



April 29, 2005

LICENSE SUA-1341  
DOCKET NO. 40-8502

Mr. John Lusher, Project Manager  
Fuel Cycle Facilities Branch  
U. S. Nuclear Regulatory Commission  
Mail Stop T-8A33  
Two White Flint North  
11545 Rockville Pike  
Rockville, MD 20852

**RE: Christensen Ranch - 5MW66 data sent to Wyoming Dept. of Environmental Quality**

Dear Mr. Lusher:

As you requested in our phone conversation of 4/28/05, I am enclosing the data set provided to Mr. Mark Taylor for his review and approval of the release of well 5MW66 from excursion status. I also called Mr. Taylor and asked if his department performed any analysis of the data sent to the WDEQ. He stated that they did not do any analysis in-house.

Please let me know if you need anything additional.

Sincerely,

A handwritten signature in cursive script that reads "Tom Nicholson".

Tom Nicholson  
Environmental Specialist/RSO

cc: Donna Wichers/COGEMA

Attachments.

WP\2005REPT\NRC\MW66-Lusher.data.wpd



December 9, 2004

PERMIT TO MINE NO. 478

Mr. Mark Taylor  
Department of Environmental Quality  
Land Quality Division  
1866 S. Sheridan Ave.  
Sheridan, Wyoming 82801

**RE: Monitor Well 5MW66 Excursion Status.**

Dear Mark:

This letter serves as the follow-up report and result of evaluation of the data associated with the excursion status for well 5MW66 in Mine Unit (MU) 5, Module 5-5, at Christensen Ranch (CR). Well 5MW66 has been on excursion status since July 21, 2004 when confirmation of the well exceeding all three of its upper control limits (UCL) was determined. Since that time, COGEMA has performed the following procedures in our process of evaluating the excursion:

- ✦ On August 9, 2004 a sample was collected from 5MW66 and a full WDEQ Guideline 8 analysis was performed by Energy Labs - Casper, Wyoming. A copy of the analysis is attached.
- ✦ The well was integrity tested (MIT) on October 5, 2004. The results indicate no integrity problems exist (copy attached). Thus, there is no concern that damaged casing is allowing an influx of groundwater from any horizon other than the mining zone being monitored.
- ✦ The well was re-sampled on October 19, 2004 to obtain up-dated UCL parameter values. Table 1(attached) provides the sample analysis history on well 5MW66 from the beginning of the post stabilization phase of MU 5 to the October 19<sup>th</sup> sample collection date.
- ✦ A piezometric map of the Module 5-5 area was constructed utilizing water levels obtained on November 17, 2004 (attached).

The attached Table 2, provides a comparison of the results of the Guideline 8 analysis of 5MW66 taken on 8/9/04 to:

1. The well's original guideline 8 baseline mean analysis.
2. The Stabilization - Round Three Guideline 8 mean for the wells in Module 5-5.
3. The Stabilization - Round Three Guideline 8 mean for the entire mine unit (MU 5).
4. The two closest up-gradient baseline wells in Module 5-5 (Stabilization - Round 3).

The shaded figures highlight the highest values for each parameter in the comparisons. Table 2 shows that well 5MW66 currently has higher concentrations of the Upper Control Limit parameters in nearly every comparison applied. The only exception is in the comparison of 5MW66 to the Module 5-5 round three stabilization average; here, alkalinity is higher in the module average than in well 5MW66. A new piezometric contour map was prepared for the immediate area of Module 5-5 with water levels taken on November 17, 2004. The map indicates the area is returning to the normal pre-mining north - northwest regional gradient since the unit's stabilization phase has begun. The reasons for well 5MW66 exceeding two of the three UCLs and four additional chemical constituents as compared to the Module 5-5 Round 3 average, is not clearly defined by the data obtained.

The elevated chemical concentrations in 5MW66 appear to be an isolated case. No other monitor wells in the area are exhibiting similar trends. 5MW66 experienced one other instance of being on excursion status; from August, 2001 through December, 2001, during the down-period between groundwater sweep and reverse osmosis phases of operation. Values during that excursion period were very similar to the values seen at present.

COGEMA believes that the best practicable technology (BPT) in the form of groundwater sweep and reverse osmosis treatment has been effectively applied in MU 5. Additional treatment of the wellfield will not help 5MW66 as the current chemical concentrations in MU 5 are already, for the most part, lower than the corresponding concentrations in 5MW66, especially for the UCL parameters. 5MW66 at baseline conditions would be classified as Class III Livestock water, and current concentrations would not negate the use of the water for this purpose.

Based on our evaluation of the 5MW66 situation, our proposal is for the following:

- ◆ Remove 5MW66 from official excursion status, as most wellfield concentrations are lower than the corresponding concentrations in 5MW66. It does not appear that the current groundwater in the wellfield is causing the problem.
- ◆ Continue monitoring 5MW66 on a quarterly basis until the MU 5 restoration package is submitted to and approved by the WDEQ. Updates of the well will be submitted to the WDEQ and U. S. Nuclear Regulatory Commission (NRC) quarterly. The final status of 5MW66 would then be addressed in the agency approval of the restoration for MU 5.

Please contact me if you have any questions regarding this report.

Sincerely,



Tom Nicholson  
Environmental Specialist/RSO

cc: COGEMA, D. Wichers  
NRC, E. Brummett Project Mgr.

j:jmv\wp\2004rpt\deq\mw66\_up\_2.wpd

DATE: 10/5/04

### WELL INTEGRITY TEST DATA

WELL SPECIFICATIONS:

WELL NUMBER MW 66 PROJECT CR  
CASING TYPE PVC CASING BOTTOM DEPTH 265 FT.  
CASING I.D. 4-5

PACKER SPECIFICATIONS:

	UPPER PACKER	LOWER PACKER
TYPE OR BRAND NAME	<u>TT</u>	<u>TT</u>
DEFLATED O.D.	<u>3-5</u>	<u>3-5</u>
INFLATED O.D.	<u>4-5</u>	<u>4-5</u>
DEPTH	<u>SURFACE</u>	<u>255</u>
INFLATION PRESSURE	<u>350</u>	<u>450</u>

TEST RESULTS:

	TEST #1	TEST #2	TEST #3	TEST #4
INITIAL P.S.I.	<u>168</u>			
P.S.I. AT _____ MIN.	<u>7</u>			
P.S.I. AT _____ MIN.				
P.S.I. AT _____ MIN.				
P.S.I. AT <u>10</u> MIN.	<u>160</u>			
TOTAL PRESSURE LOSS	<u>8</u>			
% OF INITIAL PRESSURE	<u>4-8</u>			

PASS  FAIL

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

CERTIFIED BY: [Signature]

TABLE 1

## Monitor Well 5MW66

Date	Chloride mg/l (UCL 22.7)	Conductivity $\mu$ mhos/cm (UCL 1004)	Alkalinity mg/l (UCL 134.3)	U <sub>3</sub> O <sub>8</sub> mg/l	pH
1/21/04	16.1	942	113.8	<0.4	8.2
4/13/04	20.3	967	135.6	<0.4	8.3
7/20/04	24.0	1049	166.4	<0.4	8.2
7/21/04	24.1	1054	175.1	<0.4	8.0
7/27/04	24.4	1030	170	<0.4	8.0
8/2/04	26.4	1052	189.8	<0.4	7.9
8/9/04	25.4	1064	180	<0.4	7.9
8/18/04	23.6	1063	161.3	<0.4	8.0
10/19/04	30.4	1105	209.2	<0.4	7.8

TABLE 2

■ Highest Radiometric Concentration  
■ Highest UCL Concentration  
■ Highest Other Guideline & Concentration

Ore Zone Baseline  
Well Groundwater  
Quality

5MW66 COMPARISON TO  
ORIG. BASELINE AVE.

Well ID:	5MW66 MOD #6 08/09/04	5MW66 BASELINE MEAN
<b>Major Ions mg/l:</b>		
Ca	22.00	14.867
Mg	4.00	2.733
Na	191.00	174.00
K	4.00	2.95
CO3	< 5.00	1.90
HCO3	193.00	127.50
SO4	191.00	291.867
Cl	18.00	7.825
NH4	< 0.10	0.12
NO2 (N)	< 0.05	< 0.10
NO3 (N)	0.08	0.10
F	0.20	0.20
SiO2	9.30	9.20
TDS	680.00	666.67
Cond. (umho/cm)	1120.00	887.33
Alk. (as CaCO3)	158.00	94.975
pH (units)	8.30	8.39
<b>Trace Metals mg/l:</b>		
Al	< 0.01	< 0.01
As	< 0.005	< 0.001
Ba	< 0.50	< 0.10
B	0.07	< 0.05
Cd	< 0.002	< 0.002
Cr	< 0.01	< 0.01
Cu	< 0.01	< 0.01
Fe	< 0.05	< 0.05
Pb	< 0.02	< 0.02
Mn	< 0.02	< 0.02
Hg	< 0.001	< 0.001
Mo	< 0.02	< 0.02
Ni	< 0.01	< 0.01
Se	0.028	0.001
V	< 0.02	< 0.10
Zn	< 0.01	< 0.01
<b>Radiometric pCi/l:</b>		
U (mg/l)	0.334	0.334
Ra 226	2.70	2.825
Ra 226+/-	1.30	1.30
<b>Data Quality</b>		
A/C Balance(+/-5)	1.10	-0.47
Anions	9.60	8.80
Cations	9.82	8.88
TDS Calculated	620.00	587.25
TDS Balance (0.80 - 1.20)	1.10	98.53

COMPARISON 5MW66 TO ROUND 3 STABILIZATION MODULE  
AND UNIT AVERAGE

5MW66 MOD #6 08/09/04	STAB RD #3 MOD #5 MEAN	STAB RD #3 UNIT 5 MEAN
22.00	35.50	33.80
4.00	7.28	6.80
191.00	191.00	160.90
4.00	4.33	3.20
< 5.00	2.95	< 1.80
193.00	368.13	343.50
191.00	191.81	147.00
18.00	11.54	11.20
< 0.10	0.15	0.20
< 0.05	< 0.10	< 0.10
0.08	< 0.11	< 0.10
0.20	< 0.18	< 0.10
9.30	3.40	3.00
680.00	668.75	567.50
1120.00	966.63	820.30
158.00	305.75	282.90
8.30	8.25	8.10
< 0.01	< 0.11	< 0.10
< 0.005	< 0.01	< 0.01
< 0.50	< 0.50	< 0.50
0.07	0.07	< 0.08
< 0.002	< 0.002	< 0.002
< 0.01	< 0.01	< 0.01
< 0.01	< 0.01	< 0.01
< 0.05	< 0.07	< 0.09
< 0.02	< 0.02	< 0.02
< 0.02	< 0.05	0.08
< 0.001	< 0.001	< 0.001
< 0.02	< 0.02	< 0.02
< 0.01	< 0.01	< 0.01
0.028	< 0.29	0.37
< 0.02	< 0.18	< 0.15
< 0.01	< 0.01	< 0.01
0.334	4.17	2.50
2.70	119.20	218.40
1.30	8.10	11.40
1.10	2.28	1.51
9.60	10.44	8.98
9.82	10.82	9.27
620.00	628.25	532.40
1.10	1.07	1.08

COMPARISON 5MW66 TO ROUND 3 STABILIZATION CLOSEST  
UP - GRADIENT WELLS

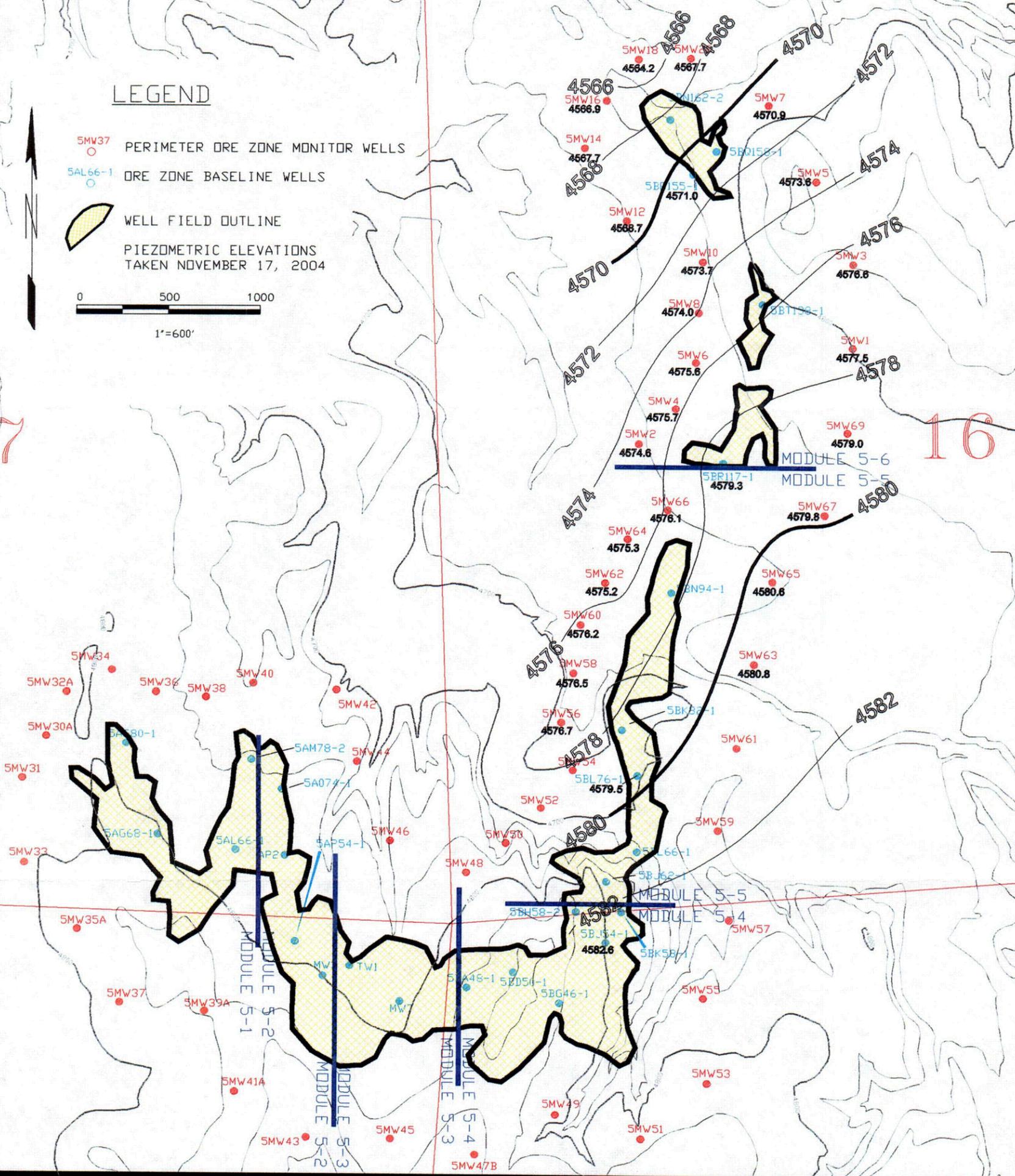
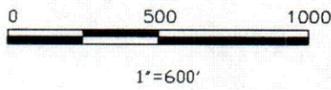
5MW66 MOD #6 08/09/04	5MW66-1 ROUND 5	5MW66-2 ROUND 5
22.00	12.70	21.10
4.00	1.90	4.80
191.00	116.00	142.00
4.00	2.30	2.40
< 5.00	8.60	< 1.00
193.00	124.00	356.00
191.00	155.00	69.80
18.00	6.30	5.80
< 0.10	< 0.10	0.20
< 0.05	< 0.10	< 0.10
0.08	< 0.10	0.20
0.20	0.20	0.20
9.30	2.30	3.10
680.00	390.00	440.00
1120.00	597.00	642.00
158.00	113.00	292.00
8.30	8.60	8.00
< 0.01	< 0.10	< 0.10
< 0.005	0.021	0.028
< 0.50	< 0.50	< 0.50
0.07	0.05	0.06
< 0.002	< 0.002	< 0.002
< 0.01	< 0.01	< 0.01
< 0.01	< 0.01	< 0.01
< 0.05	< 0.05	< 0.05
< 0.02	< 0.02	< 0.02
< 0.02	< 0.02	0.03
< 0.001	< 0.001	< 0.001
< 0.02	< 0.02	< 0.02
< 0.01	< 0.01	< 0.01
0.028	0.879	0.382
< 0.02	< 0.10	0.40
< 0.01	< 0.01	< 0.01
0.334	0.385	1.38
2.70	7.40	47.60
1.30	2.30	5.80
1.10	1.91	1.52
9.60	5.66	7.47
9.82	5.88	7.70
620.00	360.00	420.00
1.10	1.08	1.05

CO1

# CR MINE UNIT 5

## LEGEND

- SMW37 PERIMETER ORE ZONE MONITOR WELLS
- 5AL66-1 ORE ZONE BASELINE WELLS
- WELL FIELD OUTLINE
- PIEZOMETRIC ELEVATIONS  
TAKEN NOVEMBER 17, 2004



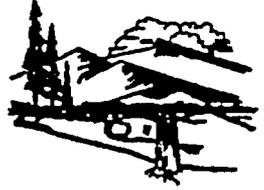
C02



Dave Freudenthal, Governor

## Department of Environmental Quality

To protect, conserve and enhance the quality of Wyoming's environment for the benefit of current and future generations.



John Corra, Director

March 2, 2005

Mr. Tom Nicholson  
COGEMA Mining, Inc.  
P.O. Box 730  
Mills, WY 82644

**RE: Monitoring Well 5MW66, Permit No. 478**

Dear Tom:

I have completed my review of information presented in your letter of December 9, 2004 concerning monitoring well 5MW66 at Christensen Ranch Mine Unit No. 5. Your plans are in order.

Please call me if you have any questions.

Sincerely,

Mark Taylor  
Senior Analyst

mt/

cc: Cheyenne File

478ar061.5MT



2/22