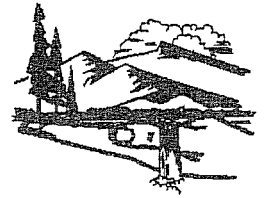


# Department of Environmental Quality



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

Dave Freudenthal, Governor

John Corra, Director

August 27, 2008

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SEP 03 2008

DNMS

Mr. Arthur Howell, Director  
Division of Nuclear Materials Safety  
U.S. Nuclear Regulatory Commission, Region IV  
612 East Lamar Blvd, Suite 400  
Arlington, TX 76011-4125

RE: ANC Gas Hills Reclamation Project  
Request to Modify Confirmatory Order, Docket No. 40-4492

Dear Mr. Howell,

In response to Mr. Wert's letter dated February 26, 2008, this is a request to modify the above-referenced Confirmatory Order. In your review and evaluation of this request we would ask that you please keep in mind the following points:

- WDEQ is not the licensee for this site. American Nuclear Corporation (ANC) is nominally the licensee and we understand that a third party recently had discussions with ANC and NRC relative to acquiring the site and the NRC License. We would suggest that if a valid license exists, then the licensee should bear some responsibility for compliance with that license.
- WDEQ's sole interest is to insure that the site is reclaimed, since the licensee defaulted on that obligation. WDEQ entered into the Confirmatory Order to be eligible to receive DOE Title X reimbursements to supplement the extremely limited bond monies available for reclamation. Our experience with radiological issues is limited and so we must rely on NRC for advice and assistance in addressing those issues in an efficient and realistic manner.
- WDEQ has consistently taken a frugal, "bare-bones" approach to this project due to the limited budget. We have acknowledged that we have not complied with all of the specific requirements of the Order. We believe that the monitoring efforts specified in the Order are not warranted given the limited funds available for reclamation of this site.
- WDEQ has completed much of the reclamation required at this site, including placement of the Bullrush Heap Leach waste and interim cover on Tailings Pond No.1, partial cleanup of windblown tailings, final cover on Tailings Pond No. 2 (123 acres) and the diversion of Campsite Draw. We have operated the groundwater pump-back system, installed 4 new wells and conducted a sampling program on 17 wells and 2 springs.
- WDEQ has yet to finalize a plan for reclamation of Tailings Pond No.1. There are two outstanding issues on which we must reach some agreement with NRC before that design work can proceed: 1. windblown tailings, and 2. groundwater contamination.
- WDEQ and NRC should be working cooperatively to bring this project to a successful conclusion. We feel that we have shouldered the work for the past 12 years with little support from NRC. We would like to see NRC take a more active and constructive role in the future.

Lander Field Office • 510 Meadowview Drive • Lander, WY 82520 • <http://deq.state.wy.us>

ABANDONED MINES  
(307) 332-5085  
FAX 332-7726

AIR QUALITY  
(307) 332-6755  
FAX 332-7726

LAND QUALITY  
(307) 332-3047  
FAX 332-7726

SOLID & HAZARDOUS WASTE  
(307) 332-6924  
FAX 332-7726

WATER QUALITY  
(307) 332-3144  
FAX 332-3183



WDEQ proposes the following specific modifications to the Confirmatory Order:

1. Part IV, section 3: Replace the first paragraph with the following:

Beginning in fall 2008, conduct an environmental monitoring program to include monthly site inspections from April through October and an annual survey of the elevations of settlement monuments numbers 1 through 4 on Tailings Pile No.1. All other monitoring requirements (listed in items a. through g. below) are suspended until 3 months prior to the resumption of construction activities at the site.

Discussion:

See NRC letters dated 12/29/00 to ANC and 5/29/01 to WDEQ. The settlement monuments were last surveyed in 2005 and settlement was still occurring at that time. See attached graph. Due to the relatively slow consolidation of the tailings we believe that annual surveying is sufficient to monitor the progress of the tailings settlement. WDEQ will survey this fall.

2. Part IV, section 10: Delete.

Discussion: The requirement for annual land use surveys is outside the scope of our reclamation project.

3. Part IV, section 11: Replace with the following:

Conduct groundwater monitoring and remediation as follows, beginning in fall 2008:

- (a) Sample Willow Spring, well R-4 and two other selected "MW" wells semi-annually (spring and fall) analyzing for chloride, nitrate, sulfate, pH, TDS, beryllium, cadmium, gross alpha, nickel, combined radium-226 and 228, selenium, thorium-230, vanadium and uranium. Sample Willow Spring North when flows are observed in the spring.
- (b) Measure water levels semiannually (spring and fall) in all 17 wells (MW-1 through MW-7, MW-9 through MW-17 and R-4).
- (c) Conduct a corrective action program consisting of pumping well R-4 from May 1 to October 31 of each year (weather permitting) with all waters discharged to a non-ponding evaporative sprinkler system located on the surface of Tailings Pile No.1, recording the flows with a totalizing flow meter.
- (d) Provide an annual report to NRC by March 1 of each year including all data and discussion of the results of the monitoring and remediation program.

Discussion:

See WDEQ letter dated 1/23/01 and NRC letter dated 5/29/01 for background information. Enclosed with this letter are graphs for Willow Spring and wells R-4, MW-14A, MW-15, MW-16 and MW-17 showing levels of selected constituents over time. Well locations are shown on the attached site map. Wells 14A, 15, 16 and 17 were installed by WDEQ in 2002 to help define background conditions and the extent of the contaminant plume.

Well R-4, the recovery well below Tailings Pond No. 1, has exhibited consistent and substantial improvement in quality over its 20 year history. Clearly the groundwater remediation program has been effective and should be continued.

Willow Spring is a natural spring located in Willow Springs Draw approximately one-half mile north of Tailings Pond No.2. As evident on the graphs, the spring was impacted by seepage from the tailings in the early 1980's. The water quality has been improving over the last 8-10 years.

None of the 4 new wells installed in 2002 exhibit significant trends at this point in time. Well 14A, located approximately midway between Pond No.2 and Willow Spring, was installed on the east side of the Willow Springs Draw (side gradient) with the thought that it might represent "background". It appears that this well does represent background in the shallow alluvial aquifer and it does not appear to be impacted by seepage from the tailings (although an elevated Radium 226 level was recorded in 2007 that will bear watching). Well MW-17 also appears to represent background conditions at this point in time. Wells MW-15 and MW-16, located approximately 3/4 mile north of tailings pond no.1, appear to be located within the area impacted by the tailings seepage plume.

Given the general consistency of the analytical data, we propose that Willow Spring and the pumping well (R-4) be sampled semi-annually (spring and fall). The other (16) wells will be sampled on a rotation approximately every 2-4 years in order to maintain continuity in the record. Water levels will be measured in all wells semi-annually, spring and fall.

WDEQ plans to prepare a summary analysis of all groundwater data over the coming months, with the goal of submitting a report to NRC in early 2009.

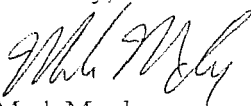
4. Part IV, section 16: Delete.

Discussion:

This requirement (payment of the Criterion 10, long term surveillance fee) is simply not possible given the extremely limited funds available for reclamation of this site. This concern has been expressed by WDEQ since the inception of the project. There may be some Title X reimbursement funds available at the conclusion of the project but they will fall far short of the current Criterion 10 calculation that is now over \$800,000. We take the position that all available funds will be required for reclamation of the site.

There may be other elements of the Confirmatory Order that warrant re-evaluation at this time. This might be an opportune time to look at the relationship between the license and the Confirmatory Order. We would solicit NRC's input in this regard. We look forward to working with NRC to resolve these issues. Should you or your staff have any questions, please contact me.

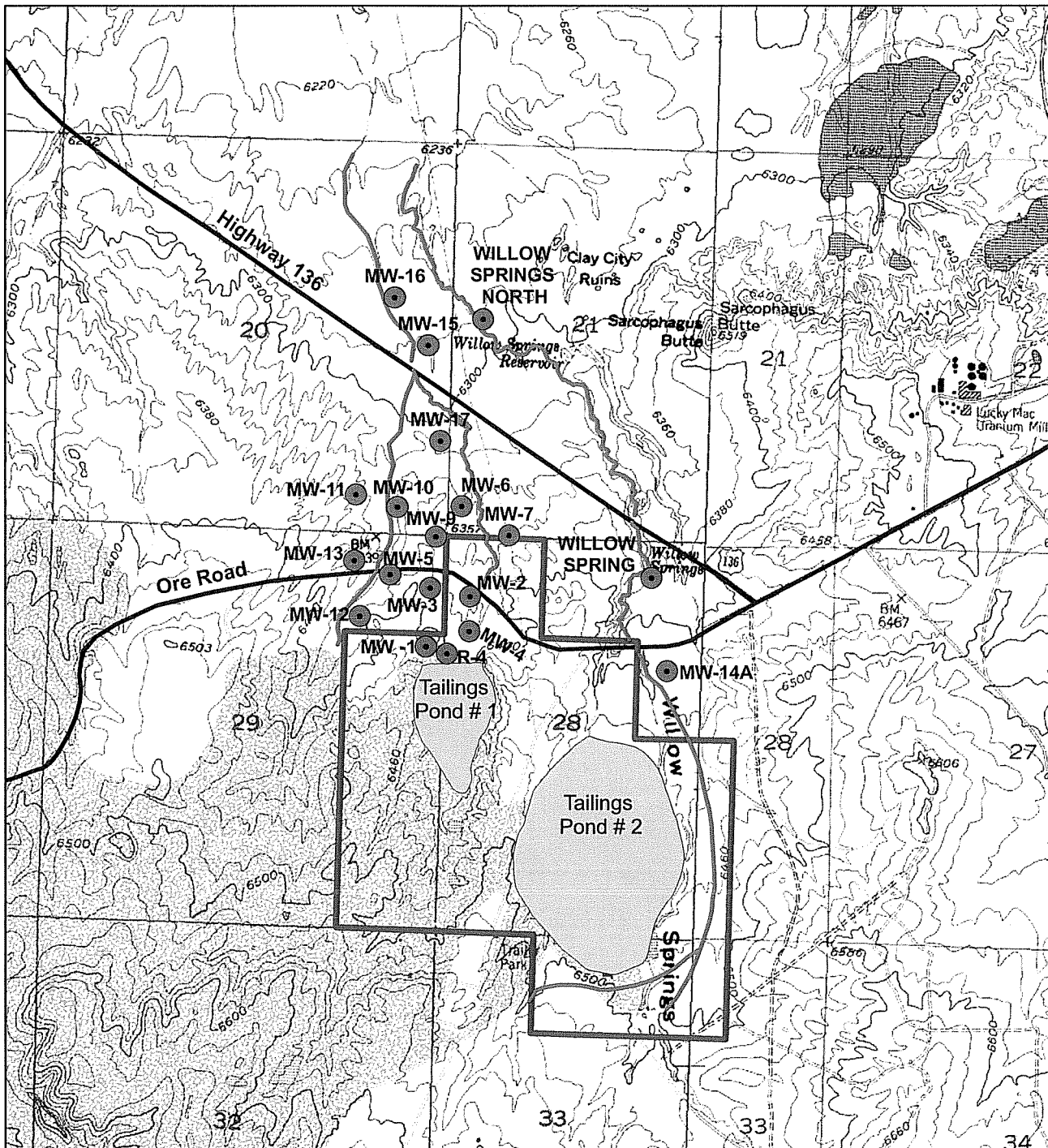
Sincerely,



Mark Moxley  
LQD District Supervisor






cc: Donald R. McKenzie - Administrator, WDEQ-LQD, Cheyenne  
Linda Gersey - US Nuclear Regulatory Commission at above address  
Myron Fliegel - US Nuclear Regulatory Commission, Uranium Recovery Licensing Branch,  
Division of Waste Management & Environmental Protection, Mail Stop T8F5,  
Washington, DC 20555

# Wyoming DEQ ANC Project



0 1,250 2,500 5,000 Feet Scale 1:24,000

## Legend

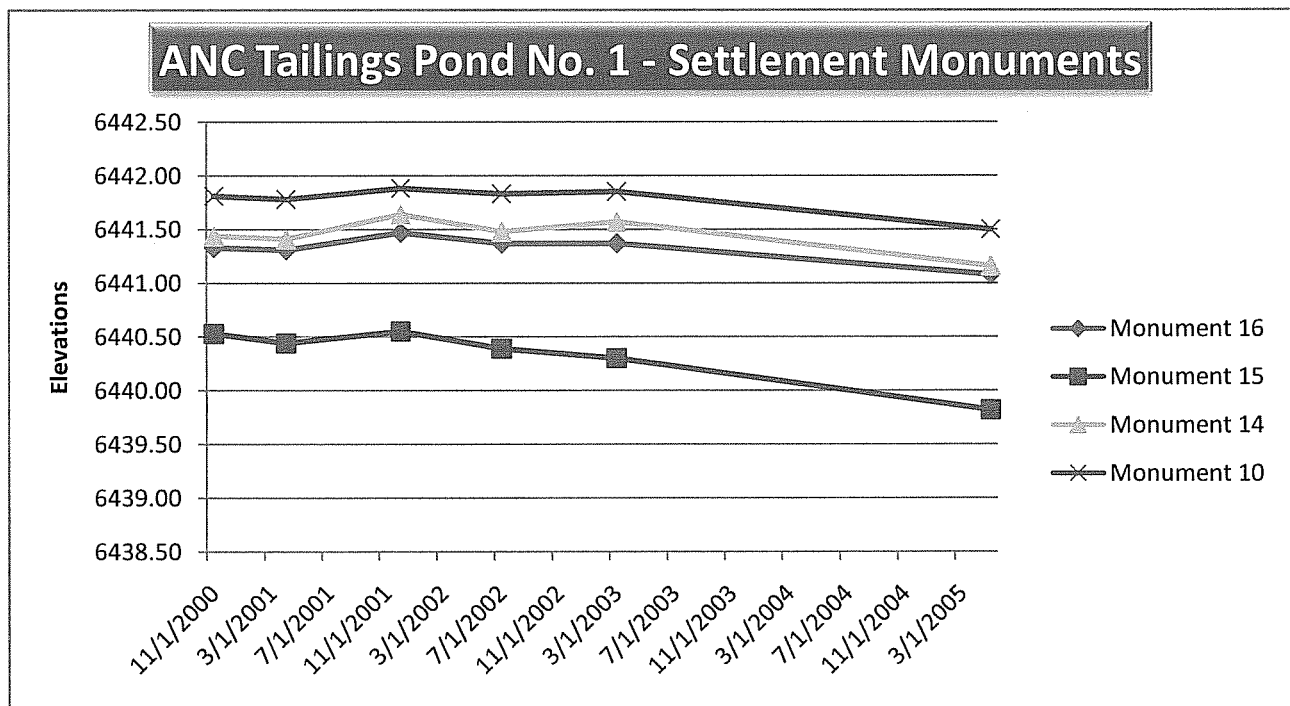
-  Wells
-  TailingsPonds
-  Drainages
-  Roads
-  ANC Property Boundary

Map Created by: M. Bautz & M. Moxley (307-332-3047)  
 Created on: August 22, 2008  
 Base Map: EDRG-24K, NAD 1927, Zone 13N  
 Site Location: T.33N, R.90W, Fremont County, Wyoming  
 File Name: ANC-MAP\_8-22-08



## WDEQ - ANC Gas Hills Project Tailings Pond No. 1 Settlement Monuments

Monument Number (old)	Monument Number (new)	11/15/2000	4/3/2001	12/6/2001	7/30/2002	3/19/2003	5/19/2005
1	16	6441.33	6441.31	6441.47	6441.37	6441.37	6441.08
2	15	6440.53	6440.44	6440.55	6440.39	6440.30	6439.82
3	14	6441.44	6441.41	6441.64	6441.48	6441.57	6441.16
4	10	6441.81	6441.78	6441.88	6441.83	6441.85	6441.50



Monument 15 settled 8.5"

**ANC Gas Hills Wells - DEQ Sampling Dates**

Well ID	2nd Q 96	1st Q 97	2nd Q 00	2nd Q 01	4th Q 01	2nd Q 02	3rd Q 02	4th Q 02	1st Q 03	2nd Q 03	3rd Q 03	4th Q 03	Spring 04	Fall 04	Fall 05	Fall 06	Fall 07
MW-1								10/18/02									
MW-2			5/23/00											9/28/04			
MW-3	5/15/96		5/23/00			5/21/02					9/23/03						
MW-4																	
MW-5						5/22/02											
MW-6	5/15/96		5/23/00			6/17/02											
MW-7			5/23/00			5/21/02											
MW-9	5/15/96					5/21/02								9/28/04			
MW-10	5/15/96		5/23/00														
MW-11	5/15/96		5/23/00			6/17/02							6/1/04				
MW-12	5/15/96		5/23/00													8/10/06	
MW-13	5/15/96		5/23/00													8/10/06	10/24/07
MW-14a						5/21/02	8/5/02	10/18/02	3/31/03		9/23/03			9/28/04			10/24/07
MW-15						5/21/02	8/5/02	10/17/02	3/31/03		9/23/03				9/27/05		
MW-16						5/21/02	8/5/02	10/17/02	3/31/03		9/23/03		6/1/04		9/27/05		
MW-17						6/17/02	8/5/02	10/17/02	3/31/03				6/1/04		9/27/05		
R-4 (pump)			5/23/00	6/25/01	10/30/01	5/21/02		10/17/02				10/20/03	6/1/04	10/17/04	9/27/05	8/10/06	10/24/07
Willow Spg		1/29/97	5/23/00	6/25/01	10/30/01	5/21/02	8/5/02 *	10/17/02 *		6/24/03		10/20/03	6/1/04	9/28/04	9/27/05	9/27/06	10/24/07
Will. Spg N.		1/29/97	5/23/00	6/25/01		5/21/02	dry	dry	dry		dry		6/1/04		dry	dry	dry

**Notes:**

Willow Spring historically sampled north of highway culvert. \* indicates sample was taken below the spring by excavating a hole in the channel (no difference observed).  
 10/24/07 data from wells R-4 and MW-14a not entered in database because the wells were not purged prior to sampling and the data is not representative.  
 Ra-228 not analyzed prior to June, 2003.

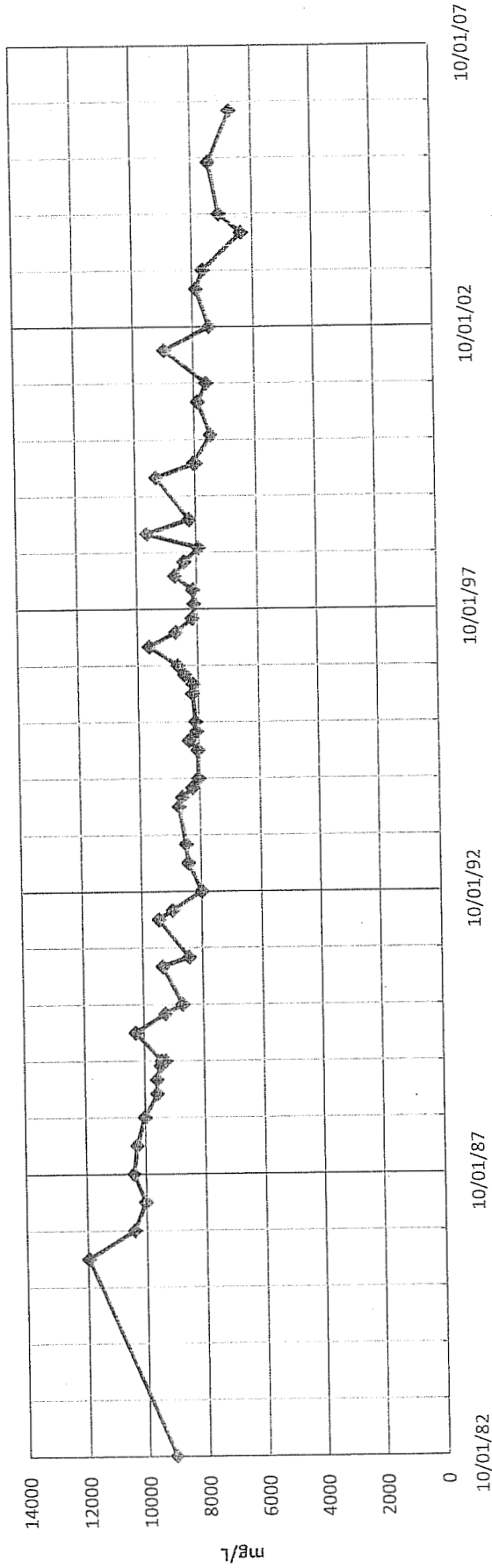
File Location and Name: F:\Division\LQDI\ANC Project\ANC-data\ANC\_Wells-Jan\_06\SamplingSummary.xls

File last updated on : March 31, 2008 by Mark Moxley

This page printed on: 8/25/2008

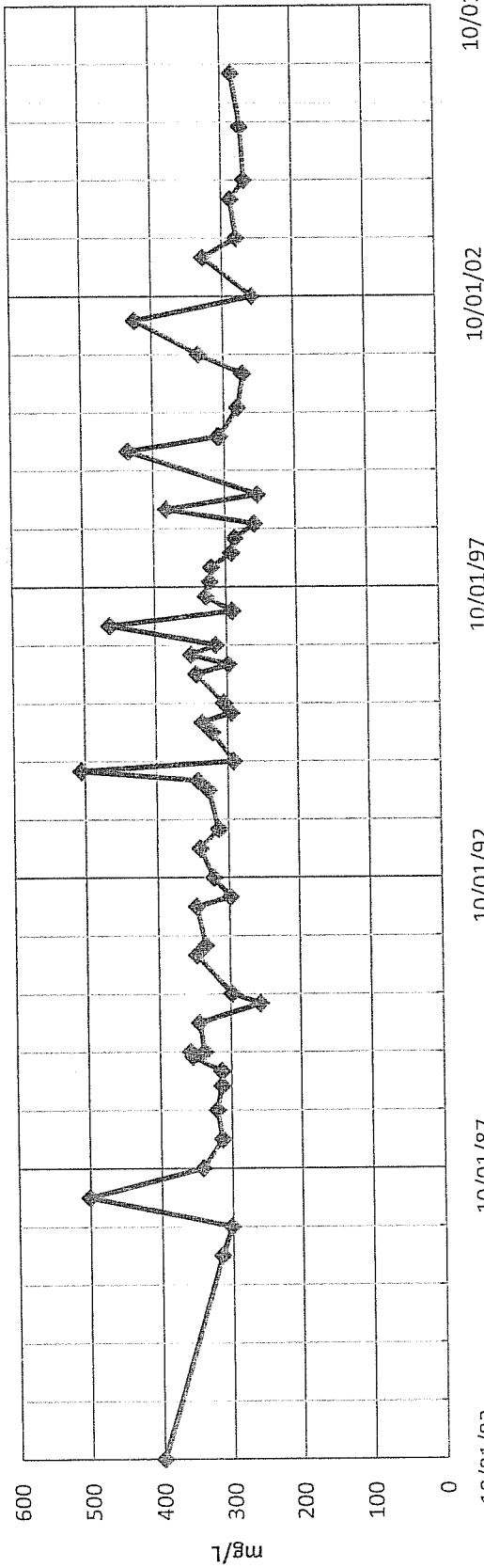
# R4

◆ TDS



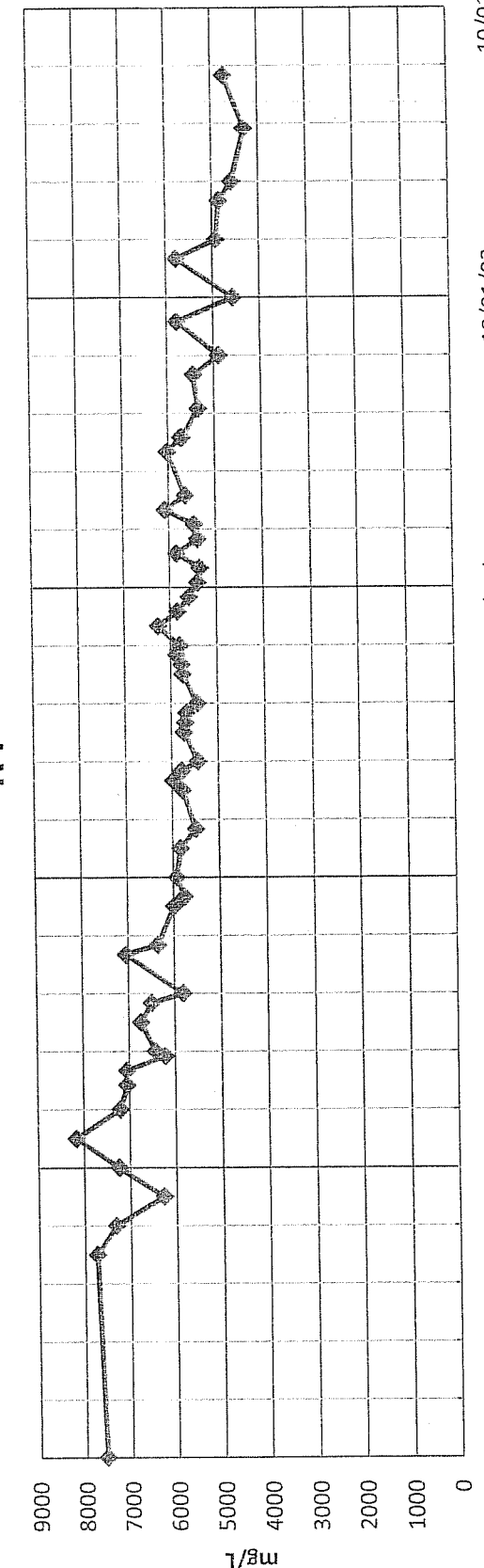
Chloride

R4



Sulfate

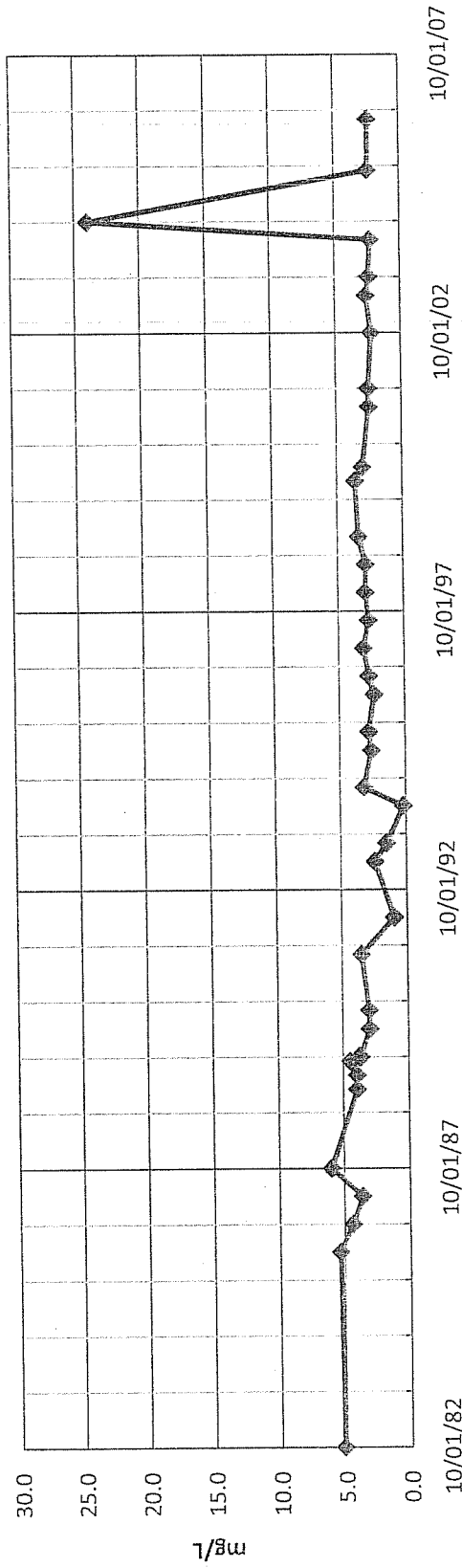
R4





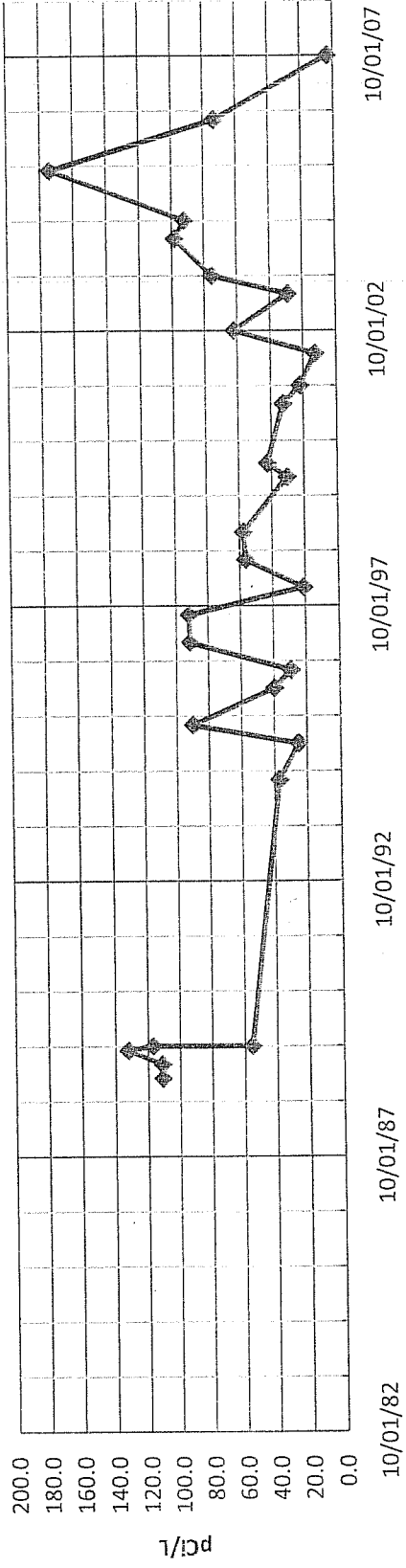
R4

Uranium

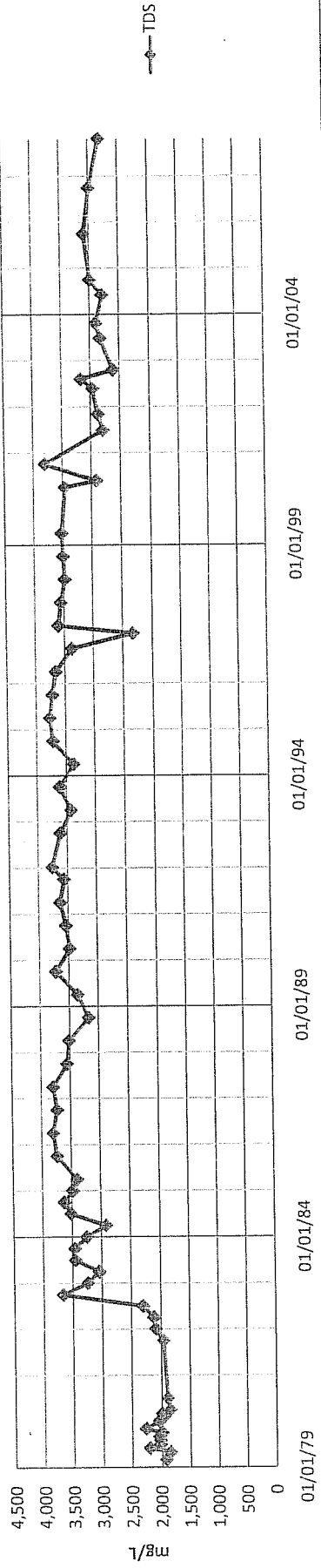


R4

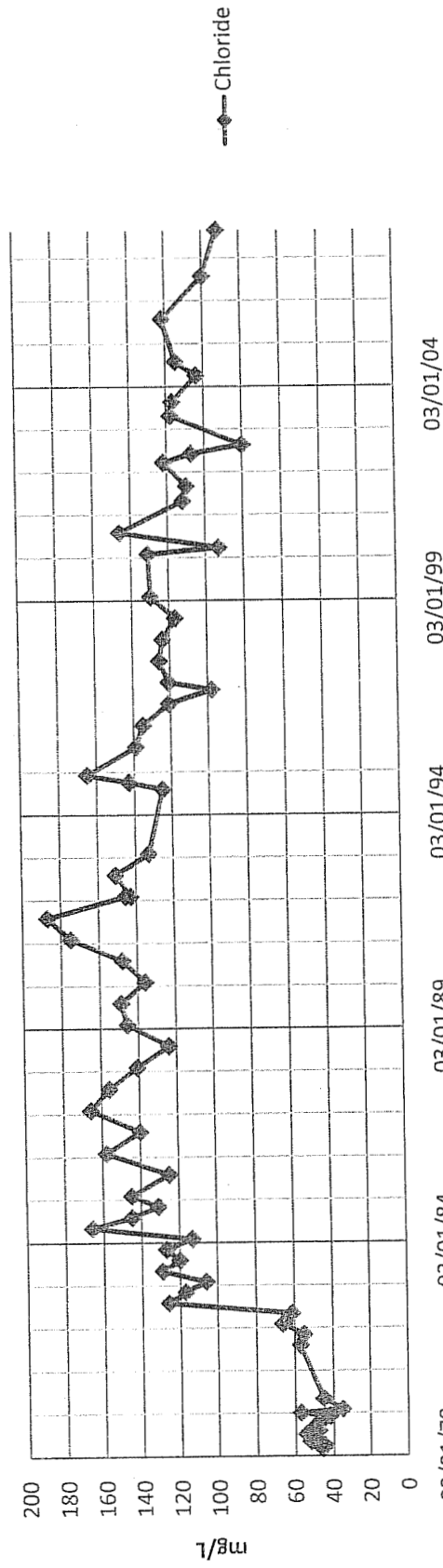
Total Radium (226+228)



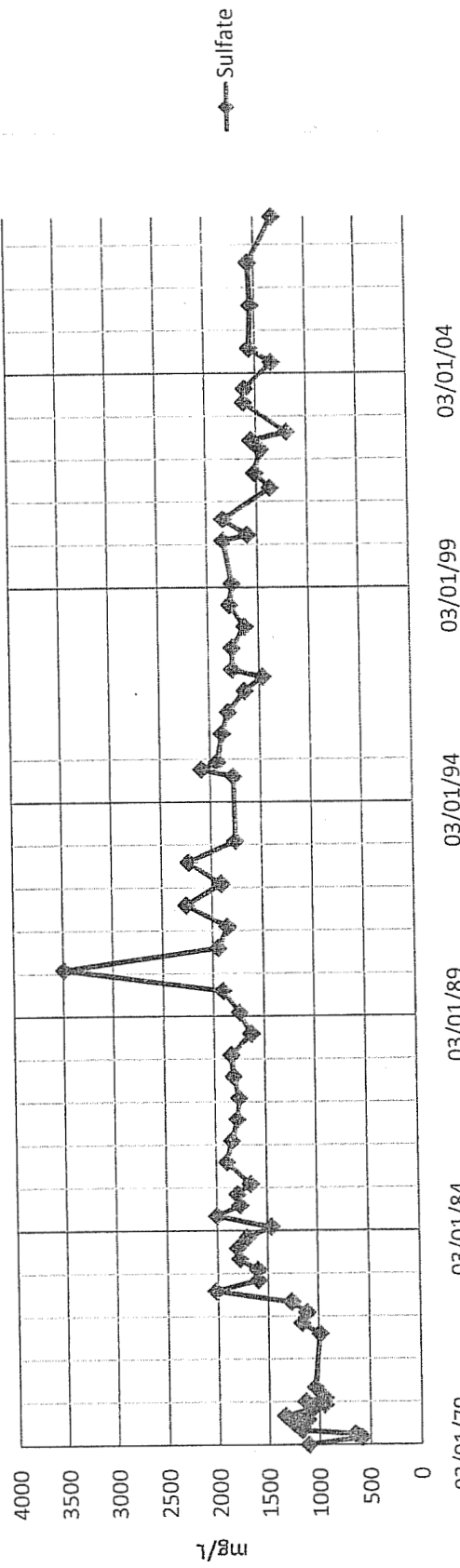
# Willow Springs



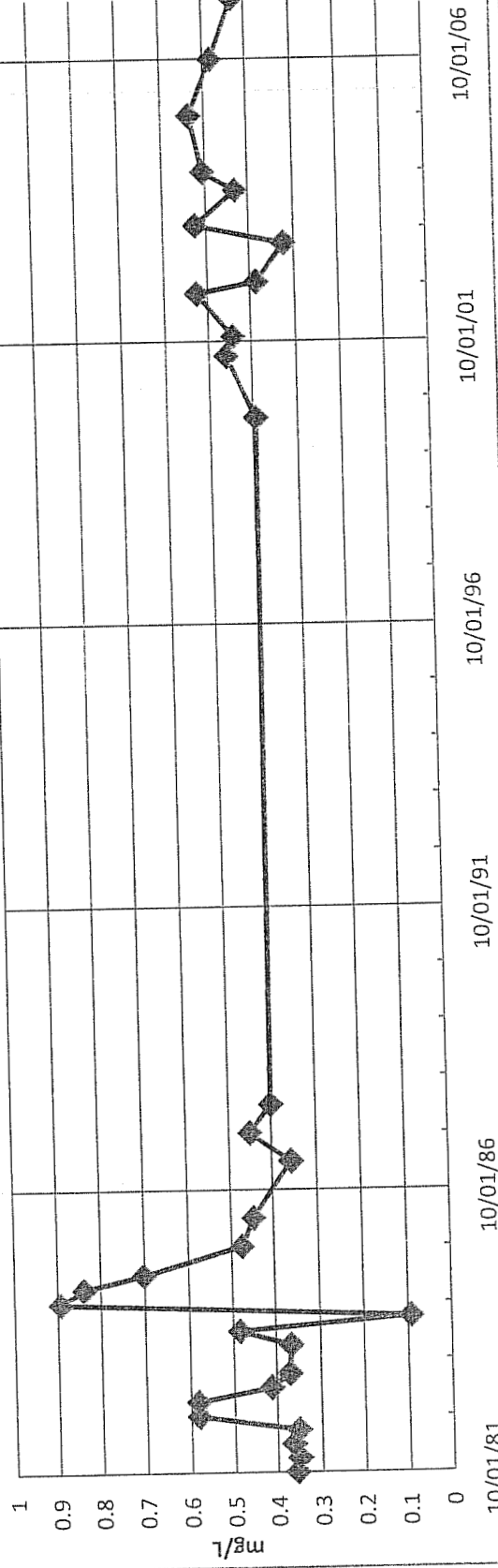
# Willow Springs



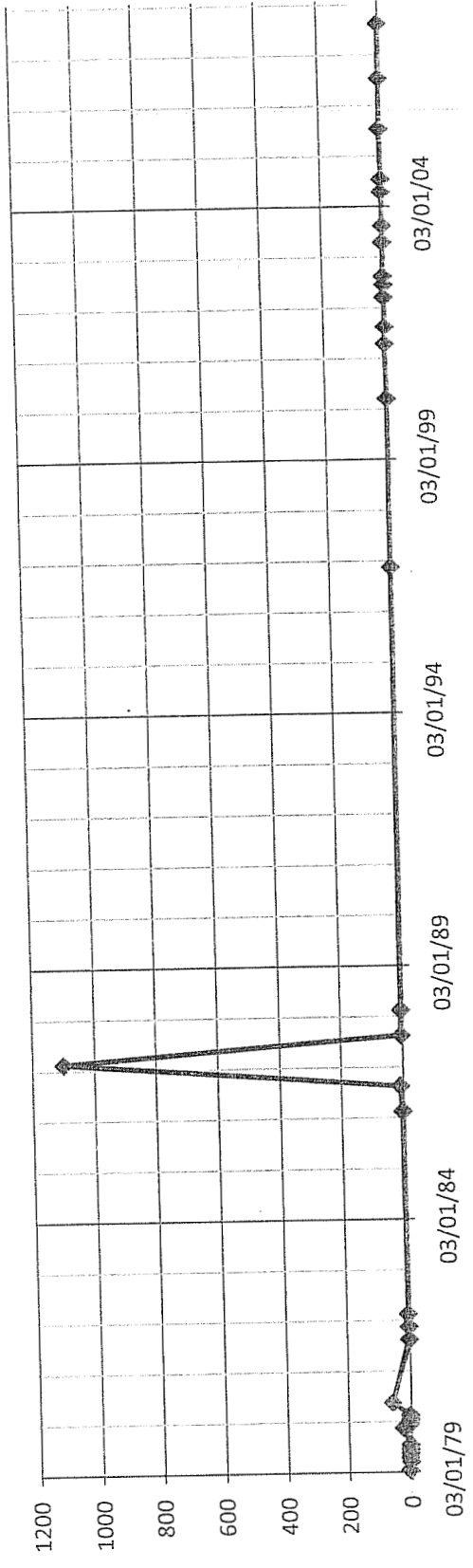
# Willow Springs



# Willow Springs

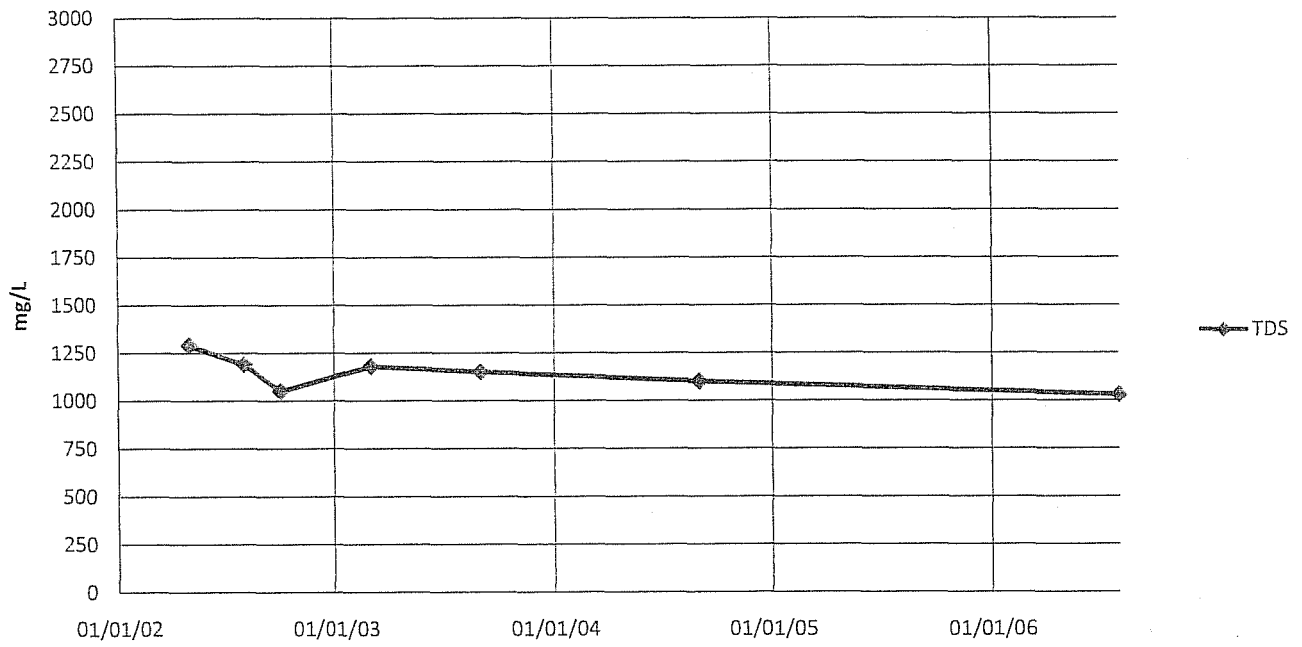


# Willow Springs

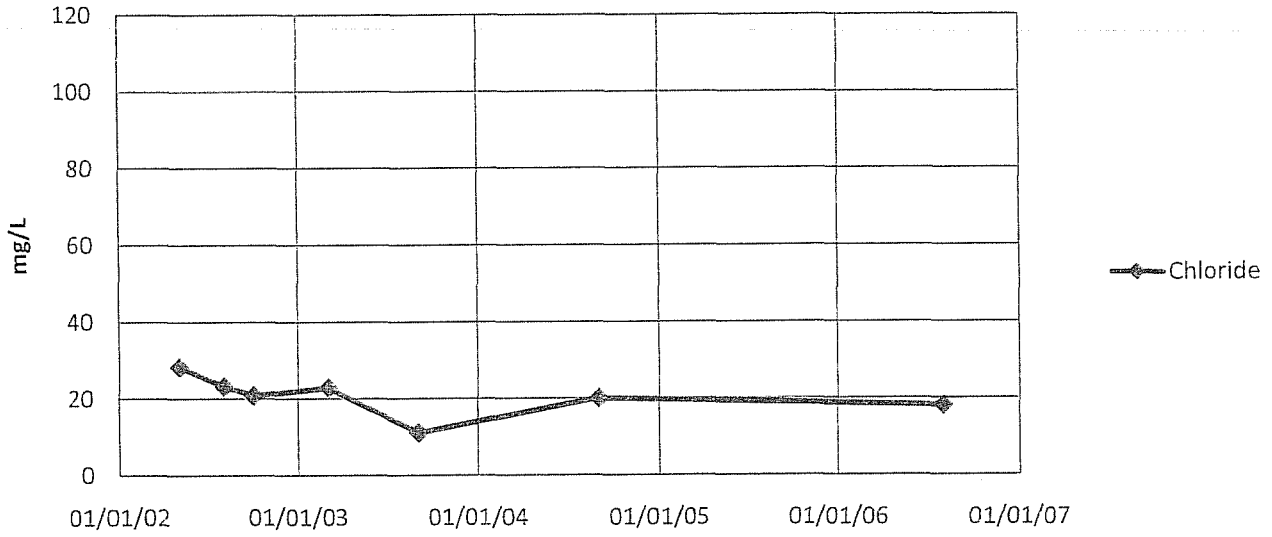


Ra228 not tested prior to 6/03, ND except for 6/24/03 (41.5 pCi/L)

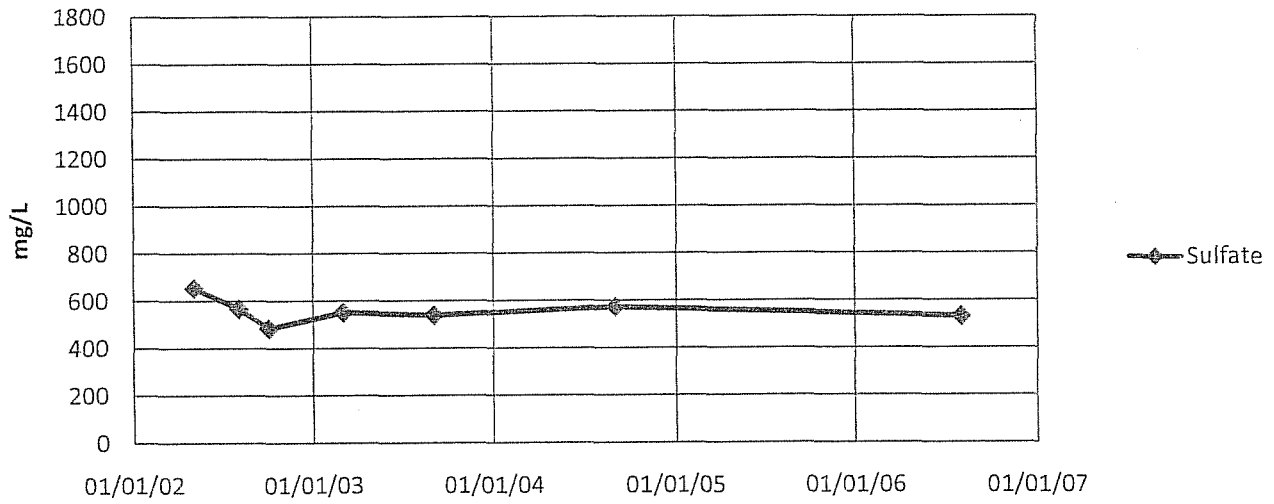
### MW - 14a



MW - 14a

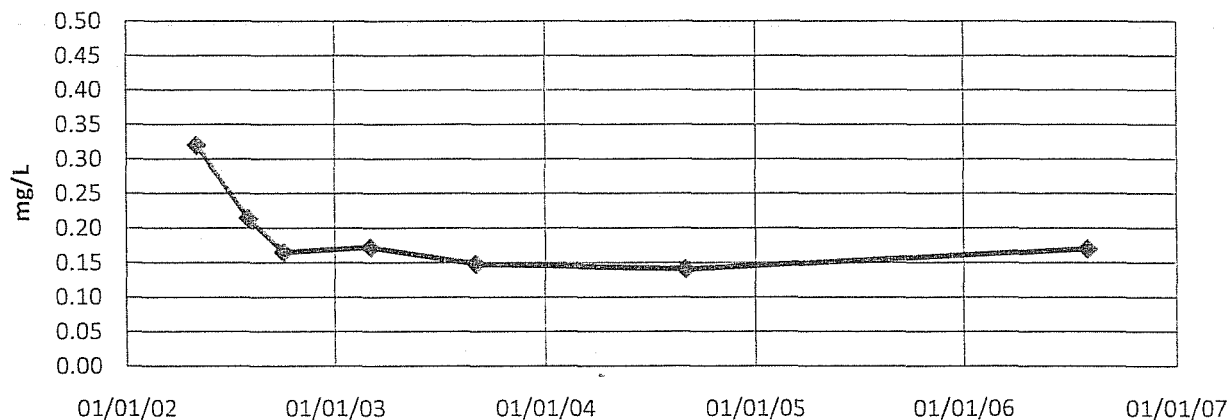


MW - 14a



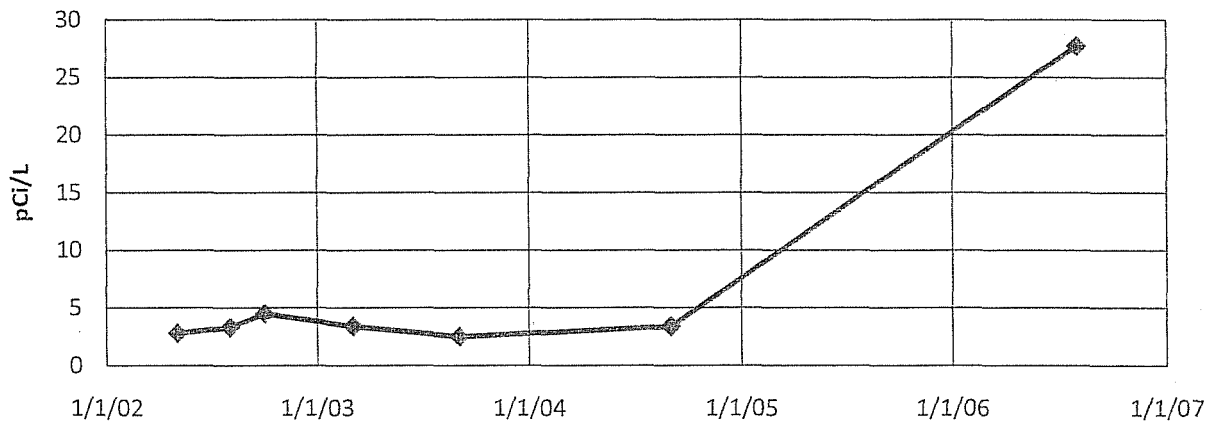
### MW - 14a

◆ Uranium



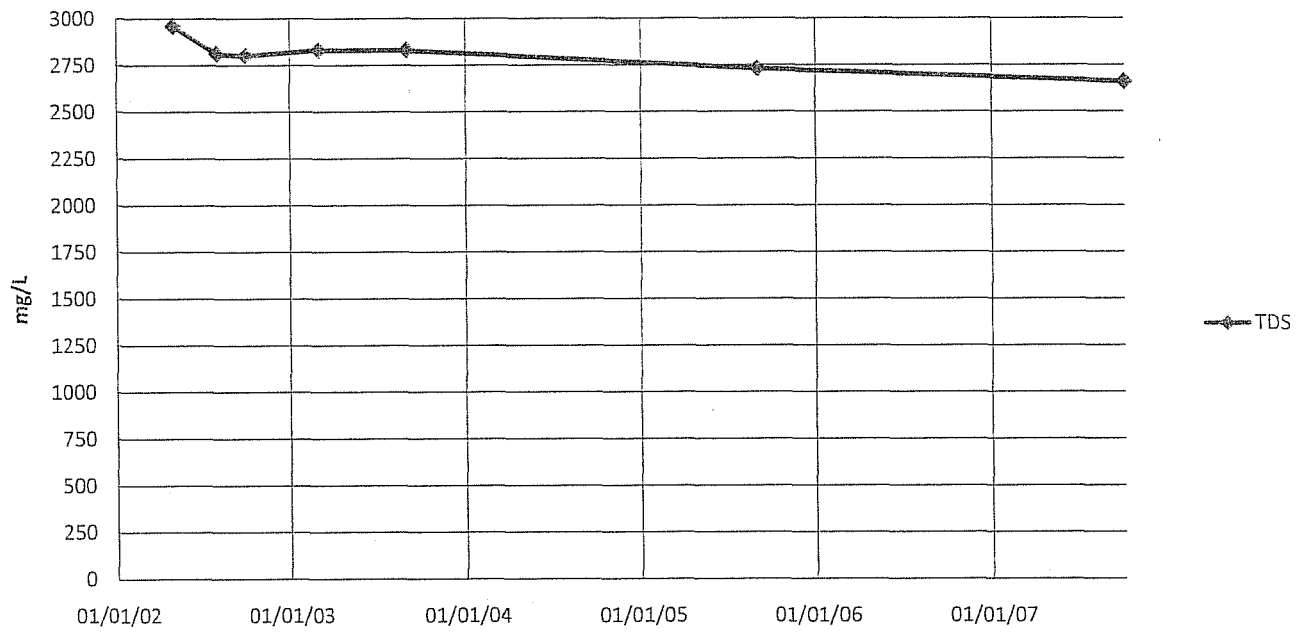
### MW - 14a

◆ Radium 226



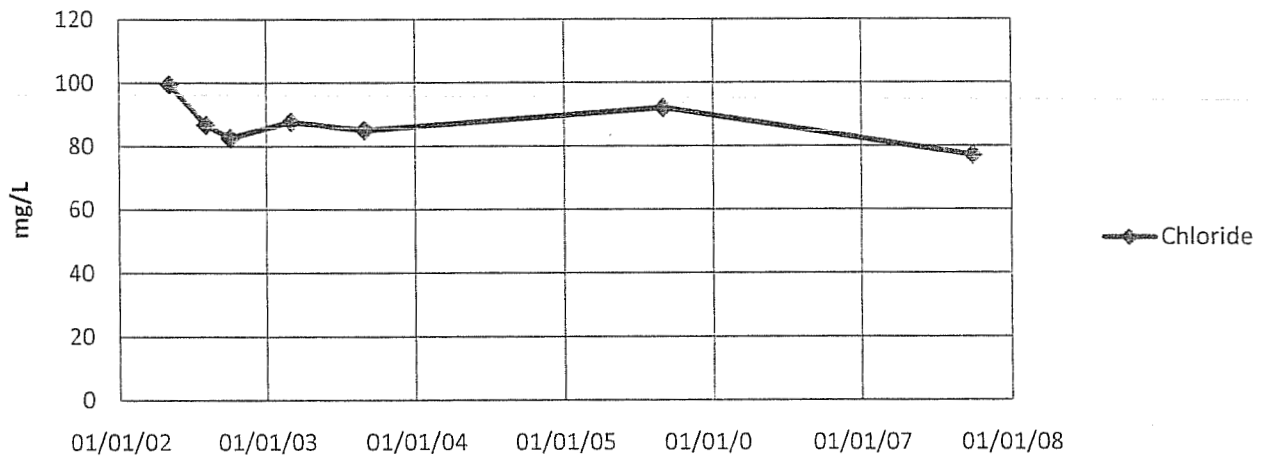
Radium 228 not tested until 9/2003 but has been undetectable since then.

### MW - 15

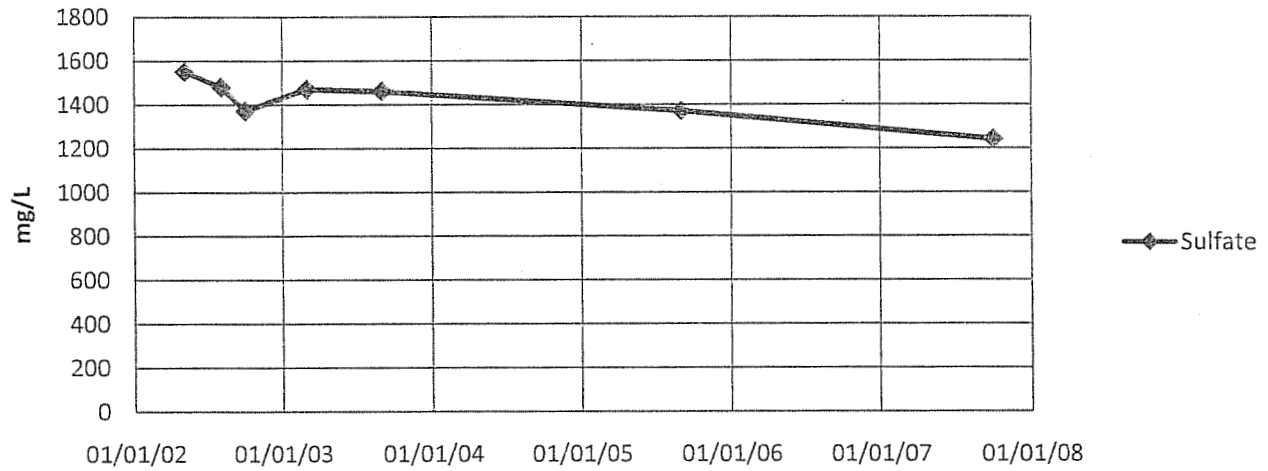


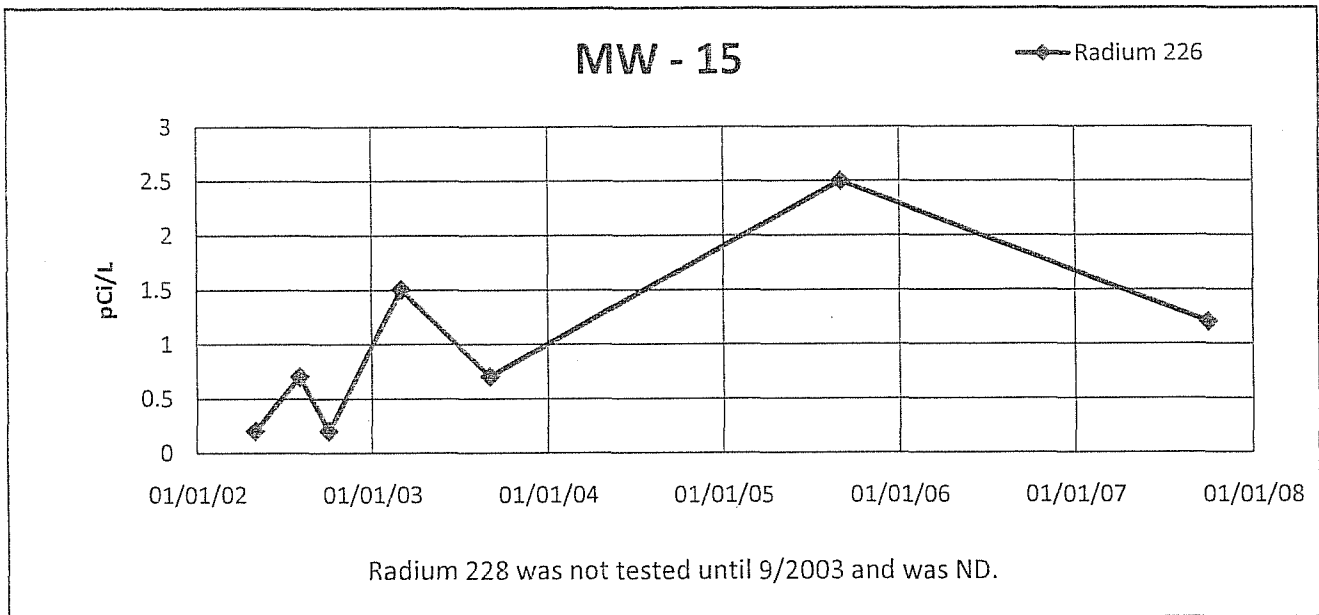
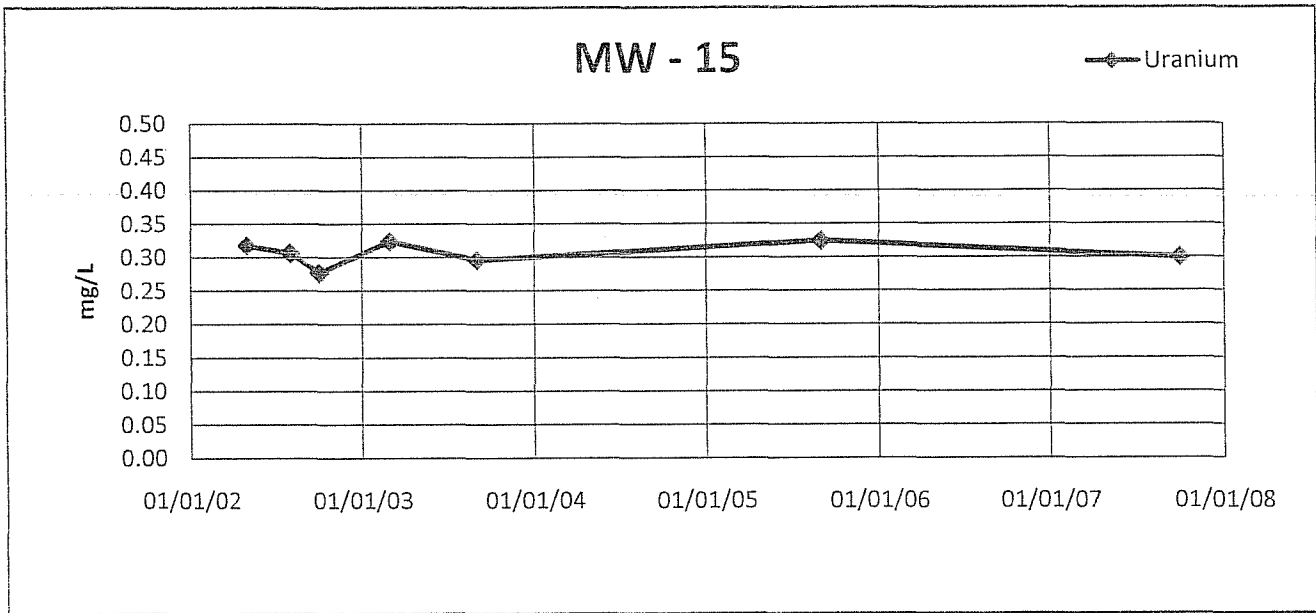


MW - 15

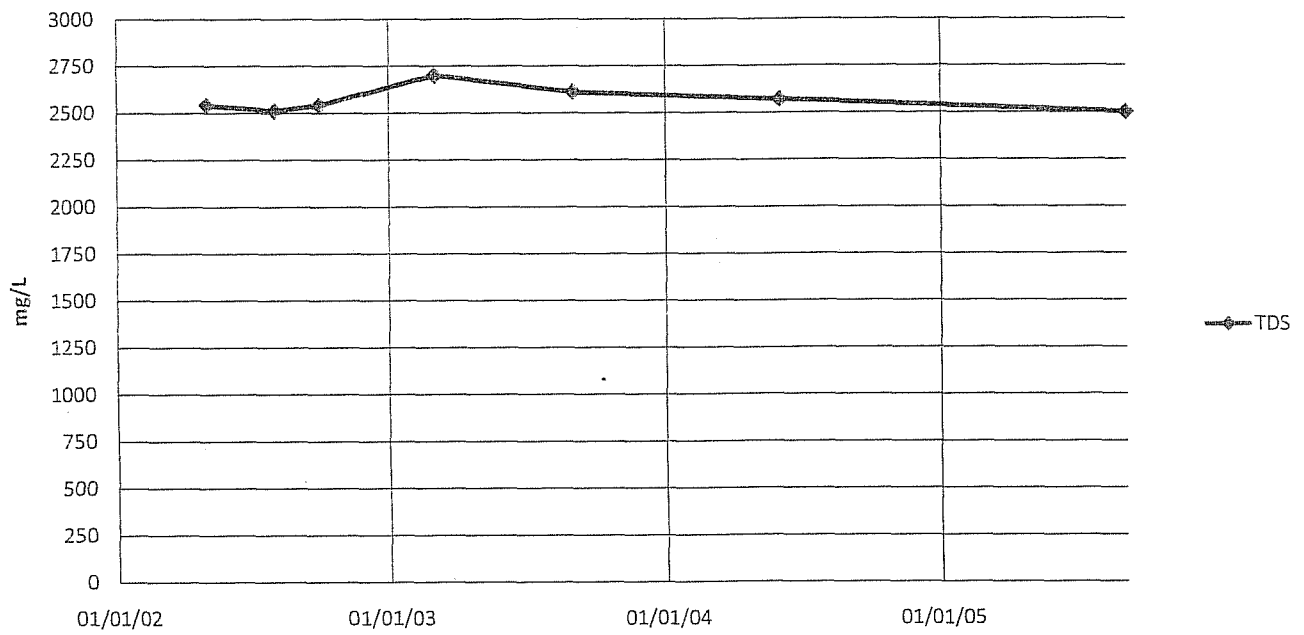


MW - 15

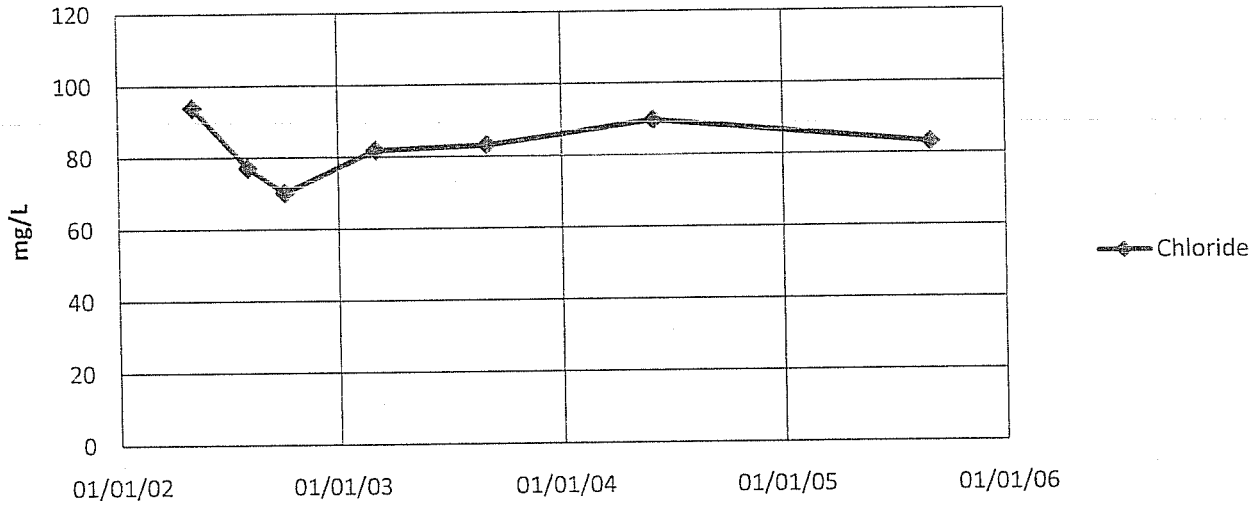




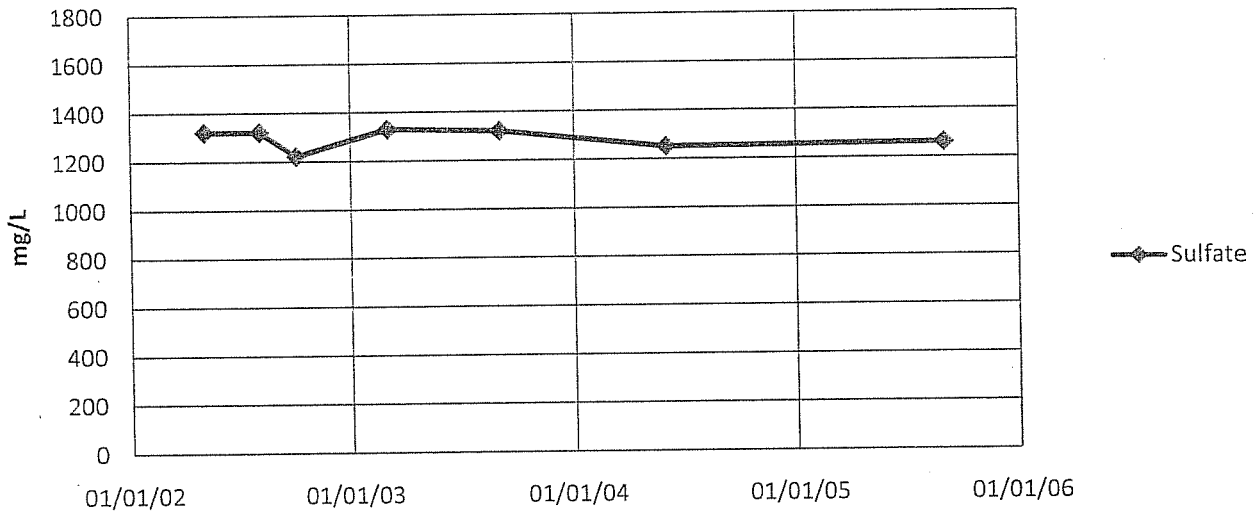
### MW - 16



### MW - 16

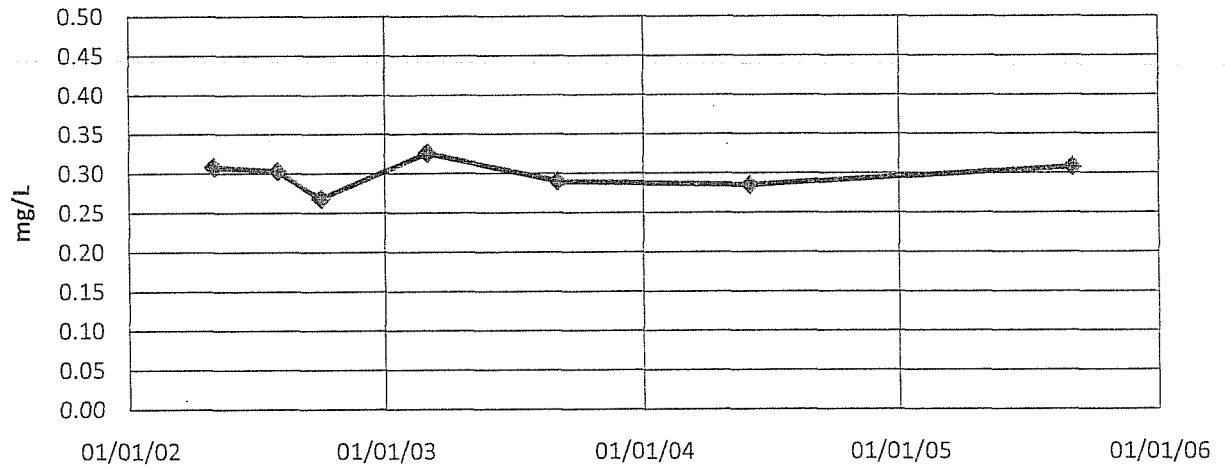


### MW - 16



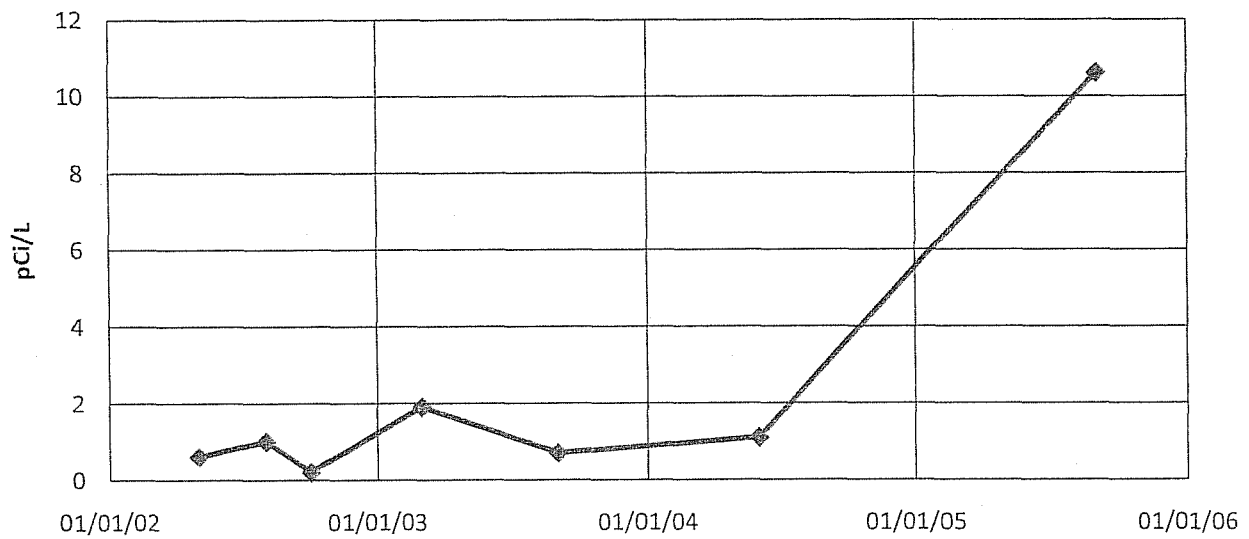
### MW - 16

◆ Uranium



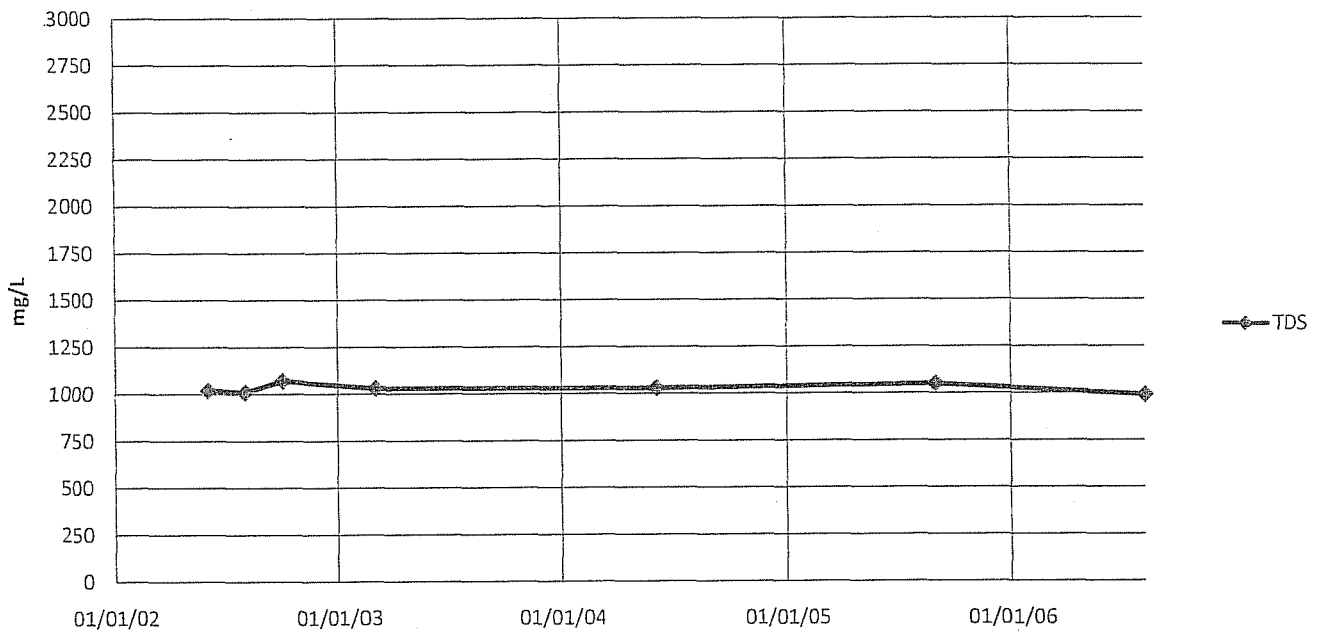
### MW - 16

◆ Radium 226

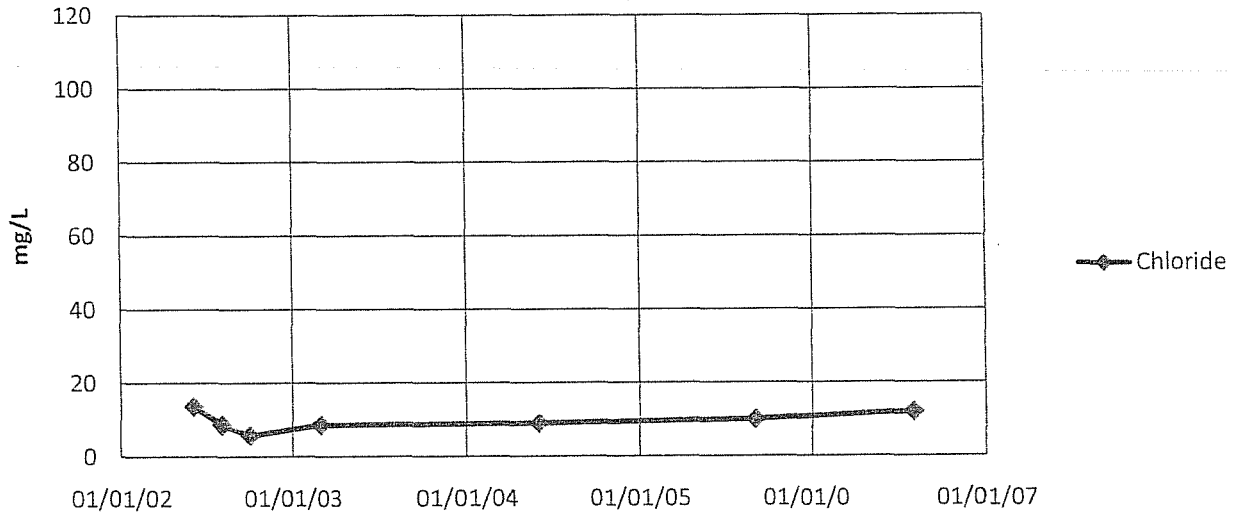


Radium 228 was not tested until 9/2003 and has been ND.

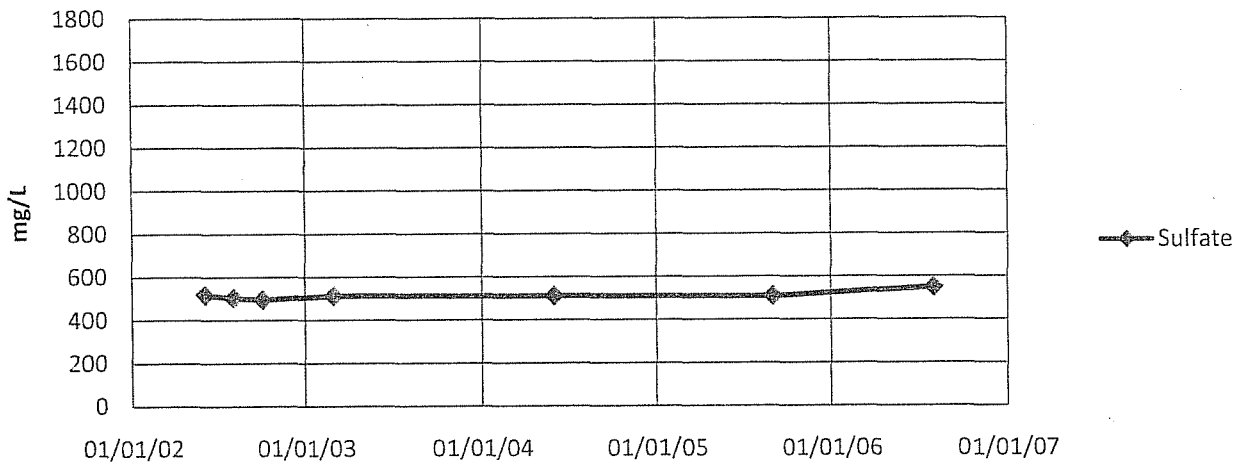
### MW - 17

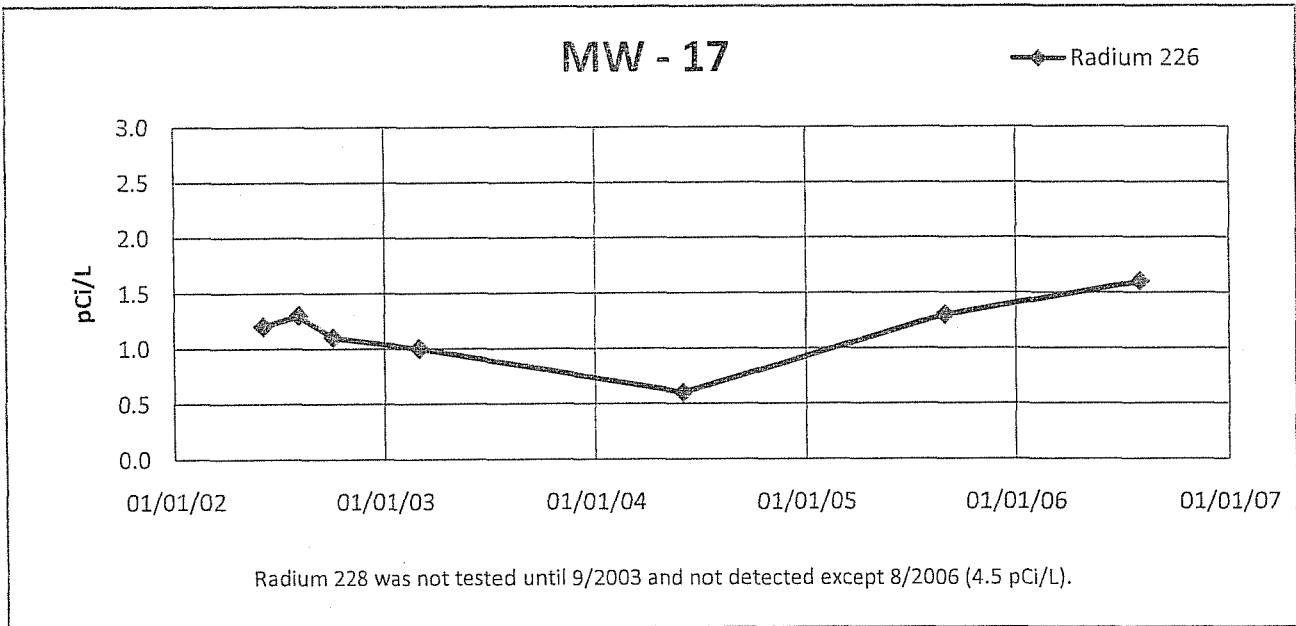
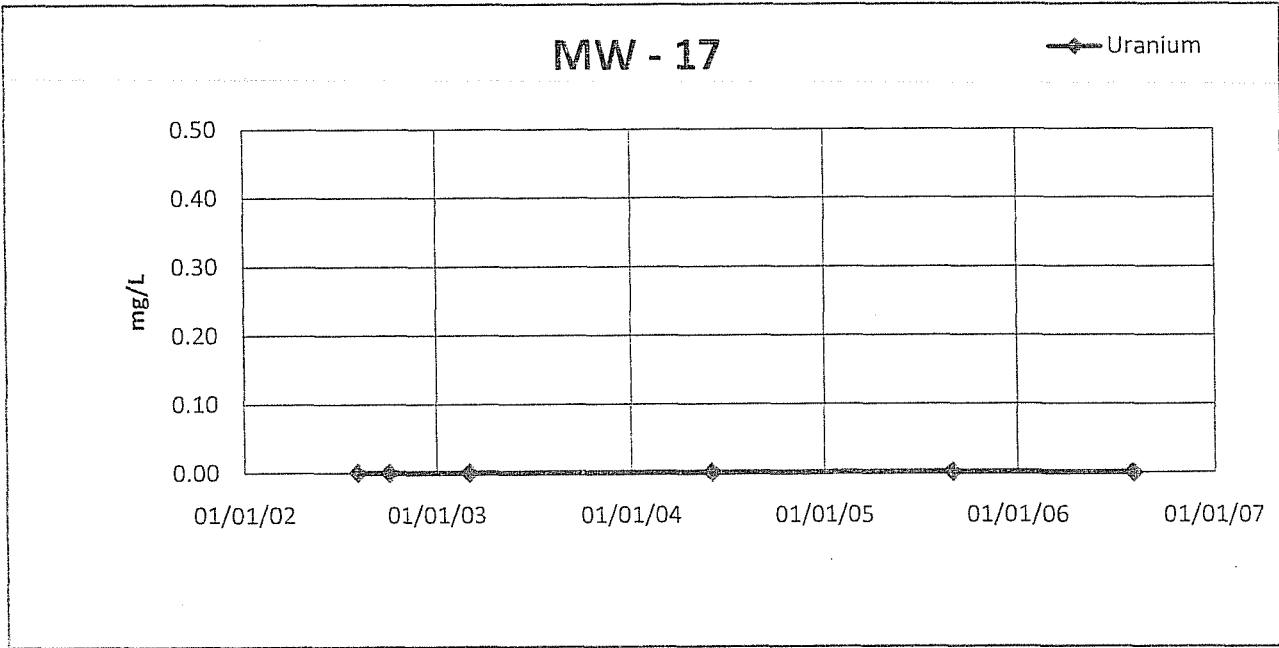


### MW - 17



### MW - 17







# TDS for Wells MW-14a, 15, 16, 17

	05/21/0	06/17/0	08/05/0	10/17/0	03/31/03	09/23/03	06/01/04	09/28/04	09/27/05	08/10/06	10/24/2007
MW-14a	1290		1190	1050	1180	1150		1100		1030	
MW-15	2960		2810	2800	2830	2830			2730		2660
MW-16	2540		2510	2540	2700	2610	2570		2500		
MW-17		1020	1010	1070	1030		1030		1050	990	

