troy ounces	% Gold	Troy ounces Gold	% Silver	Troy ounces Silver	% Lead	% Zinc	% Copper
V-1	9-29-88	2155.9	69.31	9.11	6.31	29.20	20.24	35.06	5.41	
V-2	9-29-88	2761.0	88.77	9.17	8.08	29.51	25.92	36.08	5.73	
V-3	9-29-88	2579.1	82.92	9.01	7.55	29.00	24.21	36.85	5.91	
V-4	10-04-88	2697.0	86.71	estimated	7.59	estimated	24.65	waiting on ICP analysis		
V-5	10-04-88	2136.9	68.70	7.62	5.24	26.44	18.17	48.21	5.97	17.70
V-6	10-04-88	2150.3	69.13	8.88	6.14	28.00	19.36	32.79	7.70	23.83
V-7	10-12-88	3493.8	112.33	estimated	10.30	estimated	30.89	waiting on ICP analysis		
V-8	10-12-88	2880.3	92.61	8.49	7.86	25.76	23.86	22.93	3.30	41.61
V-9	10-12-88	2605.0	83.75	8.59	7.19	26.63	22.30	22.39	3.71	39.82
V-10	10-12-88	1948.4	62.64	9.85	6.17	28.69	17.97	18.24	3.19	40.52
V-11	10-12-88	1627.5	52.33	9.76	5.11	28.90	15.12	23.41	1.37	39.19
			869.22		77.55		242.69			

A.F. Budge Limited
4301 N. 75th St.
Scottsdale, AZ 85251

ATTN: Carole O'Brien

MISC0101.291

SILVER VALLEY LABS, INC
1 GOVERNMENT GULCH
P.O. BOX 929
KELLOGG, ID 83837

ICAP SCAN FOR: V-7

ELEMENT NAME	SAMPLE CONC		
SILICON	1.789	%	as SiO2
ALUMINUM	<.1	%	as Al2O3
IRON	<.1	%	as Fe2O3
TITANIUM	<.001	%	as TiO2
CALCIUM	<.01	%	as CaO
MAGNESIUM	<.01	%	as MgO
MANGANESE	<.001	%	as Mn3O4
SODIUM	0.026	%	as Na2O
POTASSIUM	<.05	%	as K2O
PHOSPHOROUS	<.01	%	as P2O5
	1.815	%	AS MAJOR OXIDES
ANTIMONY	99	ppm	
ARSENIC	117	ppm	
BARIUM	<1	ppm	
BERYLLIUM	4	ppm	
BISMUTH	361	ppm	
BORON	<20	ppm	
CADMIUM	1479	ppm	
CHROMIUM	<2	ppm	
COBALT	<2	ppm	
COPPER	350100	ppm	35%
LANTHANUM	<2	ppm	
LEAD	150000	ppm	15%
LITHIUM	<5	ppm	
MOLYBDENUM	25	ppm	
NICKEL	1153	ppm	
SELENIUM	<20	ppm	
TIN	170	ppm	
VANADIUM	<2	ppm	
YTTERIUM	<1	ppm	
ZINC	21400	ppm	2.1%
ZIRCONIUM	<1	ppm	

CHARGES $30.00

cy/Wayne B. Sorensen

JAMES D. ROSS
CHEMIST

A.F Budge Limited
4301 N. 75th St.
Scottsdale, AZ 85251

ATTN: Carole O'Brien

MISC0101.291

SILVER VALLEY LABS, INC
1 GOVERNMENT GULCH
P.O. BOX 929
KELLOGG, ID 83837

ICAP SCAN FOR: V-4

ELEMENT NAME	SAMPLE CONC		
SILICON	2.111	%	as SiO2
ALUMINUM	<.1	%	as Al2O3
IRON	0.103	%	as Fe2O3
TITANIUM	0.001	%	as TiO2
CALCIUM	0.052	%	as CaO
MAGNESIUM	<.01	%	as MgO
MANGANESE	<.001	%	as Mn3O3
SODIUM	0.109	%	as Na2O
POTASSIUM	<.05	%	as K2O
PHOSPHOROUS	<.01	%	as P2O5
	2.376	%	AS MAJOR OXIDES
ANTIMONY	234	ppm	
ARSENIC	171	ppm	
BARIUM	5	ppm	
BERYLLIUM	2	ppm	
BISMUTH	<20	ppm	
BORON	<20	ppm	
CADMIUM	<1	ppm	
CHROMIUM	<2	ppm	
COBALT	22	ppm	
COPPER	170300	ppm	17%
LANTHANUM	<2	ppm	
LEAD	213800	ppm	21.4%
LITHIUM	14	ppm	
MOLYBDENUM	775	ppm	
NICKEL	1239	ppm	
SELENIUM	<20	ppm	
TIN	23	ppm	
VANADIUM	<2	ppm	
YTTERIUM	<1	ppm	
ZINC	98170	ppm	9.8%
ZIRCONIUM	<1	ppm	

CHARGES $30.00

James D. Ross

JAMES D. ROSS
CHEMIST

IRON KING ASSAY INC.

04-Jan-89

LAB JOB #: AFB03429

ATTN: Carole A. O'Brien

Client name: A. F. Budge Mining Ltd.

No. Samples: 5
Date Received: 11-23-88
Submitted by: D. Allen

Billing address: 4301 N. 75th Street
Suite #101
Scottsdale, AZ 85251-3504

Phone number: 945-4630/376-9056

INVOICE ATTACHED

ANALYTICAL REPORT

Client ID AFB03429	Lab ID		FA/AA Au oz/ton	FA Ag oz/ton
Vulture Line Samp.				
"11/10"	3429-	1	0.033	0.12
"11/11"	3429-	2	<.001	0.12
"11/14"	3429-	3	0.003	0.19
"11/16"	3429-	4	0.011	0.26

			FA/AA Au wt%	FA Ag wt%	Crude Insol. SiO2 wt%
Zn Precip.	3429-	5	0.75	3.33	5.8

			AA Cu wt%	Pb wt%	Zn wt%	Fe wt%
Zn Precip.	3429-	5	9.00	1.60	10.00	0.50

REGISTERED ASSAYER
CERTIFICATE NO. 14315
ROBERT G. CROOK
Date Signed 1-3-89
ARIZONA, U.S.A.

IRON KING ASSAY INC.

30-Dec-88

LAB JOB #: AFB03240

ATTN: Carole A. O'Brien

Client name: A. F. Budge Mining Ltd.

No. Samples: 1

Date Received: 10-17-88

Billing address: 4301 N. 75th St.
Suite #101
Scottsdale, AZ 85251-3504

Submitted by: D. Allen

Phone number: 945-4630

INVOICE ATTACHED

ANALYTICAL REPORT

Client ID	Lab ID	Fire Assay Au %	Ag %	AA Cu %	Pb %	Zn %
AFB03240						
"Precipitate 10/17/88"						
	3240- 1	4.08	14.00	16.50	32.00	30.00

Crude Insol. SiO2 %	Moisture H2O %
1.03	16.23

IRON KING ASSAY INC.

16-Jan-89

LAB JOB #: AFB03602

Client name: A.F.Budge Mining Ltd.

Billing address: 4301 N. 75th St.
Suite 101
Scottsdale, AZ 85251-3504

Phone number: 945-4630/949-1737

No. Samples: 7
Date Received: 01-10-89
Submitted by: D. Allen

INVOICE ATTACHED

ANALYTICAL REPORT

Client ID AFB03602	Lab ID		FA/AA Au oz/ton	Ag oz/ton
Vulture Line Samples				
11-21-88	3602-	1	0.017	<.10
06-Dec-88	3602-	2	0.022	<.10
09-Dec-88	3602-	3	0.033	<.10
12-Dec-88	3602-	4	0.023	<.10
12-1-89	3602-	5	0.021	<.10
13-1-89	3602-	6	0.023	<.10
11-29-88	3602-	7	0.024	0.27

EXXON CHEMICALS

MINING CHEMICALS

EXXON MINING CHEMICALS
7977 East Speedway #202
Tucson, AZ 85710
Phone: (602) 886-8261
(602) 745-1403

MESSAGE TO: DALE ALLEN 4/21/89

COMPANY: BUDGE MINING

NUMBER OF PAGES(INCLUDING COVER): _____

FROM: FRED McFARREN.

DALE: I telephoned and couldn't reach you. I did some computer analyses of your waters for scaling tendencies. I have faxed these also. At 80°F, your Barren Soln. shows a +3.09 value. We consider a +1.0 value as scaling and treatable. Your waters are EXTREMELY scaling as we have found out. As your solution temperatures increase, the scaling rate increases as well. You can see this on the scaling index as the temperature increases.

My recommendation is to increase S487 to 15 mls/min at the Barren pump. If this doesn't give you sztisfactory results you may need to increase it to 20/25 mls/min.

Make sure the S487 is being added continously while barren pump is operational.

Any questions, please feel free to contact me at any time.

Best Regards,

Fred McFarren

Fmd

EXXON MINING CHEMICALS
EXXON CHEMICAL AMERICAS

SCALING TENDENCIES OF WATERS FOR MINING APPLICATIONS

COMPANY: BUDGE MINING
SAMPLE POINT: PREG SOLN
LOCATION: PREG POND
DATE: 4/20/89

WATER ANALYSIS (MG/L):

SODIUM	1825.0
CALCIUM	464.0
MAGNESIUM	101.0
CHLORIDE	480.0
SULFATE	1500.0
CARBONATE	336.0
BICARBONATE	0.0
HYDROXIDE	78.0
IRON	0.0
BARIUM	0.0

PH: 12.2
IONIC STRENGTH = 0.1119

INDEX VALUES GREATER THAN ZERO INDICATE SCALING CONDITIONS
INDEX VALUES OF ZERO OR LESS INDICATE A STABLE WATER

TEMP.	CALCITE INDEX	GYPSUM INDEX	ANHYDRITE INDEX	BARITE INDEX
60	3.04	-0.24	-0.49	-41.10
80	3.15	-0.27	-0.42	-41.24
100	3.27	-0.29	-0.34	-41.36
120	3.41	-0.28	-0.25	-41.46
140	3.56	-0.27	-0.15	-41.54
160	3.72	-0.25	-0.04	-41.60
180	3.90	-0.22	0.09	-41.64
200	4.11	-0.19	0.22	-41.67
220	4.32	-0.15	0.36	-41.67
240	4.56	-0.11	0.51	-41.65
260	4.82	-0.07	0.67	-41.59

EXXON MINING CHEMICALS
EXXON CHEMICAL AMERICAS

SCALING TENDENCIES OF WATERS FOR MINING APPLICATIONS

COMPANY: BUDGE MINING
SAMPLE POINT: BARREN SOLN
LOCATION: BARREN PUMP
DATE: 4/20/89

WATER ANALYSIS (MG/L):

SODIUM	2000.0
CALCIUM	380.0
MAGNESIUM	151.0
CHLORIDE	560.0
SULFATE	1500.0
CARBONATE	372.0
BICARBONATE	0.0
HYDROXIDE	99.0
IRON	0.0
BARIUM	0.0

PH: 12.2
IONIC STRENGTH = 0.1171

INDEX VALUES GREATER THAN ZERO INDICATE SCALING CONDITIONS
INDEX VALUES OF ZERO OR LESS INDICATE A STABLE WATER

TEMP.	CALCITE INDEX	GYPSUM INDEX	ANHYDRITE INDEX	BARITE INDEX
60	2.98	-0.34	-0.59	-41.11
80	3.09	-0.37	-0.52	-41.26
100	3.22	-0.39	-0.44	-41.37
120	3.35	-0.39	-0.35	-41.47
140	3.50	-0.37	-0.25	-41.55
160	3.67	-0.35	-0.14	-41.61
180	3.86	-0.33	-0.03	-41.66
200	4.06	-0.29	0.11	-41.68
220	4.28	-0.26	0.25	-41.69
240	4.52	-0.22	0.41	-41.67
260	4.78	-0.18	0.57	-41.61

MILLSAPS MINERAL SERVICE, INC.

A.F. BUDGE MINING, LTD

ANACONDA TAILINGS PRESENTATION

1. Introduction to A. F. Budge - Carole
   A. Financial position
   B. Stability
   C. Experience

2. Plan of attack - Dale/Frank
   A. Sampling of Tails
      1. Property position
      2. Drill tailings, sample every five feet
   B. Metallurgical testing
      1. Composite drill samples by location and grade
      2. Bottle roll tests to determine solubility
      3. Determine need for agglomeration
      4. Column tests for heap leaching.
      5. Optimize conditions
   C. Environmental considerations
      1. Work with the state, county and federal environmental agencies to establish conditions.
      2. Conduct geotechnical survey of heap areas.
      3. Hire environmental consultants as needed
   D. Preliminary engineering to establish definitive cost estimates
   E. Final Designs, plant, pads, ponds
   F. Production
   G. Reclamation

3. Advantages to Arco - Dale/Frank

EXXON CHEMICALS

MINING CHEMICALS

7977 E. Speedway Blvd., Suite 202, Tucson, AZ 85710
(602) 886-8261

WATER ANALYSIS REPORT

COMPANY		DATE
A.F. BUDGE MINING - VULTURE MINE		4/20/89
PROPERTY	**COUNTY**	**STATE**
VULTURE MINE	MARICOPA	AZ
TYPE SAMPLE	**TYPE TEST**	
WATER	WATER ANALYSES	

RESULTS

	Barren Solution	Preg. Solution	Fresh Water
pH	12.17	12.21	8.33
Calcium ppm	380	464	40
Hydroxide ppm	99	78	Ø
Carbonate ppm	372	336	Ø
Bicarbonate ppm	Ø	Ø	244
TDS ppm	3,600	3,700	300
Sulfate ppm	1,500	1,500	500
Chloride ppm	560	480	40
Magnesium ppm	151	101	22

REMARKS & RECOMMENDATIONS:

1 copy

TECHNICAL REPRESENTATIVE	FRED McFARREN	OFFICE PHONE	(602) 886-8261
TESTED BY	RD. Holliday	DATE	4/21/89

EXXON MINING CHEMICALS
EXXON CHEMICAL AMERICAS

SCALING TENDENCIES OF WATERS FOR MINING APPLICATIONS

COMPANY: BUDGE MINING
SAMPLE POINT: BARREN SOLN
LOCATION: BARREN PUMP
DATE: 4/20/89

WATER ANALYSIS (MG/L):

SODIUM	2000.0
CALCIUM	380.0
MAGNESIUM	151.0
CHLORIDE	560.0
SULFATE	1500.0
CARBONATE	372.0
BICARBONATE	0.0
HYDROXIDE	99.0
IRON	0.0
BARIUM	0.0

PH: 12.2
IONIC STRENGTH = 0.1171

INDEX VALUES GREATER THAN ZERO INDICATE SCALING CONDITIONS
INDEX VALUES OF ZERO OR LESS INDICATE A STABLE WATER

TEMP.	CALCITE INDEX	GYPSUM INDEX	ANHYDRITE INDEX	BARITE INDEX
60	2.98	-0.34	-0.59	-41.11
80	3.09	-0.37	-0.52	-41.26
100	3.22	-0.39	-0.44	-41.37
120	3.35	-0.39	-0.35	-41.47
140	3.50	-0.37	-0.25	-41.55
160	3.67	-0.35	-0.14	-41.61
180	3.86	-0.33	-0.03	-41.66
200	4.06	-0.29	0.11	-41.68
220	4.28	-0.26	0.25	-41.69
240	4.52	-0.22	0.41	-41.67
260	4.78	-0.18	0.57	-41.61

EXXON MINING CHEMICALS
EXXON CHEMICAL AMERICAS

SCALING TENDENCIES OF WATERS FOR MINING APPLICATIONS

COMPANY: BUDGE MINING
SAMPLE POINT: PREG SOLN
LOCATION: PREG POND
DATE: 4/20/89

WATER ANALYSIS (MG/L):

SODIUM	1825.0
CALCIUM	464.0
MAGNESIUM	101.0
CHLORIDE	480.0
SULFATE	1500.0
CARBONATE	336.0
BICARBONATE	0.0
HYDROXIDE	78.0
IRON	0.0
BARIUM	0.0

PH: 12.2
IONIC STRENGTH = 0.1119

INDEX VALUES GREATER THAN ZERO INDICATE SCALING CONDITIONS
INDEX VALUES OF ZERO OR LESS INDICATE A STABLE WATER

TEMP.	CALCITE INDEX	GYPSUM INDEX	ANHYDRITE INDEX	BARITE INDEX
60	3.04	-0.24	-0.49	-41.10
80	3.15	-0.27	-0.42	-41.24
100	3.27	-0.29	-0.34	-41.36
120	3.41	-0.28	-0.25	-41.46
140	3.56	-0.27	-0.15	-41.54
160	3.72	-0.25	-0.04	-41.60
180	3.90	-0.22	0.09	-41.64
200	4.11	-0.19	0.22	-41.67
220	4.32	-0.15	0.36	-41.67
240	4.56	-0.11	0.51	-41.65
260	4.82	-0.07	0.67	-41.59