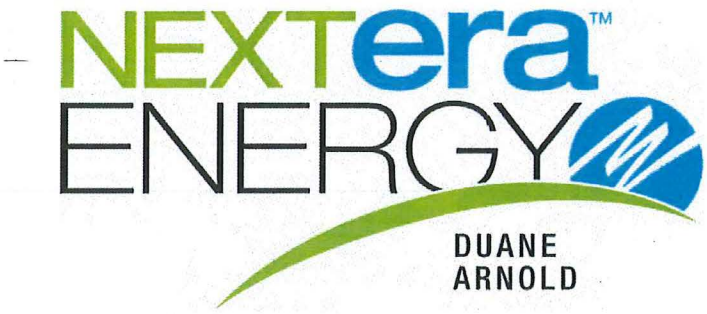
Enclosure 1 to NG-17-0092

Duane Arnold Energy Center
2016 Annual Radioactive Material Release Report

62 pages follow



2016

Annual Radioactive Material Release Report

Duane Arnold Energy Center

Cedar Rapids, Iowa

Docket No. 50-331

January 1, 2016 through December 31, 2016

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2016
Annual Radioactive Material Release Report

Duane Arnold Energy Center
DOCKET NUMBER. 50-331

Prepared By: _____ Date: 4-24-17

Approved By: _____ Date: 4/24/17

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Table of Contents

REGULATORY LIMITS

Fission and Activation Gases

Dose Rate

- Less than 500 mrem/year to the whole body.
- Less than 3000 mrem/year to the skin.

Gamma Air Dose

- 1) Less than or equal to 5 mrad/quarter.
- 2) Less than or equal to 10 mrad/year.

Beta Air Dose

- 1) Less than or equal to 10 mrad/quarter.
- 2) Less than or equal to 20 mrad/year.

Airborne Particulates, Iodines and Tritium

Dose Rate

- Less than 1500 mrem/year.

Dose

- Less than or equal to 7.5 mrem/quarter to any organ.
- Less than or equal to 15 mrem/year to any organ.

Liquid Effluents

Dose

- Less than or equal to 1.5 mrem to the whole body during any calendar quarter.
- Less than or equal to 5 mrem to any organ during any calendar quarter.
- Less than or equal to 3 mrem to the whole body during any calendar year.
- Less than or equal to 10 mrem to any organ during any calendar year.

Concentration

- Liquid effluents released from the site to unrestricted areas shall not exceed ten times (10x) the concentrations listed in Appendix B, Table 2, Column 2 to 10 CFR 20.1001 – 20.2402.

40CFR190 and 10CFR72

Dose

- 1) Less than or equal to 25 mrem annual whole body dose.
- 2) Less than or equal to 75 mrem annual thyroid dose.
- 3) Less than or equal to 25 mrem annual dose to any other critical organ.

MAXIMUM PERMISSIBLE CONCENTRATIONS

Dose rates, rather than effluent concentrations, are used to calculate permissible release rates for gaseous effluents.

The maximum permissible dose rates for gaseous releases are defined in Duane Arnold Offsite Dose Assessment Manual (ODAM). ODAM Limiting Condition for Operation (OLCO) 6.2.2.

Liquid effluent concentrations are limited per ODAM OLCO 6.1.2 to ten times (10x) the concentration specified in 10CFR20 Appendix B, Table 2, Column 2.

AVERAGE ENERGY

The ODAM limits dose rates at or beyond the site boundary due to the release of noble gases to less than or equal to 500 mrem per year to the total body and less than or equal to 3,000 mrem per year to the skin, and average energy is not used to determine dose to the public. Compliance with these limits is demonstrated based on dose calculations using measured isotopic concentrations of effluent streams and not based on gross count rate measuring systems.

Therefore, the average beta and gamma energies (E-BAR) for gaseous effluents as described in Regulatory Guide 1.21 "Measuring, Evaluating, and Reporting Radioactivity in Solid Wastes and Releases of Radioactive Materials in Liquid and Gaseous Effluents from Light-Water-Cooled Nuclear Power Plants," are not applicable.

MEASUREMENTS OF TOTAL RADIOACTIVITY

Gaseous Effluents

- Gaseous Effluents from the Offgas Stack, Reactor Building Vents, Turbine Building Vent and the Low Level Radwaste Storage and Processing Facility (LLRPSF) are continuously sampled for iodines and particulates. Sample media is changed weekly and analyzed by gamma spectroscopy. The gross alpha analyses are performed onsite. The particulate filters are composited on a quarterly basis and sent to a vendor for Sr-89, Sr-90, Fe-55 and Ni-63. Total error is calculated based on stack flow error, sample flow error, and analytical error.

- Noble gas grab samples of the same four release points are obtained monthly and analyzed by gamma spectroscopy. Total error is based on stack flow error, analytical error, and calculated sampling error.

- Tritium samples from all four release points are obtained quarterly and analyzed by liquid scintillation. Total error is based on stack flow error, analytical error, and calculated sampling error.

- A beta sensitive radiation detector provides for continuous monitoring at each of the above described release points. For the year 2016, there were no instances where ODAM required gaseous radiation monitoring or sampling systems were inoperable on an active release point for a period of 30 (contiguous) days or more. (ODAM OLCO 6.2.1.1 A.2)

Liquid Effluents

- Service water systems are sampled once per week for gamma emitters. Portions of the weekly service water samples are composited for a monthly analysis for tritium and gross alpha. If there is a positive identification of reactor by-product radioactivity in these samples, analysis for Sr-89, Sr-90 and Fe-55 are performed. Total error is based on the volume discharge error and analytical error.

- ODAM defined "Clean" Systems are sampled prior to free release. Samples are collected prior to release and analyzed for gamma emitters and tritium. If reactor byproduct gamma emitters are identified, analyses for Sr-89, Sr-90 and Fe-55 are performed. "Clean Systems" include: CST Containment Pit, Transformer Pit, Neutralizing Tank 1T022, and FRAC tanks. Total error is based on the volume discharge error, dilution flow error and analytical error.

- No radioactive batch releases of liquids from plant radwaste systems were performed in 2016. There were 97 radioactive batch releases of tritiated groundwater and rainfall recapture from catch basins. All releases were less than 6,000 pCi/L. The DAEC Groundwater Protection Plan Administrative Control Procedure, ACP 1411.35, tritium limit is 20,000 pCi/L, which is identical to the EPA drinking water limit for tritium.

- Continuous monitoring with gamma sensitive radiation detectors is provided for plant service water systems. For the year 2016, there were no instances where these liquid radiation monitoring systems were inoperable on an active release point for a period of 30 (contiguous) days or more. (ODAM OLCO 6.1.1.1 A.2)

GASEOUS EFFLUENTS

There were no radioactive gaseous batch releases from the Duane Arnold Energy Center during this report period. All gaseous effluent releases were continuous and resulted in a small fraction of the 10 CFR 50, Appendix I dose objectives.

For all release points, quarterly average gross alpha concentration of radioactivity measured less than 4.10E-09 µCi/cc.

There were no Abnormal releases of gaseous effluents during the period.

Table 1A - Gaseous Effluents – Summation of All Releases

	Units	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Est. Total Error, %
Fission and Activation Gases						
1. Total Release	Ci	1.65E+01	4.76E+01	5.26E+01	2.06E+01	1.60E+01
2. Average Release Rate for Period	uCi/sec	2.09E+00	6.05E+00	6.62E+00	2.59E+00	
3. Percent of Applicable Limit	%	*	*	*	*	
Iodines						
1. Total I-131	Ci	2.59E-06	3.89E-06	7.72E-06	1.20E-06	1.80E+01
2. Average Release Rate for Period	uCi/sec	3.29E-07	4.95E-07	9.71E-07	1.50E-06	
3. Percent of Applicable Limit	%	*	*	*	*	
Particulates						
1. Total Particulates w/ half life >8 days	Ci	2.08E-05	4.43E-05	5.84E-05	1.02E-3	1.80E+01
2. Average Release Rate for Period	uCi/sec	2.64E-06	5.63E-06	7.53E-06	1.28E-04	
3. Percent of Applicable Limit	%	*	*	*	*	
Tritium						
1. Total Release	Ci	4.60E+00	5.24E+00	1.06E+01	1.21E+01	1.60E+01
2. Average Release Rate for Period	uCi/sec	5.85E-01	6.66E-01	1.34E+00	1.52E00	
3. Percent of Applicable Limit	%	*	*	*	*	
Carbon 14						
1. Total Carbon-14	Ci	2.41E+00	2.24E+00	2.35E+00	1.63E+00	
2. Average Release Rate for Period	uCi/sec	3.07E-01	2.82E-01	2.96E-01	2.05E-01	
3. Percent of Applicable Limit	%	*	*	*	*	

* Applicable limits have been removed from the Technical Specifications. The comparison to ODAM limits is contained in the Radiological Impact on Man section of this report.

Table 1B - Gaseous Effluents by Quarter

ANNUAL RADIOACTIVE MATERIAL RELEASE REPORT (2016)					
GASEOUS EFFLUENTS BY CALENDAR QUARTER (Curies)					
Nuclides Released	Unit	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
1. Fission gases					
krypton-85	Ci	ND	ND	6.28E-02	1.42E-01
krypton-85M	Ci	6.13E-02	ND	7.11E-03	1.54E-02
krypton-87	Ci	1.56E+00	5.49E+00	7.82E-04	1.69E-03
krypton-88	Ci	ND	ND	6.61E-03	1.43E-02
xenon-131M	Ci	ND	ND	1.09E-02	2.75E-02
xenon-133	Ci	8.36E+00	2.57E+01	4.94E+01	2.00E+01
xenon-133M	Ci	9.08E-09	ND	2.54E-02	5.24E-02
xenon-135	Ci	6.46E+00	1.64E+01	3.02E+00	3.44E-01
xenon-135M	Ci	ND	ND	3.20E-02	6.91E-02
argon-41	Ci	ND	ND	ND	ND
Total for period	Ci	**2.10E+01**	**5.28E+01**	**6.32E+01**	**3.27E+01**
2. Iodines					
iodine-131	Ci	2.59E-06	3.89E-06	7.72E-06	1.20E-05
iodine-133	Ci	7.28E-06	9.41E-06	1.74E-05	6.89E-06
iodine-135	Ci	ND	ND	ND	ND
Total for period	Ci	**9.87E-06**	**1.33E-05**	**2.51E-05**	**1.88E-05**
3. Particulates					
strontium-89	Ci	7.34E-07	1.16E-06	1.08E-06	1.39E-06
strontium-90	Ci	5.00E-09	ND	ND	ND
cesium-134	Ci	ND	ND	ND	ND
cesium-137	Ci	ND	ND	ND	ND
barium-lanthanum-140	Ci	2.06E-07	3.39E-07	1.48E-07	ND
chromium-51	Ci	3.12E-06	ND	4.14E-06	3.99E-04
cobalt-58	Ci	ND	2.55E-07	9.75E-07	2.95E-05
cobalt-60	Ci	2.67E-06	6.35E-07	8.33E-06	1.01E-04
manganese-54	Ci	1.58E-06	2.95E-05	2.69E-05	3.54E-04
iron-55	Ci	1.25E-05	1.24E-05	1.55E-05	2.12E-05
iron-59	Ci	ND	ND	1.42E-06	7.57E-05
nickel-63	Ci	1.07E-05	ND	3.08E-07	2.98E-06
zinc-65	Ci	ND	ND	ND	ND
Total for period	Ci	**3.15E-05**	**4.43E-05**	**5.87E-05**	**1.02E-03**
4. Tritium	Ci	4.60E+00	5.24E+00	1.06E+01	1.21E+01
Tritium Total	Ci	**4.60E+00**	**5.24E+00**	**1.06E+01**	**1.21E+01**
5. Carbon-14	Ci	2.41E+00	2.24E+00	2.35E+00	1.63E+00
Carbon-14 Total	Ci	**2.41E+00**	**2.24E+00**	**2.35E+00**	**1.63E+00**

ND means that the radionuclide was not identified in any samples and all analyses were performed with instrumentation meeting the lower limit of detection as required by the DAEC Offsite Dose Assessment Manual.

Table 1C - Gaseous Effluents by Release Point

ANNUAL RADIOACTIVE MATERIAL RELEASE REPORT (2016) GASEOUS EFFLUENTS BY RELEASE POINT (Curies)				
RELEASE POINT:	OFFGAS STACK	REACTOR BUILDING	TURBINE BUILDING	LLRPSF
RELEASE HEIGHT:	328 FEET	156 FEET	90 FEET	65 FEET
RELEASE MODE:	ELEVATED	WAKE SPLIT	WAKE SPLIT	WAKE SPLIT
argon-41	ND	ND	ND	ND
barium-140	6.93E-07	ND	ND	ND
cesium-137	ND	ND	ND	ND
chromium-51	3.35E-06	4.03E-04	ND	ND
cerium-141	ND	ND	ND	ND
cobalt-58	ND	3.07E-05	ND	ND
cobalt-60	1.29E-06	1.09E-04	2.20E-06	ND
iodine-131	1.38E-05	1.02E-05	2.12E-06	ND
iodine-133	2.90E-05	1.19E-05	ND	ND
iron-55	3.54E-06	4.90E-05	9.03E-06	ND
krypton-85m	8.38E-02	ND	ND	ND
krypton-87	7.05E+00	ND	ND	ND
manganese-54	4.80E-06	4.06E-04	2.38E-06	ND
nickel-63	3.61E-08	1.40E-05	ND	ND
strontium-89	1.16E-06	2.21E-06	1.00E-06	ND
strontium-90	5.00E-09	ND	ND	ND
tritium	1.14E+01	1.57E+01	5.32E+00	1.17E-01
Xenon-133	8.70E+01	1.93E+00	1.45E+01	ND
xenon-135	2.62E+01	6.35E-03	ND	ND
xenon-135m	1.01E-01	ND	ND	ND
xenon-138	ND	ND	ND	ND
zinc-65	ND	3.69E-05	ND	ND
xenon-133m	6.36E-02	1.41E-02	ND	ND
xenon-131m	3.84E-02	ND	ND	ND
krypton-88	2.09E-02	ND	ND	ND
krypton-85	2.05E-01	ND	ND	ND
iron-59	ND	7.71E-05	ND	ND
carbon-14 **	8.64	-	-	-

ND means that the radionuclide was not identified in any samples and all analyses were performed with instrumentation meeting the lower limit of detection as required by the DAEC Offsite Dose Assessment Manual.
** Carbon-14 release was estimated using methods of the EPRI document, "Estimation of Carbon-14 in Nuclear Power Plant Gaseous Effluents", Report 1021106, issued December 2010.

Estimated Release of Gaseous of Carbon-14

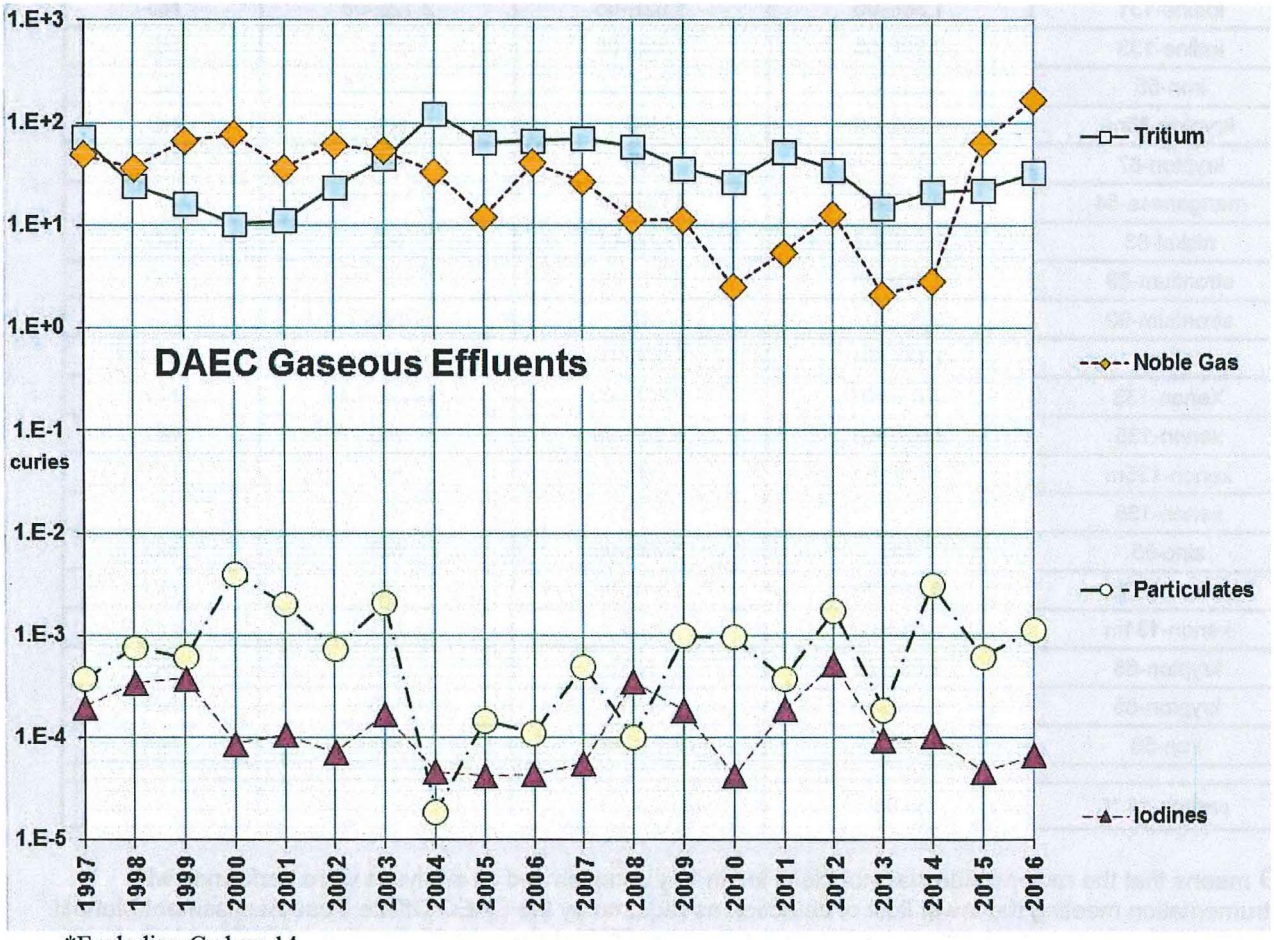
The estimate of gaseous carbon-14 (C-14) released from the Duane Arnold Energy Center was derived using the EPRI document, "Estimation of Carbon-14 in Nuclear Power Plant Gaseous Effluents", Report 1021106, issued December 2010. The site specific source term for the DAEC was estimated using the proxy generation rate values from Table 3-1 and the actual 2016 power history for the site.

The total amount of C-14 released from the site in 2016 was estimated to be 8.64 Curies.

Using the dose calculation methodology from Regulatory Guide 1.109, the resultant maximally exposed receptor organ from C-14 is the bone of a child, located 2,470 meters towards the East-Northeast. The dose is 1.13E-01 mRem (0.113 mrem). This is a fraction of the 1 mrem annual whole body dose received to the average US citizen from natural occurring carbon-14, primarily generated through cosmogenesis in the terrestrial biosphere. (Reference: National Council of Radiation Protection Report 94,"Exposure of the Population in the United States and Canada from Natural Background Radiation.")

Gaseous Effluents Trend

Curies per year, Historical Trend



*Excluding Carbon-14

LIQUID EFFLUENTS

Liquid effluent release in the form of service water from the facility was continuous during the period. No reactor by-product radionuclides were identified in samples from service water. There were no liquid releases from the plant radioactive waste handling systems in 2016.

There were 97 radioactive batch releases from the groundwater protection mitigation system in 2016.

There were no abnormal releases of radioactive liquids during the period.

Table 2A - Liquid Effluents – Summation of All Releases

	Units	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Est. Total Error, %
Fission and Activation Gases						
1. Total Release (not including Tritium, gases, alpha)	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.00E+01
2. Average Release Rate for Period	uCi/sec	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
3. Percent of Applicable Limit	%	*	*	*	*	
Tritium						
1. Total Release	Ci	0.00E+00	4.79E-04	8.35E-03	8.48E-03	2.00E+01
2. Average Release Rate for Period	uCi/sec	0.00E+00	1.27E-07	7.36E-08	1.81E-07	
3. Percent of Applicable Limit	%	*	*	*	*	
Volume of Water Release (prior to dilution)	liters	0.00E+00	5.00E+04	2.04E+06	2.85E+06	
Volume of dilution water used during period	liters	0.00E+00	3.76E+06	1.18E+08	4.70E+007	

* Applicable limits have been removed from the Technical Specifications. The comparison to ODAM limits is contained in the Radiological Impact on Man section of this report.

Table 2B - Liquid Effluents

ANNUAL RADIOACTIVE MATERIAL RELEASE REPORT (2016) LIQUID EFFLUENTS (Curies)					
Nuclides Released	Unit	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
strontium-89	Ci	ND	ND	ND	ND
strontium-90	Ci	ND	ND	ND	ND
cesium-134	Ci	ND	ND	ND	ND
cesium-137	Ci	ND	ND	ND	ND
iodine-131	Ci	ND	ND	ND	ND
cobalt-58	Ci	ND	ND	ND	ND
cobalt-60	Ci	ND	ND	ND	ND
iron-55	Ci	ND	ND	ND	ND
iron-59	Ci	ND	ND	ND	ND
zinc-65	Ci	ND	ND	ND	ND
manganese-54	Ci	ND	ND	ND	ND
chromium-51	Ci	ND	ND	ND	ND
zirconium-niobium-95	Ci	ND	ND	ND	ND
molybdenum-99	Ci	ND	ND	ND	ND
technetium-99m	Ci	ND	ND	ND	ND
barium-lanthanum-140	Ci	ND	ND	ND	ND
cerium-141	Ci	ND	ND	ND	ND
other	Ci	ND	ND	ND	ND
tritium	Ci	ND	4.79E-04	8.35E-03	8.48E-03
Total for period (above)	Ci	ND	ND	ND	ND
xenon-133	Ci	ND	ND	ND	ND
xenon-135	Ci	ND	ND	ND	ND

ND means that the radionuclide was not identified in any samples and all analyses were performed with instrumentation meeting the lower limit of detection as required by the DAEC Offsite Dose Assessment Manual.

RADIOACTIVE SOLID WASTE

A total of twenty-one solid radioactive waste shipments were made during 2016.

Six shipments of spent resin were made in 2016. These shipments of spent resin in poly liners were shipped for direct burial at Energy Solutions, located in Clive, Utah at their Containerized Waste Facility (CWF). All of these shipments contained resin from the condensate system and all were transported by highway.

Fifteen shipments of Dry Active Waste (DAW) were shipped for processing and then to burial during the year 2016. All 15 shipments were sent to Energy Solutions Bear Creek processing facility for sorting and subsequently shipped for burial at Energy Solutions Clive, Utah facility. The transportation for this waste was by highway.

There were no shipments of liquid waste in 2016.

During an internal audit of radioactive solid waste records, a single dry active waste shipment was not included in the 2011 Annual Radiological Material Release Report (Condition Report 02182217). Specifically:

Waste weight:	27,800 lbs
Waste activity:	3.43E-02 Ci
Waste volume:	1,000 ft^3
Waste density:	27.8 lbs/ft^3
External volume:	1,360 ft^3
Waste type:	DAW

Shipments in 2016

Listed below are tables summarizing the Duane Arnold Energy Center's generation of Radioactive Solid Waste for the period of January 1, 2016 through December 31, 2016.

Shipments Made To Burial Facilities in 2016:

WASTE TYPE	NO. SHIPMENTS	VOLUME (ft^3)	VOLUME (m^3)	ACTIVITY (curies)
Resin	6	1020	28.88	42.57
DESTINATION	Energy Solutions, Containerized Waste Facility and Bulk Waste Facility Clive, Utah			

See Table 3A below for Major Nuclides

Shipments Made To Processing Facilities in 2016:

WASTE TYPE	NO. SHIPMENTS	VOLUME (ft^3)	VOLUME (m^3)	ACTIVITY (curies)
Dry Active Waste	15	18820	532.92	1.054
DESTINATION	Energy Solutions Bear Creek Facility, Oakridge TN The solid waste was subsequently delivered to Containerized Waste Facility and Bulk Waste Facility Clive, Utah			

See Table 3B below for Major Nuclides

Total Solid Waste Disposition for 2016:

WASTE	VOLUME (ft^3)	VOLUME (m^3)	ACTIVITY (curies)
Shipped	19840	561.81	43.62
Buried	19840	561.81	43.62

SOLIDIFICATION AGENT: None
MODE OF TRANSPORTATION: Exclusive-Use Vehicle (Trucks).
IRRADIATED COMPONENTS: There were no shipments of irradiated components or nuclear fuel in 2016
See Table 3C below for Annual Summary of Major Nuclides

Waste Classification per 10 CFR 61	NUMBER OF SHIPMENTS IN 2016
A-Unstable	21
A-Stable	0
B	0
C	0

Site Historical Comparison

Year	Volume Buried(ft^3)	Activity (Ci)
2007	1.40E+04	110
2008	5.42E+03	134
2009	1.16E+04	58
2010	1.14E+04	23
2011	7.26E+03	324
2012	2.48E+04	58
2013	7.19E+03	52
2014	2.70E+04	33
2015	6.68E+03	48

Summary of Radioactive Solid Waste- Spent Resin

(January 1, 2016 - December 31, 2016)

MAJOR NUCLIDE COMPOSITION

Table 3A Spent Resin

Principle Nuclide	1st QTR (mCi)	2nd QTR (mCi)	3rd QTR (mCi)	4th QTR (mCi)	Total (mCi)	Percent Abundance
H-3		1.12E+01	1.80E+00		1.30E+01	0.048%
C-14		2.91E+01	9.73E+00		3.89E+01	0.143%
K-40		0.00E+00	0.00E+00		0.00E+00	0.000%
Cr-51		0.00E+00	0.00E+00		0.00E+00	0.000%
Mn-54		3.28E+03	9.13E+02		4.19E+03	15.469%
Fe-55		1.16E+04	4.12E+03		1.57E+04	57.981%
Co-57		0.00E+00	0.00E+00		0.00E+00	0.000%
Co-58		0.00E+00	0.00E+00		0.00E+00	0.000%
Ni-59		0.00E+00	0.00E+00		0.00E+00	0.000%
Fe-59		0.00E+00	0.00E+00		0.00E+00	0.000%
Co-60		3.24E+03	1.12E+03		4.36E+03	16.074%
Ni-63		3.86E+02	1.29E+02		5.15E+02	1.899%
Zn-65		1.85E+03	2.86E+02		2.14E+03	7.882%
Sr-89		0.00E+00	0.00E+00		0.00E+00	0.000%
Sr-90		2.48E+00	3.12E-01		2.79E+00	0.010%
Sr-91		0.00E+00	0.00E+00		0.00E+00	0.000%
Zr-95		0.00E+00	0.00E+00		0.00E+00	0.000%
Nb-95		0.00E+00	0.00E+00		0.00E+00	0.000%
Tc-99		4.68E+00	7.39E-01		5.42E+00	0.020%
Ag-110m		0.00E+00	0.00E+00		0.00E+00	0.000%
Sn-113		0.00E+00	0.00E+00		0.00E+00	0.000%
Sb-124		0.00E+00	0.00E+00		0.00E+00	0.000%
Sb-125		0.00E+00	0.00E+00		0.00E+00	0.000%
I-125		0.00E+00	0.00E+00		0.00E+00	0.000%
I-129		1.26E+00	2.00E-01		1.46E+00	0.005%
Cs-137		1.09E+02	1.74E+01		1.27E+02	0.468%
Ce-144		0.00E+00	0.00E+00		0.00E+00	0.000%
Pu-239		0.00E+00	0.00E+00		0.00E+00	0.000%
Am-241		0.00E+00	0.00E+00		0.00E+00	0.000%
Totals	0.00E+00	2.05E+04	6.60E+03	0.00E+00	2.71E+04	100.00%

Summary Tables of Radioactive Solid Waste
Dry Active Waste

(January 1, 2016 - December 31, 2016)

MAJOR NUCLIDE COMPOSITION

Table 3B Dry Active Waste

Principle Nuclide	1st QTR (mCi)	2nd QTR (mCi)	3rd QTR (mCi)	4th QTR (mCi)	Total (mCi)	Percent Abundance
H-3	5.08E-01	8.63E-01	6.03E-01	2.81E+00	4.79E+00	0.399%
C-14	8.54E-03	1.01E-02	8.26E-03	3.31E-02	6.00E-02	0.005%
K-40	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.000%
Cr-51	7.67E-01	0.00E+00	0.00E+00	9.19E-01	1.69E+00	0.141%
Mn-54	8.95E+00	1.75E+01	1.02E+01	5.79E+01	9.45E+01	7.889%
Fe-55	7.36E+01	1.44E+02	9.14E+01	4.72E+02	7.81E+02	65.199%
Co-57	0.00E+00	0.00E+00	0.00E+00	4.40E-03	4.40E-03	0.000%
Co-58	0.00E+00	0.00E+00	0.00E+00	5.53E-01	5.53E-01	0.046%
Ni-59	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.000%
Fe-59	0.00E+00	0.00E+00	0.00E+00	3.66E-01	3.66E-01	0.031%
Co-60	3.12E+01	5.07E+01	3.48E+01	1.65E+02	2.82E+02	23.537%
Ni-63	1.54E+00	3.41E+00	2.24E+00	1.11E+01	1.83E+01	1.525%
Zn-65	1.22E+00	2.49E+00	1.39E+00	8.21E+00	1.33E+01	1.110%
Sr-89	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.000%
Sr-90	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.000%
Sr-91	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.000%
Zr-95	0.00E+00	0.00E+00	0.00E+00	2.24E-02	2.24E-02	0.002%
Nb-95	0.00E+00	0.00E+00	0.00E+00	7.57E-02	7.57E-02	0.006%
Tc-99	3.70E-02	1.53E-02	2.22E-02	4.97E-02	1.24E-01	0.010%
Ag-110m	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.000%
Sn-113	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.000%
Sb-124	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.000%
Sb-125	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.000%
I-125	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.000%
I-129	6.39E-03	1.08E-02	7.76E-03	5.26E-02	7.75E-02	0.006%
Cs-137	2.19E-01	0.00E+00	1.74E-01	6.11E-01	1.00E+00	0.084%
Ce-144	0.00E+00	0.00E+00	0.00E+00	1.00E-01	1.00E-01	0.008%
Pu-239	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.000%
Am-241	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.000%
Totals	1.18E+02	2.19E+02	1.41E+02	7.21E+02	1.20E+03	100.00%

Summary of Radioactive Solid Waste – Annual Summary

(January 1, 2016 - December 31, 2016)

MAJOR NUCLIDE COMPOSITION

Table 3C Radwaste Annual Summary

Nuclide	Curies
H-3	1.74E-02
C-14	4.45E-02
K-40	0.00E+00
Cr-51	1.40E-01
Mn-54	4.94E+00
Fe-55	1.87E+01
Co-57	0.00E+00
Co-58	5.65E-02
Ni-59	0.00E+00
Fe-59	4.70E-02
Co-60	5.21E+00
Ni-63	6.02E-01
Zn-65	2.31E+00
Sr-89	0.00E+00
Sr-90	2.95E-03
Sr-91	0.00E+00
Zr-95	0.00E+00
Nb-95	0.00E+00
Tc-99	5.85E-03
Ag-110m	0.00E+00
Sn-113	0.00E+00
Sb-124	0.00E+00
Sb-125	0.00E+00
I-125	0.00E+00
I-129	1.58E-03
Cs-137	1.36E-01
Ce-144	0.00E+00
Pu-239	0.00E+00
Am-241	0.00E+00
Total	**3.22E+01**

RADIOLOGICAL IMPACT ON MAN

The annual offsite radiation dose to a member of the public was determined by assessment of environmental dosimetry results, by calculations based on monitored effluent releases and by estimating the release of gaseous carbon-14.

Dose Contribution from Direct Radiation

Direct radiation dose from the operation of the DAEC was reported by TLDs placed at locations in the surrounding environment as described in the Offsite Dose Assessment Manual (ODAM).

Pre-operational and 2016 TLD results were evaluated with a paired difference statistical test. The evaluation concluded that there were no significant differences in the TLD populations for the 0.5 mile, 1 mile and control TLD populations.

Estimated Offsite Dose from Effluent Releases

The contribution of dose to a member of the public most likely to be exposed from liquid and gaseous effluent releases was calculated using the Meteorological Information and Dose Assessment System (MIDAS) computer program in accordance with the ODAM. The calculation methods follow those prescribed by Regulatory Guide 1.109, "Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR Part 50, Appendix I".

Dose to members of the public from carbon-14 in gaseous effluent is calculated separately and is described below.

Results of the MIDAS dose calculations are displayed here:

1.) There were 97 batch releases of radioactive material to liquid effluents (groundwater mitigation) in 2016.

2.) The maximum dose to air at the site boundary from noble gases released was 0.00162 mrad from gamma radiation at 936 meters towards the Northwest.

3.) The maximum dose to air at the site boundary from noble gases released was 0.00213 mrad beta radiation at 1176 meters towards the North.

4.) The whole body dose equivalent to the hypothetical maximally exposed individual from noble gases was 0.0032 mrem, at 2120 meters towards the Northwest.

5.) The skin dose equivalent to the hypothetical maximally exposed individual from noble gases was 0.0038 mrem, at 2120 meters towards the North.

6.) The hypothetical maximally exposed organ due to airborne iodines and particulates with half-lives greater than eight days (excluding carbon-14) was the lungs of a child at 805 meters towards the West, with an estimated dose equivalent of 0.00617 mrem.

7.) The hypothetical maximally exposed organ due to airborne carbon-14 was the bone of a child located 2470 meters to the North of the site. The dose was 0.113 mrem.

Conclusion

No measurable dose due to the operation of the DAEC was detected by environmental TLDs in 2016. The calculated doses are below the regulatory limits stated in Appendix I to 10CFR50 and in 40CFR190.

Estimated Maximum Offsite Individual Doses for 2016

Type	Age Group	Distance (meters)	Direction	Dose or Dose Equivalent (mrem)	Annual 10 CFR 50, Appendix I "Limit"
Direct Radiation (as measured by TLDs)				None	*
Liquid Releases					
Whole Body Dose	Child	D*	SE	0.00253 mrem	3 mrem
Organ Dose	Child - Liver	D*	SE	0.00253 mrem	10 mrem
Noble Gas					
Gamma Air Dose		936	NW	0.00162 mrad	10 mrad
Beta Air Dose		1176	N	0.00213 mrad	20 mrad
Whole Body	All	2120	NW	0.00320 mrem	5 mrem
Skin	Adult	2120	NW	0.00380 mrem	15 mrem
Particulates & Iodines					
Organ Dose	Child – Lungs	805	W	0.00617 mrem	15 mrem
Carbon 14					
Organ Dose	Child – Bone	2470	N	0.113 mrem	15 mrem

* There is no Appendix I limit for direct radiation. It is listed here to demonstrate compliance with 40 CFR 190 limits of 25 mrem whole body and 75 mrem thyroid.

D* Receptor location is aquatic pathway at Cedar River, See Offsite Dose Assessment Manual, ODAM, figure 3-2.

SUMMARY OF METEOROLOGICAL DATA

The following pages are a summation of meteorological data accumulated during the 2016 calendar year by the MIDAS software (Meteorological Information and Dose Assessment System) at the Duane Arnold Energy Center.

Better than 90% data recovery was obtained for combined wind speed, delta temperature and wind direction. A table summarizing data collection is printed here:

Met. Data Recovery

Elevation and Sensors	% Joint Recovery "good" data
10 meter Wind Direction Wind Speed Delta Temp	99.1%
50 meter Wind Direction Wind Speed Delta Temp	99.1%

Listed on the following pages are wind rose plots and stability class summary tables for the specified sensor heights (33 feet or 156 feet). Joint Frequency tables for each of the individual stability classes are maintained on site and are available upon request.

Stability Class Data 33'

Joint Frequency Distribution

Hours at Each Wind Speed and Direction

Total Period

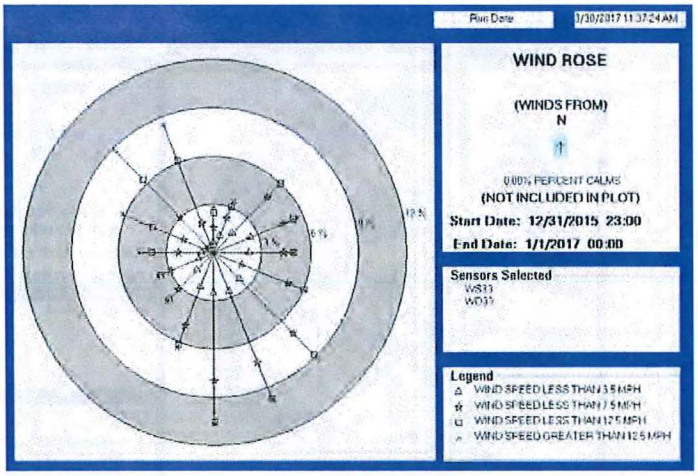
Period of Record = 12/31/2015 23:00 - 1/1/2017 00:00
Elevation: **Speed:** WS33 **Direction:** WD33 **Lapse:** DEL T
Stability Class A Delta Temperature Extremely Unstable

Wind Speed (mph)

Wind Direction	1 - 4	4 - 8	8 - 13	13 - 19	19 - 25	≥ 25	Total
N	0	2	6	0	0	0	8
NNE	0	5	4	2	0	0	11
NE	1	12	11	1	0	0	25
ENE	2	15	2	0	0	0	19
E	0	5	1	0	0	0	6
ESE	2	6	2	0	0	0	10
SE	2	24	18	0	0	0	44
SSE	2	64	35	1	0	0	102
S	4	76	37	1	0	0	118
SSW	2	44	30	4	0	0	80
SW	1	20	17	8	2	0	48
WSW	0	17	10	2	3	0	32
W	0	3	18	4	0	1	26
WNW	0	5	23	18	4	2	52
NW	1	2	39	22	13	3	80
NNW	0	1	16	6	2	1	26
Total	17	301	269	69	24	7	687

Calm Hours not Included above for :	Total Period	15
Variable Direction Hours for:	Total Period	0
Invalid Hours for:	Total Period	80
Valid Hours for this Stability Class for:	Total Period	687
Total Hours for Period		8786

Wind Rose Data 33'



Wind Rose (Direction From)

Stability Class Data 156'

Joint Frequency Distribution

Hours at Each Wind Speed and Direction

Total Period

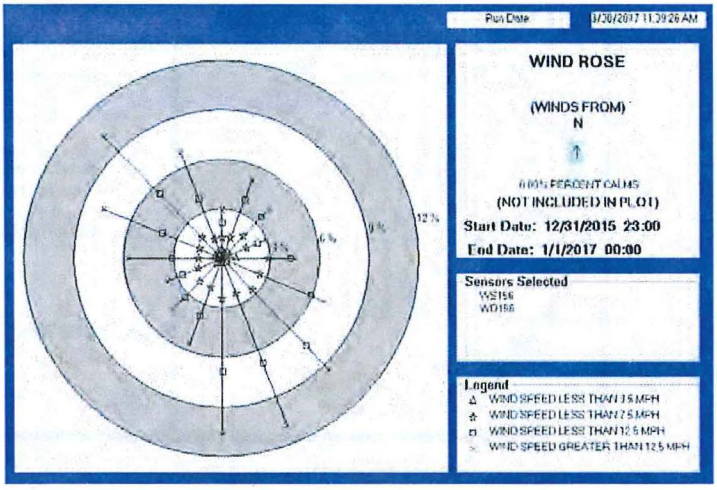
Period of Record = 12/31/2015 23:00 - 1/1/2017 00:00
Elevation: **Speed:** WS156 **Direction:** WD156 **Lapse:** DEL T
Stability Class A Delta Temperature Extremely Unstable

Wind Speed (mph)

Wind Direction	1 - 4	4 - 8	8 - 13	13 - 19	19 - 25	≥ 25	Total
N	0	2	2	3	0	0	7
NNE	0	2	16	2	0	0	20
NE	0	8	13	2	0	0	23
ENE	2	11	1	2	0	0	16
E	0	2	3	0	0	0	5
ESE	0	2	3	2	0	0	7
SE	0	8	19	10	1	0	38
SSE	0	11	54	45	4	0	114
S	0	21	60	44	5	1	131
SSW	0	2	22	39	7	0	70
SW	0	6	24	13	8	6	57
WSW	0	2	7	4	2	1	16
W	1	1	7	25	1	5	40
WNW	0	2	20	24	13	3	62
NW	0	2	17	22	16	8	65
NNW	0	1	6	9	1	0	17
Total	3	83	274	246	58	24	688

Calm Hours not Included above for :	Total Period	0
Variable Direction Hours for:	Total Period	0
Invalid Hours for:	Total Period	79
Valid Hours for this Stability Class for:	Total Period	688
Total Hours for Period		8786

Wind Rose Data 156'



Wind Rose (Direction From)

SUMMARY OF GROUND WATER PROTECTION INITIATIVE ISSUES

The Duane Arnold Energy Center has committed to the Nuclear Energy Institute's Industry Groundwater Protection Initiative - NEI 07-07. Per NEI 07-07, the following information is presented:

- Ground Water Protection Program (GWPP) samples were collected and analyzed in accordance with the requirements and guidance of the site procedure ACP 1411.35. Program results are presented in Attachment 1.

- No reactor-by-product gamma emitting isotopes were identified.

- In February 2016, the GWPP routine sampling identified a contaminate plume in the shallow aquifer (less than 25 feet deep). Release standards are set forth in Section 6.0, Radiological Liquid Effluent Release O.6.1.2, Table 7.1-2. In accordance with GWPP Administrative Control Procedure (ACP) 1411.35 and Environmental Protection Agency (EPA) drinking water standards for tritium, 20,000 pCi/L, groundwater batch and continuous releases are expected less than (<) 20,000 pCi/L.

- Tritium concentrations range from non-detectable at less than 180 pCi/L to 296,589 pCi/L from monitoring well MW-22A (D-66). No site or neighboring drinking water wells are installed in this shallow aquifer and no tritium has been identified in neighboring drinking water wells or onsite drinking water (deep aquifers). The EPA Drinking Water Standard for tritium is 20,000 pCi/L and equates to an annual dose of 4 mrem/yr. Using extraction well EW-01A (D-68) discharge water with an average concentration of 3,070 pCi/L and assuming EW-01A is the only drinking water source for an entire year, the maximum dose consequence would be approximately 0.614 mrem/yr. The highest concentration from EW-01A was 5,860 pCi/L and equates to approximately 1.172 mrem/yr.

- In 2016, there was one instance where state and local officials were notified of a spill of radioactive liquid.

  COURTESY OFFSITE NOTIFICATION MADE TO STATE AND COUNTY OFFICIALS
  "On April 12, at 1235 CDT, Duane Arnold Energy Center contacted officials with the State of Iowa (Bureau of Radiological Health and Department of Natural Resources) and Linn County Public Health Department in accordance with the nuclear industry voluntary reporting criteria contained in NEI 07-07 'Industry Ground Water Protection Initiative'. The site contacted the agencies as courtesy to notify them about the identification of low levels of tritium found within the site's protected area from a potential new source. Samples were taken, and no regulatory limits were exceeded. The site team is working with industry experts on pinpointing the cause and installing an extraction well to remediate the situation.
  "This report is being made in accordance with 10 CFR 50.72(b)(2)(xi), as a result of notification to offsite agencies.
  "The Licensee has notified the NRC Resident Inspectors.
  "There is no risk to plant employees, the public or drinking water."

- See Attachment 1A and 1B for analyses results from samples collected for the GWPP.

DESCRIPTION OF CHANGES TO THE OFFSITE DOSE ASSESSMENT MANUAL

Before implementation of the following described changes, a review was performed to validate that the levels of radioactive effluent control required by 10 CFR 20.1302, 40 CFR 190, 10 CFR 50.36a, and 10 CFR 50, Appendix I were not affected. The review also verified that the changes did not adversely impact the accuracy or reliability of effluent dose or setpoint calculations.

Revision 35 → Revision 36
Revision 36 to the ODAM was made effective on 9/2/2016. Changes implemented included:

Table of Contents:
- Revised organization due to additional pages and data.

Basis of Mixing Ratios:
- Cedar River annual average flow was updated using U.S. Geological Survey-Iowa Data Book for water year records 1902-2015.

Figure 3-2:
- Revised color map to include GPS compass overlay for sector delineation.

Figure 5-1:
- Revised maps to include new REMP-GWPP sampling points for new monitoring wells and electrical vaults.

Table 5-1:
- Revised REMP-GWPP sampling locations to include D-16a soil-precipitation sampling, twenty-two additional electrical vault sampling locations (D-73 to D-75, D-87 to D-90, D-92 to D-95, D-97, D-98, D-100 to D-106 and D-119 to D-121), eight new monitoring wells (D-62 to D-67), and two new extraction wells (D68 and D-69).

Table 7.1-2, Section C:
- Revised "Clean" Systems Batch Release sample points to include FRAC tanks.

6.1.2/7.1.2 Liquid Effluent Concentration:
- Revised "Clean" Systems Batch Release sample points to include FRAC tanks.

Appendix A:
- Revised Dose Transfer Factors for Radionuclides in Effluent Air to include Fe-55.

Revision 36 → Revision 37
Revision 37 to the ODAM was made effective on 2/9/2017. Changes implemented included:

Offsite Dose Assessment Manual Title Page:

- Licensing Manager, Emergency Planning (EP), and Chemistry Manager are required signatories. In addition, the position title "Plant Manager" was changed to "Site Director".

Section 1.0:

- Inclusion of the Groundwater Protection Program (GWPP). The GWPP compliments the Radiological Environmental Monitoring Program (REMP).

Section 2.3:

- Revised Basis of Mixing Ratios to include the City of Palo, Iowa for alluvial well withdraw and the distance to the City of Cedar Rapids alluvial well field.

Section 2.8:

- Revised narrative to include:

"In February 2016, the GWPP routine sampling identified a contaminate plume in the shallow aquifer (less than 25 feet deep). Release standards are set forth in Section 6.0, Radiological Liquid Effluent Release O.6.1.2, Table 7.1-2. In accordance with GWPP Administrative Control Procedure (ACP) 1411.35 and Environmental Protection Agency (EPA) drinking water standards for tritium, 20,000 pCi/L, groundwater batch and continuous releases are expected less than (<) 20,000 pCi/L. Groundwater samples are analyzed on-site and validated by off-site secondary laboratory. Off-site laboratory results are published in Annual Radiological Material Release Report and Annual Radiological Environmental Report."

Figure 3-2:

- Revised color map.

Figure 5-1:

- Revised maps to include new REMP-GWPP sampling points for new monitoring wells.

Figure 5-2:

- Revised maps to include new Palo, Iowa, air sampler and TLD location.

Table 5-1:

- Revised REMP-GWPP sampling locations to include new Palo, Iowa air sampler (D-5a), relocate Cedar River bed sediment sampling (D-49), on-site drinking water sample location (D-52), inclusion of a formal control sampling location (D-56) for REMP-GWPP quality assurance samples, inclusion of new goat milk sampling location (D-76), and fifteen new monitoring wells.

Radioactive Liquid Effluent Concentration O 7.1.2:

- Inclusion within OSR 7.1.2.6 for GWPP mitigation system.

Table 7.1-2, Section D:

- Inclusion of new subsection "D" for GWPP Mitigation System for continuous liquid effluent release.

Radiological Environmental Monitoring Program O 6.3.2:

- Inclusion of REMP and GWPP under Offsite Dose Assessment Controls

Table 6.3-1:

- Inclusion of REMP drinking water monthly samples (change from GWPP quarterly) and change from semi-monthly to monthly milk sampling.

Table 6.3-2:

- Inclusion of GWPP exposure pathway and/or sample type, minimum number of samples, sampling schedule, and type and frequency of analysis.

Table 6.3-3:

- Sequence change in table order number.

Table 6.3-4:

- Sequence change in table order number.

Bases Section, Liquid Effluent Concentration 6.1.2/7.1.2:

- Remove acronyms and state, "principal gamma emitters and iodine."
- Add paragraph:

"The GWPP mitigation system sample points noted in Table 7.1-2 are adequate to ensure sampling of potential liquid radioactive effluents in the shallow groundwater. Further, the GWPP mitigation plan support a reduction in contaminate concentration such that releases are expected below Administrative Control Procedure (ACP) 1411.35 and Environmental Protection Agency (EPA) drinking water limit of 20,000 pCi/L."

- Misspelling correction for "Cedar River."

Changes to the ODAM:

- Update section "b" to remove title "Plant Manger" and replace title with "Site Director".

ODAM Revision Date History

Revision:	29	30	31	32	33	34	35	36	37
Date:	9/15/11	3/11/13	8/12/14	3/19/15	11/4/15	12/18/15	3/1/16	9/2/16	2/9/17

ATTACHMENT 1: GROUND WATER PROTECTION PROGRAM RESULTS

Presented in Attachment 1A are analysis results from the site Ground Water Protection Program (GWPP) as determined by the site laboratory.

- Gamma Spectroscopy results for site surface water samples.
- Tritium results for site surface water samples
- Gamma Spectroscopy results for sewage effluent samples.

The Duane Arnold chemistry laboratory participates in Cross Check Program with the firm: Eckert & Ziegler Analytics from Atlanta GA. The Radiochemistry Cross Check program results are available upon request.

Presented in Attachment 1B are analysis results from site's Ground Water Protection Program (GWPP) as determined by a contracted vendor laboratory

- Tritium results for site monitoring well samples.
- Conditional analyses results for hard-to-detect isotopes and gamma emitters for select monitoring well and surface water samples.
- Tritium results for site precipitation samples.
- Strontium-90, Tritium and Gamma Spectroscopy results for site soil samples.
- Supplemental Analyses for electrical vault and drinking water sample locations

The vendor laboratory providing these GWPP sample analysis results is Environmental Inc. Midwest Laboratory of Northbrook, IL. The Environmental Inc. laboratory participates in several cross check programs. These cross check program results are presented in the 2016 Duane Arnold Energy Center Annual Radiological Environmental Operating Report or by request.

Groundwater Protection Program details can be found in Attachment 2, the Duane Arnold Offsite Dose Assessment Manual (ODAM), Table 6.3-2, and sampling locations can be found in ODAM, Table 5-1. Specifically, GWPP sample locations are identified by station number, GWPP, and station location and sample type. A simplified map of environmental sample locations can be found in the ODAM, Figure 5-1 and Figure 5-2.

GWPP Sampling Deviations

Sample Type	Analysis	Location	Collection Period	Comments
Precip	Tritium	D-127, D-128	January	No viable sample collected

Groundwater Protection Program Summary

The following data can also be found in the Duane Arnold Energy Center Annual Radiological Environmental Operating Report

D-69

06/09/16 3_2016-06-09_005

BA-140 <	2.50E-08 uCi/ml	CE-144 <	9.02E-08 uCi/ml	CO-58 <	7.98E-09 uCi/ml	CO-60 <	1.10E-08 uCi/ml
CS-134 <	1.14E-08 uCi/ml	CS-137 <	8.11E-09 uCi/ml	FE-59 <	1.72E-08 uCi/ml	I-131 <	7.56E-09 uCi/ml
K-40 <	1.10E-07 uCi/ml	LA-140 <	1.44E-08 uCi/ml	MN-54 <	8.08E-09 uCi/ml	ZN-65 <	2.41E-08 uCi/ml

D-68

06/03/16 3_2016-06-03_002

BA-140 <	2.47E-08 uCi/ml	CE-144 <	7.19E-08 uCi/ml	CO-58 <	7.96E-09 uCi/ml	CO-60 <	1.10E-08 uCi/ml
CS-134 <	1.43E-08 uCi/ml	CS-137 <	1.10E-08 uCi/ml	FE-59 <	1.71E-08 uCi/ml	I-131 <	1.01E-08 uCi/ml
K-40 <	1.10E-07 uCi/ml	LA-140 <	1.31E-08 uCi/ml	MN-54 <	8.07E-09 uCi/ml	ZN-65 <	1.93E-08 uCi/ml

07/29/16 3_2016-07-29_010

BA-140 <	2.52E-08 uCi/ml	CE-144 <	7.66E-08 uCi/ml	CO-58 <	7.99E-09 uCi/ml	CO-60 <	1.10E-08 uCi/ml
CS-134 <	1.19E-08 uCi/ml	CS-137 <	1.09E-08 uCi/ml	FE-59 <	1.72E-08 uCi/ml	I-131 <	1.04E-08 uCi/ml
K-40 <	1.10E-07 uCi/ml	LA-140 <	1.52E-08 uCi/ml	MN-54 <	1.30E-08 uCi/ml	ZN-65 <	2.58E-08 uCi/ml

06/27/16 3_2016-06-27_005

BA-140 <	2.92E-08 uCi/ml	CE-144 <	1.01E-07 uCi/ml	CO-58 <	7.98E-09 uCi/ml	CO-60 <	1.10E-08 uCi/ml
CS-134 <	1.12E-08 uCi/ml	CS-137 <	1.16E-08 uCi/ml	FE-59 <	1.72E-08 uCi/ml	I-131 <	9.14E-09 uCi/ml
K-40 <	1.10E-07 uCi/ml	LA-140 <	1.44E-08 uCi/ml	MN-54 <	1.39E-08 uCi/ml	ZN-65 <	1.93E-08 uCi/ml

D-73

11/07/16 3_2016-11-07_003

BA-140 <	3.02E-08 uCi/ml	CE-144 <	1.04E-07 uCi/ml	CO-58 <	7.97E-09 uCi/ml	CO-60 <	1.10E-08 uCi/ml
CS-134 <	8.99E-09 uCi/ml	CS-137 <	9.24E-09 uCi/ml	FE-59 <	1.77E-08 uCi/ml	I-131 <	5.83E-09 uCi/ml
K-40 <	1.10E-07 uCi/ml	LA-140 <	1.37E-08 uCi/ml	MN-54 <	8.08E-09 uCi/ml	ZN-65 <	2.85E-08 uCi/ml

11/07/16 2_2016-11-07_004

BA-140 <	1.88E-08 uCi/ml	CE-144 <	9.15E-08 uCi/ml	CO-58 <	6.42E-09 uCi/ml	CO-60 <	9.51E-09 uCi/ml
CS-134 <	1.01E-08 uCi/ml	CS-137 <	1.08E-08 uCi/ml	FE-59 <	1.57E-08 uCi/ml	I-131 <	1.13E-08 uCi/ml
K-40 <	1.10E-07 uCi/ml	LA-140 <	1.26E-08 uCi/ml	MN-54 <	1.11E-08 uCi/ml	ZN-65 <	2.52E-08 uCi/ml

D-88

07/12/16 3_2016-07-12_008

BA-140 <	2.49E-08 uCi/ml	CE-144 <	5.57E-08 uCi/ml	CO-58 <	7.98E-09 uCi/ml	CO-60 <	1.10E-08 uCi/ml
CS-134 <	8.34E-09 uCi/ml	CS-137 <	8.11E-09 uCi/ml	FE-59 <	1.72E-08 uCi/ml	I-131 <	7.13E-09 uCi/ml
K-40 <	1.10E-07 uCi/ml	LA-140 <	1.41E-08 uCi/ml	MN-54 <	9.47E-09 uCi/ml	ZN-65 <	1.93E-08 uCi/ml

D-89

07/11/16 3_2016-07-11_004

BA-140 <	2.47E-08 uCi/ml	CE-144 <	6.59E-08 uCi/ml	CO-58 <	7.97E-09 uCi/ml	CO-60 <	1.10E-08 uCi/ml
CS-134 <	1.30E-08 uCi/ml	CS-137 <	8.11E-09 uCi/ml	FE-59 <	1.72E-08 uCi/ml	I-131 <	6.48E-09 uCi/ml
K-40 <	1.10E-07 uCi/ml	LA-140 <	1.34E-08 uCi/ml	MN-54 <	8.08E-09 uCi/ml	ZN-65 <	1.93E-08 uCi/ml

D-90

03/08/16 3_2016-03-08_007

BA-140 <	2.48E-08 uCi/ml	CE-144 <	4.98E-08 uCi/ml	CO-58 <	7.97E-09 uCi/ml	CO-60 <	1.10E-08 uCi/ml
CS-134 <	1.35E-08 uCi/ml	CS-137 <	8.11E-09 uCi/ml	FE-59 <	1.72E-08 uCi/ml	I-131 <	5.84E-09 uCi/ml
K-40 <	1.82E-07 uCi/ml	LA-140 <	1.39E-08 uCi/ml	MN-54 <	8.08E-09 uCi/ml	ZN-65 <	1.93E-08 uCi/ml

D-92

03/08/16 3_2016-03-08_006

BA-140 <	2.48E-08 uCi/ml	CE-144 <	5.69E-08 uCi/ml	CO-58 <	7.97E-09 uCi/ml	CO-60 <	1.10E-08 uCi/ml
CS-134 <	8.33E-09 uCi/ml	CS-137 <	8.66E-09 uCi/ml	FE-59 <	1.72E-08 uCi/ml	I-131 <	5.84E-09 uCi/ml
K-40 <	1.10E-07 uCi/ml	LA-140 <	1.38E-08 uCi/ml	MN-54 <	8.59E-09 uCi/ml	ZN-65 <	1.93E-08 uCi/ml

D-93

03/11/16 3_2016-03-11_003

BA-140 <	2.48E-08 uCi/ml	CE-144 <	7.82E-08 uCi/ml	CO-58 <	7.97E-09 uCi/ml	CO-60 <	1.10E-08 uCi/ml
CS-134 <	8.33E-09 uCi/ml	CS-137 <	8.11E-09 uCi/ml	FE-59 <	1.72E-08 uCi/ml	I-131 <	7.10E-09 uCi/ml
K-40 <	1.10E-07 uCi/ml	LA-140 <	1.38E-08 uCi/ml	MN-54 <	8.76E-09 uCi/ml	ZN-65 <	1.93E-08 uCi/ml

DUANE ARNOLD ENERGY CENTER
2016 ANNUAL RADIOACTIVE MATERIAL RELEASE REPORT
ATTACHMENT 1A: GROUND WATER PROTECTION PROGRAM RESULTS-DAEC LAB

D-97

03/08/16 3_2016-03-08_005

BA-140 <	2.49E-08 uCi/ml	CE-144 <	4.98E-08 uCi/ml	CO-58 <	7.98E-09 uCi/ml	CO-60 <	1.10E-08 uCi/ml
CS-134 <	1.08E-08 uCi/ml	CS-137 <	8.11E-09 uCi/ml	FE-59 <	1.72E-08 uCi/ml	I-131 <	6.23E-09 uCi/ml
K-40 <	1.10E-07 uCi/ml	LA-140 <	1.42E-08 uCi/ml	MN-54 <	1.02E-08 uCi/ml	ZN-65 <	1.93E-08 uCi/ml

D-100

11/07/16 3_2016-11-07_004

BA-140 <	2.49E-08 uCi/ml	CE-144 <	9.02E-08 uCi/ml	CO-58 <	7.98E-09 uCi/ml	CO-60 <	1.10E-08 uCi/ml
CS-134 <	1.09E-08 uCi/ml	CS-137 <	1.02E-08 uCi/ml	FE-59 <	1.72E-08 uCi/ml	I-131 <	6.55E-09 uCi/ml
K-40 <	1.10E-07 uCi/ml	LA-140 <	1.42E-08 uCi/ml	MN-54 <	8.08E-09 uCi/ml	ZN-65 <	1.93E-08 uCi/ml

D-101

11/07/16 3_2016-11-07_008

BA-140 <	2.49E-08 uCi/ml	CE-144 <	6.84E-08 uCi/ml	CO-58 <	7.98E-09 uCi/ml	CO-60 <	1.10E-08 uCi/ml
CS-134 <	1.36E-08 uCi/ml	CS-137 <	8.11E-09 uCi/ml	FE-59 <	1.72E-08 uCi/ml	I-131 <	7.91E-09 uCi/ml
K-40 <	1.10E-07 uCi/ml	LA-140 <	1.42E-08 uCi/ml	MN-54 <	8.08E-09 uCi/ml	ZN-65 <	1.93E-08 uCi/ml

D-103

03/07/16 3_2016-03-07_005

BA-140 <	2.47E-08 uCi/ml	CE-144 <	5.63E-08 uCi/ml	CO-58 <	7.96E-09 uCi/ml	CO-60 <	1.10E-08 uCi/ml
CS-134 <	1.28E-08 uCi/ml	CS-137 <	8.11E-09 uCi/ml	FE-59 <	1.71E-08 uCi/ml	I-131 <	6.13E-09 uCi/ml
K-40 <	1.10E-07 uCi/ml	LA-140 <	1.32E-08 uCi/ml	MN-54 <	1.15E-08 uCi/ml	ZN-65 <	1.93E-08 uCi/ml

D-104

03/07/16 3_2016-03-07_006

BA-140 <	2.47E-08 uCi/ml	CE-144 <	7.41E-08 uCi/ml	CO-58 <	7.97E-09 uCi/ml	CO-60 <	1.10E-08 uCi/ml
CS-134 <	1.01E-08 uCi/ml	CS-137 <	8.11E-09 uCi/ml	FE-59 <	1.72E-08 uCi/ml	I-131 <	5.80E-09 uCi/ml
K-40 <	1.10E-07 uCi/ml	LA-140 <	1.34E-08 uCi/ml	MN-54 <	8.08E-09 uCi/ml	ZN-65 <	1.93E-08 uCi/ml

D-105

03/11/16 3_2016-03-11_002

BA-140 <	2.48E-08 uCi/ml	CE-144 <	8.98E-08 uCi/ml	CO-58 <	8.21E-09 uCi/ml	CO-60 <	1.10E-08 uCi/ml
CS-134 <	1.02E-08 uCi/ml	CS-137 <	8.11E-09 uCi/ml	FE-59 <	1.72E-08 uCi/ml	I-131 <	6.49E-09 uCi/ml
K-40 <	1.10E-07 uCi/ml	LA-140 <	1.36E-08 uCi/ml	MN-54 <	8.08E-09 uCi/ml	ZN-65 <	1.93E-08 uCi/ml

D-107

08/07/16 3_2016-08-08_002

BA-140 < CS-134 <	2.62E-08 uCi/ml 8.34E-09 uCi/ml	CE-144 < CS-137 <	4.85E-08 uCi/ml 8.11E-09 uCi/ml	CO-58 < FE-59 <	8.05E-09 uCi/ml 1.74E-08 uCi/ml	CO-60 < I-131 <	1.39E-08 uCi/ml 6.34E-09 uCi/ml
K-40 <	1.10E-07 uCi/ml	LA-140 <	2.04E-08 uCi/ml	MN-54 <	8.09E-09 uCi/ml	ZN-65 <	1.93E-08 uCi/ml

10/02/16 3_2016-10-03_005

BA-140 <	2.58E-08 uCi/ml	CE-144 <	9.10E-08 uCi/ml	CO-58 <	8.03E-09 uCi/ml	CO-60 <	1.10E-08 uCi/ml
CS-134 <	8.84E-09 uCi/ml	CS-137 <	8.11E-09 uCi/ml	FE-59 <	1.74E-08 uCi/ml	I-131 <	6.21E-09 uCi/ml
K-40 <	1.10E-07 uCi/ml	LA-140 <	1.86E-08 uCi/ml	MN-54 <	9.84E-09 uCi/ml	ZN-65 <	1.93E-08 uCi/ml

09/18/16 3_2016-09-19_004

BA-140 <	2.58E-08 uCi/ml	CE-144 <	1.09E-07 uCi/ml	CO-58 <	8.02E-09 uCi/ml	CO-60 <	1.10E-08 uCi/ml
CS-134 <	1.44E-08 uCi/ml	CS-137 <	8.11E-09 uCi/ml	FE-59 <	1.74E-08 uCi/ml	I-131 <	6.56E-09 uCi/ml
K-40 <	1.10E-07 uCi/ml	LA-140 <	1.82E-08 uCi/ml	MN-54 <	9.23E-09 uCi/ml	ZN-65 <	2.36E-08 uCi/ml

06/26/16 3_2016-06-27_002

BA-140 <	2.61E-08 uCi/ml	CE-144 <	9.84E-08 uCi/ml	CO-58 <	8.05E-09 uCi/ml	CO-60 <	1.10E-08 uCi/ml
CS-134 <	1.24E-08 uCi/ml	CS-137 <	1.02E-08 uCi/ml	FE-59 <	1.74E-08 uCi/ml	I-131 <	7.70E-09 uCi/ml
K-40 <	1.10E-07 uCi/ml	LA-140 <	2.04E-08 uCi/ml	MN-54 <	1.22E-08 uCi/ml	ZN-65 <	1.93E-08 uCi/ml

DUANE ARNOLD ENERGY CENTER
2016 ANNUAL RADIOACTIVE MATERIAL RELEASE REPORT
ATTACHMENT 1A: GROUND WATER PROTECTION PROGRAM RESULTS-DAEC LAB

02/07/16 3_2016-02-08_007

BA-140 < 2.60E-08 uCi/ml	CE-144 < 7.12E-08 uCi/ml	CO-58 < 8.04E-09 uCi/ml	CO-60 < 1.10E-08 uCi/ml
CS-134 < 9.45E-09 uCi/ml	CS-137 < 8.11E-09 uCi/ml	FE-59 < 1.74E-08 uCi/ml	I-131 < 8.46E-09 uCi/ml
K-40 < 1.10E-07 uCi/ml	LA-140 < 1.95E-08 uCi/ml	MN-54 < 8.09E-09 uCi/ml	ZN-65 < 1.93E-08 uCi/ml

03/06/16 3_2016-03-07_001

BA-140 < 2.59E-08 uCi/ml	CE-144 < 4.11E-08 uCi/ml	CO-58 < 8.03E-09 uCi/ml	CO-60 < 1.10E-08 uCi/ml
CS-134 < 1.01E-08 uCi/ml	CS-137 < 8.11E-09 uCi/ml	FE-59 < 1.74E-08 uCi/ml	I-131 < 6.61E-09 uCi/ml
K-40 < 1.33E-07 uCi/ml	LA-140 < 1.88E-08 uCi/ml	MN-54 < 8.09E-09 uCi/ml	ZN-65 < 2.29E-08 uCi/ml

03/20/16 3_2016-03-21_004

BA-140 < 2.60E-08 uCi/ml	CE-144 < 9.40E-08 uCi/ml	CO-58 < 8.04E-09 uCi/ml	CO-60 < 1.10E-08 uCi/ml
CS-134 < 1.19E-08 uCi/ml	CS-137 < 1.20E-08 uCi/ml	FE-59 < 1.74E-08 uCi/ml	I-131 < 8.48E-09 uCi/ml
K-40 < 1.10E-07 uCi/ml	LA-140 < 1.98E-08 uCi/ml	MN-54 < 8.09E-09 uCi/ml	ZN-65 < 1.93E-08 uCi/ml

04/17/16 3_2016-04-18_001

BA-140 < 2.65E-08 uCi/ml	CE-144 < 4.01E-08 uCi/ml	CO-58 < 8.02E-09 uCi/ml	CO-60 < 1.10E-08 uCi/ml
CS-134 < 1.01E-08 uCi/ml	CS-137 < 8.11E-09 uCi/ml	FE-59 < 1.74E-08 uCi/ml	I-131 < 6.72E-09 uCi/ml
K-40 # 1.79E-07 uCi/ml	LA-140 < 1.81E-08 uCi/ml	MN-54 < 8.09E-09 uCi/ml	ZN-65 < 1.93E-08 uCi/ml

05/01/16 3_2016-05-02_001

BA-140 < 2.59E-08 uCi/ml	CE-144 < 7.34E-08 uCi/ml	CO-58 < 8.03E-09 uCi/ml	CO-60 < 1.10E-08 uCi/ml
CS-134 < 1.19E-08 uCi/ml	CS-137 < 9.46E-09 uCi/ml	FE-59 < 1.74E-08 uCi/ml	I-131 < 7.15E-09 uCi/ml
K-40 # 1.94E-07 uCi/ml	LA-140 < 1.92E-08 uCi/ml	MN-54 < 9.84E-09 uCi/ml	ZN-65 < 1.93E-08 uCi/ml

08/21/16 3_2016-08-22_002

BA-140 < 2.47E-08 uCi/ml	CE-144 < 7.62E-08 uCi/ml	CO-58 < 8.45E-09 uCi/ml	CO-60 < 1.10E-08 uCi/ml
CS-134 < 1.25E-08 uCi/ml	CS-137 < 9.86E-09 uCi/ml	FE-59 < 1.72E-08 uCi/ml	I-131 < 7.94E-09 uCi/ml
K-40 < 1.10E-07 uCi/ml	LA-140 < 1.34E-08 uCi/ml	MN-54 < 8.08E-09 uCi/ml	ZN-65 < 1.93E-08 uCi/ml

10/30/16 3_2016-10-31_001

BA-140 < 3.00E-08 uCi/ml	CE-144 < 1.02E-07 uCi/ml	CO-58 < 8.02E-09 uCi/ml	CO-60 < 1.10E-08 uCi/ml
CS-134 < 1.19E-08 uCi/ml	CS-137 < 9.96E-09 uCi/ml	FE-59 < 1.73E-08 uCi/ml	I-131 < 6.15E-09 uCi/ml
K-40 < 1.10E-07 uCi/ml	LA-140 < 1.78E-08 uCi/ml	MN-54 < 8.09E-09 uCi/ml	ZN-65 < 2.41E-08 uCi/ml

11/13/16 3_2016-11-14_003

BA-140 < 2.90E-08 uCi/ml	CE-144 < 9.96E-08 uCi/ml	CO-58 < 1.12E-08 uCi/ml	CO-60 < 1.10E-08 uCi/ml
CS-134 < 1.71E-08 uCi/ml	CS-137 < 1.26E-08 uCi/ml	FE-59 < 1.74E-08 uCi/ml	I-131 < 6.66E-09 uCi/ml
K-40 < 1.10E-07 uCi/ml	LA-140 < 1.95E-08 uCi/ml	MN-54 < 9.03E-09 uCi/ml	ZN-65 < 2.90E-08 uCi/ml

11/27/16 3_2016-11-28_003

BA-140 < 2.59E-08 uCi/ml	CE-144 < 6.15E-08 uCi/ml	CO-58 < 8.03E-09 uCi/ml	CO-60 < 1.10E-08 uCi/ml
CS-134 < 1.09E-08 uCi/ml	CS-137 < 8.11E-09 uCi/ml	FE-59 < 1.74E-08 uCi/ml	I-131 < 9.69E-09 uCi/ml
K-40 < 1.10E-07 uCi/ml	LA-140 < 1.92E-08 uCi/ml	MN-54 < 1.01E-08 uCi/ml	ZN-65 < 1.93E-08 uCi/ml

12/26/16 3_2016-12-27_002

BA-140 < 2.60E-08 uCi/ml	CE-144 < 7.59E-08 uCi/ml	CO-58 < 8.04E-09 uCi/ml	CO-60 < 1.17E-08 uCi/ml
CS-134 < 8.34E-09 uCi/ml	CS-137 < 1.32E-08 uCi/ml	FE-59 < 1.74E-08 uCi/ml	I-131 < 7.18E-09 uCi/ml
K-40 < 1.10E-07 uCi/ml	LA-140 < 1.97E-08 uCi/ml	MN-54 < 8.53E-09 uCi/ml	ZN-65 < 1.93E-08 uCi/ml

05/29/16 3_2016-05-29_006

BA-140 < 2.49E-08 uCi/ml	CE-144 < 4.76E-08 uCi/ml	CO-58 < 7.98E-09 uCi/ml	CO-60 < 1.10E-08 uCi/ml
CS-134 < 8.34E-09 uCi/ml	CS-137 < 8.11E-09 uCi/ml	FE-59 < 1.72E-08 uCi/ml	I-131 < 7.14E-09 uCi/ml
K-40 < 1.10E-07 uCi/ml	LA-140 < 1.42E-08 uCi/ml	MN-54 < 9.82E-09 uCi/ml	ZN-65 < 2.28E-08 uCi/ml

12/11/16 3_2016-12-12_004

BA-140 < 2.59E-08 uCi/ml	CE-144 < 7.80E-08 uCi/ml	CO-58 < 9.77E-09 uCi/ml	CO-60 < 1.10E-08 uCi/ml
CS-134 < 1.41E-08 uCi/ml	CS-137 < 8.11E-09 uCi/ml	FE-59 < 1.74E-08 uCi/ml	I-131 < 9.79E-09 uCi/ml
K-40 < 1.48E-07 uCi/ml	LA-140 < 1.90E-08 uCi/ml	MN-54 < 9.84E-09 uCi/ml	ZN-65 < 1.93E-08 uCi/ml

01/10/16 3_2016-01-11_002

BA-140 < 2.60E-08 uCi/ml	CE-144 < 9.20E-08 uCi/ml	CO-58 < 8.04E-09 uCi/ml	CO-60 < 1.10E-08 uCi/ml
CS-134 < 1.29E-08 uCi/ml	CS-137 < 8.11E-09 uCi/ml	FE-59 < 1.74E-08 uCi/ml	I-131 < 6.28E-09 uCi/ml
K-40 # 1.94E-07 uCi/ml	LA-140 < 1.96E-08 uCi/ml	MN-54 < 8.09E-09 uCi/ml	ZN-65 < 2.75E-08 uCi/ml

02/21/16 3_2016-02-22_005

BA-140 < 2.59E-08 uCi/ml	CE-144 < 7.12E-08 uCi/ml	CO-58 < 8.03E-09 uCi/ml	CO-60 < 1.10E-08 uCi/ml
CS-134 < 8.34E-09 uCi/ml	CS-137 < 9.59E-09 uCi/ml	FE-59 < 1.74E-08 uCi/ml	I-131 < 8.92E-09 uCi/ml
K-40 < 1.10E-07 uCi/ml	LA-140 < 1.92E-08 uCi/ml	MN-54 < 8.09E-09 uCi/ml	ZN-65 < 1.93E-08 uCi/ml

DUANE ARNOLD ENERGY CENTER
2016 ANNUAL RADIOACTIVE MATERIAL RELEASE REPORT
ATTACHMENT 1A: GROUND WATER PROTECTION PROGRAM RESULTS-DAEC LAB

04/03/16 3_2016-04-04_002

BA-140 <	2.96E-08 uCi/ml	CE-144 <	8.03E-08 uCi/ml	CO-58 <	8.03E-09 uCi/ml	CO-60 <	1.10E-08 uCi/ml
CS-134 <	1.05E-08 uCi/ml	CS-137 <	8.11E-09 uCi/ml	FE-59 <	1.74E-08 uCi/ml	I-131 <	6.26E-09 uCi/ml
K-40 <	1.10E-07 uCi/ml	LA-140 <	1.92E-08 uCi/ml	MN-54 <	8.09E-09 uCi/ml	ZN-65 <	1.93E-08 uCi/ml

05/15/16 3_2016-05-16_005

BA-140 <	2.60E-08 uCi/ml	CE-144 <	9.31E-08 uCi/ml	CO-58 <	8.04E-09 uCi/ml	CO-60 <	1.10E-08 uCi/ml
CS-134 <	9.20E-09 uCi/ml	CS-137 <	8.11E-09 uCi/ml	FE-59 <	1.74E-08 uCi/ml	I-131 <	6.65E-09 uCi/ml
K-40 <	1.10E-07 uCi/ml	LA-140 <	1.95E-08 uCi/ml	MN-54 <	1.01E-08 uCi/ml	ZN-65 <	1.93E-08 uCi/ml

06/12/16 3_2016-06-13_005

BA-140 <	2.49E-08 uCi/ml	CE-144 <	9.02E-08 uCi/ml	CO-58 <	7.98E-09 uCi/ml	CO-60 <	1.10E-08 uCi/ml
CS-134 <	8.84E-09 uCi/ml	CS-137 <	8.11E-09 uCi/ml	FE-59 <	1.74E-08 uCi/ml	I-131 <	6.21E-09 uCi/ml
K-40 <	1.10E-07 uCi/ml	LA-140 <	1.97E-08 uCi/ml	MN-54 <	8.58E-09 uCi/ml	ZN-65 <	1.93E-08 uCi/ml

07/10/16 3_2016-07-11_001

BA-140 <	2.57E-08 uCi/ml	CE-144 <	1.00E-07 uCi/ml	CO-58 <	8.02E-09 uCi/ml	CO-60 <	1.10E-08 uCi/ml
CS-134 <	1.22E-08 uCi/ml	CS-137 <	9.27E-09 uCi/ml	FE-59 <	1.74E-08 uCi/ml	I-131 <	1.14E-08 uCi/ml
K-40 <	1.10E-07 uCi/ml	LA-140 <	1.80E-08 uCi/ml	MN-54 <	8.09E-09 uCi/ml	ZN-65 <	2.60E-08 uCi/ml

07/24/16 3_2016-07-25_005

BA-140 <	2.61E-08 uCi/ml	CE-144 <	9.77E-08 uCi/ml	CO-58 <	8.04E-09 uCi/ml	CO-60 <	1.10E-08 uCi/ml
CS-134 <	8.34E-09 uCi/ml	CS-137 <	9.10E-09 uCi/ml	FE-59 <	1.74E-08 uCi/ml	I-131 <	9.57E-09 uCi/ml
K-40 <	1.10E-07 uCi/ml	LA-140 <	2.00E-08 uCi/ml	MN-54 <	8.09E-09 uCi/ml	ZN-65 <	1.93E-08 uCi/ml

D-119

09/30/16 3_2016-09-30_020

BA-140 <	2.51E-08 uCi/ml	CE-144 <	6.35E-08 uCi/ml	CO-58 <	7.99E-09 uCi/ml	CO-60 <	1.10E-08 uCi/ml
CS-134 <	8.34E-09 uCi/ml	CS-137 <	8.11E-09 uCi/ml	FE-59 <	1.72E-08 uCi/ml	I-131 <	5.94E-09 uCi/ml
K-40 <	1.10E-07 uCi/ml	LA-140 <	1.50E-08 uCi/ml	MN-54 <	9.43E-09 uCi/ml	ZN-65 <	1.93E-08 uCi/ml

07/14/16 3_2016-07-14_008

BA-140 < CS-134 <	2.48E-08 uCi/ml 1.32E-08 uCi/ml	CE-144 < CS-137 <	8.95E-08 uCi/ml 8.66E-09 uCi/ml	CO-58 < FE-59 <	8.45E-09 uCi/ml 1.72E-08 uCi/ml	CO-60 < I-131 <	1.10E-08 uCi/ml 5.82E-09 uCi/ml
K-40 <	1.10E-07 uCi/ml	LA-140 <	1.35E-08 uCi/ml	MN-54 <	8.08E-09 uCi/ml	ZN-65 <	1.93E-08 uCi/ml

11/07/16 3_2016-11-07_009

BA-140 <	2.49E-08 uCi/ml	CE-144 <	8.32E-08 uCi/ml	CO-58 <	7.98E-09 uCi/ml	CO-60 <	1.10E-08 uCi/ml
CS-134 <	1.26E-08 uCi/ml	CS-137 <	8.11E-09 uCi/ml	FE-59 <	1.72E-08 uCi/ml	I-131 <	6.55E-09 uCi/ml
K-40 #	2.83E-07 uCi/ml	LA-140 <	1.42E-08 uCi/ml	MN-54 <	8.08E-09 uCi/ml	ZN-65 <	1.93E-08 uCi/ml

05/18/16 3_2016-05-19_002

BA-140 <	2.60E-08 uCi/ml	CE-144 <	5.13E-08 uCi/ml	CO-58 <	8.04E-09 uCi/ml	CO-60 <	1.10E-08 uCi/ml
CS-134 <	8.34E-09 uCi/ml	CS-137 <	8.11E-09 uCi/ml	FE-59 <	1.74E-08 uCi/ml	I-131 <	6.26E-09 uCi/ml
K-40 #	3.43E-07 uCi/ml	LA-140 <	1.93E-08 uCi/ml	MN-54 <	1.11E-08 uCi/ml	ZN-65 <	1.93E-08 uCi/ml

07/13/16 3_2016-07-13_010

BA-140 <	2.50E-08 uCi/ml	CE-144 <	5.92E-08 uCi/ml	CO-58 <	7.98E-09 uCi/ml	CO-60 <	1.10E-08 uCi/ml
CS-134 <	9.02E-09 uCi/ml	CS-137 <	8.11E-09 uCi/ml	FE-59 <	1.72E-08 uCi/ml	I-131 <	5.91E-09 uCi/ml
K-40 <	1.10E-07 uCi/ml	LA-140 <	1.46E-08 uCi/ml	MN-54 <	8.08E-09 uCi/ml	ZN-65 <	1.93E-08 uCi/ml

DUANE ARNOLD ENERGY CENTER
2016 ANNUAL RADIOACTIVE MATERIAL RELEASE REPORT
ATTACHMENT 1A: GROUND WATER PROTECTION PROGRAM RESULTS-DAEC LAB

D-120

11/07/16 3_2016-11-07_010

BA-140 < 2.49E-08 uCi/ml CE-144 < 6.65E-08 uCi/ml CO-58 < 7.98E-09 uCi/ml CO-60 < 1.10E-08 uCi/ml
CS-134 < 1.04E-08 uCi/ml CS-137 < 8.61E-09 uCi/ml FE-59 < 1.72E-08 uCi/ml I-131 < 5.88E-09 uCi/ml
K-40 < 1.10E-07 uCi/ml LA-140 < 1.42E-08 uCi/ml MN-54 < 8.08E-09 uCi/ml ZN-65 < 1.93E-08 uCi/ml

09/30/16 3_2016-09-30_021

BA-140 < 2.51E-08 uCi/ml CE-144 < 5.63E-08 uCi/ml CO-58 < 7.99E-09 uCi/ml CO-60 < 1.10E-08 uCi/ml
CS-134 < 8.34E-09 uCi/ml CS-137 < 9.10E-09 uCi/ml FE-59 < 1.72E-08 uCi/ml I-131 < 6.95E-09 uCi/ml
K-40 < 1.10E-07 uCi/ml LA-140 < 1.51E-08 uCi/ml MN-54 < 1.32E-08 uCi/ml ZN-65 < 1.93E-08 uCi/ml

D-121

05/18/16 3_2016-05-19_003

BA-140 < 2.60E-08 uCi/ml CE-144 < 6.71E-08 uCi/ml CO-58 < 8.04E-09 uCi/ml CO-60 < 1.10E-08 uCi/ml
CS-134 < 9.10E-09 uCi/ml CS-137 < 8.11E-09 uCi/ml FE-59 < 1.74E-08 uCi/ml I-131 < 7.63E-09 uCi/ml
K-40 # 2.68E-07 uCi/ml LA-140 < 1.95E-08 uCi/ml MN-54 < 9.27E-09 uCi/ml ZN-65 < 1.93E-08 uCi/ml

07/13/16 3_2016-07-13_013

BA-140 < 2.81E-08 uCi/ml CE-144 < 9.06E-08 uCi/ml CO-58 < 7.99E-09 uCi/ml CO-60 < 1.10E-08 uCi/ml
CS-134 < 1.00E-08 uCi/ml CS-137 < 8.11E-09 uCi/ml FE-59 < 1.72E-08 uCi/ml I-131 < 8.38E-09 uCi/ml
K-40 # 2.53E-07 uCi/ml LA-140 < 1.52E-08 uCi/ml MN-54 < 8.33E-09 uCi/ml ZN-65 < 1.93E-08 uCi/ml

11/07/16 3_2016-11-08_002

BA-140 < 2.55E-08 uCi/ml CE-144 < 6.89E-08 uCi/ml CO-58 < 8.01E-09 uCi/ml CO-60 < 1.10E-08 uCi/ml
CS-134 < 8.34E-09 uCi/ml CS-137 < 8.11E-09 uCi/ml FE-59 < 1.73E-08 uCi/ml I-131 < 6.45E-09 uCi/ml
K-40 < 1.31E-07 uCi/ml LA-140 < 1.68E-08 uCi/ml MN-54 < 8.09E-09 uCi/ml ZN-65 < 1.93E-08 uCi/ml

D-122

11/08/16 2_2016-11-11_002

BA-140 < 2.54E-08 uCi/ml CE-144 < 8.80E-08 uCi/ml CO-58 < 6.59E-09 uCi/ml CO-60 < 9.51E-09 uCi/ml
CS-134 < 8.12E-09 uCi/ml CS-137 < 6.34E-09 uCi/ml FE-59 < 1.50E-08 uCi/ml I-131 < 9.32E-09 uCi/ml
K-40 < 9.61E-08 uCi/ml LA-140 < 3.80E-08 uCi/ml MN-54 < 1.13E-08 uCi/ml ZN-65 < 1.70E-08 uCi/ml

05/18/16 3_2016-05-19_004

BA-140 < 2.61E-08 uCi/ml CE-144 < 6.71E-08 uCi/ml CO-58 < 8.04E-09 uCi/ml CO-60 < 1.10E-08 uCi/ml
CS-134 < 1.26E-08 uCi/ml CS-137 < 8.11E-09 uCi/ml FE-59 < 1.74E-08 uCi/ml I-131 < 6.31E-09 uCi/ml
K-40 < 1.10E-07 uCi/ml LA-140 < 2.00E-08 uCi/ml MN-54 < 8.09E-09 uCi/ml ZN-65 < 1.93E-08 uCi/ml

07/06/16 3_2016-07-06_006

BA-140 < 2.49E-08 uCi/ml CE-144 < 8.85E-08 uCi/ml CO-58 < 7.98E-09 uCi/ml CO-60 < 1.10E-08 uCi/ml
CS-134 < 8.89E-09 uCi/ml CS-137 < 8.11E-09 uCi/ml FE-59 < 1.72E-08 uCi/ml I-131 < 7.13E-09 uCi/ml
K-40 < 1.10E-07 uCi/ml LA-140 < 1.41E-08 uCi/ml MN-54 < 8.08E-09 uCi/ml ZN-65 < 1.93E-08 uCi/ml

09/12/16 3_2016-09-12_007

BA-140 < 2.49E-08 uCi/ml CE-144 < 7.33E-08 uCi/ml CO-58 < 7.97E-09 uCi/ml CO-60 < 1.10E-08 uCi/ml
CS-134 < 8.33E-09 uCi/ml CS-137 < 8.11E-09 uCi/ml FE-59 < 1.72E-08 uCi/ml I-131 < 6.20E-09 uCi/ml
K-40 < 1.10E-07 uCi/ml LA-140 < 1.39E-08 uCi/ml MN-54 < 8.08E-09 uCi/ml ZN-65 < 1.93E-08 uCi/ml

10/17/16 3_2016-10-17_003

BA-140 < 2.49E-08 uCi/ml CE-144 < 4.91E-08 uCi/ml CO-58 < 7.97E-09 uCi/ml CO-60 < 1.10E-08 uCi/ml
CS-134 < 1.39E-08 uCi/ml CS-137 < 8.11E-09 uCi/ml FE-59 < 1.72E-08 uCi/ml I-131 < 6.53E-09 uCi/ml
K-40 < 1.10E-07 uCi/ml LA-140 < 1.40E-08 uCi/ml MN-54 < 8.08E-09 uCi/ml ZN-65 < 1.93E-08 uCi/ml

D-123

07/13/16 3_2016-07-13_015

BA-140 < 2.52E-08 uCi/ml CE-144 < 7.37E-08 uCi/ml CO-58 < 7.99E-09 uCi/ml CO-60 < 1.10E-08 uCi/ml
CS-134 < 9.45E-09 uCi/ml CS-137 < 8.11E-09 uCi/ml FE-59 < 1.72E-08 uCi/ml I-131 < 5.96E-09 uCi/ml
K-40 < 1.10E-07 uCi/ml LA-140 < 1.53E-08 uCi/ml MN-54 < 1.18E-08 uCi/ml ZN-65 < 1.93E-08 uCi/ml

DUANE ARNOLD ENERGY CENTER
2016 ANNUAL RADIOACTIVE MATERIAL RELEASE REPORT
ATTACHMENT 1A: GROUND WATER PROTECTION PROGRAM RESULTS-DAEC LAB

D-124

07/13/16 3_2016-07-13_016

BA-140 <	2.52E-08 uCi/ml	CE-144 <	7.37E-08 uCi/ml	CO-58 <	7.99E-09 uCi/ml	CO-60 <	1.10E-08 uCi/ml
CS-134 <	1.27E-08 uCi/ml	CS-137 <	8.11E-09 uCi/ml	FE-59 <	1.72E-08 uCi/ml	I-131 <	5.96E-09 uCi/ml
K-40 <	1.10E-07 uCi/ml	LA-140 <	1.53E-08 uCi/ml	MN-54 <	9.88E-09 uCi/ml	ZN-65 <	1.93E-08 uCi/ml

11/08/16 3_2016-11-11_004

BA-140 <	2.98E-08 uCi/ml	CE-144 <	7.16E-08 uCi/ml	CO-58 <	1.04E-08 uCi/ml	CO-60 <	1.10E-08 uCi/ml
CS-134 <	1.43E-08 uCi/ml	CS-137 <	9.74E-09 uCi/ml	FE-59 <	1.79E-08 uCi/ml	I-131 <	9.37E-09 uCi/ml
K-40 <	1.10E-07 uCi/ml	LA-140 <	4.36E-08 uCi/ml	MN-54 <	8.13E-09 uCi/ml	ZN-65 <	2.44E-08 uCi/ml

05/18/16 3_2016-05-19_005

BA-140 <	2.61E-08 uCi/ml	CE-144 <	5.87E-08 uCi/ml	CO-58 <	8.04E-09 uCi/ml	CO-60 <	1.10E-08 uCi/ml
CS-134 <	1.05E-08 uCi/ml	CS-137 <	1.06E-08 uCi/ml	FE-59 <	1.74E-08 uCi/ml	I-131 <	7.37E-09 uCi/ml
K-40 <	1.10E-07 uCi/ml	LA-140 <	2.00E-08 uCi/ml	MN-54 <	8.09E-09 uCi/ml	ZN-65 <	1.93E-08 uCi/ml

D-125

07/13/16 3_2016-07-13_017

BA-140 <	2.52E-08 uCi/ml	CE-144 <	6.98E-08 uCi/ml	CO-58 <	7.99E-09 uCi/ml	CO-60 <	1.10E-08 uCi/ml
CS-134 <	9.96E-09 uCi/ml	CS-137 <	8.11E-09 uCi/ml	FE-59 <	1.72E-08 uCi/ml	I-131 <	6.33E-09 uCi/ml
K-40 <	1.10E-07 uCi/ml	LA-140 <	1.54E-08 uCi/ml	MN-54 <	1.41E-08 uCi/ml	ZN-65 <	1.93E-08 uCi/ml

11/08/16 3_2016-11-11_005

BA-140 <	2.91E-08 uCi/ml	CE-144 <	6.13E-08 uCi/ml	CO-58 <	8.20E-09 uCi/ml	CO-60 <	1.10E-08 uCi/ml
CS-134 <	8.36E-09 uCi/ml	CS-137 <	8.11E-09 uCi/ml	FE-59 <	1.80E-08 uCi/ml	I-131 <	9.11E-09 uCi/ml
K-40 <	1.10E-07 uCi/ml	LA-140 <	4.56E-08 uCi/ml	MN-54 <	8.13E-09 uCi/ml	ZN-65 <	2.25E-08 uCi/ml

05/18/16 3_2016-05-19_006

BA-140 <	2.61E-08 uCi/ml	CE-144 <	5.87E-08 uCi/ml	CO-58 <	8.04E-09 uCi/ml	CO-60 <	1.10E-08 uCi/ml
CS-134 <	1.03E-08 uCi/ml	CS-137 <	8.11E-09 uCi/ml	FE-59 <	1.74E-08 uCi/ml	I-131 <	7.69E-09 uCi/ml
K-40 <	1.10E-07 uCi/ml	LA-140 <	2.03E-08 uCi/ml	MN-54 <	8.09E-09 uCi/ml	ZN-65 <	1.93E-08 uCi/ml

03/10/16 3_2016-03-10_003

BA-140 <	2.47E-08 uCi/ml	CE-144 <	8.39E-08 uCi/ml	CO-58 <	7.96E-09 uCi/ml	CO-60 <	1.10E-08 uCi/ml
CS-134 <	1.17E-08 uCi/ml	CS-137 <	1.02E-08 uCi/ml	FE-59 <	1.71E-08 uCi/ml	I-131 <	5.78E-09 uCi/ml
K-40 <	1.48E-07 uCi/ml	LA-140 <	1.31E-08 uCi/ml	MN-54 <	9.31E-09 uCi/ml	ZN-65 <	1.93E-08 uCi/ml

Groundwater Protection Program Summary

The following data can also be found in the Duane Arnold Energy Center Annual Radiological Environmental Operating Report

DUANE ARNOLD

Table 21. Soil, analysis for strontium-90 and gamma-emitting isotopes.
Collection: Annually
Units: pCi/g dry

Location	D-15a	D-16
Lab Code	DSO- 2701	DSO- 2702
Date Collected	05-26-16	05-23-16
Sr-90	< 0.048	< 0.032
H-3 (pCi/L)	< 148	< 148
K-40	14.33 ± 0.81	9.53 ± 0.71
Mn-54	< 0.027	< 0.019
Fe-59	< 0.085	< 0.048
Co-58	< 0.026	< 0.016
Co-60	< 0.020	< 0.023
Zn-65	< 0.053	< 0.053
Nb-95	< 0.052	< 0.027
Zr-95	< 0.038	< 0.047
Ru-103	< 0.048	< 0.022
Ru-106	< 0.21	< 0.17
Cs-134	< 0.022	< 0.019
Cs-137	0.13 ± 0.035 [a]	0.11 ± 0.032 [a]
Ce-141	< 0.079	< 0.049
Ce-144	< 0.19	< 0.10

[a] Cs-137 identified is related to nuclear weapons testing.

D-1. Groundwater Protection Program Summary.

Precipitation samples for tritium analysis. Units: pCi/L

Lab Code	Date	H-3	Lab Code	Date	H-3
D-016			D-111		
DP- 122	01/07/16	< 145	DP- 123	01/07/16	< 145
DP- 804	02/24/16	< 155	DP- 805	02/24/16	< 155
DP- 1173	03/14/16	< 146	DP- 1174	03/14/16	< 150
DP- 1505	04/08/16	< 148	DP- 1506	04/08/16	< 148
DP- 2172	05/02/16	< 149	DP- 2173	05/02/16	172 ± 83
DP- 2773	06/01/16	< 183	DP- 2774	06/01/16	< 183
DP- 3527	07/10/16	< 147	DP- 3521	07/10/16	431 ± 98
DP- 4146	08/01/16	171 ± 81	DP- 4147	08/01/16	316 ± 88
DP- 4677	09/02/16	167 ± 91	DP- 4678	09/02/16	511 ± 105
DP- 5342	10/05/16	< 142	DP- 5343	10/05/16	554 ± 98
DP- 6082	11/03/16	< 180	DP- 6083	11/03/16	< 180
DP- 6690	12/01/16	< 152	DP- 6691	12/01/16	< 152
D-112			D-114		
DP- 124	01/07/16	< 145	DP- 125	01/07/16	659 ± 102
DP- 806	02/24/16	< 155	DP- 807	02/24/16	< 196
DP- 1175	03/14/16	< 150	DP- 1176	03/14/16	< 197
DP- 1507	04/08/16	191 ± 84	DP- 1508	04/08/16	203 ± 122
DP- 2174	05/02/16	< 149	DP- 2176	05/02/16	435 ± 95
DP- 2775	06/01/16	< 183	DP- 2777	06/01/16	< 183
DP- 3523	07/10/16	495 ± 101	DP- 3524	07/10/16	287 ± 92
DP- 4148	08/01/16	< 150	DP- 4149	08/01/16	278 ± 87
DP- 4679	09/02/16	283 ± 95	DP- 4680	09/02/16	234 ± 93
DP- 5344	10/05/16	1007 ± 116	DP- 5345	10/05/16	759 ± 107
DP- 6084	11/03/16	< 180	DP- 6085	11/03/16	< 180
DP- 6692	12/01/16	< 152	DP- 6693	12/01/16	< 152
D-127			D-128		
	ND[a]			ND[a]	
DP- 808	02/24/16	1584 ± 141	DP- 809	02/24/16	415 ± 98
DP- 1178	03/14/16	1796 ± 145	DP- 1179	03/14/16	310 ± 94
DP- 1509	04/08/16	1084 ± 120	DP- 1511	04/08/16	530 ± 99
DP- 2177	05/02/16	2684 ± 167	DP- 2178	05/02/16	< 149
DP- 2778	06/01/16	762 ± 122	DP- 2779	06/01/16	365 ± 109
DP- 3525	07/10/16	3858 ± 197	DP- 3526	07/10/16	1743 ± 144
DP- 4150	08/01/16	2173 ± 153	DP- 4151	08/01/16	734 ± 106
DP- 4681	09/01/16	5387 ± 229	DP- 4682	09/01/16	1060 ± 125
DP- 5346	10/05/16	5820 ± 234	DP- 5347	10/05/16	2794 ± 170
DP- 6086	11/03/16	837 ± 119	DP- 6087	11/03/16	< 180
DP- 6694	12/01/16	510 ± 98	DP- 6695	12/01/16	< 152

[a] "ND" = No data; sample not available

D-1A. Groundwater Protection Program Summary.

Precipitation, monthly collections, analyses for gamma emitting isotopes.

Location: D-16

		Concentration (pCi/L)											
Lab Code	Date	^{54}Mn	^{59}Fe	^{58}Co	^{60}Co	^{65}Zn	^{95}Nb	^{95}Zr	^{131}I	^{134}Cs	^{137}Cs	^{140}Ba	^{140}La
DP- 122	01/07/16	< 2.5	< 4.7	< 2.6	< 2.1	< 4.3	< 2.4	< 2.8	< 5.2	< 2.6	< 2.6	< 15.1	< 3.7
DP- 804	02/24/16	< 8.3	< 13.2	< 5.5	< 5.9	< 11.5	< 7.3	< 9.8	< 8.5	< 7.7	< 6.0	< 30.3	< 5.8
DP- 1173	03/14/16	< 6.3	< 6.6	< 6.3	< 6.2	< 10.2	< 8.2	< 13.1	< 15.9	< 5.7	< 6.1	< 39.8	< 7.6
DP- 1505	04/08/16	< 2.6	< 2.3	< 2.2	< 1.9	< 3.6	< 2.6	< 3.5	< 3.9	< 2.0	< 2.5	< 12.0	< 2.0
DP- 2172	05/02/16	< 5.0	< 11.6	< 5.2	< 6.8	< 5.3	< 6.3	< 11.8	< 8.9	< 5.6	< 5.0	< 26.2	< 5.2
DP- 2773	06/01/16	< 5.8	< 12.7	< 4.1	< 5.4	< 6.5	< 6.6	< 9.7	< 9.7	< 5.8	< 6.5	< 43.1	< 4.3
DP- 3527	07/10/16	< 2.3	< 3.4	< 3.3	< 1.4	< 4.2	< 3.2	< 2.9	< 6.2	< 2.6	< 1.8	< 10.6	< 3.4
DP- 4146	08/01/16	< 4.4	< 7.5	< 4.7	< 3.9	< 9.0	< 7.9	< 7.1	< 11.0	< 5.7	< 4.5	< 30.4	< 7.2
DP- 4677	09/02/16	< 4.3	< 7.9	< 5.0	< 1.8	< 4.5	< 3.3	< 6.7	< 12.1	< 5.0	< 4.0	< 22.3	< 4.7
DP- 5342	10/05/16	< 3.7	< 2.7	< 3.4	< 3.0	< 3.3	< 3.0	< 3.4	< 6.7	< 3.9	< 4.0	< 21.9	< 3.2
DP- 6082	11/03/16	< 5.4	< 11.3	< 5.3	< 3.1	< 4.5	< 6.4	< 6.7	< 13.1	< 6.1	< 5.4	< 24.6	< 6.1
DP- 6890	12/01/16	< 6.5	< 3.8	< 4.8	< 4.6	< 3.8	< 7.2	< 8.3	< 9.3	< 6.3	< 5.5	< 25.7	< 7.1

D-2. Groundwater Protection Program Summary.

Ground water, Monitoring wells, analyses for tritium [a].

Lab Code	Date	H-3 (pCi/L)	Lab Code	Date	H-3 (pCi/L)
	D-111A			(01A)	
DWW- 678	02/11/16	< 146	DWW- 4655	08/23/16	270 ± 89
DWW- 1923	03/30/16	< 147	DWW- 6223	11/07/16	< 180
DWW- 1757	04/12/16	< 173			
DWW- 2628	05/09/16	320 ± 91			
	D-111B			(01B)	
DWW- 679	02/11/16	< 146	DWW- 2629	05/09/16	< 152
DWW- 1924	03/30/16	< 147	DWW- 4656	08/23/16	< 152
DWW- 1758	04/12/16	< 173	DWW- 6224	11/07/16	< 180
	D-112A			(02A)	
DWW- 680	02/11/16	< 146	DWW- 4030	07/14/16	< 150
DWW- 1759	04/12/16	< 173	DWW- 4657	08/26/16	< 151
DWW- 2630	05/09/16	< 152	DWW- 6225	11/07/16	< 179
	D-112B			(02B)	
DWW- 681	02/11/16	< 146	DWW- 4658	08/24/16	< 152
DWW- 1760	04/12/16	< 173	DWW- 6226	11/07/16	< 180
DWW- 2631	05/09/16	< 152			
	D-113A			(03A)	
DWW- 782	02/11/16	< 171	DWW- 4659	08/24/16	< 152
DWW- 1761	04/12/16	< 173	DWW- 6227	11/07/16	< 180
DWW- 2632	05/10/16	< 152			
	D-113B			(03B)	
DWW- 783	02/11/16	< 171	DWW- 4660	08/24/16	< 152
DWW- 1762	04/12/16	< 173	DWW- 6228	11/07/16	< 180
DWW- 2633	05/10/16	< 152			
	D-114A			(04A)	
DWW- 682	02/15/16	< 146	DWW- 2389	05/07/16	182 ± 82
DWW- 1925	03/30/16	< 147	DWW- 4585	08/22/16	263 ± 89
DWW- 1764	04/12/16	< 173	DWW- 6229	11/08/16	< 180
	D-114B			(04B)	
DWW- 684	02/15/16	< 146	DWW- 2390	05/07/16	< 146
DWW- 1926	03/30/16	< 147	DWW- 4586	08/22/16	< 152
DWW- 1765	04/12/16	< 173	DWW- 6230	11/08/16	< 180
	D-115A			(05A)	
DWW- 685	02/12/16	< 146	DWW- 4661	08/24/16	231 ± 87
DWW- 1766	04/11/16	< 173	DWW- 6273	11/07/16	< 180
DWW- 2634	05/10/16	< 152			
	D-115B			(05B)	
DWW- 686	02/12/16	< 146	DWW- 4662	08/24/16	< 152
DWW- 1767	04/11/16	< 173	DWW- 6274	11/07/16	< 180
DWW- 2635	05/10/16	< 152			
	D-116A			(06A)	
DWW- 784	02/17/16	< 171	DWW- 4587	08/24/16	< 152
DWW- 1768	04/12/16	< 173	DWW- 6275	11/07/16	< 180
DWW- 2636	05/10/16	< 152			
	D-116B			(06B)	
DWW- 785	02/17/16	< 171	DWW- 4588	08/24/16	< 152
DWW- 1769	04/12/16	< 173	DWW- 6276	11/07/16	< 180
DWW- 2637	05/10/16	< 152			

[a] Analyses for gamma, gross alpha, Sr-89, Sr-90, Fe-55 and Ni-63 will be performed if tritium activity > 1K pCi/L.

D-2. **Groundwater Protection Program Summary.**
Ground water, Monitoring wells, analyses for tritium [a].

Lab Code	Date	H-3 (pCi/L)	Lab Code	Date	H-3 (pCi/L)
		D-127A		(07A)	
DWW- 345	01/14/16	222 ± 85	DWW- 6280	11/08/16	1441 ± 143
DWW- 786	02/16/16	232 ± 94			
DWW- 1066	02/25/16	290 ± 84			
DWW- 1338	03/29/16	205 ± 86			
DWW- 1927	04/04/16	512 ± 98			
DWW- 1770	04/15/16	445 ± 100			
DWW- 2391	05/05/16	615 ± 109			
DWW- 3054	06/13/16	579 ± 99			
DWW- 4663	08/26/16	501 ± 100			
		D-127B		(07B)	
DWW- 787	02/16/16	< 171	DWW- 2392	05/06/16	< 145
DWW- 1339	03/29/16	< 152	DWW- 4665	08/26/16	< 151
DWW- 1771	04/15/16	< 173	DWW- 6276	11/08/16	< 180
		D-128A		(08A)	
DWW- 656	02/16/16	7455 ± 262	DWW- 3194	06/02/16	18984 ± 408
DWW- 657	02/19/16	19133 ± 406	DWW- 3719	06/09/16	36638 ± 560
DWW- 821	02/25/16	65862 ± 739 [b]	DWW- 3732	06/13/16	32441 ± 527
DWW- 890	03/02/16	95729 ± 916	DWW- 3733	06/16/16	38775 ± 576
DWW- 967	03/08/16	14034 ± 802	DWW- 3869	06/20/16	42804 ± 604
DWW- 1027	03/10/16	12892 ± 774	DWW- 4475	06/27/16	40688 ± 592
DWW- 1151	03/16/16	30621 ± 612	DWW- 4600	07/05/16	39865 ± 589
DWW- 1204	03/23/16	31672 ± 617	DWW- 4601	07/12/16	26621 ± 483
DWW- 1312	03/30/16	27444 ± 483	DWW- 4699	07/18/16	13218 ± 345
DWW- 1742	04/02/16	21162 ± 427	DWW- 4969	07/25/16	6061 ± 240
DWW- 1470	04/04/16	28616 ± 491	DWW- 4970	08/01/16	5123 ± 223
DWW- 1742	04/08/16	31009 ± 515	DWW- 4971	08/10/16	5930 ± 238
DWW- 1743	04/11/16	23885 ± 453	DWW- 5386	08/15/16	33919 ± 372
DWW- 1559	04/13/16	22327 ± 437	DWW- 5387	08/29/16	30900 ± 355
DWW- 2009	04/15/16	21638 ± 405	DWW- 5276	09/06/16	46677 ± 638
DWW- 1744	04/18/16	56037 ± 668	DWW- 5277	09/13/16	64370 ± 747
DWW- 2492	04/20/16	19535 ± 387	DWW- 5219	09/20/16 [c]	64755 ± 749
DWW- 2010	04/22/16	16683 ± 357	DWW- 5221	09/27/16	14816 ± 364
DWW- 2011	04/25/16	17456 ± 365	DWW- 5716	10/04/16	26929 ± 486
DWW- 2493	04/27/16	19415 ± 384	DWW- 5525	10/11/16	80520 ± 722
DWW- 2494	04/29/16	20597 ± 396	DWW- 5717	10/18/16	91661 ± 899
DWW- 2495	05/02/16	21940 ± 407	DWW- 5371	10/25/16	183959 ± 1095
DWW- 2531	05/03/16	19253 ± 406	DWW- 6376	11/01/16	100052 ± 857
DWW- 2532	05/09/16	15520 ± 366	DWW- 6340	11/08/16	77794 ± 848
DWW- 2533	05/16/16	14342 ± 354	DWW- 6833	11/15/16	71273 ± 784
DWW- 3116	05/26/16	15533 ± 367	DWW- 6839	11/22/16	90460 ± 911
DWW- 3120	05/30/16	19892 ± 414	DWW- 7019	12/21/16	93845 ± 895
		D-128B		(08B)	
DWW- 346	01/14/16	959 ± 115	DWW- 6279	11/08/16	900 ± 124
DWW- 788	02/16/16	989 ± 119			
DWW- 658	02/19/16	1178 ± 131			
DWW- 1066	02/25/16	615 ± 102			
DWW- 1772	04/15/16	1132 ± 122			
DWW- 2393	05/05/16	736 ± 106			
DWW- 3055	06/13/16	485 ± 96			
DWW- 4793	09/06/16	372 ± 99			
		D-129A		(09A)	
DWW- 348	01/14/16	370 ± 92			
DWW- 789	02/16/16	230 ± 95			
DWW- 1067	02/25/16	334 ± 90			
DWW- 1334	03/29/16	161 ± 84			
DWW- 1773	04/14/16	< 173			
DWW- 2395	05/05/16	194 ± 92			
DWW- 4666	08/25/16	976 ± 110			
DWW- 6341	11/08/16	1356 ± 140			

[a] Analyses for gamma, gross alpha, Sr-89, Sr-90, Fe-55 and Ni-63 will be performed if tritium activity > 1K pCi/L
[b] Tritium repeated with a result of 66,013±744 pCi/L.
[c] Quality assurance duplicate.

D-2. Groundwater Protection Program Summary.
Ground water, Monitoring wells, analyses for tritium [a].

Lab Code	Date	H-3 (pCi/L)	Lab Code	Date	H-3 (pCi/L)
	D-129B			(09B)	
DWW- 669	02/15/16	663 ± 114	DWW- 6343	11/08/16	515 ± 109
DWW- 780	02/16/16	531 ± 105			
DWW- 1069	02/25/16	478 ± 96			
DWW- 1068	03/07/16	589 ± 101			
DWW- 1335	03/29/16	435 ± 96			
DWW- 1774	04/14/15	569 ± 105			
DWW- 2396	05/05/16	560 ± 103			
DWW- 4667	08/25/16	569 ± 102			
	D-130A			(10A)	
DWW- 791	02/15/16	< 171	DWW- 6281	11/08/16	< 180
DWW- 1070	02/16/16	< 147			
DWW- 1071	02/26/16	< 147			
DWW- 1336	03/29/16	< 152			
DWW- 1775	04/14/16	< 173			
DWW- 2397	05/06/16	173 ± 81			
DWW- 4668	08/25/16	167 ± 84			
	D-130B			(10B)	
DWW- 792	02/16/16	< 171	DWW- 6282	11/08/16	< 180
DWW- 1072	02/26/16	< 147			
DWW- 1337	03/29/16	< 152			
DWW- 1776	04/14/16	< 173			
DWW- 2398	05/06/16	< 145			
DWW- 4669	08/25/16	< 152			
	D-131A			(11A)	
DWW- 687	02/15/16	444 ± 92			
DWW- 1928	03/30/16	173 ± 82			
DWW- 1777	04/13/16	< 173			
DWW- 2399	05/07/16	168 ± 82			
DWW- 4589	08/22/16	< 152			
DWW- 6293	11/06/16	< 180			
	D-131B			(11B)	
DWW- 688	02/15/16	< 146	DWW- 6284	11/08/16	< 180
DWW- 1929	03/30/16	< 147			
DWW- 1778	04/13/16	< 173			
DWW- 2400	05/07/16	< 145			
DWW- 4590	08/22/16	< 152			
	D-132A			(12A)	
DWW- 689	02/15/16	< 146	DWW- 4691	07/18/16	2272 ± 159
DWW- 1073	02/26/16	< 147	DWW- 5006	07/25/16	1681 ± 146
DWW- 1340	03/30/16	688 ± 107	DWW- 4591	08/01/16	1467 ± 135
DWW- 1779	04/13/16	1283 ± 127	DWW- 5007	08/10/16	911 ± 122
DWW- 3121	05/26/16	3272 ± 180	DWW- 5008	08/15/16	725 ± 115
DWW- 3122	05/30/16	4015 ± 196	DWW- 4592	08/22/16	556 ± 102
DWW- 3195	06/02/16	4038 ± 201	DWW- 5637	10/18/16	474 ± 104
DWW- 3721	06/06/16	3663 ± 191	DWW- 6285	11/08/16	250 ± 97
DWW- 3722	06/05/16	3344 ± 183			
DWW- 3734	06/13/16	3531 ± 186			
DWW- 3670	06/20/16	3145 ± 178			
DWW- 4476	06/27/16	2554 ± 166			
DWW- 4602	07/05/16	2867 ± 175			
DWW- 4603	07/12/16	2563 ± 166			
	D-132B			(12B)	
DWW- 690	02/15/16	< 146	DWW- 4593	08/22/16	< 152
DWW- 1075	02/26/16	< 147	DWW- 6286	11/08/16	< 180
DWW- 1930	03/30/16	< 147			
DWW- 1780	04/13/16	< 173			
DWW- 2401	05/07/16	< 145			

[a] Quality assurance duplicate

D-2. Groundwater Protection Program Summary.

Ground water, Monitoring wells, analyses for tritium [a].

Lab Code	Date		H-3 (pCi/L)		Lab Code	Date	H-3 (pCi/L)
			D-133A			(13A)	
DWW- 691	02/15/16		< 146		DWW- 6287	11/08/16	< 180
DWW- 1781	04/15/16		< 173				
DWW- 2638	05/10/16		< 152				
DWW- 4670	08/22/16		154 ± 83				
			D-133B			(13B)	
DWW- 692	02/15/16		< 146		DWW- 6288	11/08/16	< 180
DWW- 1782	04/15/16		< 173				
DWW- 2639	05/10/16		< 152				
DWW- 4671	08/22/16		< 156				
			D-134A			(14A)	
DWW- 763	02/16/16		2118 ± 149		DWW- 4604	07/05/16	12445 ± 335
DWW- 922	02/26/16		2770 ± 173	[b]	DWW- 4605	07/12/16	10033 ± 303
DWW- 861	03/02/16		5059 ± 242		DWW- 4692	07/18/16	8418 ± 279
DWW- 988	03/08/16		18016 ± 691		DWW- 4972	07/25/16	17409 ± 384
DWW- 1026	03/10/16		20476 ± 942		DWW- 4973	08/01/16	20559 ± 427
DWW- 1152	03/16/16		81136 ± 025		DWW- 4974	08/10/16	31632 ± 527
DWW- 1205	03/23/16		101711 ± 929		DWW- 5388	08/15/16	13395 ± 239
DWW- 1313	03/30/16		130095 ± 1042		DWW- 5389	08/25/16	9471 ± 297
DWW- 1745	04/02/16		130878 ± 1050		DWW- 5390	08/29/16	13837 ± 354
DWW- 1471	04/04/16		147058 ± 1105		DWW- 5278	09/06/16	21302 ± 434
DWW- 1740	04/08/16		101143 ± 823		DWW- 5279	09/13/16	29112 ± 606
DWW- 1747	04/11/16		78613 ± 814		DWW- 5222	09/20/16	80249 ± 633
DWW- 1560	04/13/16		69266 ± 783		DWW- 5223	09/27/16	32084 ± 530
DWW- 2012	04/15/16		63403 ± 682		DWW- 5391	10/04/16	25448 ± 473
DWW- 1748	04/18/16		20429 ± 420		DWW- 5526	10/11/16	18904 ± 408
DWW- 2497	04/20/16		48270 ± 586		DWW- 5716	10/18/16	17131 ± 389
DWW- 2013	04/22/16		43933 ± 569		DWW- 6572	10/25/16	11610 ± 304
DWW- 2014	04/25/16		39152 ± 538		DWW- 6377	11/01/16	8297 ± 261
DWW- 2498	04/27/16		35980 ± 517		DWW- 6344	11/08/16	11739 ± 339
DWW- 2499	04/29/16		33622 ± 500		DWW- 6837	11/15/16	31494 ± 624
DWW- 2500	05/02/16		32136 ± 489		DWW- 6836	11/22/16	32808 ± 534
DWW- 2535	05/06/16		24077 ± 455		DWW- 665	11/29/16	51694 ± 636
DWW- 2536	05/09/16		26877 ± 480		DWW- 7020	12/21/16	63730 ± 739
DWW- 2537	05/16/16		18627 ± 401				
DWW- 3123	05/26/16		58720 ± 704				
DWW- 3196	05/30/16		63161 ± 735				
DWW- 3197	06/02/16	8:21	58963 ± 711	[c]			
DWW- 3198	06/02/16	8:30	44176 ± 616	[c]			
DWW- 3199	06/02/16	8:36	45650 ± 626	[c]			
DWW- 3200	06/02/16	8:44	45874 ± 628	[c]			
DWW- 3723	06/06/16		52630 ± 671				
DWW- 3724	06/09/16		36586 ± 560				
DWW- 3735	06/13/16		13934 ± 350				
DWW- 3736	06/16/16		16187 ± 376				
DWW- 3871	06/20/16		14100 ± 352				
DWW- 4477	06/27/16		22129 ± 440				
D-134B						(14B)	
DWW- 794	02/16/16		579 ± 106		DWW- 5269	11/08/16	352 ± 102
DWW- 1783	04/14/16		768 ± 111				
DWW- 2501	05/05/16		930 ± 122				
DWW- 2402	05/06/16		895 ± 112				
DWW- 3057	06/13/16		581 ± 99				
DWW- 4594	08/26/16		788 ± 111				

[a] Analyses for gamma, gross alpha, Sr-89, Sr-90, Fe-55 and Ni-63 will be performed if tritium activity > 1K pCi/L

[b] Tritium repeated with a result of 2,785±177 pCi/L.

[c] Purge pump test performed for quality assurance

D-2. Groundwater Protection Program Summary.
Ground water, Monitoring wells, analyses for tritium *

Lab Code	Date	H-3 (pCi/L)	Lab Code	Date	H-3 (pCi/L)
D-13SA				(15A)	
DWW- 795	02/17/16	< 171	DWW- 4032	07/14/16	< 150
DWW- 1931	03/30/16	< 147	DWW- 4586	08/23/16	< 152
DWW- 1785	04/12/16	< 173	DWW- 6280	11/08/16	< 182
DWW- 2403	05/07/16	< 145			
D-13SB				(15B)	
DWW- 796	02/17/16	< 171	DWW- 2404	05/07/16	< 145
DWW- 1932	03/30/16	< 147	DWW- 4587	08/23/16	< 152
DWW- 1786	04/15/16	< 173	DWW- 6281	11/08/16	< 182
D-13SC				(16A)	
DWW- 693	02/15/16	< 146	DWW- 4588	08/25/16	< 152
DWW- 1787	04/15/16	< 173	DWW- 6282	11/08/16	< 182
DWW- 2405	05/05/16	< 145			
D-13SD				(16B)	
DWW- 694	02/15/16	< 146	DWW- 4589	08/25/16	< 152
DWW- 1788	04/15/16	< 173	DWW- 6283	11/08/16	< 182
DWW- 2406	05/05/16	< 145			
D-137				(17C)	
DWW- 797	02/15/16	< 171	DWW- 4672	08/25/16	< 156
DWW- 1789	04/14/16	< 173	DWW- 6284	11/08/16	< 182
DWW- 2407	05/05/16	< 145			
D-62				(18A)	
DWW- 2496	05/05/16	50218 ± 807	DWW- 5393	09/01/16	28270 ± 469
DWW- 3036	05/19/16	23094 ± 445	DWW- 5280	09/06/16	34256 ± 548
DWW- 3201	06/02/16	23290 ± 451	DWW- 5281	09/13/16	17630 ± 395
DWW- 3737	06/09/16	27705 ± 488	DWW- 5224	09/20/16	9183 ± 291
DWW- 3738	06/16/16	21278 ± 429	DWW- 5225	09/27/16	3561 ± 190
DWW- 4478	06/23/16	20406 ± 423	DWW- 5719	10/04/16	3870 ± 196
DWW- 4479	06/29/16	17562 ± 393	DWW- 5528	10/11/16	27114 ± 486
DWW- 3873	07/06/16	11719 ± 322	DWW- 5720	10/18/16	18576 ± 405
DWW- 4606	07/14/16	13339 ± 346	DWW- 6373	10/25/16	32269 ± 492
DWW- 4693	07/21/16	12245 ± 333	DWW- 6376	11/01/16	12550 ± 315
DWW- 4694	07/29/16	20295 ± 424	DWW- 6345	11/08/16	12140 ± 344
DWW- 4976	08/04/16	16921 ± 388	DWW- 6832	11/15/16	18987 ± 409
DWW- 4975	08/10/16	10779 ± 313	DWW- 6836	11/22/16	16802 ± 385
DWW- 5392	08/26/16	21195 ± 435	DWW- 7021	12/21/16	17366 ± 392
D-63				(19A)	
DWW- 2015	04/22/16	8678 ± 265	DWW- 4031	07/14/16	< 150
DWW- 2538	05/06/16	366 ± 94	DWW- 4033	07/21/16	< 150
DWW- 3037	05/19/16	195 ± 91	DWW- 5009	08/04/16	< 161
DWW- 3725	06/02/16	< 150	DWW- 5010	08/10/16	< 160
DWW- 3170	06/16/16	< 149	DWW- 4575	08/18/16	< 156
DWW- 3689	06/23/16	< 149	DWW- 4674	08/26/16	< 156
DWW- 3690	06/29/16	< 149	DWW- 6285	11/08/16	< 182
DWW- 3691	07/06/16	< 149			
D-64				(20A)	
DWW- 2017	04/21/16	29133 ± 466	DWW- 4029	07/14/16	< 150
DWW- 2539	05/05/16	4649 ± 211	DWW- 4034	07/21/16	< 150
DWW- 3038	05/19/16	< 149	DWW- 5011	08/04/16	< 161
DWW- 3726	06/02/16	< 150	DWW- 5012	08/10/16	< 160
DWW- 3171	06/16/16	< 149	DWW- 4675	08/18/16	< 156
DWW- 3692	06/23/16	198 ± 94	DWW- 4676	08/26/16	< 156
DWW- 3693	06/29/16	< 149	DWW- 5287	09/27/16	< 157
DWW- 3695	07/06/16	< 149	DWW- 6286	11/08/16	< 182
D-65				(21A)	
DWW- 1473	04/06/16	9216 ± 285	DWW- 4607	07/14/16	29988 ± 504
DWW- 2016	04/22/16	18913 ± 379	DWW- 4035	07/21/16	1020 ± 117
DWW- 2540	05/05/16	7185 ± 256	DWW- 5013	08/04/16	798 ± 118
DWW- 3039	05/19/16	3121 ± 176	DWW- 5014	08/10/16	350 ± 102
DWW- 3727	06/02/16	6273 ± 242	DWW- 5394	08/18/16	646 ± 119
DWW- 3739	06/16/16	17380 ± 390	DWW- 5396	08/26/16	1364 ± 136
DWW- 4480	06/23/16	20029 ± 419	DWW- 4794	09/06/16	744 ± 114
DWW- 4481	06/29/16	1369 ± 132	DWW- 5288	09/27/16	192 ± 86
DWW- 3874	07/06/16	12677 ± 334	DWW- 6287	11/08/16	207 ± 98

* Analyses for gamma, gross alpha, Sr-89, Sr-90, Fe-55 and Ni-63 will be performed if tritium activity > 1K pCi/L

D-2. **Groundwater Protection Program Summary**

Ground water, Monitoring wells, analyses for tritium *.

D-66				(22A)	
DWW- 1472	04/05/16	162893 ± 1161	DWW- 5400	09/01/16	22894 ± 451
DWW- 2541	05/05/16	68723 ± 762	DWW- 5282	09/06/16	93686 ± 900
DWW- 3040	05/19/16	53435 ± 673	DWW- 5283	09/13/16	144410 ± 1116
DWW- 3728	06/02/16	92235 ± 884	DWW- 5226	09/20/16	296589 ± 1596
DWW- 3740	06/16/16	20089 ± 417	DWW- 5227	09/22/16	192987 ± 1288
DWW- 3875	06/20/16	12359 ± 331	DWW- 5228	09/27/16	36515 ± 564
DWW- 4482	06/23/16	19066 ± 419	DWW- 5721	10/04/16	25947 ± 477
DWW- 4483	06/29/16	19467 ± 414	DWW- 5529	10/11/16	13680 ± 350
DWW- 3876	07/06/16	13197 ± 341	DWW- 5722	10/18/16	37543 ± 571
DWW- 4608	07/14/16	20403 ± 425	DWW- 6374	10/25/16	52920 ± 626
DWW- 4695	07/21/16	36380 ± 564	DWW- 6379	11/01/16	74397 ± 740
DWW- 4696	07/29/16	22531 ± 446	DWW- 6346	11/08/16	59717 ± 744
DWW- 4976	08/04/16	47990 ± 647	DWW- 6829	11/15/16	40315 ± 591
DWW- 5397	08/10/16	21359 ± 437	DWW- 6835	11/22/16	108945 ± 958
DWW- 5398	08/18/16	62101 ± 735	DWW- 7022	12/21/16	92289 ± 888
DWW- 5399	08/26/16	76905 ± 817			
D-67				(23A)	
DWW- 3124	05/19/16	39811 ± 582	DWW- 5284	09/06/16	13174 ± 345
DWW- 3729	06/02/16	33881 ± 539	DWW- 5285	09/13/16	18686 ± 407
DWW- 3877	06/16/16	16753 ± 363	DWW- 5229	09/20/16	34062 ± 546
DWW- 3878	06/20/16	12096 ± 327	DWW- 5289	09/27/16	1654 ± 141
DWW- 3696	06/23/16	964 ± 116	DWW- 5723	10/04/16	36207 ± 561
DWW- 4465	06/29/16	18030 ± 398	DWW- 5530	10/11/16	60516 ± 832
DWW- 3879	07/06/16	21571 ± 432	DWW- 5725	10/18/16	64282 ± 745
DWW- 4609	07/14/16	18125 ± 401	DWW- 6375	10/25/16	91508 ± 820
DWW- 4697	07/21/16	22909 ± 450	DWW- 6380	11/01/16	80255 ± 768
DWW- 4698	07/29/16	19768 ± 419	DWW- 6347	11/08/16	43148 ± 634
DWW- 4979	08/04/16	14322 ± 359	DWW- 6831	11/15/16	32736 ± 534
DWW- 5401	08/10/16	10847 ± 317	DWW- 6834	11/22/16	40078 ± 589
DWW- 5402	08/26/16	9697 ± 303	DWW- 7023	12/21/16	70835 ± 779
DWW- 5403	09/01/16	12494 ± 338			
MW-24A					
DWW- 7024	12/30/16	< 154			
MW-25A					
DWW- 7025	12/21/16	3677 ± 192	DWW- 7026	12/30/16	4557 ± 211
MW-26A					
DWW- 7027	12/21/16	3077 ± 179	DSW- 7028	12/30/16	2922 ± 175

* Analyses for gamma, gross alpha, Sr-89, Sr-90, Fe-55 and Ni-63 will be performed if tritium activity > 1K pCi/L .

D-2. Groundwater Protection Program Summary

Ground water, Monitoring wells, analyses for tritium [*].

D-66			(EW-01A)		
DWW- 2542	05/06/16	46332 ± 627			
DWW- 4699	07/29/16	3182 ± 182			
D-69			(EW-02A)		
DWW- 3742	06/09/16	905 ± 115			
Surface water, analysis for tritium.			(2MH209)		
D-119					
DSW- 2780	05/18/16	409 ± 111	DSW- 5405	07/14/16	1784 ± 149
DSW- 5404	07/13/16	1532 ± 142	DSW- 6382	11/07/16	319 ± 102
D-120			(2MH210)		
DSW- 6237	11/07/16	< 180			
D-121			(2MH211)		
DSW- 2781	05/18/16	444 ± 112	DSW- 6231	11/07/16	< 180
DSW- 3697	07/09/16	355 ± 92			
D-122			(Sluice Pond)		
DSW- 800	02/24/16	180 ± 92	DSW- 3699	07/13/16	< 149
DSW- 2782	05/18/16	601 ± 117	DSW- 6299	11/08/16	< 182
DSW- 3698	07/06/16	213 ± 85			
D-123			(S. Drainage Ditch)		
DSW- 801	02/24/16	< 170	DSW- 3700	07/13/16	401 ± 94
DSW- 1172	03/11/16	155 ± 87			
D-124			(N. Drainage Ditch)		
DSW- 803	02/24/16	< 170	DSW- 3701	07/13/16	474 ± 97
DSW- 3041	05/18/16	< 146	DSW- 6300	11/08/16	< 182
D-125			(Onsite S. Storm Drain Outfall)		
DSW- 2783	05/18/16	265 ± 106	DSW- 6301	11/08/16	< 182
DSW- 3702	07/13/16	< 149			
D-89			(MH221)		
DSW- 3703	07/11/16	236 ± 86			
D-101			(1MH109)		
DSW- 6381	11/07/16	2671 ± 166			

[*] Analyses for gamma, gross alpha, Sr-89, Sr-90, Fe-55 and Ni-63 will be performed if tritium activity > 1K pCi/L

D-2A. Groundwater Protection Program Summary.

Monitoring wells, analyses for gamma-emitting isotopes.

Lab Code	Collection Date	^{54}Mn	^{59}Fe	^{60}Co	^{65}Zn	^{95}Nb	^{95}Zr	^{134}Cs	^{137}Cs	^{140}Ba	^{140}La
					D-12BA (MW-08A)						
DWW- 656	2/16/2016	< 2.7	< 4.6	< 2.3	< 1.6	< 5.2	< 3.4	< 5.2	< 2.5	< 2.2	< 11.8	< 3.6
DWW- 657	2/19/2016	< 2.8	< 4.4	< 2.9	< 1.7	< 3.2	< 1.8	< 5.1	< 2.9	< 2.2	< 16.0	< 2.8
DWW- 821	2/25/2016	< 3.0	< 7.7	< 3.1	< 3.7	< 6.5	< 4.1	< 7.2	< 3.9	< 4.4	< 19.7	< 5.5
DWW- 890	3/2/2016	< 2.7	< 3.9	< 2.8	< 3.0	< 3.4	< 3.1	< 5.0	< 3.2	< 3.4	< 17.9	< 3.6
DWW- 987	3/8/2016	< 2.6	< 5.6	< 1.8	< 2.0	< 5.6	< 3.4	< 5.1	< 2.6	< 2.4	< 13.6	< 4.1
DWW- 1027	3/10/2016	< 3.0	< 5.8	< 2.9	< 3.2	< 4.9	< 2.7	< 4.7	< 3.2	< 3.6	< 17.4	< 2.0
DWW- 1151	3/16/2016	< 2.7	< 5.7	< 2.7	< 2.5	< 5.9	< 3.0	< 4.1	< 2.8	< 3.4	< 18.7	< 3.8
DWW- 1204	3/23/2016	< 2.0	< 5.8	< 3.2	< 2.6	< 5.6	< 3.4	< 4.6	< 2.6	< 2.6	< 14.4	< 1.8
DWW- 1312	3/30/2016	< 2.5	< 3.6	< 2.7	< 3.3	< 5.8	< 3.5	< 2.7	< 3.1	< 2.8	< 19.8	< 4.8
DWW- 1470	4/4/2016	< 2.2	< 3.5	< 3.3	< 1.7	< 3.2	< 4.5	< 3.9	< 2.4	< 3.4	< 44.4	< 10.6
DWW- 1559	4/13/2016	< 2.5	< 4.7	< 3.1	< 3.0	< 5.4	< 4.6	< 7.3	< 2.6	< 3.2	< 32.7	< 7.3
DWW- 1740	4/2/2016	< 3.3	< 7.6	< 3.3	< 3.1	< 4.0	< 5.4	< 4.8	< 3.2	< 3.3	< 48.1	< 6.6
DWW- 1742	4/8/2016	< 2.8	< 7.3	< 3.1	< 2.9	< 4.5	< 4.4	< 6.7	< 2.5	< 2.9	< 36.8	< 6.7
DWW- 1743	4/11/2016	< 2.8	< 5.8	< 2.5	< 2.8	< 5.6	< 4.5	< 5.5	< 2.6	< 2.9	< 45.3	< 9.2
DWW- 1744	4/18/2016	< 2.7	< 6.0	< 3.3	< 2.9	< 5.8	< 3.9	< 5.8	< 2.4	< 2.9	< 29.9	< 6.4
DWW- 2009	4/15/2016	< 3.6	< 4.6	< 2.5	< 3.2	< 4.8	< 5.1	< 6.1	< 3.3	< 2.7	< 25.7	< 9.9
DWW- 2010	4/22/2016	< 2.6	< 5.4	< 3.1	< 2.8	< 4.4	< 3.8	< 5.6	< 2.7	< 3.2	< 27.9	< 5.4
DWW- 2011	4/25/2016	< 2.8	< 6.0	< 3.8	< 2.0	< 6.4	< 2.3	< 6.8	< 3.2	< 3.1	< 28.0	< 3.7
DWW- 2492	4/20/2016	< 3.1	< 6.0	< 2.7	< 2.9	< 3.6	< 5.5	< 4.0	< 2.4	< 2.8	< 63.6	< 21.5 [b]
DWW- 2493	4/27/2016	< 2.5	< 7.0	< 2.8	< 1.6	< 5.9	< 4.7	< 6.2	< 2.6	< 2.4	< 56.0	< 10.3
DWW- 2494	4/29/2016	< 2.8	< 6.9	< 2.8	< 2.9	< 6.0	< 4.7	< 6.8	< 2.9	< 2.9	< 37.8	< 12.5
DWW- 2495	5/2/2016	< 3.0	< 8.7	< 3.5	< 2.8	< 5.4	< 3.6	< 4.7	< 2.5	< 2.8	< 46.0	< 10.6
DWW- 2531	5/6/2016	< 1.9	< 5.3	< 2.5	< 2.2	< 4.7	< 4.0	< 4.5	< 2.6	< 2.0	< 48.0	< 11.2
DWW- 2532	5/9/2016	< 2.7	< 5.2	< 3.2	< 2.8	< 4.5	< 4.4	< 5.1	< 2.5	< 2.3	< 25.1	< 11.3
DWW- 2533	5/16/2016	< 3.1	< 6.9	< 1.5	< 2.2	< 5.5	< 3.8	< 5.6	< 3.0	< 2.8	< 23.4	< 6.5
DWW- 3118	5/26/2016	< 3.5	< 8.4	< 2.1	< 3.3	< 5.3	< 6.8	< 7.4	< 2.6	< 3.4	< 82.9	< 10.9 [a]
DWW- 3120	5/30/2016	< 3.0	< 7.9	< 3.9	< 2.7	< 5.0	< 7.1	< 6.4	< 2.8	< 2.2	< 67.9	< 18.3
DWW- 3194	6/2/2016	< 2.9	< 8.0	< 2.9	< 3.2	< 5.0	< 6.3	< 7.0	< 3.3	< 3.1	< 53.2	< 9.8
DWW- 3719	6/9/2016	< 3.1	< 6.1	< 4.6	< 2.9	< 5.1	< 7.0	< 7.2	< 2.8	< 3.2	< 156.9	< 48.9 [a]
DWW- 3732	6/13/2016	< 3.1	< 5.9	< 4.5	< 3.3	< 6.4	< 5.0	< 9.3	< 3.4	< 3.5	< 203.5	< 56.6 [a]
DWW- 3733	6/16/2016	< 2.5	< 10.4	< 3.7	< 1.8	< 5.8	< 6.3	< 7.0	< 2.7	< 2.7	< 127.9	< 57.5 [a]
DWW- 3869	6/20/2016	< 2.8	< 11.6	< 3.3	< 2.3	< 5.4	< 5.1	< 5.9	< 2.5	< 3.0	< 161.7	< 49.4 [a]
DWW- 4475	6/27/2016	< 3.1	< 16.7	< 5.3	< 2.9	< 6.5	< 10.4	< 11.7	< 3.2	< 3.1	< 480.6	< 85.1 [a]
DWW- 4600	7/5/2016	< 2.9	< 11.6	< 3.3	< 3.1	< 6.2	< 10.8	< 10.5	< 3.2	< 3.1	< 457.9	< 60.7 [a]
DWW- 4601	7/12/2016	< 3.0	< 12.4	< 4.6	< 2.5	< 3.8	< 10.8	< 9.0	< 3.4	< 3.4	< 311.7	< 81.8 [a]
DWW- 4690	7/18/2016	< 3.7	< 10.8	< 4.6	< 2.9	< 5.9	< 6.7	< 10.0	< 3.1	< 2.3	< 199.2	< 49.9 [a]
DWW- 4969	7/25/2016	< 4.2	< 15.7	< 4.4	< 3.1	< 6.4	< 11.0	< 13.2	< 3.6	< 3.7	< 571.6	< 89.7 [a]
DWW- 4970	8/1/2016	< 2.7	< 14.3	< 3.5	< 2.0	< 3.3	< 10.2	< 8.3	< 3.1	< 2.3	< 240.7	< 57.6 [a]
DWW- 4971	8/10/2016	< 3.4	< 8.2	< 5.5	< 2.2	< 6.0	< 7.9	< 10.0	< 3.2	< 3.3	< 183.7	< 45.6 [a]
DWW- 5386	8/15/2016	< 2.6	< 14.4	< 5.3	< 1.5	< 4.6	< 12.5	< 8.2	< 2.6	< 1.9	< 495.7	< 179.2 [a]
DWW- 5387	8/29/2016	< 2.8	< 14.0	< 4.7	< 2.5	< 6.7	< 12.1	< 8.4	< 2.7	< 2.3	< 498.8	< 169.6 [a]
DWW- 5276	9/6/2016	< 2.4	< 6.7	< 2.4	< 2.7	< 6.0	< 4.3	< 7.4	< 3.1	< 2.6	< 83.1	< 14.9 [a]
DWW- 5277	9/13/2016	< 2.4	< 8.9	< 3.6	< 2.4	< 3.7	< 4.4	< 6.4	< 2.7	< 2.9	< 94.5	< 8.0 [a]
DWW- 5219	9/20/2016	< 2.4	< 9.0	< 3.7	< 3.1	< 6.1	< 6.1	< 6.5	< 3.1	< 3.3	< 85.2	< 26.1 [a]
DWW- 5221	9/27/2016	< 2.9	< 5.6	< 2.7	< 2.1	< 3.8	< 4.0	< 5.1	< 2.7	< 2.6	< 50.0	< 9.6
DWW- 5716	10/4/2016	< 2.6	< 8.9	< 3.6	< 3.1	< 5.0	< 6.7	< 6.0	< 3.0	< 3.1	< 97.3	< 15.0 [a]
DWW- 5525	10/11/2016	< 2.3	< 5.7	< 3.8	< 2.5	< 5.6	< 6.6	< 5.8	< 3.0	< 3.4	< 78.0	< 12.0 [a]
DWW- 5717	10/18/2016	< 2.6	< 6.4	< 3.8	< 2.6	< 5.6	< 5.5	< 5.9	< 2.7	< 2.7	< 104.1	< 15.3 [a]
DWW- 6371	10/25/2016	< 3.5	< 9.0	< 4.8	< 1.7	< 5.0	< 5.9	< 4.7	< 3.1	< 2.7	< 105.3	< 25.4 [a]
DWW- 6376	11/1/2016	< 2.7	< 9.8	< 4.1	< 2.4	< 5.4	< 6.7	< 5.4	< 3.5	< 3.0	< 103.9	< 20.1 [a]
DWW- 6340	11/8/2016	< 3.2	< 8.3	< 3.1	< 2.7	< 4.0	< 5.2	< 7.0	< 2.9	< 2.9	< 76.9	< 23.1 [a]
DWW- 6833	11/15/2016	< 2.4	< 9.7	< 3.6	< 2.1	< 5.1	< 6.2	< 4.3	< 2.7	< 2.9	< 107.8	< 21.6 [a]
DWW- 6839	11/22/2016	< 2.7	< 5.5	< 2.8	< 2.1	< 3.9	< 4.7	< 3.7	< 2.6	< 2.9	< 64.5	< 16.3 [a]
DWW- 7019	12/21/2016	< 3.6	< 7.3	< 2.3	< 2.4	< 4.5	< 3.9	< 5.2	< 3.3	< 2.7	< 55.4	< 10.0

[a] LLDs for Ba-140 and/or La-140 not reached due to age of samples and smaller sample size

D-2A. Groundwater Protection Program Summary.

Monitoring wells, analyses for gamma-emitting isotopes

Lab Code	Collection Date	^{54}Mn	^{59}Fe	^{60}Co	^{58}Co	^{65}Zn	^{95}Nb	^{95}Zr	^{134}Cs	^{137}Cs	^{140}Ba	^{140}La
						D-128B (MW-08B)						
DWW- 658	2/19/2016	< 2.4	< 5.4	< 2.3	< 2.4	< 4.9	< 3.2	< 3.5	< 2.7	< 2.0	< 14.2	< 3.8
DWW- 1772	4/15/2016	< 2.4	< 4.8	< 2.9	< 1.9	< 2.1	< 3.9	< 4.7	< 3.2	< 1.6	< 30.6	< 5.2
						D-129A (MW-09A)						
DWW- 6341	11/8/2016	< 2.5	< 5.6	< 4.5	< 2.8	< 6.9	< 7.5	< 8.1	< 3.4	< 3.0	< 78.2	< 18.1 [a]
						D-132A (MW-12A)						
DWW- 1779	4/13/2016	< 2.7	< 4.5	< 1.7	< 1.0	< 5.2	< 4.8	< 5.2	< 2.6	< 1.8	< 24.8	< 6.3
DWW- 3121	5/26/2016	< 2.9	< 5.1	< 2.4	< 2.2	< 6.4	< 4.8	< 6.2	< 3.2	< 2.4	< 53.1	< 16.1
DWW- 3122	5/30/2016	< 2.6	< 7.0	< 3.5	< 2.2	< 2.2	< 5.1	< 4.1	< 2.5	< 2.6	< 51.7	< 9.1
DWW- 3195	6/2/2016	< 1.9	< 6.7	< 2.9	< 3.0	< 4.6	< 4.5	< 6.9	< 3.0	< 2.9	< 53.0	< 12.1
DWW- 3721	6/6/2016	< 2.8	< 10.2	< 5.2	< 3.4	< 6.6	< 7.2	< 6.4	< 3.2	< 2.6	< 202.2	< 50.8 [a]
DWW- 3722	6/9/2016	< 3.1	< 10.7	< 2.6	< 2.8	< 6.6	< 10.1	< 8.4	< 3.3	< 2.7	< 144.3	< 66.4 [a]
DWW- 3734	6/13/2016	< 2.7	< 12.4	< 4.9	< 3.2	< 5.3	< 8.2	< 4.9	< 2.9	< 2.7	< 173.2	< 52.1 [a]
DWW- 3870	6/20/2016	< 2.8	< 13.0	< 3.1	< 2.5	< 5.8	< 8.2	< 8.4	< 2.8	< 2.1	< 248.5	< 85.4 [a]
DWW- 4476	6/27/2016	< 2.9	< 16.0	< 2.5	< 1.4	< 6.2	< 9.4	< 9.9	< 2.7	< 2.9	< 420.1	< 93.8 [a]
DWW- 4602	7/5/2016	< 2.9	< 12.6	< 2.4	< 2.1	< 4.6	< 10.6	< 9.2	< 2.6	< 3.1	< 376.4	< 89.1 [a]
DWW- 4603	7/12/2016	< 2.9	< 10.1	< 2.8	< 3.1	< 3.8	< 6.4	< 7.5	< 2.7	< 3.1	< 174.6	< 49.8 [a]
DWW- 4691	7/18/2016	< 2.8	< 11.7	< 4.1	< 2.3	< 5.3	< 7.5	< 7.0	< 2.4	< 3.2	< 245.3	< 37.6 [a]
DWW- 5006	7/25/2016	< 2.1	< 14.0	< 4.7	< 1.3	< 4.2	< 14.4	< 9.3	< 2.3	< 1.5	< 1264.6	< 187.1 [a]
DWW- 4591	8/1/2016	< 1.5	< 5.6	< 2.0	< 1.5	< 2.5	< 4.4	< 4.6	< 1.5	< 1.6	< 42.1	< 8.3
						D-134A (MW-14A)						
DWW- 793	2/16/2016	< 1.1	< 3.2	< 0.8	< 0.9	< 2.5	< 1.9	< 1.4	< 1.0	< 1.2	< 13.0	< 3.5
DWW- 622	2/26/2016	< 2.8	< 4.3	< 3.5	< 2.1	< 6.4	< 4.1	< 5.1	< 3.3	< 3.5	< 12.9	< 4.3
DWW- 891	3/2/2016	< 2.4	< 5.6	< 2.3	< 3.3	< 5.0	< 2.4	< 5.5	< 2.7	< 2.4	< 15.5	< 2.3
DWW- 988	3/8/2016	< 2.4	< 4.5	< 2.8	< 3.2	< 4.2	< 3.3	< 3.3	< 2.8	< 2.7	< 12.4	< 4.1
DWW- 1026	3/10/2016	< 2.3	< 3.9	< 2.7	< 2.9	< 6.0	< 3.4	< 3.9	< 2.8	< 3.1	< 14.6	< 3.6
DWW- 1152	3/16/2016	< 2.1	< 2.9	< 2.7	< 2.3	< 3.9	< 3.0	< 4.0	< 2.6	< 3.1	< 14.6	< 3.4
DWW- 1205	3/23/2016	< 2.9	< 5.3	< 2.8	< 2.7	< 5.1	< 2.3	< 4.2	< 2.3	< 3.0	< 14.7	< 2.5
DWW- 1313	3/30/2016	< 2.6	< 5.9	< 2.2	< 3.1	< 6.1	< 2.9	< 5.5	< 2.8	< 2.0	< 15.1	< 4.6
DWW- 1745	4/2/2016	< 2.8	< 5.8	< 2.1	< 1.6	< 5.6	< 4.3	< 5.6	< 2.5	< 2.8	< 43.6	< 10.5
DWW- 1471	4/4/2016	< 3.1	< 7.2	< 2.9	< 2.6	< 6.8	< 3.9	< 5.8	< 2.8	< 3.4	< 35.8	< 11.6
DWW- 1746	4/8/2016	< 2.9	< 8.1	< 2.7	< 2.3	< 4.7	< 4.2	< 6.0	< 2.5	< 3.3	< 41.6	< 4.4
DWW- 1747	4/11/2016	< 2.7	< 5.7	< 2.4	< 2.8	< 4.0	< 3.4	< 6.4	< 2.5	< 1.6	< 37.3	< 8.4
DWW- 1560	4/13/2016	< 2.4	< 5.4	< 3.3	< 1.5	< 5.8	< 4.5	< 3.9	< 3.2	< 2.6	< 42.3	< 4.3
DWW- 2012	4/15/2016	< 2.5	< 4.9	< 2.7	< 1.5	< 5.9	< 2.8	< 6.0	< 2.7	< 2.3	< 35.8	< 7.9
DWW- 1748	4/18/2016	< 2.3	< 4.8	< 2.9	< 2.3	< 4.8	< 3.6	< 4.1	< 2.3	< 2.8	< 31.4	< 8.1
DWW- 2497	4/20/2016	< 2.5	< 10.5	< 3.5	< 2.5	< 5.9	< 4.1	< 7.8	< 2.5	< 3.4	< 74.4	< 15.8 [a]
DWW- 2013	4/22/2016	< 1.6	< 7.7	< 3.3	< 3.1	< 4.8	< 3.5	< 5.7	< 2.7	< 3.3	< 29.7	< 5.0
DWW- 2014	4/25/2016	< 3.0	< 6.5	< 1.9	< 2.5	< 2.5	< 2.6	< 5.6	< 2.8	< 3.1	< 33.5	< 6.5
DWW- 2498	4/27/2016	< 2.5	< 8.6	< 3.6	< 2.2	< 5.2	< 5.9	< 7.0	< 2.6	< 2.7	< 51.5	< 16.1 [a]
DWW- 2499	4/29/2016	< 3.2	< 7.4	< 3.9	< 2.6	< 6.1	< 3.8	< 8.5	< 3.3	< 2.2	< 35.8	< 12.8

[a] LLDs for Ba-140 and/or La-140 not reached due to age of samples and smaller sample size.

D-2A. Groundwater Protection Program Summary.

Monitoring wells, analyses for gamma-emitting isotopes.

Lab Code	Collection Date	^{54}Mn	^{59}Fe	^{58}Co	^{60}Co	^{65}Zn	^{95}Nb	^{95}Zr	^{134}Cs	^{137}Cs	^{140}Ba	^{140}La
						D-134A. (MW-14A) (continued)						
DWW- 2500	5/2/2016	< 3.1	< 8.5	< 2.8	< 3.0	< 4.6	< 4.7	< 5.0	< 2.6	< 3.0	< 56.8	< 8.7
DWW- 2535	5/6/2016	< 2.6	< 5.8	< 2.8	< 2.3	< 4.1	< 3.8	< 4.1	< 2.4	< 2.8	< 52.0	< 12.6
DWW- 2536	5/9/2016	< 2.8	< 7.2	< 2.5	< 2.8	< 3.8	< 3.1	< 5.9	< 2.4	< 2.9	< 49.6	< 8.9
DWW- 2537	5/16/2016	< 4.0	< 5.5	< 3.9	< 3.3	< 5.3	< 3.7	< 6.2	< 3.7	< 3.8	< 27.6	< 10.6
DWW- 3123	5/26/2016	< 2.6	< 6.8	< 3.0	< 1.4	< 6.1	< 4.0	< 4.9	< 2.6	< 1.9	< 72.1	< 14.9 [a]
DWW- 3196	5/30/2016	< 2.7	< 7.7	< 2.5	< 2.2	< 3.5	< 5.2	< 5.7	< 2.5	< 2.7	< 56.8	< 9.6
DWW- 3197	6/2/2016	< 2.8	< 6.0	< 3.2	< 2.3	< 5.1	< 4.4	< 4.9	< 2.7	< 2.2	< 37.6	< 13.5
DWW- 3198	6/2/2016	< 2.7	< 6.3	< 3.1	< 2.4	< 4.8	< 4.7	< 6.1	< 2.7	< 2.4	< 51.7	< 11.9
DWW- 3199	6/2/2016	< 2.3	< 5.9	< 1.8	< 2.5	< 3.8	< 3.7	< 6.6	< 2.3	< 2.9	< 49.6	< 16.8 [a]
DWW- 3200	6/2/2016	< 3.1	< 8.0	< 4.1	< 3.3	< 4.6	< 5.0	< 5.2	< 3.3	< 2.8	< 67.7	< 9.2 [a]
DWW- 3723	6/6/2016	< 2.6	< 7.4	< 4.5	< 2.2	< 5.9	< 6.3	< 7.2	< 2.6	< 2.6	< 146.6	< 50.7 [a]
DWW- 3724	6/9/2016	< 3.0	< 10.6	< 5.1	< 2.8	< 6.4	< 7.5	< 6.5	< 2.6	< 2.6	< 210.8	< 66.3 [a]
DWW- 3735	6/13/2016	< 3.6	< 9.9	< 4.2	< 3.3	< 6.1	< 8.3	< 7.1	< 3.1	< 2.9	< 187.6	< 63.3 [a]
DWW- 3736	6/16/2016	< 2.7	< 6.1	< 3.7	< 2.6	< 5.2	< 8.0	< 6.2	< 2.6	< 3.1	< 119.5	< 49.8 [a]
DWW- 3871	6/20/2016	< 3.5	< 12.5	< 5.2	< 2.3	< 6.4	< 10.3	< 8.1	< 2.8	< 3.3	< 198.2	< 75.2 [a]
DWW- 4477	6/27/2016	< 5.3	< 22.5	< 8.8	< 4.3	< 12.5	< 21.5	< 18.2	< 5.4	< 5.8	< 781.4	< 239.0 [a]
DWW- 4604	7/5/2016	< 3.2	< 11.1	< 4.8	< 1.8	< 6.8	< 9.2	< 11.5	< 3.0	< 2.7	< 524.2	< 123.7 [a]
DWW- 4605	7/12/2016	< 2.0	< 8.6	< 4.3	< 2.5	< 4.8	< 9.6	< 10.2	< 2.8	< 2.2	< 237.0	< 79.1 [a]
DWW- 4692	7/18/2016	< 2.8	< 8.9	< 2.5	< 2.8	< 5.3	< 9.5	< 5.6	< 3.1	< 3.3	< 302.8	< 62.5 [a]
DWW- 4972	7/25/2016	< 2.9	< 13.9	< 2.9	< 2.3	< 3.5	< 11.7	< 7.0	< 3.1	< 1.8	< 350.3	< 72.0 [a]
DWW- 4973	8/1/2016	< 3.2	< 9.4	< 4.4	< 2.5	< 4.8	< 8.2	< 4.7	< 2.5	< 3.2	< 323.5	< 114.1 [a]
DWW- 4974	8/10/2016	< 2.0	< 12.5	< 4.5	< 3.0	< 5.1	< 7.9	< 5.4	< 2.6	< 3.0	< 264.5	< 53.6 [a]
DWW- 5388	8/15/2016	< 1.8	< 22.4	< 4.0	< 2.9	< 6.4	< 11.1	< 10.9	< 2.8	< 3.0	< 939.3	< 188.8 [a]
DWW- 5389	8/25/2016	< 2.1	< 14.2	< 4.8	< 2.1	< 5.7	< 14.6	< 12.6	< 3.3	< 1.8	< 699.2	< 118.8 [a]
DWW- 5390	8/29/2016	< 3.4	< 11.0	< 4.8	< 2.7	< 6.8	< 11.2	< 8.5	< 2.6	< 2.9	< 470.0	< 110.7 [a]
DWW- 5278	9/6/2016	< 2.5	< 10.8	< 3.3	< 1.9	< 4.1	< 4.9	< 5.5	< 2.6	< 2.9	< 85.7	< 18.5 [a]
DWW- 5279	9/13/2016	< 2.4	< 6.0	< 3.3	< 2.2	< 5.3	< 4.5	< 7.1	< 3.0	< 3.0	< 81.9	< 16.8 [a]
DWW- 5222	9/20/2016	< 2.1	< 9.4	< 3.4	< 1.9	< 3.4	< 4.5	< 6.1	< 2.9	< 3.1	< 67.7	< 11.9 [a]
DWW- 5223	9/27/2016	< 3.0	< 3.8	< 3.2	< 2.5	< 5.5	< 4.9	< 3.9	< 2.5	< 1.9	< 55.9	< 8.5
DWW- 5391	10/4/2016	< 2.8	< 7.8	< 3.3	< 3.3	< 6.8	< 7.7	< 6.4	< 3.0	< 2.7	< 101.5	< 26.8 [a]
DWW- 5525	10/11/2016	< 2.9	< 8.0	< 3.2	< 2.2	< 4.2	< 3.9	< 3.7	< 2.5	< 2.9	< 67.5	< 12.9 [a]
DWW- 5718	10/18/2016	< 2.4	< 4.5	< 2.7	< 2.6	< 3.9	< 5.2	< 6.3	< 2.8	< 3.1	< 101.5	< 20.0 [a]
DWW- 6372	10/25/2016	< 2.3	< 12.2	< 3.2	< 3.0	< 5.9	< 7.0	< 4.1	< 2.6	< 2.9	< 100.7	< 35.4 [a]
DWW- 6377	11/1/2016	< 3.0	< 10.1	< 2.5	< 2.7	< 6.8	< 6.7	< 6.9	< 2.9	< 3.0	< 104.7	< 35.0 [a]
DWW- 6344	11/8/2016	< 2.6	< 8.9	< 3.4	< 2.0	< 3.0	< 5.9	< 5.9	< 2.5	< 2.9	< 82.3	< 11.1 [a]
DWW- 6837	11/15/2016	< 3.2	< 8.9	< 2.8	< 2.4	< 4.2	< 4.5	< 7.0	< 2.6	< 2.7	< 106.1	< 16.5 [a]
DWW- 6836	11/22/2016	< 2.9	< 9.6	< 2.0	< 1.8	< 5.3	< 5.1	< 4.4	< 2.5	< 2.8	< 90.6	< 20.5 [a]
DWW- 666	11/29/2016	< 3.3	< 17.8	< 6.6	< 2.8	< 4.7	< 18.6	< 8.6	< 2.7	< 2.8	< 1147.3	< 433.5 [b]
DWW- 7020	12/21/2016	< 2.8	< 8.5	< 3.5	< 1.7	< 5.2	< 3.5	< 5.6	< 2.8	< 2.6	< 36.1	< 8.0

[a] LLDs for Ba-140 and/or La-140 not reached due to age of samples and smaller sample size.

[b] LLDs for Nb-95, Ba-140 and/or La-140 not reached due to age of samples and smaller sample size. Sample received 02-21-17.

D-2A. Groundwater Protection Program Summary.

Monitoring wells, analyses for gamma-emitting isotopes.

Lab Code	Collection Date	^{54}Mn	^{59}Fe	^{58}Co	^{60}Co	^{65}Zn	^{95}Nb	^{95}Zr	^{134}Cs	^{137}Cs	^{140}Ba	^{140}La
D-62 (MW-18A)												
DWW- 2496	5/5/2016	< 3.3	< 9.7	< 4.2	< 3.9	< 4.4	< 4.4	< 6.5	< 3.4	< 4.7	< 30.7	< 7.3
DWW- 3036	5/19/2016	< 1.9	< 7.6	< 2.7	< 2.9	< 6.3	< 6.6	< 6.5	< 2.8	< 2.7	< 70.9	< 12.7 [a]
DWW- 3201	6/2/2016	< 3.1	< 6.8	< 3.4	< 2.5	< 4.8	< 4.2	< 6.6	< 2.9	< 2.9	< 38.7	< 11.5
DWW- 3737	6/9/2016	< 2.4	< 11.3	< 3.6	< 1.8	< 6.5	< 6.3	< 8.2	< 2.8	< 3.4	< 213.3	< 47.6 [a]
DWW- 3738	6/16/2016	< 3.3	< 5.8	< 3.3	< 3.2	< 5.0	< 5.9	< 8.6	< 3.4	< 3.0	< 235.8	< 68.8 [a]
DWW- 4478	6/23/2016	< 3.0	< 12.7	< 2.5	< 2.4	< 6.3	< 10.9	< 10.3	< 2.9	< 3.0	< 406.5	< 62.1 [a]
DWW- 4479	6/29/2016	< 2.0	< 14.7	< 4.7	< 2.7	< 5.4	< 8.1	< 9.6	< 2.8	< 2.5	< 212.1	< 66.0 [a]
DWW- 3873	7/6/2016	< 2.6	< 9.2	< 2.1	< 2.8	< 5.8	< 7.1	< 4.7	< 3.5	< 3.5	< 120.0	< 27.3 [a]
DWW- 4606	7/14/2016	< 3.2	< 14.5	< 3.1	< 2.2	< 2.9	< 12.2	< 9.5	< 2.6	< 3.3	< 469.7	< 156.3 [a]
DWW- 4693	7/21/2016	< 2.9	< 7.9	< 3.5	< 2.0	< 4.6	< 10.2	< 7.5	< 2.6	< 3.0	< 371.6	< 91.1 [a]
DWW- 4694	7/29/2016	< 2.5	< 7.4	< 4.3	< 1.6	< 5.3	< 7.4	< 9.6	< 3.3	< 3.1	< 426.0	< 61.9 [a]
DWW- 4976	8/4/2016	< 2.8	< 12.2	< 4.5	< 2.6	< 6.7	< 12.0	< 6.8	< 3.1	< 3.2	< 376.2	< 97.2 [a]
DWW- 4975	8/10/2016	< 2.5	< 6.2	< 3.8	< 2.1	< 5.8	< 9.4	< 7.8	< 2.6	< 3.3	< 227.1	< 87.0 [a]
DWW- 5392	8/26/2016	< 2.4	< 11.0	< 4.0	< 2.9	< 6.4	< 14.5	< 9.5	< 2.6	< 3.0	< 447.6	< 70.2 [a]
DWW- 5393	9/1/2016	< 3.3	< 12.5	< 5.3	< 3.1	< 6.5	< 12.7	< 11.4	< 3.3	< 2.0	< 425.7	< 98.6 [a]
DWW- 5280	9/6/2016	< 2.7	< 7.7	< 2.8	< 2.3	< 4.6	< 4.9	< 5.2	< 2.5	< 2.9	< 76.1	< 20.1 [b]
DWW- 5281	9/13/2016	< 2.4	< 9.3	< 1.9	< 2.7	< 3.6	< 5.4	< 7.1	< 2.5	< 3.0	< 72.8	< 22.2 [b]
DWW- 5224	9/20/2016	< 2.7	< 6.8	< 2.4	< 2.1	< 5.0	< 4.5	< 6.2	< 2.6	< 2.2	< 55.1	< 16.5 [b]
DWW- 5225	9/27/2016	< 2.1	< 7.2	< 3.3	< 2.1	< 5.9	< 3.7	< 5.5	< 2.7	< 2.2	< 47.1	< 12.5
DWW- 5719	10/4/2016	< 2.6	< 10.3	< 2.6	< 2.4	< 4.8	< 6.2	< 6.4	< 2.7	< 2.2	< 70.6	< 12.7 [a]
DWW- 5526	10/11/2016	< 2.5	< 9.6	< 3.2	< 1.7	< 5.2	< 6.8	< 4.6	< 2.6	< 3.2	< 82.4	< 19.8 [a]
DWW- 5720	10/18/2016	< 3.6	< 8.6	< 4.3	< 2.5	< 4.9	< 5.5	< 6.4	< 2.9	< 2.8	< 85.5	< 22.5 [a]
DWW- 6373	10/25/2016	< 3.2	< 9.5	< 2.1	< 2.2	< 4.8	< 5.6	< 6.5	< 2.8	< 2.0	< 84.0	< 16.3 [a]
DWW- 6378	11/1/2016	< 3.3	< 5.6	< 2.4	< 2.7	< 6.0	< 5.8	< 6.4	< 2.6	< 2.0	< 105.9	< 27.8 [a]
DWW- 6345	11/8/2016	< 3.2	< 4.6	< 3.8	< 2.4	< 5.5	< 6.1	< 6.6	< 2.5	< 2.9	< 54.0	< 11.7
DWW- 6832	11/15/2016	< 3.2	< 6.9	< 3.7	< 2.6	< 5.3	< 6.2	< 5.9	< 2.6	< 2.5	< 127.6	< 22.0 [a]
DWW- 6838	11/22/2016	< 2.9	< 10.0	< 3.5	< 1.9	< 4.9	< 4.1	< 5.8	< 2.5	< 1.5	< 91.9	< 17.2 [a]
DWW- 7021	12/21/2016	< 3.0	< 4.2	< 2.9	< 2.5	< 4.6	< 4.1	< 3.5	< 2.8	< 2.7	< 31.3	< 6.4
D-63 (MW-19A)												
DWW- 2015	4/22/2016	< 2.2	< 6.0	< 3.7	< 3.0	< 3.2	< 5.0	< 5.0	< 3.4	< 3.5	< 31.9	< 8.8
D-64 (MW-20A)												
DWW- 2017	4/21/2016	< 3.0	< 8.9	< 3.7	< 2.7	< 2.4	< 5.0	< 4.4	< 2.7	< 3.4	< 30.7	< 8.5
DWW- 2539	5/5/2016	< 2.9	< 5.3	< 2.9	< 2.2	< 5.7	< 4.9	< 6.6	< 2.6	< 3.2	< 41.5	< 8.1
D-65 (MW-21A)												
DWW- 1473	4/6/2016	< 3.0	< 8.8	< 3.3	< 2.7	< 5.1	< 3.0	< 4.8	< 2.8	< 2.9	< 33.6	< 10.4
DWW- 2016	4/22/2016	< 3.2	< 7.4	< 2.7	< 2.2	< 5.5	< 2.8	< 6.2	< 2.8	< 3.3	< 29.9	< 6.1
DWW- 2540	5/5/2016	< 2.9	< 7.7	< 2.9	< 2.1	< 4.9	< 4.4	< 4.1	< 3.1	< 2.3	< 44.3	< 8.0
DWW- 3039	5/19/2016	< 2.8	< 5.9	< 4.1	< 2.9	< 7.0	< 4.3	< 6.8	< 2.7	< 3.2	< 66.9	< 15.0 [b]
DWW- 3727	6/2/2016	< 2.6	< 8.4	< 5.5	< 2.9	< 6.3	< 10.1	< 9.3	< 3.5	< 4.2	< 163.9	< 75.4 [a]
DWW- 3739	6/16/2016	< 2.9	< 9.1	< 3.8	< 2.3	< 5.0	< 7.1	< 8.4	< 2.9	< 2.4	< 219.6	< 60.0 [a]
DWW- 4480	6/23/2016	< 3.3	< 13.2	< 4.0	< 2.0	< 5.3	< 12.6	< 5.8	< 2.8	< 3.3	< 307.4	< 68.8 [a]
DWW- 4481	6/29/2016	< 3.6	< 10.9	< 5.2	< 2.4	< 7.1	< 9.8	< 9.2	< 3.4	< 1.9	< 393.3	< 93.2 [a]
DWW- 3874	7/6/2016	< 2.3	< 5.5	< 4.0	< 2.3	< 5.2	< 6.0	< 6.4	< 2.5	< 2.7	< 107.7	< 23.6 [a]
DWW- 4607	7/14/2016	< 3.2	< 13.7	< 5.3	< 2.3	< 6.9	< 9.9	< 7.3	< 3.3	< 2.7	< 347.1	< 64.0 [a]
DWW- 4035	7/21/2016	< 1.6	< 2.6	< 2.2	< 1.6	< 3.1	< 2.5	< 3.1	< 1.6	< 1.6	< 22.5	< 8.1
DWW- 5396	8/26/2016	< 3.7	< 12.2	< 5.2	< 2.6	< 6.2	< 8.5	< 6.0	< 2.5	< 2.8	< 460.4	< 164.6 [a]

[a] LLDs for Ba-140 and/or La-140 not reached due to age of samples and smaller sample size.

D-2A. Groundwater Protection Program Summary.

Monitoring wells, analyses for gamma-emitting isotopes

Lab Code	Collection Date	^{54}Mn	^{59}Fe	^{58}Co	^{60}Co	^{65}Zn	^{95}Nb	^{95}Zr	^{134}Cs	^{137}Cs	^{140}Ba	^{140}La
						D-66 (MW-22A)						
DWW- 1472	4/6/2016	< 2.9	< 8.6	< 3.0	< 3.4	< 5.6	< 4.0	< 7.4	< 3.4	< 3.5	< 43.1	< 11.3
DWW- 2541	5/5/2016	< 2.8	< 4.6	< 2.0	< 2.3	< 5.6	< 3.0	< 4.7	< 2.6	< 2.3	< 36.4	< 12.3
DWW- 3040	5/19/2016	< 2.9	< 10.7	< 3.4	< 3.3	< 5.8	< 6.7	< 7.8	< 3.0	< 4.0	< 71.3	< 24.6 [b]
DWW- 3728	6/2/2016	< 2.8	< 14.3	< 3.8	< 2.9	< 6.9	< 7.9	< 8.9	< 3.0	< 3.7	< 160.3	< 80.6 [b]
DWW- 3740	6/16/2016	< 3.0	< 12.4	< 3.9	< 2.1	< 5.0	< 8.2	< 6.7	< 2.9	< 3.6	< 168.6	< 56.6 [b]
DWW- 3875	6/20/2016	< 3.5	< 9.5	< 5.3	< 2.1	< 3.0	< 8.0	< 7.4	< 3.2	< 3.4	< 294.2	< 101.2 [a]
DWW- 4482	6/23/2016	< 4.1	< 15.2	< 7.4	< 2.7	< 7.2	< 16.5	< 15.9	< 4.1	< 2.8	< 614.1	< 163.8 [a]
DWW- 4483	6/29/2016	< 3.1	< 10.5	< 3.8	< 2.5	< 5.3	< 11.2	< 11.0	< 3.1	< 3.1	< 373.1	< 82.2 [a]
DWW- 3876	7/8/2016	< 2.8	< 10.9	< 3.1	< 3.6	< 5.8	< 6.5	< 7.3	< 3.4	< 2.9	< 132.4	< 30.1 [b]
DWW- 4608	7/14/2016	< 3.1	< 9.4	< 3.2	< 2.4	< 4.6	< 9.7	< 10.1	< 3.1	< 3.0	< 256.0	< 57.7 [b]
DWW- 4695	7/21/2016	< 3.3	< 14.9	< 3.9	< 2.1	< 6.5	< 11.0	< 11.7	< 3.3	< 3.4	< 481.2	< 138.1 [b]
DWW- 4696	7/29/2016	< 1.5	< 15.0	< 3.9	< 2.7	< 6.3	< 7.2	< 6.7	< 2.7	< 2.5	< 268.7	< 71.7 [a]
DWW- 4978	8/4/2016	< 2.8	< 8.5	< 3.2	< 2.7	< 5.0	< 7.1	< 7.7	< 2.7	< 3.1	< 290.0	< 49.4 [a]
DWW- 5397	8/10/2016	< 3.2	< 18.9	< 5.2	< 2.6	< 5.9	< 7.6	< 8.4	< 2.4	< 2.9	< 903.4	< 210.3 [a]
DWW- 5398	8/18/2016	< 3.6	< 13.2	< 5.7	< 2.6	< 5.4	< 15.3	< 7.4	< 2.6	< 2.6	< 810.2	< 261.0 [a]
DWW- 5399	8/26/2016	< 3.4	< 8.5	< 5.5	< 2.4	< 6.1	< 11.4	< 11.0	< 2.7	< 3.1	< 784.1	< 158.4 [a]
DWW- 5400	9/1/2016	< 3.3	< 14.1	< 5.1	< 3.0	< 5.7	< 10.4	< 10.5	< 2.9	< 2.6	< 627.7	< 146.8 [a]
DWW- 5282	9/6/2016	< 2.8	< 7.3	< 3.9	< 2.4	< 5.4	< 6.3	< 6.8	< 3.3	< 2.7	< 54.6	< 17.5 [b]
DWW- 5283	9/13/2016	< 2.4	< 6.8	< 3.3	< 2.5	< 3.8	< 4.9	< 6.3	< 2.3	< 2.3	< 76.1	< 17.5 [b]
DWW- 5226	9/20/2016	< 1.6	< 6.8	< 3.0	< 1.9	< 4.5	< 4.7	< 3.6	< 2.7	< 2.4	< 42.9	< 9.9
DWW- 5227	9/22/2016	< 2.3	< 8.1	< 2.1	< 2.6	< 5.0	< 5.3	< 5.0	< 2.5	< 3.0	< 56.9	< 10.1
DWW- 5721	10/4/2016	< 2.8	< 8.3	< 3.7	< 2.1	< 4.6	< 6.5	< 8.0	< 2.5	< 2.4	< 80.5	< 33.9 [a]
DWW- 5529	10/11/2016	< 3.1	< 4.0	< 2.0	< 3.0	< 3.2	< 4.7	< 4.4	< 2.8	< 2.8	< 73.7	< 25.8 [a]
DWW- 5722	10/18/2016	< 2.7	< 5.4	< 4.4	< 2.4	< 5.8	< 5.4	< 6.2	< 2.7	< 3.5	< 129.6	< 17.4 [a]
DWW- 6374	10/25/2016	< 2.3	< 4.7	< 3.9	< 2.8	< 5.6	< 3.5	< 4.0	< 2.7	< 2.8	< 68.6	< 26.2 [a]
DWW- 6379	11/1/2016	< 3.5	< 8.6	< 3.7	< 2.8	< 5.7	< 5.7	< 7.9	< 3.2	< 2.6	< 97.8	< 27.9 [a]
DWW- 6346	11/8/2016	< 3.2	< 8.3	< 3.1	< 2.7	< 4.0	< 5.2	< 7.0	< 2.9	< 2.9	< 76.9	< 23.1 [a]
DWW- 6829	11/15/2016	< 2.6	< 7.2	< 4.2	< 2.4	< 6.0	< 7.7	< 8.2	< 2.8	< 3.0	< 112.7	< 21.8 [a]
DWW- 6835	11/22/2016	< 2.0	< 6.2	< 2.4	< 2.1	< 5.9	< 4.1	< 6.9	< 2.7	< 2.7	< 78.4	< 24.6 [a]
DWW- 7022	12/21/2016	< 3.0	< 8.6	< 3.2	< 2.8	< 6.3	< 4.6	< 5.6	< 2.8	< 3.2	< 51.0	< 6.4
						D-101						
DWW- 6381	11/7/2016	< 2.7	< 9.1	< 3.5	< 2.0	< 3.0	< 6.0	< 6.0	< 2.5	< 2.9	< 87.1	< 11.7 [a]

[a] LLDs for Ba-140 and/or La-140 not reached due to age of samples and smaller sample size.

D-2A. Groundwater Protection Program Summary.

Monitoring wells, analyses for gamma-emitting isotopes

Lab Code	Collection Date	^{54}Mn	^{59}Fe	^{58}Co	^{60}Co	^{65}Zn	^{95}Nb	^{95}Zr	^{134}Cs	^{137}Cs	^{140}Ba	^{140}La
D-67 (MW-23A)												
DWW- 3124	5/19/2016	< 3.9	< 9.2	< 3.9	< 3.8	< 5.0	< 7.2	< 8.5	< 3.1	< 3.2	< 68.9	< 18.6 [a]
DWW- 3729	6/2/2016	< 2.8	< 11.9	< 5.0	< 3.1	< 6.5	< 9.1	< 9.2	< 2.8	< 3.7	< 200.5	< 50.3 [a]
DWW- 3877	6/16/2016	< 3.5	< 11.4	< 5.1	< 2.3	< 6.4	< 8.6	< 6.0	< 3.0	< 3.0	< 227.9	< 62.0 [a]
DWW- 3878	6/20/2016	< 2.0	< 12.0	< 4.0	< 2.8	< 5.3	< 10.1	< 6.2	< 2.8	< 2.7	< 191.6	< 102.2 [a]
DWW- 4485	6/29/2016	< 2.6	< 15.9	< 3.7	< 2.0	< 5.4	< 12.0	< 7.5	< 2.7	< 3.2	< 475.4	< 100.7 [a]
DWW- 3879	7/8/2016	< 3.1	< 9.2	< 3.5	< 2.3	< 5.3	< 5.0	< 4.7	< 2.7	< 2.3	< 118.1	< 36.9 [a]
DWW- 4609	7/14/2016	< 3.0	< 8.8	< 4.0	< 2.5	< 3.3	< 10.6	< 6.2	< 2.8	< 3.1	< 215.2	< 87.6 [a]
DWW- 4697	7/21/2016	< 3.2	< 9.6	< 4.8	< 2.7	< 5.1	< 10.5	< 10.8	< 2.5	< 2.9	< 353.5	< 96.7 [a]
DWW- 4698	7/29/2016	< 2.6	< 6.1	< 3.1	< 2.5	< 4.1	< 9.2	< 9.2	< 2.5	< 2.9	< 286.3	< 92.5 [a]
DWW- 4979	8/4/2016	< 2.9	< 8.7	< 3.3	< 2.0	< 3.3	< 10.3	< 8.8	< 2.4	< 3.1	< 330.7	< 73.4 [a]
DWW- 5401	8/10/2016	< 2.9	< 17.7	< 5.6	< 2.4	< 6.9	< 9.2	< 13.0	< 3.3	< 2.9	< 1734.8	< 342.1 [a]
DWW- 5402	8/26/2016	< 3.1	< 11.0	< 5.3	< 2.4	< 5.4	< 12.3	< 9.3	< 2.8	< 3.0	< 673.4	< 223.6 [a]
DWW- 5403	9/1/2016	< 3.0	< 19.4	< 3.1	< 2.3	< 5.6	< 15.6	< 10.0	< 3.0	< 2.5	< 425.6	< 91.7 [a]
DWW- 5284	9/6/2016	< 2.6	< 9.4	< 3.4	< 2.5	< 2.7	< 4.3	< 6.8	< 2.7	< 2.2	< 81.7	< 13.9 [b]
DWW- 5285	9/13/2016	< 2.9	< 6.7	< 3.5	< 2.4	< 4.7	< 6.9	< 6.0	< 2.6	< 2.7	< 85.6	< 13.4 [a]
DWW- 5229	9/20/2016	< 2.6	< 4.9	< 3.1	< 2.5	< 5.4	< 5.1	< 3.2	< 2.3	< 2.9	< 63.0	< 14.7 [a]
DWW- 5289	9/27/2016	< 3.6	< 7.9	< 3.9	< 3.7	< 5.8	< 4.4	< 7.1	< 2.8	< 3.6	< 34.8	< 10.5
DWW- 5723	10/4/2016	< 2.6	< 4.7	< 4.0	< 2.7	< 4.9	< 6.6	< 6.8	< 2.6	< 2.6	< 99.7	< 42.5 [a]
DWW- 5530	10/11/2016	< 2.9	< 5.2	< 3.3	< 2.3	< 5.9	< 5.4	< 8.0	< 2.6	< 3.1	< 144.4	< 21.6 [a]
DWW- 5725	10/18/2016	< 3.3	< 8.4	< 3.7	< 2.2	< 5.0	< 6.7	< 7.3	< 2.9	< 2.6	< 134.3	< 41.7 [a]
DWW- 6375	10/25/2016	< 3.1	< 4.2	< 1.9	< 2.6	< 4.9	< 4.3	< 5.7	< 2.8	< 3.1	< 91.2	< 22.5 [a]
DWW- 6380	11/1/2016	< 3.2	< 5.1	< 4.1	< 2.4	< 5.6	< 7.0	< 7.4	< 2.6	< 2.9	< 80.1	< 17.3 [a]
DWW- 6347	11/8/2016	< 2.8	< 5.2	< 3.1	< 3.0	< 4.1	< 5.8	< 5.9	< 2.8	< 2.6	< 64.6	< 19.7 [a]
DWW- 6831	11/15/2016	< 3.3	< 5.3	< 2.2	< 1.4	< 3.3	< 5.6	< 6.7	< 2.7	< 2.5	< 95.3	< 31.7 [a]
DWW- 6834	11/22/2016	< 2.7	< 5.6	< 3.6	< 1.7	< 6.2	< 4.4	< 6.1	< 3.1	< 3.6	< 99.0	< 27.4 [a]
DWW- 7023	12/21/2016	< 3.1	< 5.9	< 4.1	< 2.9	< 5.2	< 5.3	< 6.9	< 3.3	< 3.6	< 54.9	< 9.8
EW-01												
DWW- 2542	5/6/2016	< 2.7	< 7.6	< 2.8	< 2.9	< 5.9	< 3.4	< 5.8	< 2.5	< 3.0	< 50.4	< 12.9
DWW- 4699	7/29/2016	< 2.7	< 13.8	< 3.4	< 2.0	< 6.1	< 9.7	< 8.7	< 2.8	< 2.8	< 212.7	< 47.1 [a]
D-127A (MW-07A)												
DWW- 6280	11/8/2016	< 1.7	< 4.6	< 1.6	< 1.4	< 2.9	< 3.6	< 3.7	< 1.6	< 1.3	< 32.0	< 10.6
MW-25A												
DWW- 7025	12/21/2016	< 2.0	< 7.3	< 3.4	< 2.3	< 5.8	< 4.1	< 5.7	< 2.9	< 3.1	< 28.1	< 12.0
DWW- 7026	12/30/2016	< 3.1	< 3.9	< 1.7	< 2.7	< 3.3	< 4.1	< 3.3	< 2.9	< 3.2	< 25.9	< 7.1
MW-26A												
DWW- 7027	12/21/2016	< 2.3	< 8.2	< 3.0	< 3.1	< 5.1	< 6.2	< 6.2	< 3.3	< 3.2	< 48.6	< 11.0
DWW- 7028	12/30/2016	< 3.2	< 3.9	< 1.9	< 3.0	< 6.7	< 4.8	< 7.3	< 3.2	< 3.6	< 42.7	< 6.3

[a] LLDs for Ba-140 and/or La-140 not reached due to age of samples and smaller sample size.

D-2B. Groundwater Protection Program Summary.

Monitoring wells, conditional analyses for gross alpha, iron-55, nickel-63, strontium-89 and strontium-90 [a]

Lab Code	Collection Date	Location	Gross Alpha	^{55}Fe	^{63}Ni	^{89}Sr	^{90}Sr
DWW- 656	2/16/2016	D-128a	< 1.0	< 602	< 146	< 1.9	< 1.6
DWW- 793	2/16/2016	D-134a	< 1.1	< 674	< 130	< 0.8	< 0.5
DWW- 657	2/19/2016	D-128a	< 1.0	< 638	< 144	< 1.9	< 1.6
DWW- 658	2/19/2016	D-128b	< 1.6	< 609	< 146	< 1.6	< 1.4
DWW- 821	2/25/2016	D-128a	< 0.9	< 631	< 126	< 1.5	< 1.4
DWW- 822	2/26/2016	D-134a	2.0 ± 0.9	< 631	< 127	< 1.3	< 1.3
DWW- 890	3/2/2016	D-128a	0.9 ± 0.7	< 644	< 128	< 1.5	< 1.0
DWW- 891	3/2/2016	D-134a	< 1.0	< 671	< 135	< 1.5	< 1.1
DWW- 987	3/5/2016	D-128a	< 1.0	< 656	< 121	< 1.1	< 0.8
DWW- 988	3/5/2016	D-134a	1.5 ± 0.8	< 649	< 113	< 1.0	< 0.6
DWW- 1027	3/10/2016	D-128a	< 1.0	< 652	< 100	< 1.3	< 1.1
DWW- 1028	3/10/2016	D-134a	1.3 ± 0.8	< 699	< 152	< 1.4	< 1.1
DWW- 1151	3/16/2016	D-128a	< 1.0	< 639	< 118	< 1.6	< 1.1
DWW- 1152	3/16/2016	D-134a	1.7 ± 0.8	< 670	< 117	< 1.9	< 1.2
DWW- 1204	3/23/2016	D-128a	< 1.1	< 609	< 110	< 1.3	< 1.1
DWW- 1205	3/23/2016	D-134a	1.1 ± 0.8	< 624	< 123	< 1.5	< 1.1
DWW- 1312	3/30/2016	D-128a	1.7 ± 0.8	< 625	< 149	< 1.4	< 1.2
DWW- 1313	3/30/2016	D-134a	1.5 ± 0.8	< 625	< 129	< 1.1	< 1.0
DWW- 1740	4/2/2016	D-128a	< 1.0	< 760	< 142	< 2.0	< 1.0
DWW- 1745	4/2/2016	D-134a	< 1.2	< 690	< 149	< 1.7	< 0.9
DWW- 1470	4/4/2016	D-128a	< 1.0	< 759	< 123	< 1.1	< 0.6
DWW- 1471	4/4/2016	D-134a	< 1.1	< 749	< 123	< 2.0	< 1.0
DWW- 1472	4/6/2016	MW-22A	1.0 ± 0.6	< 721	< 118	< 1.8	< 1.0
DWW- 1473	4/6/2016	MW-21A	2.0 ± 1.0	< 696	< 135	< 1.6	< 0.8
DWW- 1742	4/8/2016	D-128a	< 1.0	< 819	< 145	< 1.9	< 1.0
DWW- 1746	4/8/2016	D-134a	< 1.0	< 720	< 162	< 1.7	< 1.0
DWW- 1743	4/11/2016	D-128a	< 0.9	< 746	< 117	< 1.5	< 0.9
DWW- 1747	4/11/2016	D-134a	< 1.0	< 741	< 121	< 1.9	< 1.1
DWW- 1559	4/13/2016	D-128a	< 1.2	< 794	< 139	< 1.6	< 1.0
DWW- 1560	4/13/2016	D-134a	1.3 ± 0.9	< 749	< 148	< 1.7	< 1.0
DWW- 1779	4/13/2016	D-132a	1.4 ± 0.6	< 833	< 137	< 0.7	< 0.4
DWW- 1772	4/15/2016	D-128b	< 1.0	< 744	< 110	< 0.7	< 0.4
DWW- 2009	4/15/2016	D-128a	< 1.1	< 619	< 129	< 2.0	< 1.0
DWW- 2012	4/15/2016	D-134a	1.2 ± 0.8	< 546	< 130	< 2.4	< 1.1
DWW- 1744	4/18/2016	D-128a	< 1.0	< 792	< 128	< 1.4	< 0.9
DWW- 1748	4/18/2016	D-134a	< 1.0	< 737	< 116	< 1.4	< 1.0
DWW- 2492	4/20/2016	D-128a	< 1.1	< 524	< 127	< 2.2	< 1.2
DWW- 2497	4/20/2016	D-134a	< 1.2	< 543	< 103	< 2.2	< 1.2
DWW- 2017	4/21/2016	MW-20A	1.2 ± 0.9	< 543	< 124	< 1.8	< 0.9
DWW- 2010	4/22/2016	D-128a	< 1.1	< 575	< 118	< 1.8	< 1.0

[a] Analyses for gamma, gross alpha, Sr-89, Sr-90, Fe-55 and Ni-63 will be performed if tritium activity > 1K pCi/L.

D-2B. Groundwater Protection Program Summary.

Monitoring wells, conditional analyses for gross alpha, iron-55, nickel-63, strontium-89 and strontium-90 *.

Lab Code	Collection Date	Location	Gross Alpha	^{55}Fe	^{63}Ni	^{89}Sr	^{90}Sr
DWW- 2013	4/22/2016	D-134a	< 1.3	< 540	< 130	< 2.4	< 1.2
DWW- 2015	4/22/2016	MW-19A	< 1.2	< 543	< 151	< 1.9	< 1.0
DWW- 2016	4/22/2016	MW-21A	4.2 ± 2.0	< 557	< 122	< 1.8	< 0.9
DWW- 2011	4/25/2016	D-128a	< 1.0	< 549	< 134	< 1.9	< 1.0
DWW- 2014	4/25/2016	D-134a	< 1.2	< 619	< 123	< 2.1	< 1.1
DWW- 2493	4/27/2016	D-128a	< 0.9	< 534	< 125	< 2.2	< 1.2
DWW- 2498	4/27/2016	D-134a	< 0.9	< 531	< 114	< 2.3	< 1.3
DWW- 2494	4/29/2016	D-128a	< 1.0	< 530	< 113	< 1.8	< 1.1
DWW- 2499	4/29/2016	D-134a	1.1 ± 0.8	< 550	< 135	< 1.7	< 1.0
DWW- 2495	5/2/2016	D-128a	< 1.1	< 522	< 99	< 1.9	< 1.2
DWW- 2500	5/2/2016	D-134a	< 1.0	< 532	< 140	< 1.8	< 1.0
DWW- 2496	5/5/2016	MW-18a	< 1.1	< 515	< 103	< 1.6	< 1.1
DWW- 2539	5/5/2016	MW-20A	< 1.2	< 546	< 133	< 2.3	< 1.1
DWW- 2540	5/5/2016	MW-21A	< 1.1	< 548	< 117	< 2.9	< 1.4
DWW- 2541	5/5/2016	MW-22A	< 1.0	< 518	< 133	< 2.2	< 1.0
DWW- 2531	5/6/2016	D-128a	< 1.1	< 541	< 121	< 2.2	< 1.1
DWW- 2535	5/6/2016	D-134a	< 1.0	< 534	< 143	< 1.8	< 0.9
DWW- 2542	5/6/2016	EW-01	< 0.9	< 515	< 128	< 3.8	< 2.0
DWW- 2532	5/9/2016	D-128a	< 1.1	< 547	< 132	< 2.1	< 1.0
DWW- 2536	5/9/2016	D-134a	< 1.0	< 561	< 141	< 1.8	< 1.0
DWW- 2533	5/16/2016	D-128a	< 1.1	< 517	< 111	< 1.7	< 0.9
DWW- 2537	5/16/2016	D-134a	< 1.1	< 534	< 156	< 1.7	< 0.9
DWW- 3036	5/19/2016	MW-18a	1.1 ± 0.8	< 327	< 148	< 2.0	< 1.5
DWW- 3039	5/19/2016	MW-21A	3.1 ± 1.0	< 338	< 143	< 2.5	< 1.4
DWW- 3040	5/19/2016	MW-22A	4.3 ± 1.1	< 334	< 124	< 3.1	< 1.8
DWW- 3124	5/19/2016	MW-23a	3.9 ± 1.0	< 334	< 107	< 2.7	< 1.2
DWW- 3118	5/26/2016	D-128a	< 1.0	< 324	< 102	< 2.8	< 1.8
DWW- 3121	5/26/2016	D-132a	< 1.0	< 358	< 100	< 2.2	< 1.6
DWW- 3123	5/26/2016	D-134a	1.3 ± 0.9	< 348	< 109	< 2.0	< 1.0
DWW- 3120	5/30/2016	D-128a	1.1 ± 0.8	< 355	< 117	< 2.0	< 1.2
DWW- 3122	5/30/2016	D-132a	1.6 ± 0.8	< 325	< 99	< 2.1	< 1.1
DWW- 3196	5/30/2016	D-134a	1.4 ± 0.8	< 334	< 131	< 1.8	< 1.0
DWW- 3194	6/2/2016	D-128a	< 1.0	< 329	< 134	< 1.8	< 0.9
DWW- 3195	6/2/2016	D-132a	1.5 ± 0.9	< 324	< 121	< 1.7	< 0.8
DWW- 3197	6/2/2016	D-134a	< 1.2	< 335	< 103	< 1.9	< 1.0
DWW- 3198	6/2/2016	D-134a	1.2 ± 0.7	< 320	< 108	< 2.9	< 1.5
DWW- 3199	6/2/2016	D-134a	< 1.1	< 354	< 112	< 1.8	< 1.0
DWW- 3200	6/2/2016	D-134a	< 1.2	< 322	< 122	< 1.9	< 1.0
DWW- 3201	6/2/2016	MW-18a	1.4 ± 0.8	< 326	< 152	< 1.7	< 1.0

* Analyses for gamma, gross alpha, Sr-89, Sr-90, Fe-55 and Ni-63 will be performed if tritium activity > 1K pCi/L.

D-2B. Groundwater Protection Program Summary.

Monitoring wells, conditional analyses for gross alpha, iron-55, nickel-63, strontium-89 and strontium-90 [a].

Lab Code	Collection Date	Location	Gross Alpha	^{55}Fe	^{63}Ni	^{89}Sr	^{90}Sr
DWW- 3727	6/2/2016	MW-21a	2.5 ± 1.0	< 734	< 113	< 3.6	< 1.1
DWW- 3728	6/2/2016	MW-22a	2.5 ± 1.0	< 743	< 148	< 4.0	< 1.1
DWW- 3729	6/2/2016	MW-23a	3.0 ± 1.0	< 738	< 120	< 3.2	< 0.9
DWW- 3721	6/6/2016	D-132a	1.2 ± 0.7	< 736	< 105	< 3.7	< 1.1
DWW- 3723	6/6/2016	D-134a	< 1.0	< 755	< 130	< 3.2	< 0.9
DWW- 3719	6/9/2016	D-128a	< 1.0	< 735	< 122	< 4.5	< 1.4
DWW- 3722	6/9/2016	D-132a	< 0.9	< 763	< 111	< 2.9	< 0.9
DWW- 3724	6/9/2016	D-134a	< 1.0	< 794	< 122	< 2.8	< 1.0
DWW- 3737	6/9/2016	MW-18a	< 0.9	< 722	< 107	< 3.0	< 0.9
DWW- 3732	6/13/2016	D-128a	< 1.0	< 724	< 128	< 2.6	< 0.8
DWW- 3734	6/13/2016	D-132a	1.4 ± 0.8	< 761	< 116	< 3.2	< 1.0
DWW- 3735	6/13/2016	D-134a	1.2 ± 0.7	< 742	< 117	< 3.4	< 1.0
DWW- 3733	6/16/2016	D-128a	< 1.0	< 745	< 136	< 2.5	< 1.0
DWW- 3736	6/16/2016	D-134a	< 1.0	< 741	< 115	< 2.8	< 0.9
DWW- 3738	6/16/2016	MW-18a	< 1.1	< 745	< 111	< 2.6	< 0.9
DWW- 3739	6/16/2016	MW-21a	< 1.2	< 750	< 115	< 3.8	< 1.3
DWW- 3740	6/16/2016	MW-22a	1.6 ± 1.0	< 760	< 135	< 4.1	< 1.8
DWW- 3877	6/16/2016	MW-23a	2.0 ± 1.0	< 835	< 111	< 4.0	< 1.0
DWW- 3869	6/20/2016	D-128a	< 1.0	< 822	< 122	< 3.6	< 1.0
DWW- 3870	6/20/2016	D-132a	< 1.0	< 777	< 121	< 3.9	< 1.0
DWW- 3871	6/20/2016	D-134a	< 1.0	< 791	< 140	< 3.3	< 1.2
DWW- 3875	6/20/2016	MW-22a	< 1.1	< 836	< 105	< 3.8	< 1.0
DWW- 3876	6/20/2016	MW-23a	6.7 ± 1.8 [b]	< 782	< 120	< 3.0	< 0.8
DWW- 4478	6/23/2016	MW-18a	1.3 ± 0.8	< 765	< 118	< 3.6	< 0.9
DWW- 4482	6/23/2016	MW-22a	1.7 ± 1.2	< 779	< 124	< 4.1	< 1.3
DWW- 4475	6/27/2016	D-128a	< 1.1	< 806	< 123	< 3.6	< 0.8
DWW- 4476	6/27/2016	D-132a	1.3 ± 0.8	< 806	< 120	< 4.1	< 1.0
DWW- 4477	6/27/2016	D-134a	< 1.0	< 786	< 120	< 4.5	< 1.1
DWW- 4479	6/29/2016	MW-18a	3.6 ± 1.5	< 744	< 114	< 4.4	< 0.8
DWW- 4480	6/23/2016	MW-21a	6.2 ± 4.0	< 765	< 123	< 3.4	< 0.8
DWW- 4481	6/29/2016	MW-21a	5.0 ± 2.3	< 748	< 123	< 4.7	< 1.2
DWW- 4483	6/29/2016	MW-22a	3.3 ± 2.9	< 838	< 117	< 3.5	< 0.9
DWW- 4485	6/29/2016	MW-23a	1.8 ± 3.1	< 833	< 121	< 3.8	< 1.0
DWW- 4600	7/5/2016	D-128a	1.1 ± 0.8	< 819	< 120	< 3.5	< 1.0
DWW- 4602	7/5/2016	D-132a	4.5 ± 1.0 [c]	< 824	< 116	< 4.9	< 1.4
DWW- 4604	7/5/2016	D-134a	1.2 ± 0.9	< 888	< 110	< 3.4	< 1.0
DWW- 3873	7/8/2016	MW-18a	6.0 ± 3.5 [d]	< 782	< 110	< 2.8	< 1.0
DWW- 3874	7/8/2016	MW-21a	3.1 ± 1.7	< 823	< 117	< 2.3	< 0.8
DWW- 3876	7/8/2016	MW-22a	2.5 ± 1.6	< 791	< 111	< 3.1	< 1.1
DWW- 3879	7/8/2016	MW-23a	< 2.0	< 786	< 127	< 3.0	< 1.2
DWW- 4601	7/12/2016	D-128a	< 0.9	< 939	< 118	< 3.5	< 1.0
DWW- 4603	7/12/2016	D-132a	1.3 ± 0.8	< 811	< 119	< 4.6	< 1.4
DWW- 4605	7/12/2016	D-134a	< 1.0	< 846	< 102	< 3.3	< 1.0

[a] Analyses for gamma, gross alpha, Sr-89, Sr-90, Fe-55 and Ni-63 will be performed if tritium activity > 1K pCi/L.

[b] Gross alpha reanalyzed with a result of 6.0±1.4 pCi/L.

[c] Gross alpha reanalyzed with a result of 4.2±0.8 pCi/L.

[d] Gross alpha reanalyzed with a result of 5.1±2.5 pCi/L.

D-2B. Groundwater Protection Program Summary.

Monitoring wells, conditional analyses for gross alpha, iron-55, nickel-63, strontium-89 and strontium-90 [a].

Lab Code	Collection Date	Location	Gross Alpha	^{55}Fe	^{63}Ni	^{89}Sr	^{90}Sr
DWW- 4606	7/14/2016	MW-18a	1.7 ± 1.1	< 850	< 128	< 3.4	< 1.0
DWW- 4607	7/14/2016	MW-21a	1.6 ± 0.9	< 834	< 124	< 2.8	< 0.8
DWW- 4608	7/14/2016	MW-22a	1.3 ± 0.9	< 834	< 112	< 2.7	< 0.9
DWW- 4609	7/14/2016	MW-23a	1.4 ± 0.8	< 907	< 111	< 2.9	< 1.0
DWW- 4690	7/18/2016	D-128a	< 0.9	< 915	< 95	< 3.7	< 0.9
DWW- 4691	7/18/2016	D-132a	1.1 ± 0.7	< 915	< 95	< 4.0	< 1.1
DWW- 4692	7/18/2016	D-134a	0.9 ± 0.7	< 861	< 90	< 3.3	< 0.9
DWW- 4035	7/21/2016	MW-21a	2.4 ± 1.3	< 805	< 121	< 2.2	< 0.9
DWW- 4693	7/21/2016	MW-18a	< 1.0	< 868	< 103	< 3.3	< 0.8
DWW- 4695	7/21/2016	MW-22a	1.3 ± 1.0	< 884	< 88	< 3.7	< 1.0
DWW- 4697	7/21/2016	MW-23a	2.4 ± 1.2	< 874	< 91	< 3.4	< 0.9
DWW- 4969	7/25/2016	D-128a	< 0.8	< 855	< 98	< 3.5	< 0.9
DWW- 4972	7/25/2016	D-134a	< 1.2	< 850	< 103	< 3.4	< 0.9
DWW- 5006	7/25/2016	D-132a	3.9 ± 1.0	< 577	< 91	< 6.2	< 0.9
DWW- 4694	7/29/2016	MW-18a	1.6 ± 0.9	< 908	< 92	< 3.3	< 1.2
DWW- 4696	7/29/2016	MW-22a	< 1.8	< 914	< 93	< 3.4	< 1.0
DWW- 4698	7/29/2016	MW-23a	< 1.4	< 860	< 96	< 2.8	< 0.8
DWW- 4699	7/29/2016	EW-1	< 0.4	< 874	< 113	< 3.2	< 1.0
DWW- 4970	8/1/2016	D-128a	< 0.9	< 878	< 110	< 3.7	< 1.0
DWW- 4973	8/1/2016	D-134a	< 1.3	< 930	< 102	< 2.8	< 0.9
DWW- 4591	8/1/2016	D-132a	< 1.4	< 834	< 148	< 1.9	< 0.8
DWW- 4976	8/4/2016	MW-18a	< 0.9	< 898	< 97	< 2.9	< 0.9
DWW- 4978	8/4/2016	MW-22a	< 1.3	< 922	< 102	< 2.8	< 0.9
DWW- 4979	8/4/2016	MW-23a	< 1.2	< 953	< 101	< 2.8	< 0.9
DWW- 4971	8/10/2016	D-128a	< 0.9	< 878	< 90	< 2.6	< 0.9
DWW- 4974	8/10/2016	D-134a	< 1.1	< 883	< 106	< 2.9	< 1.0
DWW- 4975	8/10/2016	MW-18a	2.2 ± 1.0	< 900	< 91	< 3.5	< 1.1
DWW- 5397	8/10/2016	MW-22a	1.0 ± 0.7	< 548	< 103	< 6.4	< 0.9
DWW- 5401	8/10/2016	MW-23a	< 1.2	< 555	< 98	< 6.6	< 1.0
DWW- 5386	8/15/2016	D-128a	< 0.9	< 556	< 97	< 7.9	< 1.2
DWW- 5388	8/15/2016	D-134a	< 1.0	< 543	< 102	< 6.3	< 1.0
DWW- 5396	8/18/2016	MW-22a	2.5 ± 1.1	< 545	< 101	< 6.2	< 1.0
DWW- 5389	8/25/2016	D-134a	< 1.0	< 559	< 107	< 5.0	< 0.8
DWW- 5392	8/26/2016	MW-18a	1.1 ± 0.9	< 552	< 111	< 7.1	< 1.2
DWW- 5396	8/26/2016	MW-21a	< 1.1	< 548	< 123	< 5.4	< 0.9
DWW- 5399	8/26/2016	MW-22a	< 1.2	< 573	< 108	< 7.4	< 1.3
DWW- 5402	8/26/2016	MW-23a	1.5 ± 0.9	< 552	< 98	< 6.1	< 0.9
DWW- 5387	8/29/2016	D-128a	< 1.0	< 541	< 116	< 6.4	< 1.6
DWW- 5390	8/29/2016	D-134a	1.5 ± 1.0	< 561	< 100	< 4.7	< 0.8
DWW- 5393	9/1/2016	MW-18a	2.0 ± 1.1	< 543	< 99	< 4.4	< 0.9
DWW- 5400	9/1/2016	MW-22a	2.5 ± 1.1	< 543	< 101	< 5.7	< 0.9
DWW- 5403	9/1/2016	MW-23a	< 1.1	< 550	< 113	< 5.7	< 0.8
DWW- 5276	9/6/2016	D-128a	< 1.0	< 564	< 130	< 4.5	< 0.9
DWW- 5278	9/6/2016	D-134a	< 1.1	< 582	< 92	< 5.2	< 1.2
DWW- 5280	9/6/2016	MW-18a	2.7 ± 2.4	< 578	< 96	< 4.1	< 0.8
DWW- 5282	9/6/2016	MW-22a	2.1 ± 1.0	< 582	< 94	< 5.0	< 1.0
DWW- 5284	9/6/2016	MW-23a	< 1.2	< 578	< 93	< 4.3	< 0.8

[a] Analyses for gamma, gross alpha, Sr-89, Sr-90, Fe-55 and Ni-63 will be performed if tritium activity > 1K pCi/L.

D-2B. Groundwater Protection Program Summary.

Monitoring wells, conditional analyses for gross alpha, iron-55, nickel-63, strontium-89 and strontium-90 [a].

Lab Code	Collection Date	Location	Gross Alpha	^{55}Fe	^{63}Ni	^{89}Sr	^{90}Sr
DWW- 5277	9/13/2016	D-128a	< 1.0	< 579	< 93	< 4.7	< 1.0
DWW- 5279	9/13/2016	D-134a	1.9 ± 1.0	< 579	< 92	< 4.2	< 0.9
DWW- 5281	9/13/2016	MW-18a	3.2 < 2.4	< 548	< 95	< 4.0	< 0.9
DWW- 5283	9/13/2016	MW-22a	3.4 < 2.3	< 561	< 94	< 3.8	< 0.9
DWW- 5285	9/13/2016	MW-23a	< 1.2	< 582	< 91	< 4.1	< 0.9
DWW- 5219	9/20/2016	D-128a	1.6 ± 0.8	< 565	< 87	< 4.3	< 1.0
DWW- 5222	9/20/2016	D-134a	2.1 ± 1.0	< 552	< 98	< 3.4	< 0.8
DWW- 5224	9/20/2016	MW-18a	4.3 ± 1.7	< 539	< 100	< 3.6	< 0.9
DWW- 5226	9/20/2016	MW-22a	3.8 ± 1.5	< 542	< 113	< 3.3	< 0.9
DWW- 5228	9/20/2016	MW-23a	< 1.3	< 572	< 114	< 3.7	< 1.0
DWW- 5227	9/22/2016	MW-22a	3.7 ± 1.1	< 568	< 111	< 3.4	< 0.9
DWW- 5221	9/27/2016	D-128a	2.5 ± 1.0	< 543	< 99	< 3.6	< 1.0
DWW- 5223	9/27/2016	D-134a	3.1 ± 1.1	< 570	< 95	< 3.0	< 0.8
DWW- 5225	9/27/2016	MW-18a	< 2.0	< 543	< 99	< 3.6	< 1.0
DWW- 5228	9/27/2016	MW-22a	2.1 ± 1.4	< 592	< 110	< 3.1	< 0.9
DWW- 5289	9/27/2016	MW-23a	< 1.2	< 570	< 99	< 3.4	< 1.0
DWW- 5716	10/4/2016	D-128a	< 1.2	< 518	< 94	< 4.2	< 0.9
DWW- 5391	10/4/2016	D-134a	< 1.4	< 547	< 109	< 3.6	< 1.1
DWW- 5719	10/4/2016	MW-18a	2.6 ± 1.1	< 524	< 91	< 4.5	< 0.9
DWW- 5721	10/4/2016	MW-22a	2.3 ± 1.3	< 537	< 94	< 4.2	< 0.9
DWW- 5723	10/4/2016	MW-23a	< 1.4	< 531	< 96	< 5.3	< 1.0
DWW- 5525	10/11/2016	D-128a	< 1.0	< 548	< 96	< 3.4	< 0.9
DWW- 5526	10/11/2016	D-134a	< 1.2	< 516	< 94	< 6.4	< 1.7
DWW- 5528	10/11/2016	MW-18a	2.2 ± 1.1	< 528	< 102	< 3.2	< 0.8
DWW- 5529	10/11/2016	MW-22a	< 1.5	< 528	< 98	< 3.1	< 0.8
DWW- 5530	10/11/2016	MW-23a	< 1.2	< 545	< 87	< 3.4	< 1.0
DWW- 5717	10/18/2016	D-128a	< 1.0	< 513	< 94	< 4.0	< 0.9
DWW- 5718	10/18/2016	D-134a	1.4 ± 1.1	< 526	< 103	< 4.6	< 1.0
DWW- 5720	10/18/2016	MW-18a	2.1 ± 0.9	< 549	< 93	< 3.7	< 0.8
DWW- 5722	10/18/2016	MW-22a	1.3 ± 1.0	< 532	< 91	< 4.3	< 1.0
DWW- 5725	10/18/2016	MW-23a	< 1.2	< 516	< 95	< 3.8	< 0.9
DWW- 6371	10/25/2016	D-128a	< 1.0	< 610	< 105	< 3.8	< 1.0
DWW- 6372	10/25/2016	D-134a	< 1.4	< 610	< 96	< 3.8	< 1.4
DWW- 6373	10/25/2016	MW-18a	< 1.2	< 556	< 142	< 3.7	< 1.3
DWW- 6374	10/25/2016	MW-22a	3.7 ± 1.2	< 523	< 100	< 3.9	< 1.0
DWW- 6375	10/25/2016	MW-23a	2.3 ± 1.1	< 542	< 97	< 3.6	< 0.9
DWW- 6376	11/1/2016	D-128a	< 1.0	< 563	< 99	< 3.3	< 1.0
DWW- 6377	11/1/2016	D-134a	< 1.1	< 549	< 100	< 9.6	< 2.8
DWW- 6378	11/1/2016	MW-18a	1.8 ± 1.0	< 533	< 99	< 3.9	< 1.1
DWW- 6379	11/1/2016	MW-22a	2.3 ± 1.1	< 539	< 95	< 3.3	< 1.0
DWW- 6380	11/1/2016	MW-23a	< 1.2	< 536	< 94	< 3.3	< 0.9
DWW- 6381	11/7/2016	D-101	< 0.9	< 541	< 106	< 3.0	< 1.0
DWW- 6260	11/8/2016	D-127a	< 0.9	< 582	< 98	< 2.7	< 1.1
DWW- 6340	11/8/2016	D-128a	< 1.0	< 596	< 89	< 2.8	< 1.1
DWW- 6341	11/8/2016	D-129a	1.1 ± 0.8	< 564	< 93	< 2.5	< 1.0
DWW- 6344	11/8/2016	D-134a	< 1.1	< 571	< 112	< 2.4	< 0.9
DWW- 6345	11/8/2016	MW-18a	< 1.1	< 542	< 101	< 2.3	< 0.9

[a] Analyses for gamma, gross alpha, Sr-89, Sr-90, Fe-55 and Ni-63 will be performed if tritium activity > 1K pCi/L .

D-2B. Groundwater Protection Program Summary.

Monitoring wells, conditional analyses for gross alpha, iron-55, nickel-63, strontium-89 and strontium-90 [a]

Lab Code	Collection Date	Location	Gross Alpha	^{55}Fe	^{63}Ni	^{89}Sr	^{90}Sr
DWW- 6346	11/8/2016	MW-22a	< 1.2	< 589	< 92	< 2.6	< 1.1
DWW- 6347	11/8/2016	MW-23a	< 1.2	< 589	< 92	< 2.9	< 1.1
DWW- 6829	11/15/2016	MW-22a	< 1.0	< 522	< 99	< 3.1	< 1.0
DWW- 6831	11/15/2016	MW-23a	< 1.1	< 544	< 97	< 3.6	< 1.1
DWW- 6832	11/15/2016	MW-18a	< 1.1	< 558	< 95	< 2.8	< 0.9
DWW- 6833	11/15/2016	D-128a	< 1.1	< 544	< 89	< 2.7	< 0.9
DWW- 6837	11/15/2016	D-134a	< 1.1	< 534	< 107	< 2.7	< 0.9
DWW- 6834	11/22/2016	MW-23a	< 1.2	< 542	< 89	< 2.6	< 1.0
DWW- 6835	11/22/2016	MW-22a	< 1.3	< 532	< 87	< 2.7	< 1.0
DWW- 6836	11/22/2016	D-134a	< 1.2	< 538	< 88	< 3.1	< 1.1
DWW- 6838	11/22/2016	MW-18a	< 1.1	< 555	< 86	< 2.4	< 0.9
DWW- 6839	11/22/2016	D-128a	< 1.1	< 548	< 94	< 2.5	< 1.0
DWW- 696	11/29/2016	d-134a	< 1.1	< 645	< 101	< 3.5	< 1.1
DWW- 7019	12/21/2016	d-128a	< 1.0	< 590	< 94	< 1.9	< 1.0
DWW- 7020	12/21/2016	d-134a	< 1.1	< 626	< 91	< 2.1	< 1.1
DWW- 7021	12/21/2016	mw-18a	< 1.1	< 397	< 114	< 1.7	< 0.9
DWW- 7022	12/21/2016	mw-22a	< 1.0	< 626	< 108	< 1.9	< 1.0
DWW- 7023	12/21/2016	mw-23a	< 1.3	< 642	< 100	< 1.6	< 0.9
DWW- 7025	12/21/2016	mw-25a	< 1.1	< 634	< 118	< 1.9	< 1.0
DWW- 7027	12/21/2016	mw-26a	1.6 ± 0.8	< 623	< 100	< 1.8	< 1.0
DWW- 7026	12/30/2016	mw-25a	1.6 ± 0.8	< 623	< 102	< 1.8	< 1.1
DWW- 7028	12/30/2016	mw-26a	1.8 ± 0.9	< 643	< 122	< 1.5	< 0.9

[a] Analyses for gamma, gross alpha, Sr-89, Sr-90, Fe-55 and Ni-63 will be performed if tritium activity > 1K pCi/L.

Supplemental Analyses for Electrical Vaults

E-1. Supplemental Analyses

Water samples for tritium analysis. Units: pCi/L

Lab Code	Date	H-3	Lab Code	Date	H-3
D-119 Vault			D-121 Vault		
DSW- 798	02/24/16	211 ± 93	DSW- 799	02/24/16	204 ± 93
MH-101			MH-102		
DWW- 1060	03/07/16	234 ± 85	DWW- 1061	03/08/16	240 ± 85
MH-104			MH-105		
DSW- 6236	11/07/16	442 < 106	DSW- 6232	11/07/16	< 180
MH-106			MH-107		
DWW- 6234	11/07/16	< 180	DWW- 6233	11/07/16	< 180
MH-115			MH-202		
DWW- 1062	03/08/16	< 146	DWW- 1063	03/08/16	< 146
MH-222			MH-114		
DWW- 1064	03/08/16	< 146	DWW- 1170	03/11/16	< 150
MH-213			MH-219		
DWW- 1171	03/11/16	< 150	DWW- 5406	07/12/16	5404 ± 232

Supplemental Analyses for Drinking Water

E-2. Supplemental drinking water samples, analyses for gamma emitting isotopes iodine-131 and tritium

Location	D-52	D-53	D-54	D-52
Lab Code	DWW- 5644	DWW- 5645	DWW- 5646	DWW- 6136
Date Collected	10-19-16	10-19-16	10-19-16	11-07-16
H-3	<179	<179	<179	< 171
I-131	< 0.3	< 0.3	< 0.4	< 0.3
Mn-54	< 3.8	< 5.6	< 3.2	< 3.7
Fe-59	< 3.9	< 7.1	< 5.7	< 4.0
Co-58	< 2.2	< 2.9	< 2.8	< 2.4
Co-60	< 3.7	< 4.5	< 3.6	< 2.6
Zn-65	< 2.7	< 5.4	< 3.6	< 3.3
Nb-95	< 2.6	< 3.3	< 4.5	< 2.4
Zr-95	< 3.7	< 6.4	< 7.1	< 5.6
I-131	< 5.9	< 5.2	< 4.9	< 4.5
Cs-134	< 3.9	< 5.2	< 4.1	< 3.9
Cs-137	< 4.0	< 4.6	< 3.6	< 3.0
Ba-140	< 14.7	< 13.0	< 13.3	< 13.9
La-140	< 3.3	< 1.9	< 2.4	< 2.6

Location	D-52	D-53	D-54
Lab Code	DWW- 6883	DWW- 6884	DWW- 6885
Date Collected	12-19-16	12-19-16	12-19-16
H-3	< 147	< 147	< 147
I-131	< 0.1	< 0.3	< 0.3
Mn-54	< 1.6	< 1.6	< 2.9
Fe-59	< 3.8	< 3.1	< 4.9
Co-58	< 1.8	< 1.7	< 2.2
Co-60	< 1.9	< 1.9	< 1.4
Zn-65	< 3.8	< 5.2	< 5.2
Nb-95	< 2.3	< 3.0	< 2.7
Zr-95	< 2.9	< 2.8	< 5.4
I-131	< 3.7	< 3.8	< 3.8
Cs-134	< 2.3	< 3.4	< 3.2
Cs-137	< 1.4	< 2.0	< 3.6
Ba-140	< 6.5	< 13.2	< 11.6
La-140	< 1.8	< 1.5	< 3.4