LMS/HAL/S14752

Monitoring Assessment Report for the Decommissioned Hallam Nuclear Power Facility

December 2016

U.S. DEPARTMENT OF ENERGY | Legacy Management

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Abbreviations

amsl	above mean sea level
DOE	U.S. Department of Energy
ft	feet
LM	Office of Legacy Management
NDH	Nebraska Department of Health
pCi/L	picocuries per liter
site	Hallam, Nebraska, Decommissioned Reactor Site
USC	*United States Code*

Executive Summary

The Hallam, Nebraska, Decommissioned Reactor Site (site) was a nuclear power facility operated from 1961 through 1964. It was decommissioned and entombed immediately adjacent to the Sheldon Station (a coal-fired power plant currently in operation). The U.S. Department of Energy Office of Legacy Management is responsible for the radioactive material remaining at the site. As the result of radioactive decay, the entombed radioactive materials will decay to nonhazardous activities around year 2070 at which time the decommissioned reactor can be released for unrestricted use.

The purpose of this Monitoring Assessment Report is two-fold. First to present groundwater monitoring data from 2007 to 2016 and, second to compare those data with previously reported data from a 2006 assessment, and based on the comparison determine if the groundwater sampling frequency can be reduced without adversely impacting the protectiveness of human health and the environment at the site.

Groundwater monitoring data from 2007 to 2016 were collected from the site, the results of which are reported herein. These results complement the groundwater monitoring results from 1998 to 2006 which are reported in *Summary of Ground Water Monitoring Results and Recommendation to Discontinue Monitoring at the Decommissioned Hallam Nuclear Power facility, Hallam, Nebraska* (DOE 2006a). The entire body of data demonstrates that there have been no negative impacts to the shallow perched groundwater from the radioactive materials entombed at the site 46 years ago.

The potential for contaminant migration at the site was previously evaluated (DOE 2006a) and not revisited for this report. The potential is low due to the following:

- The relative impermeability of glacial till and other sediments
- Heterogeneities in the system
- Favorable ion-exchange capacity of the soils and sediment in the area
- The design integrity of the isolation structure

Given that there have been no negative impacts to the perched groundwater, coupled with the low probability for the potential for contaminant migration at the site, it is concluded that the groundwater sampling frequency can be reduced without adversely impacting the protectiveness of human health and the environment at the site.

It is therefore proposed that the sampling frequency be decreased. The next sampling would occur in 2021 and then proceed as outlined below.

- Once every 5 years for the next 20 years (2021 through 2041)
- Once every 10 years beyond 2041 to free release (estimated to be 2070)

It is further proposed that a total uranium analysis be included in future sampling events so that a comparison with the gross alpha can be made and the relationship between the two analyses demonstrated (i.e., similar to what was done back in 2006) (DOE 2006b).

Implementation of the proposal will require the *Long-Term Surveillance Plan for the Decommissioned Hallam Nuclear Power Facility* (2008) be revised to reflect the changes and an email notification sent to the two key stakeholder representatives; the site owner, Sheldon Power Plant, and the Nebraska Health and Human Services.

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1.0 Introduction

The Hallam, Nebraska, Decommissioned Reactor Site (site) was a nuclear power facility operated from 1961 through 1964. It was decommissioned and entombed immediately adjacent to the Sheldon Station (a coal-fired power plant currently in operation). The U.S. Department of Energy (DOE) Office of Legacy Management (LM) is responsible for the radioactive material remaining at the site, under authority of the Atomic Energy Act of 1954 (Title 42 *United States Code* Section 2011 [42 USC 2011]). Decay and dose calculations of the onsite radioactive materials indicate that the decommissioned reactor can be released for unrestricted use in the year 2070 (AEC 1971).

Groundwater beneath the site complies with U.S. Environmental Protection Agency's standards in the Clean Water Act (33 USC 1251, et seq.). LM monitors groundwater at the site as a best management practice in consultation with the Nebraska Department of Health. The Controlling document for the monitoring activity is the *Long-Term Surveillance Plan for the Decommissioned Hallam Nuclear Power Facility, Hallam, Nebraska* (DOE 2008).

After entombment, a surveillance and monitoring program was initiated in 1970 by the Nebraska Department of Health (NDH) and was funded by the Atomic Energy Commission, which included analyzing samples from deep production wells (groundwater from the regional aquifer at depths greater than 180 feet) at the Sheldon Power Station. NDH was concerned in 1990 about the possibility of shallow groundwater coming in contact with the buried radiological materials along the buried walls of the reactor. Subsequently DOE and NDH agreed to further characterize hydrologic conditions and establish a monitoring program in the shallow perched groundwater zones. The current monitoring program focuses on the shallow perched groundwater.

In 2006, DOE issued a monitoring assessment report (DOE 2006a). The report concluded that monitoring of groundwater had shown no impact to the shallow perched groundwater 36 years after entombment, and that based on evaluation of the hydrogeologic conditions in the vicinity of the site, there was no compelling evidence that there would be potential for impact to the groundwater in the future. On the basis of these conclusions, DOE in 2006 recommended that groundwater monitoring at the site be discontinued.

The 2006 report presents a good overview of the hydrogeology and migration potential for contaminants at the site. A summary of the migration potential and conclusions from that report are provided below.

Saturated perched zones in contact with the concrete walls of the former reactor building are the most likely pathway for migration of contaminants from the reactor entombment. The travel-time of constituents in the perched groundwater however, would probably be slow and intermittent and the ion-exchange capacity of the surrounding soil would reduce activities several orders of magnitude in less than 10 feet of ground water travel. Migration of contaminants to groundwater in the deeper regional aquifer is very unlikely because it is relatively deep and in most places lies beneath thick deposits of clay and silt that are very low permeability (DOE 2006a).

The 2006 report concluded that the potential for contaminate migration in the subsurface at the site is low due to the following:

- The relative impermeability of glacial till and other sediments
- Heterogeneities in the system

- Favorable ion-exchange capacity of the soils and sediment in the area
- The design integrity of the isolation structure
- Lack of any site-related contamination observed in groundwater

The State of Nebraska (State) responded to DOE's request to discontinue groundwater monitoring at the site in a letter dated February 2, 2007 (NHHS 2007). The State's position was that DOE should continue to provide periodic monitoring of the groundwater until radiation levels within the entombed facility have reached levels that are safe for free release of the facility. The State proposed a sampling reduction from once every year to once every 2 years. DOE agreed to this arrangement with the State in a letter dated March 14, 2007 (DOE 2007). The new sampling frequency was initiated in 2008.

Six additional sampling events have taken place since 2006 (i.e., 2007, 2008, 2010, 2012, 2014, and 2016). This report presents an assessment of the data collected from the additional six sampling events and recommends that, based on the results from the groundwater monitoring program to date, the frequency of sampling be reduced.

2.0 Groundwater Monitoring Results

The current groundwater monitoring program involves the collection of groundwater samples from 17 monitor wells and measurement of groundwater levels in 19 monitor wells (Figure 1) every other year. The two monitoring wells that are not sampled for water quality are wells OBS 6A and OBS 6B, due to slow recovery rates. The 19 monitor wells are completed in the perched aquifer in eight clusters surrounding the facility and are screened at depths of approximately 25 feet (ft) ("A" series), 50 ft ("B" series), and 75 ft ("C" series). Between 2007 and 2016, groundwater samples from 17 monitor wells were tested for gross alpha, gross beta, nickel-63, tritium, and gamma-emitting radionuclides once every 2 years. The list of gamma-emitting radionuclides analyzed by gamma spectrometry is shown in Table 1.

Table 1. Radionuclides Analyzed by Gamma Spectrometry[a]

Actinium-228	Cesium-137	Lead-212	Ruthenium-106
Americium-241	Cobalt-60	Potassium-40	Thorium-234
Antimony-125	Europium-152	Promethium-144	Uranium-235
Cerium-144	Europium-154	Promethium-146	Yttrium-88
Cesium-134	Europium-155		

Note:
[a] This list of radionuclides analyzed by gamma spectrometry differs from the list reported in 2006 (DOE 2006a). In 2004, LM closed the Grand Junction Analytical Laboratory, and subsequent analyses were performed by contract laboratories.

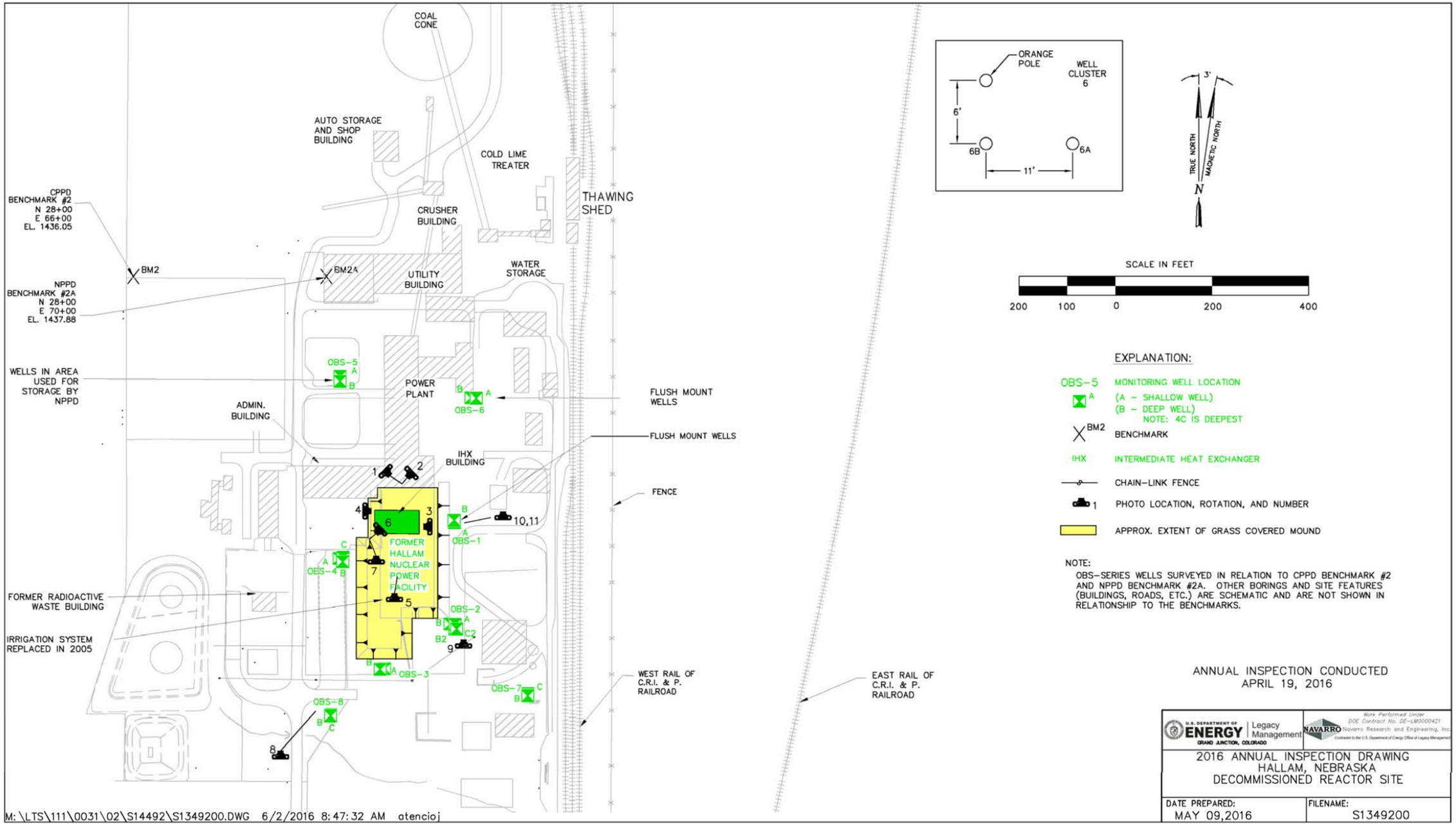

Figure 1. Location of Monitor Wells at the Hallam Site

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Monitoring well results are posted on the LM website at http://www.lm.doe.gov/Hallam/Documents.aspx#dvp, summarized below, and provided in Appendix A.

- From 2007 through 2016, no samples had detectable nickel-63 or tritium.
- From 2007 through 2016, gross alpha and gross beta activities were the only parameters that were detected at statistically significant concentrations. The activities observed between 2007 and 2016 are consistent with values previously reported (DOE 2006a). In 2006 DOE determined that the gross alpha activities were attributed to naturally occurring radionuclides (e.g., uranium and uranium decay chain products) in the groundwater DOE 2006b).

A summary of the results for gross alpha and beta activities from 2007 through 2016 and groundwater levels are provided in Sections 2.1 and 2.2.

2.1 Results for Gross Alpha Activity

Table 2 provides a summary of the results for gross alpha activity in 17 monitor wells from 2007 through 2016. As shown in the table, gross alpha activity was not detected in many of the samples. The table provides the maximum detected value and the the year that the maximum detected value was observed.

Table 2. Summary of Results for Gross Alpha Activity from 2007 Through 2016

Well ID	No. of Samples	No. of Nondetects	Percent Nondetects	Maximum Detected Value (pCi/L)	2-Sigma Uncertainty (pCi/L)	Year of Maximum Detected Value
1A	9	4	44	3.70	1.3	2012
1B	6	1	17	11.6	2.26	2007
2A	6	1	17	12.7	2.55	2007
2B	6	1	17	22.1	4.3	2010
2B2	6	1	17	10.7	2.38	2007
2C2	6	1	17	5.92	1.6	2016
3A	6	1	17	17.5	10.1	2016
3B	7	2	29	12.8	2.85	2007
4A	6	1	17	6.95	2.2	2012
4B	6	1	17	16.9	3.2	2007
4C	6	1	17	20.3	4.0	2010
5A	6	1	17	7.44	1.59	2007
5B	6	0	0	19.8	3.4	2010
7B	6	1	17	7.2	1.59	2007
7C	6	1	17	8.34	1.8	2010
8B	6	1	17	9.23	2.1	2014
8C	6	1	17	7.85	1.78	2007

Abbreviation:
pCi/L = picocuries per liter

A graph of results for gross alpha activities for the shallowest wells (A Series Wells) is provided in Figure 2. It illustrates that gross alpha values detected between 2007 and 2016 are consistent with previous results.

In 2016, an elevated gross alpha activity of 17.5 pCi/L was measured at monitoring well OBS 3A. This slightly exceeds the U.S. Environmental Protection Agency standard for gross alpha-particle activity (excluding radon and uranium) which is 15 pCi/L. It should be noted that the 2-sigma uncertainty for this result was 10.1 pCi/L.

In 2006, DOE demonstrated that the gross alpha activities measured at the site can be attributed to naturally occurring radionuclides (e.g., uranium and uranium decay chain products) in the groundwater. DOE plans to add the analysis of total uranium to the sampling program so that this relationship can be readily demonstrated for each future sampling event.

2.2 Gross Beta Results

Table 3 provides a summary of the results for gross beta activity in 17 monitor wells from 2007 through 2016. As shown in the table, gross alpha activity was not detected in many of the samples. The table provides the maximum detected value and the the year that the maximum detected value was observed.

Table 3. Summary of Results for Gross Beta Activity from 2007 Through 2016

Well ID	No. of Samples	No. of Nondetects	Percent Nondetects	Maximum Detected Value (pCi/L)	2-Sigma Uncertainty (pCi/L)	Year of Maximum Detected Value
1A	11	2	18	5.24	2.4	2016
1B	6	1	17	10.1	2.21	2007
2A	6	1	17	8.31	2.19	2007
2B	6	0	0	15.9	3.0	2014
2B2	6	0	0	12.3	3.2	2007
2C2	6	0	0	7.39	2.1	2012
3A	6	2	33	15.4	4.3	2012
3B	7	2	29	13.0	3.64	2007
4A	6	1	17	14.5	3.1	2016
4B	6	1	17	11.9	2.7	2014
4C	6	1	17	17.1	3.4	2012
5A	6	0	0	6.79	1.8	2010
5B	6	0	0	11.9	2.23	2007
7B	6	0	0	9.61	1.9	2014
7C	6	1	17	7.44	1.53	2007
8B	6	1	17	8.65	1.7	2016
8C	6	0	0	8.50	2.2	2014

Abbreviation:
pCi/L = picocuries per liter

A graph of the results for gross beta activity levels over time for the shallowest wells (Series A) is provided in Figure 3. It illustrates that gross beta values detected between 2007 and 2016 are consistent with previous results.

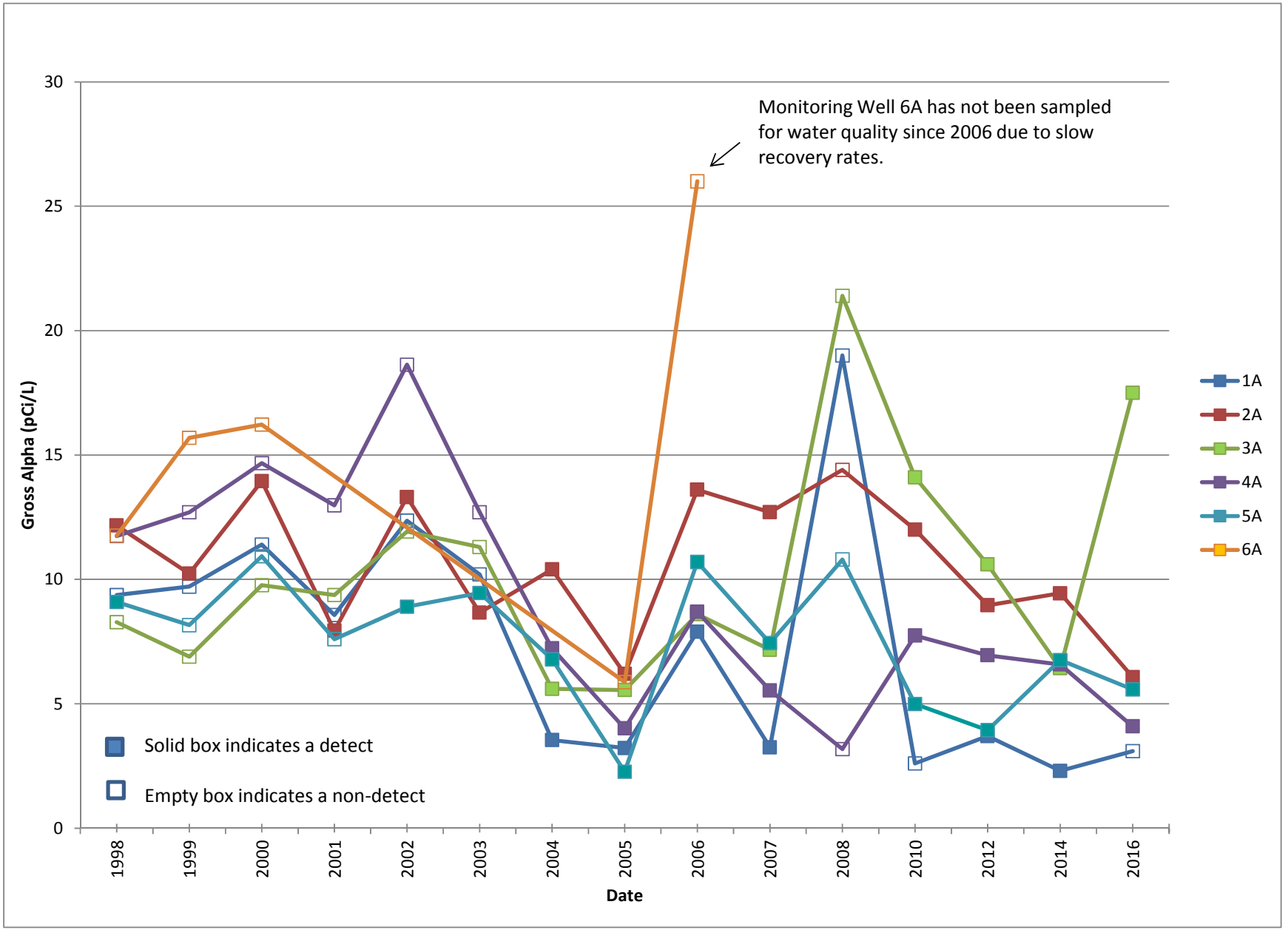

Figure 2. Gross Alpha Activity Levels over Time, 1998–2016

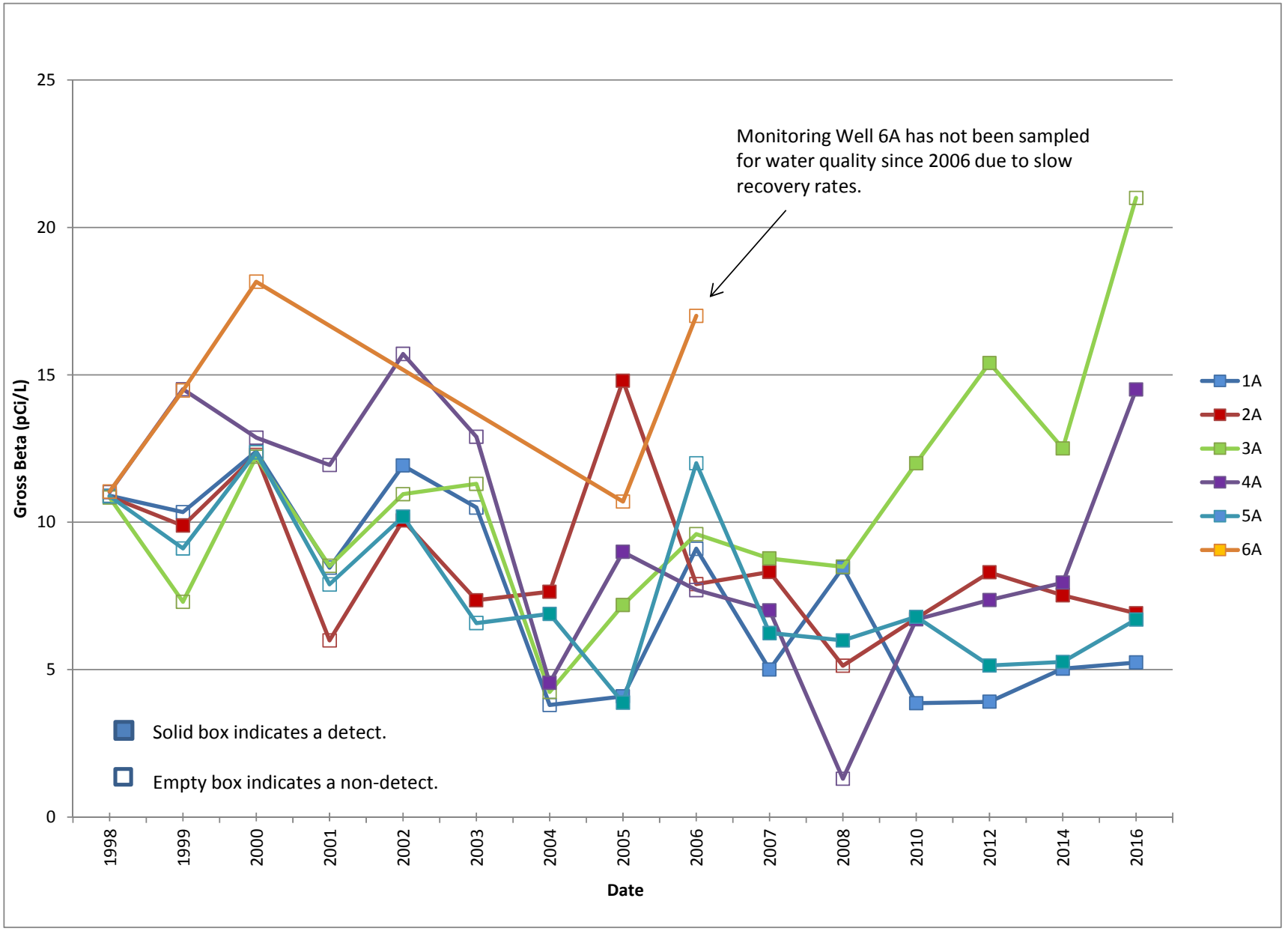

Figure 3. Gross Beta Activity Levels over Time, 1998–2016

2.3 Monitoring Well Water Levels and Precipitation Trends

Table 4 summarizes data for water levels in the 19 monitor wells from 1998 through 2016.

Table 4. Summary of Water Level Data 1998–2016

Well	Minimum (feet amsl)	Maximum (feet amsl)	Average (feet amsl)	Range (feet)
1A	1430.39	1435.65	1433.88	5.26
2A	1424.11	1435.82	1433.40	11.71
3A	1415.41	1436.79	1430.44	21.38
4A	1425.62	1434.20	1431.83	8.58
5A	1416.45	1431.03	1427.27	14.58
6A	1430.11	1434.10	1431.90	3.99
1B	1421.96	1435.78	1432.66	13.82
2B	1425.95	1436.63	1433.21	10.68
2B2	1422.80	1438.07	1433.95	15.27
3B	1423.67	1433.25	1429.99	9.58
4B	1426.00	1434.40	1432.02	8.40
5B	1415.60	1430.63	1426.99	15.03
6B	1429.07	1432.28	1431.04	3.21
7B	1408.46	1436.03	1431.73	27.57
8B	1421.88	1434.32	1430.91	12.44
2C2	1417.83	1438.51	1431.87	20.68
4C	1386.45	1421.07	1413.39	34.62
7C	1419.55	1435.84	1432.87	16.29
8C	1420.02	1433.19	1429.18	13.17

Abbreviations:
amsl = above mean sea level

As shown in Table 4, water level fluctuations across individual wells varied. This is common for perched groundwater found in heterogeneous and anisotropic fine-grained glacial till deposits. The water level fluctuations, by series, were as follows:

- A-series wells ranged from a low of 3.99 inches in MW-6A to a high of 21.38 inches in MW-3A
- B-series wells ranged from a low of 8.40 inches in MW-4B to a high of 27.57 inches in MW-7B
- C-series wells ranged from a low of 13.17 inches in MW-8C to a high of 34.62 inches in MW-4C

Figures 4, 5, and 6 are plots of the water level in the A-, B-, and C-series monitoring wells, respectively. The plots indicate that water level trends for all three well series share a similar pattern in that water levels were relatively steady until 2008, when they began to fluctuate more significantly.

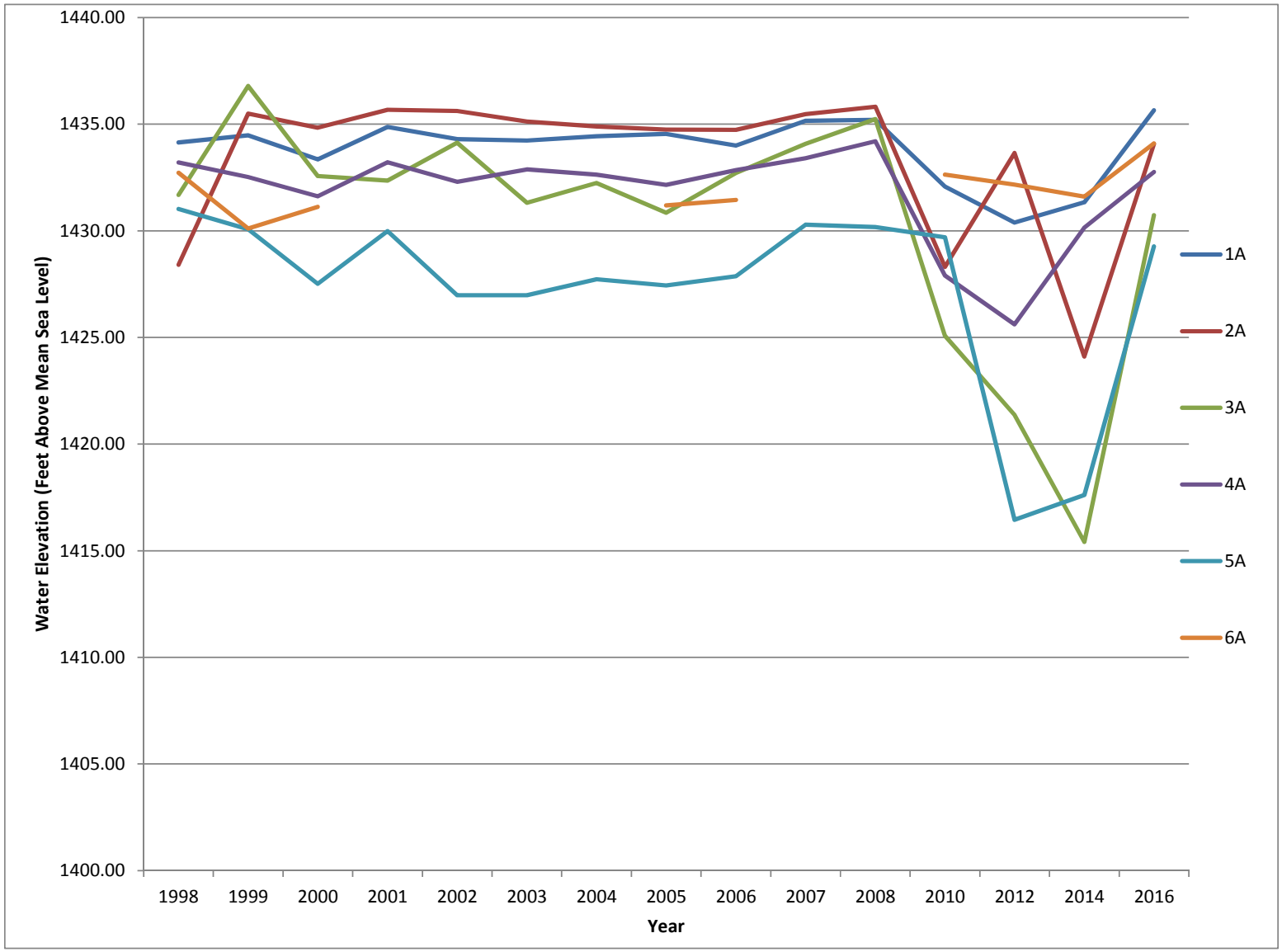

Figure 4. Water Levels in A-Series Monitoring Wells

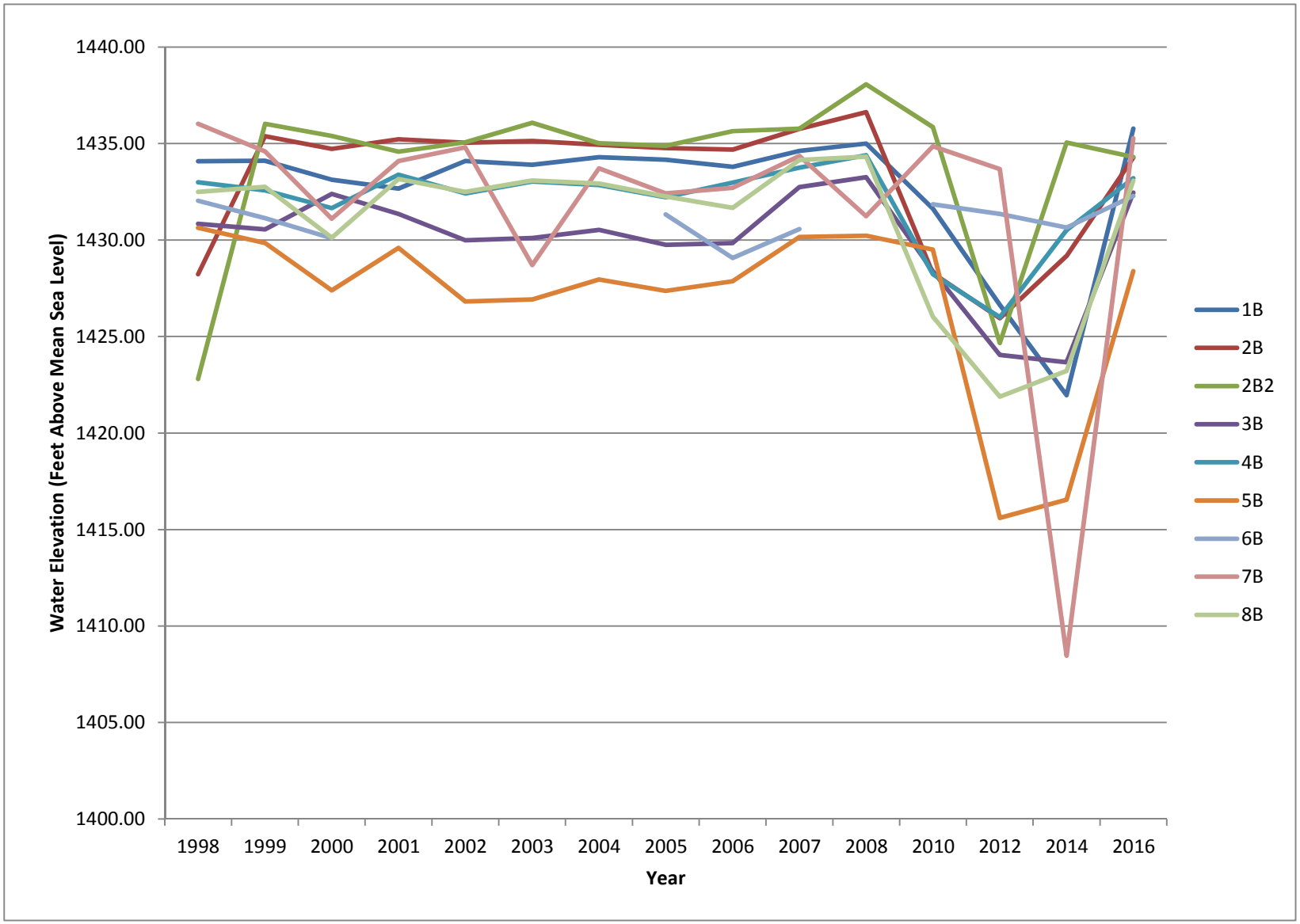

Figure 5. Water Levels in B-Series Monitoring Wells

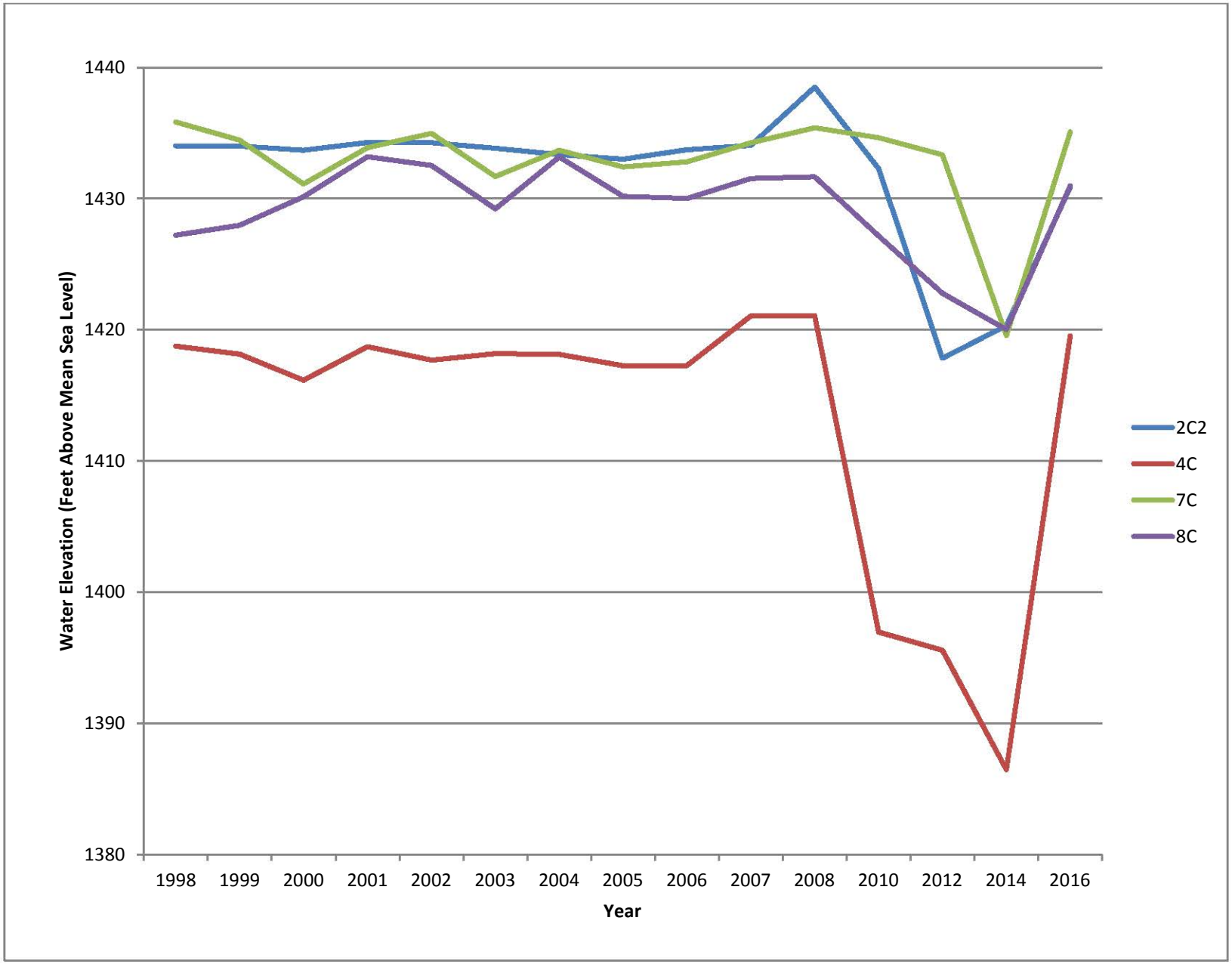

Figure 6. Water Levels in C-Series Monitoring Wells

Figure 7 shows the annual average precipitation (indicated by a blue line) for Lincoln, Nebraska, from 1970 through 2015 (recorded by the University of Nebraska). The data indicate that except in 2001, the annual average precipitation between 1999 and 2006 was lower than normal. Annual average precipitation levels began to recover and then vary significantly between 2007 and 2015. The precipitation change is most noticeable between 2012 and 2015 (19.14 and 41.16 inches each year, respectively). The period of large variation in precipitation (2007 to 2015) corresponds to the period in which the water level in the perched groundwater wells at the site fluctuated significantly. The data demonstrate that there have been no negative impacts to the perched groundwater, neither during periods of relative drought nor when precipitation levels are above normal.

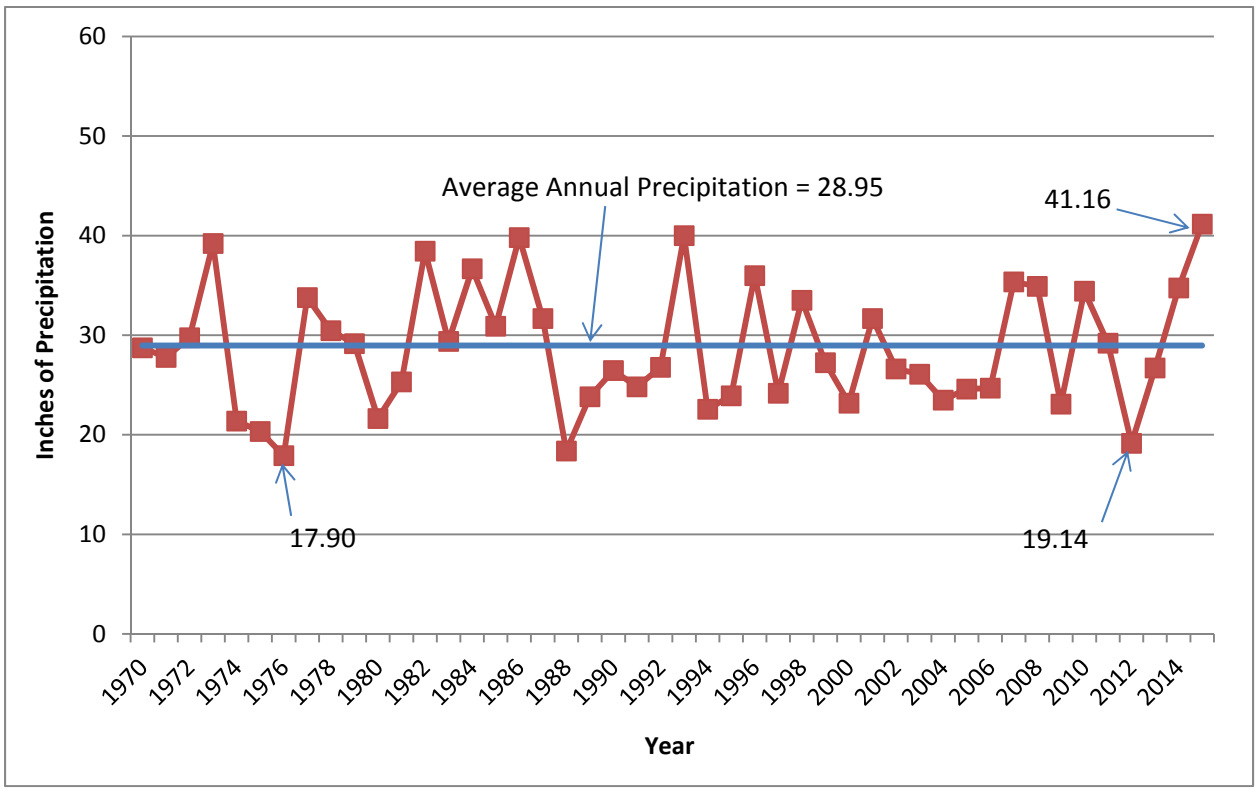

Figure 7. Annual Precipitation in Lincoln, Nebraska, from 1970 to 2015

3.0 Summary and Conclusions

Monitoring results from 2007 through 2016 show that:

- Similar to the results reported in 2006, the gross alpha and gross beta activities are the only parameters detected at statistically significant concentrations.
- Gross alpha activity concentrations observed between 2007 and 2016 are consistent with values previously reported and are attributed to naturally occurring radionuclides (e.g., uranium and uranium decay chain products) in groundwater.
- All nickel-63 and tritium results from 2007 thru 2016 qualified as nondetects.

- Water quality data collected from 2007 through 2016 continue to demonstrate that there are no negative impacts on the perched groundwater from the radioactive materials entombed at the site.
- There have been no negative impacts on the perched groundwater, neither during periods of relative drought or during periods when the annual average precipitation is above normal.

The potential for contaminant migration at the site has been evaluated (DOE 2006a). The potential is low due to the following:

- The relative impermeability of glacial till and other sediments
- Heterogeneities in the system
- Favorable ion-exchange capacity of the soils and sediment in the area
- The design integrity of the isolation structure

The entire body of data demonstrates that there have been no negative impacts to the shallow perched groundwater from the radioactive materials entombed at the site 46 years ago, and that there is low probability for the potential for contaminant migration at the site. It is therefore concluded that the groundwater sampling frequency can be reduced without adversely impacting the protectiveness of human health and the environment.

It is therefore proposed that the sampling frequency be decreased. The next sampling would occur in 2021 and then proceed as outlined below:

- Once every 5 years for the next 20 years (2021 through 2041)
- Once every 10 years beyond 2041 to free release (estimated to be 2070)

It is further propsed that a total uranium analysis be conducted for future sampling events so that a comparison with the gross alpha can be made and the relationship between the two analyses demonstrated (i.e., similar to what was done back in 2006) (DOE 2006b).

Implementation of the proposal will require the *Long-Term Surveillance Plan for the Decommissioned Hallam Nuclear Power Facility* (2008) be revised to reflect the changes and an email notification sent to the two key stakeholder representatives; the site owner, Sheldon Power Plant, and the Nebraska Health and Human Services.

4.0 References

33 USC 1251 et seq. “Clean Water Act” as amended, United States Code.

42 USC 2011 “Atomic Energy Act” as amended, United States Code.

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Appendix A

Groundwater Quality Data
2007 Through 2016

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2007 Groundwater Data

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Ground Water Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/4/2007
Location: 1A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/06/2007	0001	16	-	23.5	45.1	U	F	#	45.1	26
Actinium-228	pCi/L	06/06/2007	0002	16	-	23.5	46.9	U	F	#	46.9	26.5
Alkalinity, Total (As CaCO3)	mg/L	06/06/2007	0001	16	-	23.5	274		F	#		
Americium-241	pCi/L	06/06/2007	0001	16	-	23.5	53.9	U	F	#	53.9	30.8
Americium-241	pCi/L	06/06/2007	0002	16	-	23.5	57.3	U	F	#	57.3	32.4
Antimony-125	pCi/L	06/06/2007	0001	16	-	23.5	18.5	U	F	#	18.5	10.6
Antimony-125	pCi/L	06/06/2007	0002	16	-	23.5	17.7	U	F	#	17.7	9.91
Cerium-144	pCi/L	06/06/2007	0001	16	-	23.5	35.3	U	F	#	35.3	19.6
Cerium-144	pCi/L	06/06/2007	0002	16	-	23.5	36	U	F	#	36	20.7
Cesium-134	pCi/L	06/06/2007	0001	16	-	23.5	8.15	U	F	#	8.15	4.96
Cesium-134	pCi/L	06/06/2007	0002	16	-	23.5	8.55	U	F	#	8.55	4.83
Cesium-137	pCi/L	06/06/2007	0001	16	-	23.5	8.98	U	F	#	8.98	4.89
Cesium-137	pCi/L	06/06/2007	0002	16	-	23.5	9.42	U	F	#	9.42	5.01
Cobalt-60	pCi/L	06/06/2007	0001	16	-	23.5	9.24	U	F	#	9.24	5.43
Cobalt-60	pCi/L	06/06/2007	0002	16	-	23.5	9.8	U	F	#	9.8	5.48
Europium-152	pCi/L	06/06/2007	0001	16	-	23.5	45.9	U	F	#	45.9	26.4
Europium-152	pCi/L	06/06/2007	0002	16	-	23.5	52.6	U	F	#	52.6	29
Europium-154	pCi/L	06/06/2007	0001	16	-	23.5	53.9	U	F	#	53.9	29.4
Europium-154	pCi/L	06/06/2007	0002	16	-	23.5	55.8	U	F	#	55.8	29.7

Ground Water Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/4/2007
Location: 1A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Europium-155	pCi/L	06/06/2007	0001	16	-	23.5	14.8	U	F	#	14.8	9.11
Europium-155	pCi/L	06/06/2007	0002	16	-	23.5	22.2	U	F	#	22.2	12.4
Gross Alpha	pCi/L	06/06/2007	0001	16	-	23.5	2.71		FJ	#	1.26	1.04
Gross Alpha	pCi/L	06/06/2007	0002	16	-	23.5	3.25		FJ	#	1.24	1.11
Gross Beta	pCi/L	06/06/2007	0001	16	-	23.5	3.47		FJ	#	3.27	2.09
Gross Beta	pCi/L	06/06/2007	0002	16	-	23.5	5		FJ	#	2.99	2.04
Lead-212	pCi/L	06/06/2007	0001	16	-	23.5	17.7	U	F	#	17.7	10.7
Lead-212	pCi/L	06/06/2007	0002	16	-	23.5	14.9	U	F	#	14.9	8.72
Nickel-63	pCi/L	06/06/2007	0001	16	-	23.5	11.4	U	F	#	11.4	3.44
Nickel-63	pCi/L	06/06/2007	0002	16	-	23.5	11	U	F	#	11	3.4
Oxidation Reduction Potential	mV	06/06/2007	N001	16	-	23.5	184		F	#		
pH	s.u.	06/06/2007	N001	16	-	23.5	7.23		F	#		
Potassium-40	pCi/L	06/06/2007	0001	16	-	23.5	150	U	F	#	150	86.7
Potassium-40	pCi/L	06/06/2007	0002	16	-	23.5	147	U	F	#	147	83.3
Promethium-144	pCi/L	06/06/2007	0001	16	-	23.5	8.41	U	F	#	8.41	5.26
Promethium-144	pCi/L	06/06/2007	0002	16	-	23.5	10.1	U	F	#	10.1	5.59
Promethium-146	pCi/L	06/06/2007	0001	16	-	23.5	9.18	U	F	#	9.18	4.95
Promethium-146	pCi/L	06/06/2007	0002	16	-	23.5	8.2	U	F	#	8.2	4.55
Ruthenium-106	pCi/L	06/06/2007	0001	16	-	23.5	74.9	U	F	#	74.9	41.4

Ground Water Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/4/2007
Location: 1A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/06/2007	0002	16	-	23.5	76.8	U	F	#	76.8	42
Specific Conductance	umhos /cm	06/06/2007	N001	16	-	23.5	1474		F	#		
Temperature	C	06/06/2007	N001	16	-	23.5	18.74		F	#		
Thorium-234	pCi/L	06/06/2007	0001	16	-	23.5	161	U	F	#	161	93.7
Thorium-234	pCi/L	06/06/2007	0002	16	-	23.5	168	U	F	#	168	99.3
Tritium	pCi/L	06/06/2007	0001	16	-	23.5	377	U	F	#	377	227
Tritium	pCi/L	06/06/2007	0002	16	-	23.5	357	U	F	#	357	219
Turbidity	NTU	06/06/2007	N001	16	-	23.5	2.9		F	#		
Uranium-235	pCi/L	06/06/2007	0001	16	-	23.5	44.6	U	F	#	44.6	26.5
Uranium-235	pCi/L	06/06/2007	0002	16	-	23.5	33.3	U	F	#	33.3	20.4
Yttrium-88	pCi/L	06/06/2007	0001	16	-	23.5	9.29	U	F	#	9.29	5.4
Yttrium-88	pCi/L	06/06/2007	0002	16	-	23.5	9.77	U	F	#	9.77	5.68

Ground Water Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/4/2007
Location: 1B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/06/2007	0001	39	-	49	42.4	U	FQ	#	42.4	24.6
Alkalinity, Total (As CaCO3)	mg/L	06/06/2007	0001	39	-	49	289		FQ	#		
Americium-241	pCi/L	06/06/2007	0001	39	-	49	50	U	FQ	#	50	29.2
Antimony-125	pCi/L	06/06/2007	0001	39	-	49	16.7	U	FQ	#	16.7	9.73
Cerium-144	pCi/L	06/06/2007	0001	39	-	49	32.5	U	FQ	#	32.5	18.7
Cesium-134	pCi/L	06/06/2007	0001	39	-	49	7.41	U	FQ	#	7.41	4.21
Cesium-137	pCi/L	06/06/2007	0001	39	-	49	7.87	U	FQ	#	7.87	4.46
Cobalt-60	pCi/L	06/06/2007	0001	39	-	49	8.56	U	FQ	#	8.56	4.7
Europium-152	pCi/L	06/06/2007	0001	39	-	49	49.7	U	FQ	#	49.7	26.1
Europium-154	pCi/L	06/06/2007	0001	39	-	49	42.4	U	FQ	#	42.4	23.5
Europium-155	pCi/L	06/06/2007	0001	39	-	49	18.6	U	FQ	#	18.6	11.3
Gross Alpha	pCi/L	06/06/2007	0001	39	-	49	11.6		FQ	#	1.15	2.26
Gross Beta	pCi/L	06/06/2007	0001	39	-	49	10.1		FQ	#	2.24	2.21
Lead-212	pCi/L	06/06/2007	0001	39	-	49	14.1	U	FQ	#	14.1	8.24
Nickel-63	pCi/L	06/06/2007	0001	39	-	49	11.4	U	FQ	#	11.4	3.37
Oxidation Reduction Potential	mV	06/06/2007	N001	39	-	49	187		FQ	#		
pH	s.u.	06/06/2007	N001	39	-	49	7.33		FQ	#		
Potassium-40	pCi/L	06/06/2007	0001	39	-	49	132	U	FQ	#	132	79.8
Promethium-144	pCi/L	06/06/2007	0001	39	-	49	8.2	U	FQ	#	8.2	4.7

Ground Water Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/4/2007
Location: 1B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Promethium-146	pCi/L	06/06/2007	0001	39	-	49	7.63	U	FQ	#	7.63	4.32
Ruthenium-106	pCi/L	06/06/2007	0001	39	-	49	65.9	U	FQ	#	65.9	37.4
Specific Conductance	umhos /cm	06/06/2007	N001	39	-	49	1140		FQ	#		
Temperature	C	06/06/2007	N001	39	-	49	22.27		FQ	#		
Thorium-234	pCi/L	06/06/2007	0001	39	-	49	157	U	FQ	#	157	93
Tritium	pCi/L	06/06/2007	0001	39	-	49	357	U	FQ	#	357	210
Turbidity	NTU	06/06/2007	N001	39	-	49	85.3		FQ	#		
Uranium-235	pCi/L	06/06/2007	0001	39	-	49	41.2	U	FQ	#	41.2	24.8
Yttrium-88	pCi/L	06/06/2007	0001	39	-	49	5.37	U	FQ	#	5.37	3.46

Ground Water Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/4/2007
Location: 2A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/05/2007	0001	20	-	25	45.4	U	FQ	#	45.4	26.8
Alkalinity, Total (As CaCO3)	mg/L	06/05/2007	0001	20	-	25	299		FQ	#		
Americium-241	pCi/L	06/05/2007	0001	20	-	25	52.7	U	FQ	#	52.7	31.7
Antimony-125	pCi/L	06/05/2007	0001	20	-	25	22.1	U	FQ	#	22.1	12.7
Cerium-144	pCi/L	06/05/2007	0001	20	-	25	35.9	U	FQ	#	35.9	21.4
Cesium-134	pCi/L	06/05/2007	0001	20	-	25	9.67	U	FQ	#	9.67	5.4
Cesium-137	pCi/L	06/05/2007	0001	20	-	25	8.61	U	FQ	#	8.61	5.24
Cobalt-60	pCi/L	06/05/2007	0001	20	-	25	10.2	U	FQ	#	10.2	5.77
Europium-152	pCi/L	06/05/2007	0001	20	-	25	51.2	U	FQ	#	51.2	27.4
Europium-154	pCi/L	06/05/2007	0001	20	-	25	46.5	U	FQ	#	46.5	26.2
Europium-155	pCi/L	06/05/2007	0001	20	-	25	21.9	U	FQ	#	21.9	13.5
Gross Alpha	pCi/L	06/05/2007	0001	20	-	25	12.7		FQ	#	1.39	2.55
Gross Beta	pCi/L	06/05/2007	0001	20	-	25	8.31		FQ	#	2.68	2.19
Lead-212	pCi/L	06/05/2007	0001	20	-	25	13	U	FQ	#	13	7.8
Nickel-63	pCi/L	06/05/2007	0001	20	-	25	10.9	U	FQ	#	10.9	3.32
Oxidation Reduction Potential	mV	06/05/2007	N001	20	-	25	35		FQ	#		
pH	s.u.	06/05/2007	N001	20	-	25	7.37		FQ	#		
Potassium-40	pCi/L	06/05/2007	0001	20	-	25	165	U	FQ	#	165	94.2
Promethium-144	pCi/L	06/05/2007	0001	20	-	25	8.88	U	FQ	#	8.88	5.36

Ground Water Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/4/2007
Location: 2A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Promethium-146	pCi/L	06/05/2007	0001	20	-	25	10.2	U	FQ	#	10.2	5.92
Ruthenium-106	pCi/L	06/05/2007	0001	20	-	25	87.4	U	FQ	#	87.4	48.6
Specific Conductance	umhos /cm	06/05/2007	N001	20	-	25	1148		FQ	#		
Temperature	C	06/05/2007	N001	20	-	25	17.1		FQ	#		
Thorium-234	pCi/L	06/05/2007	0001	20	-	25	190	U	FQ	#	190	112
Tritium	pCi/L	06/05/2007	0001	20	-	25	357	U	FQ	#	357	212
Turbidity	NTU	06/05/2007	N001	20	-	25	1.85		FQ	#		
Uranium-235	pCi/L	06/05/2007	0001	20	-	25	34.4	U	FQ	#	34.4	21
Yttrium-88	pCi/L	06/05/2007	0001	20	-	25	8.27	U	FQ	#	8.27	5.36

Ground Water Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/4/2007
Location: 2B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/05/2007	0001	43	-	53	32	U	FQ	#	32	19.1
Alkalinity, Total (As CaCO3)	mg/L	06/05/2007	0001	43	-	53	290		FQ	#		
Americium-241	pCi/L	06/05/2007	0001	43	-	53	89.1	U	FQ	#	89.1	39.3
Antimony-125	pCi/L	06/05/2007	0001	43	-	53	23.2	U	FQ	#	23.2	13.1
Cerium-144	pCi/L	06/05/2007	0001	43	-	53	39.9	U	FQ	#	39.9	23.4
Cesium-134	pCi/L	06/05/2007	0001	43	-	53	9.84	U	FQ	#	9.84	5.52
Cesium-137	pCi/L	06/05/2007	0001	43	-	53	9.86	U	FQ	#	9.86	4.96
Cobalt-60	pCi/L	06/05/2007	0001	43	-	53	10.8	U	FQ	#	10.8	5.4
Europium-152	pCi/L	06/05/2007	0001	43	-	53	51.1	U	FQ	#	51.1	29.8
Europium-154	pCi/L	06/05/2007	0001	43	-	53	61	U	FQ	#	61	32.1
Europium-155	pCi/L	06/05/2007	0001	43	-	53	23.1	U	FQ	#	23.1	13.3
Gross Alpha	pCi/L	06/05/2007	0001	43	-	53	21.1		FQ	#	1.3	3.85
Gross Beta	pCi/L	06/05/2007	0001	43	-	53	14.7		FQ	#	3.11	3.15
Lead-212	pCi/L	06/05/2007	0001	43	-	53	18.6	U	FQ	#	18.6	10.9
Nickel-63	pCi/L	06/05/2007	0001	43	-	53	11	U	FQ	#	11	3.37
Oxidation Reduction Potential	mV	06/05/2007	N001	43	-	53	-50		FQ	#		
pH	s.u.	06/05/2007	N001	43	-	53	7.15		FQ	#		
Potassium-40	pCi/L	06/05/2007	0001	43	-	53	110	U	FQ	#	110	72.7
Promethium-144	pCi/L	06/05/2007	0001	43	-	53	10.5	U	FQ	#	10.5	5.89

Ground Water Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/4/2007
Location: 2B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Promethium-146	pCi/L	06/05/2007	0001	43	-	53	15.1	U	FQ	#	15.1	8.48
Ruthenium-106	pCi/L	06/05/2007	0001	43	-	53	86.7	U	FQ	#	86.7	51.3
Specific Conductance	umhos /cm	06/05/2007	N001	43	-	53	1408		FQ	#		
Temperature	C	06/05/2007	N001	43	-	53	16.7		FQ	#		
Thorium-234	pCi/L	06/05/2007	0001	43	-	53	190	U	FQ	#	190	113
Tritium	pCi/L	06/05/2007	0001	43	-	53	357	U	FQ	#	357	219
Turbidity	NTU	06/05/2007	N001	43	-	53	1.08		FQ	#		
Uranium-235	pCi/L	06/05/2007	0001	43	-	53	47.8	U	FQ	#	47.8	27.5
Yttrium-88	pCi/L	06/05/2007	0001	43	-	53	14.3	U	FQ	#	14.3	7.78

Ground Water Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/4/2007
Location: 2B2 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/05/2007	0001	-	47.3	U	FQ	#	47.3	26.9
Alkalinity, Total (As CaCO3)	mg/L	06/05/2007	0001	-	235		FQ	#		
Americium-241	pCi/L	06/05/2007	0001	-	53.8	U	FQ	#	53.8	30.9
Antimony-125	pCi/L	06/05/2007	0001	-	17.5	U	FQ	#	17.5	10.1
Cerium-144	pCi/L	06/05/2007	0001	-	35.8	U	FQ	#	35.8	19.9
Cesium-134	pCi/L	06/05/2007	0001	-	8.56	U	FQ	#	8.56	4.67
Cesium-137	pCi/L	06/05/2007	0001	-	7.67	U	FQ	#	7.67	4.58
Cobalt-60	pCi/L	06/05/2007	0001	-	9.92	U	FQ	#	9.92	5.3
Europium-152	pCi/L	06/05/2007	0001	-	47.8	U	FQ	#	47.8	25.6
Europium-154	pCi/L	06/05/2007	0001	-	48.4	U	FQ	#	48.4	26
Europium-155	pCi/L	06/05/2007	0001	-	20	U	FQ	#	20	11.7
Gross Alpha	pCi/L	06/05/2007	0001	-	10.7		FQ	#	1.57	2.38
Gross Beta	pCi/L	06/05/2007	0001	-	12.3		FQ	#	3.88	3.2
Lead-212	pCi/L	06/05/2007	0001	-	15	U	FQ	#	15	8.78
Nickel-63	pCi/L	06/05/2007	0001	-	10.8	U	FQ	#	10.8	3.27
Oxidation Reduction Potential	mV	06/05/2007	N001	-	84		FQ	#		
pH	s.u.	06/05/2007	N001	-	7.17		FQ	#		
Potassium-40	pCi/L	06/05/2007	0001	-	136	U	FQ	#	136	78.2
Promethium-144	pCi/L	06/05/2007	0001	-	9.16	U	FQ	#	9.16	5.41

Ground Water Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/4/2007
Location: 2B2 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Promethium-146	pCi/L	06/05/2007	0001	-	8.54	U	FQ	#	8.54	4.85
Ruthenium-106	pCi/L	06/05/2007	0001	-	69.7	U	FQ	#	69.7	43.1
Specific Conductance	umhos /cm	06/05/2007	N001	-	1657		FQ	#		
Temperature	C	06/05/2007	N001	-	17.11		FQ	#		
Thorium-234	pCi/L	06/05/2007	0001	-	174	U	FQ	#	174	103
Tritium	pCi/L	06/05/2007	0001	-	357	U	FQ	#	357	208
Turbidity	NTU	06/05/2007	N001	-	2.03		FQ	#		
Uranium-235	pCi/L	06/05/2007	0001	-	46	U	FQ	#	46	27
Yttrium-88	pCi/L	06/05/2007	0001	-	9.73	U	FQ	#	9.73	5.47

Ground Water Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/4/2007
Location: 2C2 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/05/2007	0001	-	28.8	U	FQ	#	28.8	17.7
Alkalinity, Total (As CaCO3)	mg/L	06/05/2007	0001	-	185		FQ	#		
Americium-241	pCi/L	06/05/2007	0001	-	56.2	U	FQ	#	56.2	32
Antimony-125	pCi/L	06/05/2007	0001	-	21.5	U	FQ	#	21.5	12.2
Cerium-144	pCi/L	06/05/2007	0001	-	36.2	U	FQ	#	36.2	21.4
Cesium-134	pCi/L	06/05/2007	0001	-	9.24	U	FQ	#	9.24	4.99
Cesium-137	pCi/L	06/05/2007	0001	-	8.75	U	FQ	#	8.75	5.13
Cobalt-60	pCi/L	06/05/2007	0001	-	9.38	U	FQ	#	9.38	5.23
Europium-152	pCi/L	06/05/2007	0001	-	49.5	U	FQ	#	49.5	26.5
Europium-154	pCi/L	06/05/2007	0001	-	53.2	U	FQ	#	53.2	28.2
Europium-155	pCi/L	06/05/2007	0001	-	20.1	U	FQ	#	20.1	11.6
Gross Alpha	pCi/L	06/05/2007	0001	-	3.69		FQJ	#	1.54	1.29
Gross Beta	pCi/L	06/05/2007	0001	-	6.65		FQJ	#	2.82	2.1
Lead-212	pCi/L	06/05/2007	0001	-	18.5	U	FQ	#	18.5	10.9
Nickel-63	pCi/L	06/05/2007	0001	-	11.1	U	FQ	#	11.1	3.43
Oxidation Reduction Potential	mV	06/05/2007	N001	-	69		FQ	#		
pH	s.u.	06/05/2007	N001	-	7.68		FQ	#		
Potassium-40	pCi/L	06/05/2007	0001	-	179	U	FQ	#	179	102
Promethium-144	pCi/L	06/05/2007	0001	-	8.62	U	FQ	#	8.62	5.14

Ground Water Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/4/2007
Location: 2C2 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Promethium-146	pCi/L	06/05/2007	0001	-	13.1	U	FQ	#	13.1	7.75
Ruthenium-106	pCi/L	06/05/2007	0001	-	77.4	U	FQ	#	77.4	46.5
Specific Conductance	umhos /cm	06/05/2007	N001	-	1484		FQ	#		
Temperature	C	06/05/2007	N001	-	24.86		FQ	#		
Thorium-234	pCi/L	06/05/2007	0001	-	174	U	FQ	#	174	104
Tritium	pCi/L	06/05/2007	0001	-	357	U	FQ	#	357	214
Turbidity	NTU	06/05/2007	N001	-	5.53		FQ	#		
Uranium-235	pCi/L	06/05/2007	0001	-	37.5	U	FQ	#	37.5	22.3
Yttrium-88	pCi/L	06/05/2007	0001	-	12.8	U	FQ	#	12.8	7.11

Ground Water Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/4/2007
Location: 3A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/05/2007	0001	19	-	24	40.7	U	FQ	#	40.7	24.2
Alkalinity, Total (As CaCO3)	mg/L	06/05/2007	0001	19	-	24	246		FQ	#		
Americium-241	pCi/L	06/05/2007	0001	19	-	24	52.2	U	FQ	#	52.2	29.8
Antimony-125	pCi/L	06/05/2007	0001	19	-	24	20	U	FQ	#	20	10.5
Cerium-144	pCi/L	06/05/2007	0001	19	-	24	35	U	FQ	#	35	20.3
Cesium-134	pCi/L	06/05/2007	0001	19	-	24	8.15	U	FQ	#	8.15	4.68
Cesium-137	pCi/L	06/05/2007	0001	19	-	24	7.71	U	FQ	#	7.71	4.38
Cobalt-60	pCi/L	06/05/2007	0001	19	-	24	9.16	U	FQ	#	9.16	5.02
Europium-152	pCi/L	06/05/2007	0001	19	-	24	45	U	FQ	#	45	26.1
Europium-154	pCi/L	06/05/2007	0001	19	-	24	47.4	U	FQ	#	47.4	25
Europium-155	pCi/L	06/05/2007	0001	19	-	24	20.7	U	FQ	#	20.7	12.4
Gross Alpha	pCi/L	06/05/2007	0001	19	-	24	7.17		FQ	#	1.68	1.91
Gross Beta	pCi/L	06/05/2007	0001	19	-	24	8.77		FQJ	#	3.35	2.58
Lead-212	pCi/L	06/05/2007	0001	19	-	24	11.1	U	FQ	#	11.1	6.72
Nickel-63	pCi/L	06/05/2007	0001	19	-	24	11.1	U	FQ	#	11.1	3.31
Oxidation Reduction Potential	mV	06/05/2007	N001	19	-	24	185		FQ	#		
pH	s.u.	06/05/2007	N001	19	-	24	7.24		FQ	#		
Potassium-40	pCi/L	06/05/2007	0001	19	-	24	150	U	FQ	#	150	89.6
Promethium-144	pCi/L	06/05/2007	0001	19	-	24	8.79	U	FQ	#	8.79	5.02

Ground Water Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/4/2007
Location: 3A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Promethium-146	pCi/L	06/05/2007	0001	19	-	24	9.5	U	FQ	#	9.5	5.42
Ruthenium-106	pCi/L	06/05/2007	0001	19	-	24	75.7	U	FQ	#	75.7	41.9
Specific Conductance	umhos /cm	06/05/2007	N001	19	-	24	2140		FQ	#		
Temperature	C	06/05/2007	N001	19	-	24	18.43		FQ	#		
Thorium-234	pCi/L	06/05/2007	0001	19	-	24	177	U	FQ	#	177	106
Tritium	pCi/L	06/05/2007	0001	19	-	24	357	U	FQ	#	357	215
Turbidity	NTU	06/05/2007	N001	19	-	24	3.94		FQ	#		
Uranium-235	pCi/L	06/05/2007	0001	19	-	24	32.8	U	FQ	#	32.8	20.1
Yttrium-88	pCi/L	06/05/2007	0001	19	-	24	8.9	U	FQ	#	8.9	5.27

Ground Water Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/4/2007
Location: 3B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/05/2007	0001	43	-	53	34	U	FQ	#	34	20.9
Americium-241	pCi/L	06/05/2007	0001	43	-	53	93.2	U	FQ	#	93.2	54.3
Antimony-125	pCi/L	06/05/2007	0001	43	-	53	21.5	U	FQ	#	21.5	11.9
Cerium-144	pCi/L	06/05/2007	0001	43	-	53	46.6	U	FQ	#	46.6	27.1
Cesium-134	pCi/L	06/05/2007	0001	43	-	53	9.84	U	FQ	#	9.84	5.49
Cesium-137	pCi/L	06/05/2007	0001	43	-	53	9	U	FQ	#	9	5.11
Cobalt-60	pCi/L	06/05/2007	0001	43	-	53	9.86	U	FQ	#	9.86	5.45
Europium-152	pCi/L	06/05/2007	0001	43	-	53	44.1	U	FQ	#	44.1	24.7
Europium-154	pCi/L	06/05/2007	0001	43	-	53	45	U	FQ	#	45	26.5
Europium-155	pCi/L	06/05/2007	0001	43	-	53	27.8	U	FQ	#	27.8	16.6
Gross Alpha	pCi/L	06/05/2007	0001	43	-	53	12.8		FQ	#	2.09	2.85
Gross Beta	pCi/L	06/05/2007	0001	43	-	53	13		FQ	#	3.64	3.16
Lead-212	pCi/L	06/05/2007	0001	43	-	53	11.9	U	FQ	#	11.9	7.1
Nickel-63	pCi/L	06/05/2007	0001	43	-	53	10.8	U	FQ	#	10.8	3.2
Oxidation Reduction Potential	mV	06/05/2007	N001	43	-	53	140		FQ	#		
pH	s.u.	06/05/2007	N001	43	-	53	7.58		FQ	#		
Potassium-40	pCi/L	06/05/2007	0001	43	-	53	182	U	FQ	#	182	104
Promethium-144	pCi/L	06/05/2007	0001	43	-	53	8.82	U	FQ	#	8.82	5.27
Promethium-146	pCi/L	06/05/2007	0001	43	-	53	10.8	U	FQ	#	10.8	6.08

Ground Water Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/4/2007
Location: 3B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/05/2007	0001	43	-	53	84.5	U	FQ	#	84.5	51.1
Specific Conductance	umhos /cm	06/05/2007	N001	43	-	53	2068		FQ	#		
Temperature	C	06/05/2007	N001	43	-	53	21.61		FQ	#		
Thorium-234	pCi/L	06/05/2007	0001	43	-	53	161	U	FQ	#	161	97
Tritium	pCi/L	06/05/2007	0001	43	-	53	357	U	FQ	#	357	218
Turbidity	NTU	06/05/2007	N001	43	-	53	1.35		FQ	#		
Uranium-235	pCi/L	06/05/2007	0001	43	-	53	43.4	U	FQ	#	43.4	26.8
Yttrium-88	pCi/L	06/05/2007	0001	43	-	53	9.32	U	FQ	#	9.32	5.91

Ground Water Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/4/2007
Location: 4A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/05/2007	0001	19	-	24	41.6	U	FQ	#	41.6	24.7
Alkalinity, Total (As CaCO3)	mg/L	06/05/2007	0001	19	-	24	164		FQ	#		
Americium-241	pCi/L	06/05/2007	0001	19	-	24	43.4	U	FQ	#	43.4	25.4
Antimony-125	pCi/L	06/05/2007	0001	19	-	24	15.6	U	FQ	#	15.6	8.87
Cerium-144	pCi/L	06/05/2007	0001	19	-	24	28.3	U	FQ	#	28.3	17
Cesium-134	pCi/L	06/05/2007	0001	19	-	24	9.65	U	FQ	#	9.65	5.68
Cesium-137	pCi/L	06/05/2007	0001	19	-	24	6.68	U	FQ	#	6.68	3.98
Cobalt-60	pCi/L	06/05/2007	0001	19	-	24	8.28	U	FQ	#	8.28	4.6
Europium-152	pCi/L	06/05/2007	0001	19	-	24	33.4	U	FQ	#	33.4	20
Europium-154	pCi/L	06/05/2007	0001	19	-	24	41	U	FQ	#	41	22.2
Europium-155	pCi/L	06/05/2007	0001	19	-	24	16.9	U	FQ	#	16.9	9.64
Gross Alpha	pCi/L	06/05/2007	0001	19	-	24	5.54		FQ	#	1.7	1.62
Gross Beta	pCi/L	06/05/2007	0001	19	-	24	7.01		FQJ	#	3.57	2.52
Lead-212	pCi/L	06/05/2007	0001	19	-	24	15.3	U	FQ	#	15.3	9.07
Nickel-63	pCi/L	06/05/2007	0001	19	-	24	10.6	U	FQ	#	10.6	3.12
Oxidation Reduction Potential	mV	06/05/2007	N001	19	-	24	184		FQ	#		
pH	s.u.	06/05/2007	N001	19	-	24	7.07		FQ	#		
Potassium-40	pCi/L	06/05/2007	0001	19	-	24	134	U	FQ	#	134	78.3
Promethium-144	pCi/L	06/05/2007	0001	19	-	24	7.67	U	FQ	#	7.67	4.52

Ground Water Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/4/2007
Location: 4A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Promethium-146	pCi/L	06/05/2007	0001	19	-	24	6.47	U	FQ	#	6.47	3.85
Ruthenium-106	pCi/L	06/05/2007	0001	19	-	24	62.8	U	FQ	#	62.8	37
Specific Conductance	umhos /cm	06/05/2007	N001	19	-	24	2088		FQ	#		
Temperature	C	06/05/2007	N001	19	-	24	15.51		FQ	#		
Thorium-234	pCi/L	06/05/2007	0001	19	-	24	159	U	FQ	#	159	94.5
Tritium	pCi/L	06/05/2007	0001	19	-	24	357	U	FQ	#	357	209
Turbidity	NTU	06/05/2007	N001	19	-	24	2.25		FQ	#		
Uranium-235	pCi/L	06/05/2007	0001	19	-	24	40.6	U	FQ	#	40.6	23.8
Yttrium-88	pCi/L	06/05/2007	0001	19	-	24	8.87	U	FQ	#	8.87	4.98

Ground Water Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/4/2007
Location: 4B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/05/2007	0001	44	-	54	26.6	U	FQ	#	26.6	11.5
Alkalinity, Total (As CaCO3)	mg/L	06/05/2007	0001	44	-	54	215		FQ	#		
Americium-241	pCi/L	06/05/2007	0001	44	-	54	51.3	U	FQ	#	51.3	30.2
Antimony-125	pCi/L	06/05/2007	0001	44	-	54	18.4	U	FQ	#	18.4	10
Cerium-144	pCi/L	06/05/2007	0001	44	-	54	32.8	U	FQ	#	32.8	19.5
Cesium-134	pCi/L	06/05/2007	0001	44	-	54	8.83	U	FQ	#	8.83	4.89
Cesium-137	pCi/L	06/05/2007	0001	44	-	54	8.3	U	FQ	#	8.3	4.65
Cobalt-60	pCi/L	06/05/2007	0001	44	-	54	8.45	U	FQ	#	8.45	4.89
Europium-152	pCi/L	06/05/2007	0001	44	-	54	39.1	U	FQ	#	39.1	22.8
Europium-154	pCi/L	06/05/2007	0001	44	-	54	45.4	U	FQ	#	45.4	25.4
Europium-155	pCi/L	06/05/2007	0001	44	-	54	19.6	U	FQ	#	19.6	11.2
Gross Alpha	pCi/L	06/05/2007	0001	44	-	54	16.9		FQ	#	1.26	3.2
Gross Beta	pCi/L	06/05/2007	0001	44	-	54	11.3		FQ	#	2.53	2.49
Lead-212	pCi/L	06/05/2007	0001	44	-	54	17.4	U	FQ	#	17.4	10.3
Nickel-63	pCi/L	06/05/2007	0001	44	-	54	10.9	U	FQ	#	10.9	3.37
Oxidation Reduction Potential	mV	06/05/2007	N001	44	-	54	91		FQ	#		
pH	s.u.	06/05/2007	N001	44	-	54	7.22		FQ	#		
Potassium-40	pCi/L	06/05/2007	0001	44	-	54	165	U	FQ	#	165	95
Promethium-144	pCi/L	06/05/2007	0001	44	-	54	8.88	U	FQ	#	8.88	5.15

Ground Water Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/4/2007
Location: 4B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Promethium-146	pCi/L	06/05/2007	0001	44	-	54	12.8	U	FQ	#	12.8	7.38
Ruthenium-106	pCi/L	06/05/2007	0001	44	-	54	66.8	U	FQ	#	66.8	39
Specific Conductance	umhos /cm	06/05/2007	N001	44	-	54	1511		FQ	#		
Temperature	C	06/05/2007	N001	44	-	54	15.17		FQ	#		
Thorium-234	pCi/L	06/05/2007	0001	44	-	54	162	U	FQ	#	162	96
Tritium	pCi/L	06/05/2007	0001	44	-	54	357	U	FQ	#	357	209
Turbidity	NTU	06/05/2007	N001	44	-	54	1.7		FQ	#		
Uranium-235	pCi/L	06/05/2007	0001	44	-	54	31	U	FQ	#	31	18.7
Yttrium-88	pCi/L	06/05/2007	0001	44	-	54	11.8	U	FQ	#	11.8	6.99

Ground Water Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/4/2007
Location: 4C WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/05/2007	0001	64	-	74	51.6	U	FQ	#	51.6	30.4
Alkalinity, Total (As CaCO3)	mg/L	06/05/2007	0001	64	-	74	246		FQ	#		
Americium-241	pCi/L	06/05/2007	0001	64	-	74	94.6	U	FQ	#	94.6	55.8
Antimony-125	pCi/L	06/05/2007	0001	64	-	74	22.8	U	FQ	#	22.8	13.4
Cerium-144	pCi/L	06/05/2007	0001	64	-	74	45.7	U	FQ	#	45.7	28.2
Cesium-134	pCi/L	06/05/2007	0001	64	-	74	9.43	U	FQ	#	9.43	5.27
Cesium-137	pCi/L	06/05/2007	0001	64	-	74	8.85	U	FQ	#	8.85	4.96
Cobalt-60	pCi/L	06/05/2007	0001	64	-	74	9.63	U	FQ	#	9.63	5.3
Europium-152	pCi/L	06/05/2007	0001	64	-	74	46.9	U	FQ	#	46.9	26.4
Europium-154	pCi/L	06/05/2007	0001	64	-	74	45.6	U	FQ	#	45.6	27.1
Europium-155	pCi/L	06/05/2007	0001	64	-	74	29.8	U	FQ	#	29.8	17.5
Gross Alpha	pCi/L	06/05/2007	0001	64	-	74	17.1		FQ	#	1.3	3.18
Gross Beta	pCi/L	06/05/2007	0001	64	-	74	15.4		FQ	#	2.55	3.03
Lead-212	pCi/L	06/05/2007	0001	64	-	74	16.2	U	FQ	#	16.2	9.52
Nickel-63	pCi/L	06/05/2007	0001	64	-	74	10.9	U	FQ	#	10.9	3.38
Oxidation Reduction Potential	mV	06/05/2007	N001	64	-	74	6		FQ	#		
pH	s.u.	06/05/2007	N001	64	-	74	7.24		FQ	#		
Potassium-40	pCi/L	06/05/2007	0001	64	-	74	187	U	FQ	#	187	108
Promethium-144	pCi/L	06/05/2007	0001	64	-	74	8.89	U	FQ	#	8.89	5.38

Ground Water Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/4/2007
Location: 4C WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Promethium-146	pCi/L	06/05/2007	0001	64	-	74	10.8	U	FQ	#	10.8	6.34
Ruthenium-106	pCi/L	06/05/2007	0001	64	-	74	85.6	U	FQ	#	85.6	48.9
Specific Conductance	umhos /cm	06/05/2007	N001	64	-	74	1275		FQ	#		
Temperature	C	06/05/2007	N001	64	-	74	16.44		FQ	#		
Thorium-234	pCi/L	06/05/2007	0001	64	-	74	143	U	FQ	#	143	88
Tritium	pCi/L	06/05/2007	0001	64	-	74	357	U	FQ	#	357	216
Turbidity	NTU	06/05/2007	N001	64	-	74	1.4		FQ	#		
Uranium-235	pCi/L	06/05/2007	0001	64	-	74	44.9	U	FQ	#	44.9	26.6
Yttrium-88	pCi/L	06/05/2007	0001	64	-	74	10.3	U	FQ	#	10.3	6.11

Ground Water Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/4/2007
Location: 5A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/06/2007	0001	19	-	24	43.3	U	FQ	#	43.3	25.8
Alkalinity, Total (As CaCO3)	mg/L	06/06/2007	0001	19	-	24	295		FQ	#		
Americium-241	pCi/L	06/06/2007	0001	19	-	24	46.2	U	FQ	#	46.2	27.5
Antimony-125	pCi/L	06/06/2007	0001	19	-	24	17.4	U	FQ	#	17.4	10.5
Cerium-144	pCi/L	06/06/2007	0001	19	-	24	30.8	U	FQ	#	30.8	18.4
Cesium-134	pCi/L	06/06/2007	0001	19	-	24	7.57	U	FQ	#	7.57	4.35
Cesium-137	pCi/L	06/06/2007	0001	19	-	24	7.38	U	FQ	#	7.38	4.16
Cobalt-60	pCi/L	06/06/2007	0001	19	-	24	8.09	U	FQ	#	8.09	4.52
Europium-152	pCi/L	06/06/2007	0001	19	-	24	41.2	U	FQ	#	41.2	24.5
Europium-154	pCi/L	06/06/2007	0001	19	-	24	39.1	U	FQ	#	39.1	22.9
Europium-155	pCi/L	06/06/2007	0001	19	-	24	19	U	FQ	#	19	11.1
Gross Alpha	pCi/L	06/06/2007	0001	19	-	24	7.44		FQ	#	.903	1.59
Gross Beta	pCi/L	06/06/2007	0001	19	-	24	6.24		FQ	#	1.89	1.56
Lead-212	pCi/L	06/06/2007	0001	19	-	24	17.3	U	FQ	#	17.3	10.3
Nickel-63	pCi/L	06/06/2007	0001	19	-	24	11.3	U	FQ	#	11.3	3.39
Oxidation Reduction Potential	mV	06/06/2007	N001	19	-	24	219		FQ	#		
pH	s.u.	06/06/2007	N001	19	-	24	7.29		FQ	#		
Potassium-40	pCi/L	06/06/2007	0001	19	-	24	141	U	FQ	#	141	84.8
Promethium-144	pCi/L	06/06/2007	0001	19	-	24	12.5	U	FQ	#	12.5	7.63

Ground Water Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/4/2007
Location: 5A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Promethium-146	pCi/L	06/06/2007	0001	19	-	24	7.87	U	FQ	#	7.87	4.71
Ruthenium-106	pCi/L	06/06/2007	0001	19	-	24	65.6	U	FQ	#	65.6	37.5
Specific Conductance	umhos /cm	06/06/2007	N001	19	-	24	1054		FQ	#		
Temperature	C	06/06/2007	N001	19	-	24	16.54		FQ	#		
Thorium-234	pCi/L	06/06/2007	0001	19	-	24	155	U	FQ	#	155	92.7
Tritium	pCi/L	06/06/2007	0001	19	-	24	357	U	FQ	#	357	215
Turbidity	NTU	06/06/2007	N001	19	-	24	3.85		FQ	#		
Uranium-235	pCi/L	06/06/2007	0001	19	-	24	30.7	U	FQ	#	30.7	18.3
Yttrium-88	pCi/L	06/06/2007	0001	19	-	24	7.9	U	FQ	#	7.9	4.84

Ground Water Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/4/2007
Location: 5B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/06/2007	0001	39	-	49	25	U	FQ	#	25	15.9
Alkalinity, Total (As CaCO3)	mg/L	06/06/2007	0001	39	-	49	312		FQ	#		
Americium-241	pCi/L	06/06/2007	0001	39	-	49	56.6	U	FQ	#	56.6	32.8
Antimony-125	pCi/L	06/06/2007	0001	39	-	49	22	U	FQ	#	22	12.5
Cerium-144	pCi/L	06/06/2007	0001	39	-	49	34.3	U	FQ	#	34.3	20.3
Cesium-134	pCi/L	06/06/2007	0001	39	-	49	8.84	U	FQ	#	8.84	5.19
Cesium-137	pCi/L	06/06/2007	0001	39	-	49	8.96	U	FQ	#	8.96	5.04
Cobalt-60	pCi/L	06/06/2007	0001	39	-	49	9.29	U	FQ	#	9.29	4.95
Europium-152	pCi/L	06/06/2007	0001	39	-	49	44.8	U	FQ	#	44.8	26.9
Europium-154	pCi/L	06/06/2007	0001	39	-	49	53.2	U	FQ	#	53.2	29.2
Europium-155	pCi/L	06/06/2007	0001	39	-	49	20	U	FQ	#	20	11.9
Gross Alpha	pCi/L	06/06/2007	0001	39	-	49	19		FQ	#	.864	3.44
Gross Beta	pCi/L	06/06/2007	0001	39	-	49	11.9		FQ	#	1.67	2.23
Lead-212	pCi/L	06/06/2007	0001	39	-	49	18.5	U	FQ	#	18.5	10.9
Nickel-63	pCi/L	06/06/2007	0001	39	-	49	10.4	U	FQ	#	10.4	3.33
Oxidation Reduction Potential	mV	06/06/2007	N001	39	-	49	215		FQ	#		
pH	s.u.	06/06/2007	N001	39	-	49	7.32		FQ	#		
Potassium-40	pCi/L	06/06/2007	0001	39	-	49	179	U	FQ	#	179	103
Promethium-144	pCi/L	06/06/2007	0001	39	-	49	9.4	U	FQ	#	9.4	5.52

Ground Water Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/4/2007
Location: 5B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Promethium-146	pCi/L	06/06/2007	0001	39	-	49	13.8	U	FQ	#	13.8	7.77
Ruthenium-106	pCi/L	06/06/2007	0001	39	-	49	78.7	U	FQ	#	78.7	46.8
Specific Conductance	umhos /cm	06/06/2007	N001	39	-	49	740		FQ	#		
Temperature	C	06/06/2007	N001	39	-	49	17.27		FQ	#		
Thorium-234	pCi/L	06/06/2007	0001	39	-	49	179	U	FQ	#	179	106
Tritium	pCi/L	06/06/2007	0001	39	-	49	357	U	FQ	#	357	213
Turbidity	NTU	06/06/2007	N001	39	-	49	0.91		FQ	#		
Uranium-235	pCi/L	06/06/2007	0001	39	-	49	43.6	U	FQ	#	43.6	25.5
Yttrium-88	pCi/L	06/06/2007	0001	39	-	49	13.3	U	FQ	#	13.3	7.58

Ground Water Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/4/2007
Location: 7B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/06/2007	0001	-	26.8	U	FQ	#	26.8	15.9
Alkalinity, Total (As CaCO3)	mg/L	06/06/2007	0001	-	340		FQ	#		
Americium-241	pCi/L	06/06/2007	0001	-	74.3	U	FQ	#	74.3	43.6
Antimony-125	pCi/L	06/06/2007	0001	-	18.3	U	FQ	#	18.3	9.8
Cerium-144	pCi/L	06/06/2007	0001	-	37.3	U	FQ	#	37.3	21.9
Cesium-134	pCi/L	06/06/2007	0001	-	10	U	FQ	#	10	5.86
Cesium-137	pCi/L	06/06/2007	0001	-	7.22	U	FQ	#	7.22	4.26
Cobalt-60	pCi/L	06/06/2007	0001	-	7.94	U	FQ	#	7.94	4.45
Europium-152	pCi/L	06/06/2007	0001	-	37.2	U	FQ	#	37.2	21.5
Europium-154	pCi/L	06/06/2007	0001	-	37.4	U	FQ	#	37.4	20.9
Europium-155	pCi/L	06/06/2007	0001	-	23.7	U	FQ	#	23.7	14.1
Gross Alpha	pCi/L	06/06/2007	0001	-	7.2		FQ	#	.911	1.59
Gross Beta	pCi/L	06/06/2007	0001	-	8.13		FQ	#	1.47	1.62
Lead-212	pCi/L	06/06/2007	0001	-	12.1	U	FQ	#	12.1	7.33
Nickel-63	pCi/L	06/06/2007	0001	-	10.8	U	FQ	#	10.8	3.27
Oxidation Reduction Potential	mV	06/06/2007	N001	-	-101		FQ	#		
pH	s.u.	06/06/2007	N001	-	7.51		FQ	#		
Potassium-40	pCi/L	06/06/2007	0001	-	167	U	FQ	#	167	100
Promethium-144	pCi/L	06/06/2007	0001	-	7.1	U	FQ	#	7.1	4.27

Ground Water Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/4/2007
Location: 7B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Promethium-146	pCi/L	06/06/2007	0001	-	8.67	U	FQ	#	8.67	5.08
Ruthenium-106	pCi/L	06/06/2007	0001	-	63.2	U	FQ	#	63.2	36.3
Specific Conductance	umhos /cm	06/06/2007	N001	-	686		FQ	#		
Temperature	C	06/06/2007	N001	-	17.73		FQ	#		
Thorium-234	pCi/L	06/06/2007	0001	-	150	U	FQ	#	150	90.3
Tritium	pCi/L	06/06/2007	0001	-	357	U	FQ	#	357	211
Turbidity	NTU	06/06/2007	N001	-	21.6		FQ	#		
Uranium-235	pCi/L	06/06/2007	0001	-	36.8	U	FQ	#	36.8	21.5
Yttrium-88	pCi/L	06/06/2007	0001	-	8.87	U	FQ	#	8.87	4.97

Ground Water Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/4/2007
Location: 7C WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/06/2007	0001	-	45.6	U	FQ	#	45.6	26.4
Alkalinity, Total (As CaCO3)	mg/L	06/06/2007	0001	-	370		FQ	#		
Americium-241	pCi/L	06/06/2007	0001	-	47.7	U	FQ	#	47.7	28.5
Antimony-125	pCi/L	06/06/2007	0001	-	16.3	U	FQ	#	16.3	8.8
Cerium-144	pCi/L	06/06/2007	0001	-	31.5	U	FQ	#	31.5	18.6
Cesium-134	pCi/L	06/06/2007	0001	-	7.5	U	FQ	#	7.5	4.41
Cesium-137	pCi/L	06/06/2007	0001	-	8.14	U	FQ	#	8.14	4.56
Cobalt-60	pCi/L	06/06/2007	0001	-	9.96	U	FQ	#	9.96	5.49
Europium-152	pCi/L	06/06/2007	0001	-	48.1	U	FQ	#	48.1	25.8
Europium-154	pCi/L	06/06/2007	0001	-	43.3	U	FQ	#	43.3	24.1
Europium-155	pCi/L	06/06/2007	0001	-	18.7	U	FQ	#	18.7	10.9
Gross Alpha	pCi/L	06/06/2007	0001	-	5.55		FQ	#	.951	1.3
Gross Beta	pCi/L	06/06/2007	0001	-	7.44		FQ	#	1.47	1.53
Lead-212	pCi/L	06/06/2007	0001	-	13.5	U	FQ	#	13.5	7.96
Nickel-63	pCi/L	06/06/2007	0001	-	10.9	U	FQ	#	10.9	3.36
Oxidation Reduction Potential	mV	06/06/2007	N001	-	-84.1		FQ	#		
pH	s.u.	06/06/2007	N001	-	7.33		FQ	#		
Potassium-40	pCi/L	06/06/2007	0001	-	134	U	FQ	#	134	76.4
Promethium-144	pCi/L	06/06/2007	0001	-	9.05	U	FQ	#	9.05	5.19

Ground Water Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/4/2007
Location: 7C WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Promethium-146	pCi/L	06/06/2007	0001	-	9.35	U	FQ	#	9.35	5.44
Ruthenium-106	pCi/L	06/06/2007	0001	-	68.8	U	FQ	#	68.8	39
Specific Conductance	umhos /cm	06/06/2007	N001	-	714		FQ	#		
Temperature	C	06/06/2007	N001	-	16.97		FQ	#		
Thorium-234	pCi/L	06/06/2007	0001	-	163	U	FQ	#	163	96.2
Tritium	pCi/L	06/06/2007	0001	-	357	U	FQ	#	357	213
Turbidity	NTU	06/06/2007	N001	-	54.1		FQ	#		
Uranium-235	pCi/L	06/06/2007	0001	-	40	U	FQ	#	40	23.7
Yttrium-88	pCi/L	06/06/2007	0001	-	7.79	U	FQ	#	7.79	4.75

Ground Water Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/4/2007
Location: 8B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/05/2007	0001	-	42.9	U	FQ	#	42.9	25.4
Alkalinity, Total (As CaCO3)	mg/L	06/05/2007	0001	-	338		FQ	#		
Americium-241	pCi/L	06/05/2007	0001	-	48.8	U	FQ	#	48.8	27.9
Antimony-125	pCi/L	06/05/2007	0001	-	18.7	U	FQ	#	18.7	10.6
Cerium-144	pCi/L	06/05/2007	0001	-	38.5	U	FQ	#	38.5	22.6
Cesium-134	pCi/L	06/05/2007	0001	-	9.88	U	FQ	#	9.88	5.86
Cesium-137	pCi/L	06/05/2007	0001	-	7.58	U	FQ	#	7.58	4.32
Cobalt-60	pCi/L	06/05/2007	0001	-	7.54	U	FQ	#	7.54	4.3
Europium-152	pCi/L	06/05/2007	0001	-	41	U	FQ	#	41	22.8
Europium-154	pCi/L	06/05/2007	0001	-	36.6	U	FQ	#	36.6	21.8
Europium-155	pCi/L	06/05/2007	0001	-	26.6	U	FQ	#	26.6	16
Gross Alpha	pCi/L	06/05/2007	0001	-	8.43		FQ	#	.913	1.8
Gross Beta	pCi/L	06/05/2007	0001	-	8.44		FQ	#	1.65	1.73
Lead-212	pCi/L	06/05/2007	0001	-	15.7	U	FQ	#	15.7	9.4
Nickel-63	pCi/L	06/05/2007	0001	-	10.9	U	FQ	#	10.9	3.5
Oxidation Reduction Potential	mV	06/05/2007	N001	-	64		FQ	#		
pH	s.u.	06/05/2007	N001	-	7.65		FQ	#		
Potassium-40	pCi/L	06/05/2007	0001	-	142	U	FQ	#	142	83.6
Promethium-144	pCi/L	06/05/2007	0001	-	7.97	U	FQ	#	7.97	4.49

Ground Water Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/4/2007
Location: 8B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Promethium-146	pCi/L	06/05/2007	0001	-	8.23	U	FQ	#	8.23	4.71
Ruthenium-106	pCi/L	06/05/2007	0001	-	70	U	FQ	#	70	40.1
Specific Conductance	umhos /cm	06/05/2007	N001	-	831		FQ	#		
Temperature	C	06/05/2007	N001	-	18.47		FQ	#		
Thorium-234	pCi/L	06/05/2007	0001	-	170	U	FQ	#	170	101
Tritium	pCi/L	06/05/2007	0001	-	357	U	FQ	#	357	213
Turbidity	NTU	06/05/2007	N001	-	1.37		FQ	#		
Uranium-235	pCi/L	06/05/2007	0001	-	36.9	U	FQ	#	36.9	16.3
Yttrium-88	pCi/L	06/05/2007	0001	-	8.55	U	FQ	#	8.55	4.99

Ground Water Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/4/2007
Location: 8C WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/05/2007	0001	-	44	U	FQ	#	44	24.7
Alkalinity, Total (As CaCO3)	mg/L	06/05/2007	0001	-	346		FQ	#		
Americium-241	pCi/L	06/05/2007	0001	-	47.9	U	FQ	#	47.9	27.5
Antimony-125	pCi/L	06/05/2007	0001	-	20.5	U	FQ	#	20.5	11.4
Cerium-144	pCi/L	06/05/2007	0001	-	37.5	U	FQ	#	37.5	21.7
Cesium-134	pCi/L	06/05/2007	0001	-	9.38	U	FQ	#	9.38	5.19
Cesium-137	pCi/L	06/05/2007	0001	-	8.9	U	FQ	#	8.9	4.92
Cobalt-60	pCi/L	06/05/2007	0001	-	11	U	FQ	#	11	5.47
Europium-152	pCi/L	06/05/2007	0001	-	49.1	U	FQ	#	49.1	26.9
Europium-154	pCi/L	06/05/2007	0001	-	54.6	U	FQ	#	54.6	28.1
Europium-155	pCi/L	06/05/2007	0001	-	19.9	U	FQ	#	19.9	11.9
Gross Alpha	pCi/L	06/05/2007	0001	-	7.85		FQ	#	1.25	1.78
Gross Beta	pCi/L	06/05/2007	0001	-	6.18		FQ	#	2.01	1.56
Lead-212	pCi/L	06/05/2007	0001	-	18.8	U	FQ	#	18.8	11
Nickel-63	pCi/L	06/05/2007	0001	-	10.9	U	FQ	#	10.9	3.27
Oxidation Reduction Potential	mV	06/05/2007	N001	-	-93		FQ	#		
pH	s.u.	06/05/2007	N001	-	7.3		FQ	#		
Potassium-40	pCi/L	06/05/2007	0001	-	137	U	FQ	#	137	76.5
Promethium-144	pCi/L	06/05/2007	0001	-	9.96	U	FQ	#	9.96	5.52
Promethium-146	pCi/L	06/05/2007	0001	-	9.2	U	FQ	#	9.2	5.45

Ground Water Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/4/2007
Location: 8C WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/05/2007	0001	-	75.9	U	FQ	#	75.9	42.7
Specific Conductance	umhos /cm	06/05/2007	N001	-	734		FQ	#		
Temperature	C	06/05/2007	N001	-	16.6		FQ	#		
Thorium-234	pCi/L	06/05/2007	0001	-	172	U	FQ	#	172	101
Tritium	pCi/L	06/05/2007	0001	-	357	U	FQ	#	357	211
Turbidity	NTU	06/05/2007	N001	-	3.89		FQ	#		
Uranium-235	pCi/L	06/05/2007	0001	-	49.6	U	FQ	#	49.6	29.4
Yttrium-88	pCi/L	06/05/2007	0001	-	10.3	U	FQ	#	10.3	6.17

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:
* Replicate analysis not within control limits.
> Result above upper detection limit.
A TIC is a suspected aldol-condensation product.
B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
C Pesticide result confirmed by GC-MS.
D Analyte determined in diluted sample.
E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
H Holding time expired, value suspect.
I Increased detection limit due to required dilution.
J Estimated
N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound (TIC).
P > 25% difference in detected pesticide or Aroclor concentrations between 2 columns.
U Analytical result below detection limit.
W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
X,Y,Z Laboratory defined qualifier, see case narrative.

DATA QUALIFIERS:
F Low flow sampling method used.
G Possible grout contamination, pH > 9.
J Estimated value.
L Less than 3 bore volumes purged prior to sampling.
Q Qualitative result due to sampling technique.
R Unusable result.
U Parameter analyzed for but was not detected.
X Location is undefined.

QA QUALIFIER:
Validated according to quality assurance guidelines.

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2008 Groundwater Data

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Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/18/2008
Location: 1A WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Data	QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/04/2008	N001	16	-	23.5	21.2	U	F	#	21.2	12.8
Actinium-228	pCi/L	06/04/2008	N002	16	-	23.5	18.8	U	F	#	18.8	12.2
Americium-241	pCi/L	06/04/2008	N001	16	-	23.5	8.35	U	F	#	8.35	6.62
Americium-241	pCi/L	06/04/2008	N002	16	-	23.5	23.4	U	F	#	23.4	13.5
Antimony-125	pCi/L	06/04/2008	N001	16	-	23.5	13.7	U	F	#	13.7	7.75
Antimony-125	pCi/L	06/04/2008	N002	16	-	23.5	11.2	U	F	#	11.2	7.03
Cerium-144	pCi/L	06/04/2008	N001	16	-	23.5	29.2	U	F	#	29.2	123
Cerium-144	pCi/L	06/04/2008	N002	16	-	23.5	28.7	U	F	#	28.7	166
Cesium-134	pCi/L	06/04/2008	N001	16	-	23.5	4.86	U	F	#	4.86	3.44
Cesium-134	pCi/L	06/04/2008	N002	16	-	23.5	3.88	U	F	#	3.88	2.85
Cesium-137	pCi/L	06/04/2008	N001	16	-	23.5	5.6	U	F	#	5.6	3.36
Cesium-137	pCi/L	06/04/2008	N002	16	-	23.5	4.27	U	F	#	4.27	2.66
Cobalt-60	pCi/L	06/04/2008	N001	16	-	23.5	5.17	U	F	#	5.17	3.1
Cobalt-60	pCi/L	06/04/2008	N002	16	-	23.5	3.99	U	F	#	3.99	2.26
Dissolved Oxygen	mg/L	06/04/2008	N001	16	-	23.5	3.39		F	#		
Europium-152	pCi/L	06/04/2008	N001	16	-	23.5	10.7	U	F	#	10.7	6.19
Europium-152	pCi/L	06/04/2008	N002	16	-	23.5	11	U	F	#	11	5.62
Europium-154	pCi/L	06/04/2008	N001	16	-	23.5	7.52	U	F	#	7.52	4.34
Europium-154	pCi/L	06/04/2008	N002	16	-	23.5	7.56	U	F	#	7.56	4.63
Europium-155	pCi/L	06/04/2008	N001	16	-	23.5	10.1	U	F	#	10.1	7.05

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/18/2008
Location: 1A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Europium-155	pCi/L	06/04/2008	N002	16	-	23.5	12.9	U	F	#	12.9	7.8
Gross Alpha	pCi/L	06/04/2008	N001	16	-	23.5	19	U	F	#	19	12.2
Gross Alpha	pCi/L	06/04/2008	N002	16	-	23.5	16.3	U	F	#	16.3	8.86
Gross Beta	pCi/L	06/04/2008	N001	16	-	23.5	5.6		FJ	#	5.47	4.23
Gross Beta	pCi/L	06/04/2008	N002	16	-	23.5	8.46	U	F	#	8.46	4.71
Lead-212	pCi/L	06/04/2008	N001	16	-	23.5	9.74	U	F	#	9.74	6.24
Lead-212	pCi/L	06/04/2008	N002	16	-	23.5	8.06	U	F	#	8.06	5.12
Nickel-63	pCi/L	06/04/2008	N001	16	-	23.5	6.22	U	F	#	6.22	3.66
Nickel-63	pCi/L	06/04/2008	N002	16	-	23.5	6.38	U	F	#	6.38	3.87
Oxidation Reduction Potential	mV	06/04/2008	N001	16	-	23.5	94.7		F	#		
pH	s.u.	06/04/2008	N001	16	-	23.5	7.51		F	#		
Potassium-40	pCi/L	06/04/2008	N001	16	-	23.5	60.9		FJ	#	48	52.8
Potassium-40	pCi/L	06/04/2008	N002	16	-	23.5	73.6	U	F	#	73.6	39.7
Promethium-144	pCi/L	06/04/2008	N001	16	-	23.5	4.86	U	F	#	4.86	2.99
Promethium-144	pCi/L	06/04/2008	N002	16	-	23.5	4	U	F	#	4	2.37
Promethium-146	pCi/L	06/04/2008	N001	16	-	23.5	6.87	U	F	#	6.87	3.9
Promethium-146	pCi/L	06/04/2008	N002	16	-	23.5	5.36	U	F	#	5.36	3.13
Ruthenium-106	pCi/L	06/04/2008	N001	16	-	23.5	47.4	U	F	#	47.4	27.9
Ruthenium-106	pCi/L	06/04/2008	N002	16	-	23.5	43.2	U	F	#	43.2	24
Specific Conductance	µmho/cm	06/04/2008	N001	16	-	23.5	1670		F	#		

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/18/2008
Location: 1A WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Data	QA	Detection Limit	Uncertainty
Temperature	C	06/04/2008	N001	16	-	23.5	17.29		F	#		
Thorium-234	pCi/L	06/04/2008	N001	16	-	23.5	72.4		UF	#	55.3	76.9
Thorium-234	pCi/L	06/04/2008	N002	16	-	23.5	86	U	F	#	86	56
Tritium	pCi/L	06/04/2008	N001	16	-	23.5	185	U	F	#	185	112
Tritium	pCi/L	06/04/2008	N002	16	-	23.5	185	U	F	#	185	115
Turbidity	NTU	06/04/2008	N001	16	-	23.5	9.2		F	#		
Uranium-235	pCi/L	06/04/2008	N001	16	-	23.5	7.84	U	F	#	7.84	19.6
Uranium-235	pCi/L	06/04/2008	N002	16	-	23.5	7	U	F	#	7	4.6
Uranium-238	pCi/L	06/04/2008	N001	16	-	23.5	960	U	F	#	960	19.6
Uranium-238	pCi/L	06/04/2008	N002	16	-	23.5	787	U	F	#	787	507
Yttrium-88	pCi/L	06/04/2008	N001	16	-	23.5	5.67	U	F	#	5.67	3.61
Yttrium-88	pCi/L	06/04/2008	N002	16	-	23.5	4.79	U	F	#	4.79	2.86

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/18/2008
Location: 1B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/04/2008	0001	39	-	49	18	U	FQ	#	18	12
Americium-241	pCi/L	06/04/2008	0001	39	-	49	22.4	U	FQ	#	22.4	13.1
Antimony-125	pCi/L	06/04/2008	0001	39	-	49	11.3	U	FQ	#	11.3	6.86
Cerium-144	pCi/L	06/04/2008	0001	39	-	49	28.5	U	FQ	#	28.5	163
Cesium-134	pCi/L	06/04/2008	0001	39	-	49	4.12	U	FQ	#	4.12	2.6
Cesium-137	pCi/L	06/04/2008	0001	39	-	49	4.56	U	FQ	#	4.56	2.54
Cobalt-60	pCi/L	06/04/2008	0001	39	-	49	4.27	U	FQ	#	4.27	2.5
Dissolved Oxygen	mg/L	06/04/2008	N001	39	-	49	4.74		FQ	#		
Europium-152	pCi/L	06/04/2008	0001	39	-	49	10.2	U	FQ	#	10.2	6.13
Europium-154	pCi/L	06/04/2008	0001	39	-	49	7.31	U	FQ	#	7.31	4.37
Europium-155	pCi/L	06/04/2008	0001	39	-	49	12.6	U	FQ	#	12.6	7.67
Gross Alpha	pCi/L	06/04/2008	0001	39	-	49	13.8	U	FQ	#	13.8	8.01
Gross Beta	pCi/L	06/04/2008	0001	39	-	49	7.21	U	FQ	#	7.21	4.92
Lead-212	pCi/L	06/04/2008	0001	39	-	49	8.57	U	FQ	#	8.57	5.27
Nickel-63	pCi/L	06/04/2008	0001	39	-	49	6.27	U	FQ	#	6.27	4.04
Oxidation Reduction Potential	mV	06/04/2008	N001	39	-	49	118		FQ	#		
pH	s.u.	06/04/2008	N001	39	-	49	7.34		FQ	#		
Potassium-40	pCi/L	06/04/2008	0001	39	-	49	75.1	U	FQ	#	75.1	38.9
Promethium-144	pCi/L	06/04/2008	0001	39	-	49	4.16	U	FQ	#	4.16	2.41
Promethium-146	pCi/L	06/04/2008	0001	39	-	49	5.85	U	FQ	#	5.85	3.39

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/18/2008
Location: 1B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/04/2008	0001	39	-	49	42.3	U	FQ	#	42.3	23.7
Specific Conductance	µmho/cm	06/04/2008	N001	39	-	49	1166		FQ	#		
Temperature	C	06/04/2008	N001	39	-	49	18.95		FQ	#		
Thorium-234	pCi/L	06/04/2008	0001	39	-	49	86.4	U	FQ	#	86.4	55.4
Tritium	pCi/L	06/04/2008	N001	39	-	49	187	U	FQ	#	187	115
Turbidity	NTU	06/04/2008	0001	39	-	49	6.1		FQ	#		
Turbidity	NTU	06/04/2008	N001	39	-	49	999	>	FQ	#		
Uranium-235	pCi/L	06/04/2008	0001	39	-	49	6.79	U	FQ	#	6.79	4.51
Uranium-238	pCi/L	06/04/2008	0001	39	-	49	799	U	FQ	#	799	520
Yttrium-88	pCi/L	06/04/2008	0001	39	-	49	4.42	U	FQ	#	4.42	2.86

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/18/2008
Location: 2A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/03/2008	0001	20	-	25	21.6	U	FQ	#	21.6	12.5
Americium-241	pCi/L	06/03/2008	0001	20	-	25	8.24	U	FQ	#	8.24	6.9
Antimony-125	pCi/L	06/03/2008	0001	20	-	25	13.8	U	FQ	#	13.8	7.8
Cerium-144	pCi/L	06/03/2008	0001	20	-	25	29.1	U	FQ	#	29.1	120
Cesium-134	pCi/L	06/03/2008	0001	20	-	25	4.72	U	FQ	#	4.72	3.2
Cesium-137	pCi/L	06/03/2008	0001	20	-	25	5.21	U	FQ	#	5.21	3.01
Cobalt-60	pCi/L	06/03/2008	0001	20	-	25	5.48	U	FQ	#	5.48	3.19
Dissolved Oxygen	mg/L	06/03/2008	N001	20	-	25	3.7		FQ	#		
Europium-152	pCi/L	06/03/2008	0001	20	-	25	10.4	U	FQ	#	10.4	6.19
Europium-154	pCi/L	06/03/2008	0001	20	-	25	7.64	U	FQ	#	7.64	4.39
Europium-155	pCi/L	06/03/2008	0001	20	-	25	9.76	U	FQ	#	9.76	6.16
Gross Alpha	pCi/L	06/03/2008	0001	20	-	25	14.4	U	FQ	#	14.4	9.89
Gross Beta	pCi/L	06/03/2008	0001	20	-	25	5.13	U	FQ	#	5.13	3.74
Lead-212	pCi/L	06/03/2008	0001	20	-	25	9.71	U	FQ	#	9.71	8.68
Nickel-63	pCi/L	06/03/2008	0001	20	-	25	6.25	U	FQ	#	6.25	3.84
Oxidation Reduction Potential	mV	06/03/2008	N001	20	-	25	39.8		FQ	#		
pH	s.u.	06/03/2008	N001	20	-	25	7.71		FQ	#		
Potassium-40	pCi/L	06/03/2008	0001	20	-	25	98.1		FQJ	#	45.8	59.6
Promethium-144	pCi/L	06/03/2008	0001	20	-	25	4.73	U	FQ	#	4.73	3.04
Promethium-146	pCi/L	06/03/2008	0001	20	-	25	6.4	U	FQ	#	6.4	3.68

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/18/2008
Location: 2A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/03/2008	0001	20	-	25	48.3	U	FQ	#	48.3	27.2
Specific Conductance	µmho/cm	06/03/2008	N001	20	-	25	1257		FQ	#		
Temperature	C	06/03/2008	N001	20	-	25	17.95		FQ	#		
Thorium-234	pCi/L	06/03/2008	0001	20	-	25	82.2	U	FQ	#	82.2	53.6
Tritium	pCi/L	06/03/2008	N001	20	-	25	186	U	FQ	#	186	111
Turbidity	NTU	06/03/2008	0001	20	-	25	1.99		FQ	#		
Turbidity	NTU	06/03/2008	N001	20	-	25	85.6		FQ	#		
Uranium-235	pCi/L	06/03/2008	0001	20	-	25	8.33	U	FQ	#	8.33	5.02
Uranium-238	pCi/L	06/03/2008	0001	20	-	25	987	U	FQ	#	987	597
Yttrium-88	pCi/L	06/03/2008	0001	20	-	25	5.97	U	FQ	#	5.97	3.12

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/18/2008
Location: 2B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/03/2008	N001	43	-	53	20.5	U	FQ	#	20.5	12.4
Americium-241	pCi/L	06/03/2008	N001	43	-	53	8.21	U	FQ	#	8.21	6.82
Antimony-125	pCi/L	06/03/2008	N001	43	-	53	13.1	U	FQ	#	13.1	7.64
Cerium-144	pCi/L	06/03/2008	N001	43	-	53	29.3	U	FQ	#	29.3	119
Cesium-134	pCi/L	06/03/2008	N001	43	-	53	4.72	U	FQ	#	4.72	3.31
Cesium-137	pCi/L	06/03/2008	N001	43	-	53	5.44	U	FQ	#	5.44	3.11
Cobalt-60	pCi/L	06/03/2008	N001	43	-	53	5.19	U	FQ	#	5.19	3.19
Dissolved Oxygen	mg/L	06/03/2008	N001	43	-	53	1.42		FQ	#		
Europium-152	pCi/L	06/03/2008	N001	43	-	53	10.7	U	FQ	#	10.7	6.17
Europium-154	pCi/L	06/03/2008	N001	43	-	53	7.56	U	FQ	#	7.56	4.36
Europium-155	pCi/L	06/03/2008	N001	43	-	53	9.98	U	FQ	#	9.98	6.12
Gross Alpha	pCi/L	06/03/2008	N001	43	-	53	19.8	U	FQ	#	19.8	17.1
Gross Beta	pCi/L	06/03/2008	N001	43	-	53	7.83		FQJ	#	7.43	5.94
Lead-212	pCi/L	06/03/2008	N001	43	-	53	15.4		UFQ	#	9.68	10.3
Nickel-63	pCi/L	06/03/2008	N001	43	-	53	6.42	U	FQ	#	6.42	3.81
Oxidation Reduction Potential	mV	06/03/2008	N001	43	-	53	-41		FQ	#		
pH	s.u.	06/03/2008	N001	43	-	53	7.37		FQ	#		
Potassium-40	pCi/L	06/03/2008	N001	43	-	53	83.4	U	FQ	#	83.4	46.4
Promethium-144	pCi/L	06/03/2008	N001	43	-	53	4.83	U	FQ	#	4.83	3.1
Promethium-146	pCi/L	06/03/2008	N001	43	-	53	6.8	U	FQ	#	6.8	3.85

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/18/2008
Location: 2B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/03/2008	N001	43	-	53	46.1	U	FQ	#	46.1	26.6
Specific Conductance	µmho/cm	06/03/2008	N001	43	-	53	1494		FQ	#		
Temperature	C	06/03/2008	N001	43	-	53	17.4		FQ	#		
Thorium-234	pCi/L	06/03/2008	N001	43	-	53	81	U	FQ	#	81	53.1
Tritium	pCi/L	06/03/2008	N001	43	-	53	186	U	FQ	#	186	119
Turbidity	NTU	06/03/2008	N001	43	-	53	9.6		FQ	#		
Uranium-235	pCi/L	06/03/2008	N001	43	-	53	8.2	U	FQ	#	8.2	4.99
Uranium-238	pCi/L	06/03/2008	N001	43	-	53	954	U	FQ	#	954	579
Yttrium-88	pCi/L	06/03/2008	N001	43	-	53	5.96	U	FQ	#	5.96	3.04

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/18/2008
Location: 2B2 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/03/2008	0001	-	18.6	U	FQ	#	18.6	12.2
Americium-241	pCi/L	06/03/2008	0001	-	22.2	U	FQ	#	22.2	12.9
Antimony-125	pCi/L	06/03/2008	0001	-	12.8	U	FQ	#	12.8	7.44
Cerium-144	pCi/L	06/03/2008	0001	-	76.9		UFQ	#	30.4	166
Cesium-134	pCi/L	06/03/2008	0001	-	4.35	U	FQ	#	4.35	2.75
Cesium-137	pCi/L	06/03/2008	0001	-	4.62	U	FQ	#	4.62	2.59
Cobalt-60	pCi/L	06/03/2008	0001	-	4.03	U	FQ	#	4.03	2.26
Dissolved Oxygen	mg/L	06/03/2008	N001	-	1.25		FQ	#		
Europium-152	pCi/L	06/03/2008	0001	-	10.8	U	FQ	#	10.8	6.42
Europium-154	pCi/L	06/03/2008	0001	-	7.53	U	FQ	#	7.53	4.53
Europium-155	pCi/L	06/03/2008	0001	-	13	U	FQ	#	13	7.65
Gross Alpha	pCi/L	06/03/2008	0001	-	9.08	U	FQ	#	9.08	5.79
Gross Beta	pCi/L	06/03/2008	0001	-	5.03		FQJ	#	3.08	2.81
Lead-212	pCi/L	06/03/2008	0001	-	8.35	U	FQ	#	8.35	5.18
Nickel-63	pCi/L	06/03/2008	0001	-	6.42	U	FQ	#	6.42	3.85
Oxidation Reduction Potential	mV	06/03/2008	N001	-	9.9		FQ	#		
pH	s.u.	06/03/2008	N001	-	7.24		FQ	#		
Potassium-40	pCi/L	06/03/2008	0001	-	72.1	U	FQ	#	72.1	38.1
Promethium-144	pCi/L	06/03/2008	0001	-	4.11	U	FQ	#	4.11	2.46
Promethium-146	pCi/L	06/03/2008	0001	-	5.55	U	FQ	#	5.55	3.29

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/18/2008
Location: 2B2 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/03/2008	0001	-	43.5	U	FQ	#	43.5	23.8
Specific Conductance	µmho/cm	06/03/2008	N001	-	1379		FQ	#		
Temperature	C	06/03/2008	N001	-	18.74		FQ	#		
Thorium-234	pCi/L	06/03/2008	0001	-	86.7	U	FQ	#	86.7	55.1
Tritium	pCi/L	06/03/2008	N001	-	185	U	FQ	#	185	119
Turbidity	NTU	06/03/2008	0001	-	0.63		FQ	#		
Turbidity	NTU	06/03/2008	N001	-	1000	>	FQ	#		
Uranium-235	pCi/L	06/03/2008	0001	-	6.57	U	FQ	#	6.57	4.44
Uranium-238	pCi/L	06/03/2008	0001	-	831	U	FQ	#	831	511
Yttrium-88	pCi/L	06/03/2008	0001	-	4.82	U	FQ	#	4.82	2.89

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/18/2008
Location: 2C2 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/03/2008	N001	-	17.7	U	FQ	#	17.7	11.6
Americium-241	pCi/L	06/03/2008	N001	-	21.4	U	FQ	#	21.4	12.9
Antimony-125	pCi/L	06/03/2008	N001	-	11.9	U	FQ	#	11.9	7.14
Cerium-144	pCi/L	06/03/2008	N001	-	29.3	U	FQ	#	29.3	167
Cesium-134	pCi/L	06/03/2008	N001	-	4.35	U	FQ	#	4.35	2.45
Cesium-137	pCi/L	06/03/2008	N001	-	4.22	U	FQ	#	4.22	2.44
Cobalt-60	pCi/L	06/03/2008	N001	-	4.01	U	FQ	#	4.01	2.41
Dissolved Oxygen	mg/L	06/03/2008	N001	-	8.91		FQ	#		
Europium-152	pCi/L	06/03/2008	N001	-	10.4	U	FQ	#	10.4	6.28
Europium-154	pCi/L	06/03/2008	N001	-	7.25	U	FQ	#	7.25	4.46
Europium-155	pCi/L	06/03/2008	N001	-	12.4	U	FQ	#	12.4	7.49
Gross Alpha	pCi/L	06/03/2008	N001	-	7.66	U	FQ	#	7.66	4.39
Gross Beta	pCi/L	06/03/2008	N001	-	6.03		FQJ	#	3.21	3.09
Lead-212	pCi/L	06/03/2008	N001	-	8.77	U	FQ	#	8.77	5.4
Nickel-63	pCi/L	06/03/2008	N001	-	6.51	U	FQ	#	6.51	4.23
Oxidation Reduction Potential	mV	06/03/2008	N001	-	136		FQ	#		
pH	s.u.	06/03/2008	N001	-	8.18		FQ	#		
Potassium-40	pCi/L	06/03/2008	N001	-	68.8	U	FQ	#	68.8	36.4
Promethium-144	pCi/L	06/03/2008	N001	-	3.89	U	FQ	#	3.89	2.38
Promethium-146	pCi/L	06/03/2008	N001	-	5.72	U	FQ	#	5.72	3.25

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/18/2008
Location: 2C2 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/03/2008	N001	-	39.9	U	FQ	#	39.9	21.8
Specific Conductance	µmho/cm	06/03/2008	N001	-	919		FQ	#		
Temperature	C	06/03/2008	N001	-	25.85		FQ	#		
Thorium-234	pCi/L	06/03/2008	N001	-	82.7	U	FQ	#	82.7	54.1
Tritium	pCi/L	06/03/2008	N001	-	184	U	FQ	#	184	112
Turbidity	NTU	06/03/2008	N001	-	6.73		FQ	#		
Uranium-235	pCi/L	06/03/2008	N001	-	6.83	U	FQ	#	6.83	4.49
Uranium-238	pCi/L	06/03/2008	N001	-	772	U	FQ	#	772	505
Yttrium-88	pCi/L	06/03/2008	N001	-	5.41	U	FQ	#	5.41	2.94

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/18/2008
Location: 3A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/03/2008	N001	19	-	24	17	U	FQ	#	17	11.6
Americium-241	pCi/L	06/03/2008	N001	19	-	24	22.6	U	FQ	#	22.6	13.4
Antimony-125	pCi/L	06/03/2008	N001	19	-	24	12	U	FQ	#	12	6.91
Cerium-144	pCi/L	06/03/2008	N001	19	-	24	30.8	U	FQ	#	30.8	163
Cesium-134	pCi/L	06/03/2008	N001	19	-	24	4.42	U	FQ	#	4.42	2.63
Cesium-137	pCi/L	06/03/2008	N001	19	-	24	4.4	U	FQ	#	4.4	2.45
Cobalt-60	pCi/L	06/03/2008	N001	19	-	24	4.41	U	FQ	#	4.41	2.46
Dissolved Oxygen	mg/L	06/03/2008	N001	19	-	24	3.7		FQ	#		
Europium-152	pCi/L	06/03/2008	N001	19	-	24	10.5	U	FQ	#	10.5	6.39
Europium-154	pCi/L	06/03/2008	N001	19	-	24	7.48	U	FQ	#	7.48	4.46
Europium-155	pCi/L	06/03/2008	N001	19	-	24	12.6	U	FQ	#	12.6	7.69
Gross Alpha	pCi/L	06/03/2008	N001	19	-	24	21.4	U	FQ	#	21.4	12.4
Gross Beta	pCi/L	06/03/2008	N001	19	-	24	8.49	U	FQ	#	8.49	5.46
Lead-212	pCi/L	06/03/2008	N001	19	-	24	8.76	U	FQ	#	8.76	5.4
Nickel-63	pCi/L	06/03/2008	N001	19	-	24	6.3	U	FQ	#	6.3	3.78
Oxidation Reduction Potential	mV	06/03/2008	N001	19	-	24	-4.6		FQ	#		
pH	s.u.	06/03/2008	N001	19	-	24	7.31		FQ	#		
Potassium-40	pCi/L	06/03/2008	N001	19	-	24	67.8	U	FQ	#	67.8	36.3
Promethium-144	pCi/L	06/03/2008	N001	19	-	24	3.95	U	FQ	#	3.95	2.43
Promethium-146	pCi/L	06/03/2008	N001	19	-	24	5.69	U	FQ	#	5.69	3.28

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/18/2008
Location: 3A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/03/2008	N001	19	-	24	41	U	FQ	#	41	23
Specific Conductance	µmho/cm	06/03/2008	N001	19	-	24	2290		FQ	#		
Temperature	C	06/03/2008	N001	19	-	24	18.07		FQ	#		
Thorium-234	pCi/L	06/03/2008	N001	19	-	24	84.3	U	FQ	#	84.3	55.1
Tritium	pCi/L	06/03/2008	N001	19	-	24	185	U	FQ	#	185	109
Turbidity	NTU	06/03/2008	N001	19	-	24	4.22		FQ	#		
Uranium-235	pCi/L	06/03/2008	N001	19	-	24	6.58	U	FQ	#	6.58	4.49
Uranium-238	pCi/L	06/03/2008	N001	19	-	24	698	U	FQ	#	698	507
Yttrium-88	pCi/L	06/03/2008	N001	19	-	24	5.36	U	FQ	#	5.36	2.88

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/18/2008
Location: 3B WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Data	QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/03/2008	N001	43	-	53	22.4	U	FQ	#	22.4	12.7
Americium-241	pCi/L	06/03/2008	N001	43	-	53	8.26	U	FQ	#	8.26	6.98
Antimony-125	pCi/L	06/03/2008	N001	43	-	53	7.99	U	FQ	#	7.99	7.99
Cerium-144	pCi/L	06/03/2008	N001	43	-	53	29	U	FQ	#	29	123
Cesium-134	pCi/L	06/03/2008	N001	43	-	53	4.68	U	FQ	#	4.68	3.24
Cesium-137	pCi/L	06/03/2008	N001	43	-	53	4.91	U	FQ	#	4.91	2.89
Cobalt-60	pCi/L	06/03/2008	N001	43	-	53	4.88	U	FQ	#	4.88	2.97
Dissolved Oxygen	mg/L	06/03/2008	N001	43	-	53	6.16		FQ	#		
Europium-152	pCi/L	06/03/2008	N001	43	-	53	10.4	U	FQ	#	10.4	6.15
Europium-154	pCi/L	06/03/2008	N001	43	-	53	7.49	U	FQ	#	7.49	4.35
Europium-155	pCi/L	06/03/2008	N001	43	-	53	9.59	U	FQ	#	9.59	6.14
Gross Alpha	pCi/L	06/03/2008	N001	43	-	53	27.7	U	FQ	#	27.7	14.5
Gross Beta	pCi/L	06/03/2008	N001	43	-	53	10.8	U	FQ	#	10.8	7.83
Lead-212	pCi/L	06/03/2008	N001	43	-	53	9.52	U	FQ	#	9.52	6.08
Nickel-63	pCi/L	06/03/2008	N001	43	-	53	6.46	U	FQ	#	6.46	4.18
Oxidation Reduction Potential	mV	06/03/2008	N001	43	-	53	29.5		FQ	#		
pH	s.u.	06/03/2008	N001	43	-	53	7.41		FQ	#		
Potassium-40	pCi/L	06/03/2008	N001	43	-	53	43.4	U	FQ	#	43.4	43.4
Promethium-144	pCi/L	06/03/2008	N001	43	-	53	4.83	U	FQ	#	4.83	3.28
Promethium-146	pCi/L	06/03/2008	N001	43	-	53	6.18	U	FQ	#	6.18	3.57

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/18/2008
Location: 3B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/03/2008	N001	43	-	53	48.1	U	FQ	#	48.1	27.9
Specific Conductance	µmho/cm	06/03/2008	N001	43	-	53	2950		FQ	#		
Temperature	C	06/03/2008	N001	43	-	53	20.15		FQ	#		
Thorium-234	pCi/L	06/03/2008	N001	43	-	53	82	U	FQ	#	82	53.4
Tritium	pCi/L	06/03/2008	N001	43	-	53	187	U	FQ	#	187	119
Turbidity	NTU	06/03/2008	N001	43	-	53	8.12		FQ	#		
Uranium-235	pCi/L	06/03/2008	N001	43	-	53	8.04	U	FQ	#	8.04	4.92
Uranium-238	pCi/L	06/03/2008	N001	43	-	53	974	U	FQ	#	974	594
Yttrium-88	pCi/L	06/03/2008	N001	43	-	53	5.2	U	FQ	#	5.2	2.98

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/18/2008
Location: 4A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/03/2008	N001	19	-	24	20.6	U	FQ	#	20.6	12.3
Americium-241	pCi/L	06/03/2008	N001	19	-	24	8.15	U	FQ	#	8.15	6.69
Antimony-125	pCi/L	06/03/2008	N001	19	-	24	14	U	FQ	#	14	8.14
Cerium-144	pCi/L	06/03/2008	N001	19	-	24	31.3	U	FQ	#	31.3	124
Cesium-134	pCi/L	06/03/2008	N001	19	-	24	4.79	U	FQ	#	4.79	3.19
Cesium-137	pCi/L	06/03/2008	N001	19	-	24	5.36	U	FQ	#	5.36	3.16
Cobalt-60	pCi/L	06/03/2008	N001	19	-	24	5.34	U	FQ	#	5.34	3.14
Dissolved Oxygen	mg/L	06/03/2008	N001	19	-	24	4.1		FQ	#		
Europium-152	pCi/L	06/03/2008	N001	19	-	24	10.7	U	FQ	#	10.7	6.19
Europium-154	pCi/L	06/03/2008	N001	19	-	24	7.54	U	FQ	#	7.54	4.37
Europium-155	pCi/L	06/03/2008	N001	19	-	24	9.46	U	FQ	#	9.46	6.98
Gross Alpha	pCi/L	06/03/2008	N001	19	-	24	3.18	U	FQ	#	3.18	1.64
Gross Beta	pCi/L	06/03/2008	N001	19	-	24	1.3	U	FQ	#	1.3	0.742
Lead-212	pCi/L	06/03/2008	N001	19	-	24	9.29	U	FQ	#	9.29	6.08
Nickel-63	pCi/L	06/03/2008	N001	19	-	24	6.32	U	FQ	#	6.32	3.9
Oxidation Reduction Potential	mV	06/03/2008	N001	19	-	24	146		FQ	#		
pH	s.u.	06/03/2008	N001	19	-	24	7.11		FQ	#		
Potassium-40	pCi/L	06/03/2008	N001	19	-	24	76.1		FQJ	#	42.7	72.8
Promethium-144	pCi/L	06/03/2008	N001	19	-	24	4.79	U	FQ	#	4.79	2.98
Promethium-146	pCi/L	06/03/2008	N001	19	-	24	6.1	U	FQ	#	6.1	3.56

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/18/2008
Location: 4A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/03/2008	N001	19	-	24	47.5	U	FQ	#	47.5	27.4
Specific Conductance	µmho/cm	06/03/2008	N001	19	-	24	2121		FQ	#		
Temperature	C	06/03/2008	N001	19	-	24	16.26		FQ	#		
Thorium-234	pCi/L	06/03/2008	N001	19	-	24	65.9		UFQ	#	53.2	70.8
Tritium	pCi/L	06/03/2008	N001	19	-	24	185	U	FQ	#	185	107
Turbidity	NTU	06/03/2008	N001	19	-	24	2.93		FQ	#		
Uranium-235	pCi/L	06/03/2008	N001	19	-	24	7.93	U	FQ	#	7.93	4.79
Uranium-238	pCi/L	06/03/2008	N001	19	-	24	977	U	FQ	#	977	614
Yttrium-88	pCi/L	06/03/2008	N001	19	-	24	5.9	U	FQ	#	5.9	3.27

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/18/2008
Location: 4B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/03/2008	N001	44	-	54	22.2	U	FQ	#	22.2	13
Americium-241	pCi/L	06/03/2008	N001	44	-	54	7.92	U	FQ	#	7.92	6.93
Antimony-125	pCi/L	06/03/2008	N001	44	-	54	13.3	U	FQ	#	13.3	7.63
Cerium-144	pCi/L	06/03/2008	N001	44	-	54	28.3	U	FQ	#	28.3	119
Cesium-134	pCi/L	06/03/2008	N001	44	-	54	5.01	U	FQ	#	5.01	3.13
Cesium-137	pCi/L	06/03/2008	N001	44	-	54	5.5	U	FQ	#	5.5	3.02
Cobalt-60	pCi/L	06/03/2008	N001	44	-	54	5.52	U	FQ	#	5.52	3.08
Dissolved Oxygen	mg/L	06/03/2008	N001	44	-	54	11.1		FQ	#		
Europium-152	pCi/L	06/03/2008	N001	44	-	54	10.8	U	FQ	#	10.8	6.22
Europium-154	pCi/L	06/03/2008	N001	44	-	54	7.5	U	FQ	#	7.5	4.38
Europium-155	pCi/L	06/03/2008	N001	44	-	54	9.61	U	FQ	#	9.61	5.97
Gross Alpha	pCi/L	06/03/2008	N001	44	-	54	21.2	U	FQ	#	21.2	15.2
Gross Beta	pCi/L	06/03/2008	N001	44	-	54	9.06	U	FQ	#	9.06	6.39
Lead-212	pCi/L	06/03/2008	N001	44	-	54	9.16	U	FQ	#	9.16	5.99
Nickel-63	pCi/L	06/03/2008	N001	44	-	54	6.4	U	FQ	#	6.4	3.94
Oxidation Reduction Potential	mV	06/03/2008	N001	44	-	54	193		FQ	#		
pH	s.u.	06/03/2008	N001	44	-	54	7.12		FQ	#		
Potassium-40	pCi/L	06/03/2008	N001	44	-	54	74.4	U	FQ	#	74.4	43.2
Promethium-144	pCi/L	06/03/2008	N001	44	-	54	4.67	U	FQ	#	4.67	3.13
Promethium-146	pCi/L	06/03/2008	N001	44	-	54	6.32	U	FQ	#	6.32	3.69

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/18/2008
Location: 4B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/03/2008	N001	44	-	54	43.1	U	FQ	#	43.1	26.2
Specific Conductance	µmho/cm	06/03/2008	N001	44	-	54	810		FQ	#		
Temperature	C	06/03/2008	N001	44	-	54	16.5		FQ	#		
Thorium-234	pCi/L	06/03/2008	N001	44	-	54	81.5	U	FQ	#	81.5	52.9
Tritium	pCi/L	06/03/2008	N001	44	-	54	186	U	FQ	#	186	114
Turbidity	NTU	06/03/2008	N001	44	-	54	3.47		FQ	#		
Uranium-235	pCi/L	06/03/2008	N001	44	-	54	8.68	U	FQ	#	6.04	6.69
Uranium-238	pCi/L	06/03/2008	N001	44	-	54	945	U	FQ	#	945	595
Yttrium-88	pCi/L	06/03/2008	N001	44	-	54	5.84	U	FQ	#	5.84	3.15

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/18/2008
Location: 4C WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/03/2008	N001	64	-	74	22	U	FQ	#	22	13.1
Americium-241	pCi/L	06/03/2008	N001	64	-	74	8.12	U	FQ	#	8.12	6.99
Antimony-125	pCi/L	06/03/2008	N001	64	-	74	13.9	U	FQ	#	13.9	7.82
Cerium-144	pCi/L	06/03/2008	N001	64	-	74	29.6	U	FQ	#	29.6	126
Cesium-134	pCi/L	06/03/2008	N001	64	-	74	4.94	U	FQ	#	4.94	3.24
Cesium-137	pCi/L	06/03/2008	N001	64	-	74	5.32	U	FQ	#	5.32	3.15
Cobalt-60	pCi/L	06/03/2008	N001	64	-	74	5.7	U	FQ	#	5.7	3.29
Dissolved Oxygen	mg/L	06/03/2008	N001	64	-	74	4.16		FQ	#		
Europium-152	pCi/L	06/03/2008	N001	64	-	74	10.6	U	FQ	#	10.6	6.17
Europium-154	pCi/L	06/03/2008	N001	64	-	74	7.69	U	FQ	#	7.69	4.41
Europium-155	pCi/L	06/03/2008	N001	64	-	74	9.98	U	FQ	#	9.98	6.12
Gross Alpha	pCi/L	06/03/2008	N001	64	-	74	19.2	U	FQ	#	19.2	11.6
Gross Beta	pCi/L	06/03/2008	N001	64	-	74	7.92	U	FQ	#	7.92	5.69
Lead-212	pCi/L	06/03/2008	N001	64	-	74	9.45	U	FQ	#	9.45	6.08
Nickel-63	pCi/L	06/03/2008	N001	64	-	74	6.27	U	FQ	#	6.27	3.78
Oxidation Reduction Potential	mV	06/03/2008	N001	64	-	74	70.8		FQ	#		
pH	s.u.	06/03/2008	N001	64	-	74	7.38		FQ	#		
Potassium-40	pCi/L	06/03/2008	N001	64	-	74	87.5		FQJ	#	42.7	42.6
Promethium-144	pCi/L	06/03/2008	N001	64	-	74	4.82	U	FQ	#	4.82	3.69
Promethium-146	pCi/L	06/03/2008	N001	64	-	74	6.21	U	FQ	#	6.21	3.69

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/18/2008
Location: 4C WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/03/2008	N001	64	-	74	44.2	U	FQ	#	44.2	26.3
Specific Conductance	µmho/cm	06/03/2008	N001	64	-	74	1410		FQ	#		
Temperature	C	06/03/2008	N001	64	-	74	18.4		FQ	#		
Thorium-234	pCi/L	06/03/2008	N001	64	-	74	80.2	U	FQ	#	80.2	53.6
Tritium	pCi/L	06/03/2008	N001	64	-	74	186	U	FQ	#	186	111
Turbidity	NTU	06/03/2008	N001	64	-	74	0.98		FQ	#		
Uranium-235	pCi/L	06/03/2008	N001	64	-	74	8.13	U	FQ	#	8.13	4.97
Uranium-238	pCi/L	06/03/2008	N001	64	-	74	997	U	FQ	#	997	589
Yttrium-88	pCi/L	06/03/2008	N001	64	-	74	5.93	U	FQ	#	5.93	3.75

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/18/2008
Location: 5A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/04/2008	N001	19	-	24	20.8	U	FQ	#	20.8	12.5
Americium-241	pCi/L	06/04/2008	N001	19	-	24	8.23	U	FQ	#	8.23	6.54
Antimony-125	pCi/L	06/04/2008	N001	19	-	24	13.5	U	FQ	#	13.5	7.54
Cerium-144	pCi/L	06/04/2008	N001	19	-	24	29.7	U	FQ	#	29.7	119
Cesium-134	pCi/L	06/04/2008	N001	19	-	24	4.96	U	FQ	#	4.96	3.15
Cesium-137	pCi/L	06/04/2008	N001	19	-	24	5	U	FQ	#	5	3.02
Cobalt-60	pCi/L	06/04/2008	N001	19	-	24	5.18	U	FQ	#	5.18	2.97
Dissolved Oxygen	mg/L	06/04/2008	N001	19	-	24	7.5		FQ	#		
Europium-152	pCi/L	06/04/2008	N001	19	-	24	11.1	U	FQ	#	11.1	6.36
Europium-154	pCi/L	06/04/2008	N001	19	-	24	7.67	U	FQ	#	7.67	4.44
Europium-155	pCi/L	06/04/2008	N001	19	-	24	9.53	U	FQ	#	9.53	6.03
Gross Alpha	pCi/L	06/04/2008	N001	19	-	24	10.8	U	FQ	#	10.8	5.98
Gross Beta	pCi/L	06/04/2008	N001	19	-	24	5.99		FQJ	#	3.93	3.46
Lead-212	pCi/L	06/04/2008	N001	19	-	24	9.1	U	FQ	#	9.1	5.96
Nickel-63	pCi/L	06/04/2008	N001	19	-	24	6.4	U	FQ	#	6.4	3.79
Oxidation Reduction Potential	mV	06/04/2008	N001	19	-	24	27.5		FQ	#		
pH	s.u.	06/04/2008	N001	19	-	24	7.64		FQ	#		
Potassium-40	pCi/L	06/04/2008	N001	19	-	24	79		FQJ	#	42.7	50.4
Promethium-144	pCi/L	06/04/2008	N001	19	-	24	4.92	U	FQ	#	4.92	3.03
Promethium-146	pCi/L	06/04/2008	N001	19	-	24	6.38	U	FQ	#	6.38	3.64

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/18/2008
Location: 5A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/04/2008	N001	19	-	24	51.8	U	FQ	#	51.8	29.4
Specific Conductance	µmho/cm	06/04/2008	N001	19	-	24	1182		FQ	#		
Temperature	C	06/04/2008	N001	19	-	24	19.4		FQ	#		
Thorium-234	pCi/L	06/04/2008	N001	19	-	24	81.4	U	FQ	#	81.4	53.1
Tritium	pCi/L	06/04/2008	N001	19	-	24	184	U	FQ	#	184	112
Turbidity	NTU	06/04/2008	N001	19	-	24	7.42		FQ	#		
Uranium-235	pCi/L	06/04/2008	N001	19	-	24	8.18	U	FQ	#	8.18	4.93
Uranium-238	pCi/L	06/04/2008	N001	19	-	24	986	U	FQ	#	986	595
Yttrium-88	pCi/L	06/04/2008	N001	19	-	24	4.73	U	FQ	#	4.73	3.27

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/18/2008
Location: 5B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/04/2008	N001	39	-	49	21.1	U	FQ	#	21.1	12.5
Americium-241	pCi/L	06/04/2008	N001	39	-	49	7.85	U	FQ	#	7.85	7.05
Antimony-125	pCi/L	06/04/2008	N001	39	-	49	13.6	U	FQ	#	13.6	7.7
Cerium-144	pCi/L	06/04/2008	N001	39	-	49	29	U	FQ	#	29	115
Cesium-134	pCi/L	06/04/2008	N001	39	-	49	5	U	FQ	#	5	3.1
Cesium-137	pCi/L	06/04/2008	N001	39	-	49	4.97	U	FQ	#	4.97	3.03
Cobalt-60	pCi/L	06/04/2008	N001	39	-	49	5.54	U	FQ	#	5.54	3.15
Dissolved Oxygen	mg/L	06/04/2008	N001	39	-	49	3.88		FQ	#		
Europium-152	pCi/L	06/04/2008	N001	39	-	49	10.5	U	FQ	#	10.5	6.08
Europium-154	pCi/L	06/04/2008	N001	39	-	49	7.51	U	FQ	#	7.51	4.31
Europium-155	pCi/L	06/04/2008	N001	39	-	49	9.68	U	FQ	#	9.68	6.75
Gross Alpha	pCi/L	06/04/2008	N001	39	-	49	10.6		FQJ	#	9.91	8.83
Gross Beta	pCi/L	06/04/2008	N001	39	-	49	7.71		FQJ	#	3.72	3.84
Lead-212	pCi/L	06/04/2008	N001	39	-	49	9.65	U	FQ	#	9.65	6.16
Nickel-63	pCi/L	06/04/2008	N001	39	-	49	6.46	U	FQ	#	6.46	3.98
Oxidation Reduction Potential	mV	06/04/2008	N001	39	-	49	26.8		FQ	#		
pH	s.u.	06/04/2008	N001	39	-	49	7.5		FQ	#		
Potassium-40	pCi/L	06/04/2008	N001	39	-	49	51.2	U	FQ	#	51.2	48.4
Promethium-144	pCi/L	06/04/2008	N001	39	-	49	4.85	U	FQ	#	4.85	3.07
Promethium-146	pCi/L	06/04/2008	N001	39	-	49	6.16	U	FQ	#	6.16	3.56

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/18/2008
Location: 5B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/04/2008	N001	39	-	49	45.4	U	FQ	#	45.4	27.3
Specific Conductance	µmho/cm	06/04/2008	N001	39	-	49	773		FQ	#		
Temperature	C	06/04/2008	N001	39	-	49	18.49		FQ	#		
Thorium-234	pCi/L	06/04/2008	N001	39	-	49	88.7		FQJ	#	54.2	79.1
Tritium	pCi/L	06/04/2008	N001	39	-	49	186	U	FQ	#	186	112
Turbidity	NTU	06/04/2008	N001	39	-	49	4.28		FQ	#		
Uranium-235	pCi/L	06/04/2008	N001	39	-	49	7.97	U	FQ	#	7.97	4.87
Uranium-238	pCi/L	06/04/2008	N001	39	-	49	966	U	FQ	#	966	577
Yttrium-88	pCi/L	06/04/2008	N001	39	-	49	6.09	U	FQ	#	6.09	3.52

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/18/2008
Location: 7B WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Data	QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/04/2008	N001	-	16.1	U	FQ	#	16.1	11.3
Americium-241	pCi/L	06/04/2008	N001	-	21.4	U	FQ	#	21.4	12.6
Antimony-125	pCi/L	06/04/2008	N001	-	12.4	U	FQ	#	12.4	7.1
Cerium-144	pCi/L	06/04/2008	N001	-	30.5	U	FQ	#	30.5	169
Cesium-134	pCi/L	06/04/2008	N001	-	4.47	U	FQ	#	4.47	2.83
Cesium-137	pCi/L	06/04/2008	N001	-	4.36	U	FQ	#	4.36	2.49
Cobalt-60	pCi/L	06/04/2008	N001	-	3.93	U	FQ	#	3.93	2.37
Dissolved Oxygen	mg/L	06/04/2008	N001	-	1.73		FQ	#		
Europium-152	pCi/L	06/04/2008	N001	-	10.8	U	FQ	#	10.8	6.49
Europium-154	pCi/L	06/04/2008	N001	-	7.48	U	FQ	#	7.48	4.47
Europium-155	pCi/L	06/04/2008	N001	-	12.7	U	FQ	#	12.7	7.8
Gross Alpha	pCi/L	06/04/2008	N001	-	8.14	U	FQ	#	8.14	7
Gross Beta	pCi/L	06/04/2008	N001	-	9.05		FQJ	#	3.05	3.9
Lead-212	pCi/L	06/04/2008	N001	-	8.36	U	FQ	#	8.36	5.25
Nickel-63	pCi/L	06/04/2008	N001	-	6.42	U	FQ	#	6.42	3.82
Oxidation Reduction Potential	mV	06/04/2008	N001	-	149		FQ	#		
pH	s.u.	06/04/2008	N001	-	7.76		FQ	#		
Potassium-40	pCi/L	06/04/2008	N001	-	63	U	FQ	#	63	34.9
Promethium-144	pCi/L	06/04/2008	N001	-	4.13	U	FQ	#	4.13	2.53
Promethium-146	pCi/L	06/04/2008	N001	-	5.92	U	FQ	#	5.92	3.39

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/18/2008
Location: 7B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/04/2008	N001	-	38.2	U	FQ	#	38.2	21.6
Specific Conductance	µmho/cm	06/04/2008	N001	-	700		FQ	#		
Temperature	C	06/04/2008	N001	-	15.18		FQ	#		
Thorium-234	pCi/L	06/04/2008	N001	-	84.9	U	FQ	#	84.9	54.5
Tritium	pCi/L	06/04/2008	N001	-	184	U	FQ	#	184	110
Turbidity	NTU	06/04/2008	N001	-	8.8		FQ	#		
Uranium-235	pCi/L	06/04/2008	N001	-	6.68	U	FQ	#	6.68	4.36
Uranium-238	pCi/L	06/04/2008	N001	-	803	U	FQ	#	803	413
Yttrium-88	pCi/L	06/04/2008	N001	-	5.45	U	FQ	#	5.45	3.49

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/18/2008
Location: 7C WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Data	QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/04/2008	N001	-	21.2	U	FQ	#	21.2	12.8
Americium-241	pCi/L	06/04/2008	N001	-	8.1	U	FQ	#	8.1	7.09
Antimony-125	pCi/L	06/04/2008	N001	-	13.2	U	FQ	#	13.2	7.55
Cerium-144	pCi/L	06/04/2008	N001	-	29.3	U	FQ	#	29.3	120
Cesium-134	pCi/L	06/04/2008	N001	-	5.01	U	FQ	#	5.01	3.05
Cesium-137	pCi/L	06/04/2008	N001	-	4.94	U	FQ	#	4.94	3.04
Cobalt-60	pCi/L	06/04/2008	N001	-	4.85	U	FQ	#	4.85	3.19
Dissolved Oxygen	mg/L	06/04/2008	N001	-	1.19		FQ	#		
Europium-152	pCi/L	06/04/2008	N001	-	10.7	U	FQ	#	10.7	6.22
Europium-154	pCi/L	06/04/2008	N001	-	7.42	U	FQ	#	7.42	4.39
Europium-155	pCi/L	06/04/2008	N001	-	9.2	U	FQ	#	9.2	6.02
Gross Alpha	pCi/L	06/04/2008	N001	-	8.99	U	FQ	#	8.99	6.95
Gross Beta	pCi/L	06/04/2008	N001	-	3.89	U	FQ	#	3.89	2.56
Lead-212	pCi/L	06/04/2008	N001	-	9.31	U	FQ	#	9.31	6.03
Nickel-63	pCi/L	06/04/2008	N001	-	16.4	U	FQ	#	16.4	9.79
Oxidation Reduction Potential	mV	06/04/2008	N001	-	159.5		FQ	#		
pH	s.u.	06/04/2008	N001	-	7.15		FQ	#		
Potassium-40	pCi/L	06/04/2008	N001	-	80.6	U	FQ	#	80.6	45.1
Promethium-144	pCi/L	06/04/2008	N001	-	4.53	U	FQ	#	4.53	3.01
Promethium-146	pCi/L	06/04/2008	N001	-	6.7	U	FQ	#	6.7	3.85

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/18/2008
Location: 7C WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/04/2008	N001	-	47.8	U	FQ	#	47.8	26.8
Specific Conductance	µmho/cm	06/04/2008	N001	-	815		FQ	#		
Temperature	C	06/04/2008	N001	-	16.07		FQ	#		
Thorium-234	pCi/L	06/04/2008	N001	-	80.8	U	FQ	#	80.8	53.9
Tritium	pCi/L	06/04/2008	N001	-	186	U	FQ	#	186	121
Turbidity	NTU	06/04/2008	N001	-	2.88		FQ	#		
Uranium-235	pCi/L	06/04/2008	N001	-	8.17	U	FQ	#	8.17	4.97
Uranium-238	pCi/L	06/04/2008	N001	-	993	U	FQ	#	993	590
Yttrium-88	pCi/L	06/04/2008	N001	-	5.47	U	FQ	#	5.47	3.1

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/18/2008
Location: 8B WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Data	QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/03/2008	N001	-	12.2	U	FQ	#	12.2	12.2
Americium-241	pCi/L	06/03/2008	N001	-	22.5	U	FQ	#	22.5	13.3
Antimony-125	pCi/L	06/03/2008	N001	-	7.31	U	FQ	#	7.31	7.31
Cerium-144	pCi/L	06/03/2008	N001	-	28.7	U	FQ	#	28.7	172
Cesium-134	pCi/L	06/03/2008	N001	-	4.32	U	FQ	#	4.32	2.52
Cesium-137	pCi/L	06/03/2008	N001	-	4.29	U	FQ	#	4.29	2.51
Cobalt-60	pCi/L	06/03/2008	N001	-	4.37	U	FQ	#	4.37	2.41
Dissolved Oxygen	mg/L	06/03/2008	N001	-	4.64		FQ	#		
Europium-152	pCi/L	06/03/2008	N001	-	10.7	U	FQ	#	10.7	6.32
Europium-154	pCi/L	06/03/2008	N001	-	7.31	U	FQ	#	7.31	4.43
Europium-155	pCi/L	06/03/2008	N001	-	12.6	U	FQ	#	12.6	7.58
Gross Alpha	pCi/L	06/03/2008	N001	-	10.8	U	FQ	#	10.8	6.32
Gross Beta	pCi/L	06/03/2008	N001	-	3.95	U	FQ	#	3.95	2.84
Lead-212	pCi/L	06/03/2008	N001	-	8.33	U	FQ	#	8.33	5.22
Nickel-63	pCi/L	06/03/2008	N001	-	6.62	U	FQ	#	6.62	3.95
Oxidation Reduction Potential	mV	06/03/2008	N001	-	60.3		FQ	#		
pH	s.u.	06/03/2008	N001	-	7.37		FQ	#		
Potassium-40	pCi/L	06/03/2008	N001	-	67.2	U	FQ	#	67.2	36.1
Promethium-144	pCi/L	06/03/2008	N001	-	4.07	U	FQ	#	4.07	2.41
Promethium-146	pCi/L	06/03/2008	N001	-	5.67	U	FQ	#	5.67	3.32

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 9/18/2008
Location: 8B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/03/2008	N001	-	37.5	U	FQ	#	37.5	22.3
Specific Conductance	µmho/cm	06/03/2008	N001	-	874		FQ	#		
Temperature	C	06/03/2008	N001	-	18.78		FQ	#		
Thorium-234	pCi/L	06/03/2008	N001	-	84	U	FQ	#	84	54.8
Tritium	pCi/L	06/03/2008	N001	-	187	U	FQ	#	187	113
Turbidity	NTU	06/03/2008	N001	-	3.51		FQ	#		
Uranium-235	pCi/L	06/03/2008	N001	-	8.69	U	FQ	#	8.69	4.41
Uranium-238	pCi/L	06/03/2008	N001	-	774	U	FQ	#	774	506
Yttrium-88	pCi/L	06/03/2008	N001	-	5.41	U	FQ	#	5.41	3.02

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site

REPORT DATE: 9/18/2008

Location: 8C WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/03/2008	N001	-	17.3	U	FQ	#	17.3	12
Americium-241	pCi/L	06/03/2008	N001	-	22.3	U	FQ	#	22.3	13.2
Antimony-125	pCi/L	06/03/2008	N001	-	11.5	U	FQ	#	11.5	7
Cerium-144	pCi/L	06/03/2008	N001	-	29.4	U	FQ	#	29.4	164
Cesium-134	pCi/L	06/03/2008	N001	-	4.14	U	FQ	#	4.14	2.65
Cesium-137	pCi/L	06/03/2008	N001	-	4.66	U	FQ	#	4.66	2.81
Cobalt-60	pCi/L	06/03/2008	N001	-	4.39	U	FQ	#	4.39	2.3
Dissolved Oxygen	mg/L	06/03/2008	N001	-	3.84		FQ	#		
Europium-152	pCi/L	06/03/2008	N001	-	10.8	U	FQ	#	10.8	6.38
Europium-154	pCi/L	06/03/2008	N001	-	7.42	U	FQ	#	7.42	4.46
Europium-155	pCi/L	06/03/2008	N001	-	12.6	U	FQ	#	12.6	7.52
Gross Alpha	pCi/L	06/03/2008	N001	-	11.4	U	FQ	#	11.4	8.47
Gross Beta	pCi/L	06/03/2008	N001	-	6.05		FQJ	#	4.28	3.73
Lead-212	pCi/L	06/03/2008	N001	-	8.53	U	FQ	#	8.53	7.14
Nickel-63	pCi/L	06/03/2008	N001	-	7.77		FQJ	#	6.49	4.37
Oxidation Reduction Potential	mV	06/03/2008	N001	-	-83		FQ	#		
pH	s.u.	06/03/2008	N001	-	7.3		FQ	#		
Potassium-40	pCi/L	06/03/2008	N001	-	65.9	U	FQ	#	65.9	35
Promethium-144	pCi/L	06/03/2008	N001	-	4.16	U	FQ	#	4.16	2.52
Promethium-146	pCi/L	06/03/2008	N001	-	5.65	U	FQ	#	5.65	3.2
Ruthenium-106	pCi/L	06/03/2008	N001	-	38.5	U	FQ	#	38.5	23.3
Specific Conductance	µmho/cm	06/03/2008	N001	-	818		FQ	#		
Temperature	C	06/03/2008	N001	-	17.55		FQ	#		
Thorium-234	pCi/L	06/03/2008	N001	-	88.1	U	FQ	#	88.1	55.8
Tritium	pCi/L	06/03/2008	N001	-	187	U	FQ	#	187	120
Turbidity	NTU	06/03/2008	N001	-	9.65		FQ	#		
Uranium-235	pCi/L	06/03/2008	N001	-	6.71	U	FQ	#	6.71	4.47

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site

REPORT DATE: 9/18/2008

Location: 8C WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Uranium-238	pCi/L	06/03/2008	N001	-	811	U	FQ	#	811	521
Yttrium-88	pCi/L	06/03/2008	N001	-	4.84	U	FQ	#	4.84	2.94

Abbreviations:
µmho/cm = inverse microohms per centimeter, ft BLS = feet below surface, mg/L = milligrams per liter, mV = millivolts, NTU = nephelometric turbidity units, pCi/L = picocuries per liter, QA = quality assurance, s.u. = standard units,

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

*	Replicate analysis not within control limits.
>	Result above upper detection limit.
A	TIC is a suspected aldol-condensation product.
B	Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
C	Pesticide result confirmed by GC-MS.
D	Analyte determined in diluted sample.
E	Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
H	Holding time expired, value suspect.
I	Increased detection limit due to required dilution.
J	Estimated
N	Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound (TIC).
P	> 25% difference in detected pesticide or Aroclor concentrations between 2 columns.
U	Analytical result below detection limit.
W	Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
X,Y,Z	Laboratory defined qualifier, see case narrative.

DATA QUALIFIERS:

F	Low flow sampling method used.	G	Possible grout contamination, pH > 9.	J	Estimated value.
L	Less than 3 bore volumes purged prior to sampling.	Q	Qualitative result due to sampling technique.	R	Unusable result.
U	Parameter analyzed for but was not detected.	X	Location is undefined.		

QA QUALIFIER:

#	Validated according to quality assurance guidelines.

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2010 Groundwater Data

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Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/3/2010
Location: 1A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/08/2010	N001	16	-	23.5	21	U	F	0	21	12.5
Actinium-228	pCi/L	06/08/2010	N002	16	-	23.5	30	U	F	0	30	19.1
Americium-241	pCi/L	06/08/2010	N001	16	-	23.5	45	U	F	0	45	26.6
Americium-241	pCi/L	06/08/2010	N002	16	-	23.5	33	U	F	0	33	19.4
Antimony-125	pCi/L	06/08/2010	N001	16	-	23.5	7.7	U	F	0	7.7	4.45
Antimony-125	pCi/L	06/08/2010	N002	16	-	23.5	18	U	F	0	18	10.1
Cerium-144	pCi/L	06/08/2010	N001	16	-	23.5	21	U	F	0	21	12.4
Cerium-144	pCi/L	06/08/2010	N002	16	-	23.5	31	U	F	0	31	17.7
Cesium-134	pCi/L	06/08/2010	N001	16	-	23.5	5.5	U	F	0	5.5	3.36
Cesium-134	pCi/L	06/08/2010	N002	16	-	23.5	7.5	U	F	0	7.5	4.39
Cesium-137	pCi/L	06/08/2010	N001	16	-	23.5	3.4	U	F	0	3.4	1.99
Cesium-137	pCi/L	06/08/2010	N002	16	-	23.5	8.5	U	F	0	8.5	4.76
Cobalt-60	pCi/L	06/08/2010	N001	16	-	23.5	3.7	U	F	0	3.7	2.15
Cobalt-60	pCi/L	06/08/2010	N002	16	-	23.5	9.7	U	F	0	9.7	5.53
Dissolved Oxygen	mg/L	06/08/2010	N001	16	-	23.5	0.53		F	0		
Europium-152	pCi/L	06/08/2010	N001	16	-	23.5	19	U	F	0	19	10.9
Europium-152	pCi/L	06/08/2010	N002	16	-	23.5	41	U	F	0	41	23.3
Europium-154	pCi/L	06/08/2010	N001	16	-	23.5	18	U	F	0	18	10.7
Europium-154	pCi/L	06/08/2010	N002	16	-	23.5	44	U	F	0	44	24.3
Europium-155	pCi/L	06/08/2010	N001	16	-	23.5	12	U	F	0	12	6.83

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/3/2010
Location: 1A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Europium-155	pCi/L	06/08/2010	N002	16	-	23.5	17	U	F	0	17	10
Gross Alpha	pCi/L	06/08/2010	N001	16	-	23.5	2.6	U	F	0	2.6	1.64
Gross Alpha	pCi/L	06/08/2010	N002	16	-	23.5	2.6	U	F	0	2.6	1.68
Gross Beta	pCi/L	06/08/2010	N001	16	-	23.5	3.86		FJ	0	3.3	2.16
Gross Beta	pCi/L	06/08/2010	N002	16	-	23.5	3.8	U	F	0	3.8	2.43
Lead-212	pCi/L	06/08/2010	N001	16	-	23.5	13	U	F	0	13	7.66
Lead-212	pCi/L	06/08/2010	N002	16	-	23.5	15	U	F	0	15	8.92
Nickel-63	pCi/L	06/08/2010	N001	16	-	23.5	13	U	F	0	13	3.87
Nickel-63	pCi/L	06/08/2010	N002	16	-	23.5	14	U	F	0	14	3.96
Oxidation Reduction Potential	mV	06/08/2010	N001	16	-	23.5	96		F	0		
pH	s.u.	06/08/2010	N001	16	-	23.5	6.77		F	0		
Potassium-40	pCi/L	06/08/2010	N001	16	-	23.5	86	U	F	0	86	51
Potassium-40	pCi/L	06/08/2010	N002	16	-	23.5	160	U	F	0	160	91
Promethium-144	pCi/L	06/08/2010	N001	16	-	23.5	3.4	U	F	0	3.4	2.02
Promethium-144	pCi/L	06/08/2010	N002	16	-	23.5	8.5	U	F	0	8.5	5.06
Promethium-146	pCi/L	06/08/2010	N001	16	-	23.5	3.9	U	F	0	3.9	2.3
Promethium-146	pCi/L	06/08/2010	N002	16	-	23.5	8.3	U	F	0	8.3	4.53
Ruthenium-106	pCi/L	06/08/2010	N001	16	-	23.5	34	U	F	0	34	19.5
Ruthenium-106	pCi/L	06/08/2010	N002	16	-	23.5	70	U	F	0	70	41.3
Specific Conductance	µmho/cm	06/08/2010	N001	16	-	23.5	1655		F	0		

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/3/2010
Location: 1A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Temperature	C	06/08/2010	N001	16	-	23.5	19.36		F	0		
Thorium-234	pCi/L	06/08/2010	N001	16	-	23.5	100	U	F	0	100	62.2
Thorium-234	pCi/L	06/08/2010	N002	16	-	23.5	170	U	F	0	170	102
Tritium	pCi/L	06/08/2010	N001	16	-	23.5	320	U	F	0	320	192
Tritium	pCi/L	06/08/2010	N002	16	-	23.5	320	U	F	0	320	194
Turbidity	NTU	06/08/2010	N001	16	-	23.5	3.15		F	0		
Uranium-235	pCi/L	06/08/2010	N001	16	-	23.5	20	U	F	0	20	11.9
Uranium-235	pCi/L	06/08/2010	N002	16	-	23.5	83	U	F	0	83	49.5
Yttrium-88	pCi/L	06/08/2010	N001	16	-	23.5	3.6	U	F	0	3.6	2.26
Yttrium-88	pCi/L	06/08/2010	N002	16	-	23.5	9.1	U	F	0	9.1	5.33

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/3/2010
Location: 1B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/08/2010	N001	39	-	49	19	U	FQ	0	19	11.2
Americium-241	pCi/L	06/08/2010	N001	39	-	49	28	U	FQ	0	28	16.7
Antimony-125	pCi/L	06/08/2010	N001	39	-	49	7.6	U	FQ	0	7.6	4.59
Cerium-144	pCi/L	06/08/2010	N001	39	-	49	20	U	FQ	0	20	12.4
Cesium-134	pCi/L	06/08/2010	N001	39	-	49	3.34		UFQ	0	2.2	1.18
Cesium-137	pCi/L	06/08/2010	N001	39	-	49	3.3	U	FQ	0	3.3	1.99
Cobalt-60	pCi/L	06/08/2010	N001	39	-	49	3.8	U	FQ	0	3.8	2.15
Dissolved Oxygen	mg/L	06/08/2010	N001	39	-	49	1.36		FQ	0		
Europium-152	pCi/L	06/08/2010	N001	39	-	49	19	U	FQ	0	19	11.1
Europium-154	pCi/L	06/08/2010	N001	39	-	49	27	U	FQ	0	27	16
Europium-155	pCi/L	06/08/2010	N001	39	-	49	12	U	FQ	0	12	6.92
Gross Alpha	pCi/L	06/08/2010	N001	39	-	49	6.33		FQ	0	2	1.85
Gross Beta	pCi/L	06/08/2010	N001	39	-	49	8.64		FQJ	0	2.9	2.32
Lead-212	pCi/L	06/08/2010	N001	39	-	49	12	U	FQ	0	12	7.26
Nickel-63	pCi/L	06/08/2010	N001	39	-	49	13	U	FQ	0	13	3.87
Oxidation Reduction Potential	mV	06/08/2010	N001	39	-	49	109.1		FQ	0		
pH	s.u.	06/08/2010	N001	39	-	49	6.92		FQ	0		
Potassium-40	pCi/L	06/08/2010	N001	39	-	49	84	U	FQ	0	84	49.6
Promethium-144	pCi/L	06/08/2010	N001	39	-	49	3.4	U	FQ	0	3.4	2.05
Promethium-146	pCi/L	06/08/2010	N001	39	-	49	3.7	U	FQ	0	3.7	2.3

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/3/2010
Location: 1B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/08/2010	N001	39	-	49	33	U	FQ	0	33	19.5
Specific Conductance	µmho/cm	06/08/2010	N001	39	-	49	1035		FQ	0		
Temperature	C	06/08/2010	N001	39	-	49	17.97		FQ	0		
Thorium-234	pCi/L	06/08/2010	N001	39	-	49	98	U	FQ	0	98	58.9
Tritium	pCi/L	06/08/2010	N001	39	-	49	320	U	FQ	0	320	190
Turbidity	NTU	06/08/2010	N001	39	-	49	9.54		FQ	0		
Uranium-235	pCi/L	06/08/2010	N001	39	-	49	20	U	FQ	0	20	12.2
Yttrium-88	pCi/L	06/08/2010	N001	39	-	49	5.13		UFQ	0	3.5	2.32

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/3/2010
Location: 2A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/08/2010	0001	20	-	25	20	U	FQ	0	20	11.6
Americium-241	pCi/L	06/08/2010	0001	20	-	25	44	U	FQ	0	44	26.5
Antimony-125	pCi/L	06/08/2010	0001	20	-	25	7.9	U	FQ	0	7.9	4.5
Cerium-144	pCi/L	06/08/2010	0001	20	-	25	21	U	FQ	0	21	12.6
Cesium-134	pCi/L	06/08/2010	0001	20	-	25	5.6	U	FQ	0	5.6	3.37
Cesium-137	pCi/L	06/08/2010	0001	20	-	25	3.5	U	FQ	0	3.5	2.04
Cobalt-60	pCi/L	06/08/2010	0001	20	-	25	3.8	U	FQ	0	3.8	2.21
Dissolved Oxygen	mg/L	06/08/2010	N001	20	-	25	2.32		FQ	0		
Europium-152	pCi/L	06/08/2010	0001	20	-	25	18	U	FQ	0	18	10.5
Europium-154	pCi/L	06/08/2010	0001	20	-	25	27	U	FQ	0	27	16
Europium-155	pCi/L	06/08/2010	0001	20	-	25	12	U	FQ	0	12	6.91
Gross Alpha	pCi/L	06/08/2010	0001	20	-	25	12		FQ	0	1.4	2.5
Gross Beta	pCi/L	06/08/2010	0001	20	-	25	6.74		FQJ	0	3.2	2.27
Lead-212	pCi/L	06/08/2010	0001	20	-	25	13	U	FQ	0	13	7.68
Nickel-63	pCi/L	06/08/2010	0001	20	-	25	13	U	FQ	0	13	3.95
Oxidation Reduction Potential	mV	06/08/2010	N001	20	-	25	182		FQ	0		
pH	s.u.	06/08/2010	N001	20	-	25	7.08		FQ	0		
Potassium-40	pCi/L	06/08/2010	0001	20	-	25	84	U	FQ	0	84	49.8
Promethium-144	pCi/L	06/08/2010	0001	20	-	25	3.4	U	FQ	0	3.4	2.09
Promethium-146	pCi/L	06/08/2010	0001	20	-	25	3.9	U	FQ	0	3.9	2.35

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/3/2010
Location: 2A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/08/2010	0001	20	-	25	33	U	FQ	0	33	19.8
Specific Conductance	µmho/cm	06/08/2010	N001	20	-	25	1120		FQ	0		
Temperature	C	06/08/2010	N001	20	-	25	15.61		FQ	0		
Thorium-234	pCi/L	06/08/2010	0001	20	-	25	100	U	FQ	0	100	60.4
Tritium	pCi/L	06/08/2010	N001	20	-	25	320	U	FQ	0	320	186
Turbidity	NTU	06/08/2010	N001	20	-	25	29.9		FQ	0		
Uranium-235	pCi/L	06/08/2010	0001	20	-	25	20	U	FQ	0	20	12.4
Yttrium-88	pCi/L	06/08/2010	0001	20	-	25	5.8	U	FQ	0	5.8	3.48

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/3/2010
Location: 2B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/08/2010	N001	43	-	53	34	U	FQ	0	34	20.6
Americium-241	pCi/L	06/08/2010	N001	43	-	53	59	U	FQ	0	59	33.9
Antimony-125	pCi/L	06/08/2010	N001	43	-	53	19	U	FQ	0	19	11.1
Cerium-144	pCi/L	06/08/2010	N001	43	-	53	36	U	FQ	0	36	20.9
Cesium-134	pCi/L	06/08/2010	N001	43	-	53	7	U	FQ	0	7	4.1
Cesium-137	pCi/L	06/08/2010	N001	43	-	53	7.7	U	FQ	0	7.7	4.38
Cobalt-60	pCi/L	06/08/2010	N001	43	-	53	8.5	U	FQ	0	8.5	4.64
Dissolved Oxygen	mg/L	06/08/2010	N001	43	-	53	0.47		FQ	0		
Europium-152	pCi/L	06/08/2010	N001	43	-	53	38	U	FQ	0	38	22.6
Europium-154	pCi/L	06/08/2010	N001	43	-	53	36	U	FQ	0	36	22
Europium-155	pCi/L	06/08/2010	N001	43	-	53	20	U	FQ	0	20	12.3
Gross Alpha	pCi/L	06/08/2010	N001	43	-	53	22.1		FQ	0	2.5	4.32
Gross Beta	pCi/L	06/08/2010	N001	43	-	53	13.8		FQ	0	3.5	3.22
Lead-212	pCi/L	06/08/2010	N001	43	-	53	13	U	FQ	0	13	7.83
Nickel-63	pCi/L	06/08/2010	N001	43	-	53	13	U	FQ	0	13	3.87
Oxidation Reduction Potential	mV	06/08/2010	N001	43	-	53	-40.6		FQ	0		
pH	s.u.	06/08/2010	N001	43	-	53	6.91		FQ	0		
Potassium-40	pCi/L	06/08/2010	N001	43	-	53	140	U	FQ	0	140	79.2
Promethium-144	pCi/L	06/08/2010	N001	43	-	53	7.9	U	FQ	0	7.9	4.66
Promethium-146	pCi/L	06/08/2010	N001	43	-	53	8.6	U	FQ	0	8.6	4.99

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/3/2010
Location: 2B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/08/2010	N001	43	-	53	70	U	FQ	0	70	38.8
Specific Conductance	µmho/cm	06/08/2010	N001	43	-	53	1280		FQ	0		
Temperature	C	06/08/2010	N001	43	-	53	14.87		FQ	0		
Thorium-234	pCi/L	06/08/2010	N001	43	-	53	180	U	FQ	0	180	108
Tritium	pCi/L	06/08/2010	N001	43	-	53	320	U	FQ	0	320	189
Turbidity	NTU	06/08/2010	N001	43	-	53	1.82		FQ	0		
Uranium-235	pCi/L	06/08/2010	N001	43	-	53	55	U	FQ	0	55	32.5
Yttrium-88	pCi/L	06/08/2010	N001	43	-	53	12	U	FQ	0	12	6.81

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/3/2010
Location: 2B2 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/07/2010	0001	-	29	U	FQ	0	29	17.9
Americium-241	pCi/L	06/07/2010	0001	-	35	U	FQ	0	35	19.9
Antimony-125	pCi/L	06/07/2010	0001	-	16	U	FQ	0	16	9.73
Cerium-144	pCi/L	06/07/2010	0001	-	31	U	FQ	0	31	18
Cesium-134	pCi/L	06/07/2010	0001	-	8.1	U	FQ	0	8.1	4.67
Cesium-137	pCi/L	06/07/2010	0001	-	8.3	U	FQ	0	8.3	4.74
Cobalt-60	pCi/L	06/07/2010	0001	-	8.8	U	FQ	0	8.8	5.06
Dissolved Oxygen	mg/L	06/07/2010	N001	-	3.39		FQ	0		
Europium-152	pCi/L	06/07/2010	0001	-	47	U	FQ	0	47	26
Europium-154	pCi/L	06/07/2010	0001	-	51	U	FQ	0	51	27.3
Europium-155	pCi/L	06/07/2010	0001	-	17	U	FQ	0	17	10
Gross Alpha	pCi/L	06/07/2010	0001	-	4.54		FQJ	0	2	1.61
Gross Beta	pCi/L	06/07/2010	0001	-	7.9		FQJ	0	2.8	2.21
Lead-212	pCi/L	06/07/2010	0001	-	17	U	FQ	0	17	9.8
Nickel-63	pCi/L	06/07/2010	0001	-	13	U	FQ	0	13	4.04
Oxidation Reduction Potential	mV	06/07/2010	N001	-	-44.3		FQ	0		
pH	s.u.	06/07/2010	N001	-	6.89		FQ	0		
Potassium-40	pCi/L	06/07/2010	0001	-	160	U	FQ	0	160	95
Promethium-144	pCi/L	06/07/2010	0001	-	9.6	U	FQ	0	9.6	5.48
Promethium-146	pCi/L	06/07/2010	0001	-	8.5	U	FQ	0	8.5	4.7

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/3/2010
Location: 2B2 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/07/2010	0001	-	77	U	FQ	0	77	44.2
Specific Conductance	µmho/cm	06/07/2010	N001	-	1092		FQ	0		
Temperature	C	06/07/2010	N001	-	16.89		FQ	0		
Thorium-234	pCi/L	06/07/2010	0001	-	160	U	FQ	0	160	97.6
Tritium	pCi/L	06/07/2010	N001	-	320	U	FQ	0	320	188
Turbidity	NTU	06/07/2010	N001	-	27.3		FQ	0		
Uranium-235	pCi/L	06/07/2010	0001	-	29	U	FQ	0	29	17.9
Yttrium-88	pCi/L	06/07/2010	0001	-	8.8	U	FQ	0	8.8	5.14

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/3/2010
Location: 2C2 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/07/2010	N001	-	55	U	FQ	0	55	31.1
Americium-241	pCi/L	06/07/2010	N001	-	9.2	U	FQ	0	9.2	5.35
Antimony-125	pCi/L	06/07/2010	N001	-	21	U	FQ	0	21	12.6
Cerium-144	pCi/L	06/07/2010	N001	-	33	U	FQ	0	33	20
Cesium-134	pCi/L	06/07/2010	N001	-	9.3	U	FQ	0	9.3	5.5
Cesium-137	pCi/L	06/07/2010	N001	-	9.1	U	FQ	0	9.1	5.04
Cobalt-60	pCi/L	06/07/2010	N001	-	11	U	FQ	0	11	6.46
Dissolved Oxygen	mg/L	06/07/2010	N001	-	8.11		FQ	0		
Europium-152	pCi/L	06/07/2010	N001	-	54	U	FQ	0	54	29.6
Europium-154	pCi/L	06/07/2010	N001	-	50	U	FQ	0	50	31.4
Europium-155	pCi/L	06/07/2010	N001	-	15	U	FQ	0	15	8.66
Gross Alpha	pCi/L	06/07/2010	N001	-	5.05		FQ	0	1.5	1.46
Gross Beta	pCi/L	06/07/2010	N001	-	4.66		FQJ	0	2.9	1.98
Lead-212	pCi/L	06/07/2010	N001	-	16	U	FQ	0	16	9.18
Nickel-63	pCi/L	06/07/2010	N001	-	13	U	FQ	0	13	3.88
Oxidation Reduction Potential	mV	06/07/2010	N001	-	111		FQ	0		
pH	s.u.	06/07/2010	N001	-	7.41		FQ	0		
Potassium-40	pCi/L	06/07/2010	N001	-	180	U	FQ	0	180	98.8
Promethium-144	pCi/L	06/07/2010	N001	-	10	U	FQ	0	10	5.79
Promethium-146	pCi/L	06/07/2010	N001	-	11	U	FQ	0	11	6.15

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/3/2010
Location: 2C2 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/07/2010	N001	-	91	U	FQ	0	91	50.6
Specific Conductance	µmho/cm	06/07/2010	N001	-	1020		FQ	0		
Temperature	C	06/07/2010	N001	-	17.44		FQ	0		
Thorium-234	pCi/L	06/07/2010	N001	-	110	U	FQ	0	110	65.3
Tritium	pCi/L	06/07/2010	N001	-	320	U	FQ	0	320	190
Turbidity	NTU	06/07/2010	N001	-	0.64		FQ	0		
Uranium-235	pCi/L	06/07/2010	N001	-	49	U	FQ	0	49	28.5
Yttrium-88	pCi/L	06/07/2010	N001	-	19	U	FQ	0	19	10.8

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/3/2010
Location: 3A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/08/2010	N001	19	-	24	28	U	FQ	0	28	17.8
Americium-241	pCi/L	06/08/2010	N001	19	-	24	69	U	FQ	0	69	41.4
Antimony-125	pCi/L	06/08/2010	N001	19	-	24	20	U	FQ	0	20	11.4
Cerium-144	pCi/L	06/08/2010	N001	19	-	24	38	U	FQ	0	38	22.5
Cesium-134	pCi/L	06/08/2010	N001	19	-	24	8.7	U	FQ	0	8.7	4.89
Cesium-137	pCi/L	06/08/2010	N001	19	-	24	8.7	U	FQ	0	8.7	4.85
Cobalt-60	pCi/L	06/08/2010	N001	19	-	24	8.3	U	FQ	0	8.3	4.45
Dissolved Oxygen	mg/L	06/08/2010	N001	19	-	24	2.64		FQ	0		
Europium-152	pCi/L	06/08/2010	N001	19	-	24	45	U	FQ	0	45	24.6
Europium-154	pCi/L	06/08/2010	N001	19	-	24	46	U	FQ	0	46	26.1
Europium-155	pCi/L	06/08/2010	N001	19	-	24	24	U	FQ	0	24	13.9
Gross Alpha	pCi/L	06/08/2010	N001	19	-	24	14.1		FQ	0	3.3	3.5
Gross Beta	pCi/L	06/08/2010	N001	19	-	24	12		FQJ	0	5.2	3.85
Lead-212	pCi/L	06/08/2010	N001	19	-	24	13	U	FQ	0	13	7.46
Nickel-63	pCi/L	06/08/2010	N001	19	-	24	13	U	FQ	0	13	4.01
Oxidation Reduction Potential	mV	06/08/2010	N001	19	-	24	87.3		FQ	0		
pH	s.u.	06/08/2010	N001	19	-	24	7.41		FQ	0		
Potassium-40	pCi/L	06/08/2010	N001	19	-	24	180	U	FQ	0	180	106
Promethium-144	pCi/L	06/08/2010	N001	19	-	24	9	U	FQ	0	9	5.31
Promethium-146	pCi/L	06/08/2010	N001	19	-	24	9.3	U	FQ	0	9.3	5.4

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/3/2010
Location: 3A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/08/2010	N001	19	-	24	77	U	FQ	0	77	43.4
Specific Conductance	µmho/cm	06/08/2010	N001	19	-	24	3114		FQ	0		
Temperature	C	06/08/2010	N001	19	-	24	17.31		FQ	0		
Thorium-234	pCi/L	06/08/2010	N001	19	-	24	120		UFQ	0	120	74.7
Tritium	pCi/L	06/08/2010	N001	19	-	24	320	U	FQ	0	320	189
Turbidity	NTU	06/08/2010	N001	19	-	24	1.68		FQ	0		
Uranium-235	pCi/L	06/08/2010	N001	19	-	24	38	U	FQ	0	38	22.6
Yttrium-88	pCi/L	06/08/2010	N001	19	-	24	8.8	U	FQ	0	8.8	5.3

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/3/2010
Location: 3B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/08/2010	N001	43	-	53	31	U	FQ	0	31	17.8
Americium-241	pCi/L	06/08/2010	N001	43	-	53	40	U	FQ	0	40	22.6
Antimony-125	pCi/L	06/08/2010	N001	43	-	53	21	U	FQ	0	21	11
Cerium-144	pCi/L	06/08/2010	N001	43	-	53	35	U	FQ	0	35	20.8
Cesium-134	pCi/L	06/08/2010	N001	43	-	53	9.7	U	FQ	0	9.7	5.41
Cesium-137	pCi/L	06/08/2010	N001	43	-	53	9.8	U	FQ	0	9.8	5.64
Cobalt-60	pCi/L	06/08/2010	N001	43	-	53	10	U	FQ	0	10	6.16
Dissolved Oxygen	mg/L	06/08/2010	N001	43	-	53	1.9		FQ	0		
Europium-152	pCi/L	06/08/2010	N001	43	-	53	54	U	FQ	0	54	27
Europium-154	pCi/L	06/08/2010	N001	43	-	53	56	U	FQ	0	56	33
Europium-155	pCi/L	06/08/2010	N001	43	-	53	19	U	FQ	0	19	11.9
Gross Alpha	pCi/L	06/08/2010	N001	43	-	53	6.31		FQJ	0	2.6	2.19
Gross Beta	pCi/L	06/08/2010	N001	43	-	53	5.4		FQJ	0	4.7	3.03
Lead-212	pCi/L	06/08/2010	N001	43	-	53	18	U	FQ	0	18	10.5
Nickel-63	pCi/L	06/08/2010	N001	43	-	53	13	U	FQ	0	13	4.03
Oxidation Reduction Potential	mV	06/08/2010	N001	43	-	53	92		FQ	0		
pH	s.u.	06/08/2010	N001	43	-	53	7.22		FQ	0		
Potassium-40	pCi/L	06/08/2010	N001	43	-	53	170	U	FQ	0	170	95.7
Promethium-144	pCi/L	06/08/2010	N001	43	-	53	11	U	FQ	0	11	6.27
Promethium-146	pCi/L	06/08/2010	N001	43	-	53	9.7	U	FQ	0	9.7	5.44

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/3/2010
Location: 3B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/08/2010	N001	43	-	53	98	U	FQ	0	98	55.2
Specific Conductance	µmho/cm	06/08/2010	N001	43	-	53	1728		FQ	0		
Temperature	C	06/08/2010	N001	43	-	53	16.21		FQ	0		
Thorium-234	pCi/L	06/08/2010	N001	43	-	53	170	U	FQ	0	170	98.8
Tritium	pCi/L	06/08/2010	N001	43	-	53	320	U	FQ	0	320	191
Turbidity	NTU	06/08/2010	N001	43	-	53	0.82		FQ	0		
Uranium-235	pCi/L	06/08/2010	N001	43	-	53	36	U	FQ	0	36	21.6
Yttrium-88	pCi/L	06/08/2010	N001	43	-	53	11	U	FQ	0	11	6.57

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/3/2010
Location: 4A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/08/2010	N001	19	-	24	28	U	FQ	0	28	16.6
Americium-241	pCi/L	06/08/2010	N001	19	-	24	48	U	FQ	0	48	28
Antimony-125	pCi/L	06/08/2010	N001	19	-	24	13	U	FQ	0	13	7.91
Cerium-144	pCi/L	06/08/2010	N001	19	-	24	34	U	FQ	0	34	20
Cesium-134	pCi/L	06/08/2010	N001	19	-	24	6.2	U	FQ	0	6.2	3.62
Cesium-137	pCi/L	06/08/2010	N001	19	-	24	5.2	U	FQ	0	5.2	2.93
Cobalt-60	pCi/L	06/08/2010	N001	19	-	24	5.9	U	FQ	0	5.9	3.63
Dissolved Oxygen	mg/L	06/08/2010	N001	19	-	24	2.91		FQ	0		
Europium-152	pCi/L	06/08/2010	N001	19	-	24	32	U	FQ	0	32	18.3
Europium-154	pCi/L	06/08/2010	N001	19	-	24	30	U	FQ	0	30	17.5
Europium-155	pCi/L	06/08/2010	N001	19	-	24	19	U	FQ	0	19	11.3
Gross Alpha	pCi/L	06/08/2010	N001	19	-	24	7.74		FQJ	0	2.9	2.48
Gross Beta	pCi/L	06/08/2010	N001	19	-	24	6.7		FQJ	0	4.5	3.01
Lead-212	pCi/L	06/08/2010	N001	19	-	24	16	U	FQ	0	16	9.47
Nickel-63	pCi/L	06/08/2010	N001	19	-	24	13	U	FQ	0	13	3.87
Oxidation Reduction Potential	mV	06/08/2010	N001	19	-	24	71		FQ	0		
pH	s.u.	06/08/2010	N001	19	-	24	7.2		FQ	0		
Potassium-40	pCi/L	06/08/2010	N001	19	-	24	110	U	FQ	0	110	63.6
Promethium-144	pCi/L	06/08/2010	N001	19	-	24	5.4	U	FQ	0	5.4	3.17
Promethium-146	pCi/L	06/08/2010	N001	19	-	24	6.2	U	FQ	0	6.2	3.66

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/3/2010
Location: 4A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/08/2010	N001	19	-	24	53	U	FQ	0	53	31.3
Specific Conductance	µmho/cm	06/08/2010	N001	19	-	24	2095		FQ	0		
Temperature	C	06/08/2010	N001	19	-	24	15.03		FQ	0		
Thorium-234	pCi/L	06/08/2010	N001	19	-	24	140	U	FQ	0	140	80.6
Tritium	pCi/L	06/08/2010	N001	19	-	24	320	U	FQ	0	320	191
Turbidity	NTU	06/08/2010	N001	19	-	24	0.98		FQ	0		
Uranium-235	pCi/L	06/08/2010	N001	19	-	24	33	U	FQ	0	33	19.5
Yttrium-88	pCi/L	06/08/2010	N001	19	-	24	8	U	FQ	0	8	4.83

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/3/2010
Location: 4B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/08/2010	N001	44	-	54	27	U	FQ	0	27	15.9
Americium-241	pCi/L	06/08/2010	N001	44	-	54	43	U	FQ	0	43	26
Antimony-125	pCi/L	06/08/2010	N001	44	-	54	11	U	FQ	0	11	6.83
Cerium-144	pCi/L	06/08/2010	N001	44	-	54	32	U	FQ	0	32	19.1
Cesium-134	pCi/L	06/08/2010	N001	44	-	54	5.6	U	FQ	0	5.6	3.25
Cesium-137	pCi/L	06/08/2010	N001	44	-	54	5.3	U	FQ	0	5.3	3.01
Cobalt-60	pCi/L	06/08/2010	N001	44	-	54	5.8	U	FQ	0	5.8	3.29
Dissolved Oxygen	mg/L	06/08/2010	N001	44	-	54	1.07		FQ	0		
Europium-152	pCi/L	06/08/2010	N001	44	-	54	27	U	FQ	0	27	15.2
Europium-154	pCi/L	06/08/2010	N001	44	-	54	31	U	FQ	0	31	17.3
Europium-155	pCi/L	06/08/2010	N001	44	-	54	17	U	FQ	0	17	10
Gross Alpha	pCi/L	06/08/2010	N001	44	-	54	13.4		FQ	0	1.7	2.78
Gross Beta	pCi/L	06/08/2010	N001	44	-	54	10.8		FQJ	0	3.9	3.02
Lead-212	pCi/L	06/08/2010	N001	44	-	54	16	U	FQ	0	16	9.21
Nickel-63	pCi/L	06/08/2010	N001	44	-	54	14	U	FQ	0	14	4.03
Oxidation Reduction Potential	mV	06/08/2010	N001	44	-	54	18		FQ	0		
pH	s.u.	06/08/2010	N001	44	-	54	7.07		FQ	0		
Potassium-40	pCi/L	06/08/2010	N001	44	-	54	100	U	FQ	0	100	58.2
Promethium-144	pCi/L	06/08/2010	N001	44	-	54	5	U	FQ	0	5	3.06
Promethium-146	pCi/L	06/08/2010	N001	44	-	54	5.7	U	FQ	0	5.7	3.41

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/3/2010
Location: 4B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/08/2010	N001	44	-	54	51	U	FQ	0	51	29.9
Specific Conductance	µmho/cm	06/08/2010	N001	44	-	54	1393		FQ	0		
Temperature	C	06/08/2010	N001	44	-	54	14.83		FQ	0		
Thorium-234	pCi/L	06/08/2010	N001	44	-	54	120	U	FQ	0	120	72.1
Tritium	pCi/L	06/08/2010	N001	44	-	54	320	U	FQ	0	320	190
Turbidity	NTU	06/08/2010	N001	44	-	54	1.19		FQ	0		
Uranium-235	pCi/L	06/08/2010	N001	44	-	54	30	U	FQ	0	30	18.2
Yttrium-88	pCi/L	06/08/2010	N001	44	-	54	5.8	U	FQ	0	5.8	3.44

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/3/2010
Location: 4C WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/08/2010	N001	64	-	74	39	U	FQ	0	39	22.5
Americium-241	pCi/L	06/08/2010	N001	64	-	74	55	U	FQ	0	55	32.6
Antimony-125	pCi/L	06/08/2010	N001	64	-	74	18	U	FQ	0	18	10.5
Cerium-144	pCi/L	06/08/2010	N001	64	-	74	35	U	FQ	0	35	20.5
Cesium-134	pCi/L	06/08/2010	N001	64	-	74	10	U	FQ	0	10	5.95
Cesium-137	pCi/L	06/08/2010	N001	64	-	74	7.4	U	FQ	0	7.4	4.22
Cobalt-60	pCi/L	06/08/2010	N001	64	-	74	7.4	U	FQ	0	7.4	4.17
Dissolved Oxygen	mg/L	06/08/2010	N001	64	-	74	1.08		FQ	0		
Europium-152	pCi/L	06/08/2010	N001	64	-	74	37	U	FQ	0	37	20.4
Europium-154	pCi/L	06/08/2010	N001	64	-	74	42	U	FQ	0	42	23.2
Europium-155	pCi/L	06/08/2010	N001	64	-	74	19	U	FQ	0	19	11.4
Gross Alpha	pCi/L	06/08/2010	N001	64	-	74	20.3		FQ	0	2.3	4.03
Gross Beta	pCi/L	06/08/2010	N001	64	-	74	16.1		FQ	0	4	3.69
Lead-212	pCi/L	06/08/2010	N001	64	-	74	14	U	FQ	0	14	8.22
Nickel-63	pCi/L	06/08/2010	N001	64	-	74	13	U	FQ	0	13	3.88
Oxidation Reduction Potential	mV	06/08/2010	N001	64	-	74	1.8		FQ	0		
pH	s.u.	06/08/2010	N001	64	-	74	7.05		FQ	0		
Potassium-40	pCi/L	06/08/2010	N001	64	-	74	140	U	FQ	0	140	83.5
Promethium-144	pCi/L	06/08/2010	N001	64	-	74	8	U	FQ	0	8	4.7
Promethium-146	pCi/L	06/08/2010	N001	64	-	74	8.8	U	FQ	0	8.8	5.11

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/3/2010
Location: 4C WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/08/2010	N001	64	-	74	60	U	FQ	0	60	36
Specific Conductance	µmho/cm	06/08/2010	N001	64	-	74	1285		FQ	0		
Temperature	C	06/08/2010	N001	64	-	74	14.96		FQ	0		
Thorium-234	pCi/L	06/08/2010	N001	64	-	74	160	U	FQ	0	160	98.2
Tritium	pCi/L	06/08/2010	N001	64	-	74	320	U	FQ	0	320	190
Turbidity	NTU	06/08/2010	N001	64	-	74	0.81		FQ	0		
Uranium-235	pCi/L	06/08/2010	N001	64	-	74	54	U	FQ	0	54	32.1
Yttrium-88	pCi/L	06/08/2010	N001	64	-	74	12	U	FQ	0	12	6.7

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/3/2010
Location: 5A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/07/2010	N001	19	-	24	53	U	FQ	0	53	30.2
Americium-241	pCi/L	06/07/2010	N001	19	-	24	66	U	FQ	0	66	39.3
Antimony-125	pCi/L	06/07/2010	N001	19	-	24	20	U	FQ	0	20	10.5
Cerium-144	pCi/L	06/07/2010	N001	19	-	24	35	U	FQ	0	35	20
Cesium-134	pCi/L	06/07/2010	N001	19	-	24	9	U	FQ	0	9	5.2
Cesium-137	pCi/L	06/07/2010	N001	19	-	24	8.4	U	FQ	0	8.4	4.82
Cobalt-60	pCi/L	06/07/2010	N001	19	-	24	9.8	U	FQ	0	9.8	5.61
Dissolved Oxygen	mg/L	06/07/2010	N001	19	-	24	7.51		FQ	0		
Europium-152	pCi/L	06/07/2010	N001	19	-	24	51	U	FQ	0	51	27.7
Europium-154	pCi/L	06/07/2010	N001	19	-	24	47	U	FQ	0	47	27.2
Europium-155	pCi/L	06/07/2010	N001	19	-	24	20	U	FQ	0	20	11.6
Gross Alpha	pCi/L	06/07/2010	N001	19	-	24	4.99		FQ	0	1.4	1.37
Gross Beta	pCi/L	06/07/2010	N001	19	-	24	6.79		FQ	0	2.2	1.8
Lead-212	pCi/L	06/07/2010	N001	19	-	24	16	U	FQ	0	16	9.17
Nickel-63	pCi/L	06/07/2010	N001	19	-	24	13	U	FQ	0	13	4.02
Oxidation Reduction Potential	mV	06/07/2010	N001	19	-	24	160.4		FQ	0		
pH	s.u.	06/07/2010	N001	19	-	24	7.25		FQ	0		
Potassium-40	pCi/L	06/07/2010	N001	19	-	24	180	U	FQ	0	180	107
Promethium-144	pCi/L	06/07/2010	N001	19	-	24	8.5	U	FQ	0	8.5	4.97
Promethium-146	pCi/L	06/07/2010	N001	19	-	24	8.8	U	FQ	0	8.8	4.94

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/3/2010
Location: 5A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/07/2010	N001	19	-	24	78	U	FQ	0	78	45.1
Specific Conductance	µmho/cm	06/07/2010	N001	19	-	24	1033		FQ	0		
Temperature	C	06/07/2010	N001	19	-	24	15.49		FQ	0		
Thorium-234	pCi/L	06/07/2010	N001	19	-	24	180	U	FQ	0	180	106
Tritium	pCi/L	06/07/2010	N001	19	-	24	320	U	FQ	0	320	191
Turbidity	NTU	06/07/2010	N001	19	-	24	2.25		FQ	0		
Uranium-235	pCi/L	06/07/2010	N001	19	-	24	44		UFQ	0	33	21.8
Yttrium-88	pCi/L	06/07/2010	N001	19	-	24	14	U	FQ	0	14	8.03

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/3/2010
Location: 5B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/07/2010	N001	39	-	49	40	U	FQ	0	40	23.2
Americium-241	pCi/L	06/07/2010	N001	39	-	49	66	U	FQ	0	66	39.1
Antimony-125	pCi/L	06/07/2010	N001	39	-	49	22	U	FQ	0	22	12.3
Cerium-144	pCi/L	06/07/2010	N001	39	-	49	41	U	FQ	0	41	23.8
Cesium-134	pCi/L	06/07/2010	N001	39	-	49	8.8	U	FQ	0	8.8	4.97
Cesium-137	pCi/L	06/07/2010	N001	39	-	49	8.1	U	FQ	0	8.1	4.71
Cobalt-60	pCi/L	06/07/2010	N001	39	-	49	10	U	FQ	0	10	5.38
Dissolved Oxygen	mg/L	06/07/2010	N001	39	-	49	5.37		FQ	0		
Europium-152	pCi/L	06/07/2010	N001	39	-	49	49	U	FQ	0	49	26.8
Europium-154	pCi/L	06/07/2010	N001	39	-	49	45	U	FQ	0	45	25.2
Europium-155	pCi/L	06/07/2010	N001	39	-	49	24	U	FQ	0	24	14.2
Gross Alpha	pCi/L	06/07/2010	N001	39	-	49	19.8		FQ	0	0.87	3.41
Gross Beta	pCi/L	06/07/2010	N001	39	-	49	10.9		FQ	0	1.4	2.02
Lead-212	pCi/L	06/07/2010	N001	39	-	49	17	U	FQ	0	17	10.1
Nickel-63	pCi/L	06/07/2010	N001	39	-	49	13	U	FQ	0	13	3.9
Oxidation Reduction Potential	mV	06/07/2010	N001	39	-	49	194.2		FQ	0		
pH	s.u.	06/07/2010	N001	39	-	49	7.02		FQ	0		
Potassium-40	pCi/L	06/07/2010	N001	39	-	49	150	U	FQ	0	150	83.3
Promethium-144	pCi/L	06/07/2010	N001	39	-	49	9.4	U	FQ	0	9.4	5.44
Promethium-146	pCi/L	06/07/2010	N001	39	-	49	10	U	FQ	0	10	5.94

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/3/2010
Location: 5B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/07/2010	N001	39	-	49	75	U	FQ	0	75	45.2
Specific Conductance	µmho/cm	06/07/2010	N001	39	-	49	713		FQ	0		
Temperature	C	06/07/2010	N001	39	-	49	15.72		FQ	0		
Thorium-234	pCi/L	06/07/2010	N001	39	-	49	170	U	FQ	0	170	101
Tritium	pCi/L	06/07/2010	N001	39	-	49	320	U	FQ	0	320	191
Turbidity	NTU	06/07/2010	N001	39	-	49	0.34		FQ	0		
Uranium-235	pCi/L	06/07/2010	N001	39	-	49	58	U	FQ	0	58	34.3
Yttrium-88	pCi/L	06/07/2010	N001	39	-	49	13	U	FQ	0	13	7.4

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/3/2010
Location: 7B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/07/2010	N001	-	24	U	FQ	0	24	13.8
Americium-241	pCi/L	06/07/2010	N001	-	50	U	FQ	0	50	30.1
Antimony-125	pCi/L	06/07/2010	N001	-	13	U	FQ	0	13	7.85
Cerium-144	pCi/L	06/07/2010	N001	-	39	U	FQ	0	39	22.6
Cesium-134	pCi/L	06/07/2010	N001	-	9.9	U	FQ	0	9.9	5.97
Cesium-137	pCi/L	06/07/2010	N001	-	5.3	U	FQ	0	5.3	3.13
Cobalt-60	pCi/L	06/07/2010	N001	-	6.3	U	FQ	0	6.3	3.72
Dissolved Oxygen	mg/L	06/07/2010	N001	-	1.53		FQ	0		
Europium-152	pCi/L	06/07/2010	N001	-	35	U	FQ	0	35	19.8
Europium-154	pCi/L	06/07/2010	N001	-	33	U	FQ	0	33	19.6
Europium-155	pCi/L	06/07/2010	N001	-	21	U	FQ	0	21	12.1
Gross Alpha	pCi/L	06/07/2010	N001	-	5.41		FQ	0	1.1	1.28
Gross Beta	pCi/L	06/07/2010	N001	-	7.57		FQ	0	1.5	1.59
Lead-212	pCi/L	06/07/2010	N001	-	16	U	FQ	0	16	9.18
Nickel-63	pCi/L	06/07/2010	N001	-	13	U	FQ	0	13	3.81
Oxidation Reduction Potential	mV	06/07/2010	N001	-	73.4		FQ	0		
pH	s.u.	06/07/2010	N001	-	7.14		FQ	0		
Potassium-40	pCi/L	06/07/2010	N001	-	110	U	FQ	0	110	64.8
Promethium-144	pCi/L	06/07/2010	N001	-	6.2	U	FQ	0	6.2	3.63
Promethium-146	pCi/L	06/07/2010	N001	-	6.6	U	FQ	0	6.6	3.96

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/3/2010
Location: 7B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/07/2010	N001	-	58	U	FQ	0	58	33.9
Specific Conductance	µmho/cm	06/07/2010	N001	-	643		FQ	0		
Temperature	C	06/07/2010	N001	-	13.84		FQ	0		
Thorium-234	pCi/L	06/07/2010	N001	-	160	U	FQ	0	160	96.3
Tritium	pCi/L	06/07/2010	N001	-	310	U	FQ	0	310	184
Turbidity	NTU	06/07/2010	N001	-	0.58		FQ	0		
Uranium-235	pCi/L	06/07/2010	N001	-	35	U	FQ	0	35	21.5
Yttrium-88	pCi/L	06/07/2010	N001	-	8.3	U	FQ	0	8.3	4.85

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/3/2010
Location: 7C WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/07/2010	N001	-	31	U	FQ	0	31	17.8
Americium-241	pCi/L	06/07/2010	N001	-	54	U	FQ	0	54	31.2
Antimony-125	pCi/L	06/07/2010	N001	-	14	U	FQ	0	14	8.2
Cerium-144	pCi/L	06/07/2010	N001	-	39	U	FQ	0	39	23.1
Cesium-134	pCi/L	06/07/2010	N001	-	6.38		UFQ	0	5.4	3.55
Cesium-137	pCi/L	06/07/2010	N001	-	5.6	U	FQ	0	5.6	3.43
Cobalt-60	pCi/L	06/07/2010	N001	-	7	U	FQ	0	7	3.91
Dissolved Oxygen	mg/L	06/07/2010	N001	-	3.7		FQ	0		
Europium-152	pCi/L	06/07/2010	N001	-	33	U	FQ	0	33	19.6
Europium-154	pCi/L	06/07/2010	N001	-	34	U	FQ	0	34	18.5
Europium-155	pCi/L	06/07/2010	N001	-	21	U	FQ	0	21	12.2
Gross Alpha	pCi/L	06/07/2010	N001	-	8.34		FQ	0	1.2	1.79
Gross Beta	pCi/L	06/07/2010	N001	-	6.5		FQ	0	1.8	1.57
Lead-212	pCi/L	06/07/2010	N001	-	16	U	FQ	0	16	9.62
Nickel-63	pCi/L	06/07/2010	N001	-	13	U	FQ	0	13	3.82
Oxidation Reduction Potential	mV	06/07/2010	N001	-	122.6		FQ	0		
pH	s.u.	06/07/2010	N001	-	7.05		FQ	0		
Potassium-40	pCi/L	06/07/2010	N001	-	120	U	FQ	0	120	65
Promethium-144	pCi/L	06/07/2010	N001	-	5.9	U	FQ	0	5.9	3.54
Promethium-146	pCi/L	06/07/2010	N001	-	6.7	U	FQ	0	6.7	3.97

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/3/2010
Location: 7C WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/07/2010	N001	-	57	U	FQ	0	57	34.1
Specific Conductance	µmho/cm	06/07/2010	N001	-	707		FQ	0		
Temperature	C	06/07/2010	N001	-	14.45		FQ	0		
Thorium-234	pCi/L	06/07/2010	N001	-	120	U	FQ	0	120	70.7
Tritium	pCi/L	06/07/2010	N001	-	320	U	FQ	0	320	188
Turbidity	NTU	06/07/2010	N001	-	3.96		FQ	0		
Uranium-235	pCi/L	06/07/2010	N001	-	34	U	FQ	0	34	20.6
Yttrium-88	pCi/L	06/07/2010	N001	-	8.3	U	FQ	0	8.3	4.98

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/3/2010
Location: 8B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/08/2010	N001	-	30	U	FQ	0	30	18.5
Americium-241	pCi/L	06/08/2010	N001	-	66	U	FQ	0	66	39.2
Antimony-125	pCi/L	06/08/2010	N001	-	20	U	FQ	0	20	11.5
Cerium-144	pCi/L	06/08/2010	N001	-	34	U	FQ	0	34	20
Cesium-134	pCi/L	06/08/2010	N001	-	9.4	U	FQ	0	9.4	5.38
Cesium-137	pCi/L	06/08/2010	N001	-	8.8	U	FQ	0	8.8	4.75
Cobalt-60	pCi/L	06/08/2010	N001	-	8.5	U	FQ	0	8.5	4.93
Dissolved Oxygen	mg/L	06/08/2010	N001	-	2.07		FQ	0		
Europium-152	pCi/L	06/08/2010	N001	-	43	U	FQ	0	43	24.2
Europium-154	pCi/L	06/08/2010	N001	-	49	U	FQ	0	49	29
Europium-155	pCi/L	06/08/2010	N001	-	20	U	FQ	0	20	11.8
Gross Alpha	pCi/L	06/08/2010	N001	-	6.47		FQ	0	1.5	1.6
Gross Beta	pCi/L	06/08/2010	N001	-	5.22		FQJ	0	1.9	1.5
Lead-212	pCi/L	06/08/2010	N001	-	16	U	FQ	0	16	9.18
Nickel-63	pCi/L	06/08/2010	N001	-	12	U	FQ	0	12	3.7
Oxidation Reduction Potential	mV	06/08/2010	N001	-	28.7		FQ	0		
pH	s.u.	06/08/2010	N001	-	6.9		FQ	0		
Potassium-40	pCi/L	06/08/2010	N001	-	160	U	FQ	0	160	93.5
Promethium-144	pCi/L	06/08/2010	N001	-	7.7	U	FQ	0	7.7	4.66
Promethium-146	pCi/L	06/08/2010	N001	-	8.6	U	FQ	0	8.6	4.83

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/3/2010
Location: 8B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/08/2010	N001	-	78	U	FQ	0	78	43.6
Specific Conductance	µmho/cm	06/08/2010	N001	-	795		FQ	0		
Temperature	C	06/08/2010	N001	-	14.71		FQ	0		
Thorium-234	pCi/L	06/08/2010	N001	-	180	U	FQ	0	180	105
Tritium	pCi/L	06/08/2010	N001	-	320	U	FQ	0	320	187
Turbidity	NTU	06/08/2010	N001	-	2.92		FQ	0		
Uranium-235	pCi/L	06/08/2010	N001	-	23	U	FQ	0	23	14.8
Yttrium-88	pCi/L	06/08/2010	N001	-	14	U	FQ	0	14	8.1

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/3/2010
Location: 8C WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Data	QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/08/2010	N001	-	20	U	FQ	0	20	13.1
Americium-241	pCi/L	06/08/2010	N001	-	75	U	FQ	0	75	43.8
Antimony-125	pCi/L	06/08/2010	N001	-	13	U	FQ	0	13	7.49
Cerium-144	pCi/L	06/08/2010	N001	-	34	U	FQ	0	34	20.3
Cesium-134	pCi/L	06/08/2010	N001	-	9.7	U	FQ	0	9.7	5.79
Cesium-137	pCi/L	06/08/2010	N001	-	5.8	U	FQ	0	5.8	3.32
Cobalt-60	pCi/L	06/08/2010	N001	-	6.3	U	FQ	0	6.3	3.76
Dissolved Oxygen	mg/L	06/08/2010	N001	-	1.61		FQ	0		
Europium-152	pCi/L	06/08/2010	N001	-	33	U	FQ	0	33	18.3
Europium-154	pCi/L	06/08/2010	N001	-	30	U	FQ	0	30	17.6
Europium-155	pCi/L	06/08/2010	N001	-	19	U	FQ	0	19	11
Gross Alpha	pCi/L	06/08/2010	N001	-	7.43		FQ	0	1.5	1.74
Gross Beta	pCi/L	06/08/2010	N001	-	5.91		FQ	0	1.8	1.52
Lead-212	pCi/L	06/08/2010	N001	-	14	U	FQ	0	14	8.39
Nickel-63	pCi/L	06/08/2010	N001	-	13	U	FQ	0	13	3.82
Oxidation Reduction Potential	mV	06/08/2010	N001	-	-68.3		FQ	0		
pH	s.u.	06/08/2010	N001	-	6.91		FQ	0		
Potassium-40	pCi/L	06/08/2010	N001	-	110	U	FQ	0	110	61.4
Promethium-144	pCi/L	06/08/2010	N001	-	5.6	U	FQ	0	5.6	3.32
Promethium-146	pCi/L	06/08/2010	N001	-	6.5	U	FQ	0	6.5	3.76
Ruthenium-106	pCi/L	06/08/2010	N001	-	55	U	FQ	0	55	31.9

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/3/2010
Location: 8C WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Specific Conductance	µmho/cm	06/08/2010	N001	-	734		FQ	0		
Temperature	C	06/08/2010	N001	-	14.71		FQ	0		
Thorium-234	pCi/L	06/08/2010	N001	-	120	U	FQ	0	120	72.9
Tritium	pCi/L	06/08/2010	N001	-	320	U	FQ	0	320	189
Turbidity	NTU	06/08/2010	N001	-	3.4		FQ	0		
Uranium-235	pCi/L	06/08/2010	N001	-	34	U	FQ	0	34	20.3
Yttrium-88	pCi/L	06/08/2010	N001	-	8.1	U	FQ	0	8.1	4.67

Abbreviations:
µmho/cm = inverse microohms per centimeter, ft BLS = feet below surface, mg/L = milligrams per liter, mV = millivolts, NTU = nephelometric turbidity units, pCi/L = picocuries per liter, QA = quality assurance, s.u. = standard units,

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:
* Replicate analysis not within control limits.
> Result above upper detection limit.
A TIC is a suspected aldol-condensation product.
B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
C Pesticide result confirmed by GC-MS.
D Analyte determined in diluted sample.
E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
H Holding time expired, value suspect.
I Increased detection limit due to required dilution.
J Estimated
N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound (TIC).
P > 25% difference in detected pesticide or Aroclor concentrations between 2 columns.
U Analytical result below detection limit.
W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
X,Y,Z Laboratory defined qualifier, see case narrative.

DATA QUALIFIERS:
F Low flow sampling method used.
L Less than 3 bore volumes purged prior to sampling.
U Parameter analyzed for but was not detected.
G Possible grout contamination, pH > 9.
Q Qualitative result due to sampling technique.
X Location is undefined.
J Estimated value.
R Unusable result.

QA QUALIFIER:
Validated according to quality assurance guidelines.

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2012 Groundwater Data

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Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/8/2012
Location: 1A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/05/2012	N001	16	-	23.5	16.9		FJ	#	14	9.42
Actinium-228	pCi/L	06/05/2012	N002	16	-	23.5	22	U	F	#	22	11.4
Americium-241	pCi/L	06/05/2012	N001	16	-	23.5	24	U	F	#	24	14.5
Americium-241	pCi/L	06/05/2012	N002	16	-	23.5	46	U	F	#	46	27.8
Antimony-125	pCi/L	06/05/2012	N001	16	-	23.5	9.5	U	F	#	9.5	5.22
Antimony-125	pCi/L	06/05/2012	N002	16	-	23.5	15	U	F	#	15	8.51
Cerium-144	pCi/L	06/05/2012	N001	16	-	23.5	18	U	F	#	18	10.4
Cerium-144	pCi/L	06/05/2012	N002	16	-	23.5	28	U	F	#	28	17.2
Cesium-134	pCi/L	06/05/2012	N001	16	-	23.5	4.2	U	F	#	4.2	2.44
Cesium-134	pCi/L	06/05/2012	N002	16	-	23.5	8.4	U	F	#	8.4	5.13
Cesium-137	pCi/L	06/05/2012	N001	16	-	23.5	3.9	U	F	#	3.9	2.18
Cesium-137	pCi/L	06/05/2012	N002	16	-	23.5	5.7	U	F	#	5.7	3.38
Cobalt-60	pCi/L	06/05/2012	N001	16	-	23.5	4.5	U	F	#	4.5	2.57
Cobalt-60	pCi/L	06/05/2012	N002	16	-	23.5	6.5	U	F	#	6.5	3.95
Dissolved Oxygen	mg/L	06/05/2012	N001	16	-	23.5	2.9		F	#		
Europium-152	pCi/L	06/05/2012	N001	16	-	23.5	19	U	F	#	19	11.5
Europium-152	pCi/L	06/05/2012	N002	16	-	23.5	32	U	F	#	32	18.5
Europium-154	pCi/L	06/05/2012	N001	16	-	23.5	22	U	F	#	22	12.9
Europium-154	pCi/L	06/05/2012	N002	16	-	23.5	32	U	F	#	32	18.8
Europium-155	pCi/L	06/05/2012	N001	16	-	23.5	10	U	F	#	10	5.98

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/8/2012
Location: 1A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Europium-155	pCi/L	06/05/2012	N002	16	-	23.5	15	U	F	#	15	8.67
Gross Alpha	pCi/L	06/05/2012	N001	16	-	23.5	3.7		FJ	#	1.5	1.27
Gross Alpha	pCi/L	06/05/2012	N002	16	-	23.5	3.34		FJ	#	2.1	1.51
Gross Beta	pCi/L	06/05/2012	N001	16	-	23.5	3.35		FJ	#	2.5	1.64
Gross Beta	pCi/L	06/05/2012	N002	16	-	23.5	3.91		FJ	#	2.7	1.81
Lead-212	pCi/L	06/05/2012	N001	16	-	23.5	12	U	F	#	12	7.49
Lead-212	pCi/L	06/05/2012	N002	16	-	23.5	14	U	F	#	14	8.3
Nickel-63	pCi/L	06/05/2012	N001	16	-	23.5	12	U	F	#	12	3.58
Nickel-63	pCi/L	06/05/2012	N002	16	-	23.5	12	U	F	#	12	3.47
Oxidation Reduction Potential	mV	06/05/2012	N001	16	-	23.5	118.1		F	#		
pH	s.u.	06/05/2012	N001	16	-	23.5	6.64		F	#		
Potassium-40	pCi/L	06/05/2012	N001	16	-	23.5	110	U	F	#	110	66.8
Potassium-40	pCi/L	06/05/2012	N002	16	-	23.5	140	U	F	#	140	80.3
Promethium-144	pCi/L	06/05/2012	N001	16	-	23.5	4.7	U	F	#	4.7	2.73
Promethium-144	pCi/L	06/05/2012	N002	16	-	23.5	6.84		UF	#	6.2	3.97
Promethium-146	pCi/L	06/05/2012	N001	16	-	23.5	4.3	U	F	#	4.3	2.53
Promethium-146	pCi/L	06/05/2012	N002	16	-	23.5	7.2	U	F	#	7.2	4.13
Ruthenium-106	pCi/L	06/05/2012	N001	16	-	23.5	35	U	F	#	35	20.7
Ruthenium-106	pCi/L	06/05/2012	N002	16	-	23.5	56	U	F	#	56	32.3
Specific Conductance	µmho/cm	06/05/2012	N001	16	-	23.5	1727		F	#		

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/8/2012
Location: 1A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Temperature	C	06/05/2012	N001	16	-	23.5	18.57		F	#		
Thorium-234	pCi/L	06/05/2012	N001	16	-	23.5	120	U	F	#	120	74.2
Thorium-234	pCi/L	06/05/2012	N002	16	-	23.5	150	U	F	#	150	92.5
Tritium	pCi/L	06/05/2012	N001	16	-	23.5	340	U	F	#	340	202
Tritium	pCi/L	06/05/2012	N002	16	-	23.5	340	U	F	#	340	199
Turbidity	NTU	06/05/2012	N001	16	-	23.5	2.11		F	#		
Uranium-235	pCi/L	06/05/2012	N001	16	-	23.5	16.6		FJ	#	16	10.1
Uranium-235	pCi/L	06/05/2012	N002	16	-	23.5	44	U	F	#	44	26.5
Yttrium-88	pCi/L	06/05/2012	N001	16	-	23.5	9.9	U	F	#	9.9	5.85
Yttrium-88	pCi/L	06/05/2012	N002	16	-	23.5	7	U	F	#	7	4.04

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/8/2012
Location: 1B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/05/2012	0001	39	-	49	26	U	FQ	#	26	16
Americium-241	pCi/L	06/05/2012	0001	39	-	49	32	U	FQ	#	32	18.2
Antimony-125	pCi/L	06/05/2012	0001	39	-	49	15	U	FQ	#	15	8.92
Cerium-144	pCi/L	06/05/2012	0001	39	-	49	27	U	FQ	#	27	16.4
Cesium-134	pCi/L	06/05/2012	0001	39	-	49	7.5	U	FQ	#	7.5	4.3
Cesium-137	pCi/L	06/05/2012	0001	39	-	49	7.3	U	FQ	#	7.3	4.05
Cobalt-60	pCi/L	06/05/2012	0001	39	-	49	7.3	U	FQ	#	7.3	4.37
Dissolved Oxygen	mg/L	06/05/2012	N001	39	-	49	5.14		FQ	#		
Europium-152	pCi/L	06/05/2012	0001	39	-	49	38	U	FQ	#	38	22.5
Europium-154	pCi/L	06/05/2012	0001	39	-	49	38	U	FQ	#	38	22
Europium-155	pCi/L	06/05/2012	0001	39	-	49	16	U	FQ	#	16	9.54
Gross Alpha	pCi/L	06/05/2012	0001	39	-	49	7.57		FQ	#	1.3	1.69
Gross Beta	pCi/L	06/05/2012	0001	39	-	49	8.54		FQ	#	1.9	1.89
Lead-212	pCi/L	06/05/2012	0001	39	-	49	15	U	FQ	#	15	8.99
Nickel-63	pCi/L	06/05/2012	0001	39	-	49	12	U	FQ	#	12	3.54
Oxidation Reduction Potential	mV	06/05/2012	N001	39	-	49	141.4		FQ	#		
pH	s.u.	06/05/2012	N001	39	-	49	6.59		FQ	#		
Potassium-40	pCi/L	06/05/2012	0001	39	-	49	160	U	FQ	#	160	93.8
Promethium-144	pCi/L	06/05/2012	0001	39	-	49	7	U	FQ	#	7	4.13
Promethium-146	pCi/L	06/05/2012	0001	39	-	49	7.8	U	FQ	#	7.8	4.42

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/8/2012
Location: 1B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/05/2012	0001	39	-	49	63	U	FQ	#	63	35.9
Specific Conductance	µmho/cm	06/05/2012	N001	39	-	49	1129		FQ	#		
Temperature	C	06/05/2012	N001	39	-	49	18.13		FQ	#		
Thorium-234	pCi/L	06/05/2012	0001	39	-	49	150	U	FQ	#	150	88.1
Tritium	pCi/L	06/05/2012	N001	39	-	49	340	U	FQ	#	340	196
Turbidity	NTU	06/05/2012	N001	39	-	49	18.3		FQ	#		
Uranium-235	pCi/L	06/05/2012	0001	39	-	49	26	U	FQ	#	26	16.5
Yttrium-88	pCi/L	06/05/2012	0001	39	-	49	7.8	U	FQ	#	7.8	4.72

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/8/2012
Location: 2A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/04/2012	N001	20	-	25	19	U	FQ	#	19	12.1
Americium-241	pCi/L	06/04/2012	N001	20	-	25	9.8	U	FQ	#	9.8	5.87
Antimony-125	pCi/L	06/04/2012	N001	20	-	25	11	U	FQ	#	11	5.98
Cerium-144	pCi/L	06/04/2012	N001	20	-	25	20	U	FQ	#	20	12
Cesium-134	pCi/L	06/04/2012	N001	20	-	25	4.6	U	FQ	#	4.6	2.68
Cesium-137	pCi/L	06/04/2012	N001	20	-	25	4.7	U	FQ	#	4.7	2.7
Cobalt-60	pCi/L	06/04/2012	N001	20	-	25	5.7	U	FQ	#	5.7	3.2
Dissolved Oxygen	mg/L	06/04/2012	N001	20	-	25	2.97		FQ	#		
Europium-152	pCi/L	06/04/2012	N001	20	-	25	27	U	FQ	#	27	15.3
Europium-154	pCi/L	06/04/2012	N001	20	-	25	28	U	FQ	#	28	15.7
Europium-155	pCi/L	06/04/2012	N001	20	-	25	8.2	U	FQ	#	8.2	4.99
Gross Alpha	pCi/L	06/04/2012	N001	20	-	25	8.96		FQ	#	1.8	2.09
Gross Beta	pCi/L	06/04/2012	N001	20	-	25	8.3		FQ	#	2.4	2.05
Lead-212	pCi/L	06/04/2012	N001	20	-	25	12	U	FQ	#	12	7.35
Nickel-63	pCi/L	06/04/2012	N001	20	-	25	11	U	FQ	#	11	3.39
Oxidation Reduction Potential	mV	06/04/2012	N001	20	-	25	91.6		FQ	#		
pH	s.u.	06/04/2012	N001	20	-	25	7.94		FQ	#		
Potassium-40	pCi/L	06/04/2012	N001	20	-	25	120	U	FQ	#	120	75.2
Promethium-144	pCi/L	06/04/2012	N001	20	-	25	5.2	U	FQ	#	5.2	3.01
Promethium-146	pCi/L	06/04/2012	N001	20	-	25	5.5	U	FQ	#	5.5	3.17

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/8/2012
Location: 2A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/04/2012	N001	20	-	25	43	U	FQ	#	43	26.2
Specific Conductance	µmho/cm	06/04/2012	N001	20	-	25	1259		FQ	#		
Temperature	C	06/04/2012	N001	20	-	25	18.46		FQ	#		
Thorium-234	pCi/L	06/04/2012	N001	20	-	25	87	U	FQ	#	87	52.4
Tritium	pCi/L	06/04/2012	N001	20	-	25	340	U	FQ	#	340	204
Turbidity	NTU	06/04/2012	N001	20	-	25	3.17		FQ	#		
Uranium-235	pCi/L	06/04/2012	N001	20	-	25	35	U	FQ	#	35	16.8
Yttrium-88	pCi/L	06/04/2012	N001	20	-	25	15	U	FQ	#	15	8.96

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/8/2012
Location: 2B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/04/2012	N001	43	-	53	17	U	FQ	#	17	10.8
Americium-241	pCi/L	06/04/2012	N001	43	-	53	5.2	U	FQ	#	5.2	3.06
Antimony-125	pCi/L	06/04/2012	N001	43	-	53	10	U	FQ	#	10	6.51
Cerium-144	pCi/L	06/04/2012	N001	43	-	53	12	U	FQ	#	12	7.35
Cesium-134	pCi/L	06/04/2012	N001	43	-	53	4.9	U	FQ	#	4.9	2.77
Cesium-137	pCi/L	06/04/2012	N001	43	-	53	5	U	FQ	#	5	2.83
Cobalt-60	pCi/L	06/04/2012	N001	43	-	53	5.9	U	FQ	#	5.9	3.26
Dissolved Oxygen	mg/L	06/04/2012	N001	43	-	53	2.91		FQ	#		
Europium-152	pCi/L	06/04/2012	N001	43	-	53	26	U	FQ	#	26	15.3
Europium-154	pCi/L	06/04/2012	N001	43	-	53	27	U	FQ	#	27	15.8
Europium-155	pCi/L	06/04/2012	N001	43	-	53	8.6	U	FQ	#	8.6	5.07
Gross Alpha	pCi/L	06/04/2012	N001	43	-	53	17.1		FQ	#	2.2	3.45
Gross Beta	pCi/L	06/04/2012	N001	43	-	53	15.4		FQ	#	3.2	3.26
Lead-212	pCi/L	06/04/2012	N001	43	-	53	11	U	FQ	#	11	6.69
Nickel-63	pCi/L	06/04/2012	N001	43	-	53	12	U	FQ	#	12	3.46
Oxidation Reduction Potential	mV	06/04/2012	N001	43	-	53	-95.5		FQ	#		
pH	s.u.	06/04/2012	N001	43	-	53	7.87		FQ	#		
Potassium-40	pCi/L	06/04/2012	N001	43	-	53	120	U	FQ	#	120	68.1
Promethium-144	pCi/L	06/04/2012	N001	43	-	53	6.7	U	FQ	#	6.7	3.96
Promethium-146	pCi/L	06/04/2012	N001	43	-	53	5.4	U	FQ	#	5.4	3.09

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/8/2012
Location: 2B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/04/2012	N001	43	-	53	44	U	FQ	#	44	24.8
Specific Conductance	µmho/cm	06/04/2012	N001	43	-	53	1392		FQ	#		
Temperature	C	06/04/2012	N001	43	-	53	17.17		FQ	#		
Thorium-234	pCi/L	06/04/2012	N001	43	-	53	77	U	FQ	#	77	46.6
Tritium	pCi/L	06/04/2012	N001	43	-	53	340	U	FQ	#	340	202
Turbidity	NTU	06/04/2012	N001	43	-	53	3.09		FQ	#		
Uranium-235	pCi/L	06/04/2012	N001	43	-	53	17	U	FQ	#	17	10.5
Yttrium-88	pCi/L	06/04/2012	N001	43	-	53	5.2	U	FQ	#	5.2	3.04

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/8/2012
Location: 2B2 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/04/2012	N001	-	15	U		#	15	9.08
Americium-241	pCi/L	06/04/2012	N001	-	98	U		#	98	58.1
Antimony-125	pCi/L	06/04/2012	N001	-	9.5	U		#	9.5	5.76
Cerium-144	pCi/L	06/04/2012	N001	-	22	U		#	22	13
Cesium-134	pCi/L	06/04/2012	N001	-	4.1	U		#	4.1	2.36
Cesium-137	pCi/L	06/04/2012	N001	-	3.8	U		#	3.8	2.23
Cobalt-60	pCi/L	06/04/2012	N001	-	7.5	U		#	7.5	4.42
Dissolved Oxygen	mg/L	06/04/2012	N001	-	5.23			#		
Europium-152	pCi/L	06/04/2012	N001	-	19	U		#	19	11.5
Europium-154	pCi/L	06/04/2012	N001	-	22	U		#	22	12.7
Europium-155	pCi/L	06/04/2012	N001	-	15	U		#	15	8.73
Gross Alpha	pCi/L	06/04/2012	N001	-	8.1			#	1.6	1.9
Gross Beta	pCi/L	06/04/2012	N001	-	10.5			#	2.4	2.32
Lead-212	pCi/L	06/04/2012	N001	-	14	U		#	14	8.28
Nickel-63	pCi/L	06/04/2012	N001	-	12	U		#	12	3.53
Oxidation Reduction Potential	mV	06/04/2012	N001	-	-6.9			#		
pH	s.u.	06/04/2012	N001	-	7.56			#		
Potassium-40	pCi/L	06/04/2012	N001	-	110	U		#	110	64.7
Promethium-144	pCi/L	06/04/2012	N001	-	4	U		#	4	2.32
Promethium-146	pCi/L	06/04/2012	N001	-	4.3	U		#	4.3	2.53

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/8/2012
Location: 2B2 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/04/2012	N001	-	34	U		#	34	20.5
Specific Conductance	µmho/cm	06/04/2012	N001	-	1191			#		
Temperature	C	06/04/2012	N001	-	18.25			#		
Thorium-234	pCi/L	06/04/2012	N001	-	200	U		#	200	120
Tritium	pCi/L	06/04/2012	N001	-	350	U		#	350	205
Turbidity	NTU	06/04/2012	N001	-	8.98			#		
Uranium-235	pCi/L	06/04/2012	N001	-	38	U		#	38	23.2
Yttrium-88	pCi/L	06/04/2012	N001	-	4	U		#	4	2.47

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/8/2012
Location: 2C2 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/04/2012	N001	-	35	U		#	35	20.8
Americium-241	pCi/L	06/04/2012	N001	-	23	U		#	23	13.8
Antimony-125	pCi/L	06/04/2012	N001	-	12	U		#	12	6.96
Cerium-144	pCi/L	06/04/2012	N001	-	20	U		#	20	12.2
Cesium-134	pCi/L	06/04/2012	N001	-	5.2	U		#	5.2	3.14
Cesium-137	pCi/L	06/04/2012	N001	-	5.2	U		#	5.2	3.05
Cobalt-60	pCi/L	06/04/2012	N001	-	6.8	U		#	6.8	3.74
Dissolved Oxygen	mg/L	06/04/2012	N001	-	5.74			#		
Europium-152	pCi/L	06/04/2012	N001	-	29	U		#	29	16.8
Europium-154	pCi/L	06/04/2012	N001	-	30	U		#	30	17.5
Europium-155	pCi/L	06/04/2012	N001	-	12	U		#	12	7.2
Gross Alpha	pCi/L	06/04/2012	N001	-	5.36		J	#	2	1.67
Gross Beta	pCi/L	06/04/2012	N001	-	7.39		J	#	2.6	2.06
Lead-212	pCi/L	06/04/2012	N001	-	14	U		#	14	8.3
Nickel-63	pCi/L	06/04/2012	N001	-	12	U		#	12	3.48
Oxidation Reduction Potential	mV	06/04/2012	N001	-	138.8			#		
pH	s.u.	06/04/2012	N001	-	7.89			#		
Potassium-40	pCi/L	06/04/2012	N001	-	140	U		#	140	86.7
Promethium-144	pCi/L	06/04/2012	N001	-	5.6	U		#	5.6	3.28
Promethium-146	pCi/L	06/04/2012	N001	-	6	U		#	6	3.62

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/8/2012
Location: 2C2 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/04/2012	N001	-	49	U		#	49	27.9
Specific Conductance	µmho/cm	06/04/2012	N001	-	1151			#		
Temperature	C	06/04/2012	N001	-	17.98			#		
Thorium-234	pCi/L	06/04/2012	N001	-	140	U		#	140	85
Tritium	pCi/L	06/04/2012	N001	-	340	U		#	340	204
Turbidity	NTU	06/04/2012	N001	-	1.7			#		
Uranium-235	pCi/L	06/04/2012	N001	-	20	U		#	20	12.5
Yttrium-88	pCi/L	06/04/2012	N001	-	6	U		#	6	3.56

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/8/2012
Location: 3A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/05/2012	N001	19	-	24	15	U	FQ	#	15	9.29
Americium-241	pCi/L	06/05/2012	N001	19	-	24	25	U	FQ	#	25	14.6
Antimony-125	pCi/L	06/05/2012	N001	19	-	24	9.6	U	FQ	#	9.6	5.41
Cerium-144	pCi/L	06/05/2012	N001	19	-	24	17	U	FQ	#	17	10.1
Cesium-134	pCi/L	06/05/2012	N001	19	-	24	4.1	U	FQ	#	4.1	2.34
Cesium-137	pCi/L	06/05/2012	N001	19	-	24	3.9	U	FQ	#	3.9	2.27
Cobalt-60	pCi/L	06/05/2012	N001	19	-	24	4.4	U	FQ	#	4.4	2.51
Dissolved Oxygen	mg/L	06/05/2012	N001	19	-	24	5.14		FQ	#		
Europium-152	pCi/L	06/05/2012	N001	19	-	24	22	U	FQ	#	22	12.1
Europium-154	pCi/L	06/05/2012	N001	19	-	24	22	U	FQ	#	22	12.6
Europium-155	pCi/L	06/05/2012	N001	19	-	24	9.9	U	FQ	#	9.9	5.92
Gross Alpha	pCi/L	06/05/2012	N001	19	-	24	10.6		FQJ	#	3.7	3.22
Gross Beta	pCi/L	06/05/2012	N001	19	-	24	15.4		FQJ	#	5.5	4.32
Lead-212	pCi/L	06/05/2012	N001	19	-	24	12	U	FQ	#	12	6.72
Nickel-63	pCi/L	06/05/2012	N001	19	-	24	12	U	FQ	#	12	3.41
Oxidation Reduction Potential	mV	06/05/2012	N001	19	-	24	108.6		FQ	#		
pH	s.u.	06/05/2012	N001	19	-	24	6.84		FQ	#		
Potassium-40	pCi/L	06/05/2012	N001	19	-	24	120	U	FQ	#	120	68.3
Promethium-144	pCi/L	06/05/2012	N001	19	-	24	4.1	U	FQ	#	4.1	2.58
Promethium-146	pCi/L	06/05/2012	N001	19	-	24	4	U	FQ	#	4	2.44

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/8/2012
Location: 3A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/05/2012	N001	19	-	24	35	U	FQ	#	35	20.3
Specific Conductance	µmho/cm	06/05/2012	N001	19	-	24	3315		FQ	#		
Temperature	C	06/05/2012	N001	19	-	24	18.03		FQ	#		
Thorium-234	pCi/L	06/05/2012	N001	19	-	24	140	U	FQ	#	140	82.1
Tritium	pCi/L	06/05/2012	N001	19	-	24	350	U	FQ	#	350	206
Turbidity	NTU	06/05/2012	N001	19	-	24	0.67		FQ	#		
Uranium-235	pCi/L	06/05/2012	N001	19	-	24	16	U	FQ	#	16	10.1
Yttrium-88	pCi/L	06/05/2012	N001	19	-	24	4.3	U	FQ	#	4.3	2.61

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/8/2012
Location: 3B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/05/2012	N001	43	-	53	17.9		FQJ	#	12	6.9
Americium-241	pCi/L	06/05/2012	N001	43	-	53	4.1	U	FQ	#	4.1	2.37
Antimony-125	pCi/L	06/05/2012	N001	43	-	53	8.7	U	FQ	#	8.7	4.75
Cerium-144	pCi/L	06/05/2012	N001	43	-	53	14	U	FQ	#	14	7.93
Cesium-134	pCi/L	06/05/2012	N001	43	-	53	3.5	U	FQ	#	3.5	2.09
Cesium-137	pCi/L	06/05/2012	N001	43	-	53	3.6	U	FQ	#	3.6	2.12
Cobalt-60	pCi/L	06/05/2012	N001	43	-	53	4.4	U	FQ	#	4.4	2.49
Dissolved Oxygen	mg/L	06/05/2012	N001	43	-	53	3.14		FQ	#		
Europium-152	pCi/L	06/05/2012	N001	43	-	53	21	U	FQ	#	21	11.9
Europium-154	pCi/L	06/05/2012	N001	43	-	53	22	U	FQ	#	22	13
Europium-155	pCi/L	06/05/2012	N001	43	-	53	6.6	U	FQ	#	6.6	3.97
Gross Alpha	pCi/L	06/05/2012	N001	43	-	53	6.47		FQJ	#	2.9	2.33
Gross Beta	pCi/L	06/05/2012	N001	43	-	53	8.93		FQJ	#	4	2.92
Lead-212	pCi/L	06/05/2012	N001	43	-	53	10	U	FQ	#	10	6.01
Nickel-63	pCi/L	06/05/2012	N001	43	-	53	12	U	FQ	#	12	3.35
Oxidation Reduction Potential	mV	06/05/2012	N001	43	-	53	109.4		FQ	#		
pH	s.u.	06/05/2012	N001	43	-	53	6.98		FQ	#		
Potassium-40	pCi/L	06/05/2012	N001	43	-	53	110	U	FQ	#	110	63.9
Promethium-144	pCi/L	06/05/2012	N001	43	-	53	2.9	U	FQ	#	2.9	1.58
Promethium-146	pCi/L	06/05/2012	N001	43	-	53	4	U	FQ	#	4	2.42

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/8/2012
Location: 3B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/05/2012	N001	43	-	53	33	U	FQ	#	33	18.8
Specific Conductance	µmho/cm	06/05/2012	N001	43	-	53	2310		FQ	#		
Temperature	C	06/05/2012	N001	43	-	53	16.83		FQ	#		
Thorium-234	pCi/L	06/05/2012	N001	43	-	53	72	U	FQ	#	72	43.1
Tritium	pCi/L	06/05/2012	N001	43	-	53	340	U	FQ	#	340	198
Turbidity	NTU	06/05/2012	N001	43	-	53	1.23		FQ	#		
Uranium-235	pCi/L	06/05/2012	N001	43	-	53	23	U	FQ	#	23	10.3
Yttrium-88	pCi/L	06/05/2012	N001	43	-	53	3.9	U	FQ	#	3.9	2.43

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/8/2012
Location: 4A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/04/2012	N001	19	-	24	17	U	FQ	#	17	10.6
Americium-241	pCi/L	06/04/2012	N001	19	-	24	5.7	U	FQ	#	5.7	3.5
Antimony-125	pCi/L	06/04/2012	N001	19	-	24	9.8	U	FQ	#	9.8	5.86
Cerium-144	pCi/L	06/04/2012	N001	19	-	24	19	U	FQ	#	19	11.4
Cesium-134	pCi/L	06/04/2012	N001	19	-	24	4.4	U	FQ	#	4.4	2.53
Cesium-137	pCi/L	06/04/2012	N001	19	-	24	4.6	U	FQ	#	4.6	2.71
Cobalt-60	pCi/L	06/04/2012	N001	19	-	24	5.4	U	FQ	#	5.4	3.18
Dissolved Oxygen	mg/L	06/04/2012	N001	19	-	24	5.38		FQ	#		
Europium-152	pCi/L	06/04/2012	N001	19	-	24	27	U	FQ	#	27	15.3
Europium-154	pCi/L	06/04/2012	N001	19	-	24	26	U	FQ	#	26	15.1
Europium-155	pCi/L	06/04/2012	N001	19	-	24	8.1	U	FQ	#	8.1	4.95
Gross Alpha	pCi/L	06/04/2012	N001	19	-	24	6.95		FQJ	#	2.7	2.23
Gross Beta	pCi/L	06/04/2012	N001	19	-	24	7.36		FQJ	#	3.5	2.54
Lead-212	pCi/L	06/04/2012	N001	19	-	24	14	U	FQ	#	14	8.21
Nickel-63	pCi/L	06/04/2012	N001	19	-	24	12	U	FQ	#	12	3.52
Oxidation Reduction Potential	mV	06/04/2012	N001	19	-	24	65.5		FQ	#		
pH	s.u.	06/04/2012	N001	19	-	24	7.47		FQ	#		
Potassium-40	pCi/L	06/04/2012	N001	19	-	24	140	U	FQ	#	140	80.9
Promethium-144	pCi/L	06/04/2012	N001	19	-	24	4.7	U	FQ	#	4.7	2.92
Promethium-146	pCi/L	06/04/2012	N001	19	-	24	5.3	U	FQ	#	5.3	3.09

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/8/2012
Location: 4A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/04/2012	N001	19	-	24	44	U	FQ	#	44	25.4
Specific Conductance	µmho/cm	06/04/2012	N001	19	-	24	2064		FQ	#		
Temperature	C	06/04/2012	N001	19	-	24	18.69		FQ	#		
Thorium-234	pCi/L	06/04/2012	N001	19	-	24	78	U	FQ	#	78	47.4
Tritium	pCi/L	06/04/2012	N001	19	-	24	330	U	FQ	#	330	195
Turbidity	NTU	06/04/2012	N001	19	-	24	1.21		FQ	#		
Uranium-235	pCi/L	06/04/2012	N001	19	-	24	19	U	FQ	#	19	11.8
Yttrium-88	pCi/L	06/04/2012	N001	19	-	24	10	U	FQ	#	10	5.93

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/8/2012
Location: 4B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/04/2012	N001	44	-	54	16	U	FQ	#	16	7.23
Americium-241	pCi/L	06/04/2012	N001	44	-	54	33	U	FQ	#	33	19.7
Antimony-125	pCi/L	06/04/2012	N001	44	-	54	10	U	FQ	#	10	5.68
Cerium-144	pCi/L	06/04/2012	N001	44	-	54	31	U	FQ	#	31	18.7
Cesium-134	pCi/L	06/04/2012	N001	44	-	54	4.3	U	FQ	#	4.3	2.49
Cesium-137	pCi/L	06/04/2012	N001	44	-	54	4.1	U	FQ	#	4.1	2.44
Cobalt-60	pCi/L	06/04/2012	N001	44	-	54	4.6	U	FQ	#	4.6	2.6
Dissolved Oxygen	mg/L	06/04/2012	N001	44	-	54	3.37		FQ	#		
Europium-152	pCi/L	06/04/2012	N001	44	-	54	20	U	FQ	#	20	11.3
Europium-154	pCi/L	06/04/2012	N001	44	-	54	22	U	FQ	#	22	12.4
Europium-155	pCi/L	06/04/2012	N001	44	-	54	20	U	FQ	#	20	12.2
Gross Alpha	pCi/L	06/04/2012	N001	44	-	54	12.6		FQ	#	2.1	2.71
Gross Beta	pCi/L	06/04/2012	N001	44	-	54	11.2		FQ	#	2.7	2.52
Lead-212	pCi/L	06/04/2012	N001	44	-	54	11	U	FQ	#	11	6.67
Nickel-63	pCi/L	06/04/2012	N001	44	-	54	12	U	FQ	#	12	3.49
Oxidation Reduction Potential	mV	06/04/2012	N001	44	-	54	-35		FQ	#		
pH	s.u.	06/04/2012	N001	44	-	54	7.59		FQ	#		
Potassium-40	pCi/L	06/04/2012	N001	44	-	54	100	U	FQ	#	100	63.7
Promethium-144	pCi/L	06/04/2012	N001	44	-	54	4.1	U	FQ	#	4.1	2.49
Promethium-146	pCi/L	06/04/2012	N001	44	-	54	4.8	U	FQ	#	4.8	2.8

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/8/2012
Location: 4B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/04/2012	N001	44	-	54	37	U	FQ	#	37	21.1
Specific Conductance	µmho/cm	06/04/2012	N001	44	-	54	1516		FQ	#		
Temperature	C	06/04/2012	N001	44	-	54	16.81		FQ	#		
Thorium-234	pCi/L	06/04/2012	N001	44	-	54	110	U	FQ	#	110	67.3
Tritium	pCi/L	06/04/2012	N001	44	-	54	340	U	FQ	#	340	202
Turbidity	NTU	06/04/2012	N001	44	-	54	1.88		FQ	#		
Uranium-235	pCi/L	06/04/2012	N001	44	-	54	17	U	FQ	#	17	10.3
Yttrium-88	pCi/L	06/04/2012	N001	44	-	54	4.5	U	FQ	#	4.5	2.78

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/8/2012
Location: 4C WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/04/2012	N001	64	-	74	16	U	FQ	#	16	9.67
Americium-241	pCi/L	06/04/2012	N001	64	-	74	99	U	FQ	#	99	59.7
Antimony-125	pCi/L	06/04/2012	N001	64	-	74	10	U	FQ	#	10	5.88
Cerium-144	pCi/L	06/04/2012	N001	64	-	74	36	U	FQ	#	36	21.5
Cesium-134	pCi/L	06/04/2012	N001	64	-	74	4.3	U	FQ	#	4.3	2.5
Cesium-137	pCi/L	06/04/2012	N001	64	-	74	4	U	FQ	#	4	2.32
Cobalt-60	pCi/L	06/04/2012	N001	64	-	74	7.5	U	FQ	#	7.5	4.45
Dissolved Oxygen	mg/L	06/04/2012	N001	64	-	74	3.15		FQ	#		
Europium-152	pCi/L	06/04/2012	N001	64	-	74	21	U	FQ	#	21	11.9
Europium-154	pCi/L	06/04/2012	N001	64	-	74	23	U	FQ	#	23	10.7
Europium-155	pCi/L	06/04/2012	N001	64	-	74	15	U	FQ	#	15	9.1
Gross Alpha	pCi/L	06/04/2012	N001	64	-	74	15		FQ	#	1.5	2.95
Gross Beta	pCi/L	06/04/2012	N001	64	-	74	17.1		FQ	#	3	3.42
Lead-212	pCi/L	06/04/2012	N001	64	-	74	14	U	FQ	#	14	8.15
Nickel-63	pCi/L	06/04/2012	N001	64	-	74	11	U	FQ	#	11	3.34
Oxidation Reduction Potential	mV	06/04/2012	N001	64	-	74	-81.9		FQ	#		
pH	s.u.	06/04/2012	N001	64	-	74	7.57		FQ	#		
Potassium-40	pCi/L	06/04/2012	N001	64	-	74	110	U	FQ	#	110	65.4
Promethium-144	pCi/L	06/04/2012	N001	64	-	74	4.1	U	FQ	#	4.1	2.5
Promethium-146	pCi/L	06/04/2012	N001	64	-	74	4.5	U	FQ	#	4.5	2.65

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/8/2012
Location: 4C WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/04/2012	N001	64	-	74	37	U	FQ	#	37	21.7
Specific Conductance	µmho/cm	06/04/2012	N001	64	-	74	1413		FQ	#		
Temperature	C	06/04/2012	N001	64	-	74	16.96		FQ	#		
Thorium-234	pCi/L	06/04/2012	N001	64	-	74	200	U	FQ	#	200	119
Tritium	pCi/L	06/04/2012	N001	64	-	74	340	U	FQ	#	340	201
Turbidity	NTU	06/04/2012	N001	64	-	74	0.46		FQ	#		
Uranium-235	pCi/L	06/04/2012	N001	64	-	74	39	U	FQ	#	39	23.5
Yttrium-88	pCi/L	06/04/2012	N001	64	-	74	4.72		UFQ	#	3.9	2.57

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/8/2012
Location: 5A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/05/2012	N001	19	-	24	40	U	FQ	#	40	23.7
Americium-241	pCi/L	06/05/2012	N001	19	-	24	46	U	FQ	#	46	27.9
Antimony-125	pCi/L	06/05/2012	N001	19	-	24	15	U	FQ	#	15	8.67
Cerium-144	pCi/L	06/05/2012	N001	19	-	24	29	U	FQ	#	29	17
Cesium-134	pCi/L	06/05/2012	N001	19	-	24	8.4	U	FQ	#	8.4	5.08
Cesium-137	pCi/L	06/05/2012	N001	19	-	24	5.8	U	FQ	#	5.8	3.4
Cobalt-60	pCi/L	06/05/2012	N001	19	-	24	6.8	U	FQ	#	6.8	3.91
Dissolved Oxygen	mg/L	06/05/2012	N001	19	-	24	6.28		FQ	#		
Europium-152	pCi/L	06/05/2012	N001	19	-	24	32	U	FQ	#	32	18.3
Europium-154	pCi/L	06/05/2012	N001	19	-	24	34	U	FQ	#	34	19
Europium-155	pCi/L	06/05/2012	N001	19	-	24	14	U	FQ	#	14	8.56
Gross Alpha	pCi/L	06/05/2012	N001	19	-	24	3.94		FQJ	#	1.5	1.29
Gross Beta	pCi/L	06/05/2012	N001	19	-	24	5.14		FQJ	#	2.2	1.64
Lead-212	pCi/L	06/05/2012	N001	19	-	24	14	U	FQ	#	14	8.59
Nickel-63	pCi/L	06/05/2012	N001	19	-	24	12	U	FQ	#	12	3.58
Oxidation Reduction Potential	mV	06/05/2012	N001	19	-	24	99.8		FQ	#		
pH	s.u.	06/05/2012	N001	19	-	24	7.26		FQ	#		
Potassium-40	pCi/L	06/05/2012	N001	19	-	24	140	U	FQ	#	140	81.7
Promethium-144	pCi/L	06/05/2012	N001	19	-	24	6.4	U	FQ	#	6.4	3.89
Promethium-146	pCi/L	06/05/2012	N001	19	-	24	7.2	U	FQ	#	7.2	4.19

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/8/2012
Location: 5A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/05/2012	N001	19	-	24	53	U	FQ	#	53	31.6
Specific Conductance	µmho/cm	06/05/2012	N001	19	-	24	1206		FQ	#		
Temperature	C	06/05/2012	N001	19	-	24	19.14		FQ	#		
Thorium-234	pCi/L	06/05/2012	N001	19	-	24	150	U	FQ	#	150	92.8
Tritium	pCi/L	06/05/2012	N001	19	-	24	340	U	FQ	#	340	203
Turbidity	NTU	06/05/2012	N001	19	-	24	6.4		FQ	#		
Uranium-235	pCi/L	06/05/2012	N001	19	-	24	44	U	FQ	#	44	26.1
Yttrium-88	pCi/L	06/05/2012	N001	19	-	24	6.6	U	FQ	#	6.6	4.01

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/8/2012
Location: 5B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/05/2012	N001	39	-	49	39	U	FQ	#	39	23
Americium-241	pCi/L	06/05/2012	N001	39	-	49	32	U	FQ	#	32	19.1
Antimony-125	pCi/L	06/05/2012	N001	39	-	49	12	U	FQ	#	12	6.59
Cerium-144	pCi/L	06/05/2012	N001	39	-	49	22	U	FQ	#	22	12.6
Cesium-134	pCi/L	06/05/2012	N001	39	-	49	5.5	U	FQ	#	5.5	3.15
Cesium-137	pCi/L	06/05/2012	N001	39	-	49	4.7	U	FQ	#	4.7	2.88
Cobalt-60	pCi/L	06/05/2012	N001	39	-	49	5.5	U	FQ	#	5.5	3.07
Dissolved Oxygen	mg/L	06/05/2012	N001	39	-	49	4.1		FQ	#		
Europium-152	pCi/L	06/05/2012	N001	39	-	49	27	U	FQ	#	27	14.7
Europium-154	pCi/L	06/05/2012	N001	39	-	49	29	U	FQ	#	29	16.3
Europium-155	pCi/L	06/05/2012	N001	39	-	49	12	U	FQ	#	12	7.83
Gross Alpha	pCi/L	06/05/2012	N001	39	-	49	11.9		FQ	#	1	2.2
Gross Beta	pCi/L	06/05/2012	N001	39	-	49	11.5		FQ	#	1.4	2.1
Lead-212	pCi/L	06/05/2012	N001	39	-	49	12	U	FQ	#	12	7.41
Nickel-63	pCi/L	06/05/2012	N001	39	-	49	12	U	FQ	#	12	3.36
Oxidation Reduction Potential	mV	06/05/2012	N001	39	-	49	89.3		FQ	#		
pH	s.u.	06/05/2012	N001	39	-	49	7.45		FQ	#		
Potassium-40	pCi/L	06/05/2012	N001	39	-	49	120	U	FQ	#	120	72
Promethium-144	pCi/L	06/05/2012	N001	39	-	49	5.7	U	FQ	#	5.7	3.41
Promethium-146	pCi/L	06/05/2012	N001	39	-	49	5.4	U	FQ	#	5.4	3.16

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/8/2012
Location: 5B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/05/2012	N001	39	-	49	46	U	FQ	#	46	26.8
Specific Conductance	µmho/cm	06/05/2012	N001	39	-	49	723		FQ	#		
Temperature	C	06/05/2012	N001	39	-	49	17.76		FQ	#		
Thorium-234	pCi/L	06/05/2012	N001	39	-	49	140	U	FQ	#	140	82.4
Tritium	pCi/L	06/05/2012	N001	39	-	49	340	U	FQ	#	340	201
Turbidity	NTU	06/05/2012	N001	39	-	49	0.85		FQ	#		
Uranium-235	pCi/L	06/05/2012	N001	39	-	49	33	U	FQ	#	33	19.8
Yttrium-88	pCi/L	06/05/2012	N001	39	-	49	5.6	U	FQ	#	5.6	3.43

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/8/2012
Location: 7B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/04/2012	N001	-	18	U		#	18	8.86
Americium-241	pCi/L	06/04/2012	N001	-	5.2	U		#	5.2	3.05
Antimony-125	pCi/L	06/04/2012	N001	-	12	U		#	12	6.68
Cerium-144	pCi/L	06/04/2012	N001	-	18	U		#	18	10.6
Cesium-134	pCi/L	06/04/2012	N001	-	4.7	U		#	4.7	2.8
Cesium-137	pCi/L	06/04/2012	N001	-	4.7	U		#	4.7	2.83
Cobalt-60	pCi/L	06/04/2012	N001	-	5.6	U		#	5.6	3.13
Dissolved Oxygen	mg/L	06/04/2012	N001	-	3.15			#		
Europium-152	pCi/L	06/04/2012	N001	-	26	U		#	26	15.1
Europium-154	pCi/L	06/04/2012	N001	-	29	U		#	29	16.7
Europium-155	pCi/L	06/04/2012	N001	-	8.9	U		#	8.9	5.12
Gross Alpha	pCi/L	06/04/2012	N001	-	5.37			#	0.91	1.19
Gross Beta	pCi/L	06/04/2012	N001	-	6.07			#	1.5	1.42
Lead-212	pCi/L	06/04/2012	N001	-	11	U		#	11	6.51
Nickel-63	pCi/L	06/04/2012	N001	-	11	U		#	11	3.38
Oxidation Reduction Potential	mV	06/04/2012	N001	-	148.8			#		
pH	s.u.	06/04/2012	N001	-	7.67			#		
Potassium-40	pCi/L	06/04/2012	N001	-	120	U		#	120	68.7
Promethium-144	pCi/L	06/04/2012	N001	-	7.4	U		#	7.4	4.39
Promethium-146	pCi/L	06/04/2012	N001	-	5.2	U		#	5.2	3.11

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/8/2012
Location: 7B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/04/2012	N001	-	45	U		#	45	26.2
Specific Conductance	µmho/cm	06/04/2012	N001	-	696			#		
Temperature	C	06/04/2012	N001	-	17.29			#		
Thorium-234	pCi/L	06/04/2012	N001	-	77	U		#	77	46
Tritium	pCi/L	06/04/2012	N001	-	350	U		#	350	205
Turbidity	NTU	06/04/2012	N001	-	0.46			#		
Uranium-235	pCi/L	06/04/2012	N001	-	26	U		#	26	15.5
Yttrium-88	pCi/L	06/04/2012	N001	-	5.54		U	#	5	3.28

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/8/2012
Location: 7C WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/04/2012	N001	-	24	U		#	24	15.1
Americium-241	pCi/L	06/04/2012	N001	-	7.7	U		#	7.7	4.64
Antimony-125	pCi/L	06/04/2012	N001	-	13	U		#	13	7.48
Cerium-144	pCi/L	06/04/2012	N001	-	26	U		#	26	14.9
Cesium-134	pCi/L	06/04/2012	N001	-	6.1	U		#	6.1	3.51
Cesium-137	pCi/L	06/04/2012	N001	-	6.2	U		#	6.2	3.7
Cobalt-60	pCi/L	06/04/2012	N001	-	7.4	U		#	7.4	4.43
Dissolved Oxygen	mg/L	06/04/2012	N001	-	4.8			#		
Europium-152	pCi/L	06/04/2012	N001	-	37	U		#	37	21.3
Europium-154	pCi/L	06/04/2012	N001	-	34	U		#	34	19.5
Europium-155	pCi/L	06/04/2012	N001	-	11	U		#	11	6.44
Gross Alpha	pCi/L	06/04/2012	N001	-	7.94			#	0.64	1.5
Gross Beta	pCi/L	06/04/2012	N001	-	6.08			#	1.5	1.4
Lead-212	pCi/L	06/04/2012	N001	-	15	U		#	15	8.9
Nickel-63	pCi/L	06/04/2012	N001	-	11	U		#	11	3.46
Oxidation Reduction Potential	mV	06/04/2012	N001	-	115.4			#		
pH	s.u.	06/04/2012	N001	-	7.1			#		
Potassium-40	pCi/L	06/04/2012	N001	-	140	U		#	140	80.4
Promethium-144	pCi/L	06/04/2012	N001	-	6.5	U		#	6.5	3.8
Promethium-146	pCi/L	06/04/2012	N001	-	7.1	U		#	7.1	4.13

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/8/2012
Location: 7C WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/04/2012	N001	-	59	U		#	59	32.8
Specific Conductance	µmho/cm	06/04/2012	N001	-	765			#		
Temperature	C	06/04/2012	N001	-	18.31			#		
Thorium-234	pCi/L	06/04/2012	N001	-	88	U		#	88	45.5
Tritium	pCi/L	06/04/2012	N001	-	340	U		#	340	204
Turbidity	NTU	06/04/2012	N001	-	0.6			#		
Uranium-235	pCi/L	06/04/2012	N001	-	25	U		#	25	15.4
Yttrium-88	pCi/L	06/04/2012	N001	-	11	U		#	11	6.49

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/8/2012
Location: 8B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/05/2012	N001	-	25.9		UFQ	#	18	12.2
Americium-241	pCi/L	06/05/2012	N001	-	38	U	FQ	#	38	22.5
Antimony-125	pCi/L	06/05/2012	N001	-	14	U	FQ	#	14	7.21
Cerium-144	pCi/L	06/05/2012	N001	-	35	U	FQ	#	35	20.7
Cesium-134	pCi/L	06/05/2012	N001	-	5.8	U	FQ	#	5.8	3.45
Cesium-137	pCi/L	06/05/2012	N001	-	5.6	U	FQ	#	5.6	3.18
Cobalt-60	pCi/L	06/05/2012	N001	-	5.6	U	FQ	#	5.6	3.36
Dissolved Oxygen	mg/L	06/05/2012	N001	-	3.76		FQ	#		
Europium-152	pCi/L	06/05/2012	N001	-	27	U	FQ	#	27	16
Europium-154	pCi/L	06/05/2012	N001	-	28	U	FQ	#	28	15.8
Europium-155	pCi/L	06/05/2012	N001	-	22	U	FQ	#	22	13.1
Gross Alpha	pCi/L	06/05/2012	N001	-	6.89		FQ	#	1	1.45
Gross Beta	pCi/L	06/05/2012	N001	-	6.79		FQ	#	1.8	1.62
Lead-212	pCi/L	06/05/2012	N001	-	12	U	FQ	#	12	7.03
Nickel-63	pCi/L	06/05/2012	N001	-	14	U	FQ	#	14	3.93
Oxidation Reduction Potential	mV	06/05/2012	N001	-	21.6		FQ	#		
pH	s.u.	06/05/2012	N001	-	7.5		FQ	#		
Potassium-40	pCi/L	06/05/2012	N001	-	120	U	FQ	#	120	71.7
Promethium-144	pCi/L	06/05/2012	N001	-	5.4	U	FQ	#	5.4	3.22
Promethium-146	pCi/L	06/05/2012	N001	-	6.2	U	FQ	#	6.2	3.62

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/8/2012
Location: 8B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/05/2012	N001	-	52	U	FQ	#	52	29.6
Specific Conductance	µmho/cm	06/05/2012	N001	-	874		FQ	#		
Temperature	C	06/05/2012	N001	-	17.32		FQ	#		
Thorium-234	pCi/L	06/05/2012	N001	-	130	U	FQ	#	130	76.4
Tritium	pCi/L	06/05/2012	N001	-	340	U	FQ	#	340	203
Turbidity	NTU	06/05/2012	N001	-	3.35		FQ	#		
Uranium-235	pCi/L	06/05/2012	N001	-	35	U	FQ	#	35	20.5
Yttrium-88	pCi/L	06/05/2012	N001	-	6.2	U	FQ	#	6.2	3.74

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/8/2012
Location: 8C WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/05/2012	N001	-	36	U	FQ	#	36	21.2
Americium-241	pCi/L	06/05/2012	N001	-	31	U	FQ	#	31	18.6
Antimony-125	pCi/L	06/05/2012	N001	-	15	U	FQ	#	15	8.98
Cerium-144	pCi/L	06/05/2012	N001	-	27	U	FQ	#	27	16.2
Cesium-134	pCi/L	06/05/2012	N001	-	7.1	U	FQ	#	7.1	4.05
Cesium-137	pCi/L	06/05/2012	N001	-	7	U	FQ	#	7	4.05
Cobalt-60	pCi/L	06/05/2012	N001	-	7.9	U	FQ	#	7.9	4.65
Dissolved Oxygen	mg/L	06/05/2012	N001	-	1.58		FQ	#		
Europium-152	pCi/L	06/05/2012	N001	-	41	U	FQ	#	41	24.3
Europium-154	pCi/L	06/05/2012	N001	-	40	U	FQ	#	40	22.2
Europium-155	pCi/L	06/05/2012	N001	-	16	U	FQ	#	16	9.47
Gross Alpha	pCi/L	06/05/2012	N001	-	6.2		FQ	#	1	1.36
Gross Beta	pCi/L	06/05/2012	N001	-	6.91		FQ	#	1.8	1.63
Lead-212	pCi/L	06/05/2012	N001	-	15	U	FQ	#	15	8.66
Nickel-63	pCi/L	06/05/2012	N001	-	13	U	FQ	#	13	3.85
Oxidation Reduction Potential	mV	06/05/2012	N001	-	-98		FQ	#		
pH	s.u.	06/05/2012	N001	-	7.4		FQ	#		
Potassium-40	pCi/L	06/05/2012	N001	-	170	U	FQ	#	170	103
Promethium-144	pCi/L	06/05/2012	N001	-	7.4	U	FQ	#	7.4	4.43
Promethium-146	pCi/L	06/05/2012	N001	-	7.8	U	FQ	#	7.8	4.48
Ruthenium-106	pCi/L	06/05/2012	N001	-	62	U	FQ	#	62	35.9

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/8/2012
Location: 8C WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Specific Conductance	µmho/cm	06/05/2012	N001	-	760		FQ	#		
Temperature	C	06/05/2012	N001	-	16.43		FQ	#		
Thorium-234	pCi/L	06/05/2012	N001	-	150	U	FQ	#	150	90.5
Tritium	pCi/L	06/05/2012	N001	-	340	U	FQ	#	340	208
Turbidity	NTU	06/05/2012	N001	-	4.95		FQ	#		
Uranium-235	pCi/L	06/05/2012	N001	-	26	U	FQ	#	26	16.3
Yttrium-88	pCi/L	06/05/2012	N001	-	7.9	U	FQ	#	7.9	4.79

Abbreviations:
µmho/cm = inverse microohms per centimeter, ft BLS = feet below surface, mg/L = milligrams per liter, mV = millivolts, NTU = nephelometric turbidity units, pCi/L = picocuries per liter, QA = quality assurance, s.u. = standard units,

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:
* Replicate analysis not within control limits.
> Result above upper detection limit.
A TIC is a suspected aldol-condensation product.
B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
C Pesticide result confirmed by GC-MS.
D Analyte determined in diluted sample.
E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
H Holding time expired, value suspect.
I Increased detection limit due to required dilution.
J Estimated
N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound (TIC).
P > 25% difference in detected pesticide or Aroclor concentrations between 2 columns.
U Analytical result below detection limit.
W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
X,Y,Z Laboratory defined qualifier, see case narrative.

DATA QUALIFIERS:
F Low flow sampling method used.
L Less than 3 bore volumes purged prior to sampling.
U Parameter analyzed for but was not detected.
G Possible grout contamination, pH > 9.
Q Qualitative result due to sampling technique.
X Location is undefined.
J Estimated value.
R Unusable result.

QA QUALIFIER:
Validated according to quality assurance guidelines.

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2014 Groundwater Data

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Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 08/05/2014
Location: 1A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/04/2014	N001	16	-	23.5	18	U	F	#	18	11.5
Americium-241	pCi/L	06/04/2014	N001	16	-	23.5	9.8	U	F	#	9.8	5.82
Antimony-125	pCi/L	06/04/2014	N001	16	-	23.5	12	U	F	#	12	6.22
Cerium-144	pCi/L	06/04/2014	N001	16	-	23.5	18	U	F	#	18	10.8
Cesium-134	pCi/L	06/04/2014	N001	16	-	23.5	4.8	U	F	#	4.8	2.81
Cesium-137	pCi/L	06/04/2014	N001	16	-	23.5	4.7	U	F	#	4.7	2.82
Cobalt-60	pCi/L	06/04/2014	N001	16	-	23.5	5.6	U	F	#	5.6	3.04
Europium-152	pCi/L	06/04/2014	N001	16	-	23.5	7.2	U	F	#	7.2	4.21
Europium-154	pCi/L	06/04/2014	N001	16	-	23.5	27	U	F	#	27	16.1
Europium-155	pCi/L	06/04/2014	N001	16	-	23.5	7.2	U	F	#	7.2	4.12
Gross Alpha	pCi/L	06/04/2014	N001	16	-	23.5	2.3		FJ	#	1.9	1.29
Gross Beta	pCi/L	06/04/2014	N001	16	-	23.5	5.03		FJ	#	3	2.07
Lead-212	pCi/L	06/04/2014	N001	16	-	23.5	11	U	F	#	11	6.46
Nickel-63	pCi/L	06/04/2014	N001	16	-	23.5	12	U	F	#	12	3.57
Oxidation Reduction Potential	mV	06/04/2014	N001	16	-	23.5	282.2		F	#		
pH	s.u.	06/04/2014	N001	16	-	23.5	6.92		F	#		
Potassium-40	pCi/L	06/04/2014	N001	16	-	23.5	110	U	F	#	110	63.6
Promethium-144	pCi/L	06/04/2014	N001	16	-	23.5	5.3	U	F	#	5.3	3.1
Promethium-146	pCi/L	06/04/2014	N001	16	-	23.5	5.3	U	F	#	5.3	3.09
Ruthenium-106	pCi/L	06/04/2014	N001	16	-	23.5	45	U	F	#	45	25.6

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 08/05/2014
Location: 1A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Specific Conductance	µmho/cm	06/04/2014	N001	16	-	23.5	1804		F	#		
Temperature	C	06/04/2014	N001	16	-	23.5	17.97		F	#		
Thorium-234	pCi/L	06/04/2014	N001	16	-	23.5	77	U	F	#	77	37.8
Tritium	pCi/L	06/04/2014	N001	16	-	23.5	360	U	F	#	360	207
Turbidity	NTU	06/04/2014	N001	16	-	23.5	1.57		F	#		
Uranium-235	pCi/L	06/04/2014	N001	16	-	23.5	26	U	F	#	26	13.5
Yttrium-88	pCi/L	06/04/2014	N001	16	-	23.5	12	U	F	#	12	6.92

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 08/05/2014
Location: 1B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/04/2014	N001	39	-	49	22.7		UFQ	#	18	10.5
Americium-241	pCi/L	06/04/2014	N001	39	-	49	30	U	FQ	#	30	16.9
Antimony-125	pCi/L	06/04/2014	N001	39	-	49	12	U	FQ	#	12	7.16
Cerium-144	pCi/L	06/04/2014	N001	39	-	49	23	U	FQ	#	23	13.7
Cesium-134	pCi/L	06/04/2014	N001	39	-	49	5.7	U	FQ	#	5.7	3.24
Cesium-137	pCi/L	06/04/2014	N001	39	-	49	6.1	U	FQ	#	6.1	3.45
Cobalt-60	pCi/L	06/04/2014	N001	39	-	49	5.8	U	FQ	#	5.8	3.59
Europium-152	pCi/L	06/04/2014	N001	39	-	49	30	U	FQ	#	30	17.4
Europium-154	pCi/L	06/04/2014	N001	39	-	49	31	U	FQ	#	31	18.8
Europium-155	pCi/L	06/04/2014	N001	39	-	49	16	U	FQ	#	16	9.53
Gross Alpha	pCi/L	06/04/2014	N001	39	-	49	6.83		FQ	#	1.2	1.54
Gross Beta	pCi/L	06/04/2014	N001	39	-	49	9.39		FQ	#	1.9	1.97
Lead-212	pCi/L	06/04/2014	N001	39	-	49	14	U	FQ	#	14	8.26
Nickel-63	pCi/L	06/04/2014	N001	39	-	49	13	U	FQ	#	13	3.75
Oxidation Reduction Potential	mV	06/04/2014	N001	39	-	49	282.4		FQ	#		
pH	s.u.	06/04/2014	N001	39	-	49	6.96		FQ	#		
Potassium-40	pCi/L	06/04/2014	N001	39	-	49	120	U	FQ	#	120	72.3
Promethium-144	pCi/L	06/04/2014	N001	39	-	49	6.1	U	FQ	#	6.1	3.76
Promethium-146	pCi/L	06/04/2014	N001	39	-	49	5.9	U	FQ	#	5.9	3.46
Ruthenium-106	pCi/L	06/04/2014	N001	39	-	49	48	U	FQ	#	48	28.4

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 08/05/2014
Location: 1B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Specific Conductance	µmho/cm	06/04/2014	N001	39	-	49	1110		FQ	#		
Temperature	C	06/04/2014	N001	39	-	49	17.71		FQ	#		
Thorium-234	pCi/L	06/04/2014	N001	39	-	49	130	U	FQ	#	130	78.3
Tritium	pCi/L	06/04/2014	N001	39	-	49	360	U	FQ	#	360	209
Turbidity	NTU	06/04/2014	N001	39	-	49	9.92		FQ	#		
Uranium-235	pCi/L	06/04/2014	N001	39	-	49	22	U	FQ	#	22	13.2
Yttrium-88	pCi/L	06/04/2014	N001	39	-	49	6.3	U	FQ	#	6.3	4

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 08/05/2014
Location: 2A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/04/2014	N001	20	-	25	16.4		UFQ	#	16	8.39
Americium-241	pCi/L	06/04/2014	N001	20	-	25	100	U	FQ	#	100	62.3
Antimony-125	pCi/L	06/04/2014	N001	20	-	25	11	U	FQ	#	11	6.23
Cerium-144	pCi/L	06/04/2014	N001	20	-	25	24	U	FQ	#	24	14.6
Cesium-134	pCi/L	06/04/2014	N001	20	-	25	4.7	U	FQ	#	4.7	2.77
Cesium-137	pCi/L	06/04/2014	N001	20	-	25	4.4	U	FQ	#	4.4	2.57
Cobalt-60	pCi/L	06/04/2014	N001	20	-	25	4.2	U	FQ	#	4.2	2.44
Europium-152	pCi/L	06/04/2014	N001	20	-	25	23	U	FQ	#	23	13
Europium-154	pCi/L	06/04/2014	N001	20	-	25	25	U	FQ	#	25	14.2
Europium-155	pCi/L	06/04/2014	N001	20	-	25	14	U	FQ	#	14	8.84
Gross Alpha	pCi/L	06/04/2014	N001	20	-	25	9.44		FQ	#	1.7	2.11
Gross Beta	pCi/L	06/04/2014	N001	20	-	25	7.52		FQ	#	2.4	1.95
Lead-212	pCi/L	06/04/2014	N001	20	-	25	14	U	FQ	#	14	8.58
Nickel-63	pCi/L	06/04/2014	N001	20	-	25	13	U	FQ	#	13	3.8
Oxidation Reduction Potential	mV	06/04/2014	N001	20	-	25	266.5		FQ	#		
pH	s.u.	06/04/2014	N001	20	-	25	7.17		FQ	#		
Potassium-40	pCi/L	06/04/2014	N001	20	-	25	120	U	FQ	#	120	71.4
Promethium-144	pCi/L	06/04/2014	N001	20	-	25	4.6	U	FQ	#	4.6	2.76
Promethium-146	pCi/L	06/04/2014	N001	20	-	25	4.8	U	FQ	#	4.8	2.87
Ruthenium-106	pCi/L	06/04/2014	N001	20	-	25	41	U	FQ	#	41	24.4

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 08/05/2014
Location: 2A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Specific Conductance	µmho/cm	06/04/2014	N001	20	-	25	1301		FQ	#		
Temperature	C	06/04/2014	N001	20	-	25	15.26		FQ	#		
Thorium-234	pCi/L	06/04/2014	N001	20	-	25	220	U	FQ	#	220	131
Tritium	pCi/L	06/04/2014	N001	20	-	25	360	U	FQ	#	360	208
Turbidity	NTU	06/04/2014	N001	20	-	25	2.32		FQ	#		
Uranium-235	pCi/L	06/04/2014	N001	20	-	25	39	U	FQ	#	39	23.3
Yttrium-88	pCi/L	06/04/2014	N001	20	-	25	4.73		UFQ	#	4.7	3

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 08/05/2014
Location: 2B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/04/2014	N001	43	-	53	56	U	FQ	#	56	33
Americium-241	pCi/L	06/04/2014	N001	43	-	53	32	U	FQ	#	32	19.6
Antimony-125	pCi/L	06/04/2014	N001	43	-	53	26	U	FQ	#	26	13.4
Cerium-144	pCi/L	06/04/2014	N001	43	-	53	28	U	FQ	#	28	16.7
Cesium-134	pCi/L	06/04/2014	N001	43	-	53	7.2	U	FQ	#	7.2	4.16
Cesium-137	pCi/L	06/04/2014	N001	43	-	53	7.5	U	FQ	#	7.5	4.28
Cobalt-60	pCi/L	06/04/2014	N001	43	-	53	10	U	FQ	#	10	5.89
Europium-152	pCi/L	06/04/2014	N001	43	-	53	46	U	FQ	#	46	25.9
Europium-154	pCi/L	06/04/2014	N001	43	-	53	43	U	FQ	#	43	25.2
Europium-155	pCi/L	06/04/2014	N001	43	-	53	16	U	FQ	#	16	9.5
Gross Alpha	pCi/L	06/04/2014	N001	43	-	53	17.2		FQ	#	2.2	3.53
Gross Beta	pCi/L	06/04/2014	N001	43	-	53	15.9		FQ	#	2.4	3.04
Lead-212	pCi/L	06/04/2014	N001	43	-	53	14	U	FQ	#	14	8.43
Nickel-63	pCi/L	06/04/2014	N001	43	-	53	14	U	FQ	#	14	4.18
Oxidation Reduction Potential	mV	06/04/2014	N001	43	-	53	122.6		FQ	#		
pH	s.u.	06/04/2014	N001	43	-	53	7		FQ	#		
Potassium-40	pCi/L	06/04/2014	N001	43	-	53	180	U	FQ	#	180	105
Promethium-144	pCi/L	06/04/2014	N001	43	-	53	8.3	U	FQ	#	8.3	4.94
Promethium-146	pCi/L	06/04/2014	N001	43	-	53	7.3	U	FQ	#	7.3	4.48
Ruthenium-106	pCi/L	06/04/2014	N001	43	-	53	72	U	FQ	#	72	41.1

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 08/05/2014
Location: 2B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Specific Conductance	µmho/cm	06/04/2014	N001	43	-	53	1428		FQ	#		
Temperature	C	06/04/2014	N001	43	-	53	14.95		FQ	#		
Thorium-234	pCi/L	06/04/2014	N001	43	-	53	160	U	FQ	#	160	94.9
Tritium	pCi/L	06/04/2014	N001	43	-	53	360	U	FQ	#	360	207
Turbidity	NTU	06/04/2014	N001	43	-	53	1.47		FQ	#		
Uranium-235	pCi/L	06/04/2014	N001	43	-	53	47	U	FQ	#	47	28.1
Yttrium-88	pCi/L	06/04/2014	N001	43	-	53	8.8	U	FQ	#	8.8	5.54

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 08/05/2014
Location: 2B2 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/04/2014	0001	-	20	U	FQ	#	20	10.6
Americium-241	pCi/L	06/04/2014	0001	-	9.9	U	FQ	#	9.9	5.84
Antimony-125	pCi/L	06/04/2014	0001	-	12	U	FQ	#	12	6.36
Cerium-144	pCi/L	06/04/2014	0001	-	12	U	FQ	#	12	7.65
Cesium-134	pCi/L	06/04/2014	0001	-	4.9	U	FQ	#	4.9	2.8
Cesium-137	pCi/L	06/04/2014	0001	-	4.9	U	FQ	#	4.9	2.9
Cobalt-60	pCi/L	06/04/2014	0001	-	4.7	U	FQ	#	4.7	2.81
Europium-152	pCi/L	06/04/2014	0001	-	25	U	FQ	#	25	14.9
Europium-154	pCi/L	06/04/2014	0001	-	31	U	FQ	#	31	17.1
Europium-155	pCi/L	06/04/2014	0001	-	7	U	FQ	#	7	4.36
Gross Alpha	pCi/L	06/04/2014	0001	-	3.68		FQJ	#	1.6	1.31
Gross Beta	pCi/L	06/04/2014	0001	-	8.1		FQ	#	2	1.83
Lead-212	pCi/L	06/04/2014	0001	-	11	U	FQ	#	11	6.7
Nickel-63	pCi/L	06/04/2014	0001	-	12	U	FQ	#	12	3.59
Oxidation Reduction Potential	mV	06/04/2014	N001	-	239.9		FQ	#		
pH	s.u.	06/04/2014	N001	-	6.97		FQ	#		
Potassium-40	pCi/L	06/04/2014	0001	-	110	U	FQ	#	110	64
Promethium-144	pCi/L	06/04/2014	0001	-	5.1	U	FQ	#	5.1	2.99
Promethium-146	pCi/L	06/04/2014	0001	-	5.4	U	FQ	#	5.4	3.11
Ruthenium-106	pCi/L	06/04/2014	0001	-	44	U	FQ	#	44	24.7

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 08/05/2014
Location: 2B2 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Specific Conductance	µmho/cm	06/04/2014	N001	-	1170		FQ	#		
Temperature	C	06/04/2014	N001	-	15.79		FQ	#		
Thorium-234	pCi/L	06/04/2014	0001	-	75	U	FQ	#	75	44.9
Tritium	pCi/L	06/04/2014	0001	-	360	U	FQ	#	360	209
Turbidity	NTU	06/04/2014	N001	-	22.9		FQ	#		
Uranium-235	pCi/L	06/04/2014	0001	-	27	U	FQ	#	27	16
Yttrium-88	pCi/L	06/04/2014	0001	-	12	U	FQ	#	12	7.02

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 08/05/2014
Location: 2C2 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/04/2014	N001	-	40	U		#	40	23.7
Americium-241	pCi/L	06/04/2014	N001	-	28	U		#	28	16.6
Antimony-125	pCi/L	06/04/2014	N001	-	13	U		#	13	7.45
Cerium-144	pCi/L	06/04/2014	N001	-	23	U		#	23	13.7
Cesium-134	pCi/L	06/04/2014	N001	-	5.7	U		#	5.7	3.31
Cesium-137	pCi/L	06/04/2014	N001	-	6	U		#	6	3.4
Cobalt-60	pCi/L	06/04/2014	N001	-	6.8	U		#	6.8	3.75
Europium-152	pCi/L	06/04/2014	N001	-	28	U		#	28	16.3
Europium-154	pCi/L	06/04/2014	N001	-	31	U		#	31	17.5
Europium-155	pCi/L	06/04/2014	N001	-	16	U		#	16	9.58
Gross Alpha	pCi/L	06/04/2014	N001	-	4.02			#	1.1	1.14
Gross Beta	pCi/L	06/04/2014	N001	-	5.38			#	1.5	1.31
Lead-212	pCi/L	06/04/2014	N001	-	14	U		#	14	8.16
Nickel-63	pCi/L	06/04/2014	N001	-	14	U		#	14	3.98
Oxidation Reduction Potential	mV	06/04/2014	N001	-	304.8			#		
pH	s.u.	06/04/2014	N001	-	7			#		
Potassium-40	pCi/L	06/04/2014	N001	-	120	U		#	120	71.4
Promethium-144	pCi/L	06/04/2014	N001	-	6.3	U		#	6.3	3.79
Promethium-146	pCi/L	06/04/2014	N001	-	5.7	U		#	5.7	3.29
Ruthenium-106	pCi/L	06/04/2014	N001	-	50	U		#	50	29.9

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 08/05/2014
Location: 2C2 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Specific Conductance	µmho/cm	06/04/2014	N001	-	977			#		
Temperature	C	06/04/2014	N001	-	16.07			#		
Thorium-234	pCi/L	06/04/2014	N001	-	130	U		#	130	78.8
Tritium	pCi/L	06/04/2014	N001	-	360	U		#	360	208
Turbidity	NTU	06/04/2014	N001	-	0.75			#		
Uranium-235	pCi/L	06/04/2014	N001	-	22	U		#	22	13
Yttrium-88	pCi/L	06/04/2014	N001	-	6.7	U		#	6.7	3.94

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 08/05/2014
Location: 3A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/04/2014	N001	19	-	24	23	U	FQ	#	23	14
Americium-241	pCi/L	06/04/2014	N001	19	-	24	25	U	FQ	#	25	15.4
Antimony-125	pCi/L	06/04/2014	N001	19	-	24	14	U	FQ	#	14	7.18
Cerium-144	pCi/L	06/04/2014	N001	19	-	24	22	U	FQ	#	22	13.4
Cesium-134	pCi/L	06/04/2014	N001	19	-	24	5.6	U	FQ	#	5.6	3.26
Cesium-137	pCi/L	06/04/2014	N001	19	-	24	5.7	U	FQ	#	5.7	3.3
Cobalt-60	pCi/L	06/04/2014	N001	19	-	24	6.8	U	FQ	#	6.8	4.24
Europium-152	pCi/L	06/04/2014	N001	19	-	24	32	U	FQ	#	32	18.2
Europium-154	pCi/L	06/04/2014	N001	19	-	24	34	U	FQ	#	34	20
Europium-155	pCi/L	06/04/2014	N001	19	-	24	13	U	FQ	#	13	7.58
Gross Alpha	pCi/L	06/04/2014	N001	19	-	24	6.43		FQJ	#	5.6	3.78
Gross Beta	pCi/L	06/04/2014	N001	19	-	24	12.5		FQJ	#	4.9	3.72
Lead-212	pCi/L	06/04/2014	N001	19	-	24	13	U	FQ	#	13	8.01
Nickel-63	pCi/L	06/04/2014	N001	19	-	24	15	U	FQ	#	15	4.48
Oxidation Reduction Potential	mV	06/04/2014	N001	19	-	24	273.1		FQ	#		
pH	s.u.	06/04/2014	N001	19	-	24	6.91		FQ	#		
Potassium-40	pCi/L	06/04/2014	N001	19	-	24	160	U	FQ	#	160	93.3
Promethium-144	pCi/L	06/04/2014	N001	19	-	24	6.1	U	FQ	#	6.1	3.58
Promethium-146	pCi/L	06/04/2014	N001	19	-	24	5.9	U	FQ	#	5.9	3.47
Ruthenium-106	pCi/L	06/04/2014	N001	19	-	24	53	U	FQ	#	53	32.2

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 08/05/2014
Location: 3A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Specific Conductance	µmho/cm	06/04/2014	N001	19	-	24	3290		FQ	#		
Temperature	C	06/04/2014	N001	19	-	24	16.15		FQ	#		
Thorium-234	pCi/L	06/04/2014	N001	19	-	24	150	U	FQ	#	150	90.6
Tritium	pCi/L	06/04/2014	N001	19	-	24	360	U	FQ	#	360	209
Turbidity	NTU	06/04/2014	N001	19	-	24	1.97		FQ	#		
Uranium-235	pCi/L	06/04/2014	N001	19	-	24	21	U	FQ	#	21	11
Yttrium-88	pCi/L	06/04/2014	N001	19	-	24	7.6	U	FQ	#	7.6	4.43

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 08/05/2014
Location: 3B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/04/2014	N001	43	-	53	16.5		UFQ	#	13	6.64
Actinium-228	pCi/L	06/04/2014	N002	43	-	53	23	U	FQ	#	23	12.9
Americium-241	pCi/L	06/04/2014	N001	43	-	53	140	U	FQ	#	140	81.8
Americium-241	pCi/L	06/04/2014	N002	43	-	53	45	U	FQ	#	45	26.7
Antimony-125	pCi/L	06/04/2014	N001	43	-	53	10	U	FQ	#	10	5.8
Antimony-125	pCi/L	06/04/2014	N002	43	-	53	12	U	FQ	#	12	6.84
Cerium-144	pCi/L	06/04/2014	N001	43	-	53	24	U	FQ	#	24	14.2
Cerium-144	pCi/L	06/04/2014	N002	43	-	53	22	U	FQ	#	22	13.5
Cesium-134	pCi/L	06/04/2014	N001	43	-	53	4.1	U	FQ	#	4.1	2.42
Cesium-134	pCi/L	06/04/2014	N002	43	-	53	5.1	U	FQ	#	5.1	2.98
Cesium-137	pCi/L	06/04/2014	N001	43	-	53	3.9	U	FQ	#	3.9	2.24
Cesium-137	pCi/L	06/04/2014	N002	43	-	53	4.7	U	FQ	#	4.7	2.77
Cobalt-60	pCi/L	06/04/2014	N001	43	-	53	3.8	U	FQ	#	3.8	2.23
Cobalt-60	pCi/L	06/04/2014	N002	43	-	53	5	U	FQ	#	5	2.78
Europium-152	pCi/L	06/04/2014	N001	43	-	53	20	U	FQ	#	20	11.6
Europium-152	pCi/L	06/04/2014	N002	43	-	53	24	U	FQ	#	24	14.4
Europium-154	pCi/L	06/04/2014	N001	43	-	53	21	U	FQ	#	21	12
Europium-154	pCi/L	06/04/2014	N002	43	-	53	28	U	FQ	#	28	16.4
Europium-155	pCi/L	06/04/2014	N001	43	-	53	16	U	FQ	#	16	9.63
Europium-155	pCi/L	06/04/2014	N002	43	-	53	13	U	FQ	#	13	7.78

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 08/05/2014
Location: 3B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Gross Alpha	pCi/L	06/04/2014	N001	43	-	53	5.72		FQJ	#	2.8	2.21
Gross Alpha	pCi/L	06/04/2014	N002	43	-	53	7.38		FQJ	#	2.8	2.39
Gross Beta	pCi/L	06/04/2014	N001	43	-	53	4.89		FQJ	#	3.9	2.55
Gross Beta	pCi/L	06/04/2014	N002	43	-	53	9.06		FQJ	#	4.2	3.01
Lead-212	pCi/L	06/04/2014	N001	43	-	53	9.9	U	FQ	#	9.9	5.92
Lead-212	pCi/L	06/04/2014	N002	43	-	53	12	U	FQ	#	12	7.48
Nickel-63	pCi/L	06/04/2014	N001	43	-	53	14	U	FQ	#	14	4.23
Nickel-63	pCi/L	06/04/2014	N002	43	-	53	13	U	FQ	#	13	3.71
Oxidation Reduction Potential	mV	06/04/2014	N001	43	-	53	282.1		FQ	#		
pH	s.u.	06/04/2014	N001	43	-	53	7.03		FQ	#		
Potassium-40	pCi/L	06/04/2014	N001	43	-	53	120	U	FQ	#	120	72.8
Potassium-40	pCi/L	06/04/2014	N002	43	-	53	160	U	FQ	#	160	99.5
Promethium-144	pCi/L	06/04/2014	N001	43	-	53	4	U	FQ	#	4	2.39
Promethium-144	pCi/L	06/04/2014	N002	43	-	53	5.7	U	FQ	#	5.7	3.36
Promethium-146	pCi/L	06/04/2014	N001	43	-	53	4.7	U	FQ	#	4.7	2.74
Promethium-146	pCi/L	06/04/2014	N002	43	-	53	5.4	U	FQ	#	5.4	3.26
Ruthenium-106	pCi/L	06/04/2014	N001	43	-	53	37	U	FQ	#	37	21.4
Ruthenium-106	pCi/L	06/04/2014	N002	43	-	53	46	U	FQ	#	46	26.6
Specific Conductance	µmho/cm	06/04/2014	N001	43	-	53	2295		FQ	#		
Temperature	C	06/04/2014	N001	43	-	53	16.1		FQ	#		

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 08/05/2014
Location: 3B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Thorium-234	pCi/L	06/04/2014	N001	43	-	53	200	U	FQ	#	200	123
Thorium-234	pCi/L	06/04/2014	N002	43	-	53	130	U	FQ	#	130	77.1
Tritium	pCi/L	06/04/2014	N001	43	-	53	360	U	FQ	#	360	213
Tritium	pCi/L	06/04/2014	N002	43	-	53	360	U	FQ	#	360	208
Turbidity	NTU	06/04/2014	N001	43	-	53	1.19		FQ	#		
Uranium-235	pCi/L	06/04/2014	N001	43	-	53	46	U	FQ	#	46	27.4
Uranium-235	pCi/L	06/04/2014	N002	43	-	53	23	U	FQ	#	23	14.3
Yttrium-88	pCi/L	06/04/2014	N001	43	-	53	4.5	U	FQ	#	4.5	2.81
Yttrium-88	pCi/L	06/04/2014	N002	43	-	53	6.3	U	FQ	#	6.3	3.77

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 08/05/2014
Location: 4A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/03/2014	N001	19	-	24	22		UFQ	#	15	9.93
Americium-241	pCi/L	06/03/2014	N001	19	-	24	26	U	FQ	#	26	15.3
Antimony-125	pCi/L	06/03/2014	N001	19	-	24	10	U	FQ	#	10	5.56
Cerium-144	pCi/L	06/03/2014	N001	19	-	24	20	U	FQ	#	20	12.2
Cesium-134	pCi/L	06/03/2014	N001	19	-	24	4.9	U	FQ	#	4.9	2.82
Cesium-137	pCi/L	06/03/2014	N001	19	-	24	3.9	U	FQ	#	3.9	2.32
Cobalt-60	pCi/L	06/03/2014	N001	19	-	24	4.5	U	FQ	#	4.5	2.67
Europium-152	pCi/L	06/03/2014	N001	19	-	24	24	U	FQ	#	24	13.7
Europium-154	pCi/L	06/03/2014	N001	19	-	24	24	U	FQ	#	24	14.2
Europium-155	pCi/L	06/03/2014	N001	19	-	24	9.7	U	FQ	#	9.7	5.99
Gross Alpha	pCi/L	06/03/2014	N001	19	-	24	6.58		FQJ	#	2.2	1.96
Gross Beta	pCi/L	06/03/2014	N001	19	-	24	7.95		FQJ	#	3.3	2.43
Lead-212	pCi/L	06/03/2014	N001	19	-	24	12	U	FQ	#	12	7.19
Nickel-63	pCi/L	06/03/2014	N001	19	-	24	12	U	FQ	#	12	3.48
Oxidation Reduction Potential	mV	06/03/2014	N001	19	-	24	316.3		FQ	#		
pH	s.u.	06/03/2014	N001	19	-	24	6.57		FQ	#		
Potassium-40	pCi/L	06/03/2014	N001	19	-	24	120	U	FQ	#	120	69.3
Promethium-144	pCi/L	06/03/2014	N001	19	-	24	4.7	U	FQ	#	4.7	2.78
Promethium-146	pCi/L	06/03/2014	N001	19	-	24	4.9	U	FQ	#	4.9	2.83
Ruthenium-106	pCi/L	06/03/2014	N001	19	-	24	39	U	FQ	#	39	23.3

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 08/05/2014
Location: 4A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Specific Conductance	µmho/cm	06/03/2014	N001	19	-	24	2054		FQ	#		
Temperature	C	06/03/2014	N001	19	-	24	15.05		FQ	#		
Thorium-234	pCi/L	06/03/2014	N001	19	-	24	130	U	FQ	#	130	79.3
Tritium	pCi/L	06/03/2014	N001	19	-	24	360	U	FQ	#	360	208
Turbidity	NTU	06/03/2014	N001	19	-	24	2.03		FQ	#		
Uranium-235	pCi/L	06/03/2014	N001	19	-	24	32	U	FQ	#	32	19.3
Yttrium-88	pCi/L	06/03/2014	N001	19	-	24	4.6	U	FQ	#	4.6	2.86

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 08/05/2014
Location: 4B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/03/2014	N001	44	-	54	20.6		UFQ	#	13	8.95
Americium-241	pCi/L	06/03/2014	N001	44	-	54	9.1	U	FQ	#	9.1	5.48
Antimony-125	pCi/L	06/03/2014	N001	44	-	54	8.6	U	FQ	#	8.6	5.07
Cerium-144	pCi/L	06/03/2014	N001	44	-	54	14	U	FQ	#	14	8.32
Cesium-134	pCi/L	06/03/2014	N001	44	-	54	3.8	U	FQ	#	3.8	2.22
Cesium-137	pCi/L	06/03/2014	N001	44	-	54	3.8	U	FQ	#	3.8	2.17
Cobalt-60	pCi/L	06/03/2014	N001	44	-	54	4	U	FQ	#	4	2.36
Europium-152	pCi/L	06/03/2014	N001	44	-	54	20	U	FQ	#	20	12.3
Europium-154	pCi/L	06/03/2014	N001	44	-	54	20	U	FQ	#	20	8.76
Europium-155	pCi/L	06/03/2014	N001	44	-	54	5.5	U	FQ	#	5.5	3.32
Gross Alpha	pCi/L	06/03/2014	N001	44	-	54	15.4		FQ	#	1.6	3.03
Gross Beta	pCi/L	06/03/2014	N001	44	-	54	11.9		FQ	#	2.9	2.69
Lead-212	pCi/L	06/03/2014	N001	44	-	54	10	U	FQ	#	10	6.11
Nickel-63	pCi/L	06/03/2014	N001	44	-	54	13	U	FQ	#	13	4.01
Oxidation Reduction Potential	mV	06/03/2014	N001	44	-	54	191		FQ	#		
pH	s.u.	06/03/2014	N001	44	-	54	6.99		FQ	#		
Potassium-40	pCi/L	06/03/2014	N001	44	-	54	100	U	FQ	#	100	61.4
Promethium-144	pCi/L	06/03/2014	N001	44	-	54	5.5	U	FQ	#	5.5	3.36
Promethium-146	pCi/L	06/03/2014	N001	44	-	54	4.2	U	FQ	#	4.2	2.49
Ruthenium-106	pCi/L	06/03/2014	N001	44	-	54	35	U	FQ	#	35	20.6

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 08/05/2014
Location: 4B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Specific Conductance	µmho/cm	06/03/2014	N001	44	-	54	1616		FQ	#		
Temperature	C	06/03/2014	N001	44	-	54	15.02		FQ	#		
Thorium-234	pCi/L	06/03/2014	N001	44	-	54	71	U	FQ	#	71	43.1
Tritium	pCi/L	06/03/2014	N001	44	-	54	360	U	FQ	#	360	211
Turbidity	NTU	06/03/2014	N001	44	-	54	1.85		FQ	#		
Uranium-235	pCi/L	06/03/2014	N001	44	-	54	13	U	FQ	#	13	7.65
Yttrium-88	pCi/L	06/03/2014	N001	44	-	54	11	U	FQ	#	11	6.74

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 08/05/2014
Location: 4C WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/03/2014	N001	64	-	74	15	U	FQ	#	15	9.35
Americium-241	pCi/L	06/03/2014	N001	64	-	74	23	U	FQ	#	23	13.3
Antimony-125	pCi/L	06/03/2014	N001	64	-	74	9.8	U	FQ	#	9.8	5.45
Cerium-144	pCi/L	06/03/2014	N001	64	-	74	18	U	FQ	#	18	10.7
Cesium-134	pCi/L	06/03/2014	N001	64	-	74	4.3	U	FQ	#	4.3	2.54
Cesium-137	pCi/L	06/03/2014	N001	64	-	74	4.5	U	FQ	#	4.5	2.62
Cobalt-60	pCi/L	06/03/2014	N001	64	-	74	4.8	U	FQ	#	4.8	2.74
Europium-152	pCi/L	06/03/2014	N001	64	-	74	23	U	FQ	#	23	13
Europium-154	pCi/L	06/03/2014	N001	64	-	74	24	U	FQ	#	24	14.4
Europium-155	pCi/L	06/03/2014	N001	64	-	74	14	U	FQ	#	14	8.23
Gross Alpha	pCi/L	06/03/2014	N001	64	-	74	21		FQ	#	1.4	3.83
Gross Beta	pCi/L	06/03/2014	N001	64	-	74	14.4		FQ	#	2.6	2.91
Lead-212	pCi/L	06/03/2014	N001	64	-	74	13	U	FQ	#	13	8.04
Nickel-63	pCi/L	06/03/2014	N001	64	-	74	13	U	FQ	#	13	3.93
Oxidation Reduction Potential	mV	06/03/2014	N001	64	-	74	7.9		FQ	#		
pH	s.u.	06/03/2014	N001	64	-	74	7.04		FQ	#		
Potassium-40	pCi/L	06/03/2014	N001	64	-	74	110	U	FQ	#	110	67.9
Promethium-144	pCi/L	06/03/2014	N001	64	-	74	4.7	U	FQ	#	4.7	2.96
Promethium-146	pCi/L	06/03/2014	N001	64	-	74	4.6	U	FQ	#	4.6	2.71
Ruthenium-106	pCi/L	06/03/2014	N001	64	-	74	40	U	FQ	#	40	23.1

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 08/05/2014
Location: 4C WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Specific Conductance	µmho/cm	06/03/2014	N001	64	-	74	1401		FQ	#		
Temperature	C	06/03/2014	N001	64	-	74	18.51		FQ	#		
Thorium-234	pCi/L	06/03/2014	N001	64	-	74	120	U	FQ	#	120	73.2
Tritium	pCi/L	06/03/2014	N001	64	-	74	360	U	FQ	#	360	209
Turbidity	NTU	06/03/2014	N001	64	-	74	0.83		FQ	#		
Uranium-235	pCi/L	06/03/2014	N001	64	-	74	19	U	FQ	#	19	11.9
Yttrium-88	pCi/L	06/03/2014	N001	64	-	74	5	U	FQ	#	5	3.14

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 08/05/2014
Location: 5A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/03/2014	N001	19	-	24	19.6		UFQ	#	18	9.76
Americium-241	pCi/L	06/03/2014	N001	19	-	24	45	U	FQ	#	45	26.7
Antimony-125	pCi/L	06/03/2014	N001	19	-	24	11	U	FQ	#	11	6.12
Cerium-144	pCi/L	06/03/2014	N001	19	-	24	23	U	FQ	#	23	13.2
Cesium-134	pCi/L	06/03/2014	N001	19	-	24	4.9	U	FQ	#	4.9	2.88
Cesium-137	pCi/L	06/03/2014	N001	19	-	24	5.1	U	FQ	#	5.1	2.89
Cobalt-60	pCi/L	06/03/2014	N001	19	-	24	4.8	U	FQ	#	4.8	2.75
Europium-152	pCi/L	06/03/2014	N001	19	-	24	25	U	FQ	#	25	14.6
Europium-154	pCi/L	06/03/2014	N001	19	-	24	26	U	FQ	#	26	15.2
Europium-155	pCi/L	06/03/2014	N001	19	-	24	12	U	FQ	#	12	7.57
Gross Alpha	pCi/L	06/03/2014	N001	19	-	24	6.76		FQ	#	1.5	1.68
Gross Beta	pCi/L	06/03/2014	N001	19	-	24	5.26		FQJ	#	2.2	1.65
Lead-212	pCi/L	06/03/2014	N001	19	-	24	12	U	FQ	#	12	7.52
Nickel-63	pCi/L	06/03/2014	N001	19	-	24	14	U	FQ	#	14	3.95
Oxidation Reduction Potential	mV	06/03/2014	N001	19	-	24	232.5		FQ	#		
pH	s.u.	06/03/2014	N001	19	-	24	7.37		FQ	#		
Potassium-40	pCi/L	06/03/2014	N001	19	-	24	160	U	FQ	#	160	99.6
Promethium-144	pCi/L	06/03/2014	N001	19	-	24	5.2	U	FQ	#	5.2	3.19
Promethium-146	pCi/L	06/03/2014	N001	19	-	24	5.3	U	FQ	#	5.3	3.14
Ruthenium-106	pCi/L	06/03/2014	N001	19	-	24	45	U	FQ	#	45	27.2

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 08/05/2014
Location: 5A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Specific Conductance	µmho/cm	06/03/2014	N001	19	-	24	1277		FQ	#		
Temperature	C	06/03/2014	N001	19	-	24	16.85		FQ	#		
Thorium-234	pCi/L	06/03/2014	N001	19	-	24	65	U	FQ	#	65	40.7
Tritium	pCi/L	06/03/2014	N001	19	-	24	360	U	FQ	#	360	208
Turbidity	NTU	06/03/2014	N001	19	-	24	1.95		FQ	#		
Uranium-235	pCi/L	06/03/2014	N001	19	-	24	23	U	FQ	#	23	13.9
Yttrium-88	pCi/L	06/03/2014	N001	19	-	24	6.3	U	FQ	#	6.3	3.71

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 08/05/2014
Location: 5B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/03/2014	N001	39	-	49	33	U	FQ	#	33	19.9
Americium-241	pCi/L	06/03/2014	N001	39	-	49	100	U	FQ	#	100	60.7
Antimony-125	pCi/L	06/03/2014	N001	39	-	49	11	U	FQ	#	11	6.35
Cerium-144	pCi/L	06/03/2014	N001	39	-	49	25	U	FQ	#	25	14.7
Cesium-134	pCi/L	06/03/2014	N001	39	-	49	4.7	U	FQ	#	4.7	2.73
Cesium-137	pCi/L	06/03/2014	N001	39	-	49	4.4	U	FQ	#	4.4	2.58
Cobalt-60	pCi/L	06/03/2014	N001	39	-	49	4.4	U	FQ	#	4.4	2.47
Europium-152	pCi/L	06/03/2014	N001	39	-	49	20	U	FQ	#	20	12
Europium-154	pCi/L	06/03/2014	N001	39	-	49	25	U	FQ	#	25	14.3
Europium-155	pCi/L	06/03/2014	N001	39	-	49	14	U	FQ	#	14	8.64
Gross Alpha	pCi/L	06/03/2014	N001	39	-	49	15.1		FQ	#	0.98	2.69
Gross Beta	pCi/L	06/03/2014	N001	39	-	49	11.6		FQ	#	1.5	2.12
Lead-212	pCi/L	06/03/2014	N001	39	-	49	14	U	FQ	#	14	8.64
Nickel-63	pCi/L	06/03/2014	N001	39	-	49	13	U	FQ	#	13	3.67
Oxidation Reduction Potential	mV	06/03/2014	N001	39	-	49	228.6		FQ	#		
pH	s.u.	06/03/2014	N001	39	-	49	7.21		FQ	#		
Potassium-40	pCi/L	06/03/2014	N001	39	-	49	120	U	FQ	#	120	69.8
Promethium-144	pCi/L	06/03/2014	N001	39	-	49	4.7	U	FQ	#	4.7	2.77
Promethium-146	pCi/L	06/03/2014	N001	39	-	49	4.8	U	FQ	#	4.8	2.86
Ruthenium-106	pCi/L	06/03/2014	N001	39	-	49	44	U	FQ	#	44	25.3

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 08/05/2014
Location: 5B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Specific Conductance	µmho/cm	06/03/2014	N001	39	-	49	736		FQ	#		
Temperature	C	06/03/2014	N001	39	-	49	17.99		FQ	#		
Thorium-234	pCi/L	06/03/2014	N001	39	-	49	220	U	FQ	#	220	130
Tritium	pCi/L	06/03/2014	N001	39	-	49	360	U	FQ	#	360	210
Turbidity	NTU	06/03/2014	N001	39	-	49	1.97		FQ	#		
Uranium-235	pCi/L	06/03/2014	N001	39	-	49	39	U	FQ	#	39	23.1
Yttrium-88	pCi/L	06/03/2014	N001	39	-	49	5	U	FQ	#	5	3.04

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 08/05/2014
Location: 7B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/03/2014	N001	-	23.5		U	#	16	10.7
Americium-241	pCi/L	06/03/2014	N001	-	38	U		#	38	22.9
Antimony-125	pCi/L	06/03/2014	N001	-	10	U		#	10	5.95
Cerium-144	pCi/L	06/03/2014	N001	-	22	U		#	22	13
Cesium-134	pCi/L	06/03/2014	N001	-	6.8	U		#	6.8	3.98
Cesium-137	pCi/L	06/03/2014	N001	-	4.7	U		#	4.7	2.72
Cobalt-60	pCi/L	06/03/2014	N001	-	5.5	U		#	5.5	3.18
Europium-152	pCi/L	06/03/2014	N001	-	25	U		#	25	14.4
Europium-154	pCi/L	06/03/2014	N001	-	26	U		#	26	14.6
Europium-155	pCi/L	06/03/2014	N001	-	13	U		#	13	7.48
Gross Alpha	pCi/L	06/03/2014	N001	-	5.86			#	1.4	1.49
Gross Beta	pCi/L	06/03/2014	N001	-	9.61			#	1.6	1.9
Lead-212	pCi/L	06/03/2014	N001	-	12	U		#	12	7.55
Nickel-63	pCi/L	06/03/2014	N001	-	13	U		#	13	3.86
Oxidation Reduction Potential	mV	06/03/2014	N001	-	207.5			#		
pH	s.u.	06/03/2014	N001	-	7.68			#		
Potassium-40	pCi/L	06/03/2014	N001	-	130	U		#	130	76.8
Promethium-144	pCi/L	06/03/2014	N001	-	5	U		#	5	2.95
Promethium-146	pCi/L	06/03/2014	N001	-	5.4	U		#	5.4	3.13
Ruthenium-106	pCi/L	06/03/2014	N001	-	45	U		#	45	25.7

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 08/05/2014
Location: 7B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Specific Conductance	µmho/cm	06/03/2014	N001	-	695			#		
Temperature	C	06/03/2014	N001	-	20.07			#		
Thorium-234	pCi/L	06/03/2014	N001	-	150	U		#	150	89.3
Tritium	pCi/L	06/03/2014	N001	-	360	U		#	360	206
Turbidity	NTU	06/03/2014	N001	-	4.58			#		
Uranium-235	pCi/L	06/03/2014	N001	-	20	U		#	20	12.6
Yttrium-88	pCi/L	06/03/2014	N001	-	16	U		#	16	9.3

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 08/05/2014
Location: 7C WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/03/2014	N001	-	21.6		U	#	21	13.4
Americium-241	pCi/L	06/03/2014	N001	-	25	U		#	25	14.8
Antimony-125	pCi/L	06/03/2014	N001	-	13	U		#	13	7.31
Cerium-144	pCi/L	06/03/2014	N001	-	22	U		#	22	13.2
Cesium-134	pCi/L	06/03/2014	N001	-	5.5	U		#	5.5	3.2
Cesium-137	pCi/L	06/03/2014	N001	-	5.9	U		#	5.9	3.36
Cobalt-60	pCi/L	06/03/2014	N001	-	7.6	U		#	7.6	4.33
Europium-152	pCi/L	06/03/2014	N001	-	34	U		#	34	19.6
Europium-154	pCi/L	06/03/2014	N001	-	33	U		#	33	19.6
Europium-155	pCi/L	06/03/2014	N001	-	12	U		#	12	7.48
Gross Alpha	pCi/L	06/03/2014	N001	-	6.15			#	1.3	1.5
Gross Beta	pCi/L	06/03/2014	N001	-	6.44			#	1.5	1.42
Lead-212	pCi/L	06/03/2014	N001	-	15	U		#	15	8.96
Nickel-63	pCi/L	06/03/2014	N001	-	13	U		#	13	3.69
Oxidation Reduction Potential	mV	06/03/2014	N001	-	223.5			#		
pH	s.u.	06/03/2014	N001	-	7.34			#		
Potassium-40	pCi/L	06/03/2014	N001	-	150	U		#	150	91.4
Promethium-144	pCi/L	06/03/2014	N001	-	6.9	U		#	6.9	4.29
Promethium-146	pCi/L	06/03/2014	N001	-	5.8	U		#	5.8	3.4
Ruthenium-106	pCi/L	06/03/2014	N001	-	55	U		#	55	32.1

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 08/05/2014
Location: 7C WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Specific Conductance	µmho/cm	06/03/2014	N001	-	741			#		
Temperature	C	06/03/2014	N001	-	19.3			#		
Thorium-234	pCi/L	06/03/2014	N001	-	150	U		#	150	84.8
Tritium	pCi/L	06/03/2014	N001	-	360	U		#	360	208
Turbidity	NTU	06/03/2014	N001	-	4.58			#		
Uranium-235	pCi/L	06/03/2014	N001	-	40	U		#	40	17.9
Yttrium-88	pCi/L	06/03/2014	N001	-	7.2	U		#	7.2	4.28

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 08/05/2014
Location: 8B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/03/2014	N001	-	32	U	FQ	#	32	19
Americium-241	pCi/L	06/03/2014	N001	-	140	U	FQ	#	140	79.9
Antimony-125	pCi/L	06/03/2014	N001	-	9.8	U	FQ	#	9.8	5.7
Cerium-144	pCi/L	06/03/2014	N001	-	24	U	FQ	#	24	14.1
Cesium-134	pCi/L	06/03/2014	N001	-	4.3	U	FQ	#	4.3	2.49
Cesium-137	pCi/L	06/03/2014	N001	-	3.8	U	FQ	#	3.8	2.19
Cobalt-60	pCi/L	06/03/2014	N001	-	3.8	U	FQ	#	3.8	2.22
Europium-152	pCi/L	06/03/2014	N001	-	21	U	FQ	#	21	11.9
Europium-154	pCi/L	06/03/2014	N001	-	21	U	FQ	#	21	12.1
Europium-155	pCi/L	06/03/2014	N001	-	16	U	FQ	#	16	9.16
Gross Alpha	pCi/L	06/03/2014	N001	-	9.23		FQ	#	1.8	2.13
Gross Beta	pCi/L	06/03/2014	N001	-	8.62		FQ	#	1.8	1.84
Lead-212	pCi/L	06/03/2014	N001	-	10	U	FQ	#	10	6.15
Nickel-63	pCi/L	06/03/2014	N001	-	14	U	FQ	#	14	4.22
Oxidation Reduction Potential	mV	06/03/2014	N001	-	223.2		FQ	#		
pH	s.u.	06/03/2014	N001	-	7.03		FQ	#		
Potassium-40	pCi/L	06/03/2014	N001	-	120	U	FQ	#	120	71.2
Promethium-144	pCi/L	06/03/2014	N001	-	3.9	U	FQ	#	3.9	2.37
Promethium-146	pCi/L	06/03/2014	N001	-	4.8	U	FQ	#	4.8	2.79
Ruthenium-106	pCi/L	06/03/2014	N001	-	37	U	FQ	#	37	21.5

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 08/05/2014
Location: 8B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Specific Conductance	µmho/cm	06/03/2014	N001	-	908		FQ	#		
Temperature	C	06/03/2014	N001	-	15.92		FQ	#		
Thorium-234	pCi/L	06/03/2014	N001	-	200	U	FQ	#	200	122
Tritium	pCi/L	06/03/2014	N001	-	360	U	FQ	#	360	207
Turbidity	NTU	06/03/2014	N001	-	1.37		FQ	#		
Uranium-235	pCi/L	06/03/2014	N001	-	46	U	FQ	#	46	27.4
Yttrium-88	pCi/L	06/03/2014	N001	-	4.66		UFQ	#	4.3	2.79

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 08/05/2014
Location: 8C WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/03/2014	N001	-	13	U	FQ	#	13	6.4
Americium-241	pCi/L	06/03/2014	N001	-	9.1	U	FQ	#	9.1	5.43
Antimony-125	pCi/L	06/03/2014	N001	-	8.8	U	FQ	#	8.8	5.17
Cerium-144	pCi/L	06/03/2014	N001	-	14	U	FQ	#	14	8.25
Cesium-134	pCi/L	06/03/2014	N001	-	3.7	U	FQ	#	3.7	2.16
Cesium-137	pCi/L	06/03/2014	N001	-	3.5	U	FQ	#	3.5	2.02
Cobalt-60	pCi/L	06/03/2014	N001	-	3.7	U	FQ	#	3.7	2.28
Europium-152	pCi/L	06/03/2014	N001	-	20	U	FQ	#	20	11.7
Europium-154	pCi/L	06/03/2014	N001	-	22	U	FQ	#	22	12.2
Europium-155	pCi/L	06/03/2014	N001	-	5.5	U	FQ	#	5.5	3.22
Gross Alpha	pCi/L	06/03/2014	N001	-	7.54		FQ	#	2.2	2.09
Gross Beta	pCi/L	06/03/2014	N001	-	8.5		FQ	#	2.7	2.21
Lead-212	pCi/L	06/03/2014	N001	-	10	U	FQ	#	10	6.24
Nickel-63	pCi/L	06/03/2014	N001	-	13	U	FQ	#	13	3.81
Oxidation Reduction Potential	mV	06/03/2014	N001	-	-38.2		FQ	#		
pH	s.u.	06/03/2014	N001	-	7.03		FQ	#		
Potassium-40	pCi/L	06/03/2014	N001	-	100	U	FQ	#	100	60.1
Promethium-144	pCi/L	06/03/2014	N001	-	2.1	U	FQ	#	2.1	1.13
Promethium-146	pCi/L	06/03/2014	N001	-	4	U	FQ	#	4	2.38
Ruthenium-106	pCi/L	06/03/2014	N001	-	34	U	FQ	#	34	19.9

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 08/05/2014
Location: 8C WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Specific Conductance	µmho/cm	06/03/2014	N001	-	814		FQ	#		
Temperature	C	06/03/2014	N001	-	15.71		FQ	#		
Thorium-234	pCi/L	06/03/2014	N001	-	70	U	FQ	#	70	34.7
Tritium	pCi/L	06/03/2014	N001	-	360	U	FQ	#	360	209
Turbidity	NTU	06/03/2014	N001	-	0.76		FQ	#		
Uranium-235	pCi/L	06/03/2014	N001	-	13	U	FQ	#	13	7.74
Yttrium-88	pCi/L	06/03/2014	N001	-	11	U	FQ	#	11	6.8

Abbreviations:
µmho/cm = inverse microohms per centimeter, ft BLS = feet below surface, mg/L = milligrams per liter, mV = millivolts, NTU = nephelometric turbidity units, pCi/L = picocuries per liter, QA = quality assurance, s.u. = standard units,

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:
* Replicate analysis not within control limits.
> Result above upper detection limit.
A TIC is a suspected aldol-condensation product.
B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
C Pesticide result confirmed by GC-MS.
D Analyte determined in diluted sample.
E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
H Holding time expired, value suspect.
I Increased detection limit due to required dilution.
J Estimated
N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound (TIC).
P > 25% difference in detected pesticide or Aroclor concentrations between 2 columns.
U Analytical result below detection limit.
W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
X,Y,Z Laboratory defined qualifier, see case narrative.

DATA QUALIFIERS:
F Low flow sampling method used. G Possible grout contamination, pH > 9. J Estimated value.
L Less than 3 bore volumes purged prior to sampling. Q Qualitative result due to sampling technique. R Unusable result.
U Parameter analyzed for but was not detected. X Location is undefined.

QA QUALIFIER:
Validated according to quality assurance guidelines.

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2016 Groundwater Data

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Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/11/2016
Location: 1A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/28/2016	N001	16	-	23.5	19	U	F	#	19	11.2
Actinium-228	pCi/L	06/28/2016	N002	16	-	23.5	20		UF	#	17	11.2
Alkalinity, Total (as $CaCO_3$)	mg/L	06/28/2016	N001	16	-	23.5	220		F	#		
Americium-241	pCi/L	06/28/2016	N001	16	-	23.5	91	U	F	#	91	54.6
Americium-241	pCi/L	06/28/2016	N002	16	-	23.5	34	U	F	#	34	19.9
Antimony-125	pCi/L	06/28/2016	N001	16	-	23.5	12	U	F	#	12	6.54
Antimony-125	pCi/L	06/28/2016	N002	16	-	23.5	11	U	F	#	11	6.46
Cerium-144	pCi/L	06/28/2016	N001	16	-	23.5	22	U	F	#	22	12.9
Cerium-144	pCi/L	06/28/2016	N002	16	-	23.5	22	U	F	#	22	13.1
Cesium-134	pCi/L	06/28/2016	N001	16	-	23.5	5	U	F	#	5	2.77
Cesium-134	pCi/L	06/28/2016	N002	16	-	23.5	7	U	F	#	7	4.08
Cesium-137	pCi/L	06/28/2016	N001	16	-	23.5	4.8	U	F	#	4.8	2.85
Cesium-137	pCi/L	06/28/2016	N002	16	-	23.5	4.9	U	F	#	4.9	2.87
Cobalt-60	pCi/L	06/28/2016	N001	16	-	23.5	4.9	U	F	#	4.9	2.78
Cobalt-60	pCi/L	06/28/2016	N002	16	-	23.5	5.6	U	F	#	5.6	3.18
Europium-152	pCi/L	06/28/2016	N001	16	-	23.5	23	U	F	#	23	13.4
Europium-152	pCi/L	06/28/2016	N002	16	-	23.5	29	U	F	#	29	16.6
Europium-154	pCi/L	06/28/2016	N001	16	-	23.5	28	U	F	#	28	15.9
Europium-154	pCi/L	06/28/2016	N002	16	-	23.5	26	U	F	#	26	15.3
Europium-155	pCi/L	06/28/2016	N001	16	-	23.5	13	U	F	#	13	7.62

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/11/2016
Location: 1A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Europium-155	pCi/L	06/28/2016	N002	16	-	23.5	13	U	F	#	13	7.59
Gross Alpha	pCi/L	06/28/2016	N001	16	-	23.5	3.1	U	F	#	3.1	1.91
Gross Alpha	pCi/L	06/28/2016	N002	16	-	23.5	3.1	U	F	#	3.1	1.87
Gross Beta	pCi/L	06/28/2016	N001	16	-	23.5	5.03		FJ	#	3.2	2.14
Gross Beta	pCi/L	06/28/2016	N002	16	-	23.5	5.24		FJ	#	3.5	2.35
Lead-212	pCi/L	06/28/2016	N001	16	-	23.5	6.8	U	F	#	6.8	4.28
Lead-212	pCi/L	06/28/2016	N002	16	-	23.5	14	U	F	#	14	8.41
Nickel-63	pCi/L	06/28/2016	N001	16	-	23.5	15	U	F	#	15	4.46
Nickel-63	pCi/L	06/28/2016	N002	16	-	23.5	15	U	F	#	15	4.43
Oxidation Reduction Potential	mV	06/28/2016	N001	16	-	23.5	117.3		F	#		
pH	s.u.	06/28/2016	N001	16	-	23.5	7.03		F	#		
Potassium-40	pCi/L	06/28/2016	N001	16	-	23.5	160	U	F	#	160	93
Potassium-40	pCi/L	06/28/2016	N002	16	-	23.5	140	U	F	#	140	82.6
Promethium-144	pCi/L	06/28/2016	N001	16	-	23.5	5.3	U	F	#	5.3	3.23
Promethium-144	pCi/L	06/28/2016	N002	16	-	23.5	5.1	U	F	#	5.1	3.09
Promethium-146	pCi/L	06/28/2016	N001	16	-	23.5	5.1	U	F	#	5.1	3.03
Promethium-146	pCi/L	06/28/2016	N002	16	-	23.5	5.7	U	F	#	5.7	3.34
Ruthenium-106	pCi/L	06/28/2016	N001	16	-	23.5	44	U	F	#	44	26.3
Ruthenium-106	pCi/L	06/28/2016	N002	16	-	23.5	47	U	F	#	47	27.3
Specific Conductance	µmho/cm	06/28/2016	N001	16	-	23.5	1901		F	#		

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/11/2016
Location: 1A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Temperature	C	06/28/2016	N001	16	-	23.5	23.78		F	#		
Thorium-234	pCi/L	06/28/2016	N001	16	-	23.5	81.3		UF	#	63	40.8
Thorium-234	pCi/L	06/28/2016	N002	16	-	23.5	187		UF	#	62	46.6
Tritium	pCi/L	06/28/2016	N001	16	-	23.5	330	U	F	#	330	196
Tritium	pCi/L	06/28/2016	N002	16	-	23.5	320	U	F	#	320	189
Turbidity	NTU	06/28/2016	N001	16	-	23.5	1.44		F	#		
Uranium-235	pCi/L	06/28/2016	N001	16	-	23.5	20	U	F	#	20	12.3
Uranium-235	pCi/L	06/28/2016	N002	16	-	23.5	20	U	F	#	20	12.7
Yttrium-88	pCi/L	06/28/2016	N001	16	-	23.5	5.3	U	F	#	5.3	3.27
Yttrium-88	pCi/L	06/28/2016	N002	16	-	23.5	6	U	F	#	6	3.63

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/11/2016
Location: 1B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/28/2016	N001	39	-	49	20.7		UFQ	#	14	9.63
Alkalinity, Total (as $CaCO_3$)	mg/L	06/28/2016	N001	39	-	49	266		FQ	#		
Americium-241	pCi/L	06/28/2016	N001	39	-	49	110	U	FQ	#	110	65.1
Antimony-125	pCi/L	06/28/2016	N001	39	-	49	11	U	FQ	#	11	6.18
Cerium-144	pCi/L	06/28/2016	N001	39	-	49	26	U	FQ	#	26	15.4
Cesium-134	pCi/L	06/28/2016	N001	39	-	49	4.9	U	FQ	#	4.9	2.86
Cesium-137	pCi/L	06/28/2016	N001	39	-	49	4.5	U	FQ	#	4.5	2.65
Cobalt-60	pCi/L	06/28/2016	N001	39	-	49	5	U	FQ	#	5	2.87
Europium-152	pCi/L	06/28/2016	N001	39	-	49	22	U	FQ	#	22	13
Europium-154	pCi/L	06/28/2016	N001	39	-	49	23	U	FQ	#	23	13.7
Europium-155	pCi/L	06/28/2016	N001	39	-	49	17	U	FQ	#	17	10.1
Gross Alpha	pCi/L	06/28/2016	N001	39	-	49	7.55		FQ	#	1.5	1.77
Gross Beta	pCi/L	06/28/2016	N001	39	-	49	7.71		FQ	#	1.8	1.71
Lead-212	pCi/L	06/28/2016	N001	39	-	49	12.2		UFQ	#	7.4	4.87
Nickel-63	pCi/L	06/28/2016	N001	39	-	49	15	U	FQ	#	15	4.49
Oxidation Reduction Potential	mV	06/28/2016	N001	39	-	49	118.7		FQ	#		
pH	s.u.	06/28/2016	N001	39	-	49	7.26		FQ	#		
Potassium-40	pCi/L	06/28/2016	N001	39	-	49	189		UFQ	#	44	40.8
Promethium-144	pCi/L	06/28/2016	N001	39	-	49	4.4	U	FQ	#	4.4	2.68
Promethium-146	pCi/L	06/28/2016	N001	39	-	49	5.1	U	FQ	#	5.1	3.02

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/11/2016
Location: 1B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/28/2016	N001	39	-	49	41	U	FQ	#	41	24.6
Specific Conductance	µmho/cm	06/28/2016	N001	39	-	49	1127		FQ	#		
Temperature	C	06/28/2016	N001	39	-	49	20.4		FQ	#		
Thorium-234	pCi/L	06/28/2016	N001	39	-	49	144		UFQ	#	79	53.1
Tritium	pCi/L	06/28/2016	N001	39	-	49	330	U	FQ	#	330	195
Turbidity	NTU	06/28/2016	N001	39	-	49	3.5		FQ	#		
Uranium-235	pCi/L	06/28/2016	N001	39	-	49	24	U	FQ	#	24	14.7
Yttrium-88	pCi/L	06/28/2016	N001	39	-	49	4.9	U	FQ	#	4.9	2.99

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/11/2016
Location: 2A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/28/2016	0001	20	-	25	14	U	FQ	#	14	8.96
Alkalinity, Total (as $CaCO_3$)	mg/L	06/28/2016	0001	20	-	25	235		FQ	#		
Americium-241	pCi/L	06/28/2016	0001	20	-	25	160	U	FQ	#	160	93.5
Antimony-125	pCi/L	06/28/2016	0001	20	-	25	22	U	FQ	#	22	11.9
Cerium-144	pCi/L	06/28/2016	0001	20	-	25	24	U	FQ	#	24	14.4
Cesium-134	pCi/L	06/28/2016	0001	20	-	25	4.1	U	FQ	#	4.1	2.47
Cesium-137	pCi/L	06/28/2016	0001	20	-	25	4.4	U	FQ	#	4.4	2.58
Cobalt-60	pCi/L	06/28/2016	0001	20	-	25	4.6	U	FQ	#	4.6	2.63
Europium-152	pCi/L	06/28/2016	0001	20	-	25	21	U	FQ	#	21	12.6
Europium-154	pCi/L	06/28/2016	0001	20	-	25	24	U	FQ	#	24	13.5
Europium-155	pCi/L	06/28/2016	0001	20	-	25	24	U	FQ	#	24	14.2
Gross Alpha	pCi/L	06/28/2016	0001	20	-	25	6.07		FQ	#	2	1.8
Gross Beta	pCi/L	06/28/2016	0001	20	-	25	6.91		FQ	#	2.2	1.82
Lead-212	pCi/L	06/28/2016	0001	20	-	25	12	U	FQ	#	12	7.3
Nickel-63	pCi/L	06/28/2016	0001	20	-	25	15	U	FQ	#	15	4.28
Oxidation Reduction Potential	mV	06/28/2016	N001	20	-	25	71.9		FQ	#		
pH	s.u.	06/28/2016	N001	20	-	25	7.5		FQ	#		
Potassium-40	pCi/L	06/28/2016	0001	20	-	25	130	U	FQ	#	130	78.1
Promethium-144	pCi/L	06/28/2016	0001	20	-	25	4.5	U	FQ	#	4.5	2.7
Promethium-146	pCi/L	06/28/2016	0001	20	-	25	4.5	U	FQ	#	4.5	2.67

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/11/2016
Location: 2A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/28/2016	0001	20	-	25	38	U	FQ	#	38	21.7
Specific Conductance	µmho/cm	06/28/2016	N001	20	-	25	1334		FQ	#		
Temperature	C	06/28/2016	N001	20	-	25	17.75		FQ	#		
Thorium-234	pCi/L	06/28/2016	0001	20	-	25	220	U	FQ	#	220	130
Tritium	pCi/L	06/28/2016	N001	20	-	25	330	U	FQ	#	330	192
Turbidity	NTU	06/28/2016	N001	20	-	25	36.8		FQ	#		
Uranium-235	pCi/L	06/28/2016	0001	20	-	25	22	U	FQ	#	22	13.5
Yttrium-88	pCi/L	06/28/2016	0001	20	-	25	4.7	U	FQ	#	4.7	3.02

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/11/2016
Location: 2B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/28/2016	N001	43	-	53	32	U	FQ	#	32	19.7
Alkalinity, Total (as $CaCO_3$)	mg/L	06/28/2016	N001	43	-	53	244		FQ	#		
Americium-241	pCi/L	06/28/2016	N001	43	-	53	26	U	FQ	#	26	15.4
Antimony-125	pCi/L	06/28/2016	N001	43	-	53	11	U	FQ	#	11	6.07
Cerium-144	pCi/L	06/28/2016	N001	43	-	53	21	U	FQ	#	21	12.8
Cesium-134	pCi/L	06/28/2016	N001	43	-	53	6.5	U	FQ	#	6.5	3.89
Cesium-137	pCi/L	06/28/2016	N001	43	-	53	4.9	U	FQ	#	4.9	2.88
Cobalt-60	pCi/L	06/28/2016	N001	43	-	53	5.7	U	FQ	#	5.7	3.24
Europium-152	pCi/L	06/28/2016	N001	43	-	53	25	U	FQ	#	25	14.8
Europium-154	pCi/L	06/28/2016	N001	43	-	53	25	U	FQ	#	25	15.6
Europium-155	pCi/L	06/28/2016	N001	43	-	53	12	U	FQ	#	12	6.92
Gross Alpha	pCi/L	06/28/2016	N001	43	-	53	16.1		FQ	#	2	3.19
Gross Beta	pCi/L	06/28/2016	N001	43	-	53	14.4		FQ	#	2	2.7
Lead-212	pCi/L	06/28/2016	N001	43	-	53	14	U	FQ	#	14	8.31
Nickel-63	pCi/L	06/28/2016	N001	43	-	53	13	U	FQ	#	13	3.89
Oxidation Reduction Potential	mV	06/28/2016	N001	43	-	53	-72		FQ	#		
pH	s.u.	06/28/2016	N001	43	-	53	7.64		FQ	#		
Potassium-40	pCi/L	06/28/2016	N001	43	-	53	140	U	FQ	#	140	80.8
Promethium-144	pCi/L	06/28/2016	N001	43	-	53	13	U	FQ	#	13	7.85
Promethium-146	pCi/L	06/28/2016	N001	43	-	53	5.1	U	FQ	#	5.1	2.99

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/11/2016
Location: 2B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/28/2016	N001	43	-	53	45	U	FQ	#	45	26.8
Specific Conductance	µmho/cm	06/28/2016	N001	43	-	53	1393		FQ	#		
Temperature	C	06/28/2016	N001	43	-	53	16.87		FQ	#		
Thorium-234	pCi/L	06/28/2016	N001	43	-	53	130	U	FQ	#	130	79.5
Tritium	pCi/L	06/28/2016	N001	43	-	53	330	U	FQ	#	330	191
Turbidity	NTU	06/28/2016	N001	43	-	53	0.93		FQ	#		
Uranium-235	pCi/L	06/28/2016	N001	43	-	53	20	U	FQ	#	20	12.4
Yttrium-88	pCi/L	06/28/2016	N001	43	-	53	11	U	FQ	#	11	6.69

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/11/2016
Location: 2B2 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/28/2016	N001	-	17	U	FQ	#	17	10.8
Alkalinity, Total (as $CaCO_3$)	mg/L	06/28/2016	N001	-	131		FQ	#		
Americium-241	pCi/L	06/28/2016	N001	-	25	U	FQ	#	25	15.3
Antimony-125	pCi/L	06/28/2016	N001	-	9.9	U	FQ	#	9.9	5.9
Cerium-144	pCi/L	06/28/2016	N001	-	18	U	FQ	#	18	10.7
Cesium-134	pCi/L	06/28/2016	N001	-	4.5	U	FQ	#	4.5	2.56
Cesium-137	pCi/L	06/28/2016	N001	-	4.6	U	FQ	#	4.6	2.6
Cobalt-60	pCi/L	06/28/2016	N001	-	5.6	U	FQ	#	5.6	3.17
Europium-152	pCi/L	06/28/2016	N001	-	25	U	FQ	#	25	14.9
Europium-154	pCi/L	06/28/2016	N001	-	25	U	FQ	#	25	14.9
Europium-155	pCi/L	06/28/2016	N001	-	10	U	FQ	#	10	6.18
Gross Alpha	pCi/L	06/28/2016	N001	-	5.02		FQ	#	1.3	1.28
Gross Beta	pCi/L	06/28/2016	N001	-	8.92		FQ	#	1.5	1.78
Lead-212	pCi/L	06/28/2016	N001	-	12	U	FQ	#	12	7.14
Nickel-63	pCi/L	06/28/2016	N001	-	15	U	FQ	#	15	4.29
Oxidation Reduction Potential	mV	06/28/2016	N001	-	-1.9		FQ	#		
pH	s.u.	06/28/2016	N001	-	7.45		FQ	#		
Potassium-40	pCi/L	06/28/2016	N001	-	120	U	FQ	#	120	69.9
Promethium-144	pCi/L	06/28/2016	N001	-	4.7	U	FQ	#	4.7	2.78
Promethium-146	pCi/L	06/28/2016	N001	-	4.8	U	FQ	#	4.8	2.84

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/11/2016
Location: 2B2 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/28/2016	N001	-	42	U	FQ	#	42	24.8
Specific Conductance	µmho/cm	06/28/2016	N001	-	1245		FQ	#		
Temperature	C	06/28/2016	N001	-	20.25		FQ	#		
Thorium-234	pCi/L	06/28/2016	N001	-	130	U	FQ	#	130	74
Tritium	pCi/L	06/28/2016	N001	-	330	U	FQ	#	330	192
Turbidity	NTU	06/28/2016	N001	-	9.81		FQ	#		
Uranium-235	pCi/L	06/28/2016	N001	-	17	U	FQ	#	17	10.5
Yttrium-88	pCi/L	06/28/2016	N001	-	5.4	U	FQ	#	5.4	3.31

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/11/2016
Location: 2C2 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/28/2016	N001	-	16		UFQ	#	14	9.23
Alkalinity, Total (as $CaCO_3$)	mg/L	06/28/2016	N001	-	198		FQ	#		
Americium-241	pCi/L	06/28/2016	N001	-	4	U	FQ	#	4	2.38
Antimony-125	pCi/L	06/28/2016	N001	-	8.8	U	FQ	#	8.8	4.76
Cerium-144	pCi/L	06/28/2016	N001	-	14	U	FQ	#	14	8.31
Cesium-134	pCi/L	06/28/2016	N001	-	3.7	U	FQ	#	3.7	2.19
Cesium-137	pCi/L	06/28/2016	N001	-	3.5	U	FQ	#	3.5	2.04
Cobalt-60	pCi/L	06/28/2016	N001	-	4	U	FQ	#	4	2.42
Europium-152	pCi/L	06/28/2016	N001	-	20	U	FQ	#	20	12.3
Europium-154	pCi/L	06/28/2016	N001	-	21	U	FQ	#	21	12.5
Europium-155	pCi/L	06/28/2016	N001	-	4.7	U	FQ	#	4.7	2.87
Gross Alpha	pCi/L	06/28/2016	N001	-	5.92		FQ	#	1.6	1.58
Gross Beta	pCi/L	06/28/2016	N001	-	6.22		FQ	#	1.8	1.52
Lead-212	pCi/L	06/28/2016	N001	-	9.9	U	FQ	#	9.9	5.93
Nickel-63	pCi/L	06/28/2016	N001	-	16	U	FQ	#	16	4.71
Oxidation Reduction Potential	mV	06/28/2016	N001	-	114.5		FQ	#		
pH	s.u.	06/28/2016	N001	-	7.61		FQ	#		
Potassium-40	pCi/L	06/28/2016	N001	-	100	U	FQ	#	100	61.5
Promethium-144	pCi/L	06/28/2016	N001	-	7.2	U	FQ	#	7.2	4.25
Promethium-146	pCi/L	06/28/2016	N001	-	4	U	FQ	#	4	2.38

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/11/2016
Location: 2C2 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/28/2016	N001	-	34	U	FQ	#	34	20
Specific Conductance	µmho/cm	06/28/2016	N001	-	1125		FQ	#		
Temperature	C	06/28/2016	N001	-	18.82		FQ	#		
Thorium-234	pCi/L	06/28/2016	N001	-	70	U	FQ	#	70	42.3
Tritium	pCi/L	06/28/2016	N001	-	330	U	FQ	#	330	193
Turbidity	NTU	06/28/2016	N001	-	3.69		FQ	#		
Uranium-235	pCi/L	06/28/2016	N001	-	13	U	FQ	#	13	8.27
Yttrium-88	pCi/L	06/28/2016	N001	-	4.2	U	FQ	#	4.2	2.57

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/11/2016
Location: 3A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/27/2016	N001	19	-	24	35	U	FQ	#	35	21.2
Alkalinity, Total (as $CaCO_3$)	mg/L	06/27/2016	N001	19	-	24	182		FQ	#		
Americium-241	pCi/L	06/27/2016	N001	19	-	24	4.9	U	FQ	#	4.9	3
Antimony-125	pCi/L	06/27/2016	N001	19	-	24	9.3	U	FQ	#	9.3	5.54
Cerium-144	pCi/L	06/27/2016	N001	19	-	24	15	U	FQ	#	15	9.01
Cesium-134	pCi/L	06/27/2016	N001	19	-	24	4.4	U	FQ	#	4.4	2.54
Cesium-137	pCi/L	06/27/2016	N001	19	-	24	4.3	U	FQ	#	4.3	2.47
Cobalt-60	pCi/L	06/27/2016	N001	19	-	24	4.7	U	FQ	#	4.7	2.78
Europium-152	pCi/L	06/27/2016	N001	19	-	24	24	U	FQ	#	24	14.5
Europium-154	pCi/L	06/27/2016	N001	19	-	24	26	U	FQ	#	26	14.7
Europium-155	pCi/L	06/27/2016	N001	19	-	24	16	U	FQ	#	16	9.41
Gross Alpha	pCi/L	06/27/2016	N001	19	-	24	17.5		FQJ	#	15	10.1
Gross Beta	pCi/L	06/27/2016	N001	19	-	24	21	U	FQ	#	21	13.1
Lead-212	pCi/L	06/27/2016	N001	19	-	24	11	U	FQ	#	11	6.74
Nickel-63	pCi/L	06/27/2016	N001	19	-	24	16	U	FQ	#	16	4.63
Oxidation Reduction Potential	mV	06/27/2016	N001	19	-	24	120.4		FQ	#		
pH	s.u.	06/27/2016	N001	19	-	24	7.32		FQ	#		
Potassium-40	pCi/L	06/27/2016	N001	19	-	24	140	U	FQ	#	140	83.2
Promethium-144	pCi/L	06/27/2016	N001	19	-	24	4.9	U	FQ	#	4.9	2.88
Promethium-146	pCi/L	06/27/2016	N001	19	-	24	4.4	U	FQ	#	4.4	2.58

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/11/2016
Location: 3A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/27/2016	N001	19	-	24	38	U	FQ	#	38	22.7
Specific Conductance	µmho/cm	06/27/2016	N001	19	-	24	3871		FQ	#		
Temperature	C	06/27/2016	N001	19	-	24	19.09		FQ	#		
Thorium-234	pCi/L	06/27/2016	N001	19	-	24	74	U	FQ	#	74	36.3
Tritium	pCi/L	06/27/2016	N001	19	-	24	330	U	FQ	#	330	194
Turbidity	NTU	06/27/2016	N001	19	-	24	4.04		FQ	#		
Uranium-235	pCi/L	06/27/2016	N001	19	-	24	17	U	FQ	#	17	9.27
Yttrium-88	pCi/L	06/27/2016	N001	19	-	24	5.1	U	FQ	#	5.1	3.1

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/11/2016
Location: 3B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/27/2016	N001	43	-	53	27	U	FQ	#	27	16.2
Alkalinity, Total (as $CaCO_3$)	mg/L	06/27/2016	N001	43	-	53	227		FQ	#		
Americium-241	pCi/L	06/27/2016	N001	43	-	53	32	U	FQ	#	32	20
Antimony-125	pCi/L	06/27/2016	N001	43	-	53	13	U	FQ	#	13	7.73
Cerium-144	pCi/L	06/27/2016	N001	43	-	53	26	U	FQ	#	26	15.4
Cesium-134	pCi/L	06/27/2016	N001	43	-	53	9.3	U	FQ	#	9.3	5.72
Cesium-137	pCi/L	06/27/2016	N001	43	-	53	6.4	U	FQ	#	6.4	3.75
Cobalt-60	pCi/L	06/27/2016	N001	43	-	53	9	U	FQ	#	9	5.12
Europium-152	pCi/L	06/27/2016	N001	43	-	53	40	U	FQ	#	40	23.3
Europium-154	pCi/L	06/27/2016	N001	43	-	53	37	U	FQ	#	37	22.7
Europium-155	pCi/L	06/27/2016	N001	43	-	53	12	U	FQ	#	12	7.45
Gross Alpha	pCi/L	06/27/2016	N001	43	-	53	13	U	FQ	#	13	7.6
Gross Beta	pCi/L	06/27/2016	N001	43	-	53	21	U	FQ	#	21	12.7
Lead-212	pCi/L	06/27/2016	N001	43	-	53	15	U	FQ	#	15	8.88
Nickel-63	pCi/L	06/27/2016	N001	43	-	53	17	U	FQ	#	17	4.86
Oxidation Reduction Potential	mV	06/27/2016	N001	43	-	53	86.1		FQ	#		
pH	s.u.	06/27/2016	N001	43	-	53	7.43		FQ	#		
Potassium-40	pCi/L	06/27/2016	N001	43	-	53	180	U	FQ	#	180	111
Promethium-144	pCi/L	06/27/2016	N001	43	-	53	24	U	FQ	#	24	14.6
Promethium-146	pCi/L	06/27/2016	N001	43	-	53	6.9	U	FQ	#	6.9	4.04

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/11/2016
Location: 3B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/27/2016	N001	43	-	53	61	U	FQ	#	61	35.4
Specific Conductance	µmho/cm	06/27/2016	N001	43	-	53	2825		FQ	#		
Temperature	C	06/27/2016	N001	43	-	53	17.66		FQ	#		
Thorium-234	pCi/L	06/27/2016	N001	43	-	53	150	U	FQ	#	150	90.6
Tritium	pCi/L	06/27/2016	N001	43	-	53	330	U	FQ	#	330	194
Turbidity	NTU	06/27/2016	N001	43	-	53	1.8		FQ	#		
Uranium-235	pCi/L	06/27/2016	N001	43	-	53	25	U	FQ	#	25	15.2
Yttrium-88	pCi/L	06/27/2016	N001	43	-	53	8.2	U	FQ	#	8.2	5.02

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/11/2016
Location: 4A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/27/2016	N001	19	-	24	38	U	FQ	#	38	22.9
Alkalinity, Total (as $CaCO_3$)	mg/L	06/27/2016	N001	19	-	24	225		FQ	#		
Americium-241	pCi/L	06/27/2016	N001	19	-	24	110	U	FQ	#	110	65.7
Antimony-125	pCi/L	06/27/2016	N001	19	-	24	11	U	FQ	#	11	5.89
Cerium-144	pCi/L	06/27/2016	N001	19	-	24	26	U	FQ	#	26	15.6
Cesium-134	pCi/L	06/27/2016	N001	19	-	24	4.9	U	FQ	#	4.9	2.84
Cesium-137	pCi/L	06/27/2016	N001	19	-	24	4.2	U	FQ	#	4.2	2.58
Cobalt-60	pCi/L	06/27/2016	N001	19	-	24	4.6	U	FQ	#	4.6	2.72
Europium-152	pCi/L	06/27/2016	N001	19	-	24	23	U	FQ	#	23	12.9
Europium-154	pCi/L	06/27/2016	N001	19	-	24	24	U	FQ	#	24	14.1
Europium-155	pCi/L	06/27/2016	N001	19	-	24	17	U	FQ	#	17	10.3
Gross Alpha	pCi/L	06/27/2016	N001	19	-	24	4.09		FQJ	#	2.4	1.78
Gross Beta	pCi/L	06/27/2016	N001	19	-	24	14.5		FQ	#	3.1	3.09
Lead-212	pCi/L	06/27/2016	N001	19	-	24	16	U	FQ	#	16	9.63
Nickel-63	pCi/L	06/27/2016	N001	19	-	24	17	U	FQ	#	17	5.03
Oxidation Reduction Potential	mV	06/27/2016	N001	19	-	24	114.8		FQ	#		
pH	s.u.	06/27/2016	N001	19	-	24	7.36		FQ	#		
Potassium-40	pCi/L	06/27/2016	N001	19	-	24	120	U	FQ	#	120	73.4
Promethium-144	pCi/L	06/27/2016	N001	19	-	24	9	U	FQ	#	9	5.36
Promethium-146	pCi/L	06/27/2016	N001	19	-	24	5.1	U	FQ	#	5.1	2.95

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/11/2016
Location: 4A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/27/2016	N001	19	-	24	42	U	FQ	#	42	24.6
Specific Conductance	µmho/cm	06/27/2016	N001	19	-	24	2159		FQ	#		
Temperature	C	06/27/2016	N001	19	-	24	19.77		FQ	#		
Thorium-234	pCi/L	06/27/2016	N001	19	-	24	210	U	FQ	#	210	128
Tritium	pCi/L	06/27/2016	N001	19	-	24	330	U	FQ	#	330	195
Turbidity	NTU	06/27/2016	N001	19	-	24	1.96		FQ	#		
Uranium-235	pCi/L	06/27/2016	N001	19	-	24	24	U	FQ	#	24	14.9
Yttrium-88	pCi/L	06/27/2016	N001	19	-	24	5	U	FQ	#	5	3.1

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/11/2016
Location: 4B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/27/2016	N001	44	-	54	18	U	FQ	#	18	11.7
Alkalinity, Total (as $CaCO_3$)	mg/L	06/27/2016	N001	44	-	54	226		FQ	#		
Americium-241	pCi/L	06/27/2016	N001	44	-	54	33	U	FQ	#	33	19.2
Antimony-125	pCi/L	06/27/2016	N001	44	-	54	11	U	FQ	#	11	6.14
Cerium-144	pCi/L	06/27/2016	N001	44	-	54	22	U	FQ	#	22	12.8
Cesium-134	pCi/L	06/27/2016	N001	44	-	54	7	U	FQ	#	7	4.2
Cesium-137	pCi/L	06/27/2016	N001	44	-	54	4.9	U	FQ	#	4.9	2.87
Cobalt-60	pCi/L	06/27/2016	N001	44	-	54	5.1	U	FQ	#	5.1	2.98
Europium-152	pCi/L	06/27/2016	N001	44	-	54	29	U	FQ	#	29	16
Europium-154	pCi/L	06/27/2016	N001	44	-	54	27	U	FQ	#	27	15.7
Europium-155	pCi/L	06/27/2016	N001	44	-	54	13	U	FQ	#	13	7.65
Gross Alpha	pCi/L	06/27/2016	N001	44	-	54	8.76		FQ	#	2.3	2.28
Gross Beta	pCi/L	06/27/2016	N001	44	-	54	10.8		FQ	#	2.1	2.25
Lead-212	pCi/L	06/27/2016	N001	44	-	54	14	U	FQ	#	14	8.21
Nickel-63	pCi/L	06/27/2016	N001	44	-	54	15	U	FQ	#	15	4.47
Oxidation Reduction Potential	mV	06/27/2016	N001	44	-	54	7.6		FQ	#		
pH	s.u.	06/27/2016	N001	44	-	54	7.2		FQ	#		
Potassium-40	pCi/L	06/27/2016	N001	44	-	54	140	U	FQ	#	140	81.7
Promethium-144	pCi/L	06/27/2016	N001	44	-	54	5	U	FQ	#	5	3.07
Promethium-146	pCi/L	06/27/2016	N001	44	-	54	5.6	U	FQ	#	5.6	3.28

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/11/2016
Location: 4B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/27/2016	N001	44	-	54	46	U	FQ	#	46	27.1
Specific Conductance	µmho/cm	06/27/2016	N001	44	-	54	1611		FQ	#		
Temperature	C	06/27/2016	N001	44	-	54	20.27		FQ	#		
Thorium-234	pCi/L	06/27/2016	N001	44	-	54	150	U	FQ	#	150	89.2
Tritium	pCi/L	06/27/2016	N001	44	-	54	330	U	FQ	#	330	195
Turbidity	NTU	06/27/2016	N001	44	-	54	1.01		FQ	#		
Uranium-235	pCi/L	06/27/2016	N001	44	-	54	20	U	FQ	#	20	12.5
Yttrium-88	pCi/L	06/27/2016	N001	44	-	54	5.7	U	FQ	#	5.7	3.46

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/11/2016
Location: 4C WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/27/2016	N001	64	-	74	23	U	FQ	#	23	14.1
Alkalinity, Total (as $CaCO_3$)	mg/L	06/27/2016	N001	64	-	74	216		FQ	#		
Americium-241	pCi/L	06/27/2016	N001	64	-	74	34	U	FQ	#	34	20
Antimony-125	pCi/L	06/27/2016	N001	64	-	74	13	U	FQ	#	13	7.01
Cerium-144	pCi/L	06/27/2016	N001	64	-	74	26	U	FQ	#	26	15.6
Cesium-134	pCi/L	06/27/2016	N001	64	-	74	9.4	U	FQ	#	9.4	5.63
Cesium-137	pCi/L	06/27/2016	N001	64	-	74	6.6	U	FQ	#	6.6	3.72
Cobalt-60	pCi/L	06/27/2016	N001	64	-	74	8	U	FQ	#	8	4.74
Europium-152	pCi/L	06/27/2016	N001	64	-	74	46	U	FQ	#	46	25.8
Europium-154	pCi/L	06/27/2016	N001	64	-	74	44	U	FQ	#	44	25
Europium-155	pCi/L	06/27/2016	N001	64	-	74	12	U	FQ	#	12	7.5
Gross Alpha	pCi/L	06/27/2016	N001	64	-	74	11.6		FQ	#	2.2	2.66
Gross Beta	pCi/L	06/27/2016	N001	64	-	74	14.8		FQ	#	2.3	2.86
Lead-212	pCi/L	06/27/2016	N001	64	-	74	14	U	FQ	#	14	8.32
Nickel-63	pCi/L	06/27/2016	N001	64	-	74	17	U	FQ	#	17	5.1
Oxidation Reduction Potential	mV	06/27/2016	N001	64	-	74	-82.5		FQ	#		
pH	s.u.	06/27/2016	N001	64	-	74	7.35		FQ	#		
Potassium-40	pCi/L	06/27/2016	N001	64	-	74	180	U	FQ	#	180	107
Promethium-144	pCi/L	06/27/2016	N001	64	-	74	24	U	FQ	#	24	14.7
Promethium-146	pCi/L	06/27/2016	N001	64	-	74	6.7	U	FQ	#	6.7	3.91

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/11/2016
Location: 4C WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/27/2016	N001	64	-	74	60	U	FQ	#	60	35
Specific Conductance	µmho/cm	06/27/2016	N001	64	-	74	1418		FQ	#		
Temperature	C	06/27/2016	N001	64	-	74	18.09		FQ	#		
Thorium-234	pCi/L	06/27/2016	N001	64	-	74	150	U	FQ	#	150	88.9
Tritium	pCi/L	06/27/2016	N001	64	-	74	320	U	FQ	#	320	192
Turbidity	NTU	06/27/2016	N001	64	-	74	0.58		FQ	#		
Uranium-235	pCi/L	06/27/2016	N001	64	-	74	24	U	FQ	#	24	15.2
Yttrium-88	pCi/L	06/27/2016	N001	64	-	74	8.5	U	FQ	#	8.5	5.09

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/11/2016
Location: 5A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/28/2016	N001	19	-	24	26	U	FQ	#	26	15.7
Alkalinity, Total (as $CaCO_3$)	mg/L	06/28/2016	N001	19	-	24	225		FQ	#		
Americium-241	pCi/L	06/28/2016	N001	19	-	24	160	U	FQ	#	160	94.7
Antimony-125	pCi/L	06/28/2016	N001	19	-	24	22	U	FQ	#	22	11.8
Cerium-144	pCi/L	06/28/2016	N001	19	-	24	24	U	FQ	#	24	14.2
Cesium-134	pCi/L	06/28/2016	N001	19	-	24	4.3	U	FQ	#	4.3	2.48
Cesium-137	pCi/L	06/28/2016	N001	19	-	24	4.3	U	FQ	#	4.3	2.56
Cobalt-60	pCi/L	06/28/2016	N001	19	-	24	4.5	U	FQ	#	4.5	2.64
Europium-152	pCi/L	06/28/2016	N001	19	-	24	22	U	FQ	#	22	13
Europium-154	pCi/L	06/28/2016	N001	19	-	24	36	U	FQ	#	36	20
Europium-155	pCi/L	06/28/2016	N001	19	-	24	23	U	FQ	#	23	14.1
Gross Alpha	pCi/L	06/28/2016	N001	19	-	24	5.58		FQJ	#	2	1.74
Gross Beta	pCi/L	06/28/2016	N001	19	-	24	6.7		FQ	#	2.2	1.81
Lead-212	pCi/L	06/28/2016	N001	19	-	24	13	U	FQ	#	13	7.94
Nickel-63	pCi/L	06/28/2016	N001	19	-	24	14	U	FQ	#	14	4.35
Oxidation Reduction Potential	mV	06/28/2016	N001	19	-	24	136.6		FQ	#		
pH	s.u.	06/28/2016	N001	19	-	24	7.31		FQ	#		
Potassium-40	pCi/L	06/28/2016	N001	19	-	24	130	U	FQ	#	130	76.9
Promethium-144	pCi/L	06/28/2016	N001	19	-	24	4.3	U	FQ	#	4.3	2.71
Promethium-146	pCi/L	06/28/2016	N001	19	-	24	4.5	U	FQ	#	4.5	2.6

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/11/2016
Location: 5A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/28/2016	N001	19	-	24	38	U	FQ	#	38	22.6
Specific Conductance	µmho/cm	06/28/2016	N001	19	-	24	1356		FQ	#		
Temperature	C	06/28/2016	N001	19	-	24	18.37		FQ	#		
Thorium-234	pCi/L	06/28/2016	N001	19	-	24	240	U	FQ	#	240	142
Tritium	pCi/L	06/28/2016	N001	19	-	24	330	U	FQ	#	330	196
Turbidity	NTU	06/28/2016	N001	19	-	24	1.86		FQ	#		
Uranium-235	pCi/L	06/28/2016	N001	19	-	24	22	U	FQ	#	22	13.3
Yttrium-88	pCi/L	06/28/2016	N001	19	-	24	4.9	U	FQ	#	4.9	3.01

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/11/2016
Location: 5B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/28/2016	N001	39	-	49	19.2		UFQ	#	18	10.5
Alkalinity, Total (as $CaCO_3$)	mg/L	06/28/2016	N001	39	-	49	277		FQ	#		
Americium-241	pCi/L	06/28/2016	N001	39	-	49	26	U	FQ	#	26	15.4
Antimony-125	pCi/L	06/28/2016	N001	39	-	49	11	U	FQ	#	11	6.37
Cerium-144	pCi/L	06/28/2016	N001	39	-	49	22	U	FQ	#	22	13.2
Cesium-134	pCi/L	06/28/2016	N001	39	-	49	6.7	U	FQ	#	6.7	3.95
Cesium-137	pCi/L	06/28/2016	N001	39	-	49	4.8	U	FQ	#	4.8	2.81
Cobalt-60	pCi/L	06/28/2016	N001	39	-	49	6.1	U	FQ	#	6.1	3.4
Europium-152	pCi/L	06/28/2016	N001	39	-	49	27	U	FQ	#	27	15.6
Europium-154	pCi/L	06/28/2016	N001	39	-	49	26	U	FQ	#	26	14.9
Europium-155	pCi/L	06/28/2016	N001	39	-	49	12	U	FQ	#	12	7.16
Gross Alpha	pCi/L	06/28/2016	N001	39	-	49	12.5		FQ	#	1.1	2.34
Gross Beta	pCi/L	06/28/2016	N001	39	-	49	10.8		FQ	#	1	1.9
Lead-212	pCi/L	06/28/2016	N001	39	-	49	13	U	FQ	#	13	7.79
Nickel-63	pCi/L	06/28/2016	N001	39	-	49	14	U	FQ	#	14	3.97
Oxidation Reduction Potential	mV	06/28/2016	N001	39	-	49	132.9		FQ	#		
pH	s.u.	06/28/2016	N001	39	-	49	7.4		FQ	#		
Potassium-40	pCi/L	06/28/2016	N001	39	-	49	140	U	FQ	#	140	82.5
Promethium-144	pCi/L	06/28/2016	N001	39	-	49	4.9	U	FQ	#	4.9	3.06
Promethium-146	pCi/L	06/28/2016	N001	39	-	49	4.9	U	FQ	#	4.9	2.92

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/11/2016
Location: 5B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/28/2016	N001	39	-	49	46	U	FQ	#	46	26.9
Specific Conductance	µmho/cm	06/28/2016	N001	39	-	49	748		FQ	#		
Temperature	C	06/28/2016	N001	39	-	49	19.55		FQ	#		
Thorium-234	pCi/L	06/28/2016	N001	39	-	49	130	U	FQ	#	130	77.2
Tritium	pCi/L	06/28/2016	N001	39	-	49	330	U	FQ	#	330	193
Turbidity	NTU	06/28/2016	N001	39	-	49	2.37		FQ	#		
Uranium-235	pCi/L	06/28/2016	N001	39	-	49	20	U	FQ	#	20	12.1
Yttrium-88	pCi/L	06/28/2016	N001	39	-	49	11	U	FQ	#	11	6.76

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/11/2016
Location: 7B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/27/2016	N001	-	17		UFQ	#	16	10.5
Alkalinity, Total (as $CaCO_3$)	mg/L	06/27/2016	N001	-	274		FQ	#		
Americium-241	pCi/L	06/27/2016	N001	-	27	U	FQ	#	27	15.8
Antimony-125	pCi/L	06/27/2016	N001	-	10	U	FQ	#	10	6.1
Cerium-144	pCi/L	06/27/2016	N001	-	18	U	FQ	#	18	10.6
Cesium-134	pCi/L	06/27/2016	N001	-	6.2	U	FQ	#	6.2	3.45
Cesium-137	pCi/L	06/27/2016	N001	-	4.4	U	FQ	#	4.4	2.6
Cobalt-60	pCi/L	06/27/2016	N001	-	5.3	U	FQ	#	5.3	3.02
Europium-152	pCi/L	06/27/2016	N001	-	25	U	FQ	#	25	14.5
Europium-154	pCi/L	06/27/2016	N001	-	36	U	FQ	#	36	21.2
Europium-155	pCi/L	06/27/2016	N001	-	10	U	FQ	#	10	6.05
Gross Alpha	pCi/L	06/27/2016	0001	-	5.58		FQ	#	1.2	1.32
Gross Beta	pCi/L	06/27/2016	0001	-	8.06		FQ	#	0.98	1.47
Lead-212	pCi/L	06/27/2016	N001	-	12	U	FQ	#	12	7.13
Nickel-63	pCi/L	06/27/2016	N001	-	15	U	FQ	#	15	4.32
Oxidation Reduction Potential	mV	06/27/2016	N001	-	105.3		FQ	#		
pH	s.u.	06/27/2016	N001	-	7.45		FQ	#		
Potassium-40	pCi/L	06/27/2016	N001	-	110	U	FQ	#	110	70
Promethium-144	pCi/L	06/27/2016	N001	-	4.51		UFQ	#	4.5	2.86
Promethium-146	pCi/L	06/27/2016	N001	-	4.8	U	FQ	#	4.8	2.87

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/11/2016
Location: 7B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/27/2016	N001	-	42	U	FQ	#	42	24.5
Specific Conductance	µmho/cm	06/27/2016	N001	-	732		FQ	#		
Temperature	C	06/27/2016	N001	-	23.82		FQ	#		
Thorium-234	pCi/L	06/27/2016	N001	-	130	U	FQ	#	130	77
Tritium	pCi/L	06/27/2016	N001	-	330	U	FQ	#	330	195
Turbidity	NTU	06/27/2016	N001	-	0.58		FQ	#		
Uranium-235	pCi/L	06/27/2016	N001	-	12	U	FQ	#	12	7.54
Yttrium-88	pCi/L	06/27/2016	N001	-	5.4	U	FQ	#	5.4	3.36

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/11/2016
Location: 7C WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/27/2016	N001	-	20.6		UFQ	#	15	9.71
Americium-241	pCi/L	06/27/2016	N001	-	4	U	FQ	#	4	2.44
Antimony-125	pCi/L	06/27/2016	N001	-	8.5	U	FQ	#	8.5	4.72
Cerium-144	pCi/L	06/27/2016	N001	-	14	U	FQ	#	14	8.42
Cesium-134	pCi/L	06/27/2016	N001	-	3.7	U	FQ	#	3.7	2.17
Cesium-137	pCi/L	06/27/2016	N001	-	3.8	U	FQ	#	3.8	2.17
Cobalt-60	pCi/L	06/27/2016	N001	-	4.2	U	FQ	#	4.2	2.43
Europium-152	pCi/L	06/27/2016	N001	-	21	U	FQ	#	21	11.6
Europium-154	pCi/L	06/27/2016	N001	-	21	U	FQ	#	21	12.3
Europium-155	pCi/L	06/27/2016	N001	-	6.5	U	FQ	#	6.5	3.84
Gross Alpha	pCi/L	06/27/2016	0001	-	7.99		FQ	#	1.1	1.68
Gross Beta	pCi/L	06/27/2016	0001	-	6.38		FQ	#	1.5	1.43
Lead-212	pCi/L	06/27/2016	N001	-	9.9	U	FQ	#	9.9	5.9
Nickel-63	pCi/L	06/27/2016	N001	-	15	U	FQ	#	15	4.35
Potassium-40	pCi/L	06/27/2016	N001	-	100	U	FQ	#	100	61
Promethium-144	pCi/L	06/27/2016	N001	-	7.1	U	FQ	#	7.1	4.22
Promethium-146	pCi/L	06/27/2016	N001	-	4.3	U	FQ	#	4.3	2.52
Ruthenium-106	pCi/L	06/27/2016	N001	-	34	U	FQ	#	34	20.1
Thorium-234	pCi/L	06/27/2016	N001	-	69	U	FQ	#	69	34.5
Tritium	pCi/L	06/27/2016	N001	-	330	U	FQ	#	330	191

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/11/2016
Location: 7C WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Uranium-235	pCi/L	06/27/2016	N001	-	25	U	FQ	#	25	12.9
Yttrium-88	pCi/L	06/27/2016	N001	-	4.5	U	FQ	#	4.5	2.73

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/11/2016
Location: 8B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/27/2016	N001	-	17	U	FQ	#	17	8.72
Alkalinity, Total (as $CaCO_3$)	mg/L	06/27/2016	N001	-	305		FQ	#		
Americium-241	pCi/L	06/27/2016	N001	-	4.9	U	FQ	#	4.9	3.02
Antimony-125	pCi/L	06/27/2016	N001	-	9.1	U	FQ	#	9.1	5.5
Cerium-144	pCi/L	06/27/2016	N001	-	15	U	FQ	#	15	9.1
Cesium-134	pCi/L	06/27/2016	N001	-	4.3	U	FQ	#	4.3	2.49
Cesium-137	pCi/L	06/27/2016	N001	-	4.2	U	FQ	#	4.2	2.49
Cobalt-60	pCi/L	06/27/2016	N001	-	4.7	U	FQ	#	4.7	2.8
Europium-152	pCi/L	06/27/2016	N001	-	24	U	FQ	#	24	13.8
Europium-154	pCi/L	06/27/2016	N001	-	25	U	FQ	#	25	14.6
Europium-155	pCi/L	06/27/2016	N001	-	16	U	FQ	#	16	9.4
Gross Alpha	pCi/L	06/27/2016	N001	-	7.15		FQ	#	1.4	1.64
Gross Beta	pCi/L	06/27/2016	N001	-	8.65		FQ	#	1.4	1.68
Lead-212	pCi/L	06/27/2016	N001	-	12	U	FQ	#	12	7.05
Nickel-63	pCi/L	06/27/2016	N001	-	16	U	FQ	#	16	4.61
Oxidation Reduction Potential	mV	06/27/2016	N001	-	129.1		FQ	#		
pH	s.u.	06/27/2016	N001	-	7.36		FQ	#		
Potassium-40	pCi/L	06/27/2016	N001	-	140	U	FQ	#	140	83
Promethium-144	pCi/L	06/27/2016	N001	-	4.8	U	FQ	#	4.8	3.07
Promethium-146	pCi/L	06/27/2016	N001	-	4.4	U	FQ	#	4.4	2.58

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/11/2016
Location: 8B WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/27/2016	N001	-	39	U	FQ	#	39	22.9
Specific Conductance	µmho/cm	06/27/2016	N001	-	1069		FQ	#		
Temperature	C	06/27/2016	N001	-	17.24		FQ	#		
Thorium-234	pCi/L	06/27/2016	N001	-	74	U	FQ	#	74	36.2
Tritium	pCi/L	06/27/2016	N001	-	320	U	FQ	#	320	186
Turbidity	NTU	06/27/2016	N001	-	9.64		FQ	#		
Uranium-235	pCi/L	06/27/2016	N001	-	34	U	FQ	#	34	17.9
Yttrium-88	pCi/L	06/27/2016	N001	-	5.3	U	FQ	#	5.3	3.13

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/11/2016
Location: 8C WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Actinium-228	pCi/L	06/27/2016	N001	-	27	U	FQ	#	27	15.8
Alkalinity, Total (as $CaCO_3$)	mg/L	06/27/2016	N001	-	274		FQ	#		
Americium-241	pCi/L	06/27/2016	N001	-	34	U	FQ	#	34	20.1
Antimony-125	pCi/L	06/27/2016	N001	-	14	U	FQ	#	14	7.99
Cerium-144	pCi/L	06/27/2016	N001	-	26	U	FQ	#	26	15.4
Cesium-134	pCi/L	06/27/2016	N001	-	9.3	U	FQ	#	9.3	5.77
Cesium-137	pCi/L	06/27/2016	N001	-	6.2	U	FQ	#	6.2	3.72
Cobalt-60	pCi/L	06/27/2016	N001	-	8.1	U	FQ	#	8.1	4.82
Europium-152	pCi/L	06/27/2016	N001	-	40	U	FQ	#	40	23.2
Europium-154	pCi/L	06/27/2016	N001	-	40	U	FQ	#	40	23.8
Europium-155	pCi/L	06/27/2016	N001	-	13	U	FQ	#	13	7.63
Gross Alpha	pCi/L	06/27/2016	N001	-	6.78		FQ	#	1.7	2.1
Gross Beta	pCi/L	06/27/2016	N001	-	6.06		FQ	#	1.9	1.7
Lead-212	pCi/L	06/27/2016	N001	-	14	U	FQ	#	14	8.49
Nickel-63	pCi/L	06/27/2016	N001	-	14	U	FQ	#	14	4.21
Oxidation Reduction Potential	mV	06/27/2016	N001	-	-116.6		FQ	#		
pH	s.u.	06/27/2016	N001	-	7.27		FQ	#		
Potassium-40	pCi/L	06/27/2016	N001	-	190	U	FQ	#	190	114
Promethium-144	pCi/L	06/27/2016	N001	-	24	U	FQ	#	24	14.7
Promethium-146	pCi/L	06/27/2016	N001	-	6.8	U	FQ	#	6.8	4.01

Groundwater Quality Data by Location (USEE100) FOR SITE HAL01, Hallam Decommissioned Reactor Site
REPORT DATE: 8/11/2016
Location: 8C WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ruthenium-106	pCi/L	06/27/2016	N001	-	59	U	FQ	#	59	35
Specific Conductance	µmho/cm	06/27/2016	N001	-	805		FQ	#		
Temperature	C	06/27/2016	N001	-	17.18		FQ	#		
Thorium-234	pCi/L	06/27/2016	N001	-	150	U	FQ	#	150	90.8
Tritium	pCi/L	06/27/2016	N001	-	330	U	FQ	#	330	194
Turbidity	NTU	06/27/2016	N001	-	2.37		FQ	#		
Uranium-235	pCi/L	06/27/2016	N001	-	24	U	FQ	#	24	13.9
Yttrium-88	pCi/L	06/27/2016	N001	-	8.3	U	FQ	#	8.3	4.95

Abbreviations:
µmho/cm = inverse microohms per centimeter, ft BLS = feet below surface, mg/L = milligrams per liter, mV = millivolts, NTU = nephelometric turbidity units, pCi/L = picocuries per liter, QA = quality assurance, s.u. = standard units,

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

*	Replicate analysis not within control limits.
>	Result above upper detection limit.
A	TIC is a suspected aldol-condensation product.
B	Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
C	Pesticide result confirmed by GC-MS.
D	Analyte determined in diluted sample.
E	Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
H	Holding time expired, value suspect.
I	Increased detection limit due to required dilution.
J	Estimated
N	Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound (TIC).
P	> 25% difference in detected pesticide or Aroclor concentrations between 2 columns.
U	Analytical result below detection limit.
W	Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
X,Y,Z	Laboratory defined qualifier, see case narrative.

DATA QUALIFIERS:

F	Low flow sampling method used.	G	Possible grout contamination, pH > 9.	J	Estimated value.
L	Less than 3 bore volumes purged prior to sampling.	Q	Qualitative result due to sampling technique.	R	Unusable result.
U	Parameter analyzed for but was not detected.	X	Location is undefined.		

QA QUALIFIER:
Validated according to quality assurance guidelines.