



## American Radiation Services, Inc.

### Laboratory Analysis Report

Prepared For :

**Enercon Services  
Gerry Williams  
4115 William Penn Highway  
Murrysville, PA 15666**

**Phone: 724-733-8711  
FAX: 724-733-4630**

  
Quality Assurance Review

  
Technical Review

Notes: American Radiation Services, Inc. assumes no liability for the use or interpretation of any analytical results provided other than the cost of the analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Contact Person: Questions regarding this analytical report should be addressed to William McDowell, Phd at 2609 North River Road, Port Allen, Louisiana. Phone: 225.381.2991 Fax: 225.381.2996



ARS Tracking Number: ARS050101

Request or PO Number: NA

Client ID: Sample #4

ARS Sample ID: ARS050101-0322

Date Sampled: 1/20/05

Date Received: 1/21/05

Time Sampled: NA

Time Received: 1015

Type of Sample: Solid

Date of Report: 1/26/05

Analysis Description	Analysis Results	Analysis Error +/- 2 Sigma	MDC	Analysis Units	Analysis Test Method	Analysis Date / Time	Analysis Technician
TH-228	.257	0.2040	0.243	pCi/g	EPA 901.1M	1/25/05 10:58	MS
TH-232	0.115	0.8120	0.600	pCi/g	EPA 901.1M	1/25/05 10:58	MS
U-238	3.43	2.4300	2.740	pCi/g	EPA 901.1M	1/25/05 10:58	MS

Notes:

*Karen Rado*

Quality Assurance Review

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ARS Tracking Number: ARS050101

Request or PO Number: NA

Client ID: Sample #5

ARS Sample ID: ARS050101-0323

Date Sampled: 1/20/05

Date Received: 1/21/05

Time Sampled: NA

Time Received: 1015

Type of Sample: Solid

Date of Report: 1/26/05

Analysis Description	Analysis Results	Analysis Error +/- 2 Sigma	MDC	Analysis Units	Analysis Test Method	Analysis Date / Time	Analysis Technician
TH-228	0.337	0.1890	0.245	pCi/g	EPA 901.1M	1/25/05 16:11	MS
TH-232	0.509	0.5070	0.672	pCi/g	EPA 901.1M	1/25/05 16:11	MS
U-238	2.230	2.7500	2.730	pCi/g	EPA 901.1M	1/25/05 16:11	MS

Notes:

Karen Rueda  
 Quality Assurance Review

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ARS Tracking Number: ARS050101

Request or PO Number: NA

Client ID: Sample #6A

ARS Sample ID: ARS050101-0324

Date Sampled: 1/20/05

Date Received: 1/21/05

Time Sampled: NA

Time Received: 1015

Type of Sample: Solid

Date of Report: 1/26/05

Analysis Description	Analysis Results	Analysis Error +/- 2 Sigma	MDC	Analysis Units	Analysis Test Method	Analysis Date / Time	Analysis Technician
TH-228	0.541	0.2010	0.292	pCi/g	EPA 901.1M	1/25/05 17:33	MS
TH-232	0.012	0.7160	0.853	pCi/g	EPA 901.1M	1/25/05 17:33	MS
U-238	-1.190	3.6600	2.910	pCi/g	EPA 901.1M	1/25/05 17:33	MS

Notes:

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ARS Tracking Number: ARS050101  
 Client ID: Sample #9A  
 Date Sampled: 1/20/05  
 Time Sampled: NA  
 Type of Sample: Solid

Request or PO Number: NA  
 ARS Sample ID: ARS050101-0325  
 Date Received: 1/21/05  
 Time Received: 1015  
 Date of Report: 1/26/05

Analysis Description	Analysis Results	Analysis Error +/- 2 Sigma	MDC	Analysis Units	Analysis Test Method	Analysis Date / Time	Analysis Technician
TH-228	0.269	0.1005	0.043	pCi/g	EPA 901.1M	1/25/05 8:57	MS
TH-232	0.051	0.1820	0.100	pCi/g	EPA 901.1M	1/25/05 8:57	MS
U-238	2.207	0.8901	0.321	pCi/g	EPA 901.1M	1/25/05 8:57	MS

Notes:

Fore Reach  
 Quality Assurance Review

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ARS Tracking Number: ARS050101

Request or PO Number: NA

Client ID: Sample #9B

ARS Sample ID: ARS050101-0326

Date Sampled: 1/20/05

Date Received: 1/21/05

Time Sampled: NA

Time Received: 1015

Type of Sample: Solid

Date of Report: 1/26/05

Analysis Description	Analysis Results	Analysis Error +/- 2 Sigma	MDC	Analysis Units	Analysis Test Method	Analysis Date / Time	Analysis Technician
TH-228	0.303	0.257	0.219	pCi/g	EPA 901.1M	1/25/05 12:01	MS
TH-232	0.575	0.3920	0.626	pCi/g	EPA 901.1M	1/25/05 12:01	MS
U-238	3.680	2.5500	2.800	pCi/g	EPA 901.1M	1/25/05 12:01	MS

Notes:

*Karen Brady*  
 Quality Assurance Review

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ARS Tracking Number: ARS050101  
 Client ID: Sample #9C  
 Date Sampled: 1/20/05  
 Time Sampled: NA  
 Type of Sample: Solid

Request or PO Number: NA  
 ARS Sample ID: ARS050101-0327  
 Date Received: 1/21/05  
 Time Received: 1015  
 Date of Report: 1/26/05

Analysis Description	Analysis Results	Analysis Error +/- 2 Sigma	MDC	Analysis Units	Analysis Test Method	Analysis Date / Time	Analysis Technician
TH-228	0.159	0.246	0.255	pCi/g	EPA 901.1M	1/25/05 9:51	MS
TH-232	0.442	0.4260	0.602	pCi/g	EPA 901.1M	1/25/05 9:51	MS
U-238	1.110	3.1400	2.770	pCi/g	EPA 901.1M	1/25/05 9:51	MS

Notes:

*Korey Beado*

Quality Assurance Review

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ARS Tracking Number: ARS050101

Request or PO Number: NA

Client ID: Sample #10A

ARS Sample ID: ARS050101-0328

Date Sampled: 1/20/05

Date Received: 1/21/05

Time Sampled: NA

Time Received: 1015

Type of Sample: Solid

Date of Report: 1/26/05

Analysis Description	Analysis Results	Analysis Error +/- 2 Sigma	MDC	Analysis Units	Analysis Test Method	Analysis Date / Time	Analysis Technician
TH-228	0.662	0.1298	0.031	pCi/g	EPA 901.1M	1/25/05 10:56	MS
TH-232	0.406	0.1997	0.075	pCi/g	EPA 901.1M	1/25/05 10:56	MS
U-238	2.850	0.9479	0.677	pCi/g	EPA 901.1M	1/25/05 10:56	MS

Notes:

*Karen Beards*

Quality Assurance Review

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ARS Tracking Number: ARS050101

Request or PO Number: NA

Client ID: Sample #10B

ARS Sample ID: ARS050101-0329

Date Sampled: 1/20/05

Date Received: 1/21/05

Time Sampled: NA

Time Received: 1015

Type of Sample: Solid

Date of Report: 1/26/05

Analysis Description	Analysis Results	Analysis Error $\pm 2$ Sigma	MDC	Analysis Units	Analysis Test Method	Analysis Date / Time	Analysis Technician
TH-228	1.240	0.1470	0.177	pCi/g	EPA 901.1M	1/25/05 18:09	MS
TH-232	1.100	0.8200	0.950	pCi/g	EPA 901.1M	1/25/05 18:09	MS
U-238	4.640	3.8800	3.740	pCi/g	EPA 901.1M	1/25/05 18:09	MS

Notes:

*Korlenhead*  
 Quality Assurance Review

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ARS Tracking Number: ARS050101

Request or PO Number: NA

Client ID: Sample #10C

ARS Sample ID: ARS050101-0330

Date Sampled: 1/20/05

Date Received: 1/21/05

Time Sampled: NA

Time Received: 1015

Type of Sample: Solid

Date of Report: 1/26/05

Analysis Description	Analysis Results	Analysis Error +/- 2 Sigma	MDC	Analysis Units	Analysis Test Method	Analysis Date / Time	Analysis Technician
TH-228	0.608	0.2720	0.329	pCi/g	EPA 901.1M	1/25/05 17:02	MS
TH-232	0.568	0.2230	0.503	pCi/g	EPA 901.1M	1/25/05 17:02	MS
U-238	2.890	3.2300	3.110	pCi/g	EPA 901.1M	1/25/05 17:02	MS

Notes:

*Keren Leach*  
 Quality Assurance Review

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ARS Tracking Number: ARS050101

Request or PO Number: NA

Client ID: Sample #10D

ARS Sample ID: ARS050101-0331

Date Sampled: 1/20/05

Date Received: 1/21/05

Time Sampled: NA

Time Received: 1015

Type of Sample: Solid

Date of Report: 1/26/05

Analysis Description	Analysis Results	Analysis Error $\pm 2$ Sigma	MDC	Analysis Units	Analysis Test Method	Analysis Date / Time	Analysis Technician
TH-228	1.120	0.2740	0.379	pCi/g	EPA 901.1M	1/26/05 8:57	MS
TH-232	0.814	0.2490	0.467	pCi/g	EPA 901.1M	1/26/05 8:57	MS
U-238	4.130	3.4300	3.390	pCi/g	EPA 901.1M	1/26/05 8:57	MS

Notes:

*Karen Pardo*  
 Quality Assurance Review

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### Notes:

#### Comments:

- 1.0) Soil and Sludge analysis are reported on a wet basis or an as received basis unless otherwise indicated.
- 2.0) The data in this report are within the limits of uncertainty specified in the reference method unless specified.
- 3.0) Modified analysis procedures are procedures that are modified to meet the certain specifications. An example may be the use of a water method to analyze a solid matrix due to the lack of an officially recognized procedure for the analysis of the solid matrix.
- 4.0) Derived Air Concentrations and Effluent Release Concentrations are obtained from 10 CFR 20 Appendix B.
- 5.0) Total activity is actually total gamma activity and is determined utilizing the prominent gamma emitters from the naturally occurring radioactive decay chains and other prominent radioactive nuclides. Total activity may be lower than the actual total activity due to the extent of secular equilibrium achieved in the various decay chains at the time of analysis. The total activity is not representative of nuclides that emit solely alpha or beta particles.
- 6.0) Ra-228 is determined via secular equilibrium with its daughter, Actinium 228. (Gamma Spectroscopy only).
- 7.0) U-238 is determined via secular equilibrium with its daughter, Thorium 234. (Gamma Spectroscopy only).
- 8.0) All gamma spectroscopy was performed utilizing high purity germanium detectors (HPGe).

#### Method References:

- 1.0) EPA 600/4-80-032, Prescribed Procedures for the Measurements of Radioactivity in Drinking Water, August 1980.
- 2.0) Standard Methods for Examination of Water and Waste Water, 18th, 1992.
- 3.0) EPA SW-846, Test Methods for Evaluating Solid Waste, Third Edition, (9/86). (Updated through 1995).
- 4.0) EPA 600/4/79-020, Methods for Chemical Analysis of Water and Waste, March 1983.
- 5.0) HASL 300

#### Definitions:

- |                      |  |
|----------------------|--|
| 1.0) BDL             | Analyte not detected because the value was below the detection limit.                  |
| 2.0) ND              | Not detected above the detection limit.  |
| 3.0) Detection Limit | The minimum amount of the analyte that ARS can detect utilizing the specific analysis. |
| 4.0) B               | Method Blank   |
| 5.0) D               | Method Duplicate   |
| 6.0) MS              | Matrix Spike   |
| 7.0) S               | Spike  |
| 8.0) RS              | Reference Spike  |
| 9.0) *SC             | Subcontracted out to another qualified laboratory                                      |
| 10.0) NR             | Not Referenced   |
| 11.0) N/A            | Not Applicable   |

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Client: Enercon Services

Date: 1-21-05

Address: 4115 William Penn Hwy.  
Murrysville, PA 15146

Phone #: 724-733-8711  
Fax #: 724-733-4630

Purchase Order #: \_\_\_\_\_

Job #: \_\_\_\_\_

Contact: Gerry Williams

Date	Time	Sample ID.	Type	# of Containers	Radiochemistry							Gamma Spectroscopy							
					Gross		Ra-226	Ra-228	Total Radium	Sr89/Sr90	Nat. Uran.	Am/Pu/Th/U	Fission	Natural (Norm)	Total Gamma	Other			
					Alpha	Beta													
2005	NA	4	S	1															
2005	NA	5	S	1															Th232, U-235
2005	NA	6A	S	1															
2005	NA	9A	S	1															
2005	NA	9B	S	1															
2005	NA	9C	S	1															
2005	NA	10A	S	1															
2005	NA	10B	S	1															
2005	NA	10C	S	1															
2005	NA	10D	S	1															

Relinquished By: (Signature)	Date	Time	Received By: (Signature)	Date	Time
			<u>Eugene M. McInerney</u>	<u>1-21-05</u>	