2609 North River Road, Port Allen, Louisiana 70767
(800) 401-4277 -- FAX (225) 381-2996

American Radiation Services, Inc.

Laboratory Analysis Report

ARS1-08-02366

Prepared for:

Nuclear Regulatory Commission (NRC)

James Noggle
USNRC Region 1
475 Allendale Road
King of Prussia, PA 19406
James.Noggle@nrc.gov

Phone: 610.337.5063

Project Manager Review

Management 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:***

Project Manager

ProjectManagers@amrad.com

Phone: 225.381.2991
***Fax:* 225.381.2996**

LELAP Cert# 30658 **NELAP Cert# E87558**

ARS INTERNATIONAL

2609 North River Road • Port Allen, Louisiana 70767
1 (800) 401-4277 • Fax (225) 381-2996

December 15, 2008

Nuclear Regulatory Commission
James Noggle
475 Allendale Road
King of Prussia, PA 19406

Client Sample: MW-67-105-(006), MW-67-173-(006), MW-67-219-(006), MW-67-276-(006), MW-67-323-(006), MW-67-340-(006), MW-67-39-(006)
ARS SGD: ARS1-08-02366

Dear Mr. Noggle,

On November 19, 2008, American Radiation Services (ARS) received 7 Ground Water Samples to be analyzed for Gamma Spectroscopy, Tritium, Strontium-90, and Nickel-63.

The samples were processed and counted using the appropriate counting equipment and QA/QC for this type of analysis. Results of the analysis and QA/QC are attached in the data package.

The sample and QA/QC's were counted with a count time sufficient to meet a statistical sound detection limits.

Counting equipment Quality Assurance was with in acceptance criteria when the above referenced samples were processed.

If you have any questions please do not hesitate to call at 225-381-2991.

Sincerely,

Eugene Mulligan

Laboratory Director
American Radiation Services

ARS INTERNATIONAL

2609 North River Road • Port Allen, Louisiana 70767

1 (800) 401-4277 • Fax (225) 381-2996

COVER PAGE

Statement of Work for Analytical Laboratories

PROJECT SAMPLE IDENTIFICATION CROSS-REFERENCE TO ARS SAMPLE LABORATORY IDs

CLIENT SAMPLE	American Radiation Services SAMPLE ID NUMBER(S)
MW-67-105-(006)	ARS1-08-02366-001
MW-67-173-(006)	ARS1-08-02366-002
MW-67-219-(006)	ARS1-08-02366-003
MW-67-276-(006)	ARS1-08-02366-004
MW-67-323-(006)	ARS1-08-02366-005
MW-67-340-(006)	ARS1-08-02366-006
MW-67-39-(006)	ARS1-08-02366-007

SAMPLE RECEIPT

The samples were received in good condition. The samples were screened for radioactive contamination as per procedure **ARS-062 "Sample Receiving"**.

ANALYTICAL METHODS

The Gamma Spectroscopy determinations were performed using American Radiation Services procedure **ARS-006/EPA 901.1, "Gamma Emitting Radionuclides in Water."** The tritium analyses were performed using American Radiation Services procedure **ARS-054, "Tritium In Water". ".** The Strontium-90 analyses were performed using American Radiation Services procedure **ARS-032, "Total Strontium by Eichrom Resin Seperation."** The Nickel-63 analyses were performed using American Radiation Services procedure **ARS-022.**

ANALYTICAL RESULTS

The result data that are flagged with "U" indicates that the activity is below the MDC.

With regards to Gamma Spectroscopy analysis, Batch ARS1-B08-03098, the QC from Batch ARS1-B08-03097 was used due to a LIMS error when closing the batch instead of suspending the batch.

With regards to Nickel-63 analysis, the high level LCS standard (S-0178) was accidentally used for the LCS/LCSD. Due to the LCS/LCSD sample counts being higher than the yield spike counts, the activity for the LCS/LCSD could not be calculated. Due to each sample having its own yield spike, data is being released as valid per technical review.

ARS INTERNATIONAL

2609 North River Road • Port Allen, Louisiana 70767

1 (800) 401-4277 • Fax (225) 381-2996

American Radiation Services Project Manager/Laboratory Manager's Comments:
"I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this sample data package and the computer-readable EDD, as applicable, submitted on diskette or by modem, has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature."

"I certify that this electronic image, and all hardcopies produced from this image, accurately represents the data and is in compliance with the client specific requirements, both technically and for completeness, other than the conditions detailed above or in the sample data package narrative. Release, by submission through email, the data contained in this electronic image and the computer-readable EDD (as applicable), has been authorized by the laboratory Manager/Technical Director or the Manager's designee."

Dwayne Mulligan — **Signature**

Laboratory Director, American Radiation Services — **Title**

10-18-08 — **Date**

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-08-02366
Client Sample ID: MW-67-105-(006)
Sample Collection Date: 11/03/08 14:21
Sample Matrix: Aqueous

Request or PO Number: N/A
ARS Sample ID: ARS1-08-02366-001
Date Received: 11/19/2008
Report Date: 12/15/08 13:39

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recove
MN-54	0.000	1.274	4.300	2.150	U	pCi/L	ARS-006/EPA 901.1	11/24/08 16:48	JLA	N/A
FE-59	1.573	2.232	7.490	3.745	U	pCi/L	ARS-006/EPA 901.1	11/24/08 16:48	JLA	N/A
CO-58	-1.773	4.157	4.000	2.000	U	pCi/L	ARS-006/EPA 901.1	11/24/08 16:48	JLA	N/A
CO-60	1.251	1.226	4.100	2.050	U	pCi/L	ARS-006/EPA 901.1	11/24/08 16:48	JLA	N/A
ZN-65	0.350	2.638	8.940	4.470	U	pCi/L	ARS-006/EPA 901.1	11/24/08 16:48	JLA	N/A
NB-95	-1.446	91.923	4.120	2.060	U	pCi/L	ARS-006/EPA 901.1	11/24/08 16:48	JLA	N/A
ZR-95	-1.966	2.135	7.110	3.555	U	pCi/L	ARS-006/EPA 901.1	11/24/08 16:48	JLA	N/A
I-131	-0.044	1.099	3.690	1.845	U	pCi/L	ARS-006/EPA 901.1	11/24/08 16:48	JLA	N/A
CS-134	-0.404	2.513	4.250	2.125	U	pCi/L	ARS-006/EPA 901.1	11/24/08 16:48	JLA	N/A
CS-137	-0.024	1.036	3.510	1.755	U	pCi/L	ARS-006/EPA 901.1	11/24/08 16:48	JLA	N/A
BA-140	0.543	4.623	15.600	7.800	U	pCi/L	ARS-006/EPA 901.1	11/24/08 16:48	JLA	N/A
LA-140	1.020	1.347	4.560	2.280	U	pCi/L	ARS-006/EPA 901.1	11/24/08 16:48	JLA	N/A
SR-90	1.197	0.186	0.439	0.207	U	pCi/L	ARS-032/Eichrom SRW-01	12/11/08 16:58	BJS	57.97%
H-3	2224.035	258.733	148.503	73.073		pCi/L	ARS-054/EPA 906.0	12/6/08 13:06	BJS	N/A
NI-63	1.3287	5.5359	9.3853	4.6176	U	pCi/L	ARS-022	12/4/08 10:57	BJS	N/A

NOTES:

Lindsay Rausch
Project Manager Review

LELAP Certificate# 30658 NELAP Certificate # E87558

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-08-02366
Client Sample ID: MW-67-173-(006)
Sample Collection Date: 11/03/08 14:37
Sample Matrix: Aqueous

Request or PO Number: N/A
ARS Sample ID: ARS1-08-02366-002
Date Received: 11/19/2008
Report Date: 12/15/08 13:39

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
MN-54	0.553	1.240	4.170	2.085	U	pCi/L	ARS-006/EPA 901.1	11/24/08 17:10	JLA	N/A
FE-59	2.932	2.330	7.740	3.870	U	pCi/L	ARS-006/EPA 901.1	11/24/08 17:10	JLA	N/A
CO-58	1.296	0.948	3.140	1.570	U	pCi/L	ARS-006/EPA 901.1	11/24/08 17:10	JLA	N/A
CO-60	0.219	1.386	4.750	2.375	U	pCi/L	ARS-006/EPA 901.1	11/24/08 17:10	JLA	N/A
ZN-65	-3.501	3.067	10.200	5.100	U	pCi/L	ARS-006/EPA 901.1	11/24/08 17:10	JLA	N/A
NB-95	-0.719	1.319	4.420	2.210	U	pCi/L	ARS-006/EPA 901.1	11/24/08 17:10	JLA	N/A
ZR-95	-0.949	2.161	7.270	3.635	U	pCi/L	ARS-006/EPA 901.1	11/24/08 17:10	JLA	N/A
I-131*	42.372	2.428	3.570	1.785		pCi/L	ARS-006/EPA 901.1	11/24/08 17:10	JLA	N/A
CS-134	1.385	1.375	4.580	2.290	U	pCi/L	ARS-006/EPA 901.1	11/24/08 17:10	JLA	N/A
CS-137	-0.071	0.972	3.320	1.660	U	pCi/L	ARS-006/EPA 901.1	11/24/08 17:10	JLA	N/A
BA-140*	54.605	2.985	16.900	8.450		pCi/L	ARS-006/EPA 901.1	11/24/08 17:10	JLA	N/A
LA-140	0.612	1.324	4.540	2.270	U	pCi/L	ARS-006/EPA 901.1	11/24/08 17:10	JLA	N/A
SR-90	0.246	0.087	0.266	0.125	U	pCi/L	ARS-032/Eichrom SRW-01	12/11/08 16:58	BJS	100.00%
H-3	786.313	129.201	148.458	73.051		pCi/L	ARS-054/EPA 906.0	12/6/08 17:14	BJS	N/A
NI-63	-3.2112	4.9405	8.4401	4.1526	U	pCi/L	ARS-022	12/4/08 15:08	BJS	N/A

NOTES:

Project Manager Review

LELAP Certificate# 30658 NELAP Certificate # E87558

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-08-02366
Client Sample ID: MW-67-219-(006)
Sample Collection Date: 11/03/08 11:31
Sample Matrix: Aqueous

Request or PO Number: N/A
ARS Sample ID: ARS1-08-02366-003
Date Received: 11/19/2008
Report Date: 12/15/08 13:39

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
MN-54	-0.074	1.272	4.340	2.170	U	pCi/L	ARS-006/EPA 901.1	11/25/08 15:29	JLA	N/A
FE-59	1.290	2.205	7.500	3.750	U	pCi/L	ARS-006/EPA 901.1	11/25/08 15:29	JLA	N/A
CO-58	-0.679	1.137	3.850	1.925	U	pCi/L	ARS-006/EPA 901.1	11/25/08 15:29	JLA	N/A
CO-60	0.235	1.326	4.590	2.295	U	pCi/L	ARS-006/EPA 901.1	11/25/08 15:29	JLA	N/A
ZN-65	-0.180	3.600	15.400	7.700	U	pCi/L	ARS-006/EPA 901.1	11/25/08 15:29	JLA	N/A
NB-95	1.120	1.173	3.930	1.965	U	pCi/L	ARS-006/EPA 901.1	11/25/08 15:29	JLA	N/A
ZR-95	1.496	2.142	7.280	3.640	U	pCi/L	ARS-006/EPA 901.1	11/25/08 15:29	JLA	N/A
I-131	0.085	1.103	3.730	1.865	U	pCi/L	ARS-006/EPA 901.1	11/25/08 15:29	JLA	N/A
CS-134	1.223	1.340	4.500	2.250	U	pCi/L	ARS-006/EPA 901.1	11/25/08 15:29	JLA	N/A
CS-137	0.541	1.329	4.500	2.250	U	pCi/L	ARS-006/EPA 901.1	11/25/08 15:29	JLA	N/A
BA-140	-7.343	9.819	18.200	9.100	U	pCi/L	ARS-006/EPA 901.1	11/25/08 15:29	JLA	N/A
LA-140	1.318	1.655	5.630	2.815	U	pCi/L	ARS-006/EPA 901.1	11/25/08 15:29	JLA	N/A
SR-90	0.072	0.078	0.263	0.124	U	pCi/L	ARS-032/Elchrom SRW-01	12/11/08 16:58	BJS	91.10%
H-3	1159.667	160.223	149.265	73.448		pCi/L	ARS-054/EPA 906.0	12/6/08 21:22	BJS	N/A
NI-63	5.9061	4.8053	7.6725	3.7749	U	pCi/L	ARS-022	12/4/08 19:20	BJS	N/A

NOTES:

Lindsay Rousel
Project Manager Review

LELAP Certificate# 30658 NELAP Certificate # E87558

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-08-02366
Client Sample ID: MW-67-276-(006)
Sample Collection Date: 11/03/08 11:39
Sample Matrix: Aqueous

Request or PO Number: N/A
ARS Sample ID: ARS1-08-02366-004
Date Received: 11/19/2008
Report Date: 12/15/08 13:39

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
MN-54	-0.189	1.120	3.740	1.870	U	pCi/L	ARS-006/EPA 901.1	11/25/08 15:42	JLA	N/A
FE-59	-1.428	2.050	6.910	3.455	U	pCi/L	ARS-006/EPA 901.1	11/25/08 15:42	JLA	N/A
CO-58	-0.116	1.022	3.380	1.690	U	pCi/L	ARS-006/EPA 901.1	11/25/08 15:42	JLA	N/A
CO-60	0.471	1.138	3.950	1.975	U	pCi/L	ARS-006/EPA 901.1	11/25/08 15:42	JLA	N/A
ZN-65	-2.153	2.517	8.440	4.220	U	pCi/L	ARS-006/EPA 901.1	11/25/08 15:42	JLA	N/A
NB-95	0.457	1.045	3.530	1.765	U	pCi/L	ARS-006/EPA 901.1	11/25/08 15:42	JLA	N/A
ZR-95	-4.731	4.947	6.780	3.390	U	pCi/L	ARS-006/EPA 901.1	11/25/08 15:42	JLA	N/A
I-131	0.633	0.921	3.080	1.540	U	pCi/L	ARS-006/EPA 901.1	11/25/08 15:42	JLA	N/A
CS-134	-0.931	28.852	3.620	1.810	U	pCi/L	ARS-006/EPA 901.1	11/25/08 15:42	JLA	N/A
CS-137	-0.741	11.594	3.860	1.930	U	pCi/L	ARS-006/EPA 901.1	11/25/08 15:42	JLA	N/A
BA-140	1.158	3.131	10.700	5.350	U	pCi/L	ARS-006/EPA 901.1	11/25/08 15:42	JLA	N/A
LA-140	0.741	1.231	4.250	2.125	U	pCi/L	ARS-006/EPA 901.1	11/25/08 15:42	JLA	N/A
SR-90	0.585	0.117	0.311	0.147		pCi/L	ARS-032/Eichrom SRW-01	12/11/08 16:58	BJS	91.10%
H-3	1012.044	147.499	148.834	73.237		pCi/L	ARS-054/EPA 906.0	12/7/08 1:30	BJS	N/A
NI-63	2.7922	4.8397	8.0917	3.9812	U	pCi/L	ARS-022	12/4/08 23:32	BJS	N/A

NOTES:

Project Manager Review

LELAP Certificate# 30658 NELAP Certificate # E87558

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-08-02366
Client Sample ID: MW-67-323-(006)
Sample Collection Date: 11/03/08 11:44
Sample Matrix: Aqueous

Request or PO Number: N/A
ARS Sample ID: ARS1-08-02366-005
Date Received: 11/19/2008
Report Date: 12/15/08 13:39

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
MN-54	-0.010	1.152	3.910	1.955	U	pCi/L	ARS-006/EPA 901.1	11/25/08 15:51	JLA	N/A
FE-59	-1.703	2.094	7.050	3.525	U	pCi/L	ARS-006/EPA 901.1	11/25/08 15:51	JLA	N/A
CO-58	0.099	1.135	3.920	1.960	U	pCi/L	ARS-006/EPA 901.1	11/25/08 15:51	JLA	N/A
CO-60	-0.154	1.104	3.830	1.915	U	pCi/L	ARS-006/EPA 901.1	11/25/08 15:51	JLA	N/A
ZN-65	-3.362	3.286	11.000	5.500	U	pCi/L	ARS-006/EPA 901.1	11/25/08 15:51	JLA	N/A
NB-95	0.740	1.135	3.820	1.910	U	pCi/L	ARS-006/EPA 901.1	11/25/08 15:51	JLA	N/A
ZR-95	1.327	1.919	6.460	3.230	U	pCi/L	ARS-006/EPA 901.1	11/25/08 15:51	JLA	N/A
I-131*	14.588	1.677	3.320	1.660		pCi/L	ARS-006/EPA 901.1	11/25/08 15:51	JLA	N/A
CS-134	2.088	1.276	4.200	2.100	U	pCi/L	ARS-006/EPA 901.1	11/25/08 15:51	JLA	N/A
CS-137	0.566	1.195	3.640	1.820	U	pCi/L	ARS-006/EPA 901.1	11/25/08 15:51	JLA	N/A
BA-140	-6.840	14.135	17.800	8.900	U	pCi/L	ARS-006/EPA 901.1	11/25/08 15:51	JLA	N/A
LA-140	0.356	1.563	5.400	2.700	U	pCi/L	ARS-006/EPA 901.1	11/25/08 15:51	JLA	N/A
SR-90	0.172	0.080	0.254	0.120	U	pCi/L	ARS-032/Eichrom SRW-01	12/11/08 16:58	BJS	100.00 %
H-3	497.402	109.269	149.386	73.508		pCi/L	ARS-054/EPA 906.0	12/7/08 5:37	BJS	N/A
NI-63	-0.2093	4.6176	7.8835	3.8788	U	pCi/L	ARS-022	12/5/08 3:45	BJS	N/A

NOTES:

Sunday Rousel
oject Manager Review

LELAP Certificate# 30658 NELAP Certificate # E87558

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-08-02366
Client Sample ID: MW-67-340-(006)
Sample Collection Date: 11/03/08 11:54
Sample Matrix: Aqueous

Request or PO Number: N/A
ARS Sample ID: ARS1-08-02366-006
Date Received: 11/19/2008
Report Date: 12/15/08 13:39

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
MN-54	-0.332	1.237	4.210	2.105	U	pCi/L	ARS-006/EPA 901.1	11/26/08 15:05	JLA	N/A
FE-59	0.006	1.948	6.780	3.390	U	pCi/L	ARS-006/EPA 901.1	11/26/08 15:05	JLA	N/A
CO-58	0.671	1.111	3.760	1.880	U	pCi/L	ARS-006/EPA 901.1	11/26/08 15:05	JLA	N/A
CO-60	-0.239	1.287	4.460	2.230	U	pCi/L	ARS-006/EPA 901.1	11/26/08 15:05	JLA	N/A
ZN-65	-1.434	3.797	10.100	5.050	U	pCi/L	ARS-006/EPA 901.1	11/26/08 15:05	JLA	N/A
NB-95	0.081	1.288	4.390	2.195	U	pCi/L	ARS-006/EPA 901.1	11/26/08 15:05	JLA	N/A
ZR-95	-2.564	4.362	7.500	3.750	U	pCi/L	ARS-006/EPA 901.1	11/26/08 15:05	JLA	N/A
I-131	-1.020	1.064	3.550	1.775	U	pCi/L	ARS-006/EPA 901.1	11/26/08 15:05	JLA	N/A
CS-134	3.308	0.975	4.960	2.480	U	pCi/L	ARS-006/EPA 901.1	11/26/08 15:05	JLA	N/A
CS-137	0.359	1.233	4.200	2.100	U	pCi/L	ARS-006/EPA 901.1	11/26/08 15:05	JLA	N/A
BA-140	0.285	4.828	16.600	8.300	U	pCi/L	ARS-006/EPA 901.1	11/26/08 15:05	JLA	N/A
LA-140	0.043	1.598	5.600	2.800	U	pCi/L	ARS-006/EPA 901.1	11/26/08 15:05	JLA	N/A
SR-90	0.049	0.114	0.389	0.184	U	pCi/L	ARS-032/Eichrom SRW-01	12/11/08 16:58	BJS	74.54%
H-3	598.758	115.515	148.497	73.071		pCi/L	ARS-054/EPA 906.0	12/7/08 9:45	BJS	N/A
NI-63	-2.4962	4.8498	8.2978	4.0826	U	pCi/L	ARS-022	12/5/08 7:56	BJS	N/A

NOTES:

Lindsay Ramsel
Project Manager Review

LELAP Certificate# 30658 NELAP Certificate # E87558

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-08-02366
Client Sample ID: MW-67-39-(006)
Sample Collection Date: 11/03/08 14:11
Sample Matrix: Aqueous

Request or PO Number: N/A
ARS Sample ID: ARS1-08-02366-007
Date Received: 11/19/2008
Report Date: 12/15/08 13:39

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
MN-54	-1.779	3.536	4.090	2.045	U	pCi/L	ARS-006/EPA 901.1	11/26/08 15:34	JLA	N/A
FE-59	1.199	1.853	6.290	3.145	U	pCi/L	ARS-006/EPA 901.1	11/26/08 15:34	JLA	N/A
CO-58	-0.244	1.846	3.550	1.775	U	pCi/L	ARS-006/EPA 901.1	11/26/08 15:34	JLA	N/A
CO-60	1.698	0.932	3.040	1.520	U	pCi/L	ARS-006/EPA 901.1	11/26/08 15:34	JLA	N/A
ZN-65	-1.092	2.872	9.730	4.865	U	pCi/L	ARS-006/EPA 901.1	11/26/08 15:34	JLA	N/A
NB-95	0.934	1.167	3.740	1.870	U	pCi/L	ARS-006/EPA 901.1	11/26/08 15:34	JLA	N/A
ZR-95	0.407	1.730	5.900	2.950	U	pCi/L	ARS-006/EPA 901.1	11/26/08 15:34	JLA	N/A
I-131*	15.031	1.643	3.710	1.855		pCi/L	ARS-006/EPA 901.1	11/26/08 15:34	JLA	N/A
CS-134	1.968	1.236	4.070	2.035	U	pCi/L	ARS-006/EPA 901.1	11/26/08 15:34	JLA	N/A
CS-137	-0.074	1.261	3.900	1.950	U	pCi/L	ARS-006/EPA 901.1	11/26/08 15:34	JLA	N/A
BA-140	2.031	4.850	16.500	8.250	U	pCi/L	ARS-006/EPA 901.1	11/26/08 15:34	JLA	N/A
LA-140	0.070	1.420	4.960	2.480	U	pCi/L	ARS-006/EPA 901.1	11/26/08 15:34	JLA	N/A
SR-90	13.673	1.054	0.262	0.124		pCi/L	ARS-032/Eichrom SRW-01	12/11/08 16:58	BJS	99.38 %
H-3	2410.557	277.151	149.590	73.609		pCi/L	ARS-054/EPA 906.0	12/7/08 13:52	BJS	N/A
NI-63	4.2232	4.9198	8.09	3.8903	U	pCi/L	ARS-022	12/5/08 12:07	BJS	N/A

NOTES:

Project Manager Review

LELAP Certificate# 30658 NELAP Certificate # E87558

ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

QC Results Report

Sample Delivery Group: ARS1-08-02366
Date Received: 11/19/08

Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B08-03097	LCS	CO-60	25337.00	505.32	242.50	25394.58		pCi/g	EPA 901.1	11/24/08	JLA	100	75%-125%
ARS1-B08-03097	LCS	CS-137	15314.00	359.16	168.10	15365.62		pCi/g	EPA 901.1	11/24/08	JLA	100	75%-125%
ARS1-B08-03097	LCS	AM-241	34148.00	11253.80	297.30	34896.70		pCi/g	EPA 901.1	11/24/08	JLA	98	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date	Analysis Technician
ARS1-B08-03097	MBL	CO-60	0.001	0.001	0.037	NA	U	pCi/g	EPA 901.1	11/24/08	JLA
ARS1-B08-03097	MBL	CS-137	-0.004	0.006	0.051	NA	U	pCi/g	EPA 901.1	11/24/08	JLA
ARS1-B08-03097	MBL	AM-241	0.000	0.002	0.064	NA	U	pCi/g	EPA 901.1	11/24/08	JLA

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date	Analysis Technician	RER	RER AcceptanceRange
ARS1-B08-03097	LCSD	CO-60	25337.00	505.32	25220.00	496.90		pCi/g	EPA 901.1	11/24/08	JLA	0.12	< 1
ARS1-B08-03097	LCSD	CS-137	15314.00	359.16	15106.00	336.68		pCi/g	EPA 901.1	11/24/08	JLA	0.30	< 1
ARS1-B08-03097	LCSD	AM-241	34148.00	11253.80	34495.00	1264.40		pCi/g	EPA 901.1	11/24/08	JLA	0.03	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date	Analysis Technician	DER	DER AcceptanceRange
ARS1-B08-03097	LCSD	CO-60	25337.00	505.32	25220.00	496.90		pCi/g	EPA 901.1	11/24/08	JLA	0.33	< 3
ARS1-B08-03097	LCSD	CS-137	15314.00	359.16	15106.00	336.68		pCi/g	EPA 901.1	11/24/08	JLA	0.85	< 3
ARS1-B08-03097	LCSD	AM-241	34148.00	11253.80	34495.00	1264.40		pCi/g	EPA 901.1	11/24/08	JLA	0.06	< 3

Lindsay Rausel
Quality Assurance Review

LELAP Certificate# 30658 NELAP Certificate # E87558

ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

QC Results Report

Sample Delivery Group: ARS1-08-02366
Date Received: 11/19/08

Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
1-B08-03110	LCS	CO-60	25239.00	497.17	208.80	25394.58		pCi/g	EPA 901.1	11/25/08	JLA	99	75%-125%
S1-B08-03110	LCS	CS-137	15200.00	344.53	149.70	15365.62		pCi/g	EPA 901.1	11/25/08	JLA	99	75%-125%
ARS1-B08-03110	LCS	AM-241	34130.00	1250.10	254.20	34896.70		pCi/g	EPA 901.1	11/25/08	JLA	98	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date	Analysis Technician
ARS1-B08-03110	MBL	CO-60	-0.003	0.022	0.005	NA	U	pCi/g	EPA 901.1	11/25/08	JLA
ARS1-B08-03110	MBL	CS-137	-0.001	0.002	0.004	NA	U	pCi/g	EPA 901.1	11/25/08	JLA
ARS1-B08-03110	MBL	AM-241	-0.003	0.006	0.001	NA	U	pCi/g	EPA 901.1	11/25/08	JLA

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date	Analysis Technician	RER	RER Acceptance Range
ARS1-B08-03110	LCSD	CO-60	25239.00	497.17	24161.00	522.38		pCi/g	EPA 901.1	11/25/08	JLA	1.06	< 1
ARS1-B08-03110	LCSD	CS-137	15200.00	344.53	14974.00	357.89		pCi/g	EPA 901.1	11/25/08	JLA	0.32	< 1
S1-B08-03110	LCSD	AM-241	34130.00	1250.10	34601.00	1255.70		pCi/g	EPA 901.1	11/25/08	JLA	0.19	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date	Analysis Technician	DER	DER Acceptance Range
ARS1-B08-03110	LCSD	CO-60	25239.00	497.17	24161.00	522.38		pCi/g	EPA 901.1	11/25/08	JLA	2.99	< 3
ARS1-B08-03110	LCSD	CS-137	15200.00	344.53	14974.00	357.89		pCi/g	EPA 901.1	11/25/08	JLA	0.91	< 3
ARS1-B08-03110	LCSD	AM-241	34130.00	1250.10	34601.00	1255.70		pCi/g	EPA 901.1	11/25/08	JLA	0.53	< 3

Lindsay Rausel
Quality Assurance Review

LELAP Certificate# 30658 NELAP Certificate # E87558

ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

QC Results Report

Sample Delivery Group: ARS1-08-02366
Date Received: 11/19/08

Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B08-03122	LCS	CO-60	25003.00	500.08	186.20	25394.58		pCi/g	EPA 901.1	11/26/08	JLA	98	75%-125%
ARS1-B08-03122	LCS	CS-137	15381.00	366.58	155.90	15365.62		pCi/g	EPA 901.1	11/26/08	JLA	100	75%-125%
ARS1-B08-03122	LCS	AM-241	33437.00	1213.40	259.10	34896.70		pCi/g	EPA 901.1	11/26/08	JLA	96	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date	Analysis Technician
ARS1-B08-03122	MBL	CO-60	-0.001	0.452	0.004	NA	U	pCi/g	EPA 901.1	11/26/08	JLA
ARS1-B08-03122	MBL	CS-137	-0.001	0.013	0.004	NA	U	pCi/g	EPA 901.1	11/26/08	JLA
ARS1-B08-03122	MBL	AM-241	-0.002	0.010	0.004	NA	U	pCi/g	EPA 901.1	11/26/08	JLA

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date	Analysis Technician	RER	RER AcceptanceRange
ARS1-B08-03122	LCSD	CO-60	25003.00	500.08	24310.00	538.73		pCi/g	EPA 901.1	11/26/08	JLA	0.67	< 1
ARS1-B08-03122	LCSD	CS-137	15381.00	366.58	14833.00	334.75		pCi/g	EPA 901.1	11/26/08	JLA	0.78	< 1
ARS1-B08-03122	LCSD	AM-241	33437.00	1213.40	34621.00	1270.50		pCi/g	EPA 901.1	11/26/08	JLA	0.48	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date	Analysis Technician	DER	DER AcceptanceRange
ARS1-B08-03122	LCSD	CO-60	25003.00	500.08	24310.00	538.73		pCi/g	EPA 901.1	11/26/08	JLA	1.89	< 3
ARS1-B08-03122	LCSD	CS-137	15381.00	366.58	14833.00	334.75		pCi/g	EPA 901.1	11/26/08	JLA	2.21	< 3
ARS1-B08-03122	LCSD	AM-241	33437.00	1213.40	34621.00	1270.50		pCi/g	EPA 901.1	11/26/08	JLA	1.35	< 3

Lindsay Rousel
Quality Assurance Review

LELAP Certificate# 30658 NELAP Certificate # E87558

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

QC Results Report

Sample Delivery Group: ARS1-08-02366
Date Received: 11/19/2008

Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
S1-B08-03154	LCS	H3	1194.630	162.915	148.398	1250.450		pCi/L	ARS-054/EPA 906.0	12/5/08 20:32	BS	96	75% -125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B08-03154	MBL	H3	171.099	90.953	146.730	NA		pCi/L	ARS-054/EPA 906.0	12/6/08 4:50	BS

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B08-03154	LCSD	H3	1194.630	162.915	1153.645	158.440		pCi/L	ARS-054/EPA 906.0	12/6/08 0:41	BS	0.13	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B08-03154	LCSD	H3	1194.630	162.915	1153.645	158.440		pCi/L	ARS-054/EPA 906.0	12/6/08 0:41	BS	0.36	< 3

Project Manager Review

LELAP Certificate# 01949 NELAP Certificate # E87558

AMERICAN RADIATION SERVICES, INC.

2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

QC Results Report

Sample Delivery Group: ARS1-08-02366
Date Received: 11/19/08

Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B08-03155	LCS	Sr-90	19.93	1.5	0.297	20.68		pCi/L	ARS-032/EPA 905.0	12/11/08 16:58	BJS	96	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B08-03155	MBL	Sr-90	0.276	0.097	0.3	NA	U	pCi/L	ARS-032/EPA 905.0	12/11/08 16:58	BJS

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B08-03155	LCSD	Sr-90	19.93	1.5	17.73	1.4		pCi/L	ARS-032/EPA 905.0	12/11/08 16:58	BJS	0.76	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B08-03155	LCSD	Sr-90	19.93	1.5	17.7	1.4		pCi/L	ARS-032/EPA 905.0	12/11/08 16:58	BJS	2.15	< 3

Project Manager Review

LELAP Certificate# 30658 NELAP Certificate # E87558

ARS INTERNATIONAL

2609 North River Road • Port Allen, Louisiana 70767
1 (800) 401-4277 • Fax (225) 381-2996

Notes:

Comments:

1.0) Soil and Sludge analysis are reported on a wet basis or an as received basis unless otherwise indicated.
2.0) Data in this report are within the limits of uncertainty specified in the reference method unless otherwise 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. Modified analyses are indicated by the subsequent addition of "m" to the procedure number (i.e. 900.0M).
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**).
9.0) ARS makes every attempt to match sample density to calibrated density; however, in some cases, it is not practical or possible to do so and data results may be affected.

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
6.0) **ARS-040**; An LCSD is not reported with this process. The criteria for the LCS/LCSD analysis for reproducibility have not been established for Low Level Tritium analysis. A prepared standard for Low Level Tritium has not been developed. As a result, the standard we use is based on the dilution of a verified conventional tritium standard. The volume required for Low Level Tritium analysis, in addition to the lack of an available Low Level Tritium standard, introduce variability into the LCS/LCSD analysis that does not represent the actual sample analysis. The preferred measure for reproducibility is to run a duplicate analysis of a sample.

Definitions:

1.0)	**ND**	Not detected above the detection limit (non-detect).
2.0)	**MDC**	(Minimum Detectable Concentration) minimum concentration of the analyte that ARS can detect utilizing the specific analysis
3.0)	**MBL**	Method Blank
4.0)	**DO**	Duplicate Original
5.0)	**DUP**	Method Duplicate
6.0)	**MS/MSD**	Matrix Spike/Matrix Spike Duplicate
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
12.0)	*****	Reported as a calculated value
13.0)	******	False Positive due to interference from Bi-214
14.0)	**U**	Activity is below the MDC
15.0)	**LCS/LCSD**	Laboratory Control Standard/Laboratory Control Standard Duplicate

LELAP Cert# 30658 ***NELAP Cert# E87558***

C FORM 303 U.S. NUCLEAR REGULATORY COMMISSION
004)

REQUEST FOR ANALYSIS AND CHAIN OF CUSTODY

LABORATORY:

LABORATORY USE ONLY
CONTROL NUMBER

PLE LOCATION (LICENSEE)
INDIAN POINT ENERGY CENTER

LICENSEE NUMBER	DOCKET NO.

SAMPLE SUBMITTED

# TOTAL	TYPE	VOLUME	WEIGHT
1	GROUND WATER	2000 ML	~ 2 Kg

DATE SAMPLES SUBMITTED:

PRIORITY
☐ ROUTINE
☐ URGENT

SAMPLE COLLECTION INTERVAL

	MONTH	DAY	YEAR	TIME
START				
STOP				

PECTOR RESPONSIBLE: Jim Noggle (USNRC)
TELEPHONE NUMBER: (610) 337-5063

ANALYSIS TO BE PERFORMED	LIST DESIRED LLD (Optional)	OTHER TYPE OF ANALYSIS (Specify)	LIST DESIRED LLD (Optional)
☐ GROSS ALPHA (GA)		☒ STRONTIUM-90 (Sr90)	
☐ GROSS BETA (GB)		☒ NICKEL-63 (Ni63)	
☒ GAMMA SPEC (GS)		☐	
☒ TRITIUM (H3)		☐	
☐ CARBON-14 (C14)		☐	
☐ IODINE-125 (I125)		☐	

RELENQUISHED BY	RECEIVED BY	DATE	TIME	REASON FOR CHANGE OF CUSTODY
		11/3/08	1455	VERIFY CORRECT SAMPLES
		11/3/08	1455	RECEIVED CORRECT SAMPLES
	SECURED STORAGE	11/3/08	1500	SECURED SAMPLE STORAGE
SECURED STORAGE		11-12-08	1420	SHIPMENT
Fed EX		11-14-08	9:33	VERIFY SAMPLES

FEE RECOVERABLE ☐ NO ☒ YES TAC NUMBER

MARKS:

NOTE: SAMPLES WILL BE DISCARDED AFTER ANALYSIS UNLESS REASON ARE NOTED IN REMARKS ABOVE.

NRC FORM 303 (4-2004) U.S. NUCLEAR REGULATORY COMMISSION

LABORATORY USE ONLY
CONTROL NUMBER

SAMPLE RECORD - Continued

LABORATORY: _____

SAMPLE NUMBER	SAMPLE NAME AND DESCRIPTION	COLLECTION DATE/TIME	REMARKS, PRESERVATIVE ANALYSIS REQUESTED, ETC.
MW-67-105-(006)	Ground Water Split Sample of MW-67-105-(006)	11/03/08 1421	Sample is unfiltered & unpreserved. Analyze for Gamma Spec, H3, Sr90, Ni63
MW-67-173-(006)	Ground Water Split Sample of MW-67-173-(006)	11/03/08 1437	Sample is unfiltered & unpreserved. Analyze for Gamma Spec, H3, Sr90, Ni63
MW-67-219-(006)	Ground Water Split Sample of MW-67-219-(006)	11/03/08 1131	Sample is unfiltered & unpreserved. Analyze for Gamma Spec, H3, Sr90, Ni63
MW-67-276-(006)	Ground Water Split Sample of MW-67-276-(006)	11/03/08 1139	Sample is unfiltered & unpreserved. Analyze for Gamma Spec, H3, Sr90, Ni63
MW-67-323-(006)	Ground Water Split Sample of MW-67-323-(006)	11/03/08 1144	Sample is unfiltered & unpreserved. Analyze for Gamma Spec, H3, Sr90, Ni63
MW-67-340-(006)	Ground Water Split Sample of MW-67-340-(006)	11/03/08 1154	Sample is unfiltered & unpreserved. Analyze for Gamma Spec, H3, Sr90, Ni63
MW-67-39-(006)	Ground Water Split Sample of MW-67-39-(006)	11/03/08 1411	Sample is unfiltered & unpreserved. Analyze for Gamma Spec, H3, Sr90, Ni63