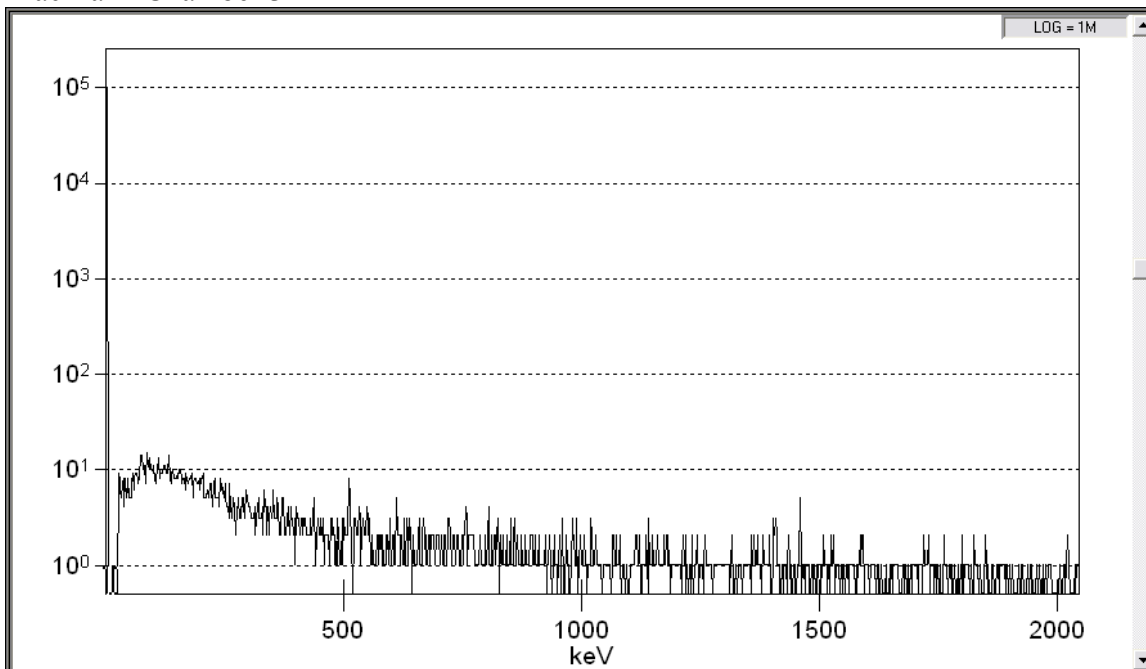


Frac Tank Chamber 3



***** G A M M A S P E C T R U M A N A L Y S I S *****

Filename: C:\GENIE2K\CAMFILES\Whittaker\Contam Pond\Frac Tank 3.CNF

Report Generated On : 7/10/2006 10:03:54 AM

Sample Title : Frac Tank Chamber 3
Sample Description : Water
Sample Identification : FT-3
Sample Type : Water
Sample Geometry : 500 ml Wet Dirt

Peak Locate Threshold : 5.00
Peak Locate Range (in channels) : 1 - 8192
Peak Area Range (in channels) : 1 - 8192
Identification Energy Tolerance : 1.500 FWHM

Sample Size : 1.155E+003 grams

Sample Taken On : 7/8/2006 9:35:00 AM
Acquisition Started : 7/8/2006 9:56:56 AM

Live Time : 1000.0 seconds
Real Time : 1000.3 seconds

Dead Time : 0.03 %

Energy Calibration Used Done On : 7/8/2006
Efficiency Calibration Used Done On : 4/30/2005
Efficiency ID : 00_ML__MARINELLI

 ***** ENERGY CALIBRATION REPORT *****

Detector Name: DET01
 Sample Title: Frac Tank Chamber 3

***** ENERGY CALIBRATION COEFFICIENTS *****

Energy Calibrate Performed on: 7/8/2006 7:57:40 AM
 by:
 Energy Calibrate Type: POLY

$$\text{Energy (keV)} = -0.196 + 0.250 \cdot \text{ch} + 0.00\text{E}+000 \cdot \text{ch}^2 + 0.00\text{E}+000 \cdot \text{ch}^3$$

***** SHAPE CALIBRATION COEFFICIENTS *****

Shape Calibrate Performed on:
 by:

$$\text{FWHM} = 1.000 + 0.030 \cdot \text{E}^{1/2}$$

$$\text{LOW TAIL} = 0.0\text{E}+000 + 0.0\text{E}+000 \cdot \text{E}$$

***** ENERGY CALIBRATION RESULTS TABLE *****

Centroid Channel	Centroid error	Energy (keV)
487.61	0.04	121.78
1376.99	0.04	344.28
3114.51	0.05	778.90
4446.37	0.05	1112.12

***** SHAPE CALIBRATION RESULTS TABLE *****

Energy (keV)	FWHM channels	FWHM error	TAIL channels	TAIL error
121.78	0.00	0.00	0.00	0.00
344.28	0.00	0.00	0.00	0.00
778.90	0.00	0.00	0.00	0.00
1112.12	0.00	0.00	0.00	0.00

 ***** EFFICIENCY CALIBRATION REPORT *****

Detector Name: DET01
 Sample Title: Frac Tank Chamber 3

Geometry Description: 00_ML_MARINELLI
 Efficiency Calibration Performed on: 4/30/2005 10:10:10 AM
 by:
 Geometry Type Used: LINEAR

Efficiency Triplets
 =====

Energy	Efficiency	Error
63.30	7.31E-003	7.31E-004
100.00	2.58E-002	2.58E-003
121.80	3.04E-002	3.04E-003
150.00	3.15E-002	3.15E-003
200.00	2.93E-002	2.34E-003
239.00	2.62E-002	2.10E-003
295.20	2.26E-002	1.81E-003
300.00	2.24E-002	1.79E-003
338.30	2.02E-002	1.52E-003
344.30	2.00E-002	1.50E-003
351.00	1.96E-002	1.37E-003
500.00	1.47E-002	8.82E-004
583.20	1.29E-002	7.71E-004
609.00	1.24E-002	7.45E-004
700.00	1.13E-002	6.77E-004
778.90	1.06E-002	6.12E-004
860.60	9.87E-003	5.43E-004
911.00	9.45E-003	4.72E-004
965.00	8.98E-003	4.04E-004
969.00	8.95E-003	4.03E-004
1000.00	8.72E-003	3.49E-004
1001.00	8.71E-003	3.48E-004
1112.00	8.02E-003	3.21E-004
1120.00	7.98E-003	3.19E-004
1400.00	6.81E-003	2.72E-004
1408.00	6.78E-003	2.71E-004
1765.00	5.59E-003	2.24E-004
2000.00	4.98E-003	1.99E-004

DUAL Efficiency Calibration Equation
 =====

Single Equation Terms -> Offset: -337.122
 Slope: 249.150
 Quadratic: -73.329
 Cubic: 10.657
 4th Order: -0.767
 5th Order: 0.022
 6th Order: 0.000
 7th Order: 0.000

8th Order:	0.000
9th Order:	0.000

EMPIRICAL Efficiency Calibration Equation

=====

Empirical Equation Terms ->	Scaling:	1031.650
	Offset:	-4.763
	Slope:	0.731
	Quadratic:	-0.050
	Cubic:	0.113
	4th Order:	-0.009
	5th Order:	-0.022

LINEAR Efficiency Calibration Equation

=====

Linear Equation Terms ->	Offset:	-0.000
	Slope:	-2.103
	Quadratic:	215.969
	Cubic:	-22800.293
	4th Order:	776382.938
	5th Order:	-12934173.0
	6th Order:	0.000
	7th Order:	0.000
	8th Order:	0.000
	9th Order:	0.000

** P E A K - T O - T O T A L C A L I B R A T I O N R E P O R T **

Detector Name: DET01
Sample Title: Frac Tank Chamber 3
Peak-to-Total Calibration Performed on: ?????????? ????????????

Peak-to-Total Calibration Equation
=====

No Peak-to-Total Equation

No peak locate results available for reporting purposes

No peak locate results available for reporting purposes

No peak analysis results available for reporting purposes

***** S T A N D A R D V M S P E A K A N A L Y S I S R E P O R T *****

Configuration Title:
Spectrum Title: Frac Tank Chamber 3
Peak Analysis Performed on: 7/10/06 10:03:53 AM
Peak Analysis From Channel: 1 To Channel: 8192
Peak Search Sensitivity: 5.00 Gaussian Sensitivity: 10.00
Max Iterations: 10 Fit Singlets: No Critical Level Test: Yes
Use Fixed FWHM: No FWHM Reject: No FWHM Reject Ratio: 0.00
Peak Fit Engine Name: ?????????? Continuum Type: STEP

No peak analysis results available for reporting purposes

No peak analysis results available for reporting purposes

No peak analysis results available for reporting purposes

No peak analysis results available for reporting purposes.

No peak analysis results available to perform background subtract on.

OR

No peaks remain after background subtracted.

No peak analysis results available for correction.

OR

No peaks remain after area correction.

 ***** N U C L I D E I D E N T I F I C A T I O N R E P O R T *****

Sample Title: Frac Tank Chamber 3
 Nuclide Library Used: C:\GENIE2K\CAMFILES\Whittaker library 2.

..... IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield (%)	Activity (pCi/gram)	Activity Uncertainty
-----------------	------------------	-----------------	--------------	------------------------	-------------------------

* = Energy line found in the spectrum.
 Energy Tolerance : 1.500 FWHM
 Nuclide confidence index threshold = 0.30
 Errors quoted at 1.000 sigma

No peak search results available for nuclide analysis.

***** N U C L I D E I D E N T I F I C A T I O N R E P O R T *****

Sample Title: Frac Tank Chamber 3
Nuclide Library Used: C:\GENIE2K\CAMFILES\Whittaker library 2.

..... IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield (%)	Activity (pCi/gram)	Activity Uncertainty
-----------------	------------------	-----------------	--------------	------------------------	-------------------------

* = Energy line found in the spectrum.
@ = Energy line not used for Weighted Mean Activity
Energy Tolerance : 1.500 FWHM
Nuclide confidence index threshold = 0.30
Errors quoted at 1.000 sigma

***** I N T E R F E R E N C E C O R R E C T E D R E P O R T *****

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/gram)	Wt mean Activity Uncertainty
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? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

No peak search results available for nuclide analysis.

 ***** N U C L I D E M D A R E P O R T *****

Detector Name: DET01
 Sample Geometry: 500 ml Wet Dirt
 Sample Title: Frac Tank Chamber 3
 Nuclide Library Used: C:\GENIE2K\CAMFILES\Whittaker library 2.

Nuclide Name	Energy (keV)	Yield (%)	Line MDA (pCi/gram)	Nuclide MDA (pCi/gram)	Activity (pCi/gram)
K-40	1460.80	10.67	8.2291E-001	8.23E-001	7.3805E-001
Ra-226d	295.21	19.20	2.4357E-001	1.19E-001	8.7667E-003
	351.92	37.20	1.3142E-001		-5.1741E-002
	609.31	46.30	1.1927E-001		3.5899E-002
	1120.29	15.10	3.8872E-001		-1.3941E-001
	1764.50	15.84	4.6007E-001		2.6412E-001
Th-232d	238.63	44.60	1.0033E-001	1.00E-001	1.7311E-004
	338.32	11.36	4.1418E-001		-1.0649E-001
	583.14	30.30	1.4776E-001		-1.0536E-001
	911.07	27.70	1.8723E-001		-7.5278E-003
	969.11	16.60	3.0741E-001		-7.3435E-002
	>	2614.70	99.80	0.0000E+000	

+ = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction

 ***** N U C L I D E M D A R E P O R T *****

Detector Name: DET01
 Sample Geometry: 500 ml Wet Dirt
 Sample Title: Frac Tank Chamber 3
 Nuclide Library Used: C:\GENIE2K\CAMFILES\Whittaker library 2.

Level	Nuclide Name	Energy (keV)	Yield (%)	Line MDA (pCi/gram)	Nuclide MDA (pCi/gram)	Activity (pCi/gram)	Dec.
001	K-40	1460.80	10.67	8.229E-001	8.23E-001	7.381E-001	3.661E-
001	Ra-226d	295.21	19.20	2.436E-001	1.19E-001	8.767E-003	1.144E-
002		351.92	37.20	1.314E-001		-5.174E-002	6.135E-
002		609.31	46.30	1.193E-001		3.590E-002	5.423E-
001		1120.29	15.10	3.887E-001		-1.394E-001	1.682E-
001		1764.50	15.84	4.601E-001		2.641E-001	1.943E-
002	Th-232d	238.63	44.60	1.003E-001	1.00E-001	1.731E-004	4.746E-
001		338.32	11.36	4.142E-001		-1.065E-001	1.933E-
002		583.14	30.30	1.478E-001		-1.054E-001	6.589E-
002		911.07	27.70	1.872E-001		-7.528E-003	8.139E-
001		969.11	16.60	3.074E-001		-7.343E-002	1.324E-
>		2614.70	99.80	0.000E+000		0.000E+000	

+ = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction

No Action Level results available for reporting purposes

```
*****  
*****          A U T O G A I N   A D J U S T          *****  
*****
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Report Generated On:

7/10/2006 10:03:54 AM

No AGA results for reporting.
Status:

This report is valid only if a Certificate was the source of the true values.

No AGA results for reporting.
Status: