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RBG-48081

April 20, 2021

Attn: Document Control Desk  
U. S. Nuclear Regulatory Commission  
11555 Rockville Pike  
Rockville, MD 20852-2738

Subject: 2020 Annual Radioactive Effluent Release Report  
River Bend Station – Unit 1  
Renewed Operating License No. NPF-47  
Docket No. 50-458

Enclosed is the River Bend Station (RBS) Annual Radioactive Effluent Release Report for the period of January 1, 2020 through December 31, 2020. This report is submitted in accordance with the RBS Technical Specifications, Section 5.6.3.

Should you have any questions regarding the enclosed, please contact Tim Schenk, at (225) 381-4177.

Sincerely,

**Tim Schenk**  
Digitally signed by Tim Schenk  
DN: cn=Tim Schenk, c=US, o=River Bend Station, ou=Manager  
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Tim Schenk

TAS/tf

Enclosure: 2020 Annual Radioactive Effluent Release Report

cc: NRC Region IV Regional Administrator, w/o Enclosure  
NRC Senior Resident Inspector – River Bend Station, Unit 1  
Ji Young Wiley, Department of Environmental Quality, Office of Environmental Compliance, Radiological Emergency Planning and Response Section  
Public Utility Commission of Texas, Attn: PUC Filing Clerk  
NRC Project Manager

**Enclosure**  
**2020 Annual Radioactive Effluent Release Report**



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	<b>YEAR: 2020</b>
<b>Document Number: RBG-48081</b>	
<b>Annual Radioactive Effluent Release Report</b>	

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**Annual Radioactive Effluent Release Report****1.0 INTRODUCTION**

This is the Annual Radioactive Effluent Release Report for the period of January 1, 2020, through December 31, 2020. This report is submitted in accordance with Technical Specification 5.6.3 of Appendix A to River Bend Station (RBS) License Number NPF-47.

**2.0 SUPPLEMENTAL INFORMATION****2.1 Regulatory Limits****2.1.1 10CFR50, Appendix I Limits**

1. Fission and activation gases:
  - a. In accordance with Technical Requirement (TR) 3.11.2.2, the air dose due to noble gases released in gaseous effluent to areas at and beyond the SITE BOUNDARY shall be limited to:
    - 1) Quarterly
      - Less than or equal to 5 mrad gamma
      - Less than or equal to 10 mrad beta
    - 2) Yearly
      - Less than or equal to 10 mrad gamma
      - Less than or equal to 20 mrad beta
2. Iodine, tritium, and all radionuclides in particulate form with half-lives greater than 8 days.
  - a. In accordance with Technical Requirement 3.11.2.3, the dose to a MEMBER OF THE PUBLIC from radioiodines (I-131 and I-133), tritium (H-3) and all radionuclides in particulate form with half-lives greater than 8 days, in gaseous effluent releases to areas at and beyond the SITE BOUNDARY shall be limited to:
    - 1) Quarterly
      - Less than or equal to 7.5 mrem to any organ
    - 2) Yearly
      - Less than or equal to 15 mrem to any organ

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3. Liquid Effluents Dose
  - a. In accordance with Technical Requirement 3.11.1.2, the dose or dose commitment to a MEMBER OF THE PUBLIC from radioactive materials in liquid effluent released to UNRESTRICTED AREAS shall be limited to:
    - 1) Quarterly
      - Less than or equal to 1.5 mrem total body
      - Less than or equal to 5 mrem critical organ
    - 2) Yearly
      - Less than or equal to 3 mrem total body
      - Less than or equal to 10 mrem critical organ
4. Total Dose (40CFR190)
  - a. In accordance with Technical Requirement 3.11.4, the annual (calendar year) dose or dose commitment to any MEMBER OF THE PUBLIC, due to releases of radioactivity and to radiation from uranium fuel cycle sources, shall be limited to:
    - Less than or equal to 25 mrem, Total Body or any Organ except Thyroid.
    - Less than or equal to 75 mrem, Thyroid

### 2.1.2 Miscellaneous Limits

1. Technical Requirement 3.11.2.1 - Fission and Activation Gases
  - a. In accordance with Technical Requirement 3.11.2.1, the dose rate due to radioactive materials released in gaseous effluents from the site to areas at and beyond the SITE BOUNDARY shall be:
    - Less than or equal to 500 mrem/year to the total body
    - Less than or equal to 3000 mrem/year to the skin
2. Technical Requirement 3.11.2.1 - Radioiodine (I-131 & I-133) and Particulate
  - a. In accordance with Technical Requirement 3.11.2.1, the dose rate due to radioiodines, tritium, and all radionuclides in particulate form with half-lives greater than 8 days released in gaseous effluents from the site to areas at and beyond the SITE BOUNDARY shall be limited to:
    - Less than or equal to 1500 mrem/yr to any organ

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3. Technical Requirement 3.11.1.1 - Liquid Effluent
  - a. In accordance with Technical Requirement 3.11.1.1, the concentration of radioactive material released in liquid effluent to UNRESTRICTED AREAS shall be limited to ten times the concentrations specified in 10CFR20, Appendix B, Table 2, Column 2 for radionuclides other than dissolved or entrained noble gases. For dissolved or entrained noble gases, the concentration shall be limited to 2.0E-04 microcuries/milliliter total concentration.
4. Technical Requirement 3.11.2.5 - Ventilation Exhaust Treatment
  - a. In accordance with Technical Requirement 3.11.2.5, the VENTILATION EXHAUST TREATMENT SYSTEM shall be used to reduce radioactive materials in gaseous waste prior to their discharge when the projected doses, due to gaseous effluent releases to areas and beyond the SITE BOUNDARY would exceed 0.3 mrem to any organ in a 31-day period.
5. Technical Requirement 3.11.1.3 - Liquid Radwaste Treatment System
  - a. In accordance with Technical Requirement 3.11.1.3, the liquid radwaste treatment system shall be used to reduce the radioactive materials in liquid waste prior to their discharge when the projected doses, due to the liquid effluent, to UNRESTRICTED AREAS would exceed 0.06 mrem to the total body or 0.2 mrem to any organ in a 31-day period.

**2.2 Effluent Concentration Limits**

1. Gaseous Releases
  - a. The concentrations of radioactive gaseous releases are based on the dose rate restrictions in RBS Technical Requirements, rather than the Effluent Concentration Limits (ECL) listed in 10CFR20 Appendix B, Table 2, Column 1.
2. Liquid Releases
  - a. The Effluent Concentration Limits of radioactive materials in liquid effluents are limited to ten times 10CFR20, Appendix B, Table 2, Column 2.

**2.3 Measurements & Approximations of Total Radioactivity**

1. Gaseous Effluent
  - a. Fission & activation gases

Periodic grab samples are obtained from the Main Plant Exhaust Duct, Fuel Building Exhaust Vent and Radwaste Building Exhaust Vent. These samples are analyzed using high purity germanium detectors coupled to computerized pulse height analyzers. The sampling and analysis frequencies are described in Table 4.

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Sampling and analysis of these effluent streams provide noble gas radionuclide relative abundance that can then be applied to the noble gas gross activity and gross activity release rate to obtain nuclide specific activities and release rates. The noble gas gross activity released within a specific time period is determined by integrating the stack monitor release rate over the considered time period. If no activity was detected between the stack grab sample and a significant increase in hourly averages was recorded, the nuclide relative abundance of the last sample (or the last similar event), which indicated the presence of activity, was used to obtain nuclide specific activities. Correction factors for the monitors are derived and applied for each sampling period whenever noble gas radionuclides are detected in the effluent stream.

b. Particulate and Radioiodine (I-131 & I-133)

Particulates, Iodine-131 and Iodine-133 are continuously sampled from the three release points using a particulate filter and charcoal cartridge in line with a sample pump (stack monitor pump). These filters and charcoal cartridges are removed and analyzed in accordance with the frequencies specified in Table 4. Analysis is performed to identify and quantify radionuclides using high purity germanium detectors coupled to computerized pulse height analyzers. Given the nuclide specific activity concentrations, process flow rate, and duration of the sample, the nuclide specific activity released to the environment can be obtained. Due to the continuous sampling process, it is assumed that the radioactive material is released to the environment at a constant rate within the sampling period. Strontium-89 and Strontium-90 (Sr-89 and Sr-90) are quantitatively analyzed by counting by gas flow proportional counting. Gross alpha analysis is performed using a zinc sulfide scintillation counter.

c. Tritium

Tritium grab samples are obtained from the three gaseous release points at the specified frequencies listed in Table 4 using an ice bath condensation collection method. The collected sample is then analyzed using a liquid scintillation counter. Given the tritium concentration, process flow rate, and time period for which the sample is obtained, the tritium activity released to the environment can be determined. Due to the frequency of sampling, it is assumed that the tritium is released to the environment at a constant rate within the time period for which the sample is obtained.



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## d. Carbon-14

The bounding annual dose from C-14 was calculated using guidance from Regulatory Guide 1.21, Revision 2, NUREG-0016, and the methodology in Regulatory Guide 1.109. The results of this calculation are listed in Table 13. The C-14 source term of 11 curies was taken from the site calculation PR(C)-359-3A, Gaseous Releases per NUREG-0016 Revision 1. Carbon-14 does not have dose factors associated with standing on contaminated ground; therefore, no ground plane dose was calculated. There is no milk pathway within five miles of River Bend Station, so this pathway is not evaluated. RBS does not take credit for decay in the X/Q. This calculation assumes the inhalation, meat and vegetation pathways are at the site boundary in the sector with the highest X/Q. The dose from liquid effluents is not calculated as the dose contribution from C-14 is considered to be insignificant as indicated in Regulatory Guide 1.21, Revision 2. According to EPRI 1021106, Estimation of Carbon-14 in Nuclear Power Plant Gaseous Effluents, 95% of the carbon released is in the form of carbon dioxide and this contributes the highest dose to man. The ingestion pathway, specifically vegetation, is the most likely route of intake for man. An assumption has been made for gaseous releases that plants obtain all of their C-14 from carbon dioxide.

## e. Nickel-63

No Nickel-63 was quantified in 2020.

## f. Gaseous Effluent Summary Information

Gaseous effluent summary information is located in Table 1, Table 2, and Table 3. It should be noted that an entry of "0.00E+00" Curie (Ci) or microcurie/second (uCi/sec) in this section indicates that the concentration of the particular radionuclide was below the Lower Limit of Detection (LLD) as listed in Table 4. Also, any nuclide not appearing in the tables was < LLD for all four quarters.

## 2. Liquid Effluents

- a. Representative grab samples are obtained from the appropriate sample recovery tank and analyzed prior to release of the tank in accordance with the frequencies listed in Table 8. Analysis for gamma emitting nuclides (including dissolved and entrained noble gases) is performed using a high purity germanium detector coupled to a computerized pulse height analyzer. Tritium concentration is determined using a liquid scintillation counter. Strontium-89 and Strontium-90 are quantitatively analyzed by scintillation techniques (Cherenkov counting). Iron-55 is counted with a liquid scintillation counter after digestion of the iron. Gross alpha analysis is performed using a zinc sulfide scintillation counter. The activity of each nuclide released to the environment is determined from the nuclide specific concentration and total tank volume released.

## Annual Radioactive Effluent Release Report

- b. Liquid effluent summation information is located in Table 5 and Table 6. It should be noted that an entry of "0.00E+00" Ci or uCi/ml in this section indicates that the concentration of the particular radionuclide was below the Lower Limit of Detection (LLD) as listed in Table 8. Also, any nuclide not appearing in the tables was < LLD for all four quarters.

## 3. Estimate of Total Error

## a. Liquid

The maximum error associated with sample collection, laboratory analysis, and discharge volume is collectively estimated to be:

Fission and Activation Products	± 14.2%
Tritium	± 14.2%
Dissolved and Entrained Noble Gases	± 14.2%
Gross Alpha Radioactivity	± 14.2%

## b. Gaseous

The maximum error (not including sample line loss) associated with sample flow, process flow, sample collection, monitor accuracy and laboratory analysis are collectively estimated to be:

Noble Gases	± 37.0%
Iodines	± 18.6%
Particulate	± 18.6%
Tritium	± 18.2%

## c. Determination of Total Error

The total error (i.e., collective error due to sample collection, laboratory analysis, sample flow, process flow, monitor accuracy, etc.) is calculated using the following equation:

$$E_T = \sqrt{[(E_1)^2 + (E_2)^2 + \dots + (E_n)^2]}$$

Where:

$E_T$  = total error

$E_1 \dots E_n$  = individual errors due to sample collection, laboratory analysis, sample flow, process flow, monitor accuracy, etc.

**Annual Radioactive Effluent Release Report****2.4 Batch Releases:**2.4.1 Liquid

Batch releases and receiving stream flow from River Bend Station during the reporting period of January 1, 2020, through December 31, 2020 are shown in Table 7.

The Mississippi River stream flow is obtained by averaging data from the U. S. Army Corp of Engineers website using flow gauge data at Tarbert Landing.

2.4.2 Gaseous

There were no routine batch releases of gaseous effluents from River Bend Station during the reporting period of January 1, 2020, through December 31, 2020.

**2.5 Abnormal Releases**

There were no abnormal releases in 2020.

**2.6 Major Changes to Radioactive Liquid, Gaseous, and Solid Waste Treatment Systems**

Engineering performed a review of the Asset Suite database to evaluate non-administrative design changes completed or partially completed during 2020 involving the subject systems (i.e. changes classified as evaluations or nuclear changes). These design changes were then reviewed to determine if there have been any major changes to the subject systems. The review was based on a major change being defined as a modification which affected the method of processing or the effluent from the system. Also, to be a "major change" the change must have affected the Updated Safety Analysis Report (USAR).

The Engineering Changes (EC's) to liquid, solid or gaseous radwaste systems implemented during this time period were:

**Annual Radioactive Effluent Release Report****EC 53367 -- LIQUID RADWASTE PIPING REPLACEMENT**

This quality-related EC removes a portion of discharge line LWS-002-615-4, and all of lines LWS-003-1000-4 and LWS-002-640-4 from 2" valve LWS-AOV257 to the CWS blowdown pit. The segment of line SWP-003-1043-4 routed inside the plant is also removed by this modification. Line LWS-002-640-4 and the buried segment of SWP-003-1043-4 are retired-in-place by filling the lines with a flowable grout and installing blind flanges on the ends. The existing lines are replaced by approximately 100 feet of 2" diameter piping and approximately 1000 feet of 4" diameter piping. The new LWS piping utilizes the existing LWS/SWP pipe routing and existing pipe supports, where possible, for the portion of piping inside the piping tunnels. A new engineered trench configuration is installed for the exterior portion of piping in the site yard, from the Turbine Building (TB) to the CWS blowdown pit. Stainless steel pipe is used for the in-plant piping and heat fusion joined High Density Polyethylene (HDPE) pipe is used for the exterior piping that is routed inside the concrete trench. Flanges are installed at the stainless steel/HDPE piping interface. Inside the CWS blowdown pit, the new 4" diameter LWS line connects to line CWS-020-35-4 via new 4" diameter CWS valve and line. The new 4" diameter CWS valve and line is installed by performing a 'hot tap' on line CWS-020-35-4.

EC-53367 installs two (2) new, 6" diameter wall penetrations to route the 4" diameter HDPE piping. The first new penetration is installed at El. 93' on the south wall of the Turbine Building, near existing penetrations for lines LWS-002-615-4 and SWP-003-1043-4. The second penetration is installed at El. 90.67' on the west wall of the CWS Blowdown Pit, approximately 27' -9" from the south edge.

A temporary modification (TMOD) has been installed per EC-35300 to allow the LWS to discharge processed liquid radwaste to the CWS blowdown pit. EC-35300 disconnected lines LWS-002-615-4 and SWP-003-1043-4 from the LWS and placed the lines out-of-service. Installation of EC-53367 requires the disconnection of temporary modification EC-35300 from the LWS.

EC-53367 is a quality-related EC because it impacts Secondary Containment barriers by removing existing piping and installing new piping in "D" Tunnel. This EC also impacts piping in the LWS, which is classified as an Augmented Quality (QP) system. However, the piping system that is installed by this EC is used in a non-nuclear safety application. Procurement of major piping components and all pipe support structural elements / engineered hardware components are QP. The QP classification is maintained by requiring vendor of piping and pipe support materials to provide Certificate of Compliance to the material specifications

**Annual Radioactive Effluent Release Report****EC 11564 -- LWS-TK7 BACKWASH TANK DECANT FILTERING UNIT SSCV**

## Problem Statement:

The Liquid Radioactive Waste System (LWS) Backwash Tank, LWS-TK7, has not been efficient in removing/settling out suspended solids before decanting excess water to the Floor Drain Collector Tanks. This results in the transfer of suspended solids to the Floor Drain Collector Tanks and excessive downstream LWS strainer and/or filter loading and backwashing. Furthermore, solids smaller than the solid radioactive waste shipping liner (WSS-SKD1) retention elements are also being transferred to the Floor Drain Collector Tanks during dewatering of the shipping liner.

Without routine recirculation of the Floor Drain Collector Tanks, suspended solids transferred to the Floor Drain Collector Tanks settle to the bottom of the tanks creating sludge layers. Removal of these sludge layers from the Floor Drain Collector Tanks impacts their radioactive waste collection capacity and is person-rem intensive.

## Solution Statement:

Install an AVANTech designed Solids Separation and Collection Vessel (SSCV) subsystem (LWS-SKD7) to receive decant water from LWS-TK7 and dewatering discharge from WSS-SKD1. The SSCV subsystem settles out suspended solids, transfers those solids to WSS-SKD1, and filters the discharge water through a Solids Collection Filter (SCF) prior to supplying it to the Floor Drain Collector Tanks. Solids from the SSCV subsystem are transferred to WSS-SKD1 in the same manner as other solid radioactive waste.

No EC was identified as being completed during this time period that modified any radioactive waste system major component such that the processing method or effluent was changed. Also, no changes were identified affecting the method of processing solid, liquid or gaseous waste or the isotopic composition or the quantity of liquid, solid, or gaseous waste as described in the USAR.

In conclusion, no design changes were completed during the specified time period that constituted a major change to either the liquid, solid or gaseous radwaste treatment systems.

**Annual Radioactive Effluent Release Report****2.7 Land Use Census Changes**

The Land Use Census for 2020 was conducted as required by the Technical Requirements Manual (TRM) (TR 3.12.2). The results of the Land Use Census will be included in the Annual Radiological Environmental Operating Report pursuant to Technical Specification 5.6.2.

A garden census is not conducted pursuant to the note in the TRM 3.12.2 that allows the sampling of broadleaf vegetation in the highest calculated average ground-level D/Q sector near site boundary in lieu of the garden census.

The milk animal census identified no milk animals within 8 km (5 miles) of River Bend site. This information was verified by the County Agents from West Feliciana, East Feliciana and Pointe Coupee parishes.

No locations were identified this period that would yield a calculated dose or dose commitment greater than those currently calculated in Requirement TSR 3.11.2.3.1.

The County Agents confirmed that there was no commercial harvesting of crawfish within the five-mile radius downstream of RBS. RBS conservatively uses the invertebrate pathway although not required by NUREG-0133 liquid dose factor methodology for fresh water nuclear power plants.

**2.8 Effluent Monitor Instrument Inoperability****2.8.1 Radioactive Liquid Effluent Monitoring Instrumentation Operability**

The minimum number of channels required to be OPERABLE as described in Table 3.3.11.2-1 of Technical Requirement 3.3.11.2 were, if inoperable at any time in the period January 1, 2020, through December 31, 2020, restored to operable status within the required time.

**2.8.2 Radioactive Gaseous Effluent Monitoring Instrumentation Operability**

The minimum number of channels required to be OPERABLE as described in Table 3.3.11.3-1 of Technical Requirement 3.3.11.3 were, if inoperable at any time in the period January 1, 2020, through December 31, 2020, restored to operable status within the required time.

**Annual Radioactive Effluent Release Report****2.9 Offsite Dose Calculation Manual Changes**

There were no changes to the Offsite Dose Calculation Manual in 2020.

**2.10 Radiological Environmental Monitoring Program Changes**

There were no changes to the Radiological Environmental Monitoring Program during the reporting period January 1, 2020, through December 31, 2020. Process Control Program (PCP) Changes

There were no changes to the Process Control Program (PCP) in 2019. NON-REMP Groundwater Monitoring Results (NEI 07-07)

Ground water samples were taken in support of the Groundwater Protection Initiative (GPI). These samples are not part of the Radiological Environmental Monitoring Program. The sample results for 2020 are located in Table 17, Table 18, and Table 19.

River Bend Station made no NEI 07-07 voluntary notifications in 2020.

**2.11 Outside Tanks**

The maximum quantity of radioactive material, excluding tritium and dissolved or entrained noble gases, contained in any unprotected outdoor tank during the period of January 1, 2020, through December 31, 2020 was less than or equal to the 10 curie limit as required by Technical Specification 5.5.8.b.

## Annual Radioactive Effluent Release Report

## 3.0 GASEOUS EFFLUENTS

## 3.1 Gas Effluent and Waste Disposal Report

Table 1, Gaseous Effluents-Summation of All Releases

A.	Fission & Activation Gases	Unit	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Annual
1.	Total Release	Ci	4.60E+01	2.12E+01	1.67E+02	4.40E+03	4.63E+03
2.	Average release rate for the period	μCi/sec	5.85E+00	2.70E+00	2.11E+01	5.53E+02	1.46E+02

B.	Iodine						
1.	Total Iodine – 131	Ci	4.70E-02	3.75E-02	4.85E-02	5.70E-02	1.90E-01
2.	Average release rate for the period	μCi/sec	5.98E-03	4.77E-03	6.10E-03	7.17E-03	6.01E-03

C.	Particulates						
1.	Particulates with half-lives > 8 days	Ci	1.57E-03	2.85E-04	5.19E-04	4.24E-04	2.80E-03
2.	Average release rate for the period	μCi/sec	2.00E-04	3.63E-05	6.53E-05	5.33E-05	8.86E-05

D.	Tritium						
1.	Total Release	Ci	4.12E+00	2.32E+00	4.03E+00	6.83E+00	1.73E+01
2.	Average release rate for the period	μCi/sec	5.24E-01	2.95E-01	5.07E-01	8.60E-01	5.47E-01

E.	Gross Alpha						
1.	Total Release	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.	Average release rate for the period	μCi/sec	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

F.	Carbon-14						
1.	Total Release	Ci	2.71E+00	2.74E+00	2.77E+00	2.77E+00	1.1E+01
2.	Average release rate for the period	μCi/sec	3.49E-01	3.48E-01	3.48E-01	3.48E-01	3.49E-01

% of limit is located in the Radiological Impact to Man Table



## Annual Radioactive Effluent Release Report

Table 2, Gaseous Effluents – Ground Level Release - Continuous Mode

Radionuclide Released	Unit	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Total
<b>Fission Gases</b>						
Xe-133m	Ci	0.0E+00	3.3E-01	1.5E-01	0.0E+00	4.7E-01
Xe-133	Ci	0.0E+00	0.0E+00	0.0E+00	4.2E+03	4.2E+03
Xe-135m	Ci	4.4E+00	3.7E+00	2.7E+00	5.8E+00	1.7E+01
Xe-135	Ci	3.4E+00	2.1E+00	4.8E+00	5.2E+00	1.5E+01
Total For Period	Ci	7.8E+00	6.2E+00	7.6E+00	4.2E+03	4.2E+03
<b>Iodines</b>						
I-131	Ci	1.57E-04	4.70E-05	7.09E-05	6.16E-05	3.36E-04
I-133	Ci	1.02E-04	8.63E-05	8.95E-05	1.57E-04	4.35E-04
Total for Period	Ci	2.58E-04	1.33E-04	1.60E-04	2.19E-04	7.71E-04
<b>Particulates</b>						
Co-58	Ci	0.00E+00	1.06E-06	0.00E+00	0.00E+00	1.06E-06
Co-60	Ci	0.00E+00	7.16E-06	0.00E+00	9.39E-07	8.10E-06
Total for Period	Ci	0.00E+00	7.16E-06	0.00E+00	9.39E-07	8.10E-06
<b>Tritium</b>						
H-3	Ci	2.15E-01	6.75E-01	6.41E-01	2.94E+00	4.47E+00

## Annual Radioactive Effluent Release Report

Table 3, Gaseous Effluents – Mixed Mode Release – Continuous Mode

Radionuclide Released	Unit	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Total
<b>Fission Gases</b>						
Kr-85m	Ci	2.75E-01	1.50E-01	4.17E+00	3.69E+00	8.29E+00
Kr-87	Ci	1.91E+00	0.00E+00	6.74E-01	2.93E+00	5.51E+00
Kr-88	Ci	0.00E+00	0.00E+00	1.90E+00	4.11E+00	6.01E+00
Xe-133	Ci	0.00E+00	0.00E+00	1.24E+00	8.73E-01	2.11E+00
Xe-135m	Ci	1.62E-01	2.24E+00	4.60E+01	3.69E+01	8.53E+01
Xe-135	Ci	5.91E+00	3.30E+00	1.85E+01	1.52E+01	4.29E+01
Xe-137	Ci	6.58E+00	9.34E+00	7.03E+01	3.69E+01	1.23E+02
Xe-138	Ci	0.00E+00	0.00E+00	2.48E+00	4.31E+01	4.55E+01
Total for Period	Ci	2.34E+01	0.00E+00	1.45E+01	4.48E+01	8.27E+01
<b>Iodines</b>						
I-131	Ci	4.20E-03	3.38E-03	5.43E-03	6.20E-03	1.92E-02
I-133	Ci	4.25E-02	3.40E-02	4.29E-02	5.06E-02	1.70E-01
Total for Period	Ci	4.67E-02	3.74E-02	4.84E-02	5.68E-02	1.89E-01
<b>Particulates</b>						
Fe-59	Ci	0.00E+00	0.00E+00	2.62E-06	0.00E+00	2.62E-06
Co-58	Ci	1.86E-05	0.00E+00	0.00E+00	0.00E+00	1.86E-05
Co-60	Ci	4.14E-05	2.86E-06	2.71E-06	0.00E+00	4.70E-05
Sr-89	Ci	8.65E-04	5.94E-05	1.87E-04	1.85E-04	1.30E-03
Ag-110m	Ci	0.00E+00	1.09E-05	2.99E-05	8.43E-06	4.92E-05
Sb-126	Ci	0.00E+00	0.00E+00	0.00E+00	1.73E-06	1.73E-06
Cs-136	Ci	0.00E+00	2.19E-06	0.00E+00	0.00E+00	2.19E-06
Ba-140	Ci	6.41E-04	1.98E-04	2.94E-04	2.24E-04	1.36E-03
Ce-141	Ci	7.76E-06	4.14E-06	2.63E-06	3.60E-06	1.81E-05
Total for Period	Ci	1.57E-03	2.77E-04	5.19E-04	4.23E-04	2.79E-03
<b>Tritium</b>						
H-3	Ci	3.91E+00	1.64E+00	3.39E+00	3.89E+00	1.28E+01

## Annual Radioactive Effluent Release Report

Table 4, Radioactive Gaseous Waste Sampling and Analysis Program

Gaseous Release Type	Sampling Frequency	Minimum Analysis Frequency	Type of Activity Analysis	Lower Limit of Detection (LLD) uC/ml
Main Plant Exhaust Duct	M Grab Sample	M	Principle Gamma Emitters	1.00E-04
			H-3	1.00E-06
Fuel Building Ventilation Exhaust Duct	M Grab Sample	M	Principle Gamma Emitters	1.00E-04
			H-3	1.00E-06
Radwaste Building Ventilation Exhaust Duct	M Grab Sample	M	Principle Gamma Emitters	1.00E-04
			H-3	1.00E-06
All Release Types as listed above	Continuous	W Charcoal Sample	I-131	1.00E-12
			I-133	1.00E-10
	Continuous	W Particulate Sample	Principle Gamma Emitters (I-131, Others)	1.00E-11
	Continuous	M Composite Particulate Sample	Gross Alpha	1.00E-11
	Continuous	Q Composite Particulate Sample	Sr-89, Sr-90	1.00E-11
	Continuous	Noble Gas Monitor	Noble Gases Gross Beta or Gamma	1.00E-6

W = At least once per 7 days

M = At least once per 31 days

Q = At least once per 92 days

## Annual Radioactive Effluent Release Report

## 4.0 LIQUID EFFLUENTS

4.1 Liquid Effluent and Waste Disposal Report

Table 5, Liquid Effluents-Summation of All Releases

A	Fission & Activation Products	Unit	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Annual
1.	Total Release (not including tritium, gases or alpha)	Ci	1.43E-03	1.72E-03	4.66E-03	1.02E-03	8.82E-03
2.	Average diluted concentration during period	μCi/mL	6.56E-07	5.19E-07	9.68E-07	4.81E-07	7.10E-07
<b>B. Tritium</b>							
1.	Total Release	Ci	8.45E+00	1.11E+01	1.58E+01	1.54E+01	5.07E+01
2.	Average diluted concentration during period.	μCi/mL	3.89E-03	3.35E-03	3.28E-03	7.29E-03	4.08E-03
<b>C. Dissolved &amp; Entrained Gases</b>							
1.	Total Release	Ci	5.55E-02	4.85E-02	1.16E-01	4.07E-02	2.61E-01
2.	Average diluted concentration during period	μCi/mL	2.55E-05	1.46E-05	2.40E-05	1.93E-05	2.10E-05
<b>D. Gross Alpha Activity</b>							
1.	Total Release	Ci	0.0E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
E.	Volume Of Waste Released (prior to dilution)	Liters	2.17E+06	3.32E+06	4.82E+06	2.11E+06	1.24E+07
F.	Volume Of Dilution Water Used During Period	Liters	1.37E+09	1.32E+09	1.41E+09	1.36E+09	5.46E+09

% of limit is located in the Radiological Impact to Man Table

## Annual Radioactive Effluent Release Report

Table 6, Liquid Effluents – Batch Release

Radionuclide Released	Unit	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Total
<b>Fission and Activation Products</b>						
Cr-51	Ci	0.00E+00	0.00E+00	0.00E+00	1.02E-05	1.02E-05
Mn-54	Ci	4.49E-06	1.45E-06	1.01E-05	1.40E-05	3.01E-05
Co-58	Ci	1.34E-06	1.07E-06	0.00E+00	0.00E+00	2.41E-06
Co-60	Ci	9.72E-04	1.67E-03	2.24E-03	8.96E-04	5.78E-03
Br-82	Ci	1.61E-06	0.00E+00	0.00E+00	0.00E+00	1.61E-06
Nb-97	Ci	3.90E-06	0.00E+00	2.02E-06	0.00E+00	5.92E-06
Ag-110m	Ci	3.55E-06	0.00E+00	9.28E-06	0.00E+00	1.28E-05
Sn-113	Ci	1.27E-06	0.00E+00	0.00E+00	0.00E+00	1.27E-06
Sb-125	Ci	3.65E-06	8.00E-06	0.00E+00	0.00E+00	1.16E-05
I-131	Ci	7.71E-06	4.76E-06	1.20E-05	0.00E+00	2.45E-05
I-133	Ci	1.63E-06	0.00E+00	3.64E-06	0.00E+00	5.28E-06
Cs-134	Ci	2.68E-06	0.00E+00	6.05E-06	1.81E-06	1.05E-05
Cs-137	Ci	3.42E-06	0.00E+00	1.53E-05	4.64E-06	2.34E-05
Cs-138	Ci	0.00E+00	2.48E-05	0.00E+00	0.00E+00	2.48E-05
Ba-141	Ci	2.38E-05	0.00E+00	0.00E+00	1.27E-05	3.64E-05
Ba-142	Ci	3.43E-04	0.00E+00	2.30E-03	3.17E-05	2.68E-03
La-140	Ci	5.23E-05	9.93E-06	6.02E-05	0.00E+00	1.22E-04
Ce-141	Ci	0.00E+00	0.00E+00	3.41E-06	0.00E+00	3.41E-06
Ce-144	Ci	0.00E+00	0.00E+00	0.00E+00	4.46E-05	4.46E-05
Total For Period	Ci	1.43E-03	1.72E-03	4.66E-03	1.02E-03	8.82E-03
<b>Tritium</b>						
H-3	Ci	8.45E+00	1.11E+01	1.58E+01	1.54E+01	5.07E+01
Total for Period	Ci	8.45E+00	1.11E+01	1.58E+01	1.54E+01	5.07E+01

## Annual Radioactive Effluent Release Report

Table 6, Liquid Effluents – Batch Release

Radionuclide Released	Unit	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Total
<b>Dissolved and Entrained Gases</b>						
Kr-88	Ci	0.000E+00	1.348E-05	7.730E-05	5.089E-05	1.417E-04
Xe-131m	Ci	0.000E+00	0.000E+00	0.000E+00	2.256E-04	2.256E-04
Xe-133m	Ci	1.035E-03	4.352E-04	2.031E-03	1.749E-04	3.676E-03
Xe-133	Ci	3.144E-02	2.126E-02	5.468E-02	1.051E-02	1.179E-01
Xe-135m	Ci	6.680E-04	0.000E+00	0.000E+00	0.000E+00	6.680E-04
Xe-135	Ci	2.238E-02	2.679E-02	5.900E-02	2.979E-02	1.380E-01
Xe-138	Ci	0.000E+00	0.000E+00	2.004E-05	0.000E+00	2.004E-05
Total For Period	Ci	5.553E-02	4.850E-02	1.158E-01	4.075E-02	2.606E-01

## Annual Radioactive Effluent Release Report

Table 7, Supplemental Information for Liquid Effluents – Batch Mode

Report for 2020	Units	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Year
Number of releases		35	51	74	35	195
Total Release Time	minutes	1.175E+04	1.701E+04	2.466E+04	1.089E+04	6.431E+04
Maximum Release Time	minutes	9.190E+02	8.910E+02	1.188E+03	8.140E+02	1.188E+03
Average Release Time	minutes	3.357E+02	3.336E+02	3.333E+02	3.110E+02	3.298E+02
Minimum Release Time	minutes	1.670E+02	2.650E+02	2.640E+02	2.400E+02	1.670E+02

	Units	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Average Mississippi River stream flow during periods of release into a flowing stream	ft <sup>3</sup> /sec	1,058,917	1,076,113	400,469	343,539

## Annual Radioactive Effluent Release Report

Table 8, Radioactive Liquid Waste Sampling and Analysis Program

Liquid Release Type	Sampling Frequency	Minimum Analysis Frequency	Type of Activity Analysis	Lower Limit of Detection (LLD) uC/ml
Batch Waste Release (Liquid Radwaste Recovery Sample Tanks)	P Each Batch	P Each Batch	Principle Gamma Emitters; except Ce-144	5.00E-07 5.00E-06
			I-131	1.00E-06
	P Each Batch / M	M	Dissolved and Entrained Gases (Gamma Emitters)	1.00E-05
	P Each Batch	M Composite	H-3	1.00E-05
			Gross Alpha	1.00E-07
	P Each Batch	Q Composite	Sr-89, Sr-90	5.00E-8
			Fe-55	1.00E-06

P = Prior to each radioactive release

M = At least once per 31 days

Q = At least once per 92 days



## Annual Radioactive Effluent Release Report

## 5.0 SOLID WASTE SUMMARY

5.1 Solid Waste Shipped Offsite for Burial or Disposal (Not Irradiated Fuel)5.1.1 Types of Waste

Table 9, Types of Solid Waste Summary

Types of Waste	Total Quantity (m <sup>3</sup> )	Total Activity (Ci)	Est. Total Error (%)
a. Spent resins, filter sludges, evaporator bottoms, etc.	3.61E+01	1.25E+03	25
b. Dry compressible waste, contaminated equip, etc.	3.64E+02	4.61E-01	25
c. Irradiated components, control rods, etc.	0.00E+00	0.00E+00	25
d. Other (Water, EHC, Waste Oil, etc.)	7.79E+01	2.66E-02	25

5.1.2 Estimate of major nuclide composition (by waste type) only >1% [Note 1] are reported.

Table 10, Major Nuclides

Major Nuclide Composition	Isotope	%	Curies
a. Resins, filters, evaporator bottoms, etc.	Mn-54	1.55%	1.95E+01
	Fe-55	27.02%	3.39E+02
	Co-60	63.14%	7.92E+02
	Zn-65	2.46%	3.09E+01
	Sr-90	2.20%	2.75E+01
	Cs-134	1.12%	1.40E+01
	Cs-137	1.82%	2.28E+01

## Annual Radioactive Effluent Release Report

Table 10, Major Nuclides

b. Dry compressible waste, contaminated equip, etc.	Cr-51	3.88%	1.79E-02
	Mn-54	2.99%	1.38E-02
	Fe-55	27%	1.25E-01
	Co-60	33.45%	1.55E-01
	Zn-65	1.55%	7.16E-03
	Tc-99	18.09%	8.37E-02
	Cs-134	3.56%	1.65E-02
	Cs-137	3.27%	1.51E-02
	Ce-141	2.58%	1.19E-02
c. Irradiated components, control rods, etc.	N/A	N/A	N/A
<b>Major Nuclide Composition</b>	<b>Isotope</b>	<b>%</b>	<b>Curies</b>
d. Other (Water, EHC, Waste Oil, Etc.)	Cr-51	3.35%	8.93E-04
	Mn-54	3.25%	8.66E-04
	Fe-55	27.38%	7.31E-03
	Co-60	33.59%	8.96E-03
	Zn-65	1.69%	4.52E-04
	Tc-99	17.37%	4.64E-03
	Cs-134	4.05%	1.08E-03
	Cs-137	3.31%	8.82E-04
	Ce-141	2.35%	6.28E-04

[Note 1] – “Major” radionuclide is equivalent to a “principle” radionuclide, i.e. greater than 1 percent of total activity.

## Annual Radioactive Effluent Release Report

5.1.3 Solid Waste Disposition

Table 11, Solid Waste Disposition (Specify Site or Unit)

Number of Shipments	Mode of Transportation	Destination
1	Truck	Energy Solutions (Gallaher) 628 Gallaher Road
17	Truck	EnergySolutions Services (Bear Creek) Bear Creek Processing Facility
2	Truck	Erwin ResinSolution, LLC 151 T. C. Runion Road
1	Truck	EnergySolutions Services (Bear Creek) Bear Creek Processing Facility

Table 12, Irradiated Fuel Shipments Disposition

No Irradiated Fuel Shipments for 2020		
Number of Shipments	Mode of Transportation	Destination
N/A	N/A	N/A

## Annual Radioactive Effluent Release Report

## 6.0 RADIOLOGICAL IMPACT TO MAN

## 6.1 10CFR Part50, Appendix I Evaluation

Table 13, Dose Assessment

	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Annual
Liquid Effluent Dose Limit, Total Body	1.5 mrem	1.5 mrem	1.5 mrem	1.5 mrem	3 mrem
Total Body Dose	7.03E-06	7.95E-06	3.68E-05	8.70E-06	5.45E-05
<b>% of Limit</b>	<b>4.68E-04</b>	<b>5.30E-04</b>	<b>2.45E-03</b>	<b>5.80E-04</b>	<b>1.82E-03</b>
Liquid Effluent Dose Limit, Any Organ	5 mrem	5 mrem	5 mrem	5 mrem	10 mrem
Maximum Organ Dose	1.89E-05	3.23E-05	7.91E-05	2.67E-05	1.48E-04
<b>% of Limit</b>	<b>3.78E-04</b>	<b>6.46E-04</b>	<b>1.58E-03</b>	<b>5.34E-04</b>	<b>1.48E-03</b>
Gaseous Effluent Dose Limit, Gamma Air	5 mrad	5 mrad	5 mrad	5 mrad	10 mrad
Gamma Air Dose	5.56E-02	2.56E-02	6.54E-02	2.09E+00	2.24E+00
<b>% of Limit</b>	<b>1.11</b>	<b>0.51</b>	<b>1.31</b>	<b>41.80</b>	<b>22.36</b>
Gaseous Effluent Dose Limit, Beta Air	10 mrad	10 mrad	10 mrad	10 mrad	20 mrad
Beta Air Dose	3.14E-02	1.43E-02	5.63E-02	6.00E+00	6.11E+00
<b>% of Limit</b>	<b>0.31</b>	<b>0.14</b>	<b>0.56</b>	<b>60.04</b>	<b>30.53</b>
Gaseous Effluent Organ Dose Limit (Iodine, Tritium, Particulates with > 8 day half-life)	7.5 mrem	7.5 mrem	7.5 mrem	7.5 mrem	15 mrem
Gaseous Effluent Organ Dose (Iodine, Tritium, Particulates with > 8 day half-life)	1.92E-01	1.47E-01	2.23E-01	2.66E-01	8.29E-01
<b>% of Limit</b>	<b>2.56</b>	<b>1.96</b>	<b>2.98</b>	<b>3.55</b>	<b>5.52</b>

## Annual Radioactive Effluent Release Report

Table 13, Dose Assessment (continued)

	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Annual
Gaseous Effluent Organ Dose Limit (Carbon-14 – Bounding Calculation)	7.5 mrem	7.5 mrem	7.5 mrem	7.5 mrem	15 mrem
Gaseous Effluent Organ Dose (Carbon-14 – Bounding Calculation)	1.17E+00	1.17E+00	1.18E+00	1.18E+00	4.70E+00
% of Limit	1.56E+01	1.56E+01	1.58E+01	1.58E+01	3.13E+01

## 6.2 Dose to Members of the Public Inside the Site Boundary

The maximally exposed member of the public was calculated to be member of the West Feliciana Parish Sheriff's Office (WFPSO) that opened a substation in a facility within the site boundary beginning in 2019. The office is estimated to be occupied during normal work hours for 2000 hours per year. It should be noted that the liquid effluent pathway dose was not considered since the individual would not engage in activities that would allow exposure to this pathway.

Location	Annual Critical Organ Dose (mrem)	Annual Total Body Dose (mrem)	Annual Skin Dose (mrem)	Annual Duration Factor
Alligator Bayou	5.99E-05	4.53E-06	5.77E-07	4.57E-03
Deer Hunters	2.33E-03	3.15E-04	4.89E-05	2.92E-02
Onsite RV Park	5.43E-03	7.35E-04	1.14E-04	6.82E-02
WFPSO Building	1.82E-02	2.46E-03	3.82E-04	2.28E-01

## Annual Radioactive Effluent Release Report

**6.3 40CFR Part 190 Evaluation for an Individual in the Unrestricted Area**

An assessment (see Table 14) was made of radiation doses to the likely most-exposed member of the public from River Bend and other nearby uranium fuel cycle sources (none within five miles). The annual (calendar year) dose or dose commitment to any MEMBER OF THE PUBLIC, due to releases of radioactivity and to radiation from uranium fuel cycle sources, shall be limited to less than or equal to 25 mrem to the total body or any organ, except the thyroid, which shall be limited to less than or equal to 75 mrem.

**Table 14, EPA 40 CFR PART 190 Evaluation**

	<b>Total Body</b>	<b>Thyroid</b>	<b>Any Other Organ</b>
Dose Limit	25 mrem	75 mrem	25 mrem
Dose	1.92E+00	2.72E+00	1.93E+00
% of Limit	7.69E+00	3.63E+00	7.72E+00

Liquid dose, gaseous dose including a bounding calculation of C-14 dose, direct shine, ISFSI and any other nuclear power related facility within 5 miles of the station are considered when calculating dose compliance with 40 CFR 190.

## Annual Radioactive Effluent Release Report

**7.0 METEOROLOGICAL DATA**

Cumulative joint frequency distributions and annual average data for continuous releases are listed below. The meteorological recovery for 2020 was 93.01%.

**7.1 Joint Frequency Distributions**

All Stability Classes

Period of Record: 01/01/2020 - 12/31/2020

Elevation: Primary Sensors – 30 Foot

Wind Direction	Wind Speed (meters/second)										Total
	0.22-0.50	0.51-0.75	0.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	>10.0	
N	74	61	84	156	92	153	55	0	0	0	675
NNE	78	55	67	153	122	109	29	0	0	0	613
NE	83	49	83	164	145	120	6	0	0	0	650
ENE	105	71	78	136	97	124	16	1	0	0	628
E	80	76	81	105	69	40	7	0	0	0	458
ESE	49	57	74	122	107	73	5	0	0	0	487
SE	51	63	120	167	196	224	36	1	0	0	858
SSE	17	42	70	139	134	196	94	14	4	0	710
S	25	39	52	162	125	169	65	3	0	0	640
SSW	17	43	44	62	61	76	30	1	0	0	334
SW	16	24	32	44	44	50	8	1	0	0	219
WSW	24	25	20	41	61	51	5	0	0	0	227
W	31	44	23	55	46	75	16	0	0	0	290
WNW	60	51	31	56	52	58	45	1	0	0	354
NW	51	50	40	56	57	106	60	6	0	0	426
NNW	60	42	37	80	76	115	50	1	0	0	461
Total	821	792	936	1698	1484	1739	527	29	4	0	8030

Number of Calms: 140

Number of Invalid Hours: 614

Number of Valid Hours: 8170

Total Hours for the Period: 8784

## Annual Radioactive Effluent Release Report

Stability Class A

Period of Record: 01/01/2020 - 12/31/2020

Elevation: Primary Sensors – 30 Foot

Wind Direction	Wind Speed (meters/second)										Total
	0.22-0.50	0.51-0.75	0.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	>10.0	
N	1	2	2	15	23	45	7	0	0	0	95
NNE	0	0	6	18	38	30	13	0	0	0	105
NE	0	1	5	24	29	40	2	0	0	0	101
ENE	1	3	4	22	35	42	0	0	0	0	107
E	1	1	5	32	25	14	0	0	0	0	78
ESE	1	1	8	18	35	19	2	0	0	0	84
SE	0	0	7	20	45	80	10	0	0	0	162
SSE	0	2	2	16	25	31	7	0	0	0	83
S	0	2	4	21	20	42	16	1	0	0	106
SSW	0	0	0	12	15	22	0	0	0	0	49
SW	0	1	1	9	21	19	1	0	0	0	52
WSW	0	0	1	16	42	26	2	0	0	0	87
W	1	2	1	24	32	45	6	0	0	0	111
WNW	0	0	3	17	32	20	6	1	0	0	79
NW	0	1	6	12	25	37	16	2	0	0	99
NNW	0	1	1	19	22	34	13	0	0	0	90
Total	5	17	56	295	464	546	101	4	0	0	1488

Number of Calms: 0

Number of Invalid Hours: 0

Number of Valid Hours: 1488

Total Hours for the Period: 1488



## Annual Radioactive Effluent Release Report

Stability Class B

Period of Record: 01/01/2020 - 12/31/2020

Elevation: Primary Sensors – 30 Foot

Wind Direction	Wind Speed (meters/second)										Total
	0.22-0.50	0.51-0.75	0.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	>10.0	
N	0	0	1	0	0	5	5	0	0	0	11
NNE	0	0	0	0	1	6	0	0	0	0	7
NE	0	0	1	0	1	9	0	0	0	0	11
ENE	0	0	1	2	0	1	0	0	0	0	4
E	0	0	0	2	1	1	0	0	0	0	4
ESE	0	0	1	1	0	2	0	0	0	0	4
SE	0	0	0	0	0	12	0	0	0	0	12
SSE	0	0	0	0	2	3	1	1	0	0	7
S	0	0	0	0	1	0	1	0	0	0	2
SSW	0	0	0	0	0	1	0	0	0	0	1
SW	0	0	1	1	0	0	0	0	0	0	2
WSW	0	0	0	0	0	1	1	0	0	0	2
W	0	0	1	0	0	6	1	0	0	0	8
WNW	0	0	0	0	1	0	2	0	0	0	3
NW	0	0	1	1	0	1	3	2	0	0	8
NNW	0	0	0	0	0	1	1	0	0	0	2
Total	0	0	7	7	7	49	15	3	0	0	88

NUMBER OF CALMS: 1

NUMBER OF INVALID HOURS: 0

NUMBER OF VALID HOURS: 89

TOTAL HOURS FOR THE PERIOD: 89

## Annual Radioactive Effluent Release Report

Stability Class C

Period of Record: 01/01/2020 - 12/31/2020

Elevation: Primary Sensors – 30 Foot

Wind Direction	Wind Speed (meters/second)										Total
	0.22-0.50	0.51-0.75	0.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	>10.0	
N	0	1	0	0	2	14	9	0	0	0	26
NNE	0	0	1	1	4	19	2	0	0	0	27
NE	0	0	1	2	7	14	1	0	0	0	25
ENE	1	0	1	4	5	6	0	0	0	0	17
E	0	2	0	3	2	2	1	0	0	0	10
ESE	0	0	0	2	6	6	0	0	0	0	14
SE	1	0	0	2	9	14	3	0	0	0	29
SSE	0	0	1	3	2	9	4	0	1	0	20
S	0	0	0	0	4	4	1	1	0	0	10
SSW	0	0	0	2	0	1	1	0	0	0	4
SW	0	0	1	2	3	3	0	0	0	0	9
WSW	0	0	0	1	5	8	1	0	0	0	15
W	0	1	0	1	3	9	3	0	0	0	17
WNW	0	1	0	2	0	3	6	0	0	0	12
NW	0	0	0	0	1	8	5	2	0	0	16
NNW	0	1	0	0	1	10	12	1	0	0	25
Total	2	6	5	25	54	130	49	4	1	0	276

NUMBER OF CALMS: 0

NUMBER OF INVALID HOURS: 0

NUMBER OF VALID HOURS: 276

TOTAL HOURS FOR THE PERIOD: 276

## Annual Radioactive Effluent Release Report

Stability Class D

Period of Record: 01/01/2020 - 12/31/2020

Elevation: Primary Sensors – 30 Foot

Wind Direction	Wind Speed (meters/second)										Total
	0.22-0.50	0.51-0.75	0.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	>10.0	
N	0	1	2	19	20	39	19	0	0	0	100
NNE	1	1	3	17	24	34	3	0	0	0	83
NE	2	1	3	16	36	33	1	0	0	0	92
ENE	0	3	3	17	14	42	9	0	0	0	88
E	1	2	3	17	8	12	2	0	0	0	45
ESE	2	2	7	13	19	13	2	0	0	0	58
SE	0	2	4	21	34	36	11	1	0	0	109
SSE	2	0	1	14	19	46	52	1	3	0	138
S	0	2	5	14	31	70	30	0	0	0	152
SSW	0	2	3	8	17	25	16	1	0	0	72
SW	0	3	0	9	15	21	5	1	0	0	54
WSW	0	1	2	12	9	12	1	0	0	0	37
W	0	2	0	9	10	10	4	0	0	0	35
WNW	1	0	1	6	8	16	12	0	0	0	44
NW	1	2	3	7	11	21	18	0	0	0	63
NNW	0	1	4	11	17	32	13	0	0	0	78
Total	10	25	44	210	292	462	198	4	3	0	1248

NUMBER OF CALMS: 1

NUMBER OF INVALID HOURS: 0

NUMBER OF VALID HOURS: 1249

TOTAL HOURS FOR THE PERIOD: 1249

## Annual Radioactive Effluent Release Report

Stability Class E

Period of Record: 01/01/2020 - 12/31/2020

Elevation: Primary Sensors – 30 Foot

Wind Direction	Wind Speed (meters/second)										Total
	0.22-0.50	0.51-0.75	0.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	>10.0	
N	4	6	20	73	43	48	15	0	0	0	209
NNE	4	11	19	82	51	18	11	0	0	0	196
NE	3	10	27	84	65	23	2	0	0	0	214
ENE	8	15	28	64	35	31	7	1	0	0	189
E	6	12	41	40	26	11	4	0	0	0	140
ESE	14	17	34	65	46	31	1	0	0	0	208
SE	9	22	63	86	88	81	12	0	0	0	361
SSE	4	13	29	74	78	99	30	12	0	0	339
S	7	11	22	87	65	50	16	1	0	0	259
SSW	3	14	23	32	23	25	13	0	0	0	133
SW	4	10	16	21	4	7	2	0	0	0	64
WSW	3	7	9	8	4	2	0	0	0	0	33
W	4	8	10	16	1	3	2	0	0	0	44
WNW	1	8	8	20	10	16	19	0	0	0	82
NW	1	11	8	26	15	37	18	0	0	0	116
NNW	6	3	14	28	32	37	11	0	0	0	131
Total	81	178	371	806	586	519	163	14	0	0	2272

NUMBER OF CALMS: 5

NUMBER OF INVALID HOURS: 0

NUMBER OF VALID HOURS: 2723

TOTAL HOURS FOR THE PERIOD: 2723

## Annual Radioactive Effluent Release Report

Stability Class F

Period of Record: 01/01/2020 - 12/31/2020

Elevation: Primary Sensors – 30 Foot

Wind Direction	Wind Speed (meters/second)										Total
	0.22-0.50	0.51-0.75	0.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	>10.0	
N	8	14	29	40	1	0	0	0	0	0	92
NNE	8	18	25	24	2	0	0	0	0	0	77
NE	8	15	27	35	5	0	0	0	0	0	90
ENE	17	14	25	23	6	2	0	0	0	0	87
E	11	14	19	7	4	0	0	0	0	0	55
ESE	11	15	11	15	0	1	0	0	0	0	53
SE	10	20	23	27	13	1	0	0	0	0	94
SSE	4	16	27	26	7	6	0	0	0	0	86
S	6	17	18	31	3	1	1	0	0	0	77
SSW	13	17	15	5	1	0	0	0	0	0	51
SW	5	6	8	0	0	0	0	0	0	0	19
WSW	5	4	2	1	0	1	0	0	0	0	13
W	5	10	7	1	0	1	0	0	0	0	24
WNW	13	17	8	7	1	0	0	0	0	0	46
NW	5	11	13	6	3	1	0	0	0	0	39
NNW	5	12	9	16	4	0	0	0	0	0	46
Total	134	220	266	264	50	14	1	0	0	0	949

NUMBER OF CALMS: 18

NUMBER OF INVALID HOURS: 0

NUMBER OF VALID HOURS: 967

TOTAL HOURS FOR THE PERIOD: 967

## Annual Radioactive Effluent Release Report

Stability Class G

Period of Record: 01/01/2020 - 12/31/2020

Elevation: Primary Sensors – 30 Foot

Wind Direction	Wind Speed (meters/second)										Total
	0.22-0.50	0.51-0.75	0.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	>10.0	
N	61	37	30	9	3	2	0	0	0	0	142
NNE	65	25	13	11	2	2	0	0	0	0	118
NE	70	22	19	3	2	1	0	0	0	0	117
ENE	78	36	16	4	2	0	0	0	0	0	136
E	61	45	13	4	3	0	0	0	0	0	126
ESE	21	22	13	8	1	1	0	0	0	0	66
SE	31	19	23	11	7	0	0	0	0	0	91
SSE	7	11	10	6	1	2	0	0	0	0	37
S	12	7	3	9	1	2	0	0	0	0	34
SSW	1	10	3	3	5	2	0	0	0	0	24
SW	7	4	5	2	1	0	0	0	0	0	19
WSW	16	13	6	3	1	1	0	0	0	0	40
W	21	21	4	4	0	1	0	0	0	0	51
WNW	45	25	11	4	0	3	0	0	0	0	88
NW	44	25	9	4	2	1	0	0	0	0	85
NNW	49	24	9	6	0	1	0	0	0	0	89
Total	589	346	187	91	31	19	0	0	0	0	1263

NUMBER OF CALMS: 115

NUMBER OF INVALID HOURS: 0

NUMBER OF VALID HOURS: 1378

TOTAL HOURS FOR THE PERIOD: 1378

## Annual Radioactive Effluent Release Report

## All Stability Classes

Period of Record: 01/01/2020 - 12/31/2020

Elevation: Primary Sensors – 150 Foot

Wind Direction	Wind Speed (meters/second)										Total
	0.22-0.50	0.51-0.75	0.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	>10.0	
N	6	8	10	28	60	171	184	16	0	0	483
NNE	11	8	21	41	64	210	269	18	4	0	646
NE	15	15	18	33	82	204	289	23	1	0	680
ENE	13	5	10	45	68	177	269	64	12	0	663
E	12	6	12	35	59	181	207	36	6	0	554
ESE	16	2	4	35	45	196	398	109	18	3	826
SE	9	3	9	25	45	147	228	42	4	2	514
SSE	3	2	9	30	50	136	137	30	13	4	414
S	5	6	10	35	57	221	210	28	5	1	578
SSW	9	4	6	25	55	181	191	37	3	0	511
SW	10	5	9	24	64	138	110	24	2	0	386
WSW	10	6	8	35	64	173	114	14	2	0	426
W	8	4	7	28	75	170	132	21	0	0	445
WNW	3	4	8	17	33	104	63	27	1	0	260
NW	11	2	6	25	30	117	78	23	5	0	297
NNW	7	4	15	29	52	127	99	21	1	0	355
Total	148	84	162	490	903	2653	2978	533	77	10	8038

NUMBER OF CALMS: 94

NUMBER OF INVALID HOURS: 652

NUMBER OF VALID HOURS: 8132

TOTAL HOURS FOR THE PERIOD: 8784

## Annual Radioactive Effluent Release Report

Stability Class A

Period of Record: 01/01/2020 - 12/31/2020

Elevation: Primary Sensors – 150 Foot

Wind Direction	Wind Speed (meters/second)										Total
	0.22-0.50	0.51-0.75	0.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	>10.0	
N	0	2	2	7	10	38	27	4	0	0	90
NNE	1	0	4	6	12	29	34	0	1	0	87
NE	3	0	3	13	17	29	30	4	0	0	99
ENE	1	1	0	7	10	17	39	12	1	0	88
E	3	1	0	5	12	29	33	8	1	0	92
ESE	2	0	0	7	6	25	46	15	2	0	103
SE	1	1	3	6	9	15	12	3	1	0	51
SSE	0	2	1	7	8	7	8	0	0	0	33
S	0	2	3	6	5	15	25	4	1	0	61
SSW	1	2	2	3	9	15	8	3	0	0	43
SW	1	0	1	1	8	16	23	0	0	0	50
WSW	1	3	3	13	15	39	15	3	0	0	92
W	2	0	2	13	25	45	27	3	0	0	117
WNW	0	1	0	6	8	23	7	4	0	0	49
NW	2	0	2	9	6	24	17	5	2	0	67
NNW	0	1	4	6	13	26	22	6	0	0	78
Total	18	16	30	115	173	392	373	74	9	0	1200

NUMBER OF CALMS: 1

NUMBER OF INVALID HOURS: 0

NUMBER OF VALID HOURS: 1201

TOTAL HOURS FOR THE PERIOD: 1201



## Annual Radioactive Effluent Release Report

Stability Class B

Period of Record: 01/01/2020 - 12/31/2020

Elevation: Primary Sensors – 150 Foot

Wind Direction	Wind Speed (meters/second)										Total
	0.22-0.50	0.51-0.75	0.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	>10.0	
N	0	0	0	1	0	5	11	0	0	0	17
NNE	0	0	0	0	1	4	21	2	2	0	30
NE	0	0	0	0	1	8	12	1	0	0	22
ENE	0	0	1	1	0	6	17	5	0	0	30
E	0	1	0	2	0	4	10	0	1	0	18
ESE	0	0	0	0	1	6	31	6	0	0	44
SE	0	1	0	0	2	1	12	0	0	0	16
SSE	0	0	0	0	0	1	1	0	1	0	3
S	0	0	0	0	0	7	17	1	0	0	25
SSW	0	0	0	0	0	7	17	0	0	0	24
SW	0	0	0	0	1	0	2	0	0	0	3
WSW	1	0	1	0	2	4	1	0	0	0	9
W	0	0	0	1	0	6	3	0	0	0	10
WNW	0	0	0	1	1	2	1	0	0	0	5
NW	0	0	0	0	0	8	6	2	0	0	16
NNW	0	0	0	0	1	4	9	2	0	0	16
Total	1	2	2	6	10	73	171	19	4	0	288

NUMBER OF CALMS: 0

NUMBER OF INVALID HOURS: 0

NUMBER OF VALID HOURS: 288

TOTAL HOURS FOR THE PERIOD: 288

## Annual Radioactive Effluent Release Report

Stability Class C

Period of Record: 01/01/2020 - 12/31/2020

Elevation: Primary Sensors – 150 Foot

Wind Direction	Wind Speed (meters/second)										Total
	0.22-0.50	0.51-0.75	0.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	>10.0	
N	0	0	0	0	0	2	15	4	0	0	21
NNE	0	1	0	1	0	9	17	2	1	0	31
NE	0	0	1	1	0	13	16	1	1	0	33
ENE	0	1	0	3	5	3	25	9	0	0	46
E	0	0	0	0	0	7	11	1	0	0	19
ESE	0	0	0	0	1	9	24	4	2	1	41
SE	0	1	0	0	1	6	17	3	0	0	28
SSE	0	0	0	1	0	6	4	0	0	1	12
S	1	0	0	1	1	2	7	0	0	1	13
SSW	0	0	0	1	1	7	14	0	0	0	23
SW	0	0	0	0	2	6	8	1	1	0	18
WSW	0	1	0	0	2	7	5	1	0	0	16
W	0	1	0	2	0	7	2	0	0	0	12
WNW	0	0	0	1	1	4	2	0	0	0	8
NW	0	0	0	1	1	4	5	2	1	0	14
NNW	0	0	0	1	0	6	11	1	0	0	19
Total	1	5	1	13	15	98	183	29	6	3	354

NUMBER OF CALMS: 0

NUMBER OF INVALID HOURS: 0

NUMBER OF VALID HOURS: 354

TOTAL HOURS FOR THE PERIOD: 354

## Annual Radioactive Effluent Release Report

Stability Class D

Period of Record: 01/01/2020 - 12/31/2020

Elevation: Primary Sensors – 150 Foot

Wind Direction	Wind Speed (meters/second)										Total
	0.22-0.50	0.51-0.75	0.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	>10.0	
N	1	1	1	7	9	24	31	1	0	0	75
NNE	2	1	1	3	4	23	41	10	0	0	85
NE	0	3	3	1	15	20	52	10	0	0	104
ENE	0	1	0	8	6	22	50	21	10	0	118
E	1	0	1	4	6	20	47	7	1	0	87
ESE	1	1	0	6	8	24	36	18	3	1	98
SE	0	0	1	4	7	23	25	11	0	2	73
SSE	0	0	1	4	7	21	35	14	0	2	84
S	0	1	1	4	6	34	51	9	2	0	108
SSW	0	0	1	4	13	26	42	13	2	0	101
SW	0	0	1	6	6	23	23	12	1	0	72
WSW	0	0	1	1	2	22	24	6	1	0	57
W	1	0	0	1	9	29	30	6	0	0	76
WNW	0	1	0	3	4	16	13	6	0	0	43
NW	0	0	0	5	5	15	16	4	0	0	45
NNW	0	1	2	7	12	17	23	5	0	0	67
Total	6	10	14	68	119	359	539	153	20	5	1293

NUMBER OF CALMS: 1

NUMBER OF INVALID HOURS: 0

NUMBER OF VALID HOURS: 1294

TOTAL HOURS FOR THE PERIOD: 1294

## Annual Radioactive Effluent Release Report

Stability Class E

Period of Record: 01/01/2020 - 12/31/2020

Elevation: Primary Sensors – 150 Foot

Wind Direction	Wind Speed (meters/second)										Total
	0.22-0.50	0.51-0.75	0.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	>10.0	
N	1	4	3	6	25	43	42	6	0	0	130
NNE	1	3	8	17	22	71	80	4	0	0	206
NE	4	8	8	9	26	68	101	7	0	0	231
ENE	2	0	5	13	19	64	86	14	1	0	204
E	1	0	3	12	14	48	84	20	3	0	185
ESE	1	0	1	10	14	85	153	52	11	1	328
SE	1	0	2	8	13	61	107	25	3	0	220
SSE	1	0	3	7	16	40	71	16	12	1	167
S	0	3	1	4	15	93	91	13	2	0	222
SSW	1	2	2	7	14	65	86	21	1	0	199
SW	0	0	3	8	19	53	33	11	0	0	127
WSW	0	0	1	6	10	36	58	4	1	0	116
W	0	2	0	2	16	38	60	12	0	0	130
WNW	0	1	1	3	5	25	33	17	1	0	86
NW	2	0	1	4	10	24	31	10	2	0	84
NNW	3	1	3	6	14	30	28	7	1	0	93
Total	18	24	45	122	252	844	1144	239	38	2	2728

NUMBER OF CALMS: 5

NUMBER OF INVALID HOURS: 0

NUMBER OF VALID HOURS: 2733

TOTAL HOURS FOR THE PERIOD: 2733

## Annual Radioactive Effluent Release Report

Stability Class F

Period of Record: 01/01/2020 - 12/31/2020

Elevation: Primary Sensors – 150 Foot

Wind Direction	Wind Speed (meters/second)										Total
	0.22-0.50	0.51-0.75	0.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	>10.0	
N	0	0	1	1	6	29	29	1	0	0	67
NNE	0	1	0	2	6	28	54	0	0	0	91
NE	0	0	0	0	10	26	45	0	0	0	81
ENE	1	2	2	4	9	26	31	3	0	0	78
E	0	1	5	3	8	21	14	0	0	0	52
ESE	4	1	0	4	6	21	62	12	0	0	110
SE	1	0	2	2	6	14	31	0	0	0	56
SSE	0	0	0	7	6	31	6	0	0	0	50
S	0	0	3	5	15	47	15	1	0	0	86
SSW	0	0	0	4	10	42	15	0	0	0	71
SW	0	1	1	5	9	18	11	0	0	0	45
WSW	0	1	0	4	16	28	8	0	0	0	57
W	0	0	1	2	8	22	8	0	0	0	41
WNW	1	0	1	2	4	9	4	0	0	0	21
NW	3	0	0	4	3	12	2	0	0	0	24
NNW	2	0	2	3	6	20	4	0	0	0	37
Total	12	7	18	52	128	394	339	17	0	0	967

NUMBER OF CALMS: 9

NUMBER OF INVALID HOURS: 0

NUMBER OF VALID HOURS: 976

TOTAL HOURS FOR THE PERIOD: 976

## Annual Radioactive Effluent Release Report

Stability Class G

Period of Record: 01/01/2020 - 12/31/2020

Elevation: Primary Sensors – 150 Foot

Wind Direction	Wind Speed (meters/second)										Total
	0.22-0.50	0.51-0.75	0.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	>10.0	
N	4	1	3	6	10	30	29	0	0	0	83
NNE	7	2	8	12	19	46	22	0	0	0	116
NE	8	4	3	9	13	40	33	0	0	0	110
ENE	9	0	2	9	19	39	21	0	0	0	99
E	7	3	3	9	19	52	8	0	0	0	101
ESE	8	0	3	8	9	26	46	2	0	0	102
SE	6	0	1	5	7	27	24	0	0	0	70
SSE	2	0	4	4	13	30	12	0	0	0	65
S	4	0	2	15	15	23	4	0	0	0	63
SSW	7	0	1	6	8	19	9	0	0	0	50
SW	9	4	3	4	19	22	10	0	0	0	71
WSW	8	1	2	11	17	37	3	0	0	0	79
W	5	1	4	7	17	23	2	0	0	0	59
WNW	2	1	6	1	10	25	3	0	0	0	48
NW	4	2	3	2	5	30	1	0	0	0	47
NNW	2	1	4	6	6	24	2	0	0	0	45
Total	92	20	52	114	206	493	229	2	0	0	1208

NUMBER OF CALMS: 78

NUMBER OF INVALID HOURS: 0

NUMBER OF VALID HOURS: 1286

TOTAL HOURS FOR THE PERIOD: 1286

## Annual Radioactive Effluent Release Report

7.2 Stability Class

Table 15, Classification of Atmospheric Stability

Stability Condition	Pasquill Categories	Hours (Percentage)
Extremely Unstable	A	18
Moderately Stable	B	1
Slightly Unstable	C	3
Neutral	D	15
Slightly Stable	E	33
Moderately Stable	F	12
Extremely Stable	G	17

Table 16, Atmospheric Dispersion and Deposition Rates for the Maximum Individual Dose Calculations

Analysis	Location (meters)	Ground Level Releases	Mixed Mode Releases
Gamma air dose (3) and Beta Air Dose	994 m WNW (Containment)	CHI/Q - 421.0	CHI/Q - 33.1
Maximum Receptor (4)	994 m WNW	CHI/Q - 421.0	CHI/Q - 33.1
Resident Garden		D/Q - 50.3	D/Q - 18.0
Meat animal Immersion			
Milk animal (5)	7,000 m WNW	CHI/Q - 3.58 D/Q - 0.38	CHI/Q - .870 D/Q - .223
Other on-site Receptors	115 m ENE	CHI/Q - 5977.0 D/Q - 529.7	CHI/Q - 407.5 D/Q - 46.9
	275 m N	CHI/Q - 1644.0 D/Q - 345.6	CHI/Q - 169.1 D/Q - 68.4
	2500 SW	CHI/Q - 34.45 D/Q - 3.35	CHI/Q - 4.65 D/Q - 1.40

Notes:(1) All CHI/Q =  $10^{-7}$  sec/m<sup>3</sup>(2) All D/Q =  $10^{-9}$  m<sup>-2</sup>

(3) Maximum offsite location (property boundary) with highest CHI/Q (unoccupied).

(4) Maximum hypothetical occupied offsite location with highest CHI/Q and D/Q.

(5) No milk animal within 5 miles radius, hypothetical location in worst sector.

(6) Other onsite receptors

(7) Revisions to X/Q and D/Q can be performed using NUREG/CR-2919, XOQDOQ, Computer Program for the Meteorological Evaluation of Routine Effluent Releases at Nuclear Power Stations

## Annual Radioactive Effluent Release Report

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## Groundwater Monitoring Well Sampling Results

Table 17, Gamma Isotopic Results

Station ID	Sample Date	Units	MN-54	CO-58	FE-59	CO-60	ZN-65	NB-95	ZR-95	I-131	CS-134	CS-137	BA-140	LA-140
MW-100	2/4/2020	pCi/L	< 4.7E+00	< 4.6E+00	< 1.3E+01	< 6.2E+00	< 8.6E+00	< 4.5E+00	< 9.9E+00	< 1.3E+01	< 5.8E+00	< 5.0E+00	< 3.8E+01	< 1.2E+01
MW-124	2/4/2020	pCi/L	< 3.2E+00	< 4.2E+00	< 1.1E+01	< 5.6E+00	< 9.1E+00	< 3.9E+00	< 8.5E+00	< 1.4E+01	< 4.9E+00	< 4.6E+00	< 3.5E+01	< 1.0E+01
MW-125	2/4/2020	pCi/L	< 3.7E+00	< 4.5E+00	< 7.5E+00	< 4.1E+00	< 7.7E+00	< 4.5E+00	< 7.3E+00	< 1.4E+01	< 4.1E+00	< 3.7E+00	< 3.4E+01	< 1.0E+01
MW-126	2/4/2020	pCi/L	< 4.2E+00	< 4.1E+00	< 1.0E+01	< 3.3E+00	< 8.4E+00	< 4.5E+00	< 7.3E+00	< 1.5E+01	< 3.8E+00	< 4.1E+00	< 3.4E+01	< 8.0E+00
MW-142	2/4/2020	pCi/L	< 3.9E+00	< 4.2E+00	< 9.2E+00	< 4.1E+00	< 8.8E+00	< 4.1E+00	< 7.4E+00	< 1.4E+01	< 4.4E+00	< 3.8E+00	< 3.2E+01	< 9.4E+00
MW-144	2/4/2020	pCi/L	< 3.0E+00	< 4.0E+00	< 9.6E+00	< 4.2E+00	< 7.5E+00	< 4.5E+00	< 7.8E+00	< 1.4E+01	< 3.9E+00	< 4.2E+00	< 2.9E+01	< 8.9E+00
MW-146	2/4/2020	pCi/L	< 3.0E+00	< 3.8E+00	< 7.6E+00	< 3.2E+00	< 7.8E+00	< 3.8E+00	< 6.6E+00	< 1.4E+01	< 3.8E+00	< 3.7E+00	< 2.7E+01	< 7.9E+00
MW-147	2/4/2020	pCi/L	< 5.1E+00	< 5.4E+00	< 1.0E+01	< 4.5E+00	< 7.1E+00	< 4.9E+00	< 9.8E+00	< 1.4E+01	< 5.2E+00	< 4.6E+00	< 3.4E+01	< 1.1E+01
MW-148	2/4/2020	pCi/L	< 5.1E+00	< 6.0E+00	< 1.4E+01	< 5.0E+00	< 1.1E+01	< 5.7E+00	< 9.0E+00	< 1.5E+01	< 6.0E+00	< 5.8E+00	< 3.5E+01	< 8.1E+00
MW-151	2/4/2020	pCi/L	< 3.3E+00	< 5.2E+00	< 9.0E+00	< 4.9E+00	< 7.6E+00	< 4.9E+00	< 8.4E+00	< 1.5E+01	< 4.9E+00	< 4.6E+00	< 2.6E+01	< 1.2E+01
MW-155	2/4/2020	pCi/L	< 2.6E+00	< 2.7E+00	< 5.5E+00	< 2.4E+00	< 5.0E+00	< 2.7E+00	< 4.5E+00	< 7.8E+00	< 2.8E+00	< 2.3E+00	< 1.8E+01	< 6.5E+00
MW-155-DUP	2/4/2020	pCi/L	< 2.5E+00	< 2.6E+00	< 5.6E+00	< 2.4E+00	< 4.3E+00	< 2.7E+00	< 4.2E+00	< 8.2E+00	< 2.7E+00	< 2.4E+00	< 1.8E+01	< 5.3E+00



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## Groundwater Monitoring Well Sampling Results

Table 17, Gamma Isotopic Results

Station ID	Sample Date	Units	MN-54	CO-58	FE-59	CO-60	ZN-65	NB-95	ZR-95	I-131	CS-134	CS-137	BA-140	LA-140
MW-156	2/4/2020	pCi/L	< 4.5E+00	< 3.9E+00	< 8.4E+00	< 3.5E+00	< 9.2E+00	< 4.7E+00	< 7.6E+00	< 1.5E+01	< 4.5E+00	< 3.9E+00	< 2.8E+01	< 1.1E+01
MW-157	2/4/2020	pCi/L	< 2.9E+00	< 3.1E+00	< 6.0E+00	< 2.8E+00	< 5.6E+00	< 2.8E+00	< 5.5E+00	< 8.7E+00	< 2.8E+00	< 2.8E+00	< 2.1E+01	< 6.8E+00
MW-157-DUP	2/4/2020	pCi/L	< 3.9E+00	< 3.7E+00	< 9.4E+00	< 4.1E+00	< 8.6E+00	< 4.6E+00	< 7.7E+00	< 1.5E+01	< 4.5E+00	< 4.2E+00	< 2.8E+01	< 9.8E+00
MW-158	2/4/2020	pCi/L	< 4.0E+00	< 4.8E+00	< 8.0E+00	< 3.7E+00	< 7.8E+00	< 4.4E+00	< 7.2E+00	< 1.5E+01	< 3.4E+00	< 4.2E+00	< 3.1E+01	< 1.1E+01
MW-159	2/4/2020	pCi/L	< 4.0E+00	< 4.9E+00	< 9.6E+00	< 5.3E+00	< 8.9E+00	< 5.3E+00	< 9.7E+00	< 1.5E+01	< 5.4E+00	< 4.9E+00	< 3.6E+01	< 9.0E+00
MW-162	2/4/2020	pCi/L	< 2.2E+00	< 2.8E+00	< 6.0E+00	< 2.7E+00	< 5.0E+00	< 2.7E+00	< 5.1E+00	< 8.5E+00	< 2.7E+00	< 2.5E+00	< 1.9E+01	< 6.1E+00
MW-164	2/4/2020	pCi/L	< 4.6E+00	< 4.7E+00	< 1.0E+01	< 6.0E+00	< 1.2E+01	< 5.6E+00	< 8.9E+00	< 1.5E+01	< 5.3E+00	< 4.7E+00	< 3.5E+01	< 1.0E+01
MW-165	2/4/2020	pCi/L	< 4.0E+00	< 4.6E+00	< 8.3E+00	< 4.4E+00	< 7.1E+00	< 4.4E+00	< 9.0E+00	< 1.2E+01	< 4.9E+00	< 4.4E+00	< 2.9E+01	< 1.0E+01
MW-178	2/4/2020	pCi/L	< 3.9E+00	< 4.1E+00	< 8.2E+00	< 3.4E+00	< 8.3E+00	< 4.5E+00	< 6.3E+00	< 1.5E+01	< 3.4E+00	< 3.9E+00	< 2.9E+01	< 1.0E+01
MW-179	2/4/2020	pCi/L	< 2.4E+00	< 2.8E+00	< 5.5E+00	< 2.4E+00	< 5.1E+00	< 2.6E+00	< 4.6E+00	< 8.4E+00	< 2.7E+00	< 2.5E+00	< 1.8E+01	< 5.6E+00
MW-185	2/4/2020	pCi/L	< 2.3E+00	< 2.9E+00	< 5.8E+00	< 2.7E+00	< 5.3E+00	< 3.1E+00	< 5.1E+00	< 8.6E+00	< 2.7E+00	< 2.8E+00	< 1.9E+01	< 6.1E+00
MW-186	2/4/2020	pCi/L	< 4.5E+00	< 5.4E+00	< 1.1E+01	< 4.8E+00	< 9.3E+00	< 4.3E+00	< 8.7E+00	< 1.5E+01	< 5.0E+00	< 5.0E+00	< 3.1E+01	< 1.0E+01

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## Groundwater Monitoring Well Sampling Results

Table 17, Gamma Isotopic Results

Station ID	Sample Date	Units	MN-54	CO-58	FE-59	CO-60	ZN-65	NB-95	ZR-95	I-131	CS-134	CS-137	BA-140	LA-140
MW-187	2/4/2020	pCi/L	< 4.2E+00	< 4.5E+00	< 9.6E+00	< 4.5E+00	< 8.1E+00	< 4.3E+00	< 8.3E+00	< 1.5E+01	< 4.7E+00	< 4.0E+00	< 2.7E+01	< 1.0E+01
MW-188	2/4/2020	pCi/L	< 4.3E+00	< 4.4E+00	< 8.8E+00	< 6.1E+00	< 1.0E+01	< 5.0E+00	< 9.7E+00	< 1.5E+01	< 4.6E+00	< 4.0E+00	< 3.4E+01	< 7.8E+00
MW-188-DUP	2/4/2020	pCi/L	< 4.2E+00	< 4.8E+00	< 9.3E+00	< 4.2E+00	< 1.0E+01	< 4.6E+00	< 7.4E+00	< 1.4E+01	< 4.9E+00	< 4.6E+00	< 3.2E+01	< 9.4E+00
MW-201	2/4/2020	pCi/L	< 4.2E+00	< 5.2E+00	< 1.0E+01	< 3.9E+00	< 7.9E+00	< 5.6E+00	< 8.3E+00	< 1.5E+01	< 4.9E+00	< 4.5E+00	< 2.9E+01	< 1.1E+01
MW-205	2/4/2020	pCi/L	< 2.8E+00	< 2.9E+00	< 6.6E+00	< 2.5E+00	< 6.0E+00	< 3.4E+00	< 5.7E+00	< 9.8E+00	< 3.1E+00	< 3.3E+00	< 2.1E+01	< 6.0E+00
MW-207	2/4/2020	pCi/L	< 3.6E+00	< 3.8E+00	< 8.3E+00	< 3.8E+00	< 7.5E+00	< 3.8E+00	< 7.1E+00	< 1.4E+01	< 4.4E+00	< 3.8E+00	< 2.6E+01	< 9.3E+00
MW-227	2/4/2020	pCi/L	< 4.2E+00	< 4.2E+00	< 1.0E+01	< 4.1E+00	< 8.6E+00	< 5.6E+00	< 7.4E+00	< 1.5E+01	< 4.4E+00	< 4.4E+00	< 3.0E+01	< 1.2E+01
MW-229	2/4/2020	pCi/L	< 2.3E+00	< 2.6E+00	< 5.8E+00	< 3.2E+00	< 5.0E+00	< 2.6E+00	< 4.6E+00	< 8.4E+00	< 2.8E+00	< 2.4E+00	< 1.8E+01	< 5.6E+00
MW-110	2/5/2020	pCi/L	< 4.7E+00	< 4.6E+00	< 1.1E+01	< 5.0E+00	< 9.3E+00	< 4.7E+00	< 8.3E+00	< 1.5E+01	< 4.5E+00	< 4.6E+00	< 3.4E+01	< 1.1E+01
MW-112	2/5/2020	pCi/L	< 4.4E+00	< 4.2E+00	< 1.0E+01	< 4.9E+00	< 6.6E+00	< 5.3E+00	< 9.0E+00	< 1.4E+01	< 4.6E+00	< 4.9E+00	< 2.9E+01	< 1.1E+01
MW-114	2/5/2020	pCi/L	< 4.3E+00	< 4.0E+00	< 9.3E+00	< 5.0E+00	< 9.5E+00	< 5.1E+00	< 7.9E+00	< 1.4E+01	< 4.1E+00	< 4.5E+00	< 3.3E+01	< 9.9E+00
MW-116	2/5/2020	pCi/L	< 4.8E+00	< 4.6E+00	< 9.3E+00	< 4.5E+00	< 9.4E+00	< 5.9E+00	< 9.2E+00	< 1.4E+01	< 5.0E+00	< 4.6E+00	< 3.4E+01	< 1.2E+01

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## Groundwater Monitoring Well Sampling Results

Table 17, Gamma Isotopic Results

Station ID	Sample Date	Units	MN-54	CO-58	FE-59	CO-60	ZN-65	NB-95	ZR-95	I-131	CS-134	CS-137	BA-140	LA-140
MW-118	2/5/2020	pCi/L	< 3.7E+00	< 4.4E+00	< 9.9E+00	< 4.5E+00	< 8.3E+00	< 5.4E+00	< 7.2E+00	< 1.5E+01	< 4.8E+00	< 4.1E+00	< 2.5E+01	< 1.0E+01
MW-137	2/5/2020	pCi/L	< 4.5E+00	< 4.2E+00	< 1.2E+01	< 5.2E+00	< 7.9E+00	< 5.3E+00	< 1.0E+01	< 1.3E+01	< 5.4E+00	< 4.8E+00	< 3.0E+01	< 9.5E+00
MW-139	2/5/2020	pCi/L	< 4.1E+00	< 4.4E+00	< 8.8E+00	< 4.7E+00	< 9.8E+00	< 5.3E+00	< 8.6E+00	< 1.4E+01	< 4.8E+00	< 4.2E+00	< 3.2E+01	< 1.2E+01
MW-141	2/5/2020	pCi/L	< 3.6E+00	< 4.4E+00	< 8.2E+00	< 4.0E+00	< 8.7E+00	< 4.3E+00	< 7.6E+00	< 1.4E+01	< 4.6E+00	< 4.4E+00	< 3.4E+01	< 8.5E+00
MW-153	2/5/2020	pCi/L	< 4.2E+00	< 5.0E+00	< 9.0E+00	< 4.6E+00	< 8.6E+00	< 4.4E+00	< 8.6E+00	< 1.4E+01	< 5.6E+00	< 5.3E+00	< 2.9E+01	< 1.1E+01
MW-161	2/5/2020	pCi/L	< 5.7E+00	< 5.2E+00	< 1.4E+01	< 5.8E+00	< 9.1E+00	< 6.4E+00	< 1.1E+01	< 1.4E+01	< 5.7E+00	< 5.3E+00	< 4.2E+01	< 9.8E+00
MW-170	2/5/2020	pCi/L	< 4.9E+00	< 4.5E+00	< 9.3E+00	< 3.5E+00	< 8.1E+00	< 5.3E+00	< 9.4E+00	< 1.4E+01	< 5.3E+00	< 4.5E+00	< 3.8E+01	< 8.9E+00
MW-170-DUP	2/5/2020	pCi/L	< 5.4E+00	< 5.6E+00	< 8.6E+00	< 3.0E+00	< 9.3E+00	< 5.9E+00	< 9.1E+00	< 1.5E+01	< 5.9E+00	< 5.4E+00	< 3.4E+01	< 1.2E+01
MW-182	2/5/2020	pCi/L	< 4.7E+00	< 3.4E+00	< 1.1E+01	< 4.8E+00	< 9.2E+00	< 5.0E+00	< 9.7E+00	< 1.4E+01	< 4.8E+00	< 4.8E+00	< 3.5E+01	< 1.0E+01
MW-209	2/5/2020	pCi/L	< 4.1E+00	< 4.1E+00	< 1.0E+01	< 5.1E+00	< 8.7E+00	< 4.9E+00	< 7.5E+00	< 1.5E+01	< 4.7E+00	< 5.1E+00	< 2.8E+01	< 9.4E+00
MW-219	2/5/2020	pCi/L	< 4.5E+00	< 4.6E+00	< 1.0E+01	< 4.5E+00	< 9.1E+00	< 5.1E+00	< 8.0E+00	< 1.4E+01	< 5.1E+00	< 4.9E+00	< 2.9E+01	< 8.1E+00
MW-221	2/5/2020	pCi/L	< 4.3E+00	< 4.2E+00	< 9.3E+00	< 4.2E+00	< 6.2E+00	< 4.6E+00	< 9.7E+00	< 1.5E+01	< 4.9E+00	< 4.7E+00	< 3.4E+01	< 9.1E+00

## Annual Radioactive Effluent Release Report

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## Groundwater Monitoring Well Sampling Results

Table 17, Gamma Isotopic Results

Station ID	Sample Date	Units	MN-54	CO-58	FE-59	CO-60	ZN-65	NB-95	ZR-95	I-131	CS-134	CS-137	BA-140	LA-140
MW-223	2/5/2020	pCi/L	< 4.3E+00	< 4.7E+00	< 1.1E+01	< 4.8E+00	< 9.5E+00	< 5.4E+00	< 8.0E+00	< 1.5E+01	< 4.9E+00	< 4.7E+00	< 3.3E+01	< 1.1E+01
MW-223-DUP	2/5/2020	pCi/L	< 4.4E+00	< 4.1E+00	< 9.7E+00	< 4.9E+00	< 8.2E+00	< 5.2E+00	< 8.3E+00	< 1.5E+01	< 5.2E+00	< 4.6E+00	< 3.1E+01	< 8.3E+00
MW-225	2/5/2020	pCi/L	< 4.8E+00	< 4.7E+00	< 1.0E+01	< 5.2E+00	< 8.5E+00	< 5.8E+00	< 9.6E+00	< 1.4E+01	< 4.9E+00	< 4.8E+00	< 3.1E+01	< 1.5E+01
MW-231	2/5/2020	pCi/L	< 5.4E+00	< 5.5E+00	< 9.8E+00	< 6.5E+00	< 1.2E+01	< 6.4E+00	< 9.3E+00	< 1.5E+01	< 6.5E+00	< 5.1E+00	< 3.5E+01	< 1.4E+01
MW-233	2/5/2020	pCi/L	< 4.2E+00	< 4.5E+00	< 1.1E+01	< 3.6E+00	< 8.2E+00	< 4.7E+00	< 1.0E+01	< 1.4E+01	< 4.9E+00	< 4.6E+00	< 3.2E+01	< 1.0E+01
MW-235	2/5/2020	pCi/L	< 4.2E+00	< 4.4E+00	< 8.3E+00	< 4.2E+00	< 9.6E+00	< 4.1E+00	< 7.9E+00	< 1.4E+01	< 4.5E+00	< 3.9E+00	< 3.0E+01	< 1.1E+01
PZ-01	2/5/2020	pCi/L	< 4.3E+00	< 3.6E+00	< 8.0E+00	< 4.2E+00	< 9.1E+00	< 4.1E+00	< 6.3E+00	< 1.3E+01	< 4.8E+00	< 3.9E+00	< 2.8E+01	< 9.6E+00
SW-101	2/5/2020	pCi/L	< 4.2E+00	< 4.5E+00	< 9.5E+00	< 3.5E+00	< 8.9E+00	< 4.2E+00	< 7.9E+00	< 1.3E+01	< 4.6E+00	< 4.0E+00	< 2.6E+01	< 9.5E+00
SW-102	2/5/2020	pCi/L	< 4.6E+00	< 6.2E+00	< 1.2E+01	< 5.5E+00	< 8.0E+00	< 5.2E+00	< 7.8E+00	< 1.5E+01	< 5.8E+00	< 6.0E+00	< 3.8E+01	< 1.2E+01
SW-103	2/5/2020	pCi/L	< 2.1E+00	< 2.6E+00	< 5.7E+00	< 2.4E+00	< 4.5E+00	< 2.7E+00	< 4.4E+00	< 8.2E+00	< 2.5E+00	< 2.5E+00	< 1.8E+01	< 5.6E+00
SW-104	2/5/2020	pCi/L	< 2.7E+00	< 3.0E+00	< 6.5E+00	< 2.5E+00	< 5.5E+00	< 2.9E+00	< 4.9E+00	< 8.9E+00	< 2.7E+00	< 2.7E+00	< 2.0E+01	< 7.7E+00
MW-158	3/16/2020	pCi/L	< 5.7E+00	< 4.7E+00	< 1.2E+01	< 4.7E+00	< 1.0E+01	< 6.6E+00	< 9.1E+00	< 1.4E+01	< 5.3E+00	< 5.1E+00	< 3.5E+01	< 1.0E+01

## Annual Radioactive Effluent Release Report

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## Groundwater Monitoring Well Sampling Results

Table 17, Gamma Isotopic Results

Station ID	Sample Date	Units	MN-54	CO-58	FE-59	CO-60	ZN-65	NB-95	ZR-95	I-131	CS-134	CS-137	BA-140	LA-140
MW-124	5/12/2020	pCi/L	< 2.7E+00	< 3.0E+00	< 5.2E+00	< 3.4E+00	< 6.5E+00	< 3.2E+00	< 5.2E+00	< 6.8E+00	< 3.1E+00	< 2.7E+00	< 1.7E+01	< 5.0E+00
MW-124-DUP	5/12/2020	pCi/L	< 6.1E+00	< 7.5E+00	< 1.5E+01	< 7.9E+00	< 1.3E+01	< 7.4E+00	< 1.2E+01	< 1.5E+01	< 7.8E+00	< 7.5E+00	< 3.9E+01	< 1.3E+01
MW-125	5/12/2020	pCi/L	< 5.0E+00	< 5.8E+00	< 1.0E+01	< 6.3E+00	< 9.4E+00	< 5.8E+00	< 8.2E+00	< 1.1E+01	< 5.2E+00	< 4.9E+00	< 2.7E+01	< 1.1E+01
MW-126	5/12/2020	pCi/L	< 4.8E+00	< 6.6E+00	< 1.2E+01	< 5.5E+00	< 1.1E+01	< 7.2E+00	< 1.1E+01	< 1.4E+01	< 6.7E+00	< 6.1E+00	< 3.3E+01	< 1.0E+01
MW-142	5/12/2020	pCi/L	< 7.0E+00	< 6.3E+00	< 1.3E+01	< 5.2E+00	< 1.2E+01	< 5.9E+00	< 1.0E+01	< 1.3E+01	< 7.7E+00	< 6.7E+00	< 3.3E+01	< 8.5E+00
MW-144	5/12/2020	pCi/L	< 3.7E+00	< 3.8E+00	< 9.7E+00	< 4.5E+00	< 8.5E+00	< 4.2E+00	< 7.5E+00	< 8.8E+00	< 4.6E+00	< 4.3E+00	< 2.5E+01	< 8.9E+00
MW-146	5/12/2020	pCi/L	< 6.5E+00	< 6.6E+00	< 1.6E+01	< 6.2E+00	< 1.5E+01	< 8.9E+00	< 1.2E+01	< 1.2E+01	< 7.9E+00	< 7.3E+00	< 4.2E+01	< 1.2E+01
MW-147	5/12/2020	pCi/L	< 5.3E+00	< 6.8E+00	< 1.3E+01	< 5.3E+00	< 1.1E+01	< 5.4E+00	< 1.0E+01	< 1.2E+01	< 6.4E+00	< 5.2E+00	< 4.0E+01	< 8.6E+00
MW-148	5/12/2020	pCi/L	< 4.2E+00	< 4.1E+00	< 9.9E+00	< 5.0E+00	< 9.5E+00	< 5.8E+00	< 8.9E+00	< 1.2E+01	< 4.9E+00	< 4.8E+00	< 2.5E+01	< 9.5E+00
MW-155	5/12/2020	pCi/L	< 4.0E+00	< 7.2E+00	< 1.4E+01	< 5.6E+00	< 1.1E+01	< 7.2E+00	< 8.6E+00	< 1.4E+01	< 6.4E+00	< 7.4E+00	< 3.3E+01	< 1.4E+01
MW-156	5/12/2020	pCi/L	< 3.5E+00	< 3.8E+00	< 8.7E+00	< 3.6E+00	< 6.9E+00	< 3.9E+00	< 7.2E+00	< 8.6E+00	< 3.4E+00	< 3.7E+00	< 2.1E+01	< 7.6E+00
MW-157	5/12/2020	pCi/L	< 6.5E+00	< 5.4E+00	< 1.1E+01	< 6.4E+00	< 1.2E+01	< 7.6E+00	< 1.3E+01	< 1.5E+01	< 6.7E+00	< 5.9E+00	< 3.4E+01	< 1.1E+01

## Annual Radioactive Effluent Release Report

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## Groundwater Monitoring Well Sampling Results

Table 17, Gamma Isotopic Results

Station ID	Sample Date	Units	MN-54	CO-58	FE-59	CO-60	ZN-65	NB-95	ZR-95	I-131	CS-134	CS-137	BA-140	LA-140
MW-158	5/12/2020	pCi/L	< 3.4E+00	< 4.1E+00	< 9.6E+00	< 3.6E+00	< 6.8E+00	< 4.0E+00	< 7.1E+00	< 8.9E+00	< 4.7E+00	< 3.9E+00	< 2.3E+01	< 8.6E+00
MW-159	5/12/2020	pCi/L	< 5.6E+00	< 5.9E+00	< 1.1E+01	< 6.0E+00	< 9.5E+00	< 5.4E+00	< 8.1E+00	< 1.2E+01	< 5.8E+00	< 5.4E+00	< 3.3E+01	< 1.0E+01
MW-162	5/12/2020	pCi/L	< 5.4E+00	< 5.6E+00	< 1.3E+01	< 3.5E+00	< 1.3E+01	< 6.0E+00	< 8.9E+00	< 1.0E+01	< 5.0E+00	< 6.1E+00	< 2.1E+01	< 7.7E+00
MW-100	5/13/2020	pCi/L	< 6.5E+00	< 6.3E+00	< 1.2E+01	< 7.2E+00	< 8.9E+00	< 4.5E+00	< 1.2E+01	< 1.1E+01	< 8.0E+00	< 5.6E+00	< 3.5E+01	< 8.1E+00
MW-106	5/13/2020	pCi/L	< 7.2E+00	< 5.6E+00	< 1.5E+01	< 7.8E+00	< 1.5E+01	< 8.1E+00	< 1.2E+01	< 1.2E+01	< 9.6E+00	< 7.3E+00	< 3.3E+01	< 9.0E+00
MW-110	5/13/2020	pCi/L	< 8.0E+00	< 6.8E+00	< 1.4E+01	< 8.0E+00	< 1.6E+01	< 7.5E+00	< 1.3E+01	< 1.4E+01	< 8.2E+00	< 7.9E+00	< 3.3E+01	< 1.4E+01
MW-112	5/13/2020	pCi/L	< 7.1E+00	< 7.0E+00	< 1.3E+01	< 5.9E+00	< 1.3E+01	< 7.1E+00	< 1.2E+01	< 1.3E+01	< 8.0E+00	< 7.3E+00	< 3.3E+01	< 1.2E+01
MW-114	5/13/2020	pCi/L	< 6.8E+00	< 7.4E+00	< 1.2E+01	< 6.8E+00	< 1.3E+01	< 7.7E+00	< 1.1E+01	< 1.3E+01	< 8.1E+00	< 6.9E+00	< 3.4E+01	< 1.1E+01
MW-116	5/13/2020	pCi/L	< 8.0E+00	< 6.6E+00	< 1.6E+01	< 7.4E+00	< 1.7E+01	< 9.0E+00	< 1.3E+01	< 1.2E+01	< 6.7E+00	< 8.2E+00	< 4.1E+01	< 1.3E+01
MW-118	5/13/2020	pCi/L	< 6.7E+00	< 8.0E+00	< 1.4E+01	< 7.4E+00	< 1.4E+01	< 8.9E+00	< 1.0E+01	< 1.4E+01	< 7.1E+00	< 6.9E+00	< 4.0E+01	< 1.3E+01
MW-120	5/13/2020	pCi/L	< 6.4E+00	< 7.5E+00	< 1.3E+01	< 5.5E+00	< 1.0E+01	< 5.7E+00	< 1.1E+01	< 9.9E+00	< 6.0E+00	< 7.3E+00	< 3.5E+01	< 1.2E+01
MW-122R	5/13/2020	pCi/L	< 6.9E+00	< 6.6E+00	< 1.3E+01	< 6.3E+00	< 1.1E+01	< 9.6E+00	< 1.2E+01	< 1.1E+01	< 8.3E+00	< 6.3E+00	< 3.2E+01	< 1.1E+01

## Annual Radioactive Effluent Release Report

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## Groundwater Monitoring Well Sampling Results

Table 17, Gamma Isotopic Results

Station ID	Sample Date	Units	MN-54	CO-58	FE-59	CO-60	ZN-65	NB-95	ZR-95	I-131	CS-134	CS-137	BA-140	LA-140
MW-122R-DUP	5/13/2020	pCi/L	< 5.2E+00	< 7.3E+00	< 1.4E+01	< 9.7E+00	< 1.2E+01	< 7.9E+00	< 1.3E+01	< 1.3E+01	< 8.8E+00	< 4.8E+00	< 4.4E+01	< 1.1E+01
MW-128	5/13/2020	pCi/L	< 6.8E+00	< 5.9E+00	< 1.1E+01	< 8.1E+00	< 1.3E+01	< 8.1E+00	< 1.0E+01	< 1.3E+01	< 8.2E+00	< 6.9E+00	< 3.4E+01	< 1.2E+01
MW-130	5/13/2020	pCi/L	< 7.5E+00	< 7.7E+00	< 1.3E+01	< 4.7E+00	< 1.6E+01	< 8.2E+00	< 1.4E+01	< 1.0E+01	< 5.5E+00	< 5.2E+00	< 2.3E+01	< 1.4E+01
MW-131	5/13/2020	pCi/L	< 6.7E+00	< 5.3E+00	< 1.4E+01	< 4.8E+00	< 1.0E+01	< 6.2E+00	< 1.1E+01	< 1.0E+01	< 6.9E+00	< 5.9E+00	< 3.1E+01	< 1.1E+01
MW-132	5/13/2020	pCi/L	< 6.3E+00	< 7.2E+00	< 1.2E+01	< 7.2E+00	< 1.3E+01	< 6.6E+00	< 1.1E+01	< 1.1E+01	< 7.6E+00	< 7.0E+00	< 3.6E+01	< 1.2E+01
MW-137	5/13/2020	pCi/L	< 5.6E+00	< 5.7E+00	< 1.3E+01	< 5.7E+00	< 1.4E+01	< 6.5E+00	< 1.1E+01	< 1.3E+01	< 7.2E+00	< 4.5E+00	< 3.9E+01	< 7.2E+00
MW-139	5/13/2020	pCi/L	< 5.6E+00	< 6.1E+00	< 1.3E+01	< 7.2E+00	< 1.4E+01	< 7.9E+00	< 1.0E+01	< 1.0E+01	< 6.8E+00	< 6.9E+00	< 2.7E+01	< 9.4E+00
MW-141	5/13/2020	pCi/L	< 3.8E+00	< 7.6E+00	< 1.5E+01	< 6.3E+00	< 1.4E+01	< 8.0E+00	< 9.9E+00	< 1.3E+01	< 7.5E+00	< 6.0E+00	< 4.0E+01	< 1.4E+01
MW-151	5/13/2020	pCi/L	< 4.3E+00	< 7.4E+00	< 1.3E+01	< 6.2E+00	< 1.5E+01	< 7.0E+00	< 1.2E+01	< 1.1E+01	< 6.6E+00	< 5.4E+00	< 2.9E+01	< 9.8E+00
MW-153	5/13/2020	pCi/L	< 7.2E+00	< 8.3E+00	< 2.0E+01	< 7.3E+00	< 1.5E+01	< 6.6E+00	< 1.5E+01	< 1.5E+01	< 8.8E+00	< 7.9E+00	< 2.6E+01	< 1.2E+01
MW-161	5/13/2020	pCi/L	< 3.7E+00	< 4.3E+00	< 8.5E+00	< 4.3E+00	< 7.5E+00	< 4.4E+00	< 7.1E+00	< 7.8E+00	< 4.2E+00	< 3.7E+00	< 1.8E+01	< 7.4E+00
MW-164	5/13/2020	pCi/L	< 5.8E+00	< 8.6E+00	< 1.8E+01	< 6.3E+00	< 1.4E+01	< 7.7E+00	< 1.4E+01	< 1.3E+01	< 7.5E+00	< 7.0E+00	< 3.2E+01	< 1.2E+01

## Annual Radioactive Effluent Release Report

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## Groundwater Monitoring Well Sampling Results

Table 17, Gamma Isotopic Results

Station ID	Sample Date	Units	MN-54	CO-58	FE-59	CO-60	ZN-65	NB-95	ZR-95	I-131	CS-134	CS-137	BA-140	LA-140
MW-164-DUP	5/13/2020	pCi/L	< 6.7E+00	< 5.6E+00	< 1.2E+01	< 3.9E+00	< 1.2E+01	< 6.5E+00	< 1.2E+01	< 1.0E+01	< 7.1E+00	< 4.6E+00	< 2.6E+01	< 9.0E+00
MW-165	5/13/2020	pCi/L	< 5.1E+00	< 4.2E+00	< 1.1E+01	< 6.0E+00	< 8.2E+00	< 6.8E+00	< 1.0E+01	< 1.0E+01	< 6.1E+00	< 6.3E+00	< 2.6E+01	< 8.8E+00
MW-167	5/13/2020	pCi/L	< 5.0E+00	< 5.7E+00	< 1.2E+01	< 5.0E+00	< 8.8E+00	< 5.4E+00	< 1.0E+01	< 9.6E+00	< 5.6E+00	< 5.6E+00	< 2.7E+01	< 8.6E+00
MW-169	5/13/2020	pCi/L	< 5.7E+00	< 4.8E+00	< 1.1E+01	< 4.5E+00	< 7.7E+00	< 4.5E+00	< 8.9E+00	< 9.2E+00	< 5.8E+00	< 4.7E+00	< 2.5E+01	< 8.5E+00
MW-170	5/13/2020	pCi/L	< 6.0E+00	< 5.3E+00	< 1.3E+01	< 5.8E+00	< 9.9E+00	< 5.4E+00	< 1.4E+01	< 1.0E+01	< 7.9E+00	< 6.7E+00	< 3.6E+01	< 1.0E+01
MW-170-DUP	5/13/2020	pCi/L	< 5.8E+00	< 8.5E+00	< 1.5E+01	< 5.0E+00	< 1.4E+01	< 7.0E+00	< 1.3E+01	< 1.5E+01	< 7.2E+00	< 7.0E+00	< 3.7E+01	< 8.7E+00
MW-178	5/13/2020	pCi/L	< 5.7E+00	< 7.4E+00	< 1.2E+01	< 5.4E+00	< 1.3E+01	< 8.1E+00	< 1.1E+01	< 1.2E+01	< 9.2E+00	< 6.7E+00	< 3.1E+01	< 1.2E+01
MW-178-DUP	5/13/2020	pCi/L	< 5.6E+00	< 6.8E+00	< 1.4E+01	< 5.2E+00	< 1.2E+01	< 6.7E+00	< 1.1E+01	< 1.2E+01	< 6.6E+00	< 6.5E+00	< 3.4E+01	< 1.3E+01
MW-179	5/13/2020	pCi/L	< 7.8E+00	< 9.4E+00	< 1.6E+01	< 1.0E+01	< 1.8E+01	< 8.3E+00	< 1.7E+01	< 1.4E+01	< 8.2E+00	< 6.5E+00	< 3.4E+01	< 1.4E+01
MW-180	5/13/2020	pCi/L	< 7.2E+00	< 4.9E+00	< 1.3E+01	< 7.7E+00	< 1.3E+01	< 7.2E+00	< 1.3E+01	< 1.5E+01	< 7.7E+00	< 7.5E+00	< 3.5E+01	< 1.0E+01
MW-185	5/13/2020	pCi/L	< 7.0E+00	< 7.1E+00	< 1.4E+01	< 9.7E+00	< 1.8E+01	< 7.3E+00	< 1.2E+01	< 1.2E+01	< 7.0E+00	< 7.4E+00	< 3.2E+01	< 8.3E+00
MW-185-DUP	5/13/2020	pCi/L	< 6.5E+00	< 7.4E+00	< 1.4E+01	< 6.7E+00	< 1.1E+01	< 6.6E+00	< 1.1E+01	< 1.1E+01	< 7.7E+00	< 8.6E+00	< 3.4E+01	< 9.9E+00



## Annual Radioactive Effluent Release Report

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## Groundwater Monitoring Well Sampling Results

Table 17, Gamma Isotopic Results

Station ID	Sample Date	Units	MN-54	CO-58	FE-59	CO-60	ZN-65	NB-95	ZR-95	I-131	CS-134	CS-137	BA-140	LA-140
MW-186	5/13/2020	pCi/L	< 7.2E+00	< 7.1E+00	< 1.6E+01	< 5.7E+00	< 1.4E+01	< 7.9E+00	< 1.4E+01	< 1.2E+01	< 7.7E+00	< 7.3E+00	< 3.5E+01	< 8.7E+00
MW-187	5/13/2020	pCi/L	< 7.7E+00	< 7.3E+00	< 1.3E+01	< 9.4E+00	< 1.5E+01	< 6.8E+00	< 1.1E+01	< 9.8E+00	< 8.2E+00	< 6.9E+00	< 4.0E+01	< 1.3E+01
MW-201	5/13/2020	pCi/L	< 4.8E+00	< 5.5E+00	< 1.4E+01	< 5.1E+00	< 8.6E+00	< 5.1E+00	< 9.7E+00	< 9.4E+00	< 6.1E+00	< 5.4E+00	< 2.7E+01	< 9.8E+00
MW-207	5/13/2020	pCi/L	< 6.5E+00	< 5.8E+00	< 1.5E+01	< 7.8E+00	< 1.2E+01	< 6.9E+00	< 1.2E+01	< 1.1E+01	< 7.0E+00	< 6.2E+00	< 3.3E+01	< 1.2E+01
MW-211	5/13/2020	pCi/L	< 7.9E+00	< 6.1E+00	< 1.3E+01	< 7.9E+00	< 1.6E+01	< 7.5E+00	< 1.2E+01	< 1.2E+01	< 8.6E+00	< 7.4E+00	< 3.3E+01	< 1.4E+01
MW-213	5/13/2020	pCi/L	< 5.8E+00	< 6.1E+00	< 1.4E+01	< 5.2E+00	< 1.1E+01	< 5.7E+00	< 1.3E+01	< 9.8E+00	< 7.0E+00	< 5.9E+00	< 2.9E+01	< 1.1E+01
MW-215	5/13/2020	pCi/L	< 8.2E+00	< 7.6E+00	< 1.5E+01	< 9.2E+00	< 1.5E+01	< 8.2E+00	< 1.4E+01	< 1.1E+01	< 7.0E+00	< 8.6E+00	< 3.8E+01	< 1.2E+01
MW-217	5/13/2020	pCi/L	< 6.5E+00	< 5.4E+00	< 9.9E+00	< 6.4E+00	< 1.8E+01	< 7.8E+00	< 1.4E+01	< 1.0E+01	< 7.0E+00	< 7.9E+00	< 3.3E+01	< 1.1E+01
MW-221	5/13/2020	pCi/L	< 4.9E+00	< 5.7E+00	< 1.5E+01	< 1.0E+01	< 1.5E+01	< 5.9E+00	< 1.3E+01	< 1.0E+01	< 9.4E+00	< 6.7E+00	< 3.9E+01	< 1.3E+01
MW-223	5/13/2020	pCi/L	< 4.3E+00	< 6.9E+00	< 1.3E+01	< 4.9E+00	< 1.1E+01	< 5.4E+00	< 7.8E+00	< 1.0E+01	< 6.7E+00	< 6.1E+00	< 2.6E+01	< 7.6E+00
MW-229	5/13/2020	pCi/L	< 6.7E+00	< 5.3E+00	< 1.4E+01	< 6.7E+00	< 1.1E+01	< 6.2E+00	< 1.1E+01	< 8.2E+00	< 6.1E+00	< 5.6E+00	< 2.9E+01	< 7.4E+00
MW-231	5/13/2020	pCi/L	< 6.6E+00	< 6.5E+00	< 1.1E+01	< 9.0E+00	< 1.3E+01	< 7.1E+00	< 1.3E+01	< 1.3E+01	< 7.8E+00	< 9.7E+00	< 3.3E+01	< 1.4E+01

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## Groundwater Monitoring Well Sampling Results

Table 17, Gamma Isotopic Results

Station ID	Sample Date	Units	MN-54	CO-58	FE-59	CO-60	ZN-65	NB-95	ZR-95	I-131	CS-134	CS-137	BA-140	LA-140
PZ-01	5/13/2020	pCi/L	< 3.4E+00	< 3.4E+00	< 7.5E+00	< 3.3E+00	< 6.6E+00	< 3.7E+00	< 5.7E+00	< 6.9E+00	< 3.7E+00	< 3.6E+00	< 1.9E+01	< 5.5E+00
PZ-01-DUP	5/13/2020	pCi/L	< 3.4E+00	< 3.5E+00	< 7.0E+00	< 3.7E+00	< 8.0E+00	< 3.6E+00	< 6.8E+00	< 7.5E+00	< 4.0E+00	< 4.0E+00	< 2.1E+01	< 6.3E+00
PZ-03	5/13/2020	pCi/L	< 7.3E+00	< 6.6E+00	< 1.8E+01	< 5.3E+00	< 1.3E+01	< 9.0E+00	< 1.2E+01	< 1.1E+01	< 7.3E+00	< 8.0E+00	< 3.3E+01	< 1.2E+01
MW-134	5/14/2020	pCi/L	< 7.5E+00	< 6.0E+00	< 1.6E+01	< 6.5E+00	< 1.7E+01	< 7.6E+00	< 1.0E+01	< 1.2E+01	< 8.3E+00	< 8.0E+00	< 3.5E+01	< 1.2E+01
MW-182	5/14/2020	pCi/L	< 7.9E+00	< 6.6E+00	< 1.4E+01	< 8.7E+00	< 1.5E+01	< 7.1E+00	< 9.7E+00	< 1.3E+01	< 6.9E+00	< 7.1E+00	< 3.2E+01	< 1.1E+01
MW-188	5/14/2020	pCi/L	< 7.1E+00	< 9.0E+00	< 1.9E+01	< 9.2E+00	< 1.4E+01	< 6.9E+00	< 1.6E+01	< 1.4E+01	< 1.0E+01	< 8.1E+00	< 3.9E+01	< 9.1E+00
MW-205	5/14/2020	pCi/L	< 5.9E+00	< 9.5E+00	< 1.4E+01	< 7.2E+00	< 1.3E+01	< 9.6E+00	< 1.6E+01	< 1.0E+01	< 9.3E+00	< 7.5E+00	< 3.9E+01	< 1.3E+01
MW-209	5/14/2020	pCi/L	< 7.1E+00	< 8.1E+00	< 1.2E+01	< 7.1E+00	< 1.8E+01	< 7.2E+00	< 1.4E+01	< 1.2E+01	< 1.0E+01	< 7.5E+00	< 3.6E+01	< 1.2E+01
MW-219	5/14/2020	pCi/L	< 7.1E+00	< 7.7E+00	< 1.9E+01	< 6.3E+00	< 1.6E+01	< 8.8E+00	< 1.5E+01	< 1.1E+01	< 8.8E+00	< 8.6E+00	< 3.5E+01	< 1.1E+01
MW-225	5/14/2020	pCi/L	< 5.2E+00	< 5.4E+00	< 1.0E+01	< 6.5E+00	< 7.7E+00	< 4.6E+00	< 9.1E+00	< 7.5E+00	< 6.2E+00	< 5.8E+00	< 2.4E+01	< 9.9E+00
MW-227	5/14/2020	pCi/L	< 6.5E+00	< 7.5E+00	< 1.6E+01	< 6.6E+00	< 1.4E+01	< 7.9E+00	< 1.1E+01	< 1.3E+01	< 5.3E+00	< 8.4E+00	< 3.6E+01	< 9.3E+00
MW-233	5/14/2020	pCi/L	< 5.0E+00	< 7.5E+00	< 1.5E+01	< 6.0E+00	< 1.4E+01	< 6.9E+00	< 1.3E+01	< 1.2E+01	< 8.4E+00	< 6.2E+00	< 3.1E+01	< 9.8E+00

## Annual Radioactive Effluent Release Report

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## Groundwater Monitoring Well Sampling Results

Table 17, Gamma Isotopic Results

Station ID	Sample Date	Units	MN-54	CO-58	FE-59	CO-60	ZN-65	NB-95	ZR-95	I-131	CS-134	CS-137	BA-140	LA-140
MW-235	5/14/2020	pCi/L	< 8.3E+00	< 7.2E+00	< 1.8E+01	< 7.0E+00	< 1.8E+01	< 8.9E+00	< 1.2E+01	< 1.1E+01	< 7.7E+00	< 7.9E+00	< 3.2E+01	< 1.2E+01
SW-103	5/14/2020	pCi/L	< 5.3E+00	< 5.7E+00	< 1.3E+01	< 7.2E+00	< 1.3E+01	< 7.4E+00	< 1.1E+01	< 1.1E+01	< 6.6E+00	< 6.0E+00	< 2.4E+01	< 1.4E+01
SW-104	5/14/2020	pCi/L	< 6.0E+00	< 6.8E+00	< 1.4E+01	< 7.9E+00	< 1.4E+01	< 7.3E+00	< 1.0E+01	< 1.2E+01	< 7.2E+00	< 7.1E+00	< 3.2E+01	< 8.6E+00
MW-100	8/11/2020	pCi/L	< 5.4E+00	< 5.8E+00	< 1.2E+01	< 5.9E+00	< 1.0E+01	< 6.0E+00	< 7.9E+00	< 1.1E+01	< 5.2E+00	< 6.0E+00	< 2.9E+01	< 5.3E+00
MW-100-DUP	8/11/2020	pCi/L	< 6.1E+00	< 5.8E+00	< 1.2E+01	< 7.5E+00	< 1.1E+01	< 6.2E+00	< 1.1E+01	< 1.3E+01	< 7.1E+00	< 7.5E+00	< 3.4E+01	< 1.3E+01
MW-110	8/11/2020	pCi/L	< 2.5E+00	< 2.4E+00	< 5.6E+00	< 2.4E+00	< 4.5E+00	< 2.6E+00	< 4.5E+00	< 5.7E+00	< 2.7E+00	< 2.7E+00	< 1.5E+01	< 5.3E+00
MW-112	8/11/2020	pCi/L	< 2.5E+00	< 2.6E+00	< 5.7E+00	< 2.6E+00	< 4.9E+00	< 2.7E+00	< 4.8E+00	< 5.8E+00	< 2.7E+00	< 2.6E+00	< 1.5E+01	< 4.8E+00
MW-118	8/11/2020	pCi/L	< 2.7E+00	< 2.6E+00	< 5.2E+00	< 2.5E+00	< 5.0E+00	< 2.7E+00	< 4.7E+00	< 6.5E+00	< 2.9E+00	< 2.7E+00	< 1.6E+01	< 4.4E+00
MW-124	8/11/2020	pCi/L	< 4.2E+00	< 4.4E+00	< 8.6E+00	< 5.1E+00	< 9.2E+00	< 5.1E+00	< 8.8E+00	< 1.4E+01	< 4.5E+00	< 4.0E+00	< 2.8E+01	< 9.8E+00
MW-125	8/11/2020	pCi/L	< 2.5E+00	< 2.8E+00	< 5.7E+00	< 3.0E+00	< 5.6E+00	< 2.5E+00	< 4.7E+00	< 6.2E+00	< 2.8E+00	< 2.6E+00	< 1.6E+01	< 6.2E+00
MW-126	8/11/2020	pCi/L	< 6.6E+00	< 5.2E+00	< 1.3E+01	< 5.5E+00	< 1.2E+01	< 6.1E+00	< 9.5E+00	< 1.5E+01	< 5.7E+00	< 5.5E+00	< 3.4E+01	< 1.1E+01
MW-137	8/11/2020	pCi/L	< 4.3E+00	< 5.1E+00	< 1.2E+01	< 4.8E+00	< 8.7E+00	< 5.1E+00	< 1.0E+01	< 1.4E+01	< 5.3E+00	< 5.0E+00	< 3.4E+01	< 1.3E+01

## Annual Radioactive Effluent Release Report

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## Groundwater Monitoring Well Sampling Results

Table 17, Gamma Isotopic Results

Station ID	Sample Date	Units	MN-54	CO-58	FE-59	CO-60	ZN-65	NB-95	ZR-95	I-131	CS-134	CS-137	BA-140	LA-140
MW-142	8/11/2020	pCi/L	< 5.5E+00	< 7.0E+00	< 1.4E+01	< 7.4E+00	< 1.4E+01	< 7.4E+00	< 1.3E+01	< 1.4E+01	< 7.8E+00	< 6.0E+00	< 3.4E+01	< 1.2E+01
MW-144	8/11/2020	pCi/L	< 2.8E+00	< 3.1E+00	< 6.3E+00	< 2.8E+00	< 5.3E+00	< 3.0E+00	< 5.1E+00	< 6.9E+00	< 3.5E+00	< 2.9E+00	< 1.7E+01	< 6.1E+00
MW-146	8/11/2020	pCi/L	< 2.9E+00	< 3.0E+00	< 6.8E+00	< 3.0E+00	< 6.5E+00	< 3.2E+00	< 5.2E+00	< 7.6E+00	< 3.1E+00	< 3.1E+00	< 1.7E+01	< 5.8E+00
MW-146-DUP	8/11/2020	pCi/L	< 3.2E+00	< 3.2E+00	< 6.8E+00	< 3.9E+00	< 7.1E+00	< 3.9E+00	< 6.4E+00	< 7.9E+00	< 3.5E+00	< 3.3E+00	< 1.8E+01	< 6.1E+00
MW-147	8/11/2020	pCi/L	< 2.7E+00	< 3.1E+00	< 6.8E+00	< 2.8E+00	< 5.3E+00	< 3.0E+00	< 5.2E+00	< 7.4E+00	< 3.2E+00	< 2.9E+00	< 1.7E+01	< 5.4E+00
MW-147-DUP	8/11/2020	pCi/L	< 2.7E+00	< 2.8E+00	< 6.5E+00	< 2.9E+00	< 5.2E+00	< 2.7E+00	< 5.0E+00	< 6.7E+00	< 2.9E+00	< 3.0E+00	< 1.6E+01	< 6.3E+00
MW-148	8/11/2020	pCi/L	< 6.3E+00	< 5.2E+00	< 1.2E+01	< 6.6E+00	< 1.2E+01	< 5.6E+00	< 1.0E+01	< 1.2E+01	< 6.5E+00	< 4.9E+00	< 3.3E+01	< 6.3E+00
MW-155	8/11/2020	pCi/L	< 3.7E+00	< 4.4E+00	< 9.4E+00	< 4.7E+00	< 7.6E+00	< 3.7E+00	< 7.2E+00	< 1.3E+01	< 3.9E+00	< 4.2E+00	< 2.6E+01	< 9.7E+00
MW-156	8/11/2020	pCi/L	< 3.1E+00	< 3.2E+00	< 6.6E+00	< 4.0E+00	< 6.0E+00	< 3.6E+00	< 5.7E+00	< 7.0E+00	< 3.9E+00	< 3.4E+00	< 1.8E+01	< 6.6E+00
MW-157	8/11/2020	pCi/L	< 2.6E+00	< 2.8E+00	< 5.9E+00	< 2.7E+00	< 5.1E+00	< 2.9E+00	< 5.1E+00	< 6.1E+00	< 2.8E+00	< 2.7E+00	< 1.6E+01	< 5.0E+00
MW-158	8/11/2020	pCi/L	< 2.7E+00	< 2.7E+00	< 6.2E+00	< 3.2E+00	< 5.1E+00	< 3.0E+00	< 5.1E+00	< 6.5E+00	< 3.0E+00	< 2.6E+00	< 1.6E+01	< 5.3E+00
MW-159	8/11/2020	pCi/L	< 2.2E+00	< 2.2E+00	< 5.1E+00	< 2.4E+00	< 4.5E+00	< 2.3E+00	< 4.0E+00	< 5.4E+00	< 2.4E+00	< 2.3E+00	< 1.5E+01	< 4.5E+00

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## Groundwater Monitoring Well Sampling Results

Table 17, Gamma Isotopic Results

Station ID	Sample Date	Units	MN-54	CO-58	FE-59	CO-60	ZN-65	NB-95	ZR-95	I-131	CS-134	CS-137	BA-140	LA-140
MW-161	8/11/2020	pCi/L	< 4.7E+00	< 4.5E+00	< 1.1E+01	< 6.4E+00	< 1.0E+01	< 5.7E+00	< 8.9E+00	< 1.2E+01	< 5.0E+00	< 4.7E+00	< 3.4E+01	< 1.3E+01
MW-162	8/11/2020	pCi/L	< 5.3E+00	< 5.2E+00	< 1.3E+01	< 5.0E+00	< 1.1E+01	< 5.5E+00	< 9.4E+00	< 1.0E+01	< 6.3E+00	< 5.6E+00	< 2.9E+01	< 8.8E+00
MW-185	8/11/2020	pCi/L	< 5.6E+00	< 5.3E+00	< 8.4E+00	< 5.8E+00	< 1.1E+01	< 6.0E+00	< 1.1E+01	< 1.3E+01	< 6.6E+00	< 4.1E+00	< 3.5E+01	< 8.0E+00
MW-188	8/11/2020	pCi/L	< 3.9E+00	< 4.9E+00	< 1.0E+01	< 4.4E+00	< 8.7E+00	< 4.8E+00	< 9.7E+00	< 1.1E+01	< 4.8E+00	< 4.9E+00	< 2.8E+01	< 1.0E+01
MW-205	8/11/2020	pCi/L	< 4.8E+00	< 5.6E+00	< 1.0E+01	< 6.1E+00	< 9.0E+00	< 5.2E+00	< 9.4E+00	< 1.1E+01	< 4.7E+00	< 6.2E+00	< 2.9E+01	< 9.8E+00
MW-207	8/11/2020	pCi/L	< 6.1E+00	< 6.0E+00	< 1.6E+01	< 7.6E+00	< 2.1E+01	< 7.8E+00	< 1.5E+01	< 1.3E+01	< 8.3E+00	< 7.3E+00	< 3.7E+01	< 1.3E+01
MW-221	8/11/2020	pCi/L	< 4.2E+00	< 4.4E+00	< 1.0E+01	< 4.7E+00	< 7.1E+00	< 5.0E+00	< 8.0E+00	< 1.4E+01	< 5.1E+00	< 5.2E+00	< 3.0E+01	< 9.2E+00
MW-227	8/11/2020	pCi/L	< 6.9E+00	< 6.0E+00	< 1.1E+01	< 7.0E+00	< 1.3E+01	< 7.4E+00	< 1.0E+01	< 1.3E+01	< 6.8E+00	< 6.0E+00	< 3.2E+01	< 1.0E+01
MW-229	8/11/2020	pCi/L	< 6.1E+00	< 7.2E+00	< 1.4E+01	< 5.1E+00	< 1.3E+01	< 7.7E+00	< 1.3E+01	< 1.4E+01	< 7.9E+00	< 6.9E+00	< 3.3E+01	< 9.7E+00
MW-114	8/12/2020	pCi/L	< 5.3E+00	< 5.1E+00	< 1.3E+01	< 9.4E+00	< 1.4E+01	< 8.6E+00	< 1.4E+01	< 1.3E+01	< 7.9E+00	< 6.5E+00	< 3.3E+01	< 1.5E+01
MW-116	8/12/2020	pCi/L	< 3.7E+00	< 3.6E+00	< 7.5E+00	< 4.3E+00	< 7.2E+00	< 4.4E+00	< 6.8E+00	< 7.8E+00	< 3.6E+00	< 3.9E+00	< 2.2E+01	< 7.0E+00
MW-139	8/12/2020	pCi/L	< 5.3E+00	< 6.1E+00	< 1.2E+01	< 6.3E+00	< 1.4E+01	< 6.2E+00	< 8.3E+00	< 9.5E+00	< 5.2E+00	< 6.0E+00	< 3.0E+01	< 1.2E+01

## Annual Radioactive Effluent Release Report

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## Groundwater Monitoring Well Sampling Results

Table 17, Gamma Isotopic Results

Station ID	Sample Date	Units	MN-54	CO-58	FE-59	CO-60	ZN-65	NB-95	ZR-95	I-131	CS-134	CS-137	BA-140	LA-140
MW-141	8/12/2020	pCi/L	< 5.7E+00	< 7.2E+00	< 1.2E+01	< 8.3E+00	< 1.3E+01	< 8.1E+00	< 1.1E+01	< 1.4E+01	< 7.4E+00	< 5.1E+00	< 3.8E+01	< 1.4E+01
MW-151	8/12/2020	pCi/L	< 5.2E+00	< 5.0E+00	< 1.2E+01	< 5.5E+00	< 1.3E+01	< 5.5E+00	< 9.6E+00	< 9.8E+00	< 6.2E+00	< 5.6E+00	< 2.9E+01	< 8.5E+00
MW-153	8/12/2020	pCi/L	< 2.6E+00	< 2.5E+00	< 6.1E+00	< 2.6E+00	< 5.2E+00	< 2.8E+00	< 4.6E+00	< 6.0E+00	< 2.8E+00	< 2.9E+00	< 1.5E+01	< 5.2E+00
MW-164	8/12/2020	pCi/L	< 7.6E+00	< 8.6E+00	< 2.1E+01	< 9.7E+00	< 1.7E+01	< 9.7E+00	< 1.3E+01	< 1.3E+01	< 8.7E+00	< 8.7E+00	< 3.1E+01	< 1.3E+01
MW-164-DUP	8/12/2020	pCi/L	< 6.2E+00	< 6.7E+00	< 1.4E+01	< 6.6E+00	< 1.5E+01	< 7.4E+00	< 1.5E+01	< 1.3E+01	< 8.5E+00	< 7.4E+00	< 3.6E+01	< 1.4E+01
MW-165	8/12/2020	pCi/L	< 7.4E+00	< 7.1E+00	< 1.3E+01	< 9.6E+00	< 1.4E+01	< 8.1E+00	< 1.5E+01	< 1.3E+01	< 8.8E+00	< 8.0E+00	< 4.5E+01	< 1.1E+01
MW-170	8/12/2020	pCi/L	< 7.8E+00	< 7.4E+00	< 1.2E+01	< 7.1E+00	< 1.5E+01	< 7.0E+00	< 1.2E+01	< 1.4E+01	< 9.1E+00	< 8.7E+00	< 4.0E+01	< 1.3E+01
MW-178	8/12/2020	pCi/L	< 5.9E+00	< 6.7E+00	< 1.2E+01	< 9.0E+00	< 1.1E+01	< 7.3E+00	< 9.8E+00	< 1.4E+01	< 5.8E+00	< 5.8E+00	< 3.5E+01	< 1.2E+01
MW-179	8/12/2020	pCi/L	< 6.2E+00	< 5.6E+00	< 1.4E+01	< 7.4E+00	< 1.5E+01	< 5.7E+00	< 1.3E+01	< 1.2E+01	< 5.7E+00	< 6.7E+00	< 3.2E+01	< 9.7E+00
MW-182	8/12/2020	pCi/L	< 6.3E+00	< 6.4E+00	< 1.6E+01	< 6.1E+00	< 9.4E+00	< 7.2E+00	< 1.2E+01	< 1.1E+01	< 5.7E+00	< 6.4E+00	< 3.1E+01	< 1.1E+01
MW-186	8/12/2020	pCi/L	< 7.0E+00	< 4.6E+00	< 1.6E+01	< 7.3E+00	< 9.8E+00	< 6.3E+00	< 1.1E+01	< 1.1E+01	< 6.8E+00	< 5.6E+00	< 2.7E+01	< 1.3E+01
MW-187	8/12/2020	pCi/L	< 7.2E+00	< 7.3E+00	< 1.8E+01	< 7.0E+00	< 1.7E+01	< 7.4E+00	< 1.2E+01	< 1.0E+01	< 7.8E+00	< 5.2E+00	< 3.5E+01	< 1.3E+01

## Annual Radioactive Effluent Release Report

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## Groundwater Monitoring Well Sampling Results

Table 17, Gamma Isotopic Results

Station ID	Sample Date	Units	MN-54	CO-58	FE-59	CO-60	ZN-65	NB-95	ZR-95	I-131	CS-134	CS-137	BA-140	LA-140
MW-201	8/12/2020	pCi/L	< 6.9E+00	< 5.9E+00	< 1.4E+01	< 6.5E+00	< 1.4E+01	< 8.6E+00	< 1.3E+01	< 1.2E+01	< 6.8E+00	< 5.9E+00	< 3.7E+01	< 1.2E+01
MW-209	8/12/2020	pCi/L	< 5.7E+00	< 5.8E+00	< 1.2E+01	< 8.6E+00	< 1.6E+01	< 7.2E+00	< 1.2E+01	< 1.2E+01	< 6.2E+00	< 5.1E+00	< 2.9E+01	< 8.6E+00
MW-219	8/12/2020	pCi/L	< 5.4E+00	< 5.5E+00	< 1.3E+01	< 6.4E+00	< 1.3E+01	< 9.0E+00	< 1.5E+01	< 1.2E+01	< 7.0E+00	< 7.4E+00	< 2.4E+01	< 1.4E+01
MW-223	8/12/2020	pCi/L	< 6.4E+00	< 5.6E+00	< 1.2E+01	< 6.2E+00	< 1.0E+01	< 5.6E+00	< 8.1E+00	< 1.3E+01	< 7.0E+00	< 7.1E+00	< 3.2E+01	< 1.0E+01
MW-225	8/12/2020	pCi/L	< 6.6E+00	< 7.8E+00	< 1.8E+01	< 8.0E+00	< 1.7E+01	< 8.0E+00	< 1.4E+01	< 1.4E+01	< 9.2E+00	< 8.3E+00	< 3.9E+01	< 1.2E+01
MW-231	8/12/2020	pCi/L	< 6.2E+00	< 6.1E+00	< 1.1E+01	< 5.8E+00	< 1.2E+01	< 6.2E+00	< 9.8E+00	< 1.2E+01	< 6.9E+00	< 6.0E+00	< 3.1E+01	< 1.0E+01
MW-233	8/12/2020	pCi/L	< 5.1E+00	< 5.4E+00	< 1.2E+01	< 6.1E+00	< 1.0E+01	< 7.2E+00	< 1.0E+01	< 1.4E+01	< 7.0E+00	< 7.6E+00	< 3.6E+01	< 8.1E+00
MW-235	8/12/2020	pCi/L	< 7.2E+00	< 6.6E+00	< 1.5E+01	< 9.2E+00	< 1.4E+01	< 7.1E+00	< 1.1E+01	< 1.2E+01	< 6.5E+00	< 6.4E+00	< 3.7E+01	< 1.3E+01
MW-235-DUP	8/12/2020	pCi/L	< 7.0E+00	< 8.9E+00	< 1.8E+01	< 5.8E+00	< 1.1E+01	< 8.6E+00	< 9.8E+00	< 1.3E+01	< 8.1E+00	< 7.3E+00	< 3.4E+01	< 1.4E+01
PZ-01	8/12/2020	pCi/L	< 6.5E+00	< 6.4E+00	< 1.3E+01	< 6.5E+00	< 1.0E+01	< 5.7E+00	< 1.2E+01	< 1.5E+01	< 6.0E+00	< 6.1E+00	< 3.4E+01	< 1.3E+01
SW-103	8/12/2020	pCi/L	< 6.8E+00	< 5.1E+00	< 1.6E+01	< 9.0E+00	< 1.6E+01	< 8.9E+00	< 1.1E+01	< 1.1E+01	< 7.1E+00	< 8.1E+00	< 2.9E+01	< 1.0E+01
SW-104	8/12/2020	pCi/L	< 7.5E+00	< 5.4E+00	< 1.6E+01	< 5.9E+00	< 1.6E+01	< 6.3E+00	< 1.2E+01	< 1.3E+01	< 8.0E+00	< 7.1E+00	< 3.9E+01	< 1.5E+01

## Annual Radioactive Effluent Release Report

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## Groundwater Monitoring Well Sampling Results

Table 17, Gamma Isotopic Results

Station ID	Sample Date	Units	MN-54	CO-58	FE-59	CO-60	ZN-65	NB-95	ZR-95	I-131	CS-134	CS-137	BA-140	LA-140
MW-04	11/10/2020	pCi/L	< 5.7E+00	< 6.3E+00	< 1.3E+01	< 6.1E+00	< 1.4E+01	< 7.0E+00	< 1.2E+01	< 1.4E+01	< 8.2E+00	< 6.7E+00	< 3.6E+01	< 8.6E+00
MW-103	11/10/2020	pCi/L	< 3.8E+00	< 5.4E+00	< 1.0E+01	< 5.6E+00	< 7.5E+00	< 6.5E+00	< 8.0E+00	< 1.2E+01	< 6.7E+00	< 5.4E+00	< 2.9E+01	< 8.5E+00
MW-104	11/10/2020	pCi/L	< 7.0E+00	< 5.4E+00	< 1.3E+01	< 7.1E+00	< 8.6E+00	< 8.0E+00	< 1.2E+01	< 1.1E+01	< 6.9E+00	< 4.6E+00	< 3.7E+01	< 1.1E+01
MW-116	11/10/2020	pCi/L	< 2.0E+00	< 2.4E+00	< 5.3E+00	< 2.2E+00	< 4.2E+00	< 2.4E+00	< 4.2E+00	< 1.3E+01	< 2.1E+00	< 2.0E+00	< 2.4E+01	< 7.9E+00
MW-120	11/10/2020	pCi/L	< 5.9E+00	< 5.2E+00	< 1.6E+01	< 6.7E+00	< 1.4E+01	< 7.4E+00	< 1.4E+01	< 1.4E+01	< 6.8E+00	< 5.9E+00	< 4.1E+01	< 9.1E+00
MW-124	11/10/2020	pCi/L	< 1.7E+00	< 2.0E+00	< 4.5E+00	< 1.8E+00	< 3.6E+00	< 2.1E+00	< 3.6E+00	< 1.3E+01	< 1.9E+00	< 1.7E+00	< 2.0E+01	< 7.1E+00
MW-125	11/10/2020	pCi/L	< 1.8E+00	< 2.0E+00	< 4.6E+00	< 2.2E+00	< 3.4E+00	< 2.1E+00	< 3.6E+00	< 1.2E+01	< 1.8E+00	< 1.8E+00	< 2.2E+01	< 7.2E+00
MW-126	11/10/2020	pCi/L	< 1.6E+00	< 1.9E+00	< 4.4E+00	< 1.6E+00	< 3.3E+00	< 2.1E+00	< 3.3E+00	< 1.3E+01	< 1.7E+00	< 1.6E+00	< 2.0E+01	< 7.0E+00
MW-137	11/10/2020	pCi/L	< 1.6E+00	< 1.9E+00	< 4.3E+00	< 1.8E+00	< 3.5E+00	< 2.1E+00	< 3.2E+00	< 1.2E+01	< 1.9E+00	< 1.8E+00	< 2.0E+01	< 6.5E+00
MW-137	11/10/2020	pCi/L	< 1.8E+00	< 2.1E+00	< 4.6E+00	< 1.9E+00	< 3.6E+00	< 2.1E+00	< 3.6E+00	< 1.3E+01	< 2.0E+00	< 1.9E+00	< 2.2E+01	< 6.6E+00
MW-141	11/10/2020	pCi/L	< 2.0E+00	< 2.3E+00	< 5.4E+00	< 2.2E+00	< 4.4E+00	< 2.3E+00	< 4.2E+00	< 1.3E+01	< 2.2E+00	< 2.1E+00	< 2.2E+01	< 8.3E+00
MW-142	11/10/2020	pCi/L	< 5.8E+00	< 5.9E+00	< 1.2E+01	< 6.2E+00	< 1.5E+01	< 7.5E+00	< 9.7E+00	< 1.5E+01	< 5.7E+00	< 6.1E+00	< 3.7E+01	< 1.3E+01



## Annual Radioactive Effluent Release Report

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## Groundwater Monitoring Well Sampling Results

Table 17, Gamma Isotopic Results

Station ID	Sample Date	Units	MN-54	CO-58	FE-59	CO-60	ZN-65	NB-95	ZR-95	I-131	CS-134	CS-137	BA-140	LA-140
MW-144	11/10/2020	pCi/L	< 6.0E+00	< 5.5E+00	< 1.4E+01	< 6.7E+00	< 1.2E+01	< 6.4E+00	< 1.2E+01	< 1.5E+01	< 6.5E+00	< 5.9E+00	< 3.6E+01	< 1.1E+01
MW-146	11/10/2020	pCi/L	< 1.9E+00	< 2.2E+00	< 5.1E+00	< 2.0E+00	< 3.9E+00	< 2.5E+00	< 4.0E+00	< 1.5E+01	< 1.9E+00	< 2.0E+00	< 2.5E+01	< 7.4E+00
MW-147	11/10/2020	pCi/L	< 1.9E+00	< 2.0E+00	< 4.5E+00	< 2.0E+00	< 3.4E+00	< 2.1E+00	< 3.6E+00	< 1.3E+01	< 1.9E+00	< 1.8E+00	< 2.0E+01	< 7.0E+00
MW-148	11/10/2020	pCi/L	< 5.5E+00	< 5.2E+00	< 1.5E+01	< 7.2E+00	< 1.1E+01	< 7.6E+00	< 1.1E+01	< 1.3E+01	< 5.6E+00	< 4.7E+00	< 3.1E+01	< 9.8E+00
MW-155	11/10/2020	pCi/L	< 1.9E+00	< 2.1E+00	< 5.0E+00	< 1.9E+00	< 3.8E+00	< 2.4E+00	< 4.1E+00	< 1.3E+01	< 2.0E+00	< 1.9E+00	< 2.2E+01	< 7.6E+00
MW-156	11/10/2020	pCi/L	< 1.7E+00	< 1.9E+00	< 4.7E+00	< 1.6E+00	< 3.5E+00	< 1.9E+00	< 3.4E+00	< 1.3E+01	< 1.9E+00	< 1.7E+00	< 2.1E+01	< 6.6E+00
MW-156	11/10/2020	pCi/L	< 1.7E+00	< 2.0E+00	< 4.8E+00	< 1.8E+00	< 3.6E+00	< 2.2E+00	< 3.7E+00	< 1.2E+01	< 1.9E+00	< 1.8E+00	< 2.0E+01	< 6.3E+00
MW-157	11/10/2020	pCi/L	< 1.6E+00	< 1.7E+00	< 4.5E+00	< 1.7E+00	< 3.1E+00	< 1.9E+00	< 3.3E+00	< 1.2E+01	< 1.7E+00	< 1.7E+00	< 1.9E+01	< 6.5E+00
MW-158	11/10/2020	pCi/L	< 1.6E+00	< 2.0E+00	< 5.0E+00	< 1.7E+00	< 3.4E+00	< 2.1E+00	< 3.5E+00	< 1.3E+01	< 1.8E+00	< 1.7E+00	< 2.1E+01	< 6.4E+00
MW-159	11/10/2020	pCi/L	< 1.5E+00	< 1.7E+00	< 4.0E+00	< 1.6E+00	< 3.1E+00	< 1.8E+00	< 3.0E+00	< 1.2E+01	< 1.6E+00	< 1.4E+00	< 1.9E+01	< 6.5E+00
MW-162	11/10/2020	pCi/L	< 6.8E+00	< 6.9E+00	< 1.2E+01	< 6.2E+00	< 9.9E+00	< 6.0E+00	< 1.3E+01	< 1.3E+01	< 6.3E+00	< 5.5E+00	< 4.1E+01	< 1.3E+01
MW-174	11/10/2020	pCi/L	< 5.9E+00	< 5.8E+00	< 1.5E+01	< 7.4E+00	< 1.3E+01	< 7.9E+00	< 1.1E+01	< 1.3E+01	< 6.5E+00	< 5.5E+00	< 3.2E+01	< 1.4E+01

## Annual Radioactive Effluent Release Report

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## Groundwater Monitoring Well Sampling Results

Table 17, Gamma Isotopic Results

Station ID	Sample Date	Units	MN-54	CO-58	FE-59	CO-60	ZN-65	NB-95	ZR-95	I-131	CS-134	CS-137	BA-140	LA-140
MW-188	11/10/2020	pCi/L	< 5.7E+00	< 5.9E+00	< 1.2E+01	< 5.9E+00	< 1.3E+01	< 6.6E+00	< 1.2E+01	< 1.3E+01	< 6.6E+00	< 6.0E+00	< 3.4E+01	< 1.2E+01
MW-08	11/11/2020	pCi/L	< 2.7E+00	< 3.1E+00	< 7.4E+00	< 3.2E+00	< 6.1E+00	< 3.4E+00	< 5.6E+00	< 6.4E+00	< 3.6E+00	< 2.9E+00	< 1.6E+01	< 5.7E+00
MW-100	11/11/2020	pCi/L	< 5.0E+00	< 5.6E+00	< 1.5E+01	< 6.2E+00	< 1.4E+01	< 9.5E+00	< 1.2E+01	< 1.3E+01	< 7.0E+00	< 6.1E+00	< 2.7E+01	< 1.1E+01
MW-110	11/11/2020	pCi/L	< 1.6E+00	< 2.2E+00	< 4.7E+00	< 1.9E+00	< 3.7E+00	< 2.2E+00	< 3.7E+00	< 1.4E+01	< 2.0E+00	< 1.9E+00	< 2.3E+01	< 7.7E+00
MW-111	11/11/2020	pCi/L	< 6.1E+00	< 6.1E+00	< 9.7E+00	< 9.5E+00	< 1.5E+01	< 8.4E+00	< 1.4E+01	< 1.5E+01	< 8.4E+00	< 7.7E+00	< 3.6E+01	< 1.1E+01
MW-112	11/11/2020	pCi/L	< 1.8E+00	< 1.9E+00	< 4.7E+00	< 1.9E+00	< 3.7E+00	< 2.1E+00	< 3.7E+00	< 1.4E+01	< 1.8E+00	< 1.8E+00	< 2.3E+01	< 7.5E+00
MW-114	11/11/2020	pCi/L	< 1.8E+00	< 2.1E+00	< 4.8E+00	< 1.9E+00	< 3.6E+00	< 2.1E+00	< 3.7E+00	< 1.3E+01	< 1.9E+00	< 1.8E+00	< 2.1E+01	< 6.9E+00
MW-118	11/11/2020	pCi/L	< 2.0E+00	< 2.3E+00	< 5.3E+00	< 2.1E+00	< 4.2E+00	< 2.5E+00	< 4.1E+00	< 1.4E+01	< 2.1E+00	< 1.9E+00	< 2.1E+01	< 8.8E+00
MW-128	11/11/2020	pCi/L	< 6.3E+00	< 7.4E+00	< 1.3E+01	< 6.5E+00	< 1.3E+01	< 6.3E+00	< 1.3E+01	< 1.3E+01	< 6.3E+00	< 5.4E+00	< 3.7E+01	< 1.5E+01
MW-130	11/11/2020	pCi/L	< 7.3E+00	< 7.6E+00	< 1.3E+01	< 8.2E+00	< 1.3E+01	< 5.6E+00	< 1.4E+01	< 1.1E+01	< 8.5E+00	< 6.2E+00	< 4.1E+01	< 1.4E+01
MW-131	11/11/2020	pCi/L	< 8.4E+00	< 6.3E+00	< 1.3E+01	< 8.0E+00	< 1.5E+01	< 8.8E+00	< 1.1E+01	< 1.3E+01	< 5.7E+00	< 6.9E+00	< 4.1E+01	< 1.4E+01
MW-132	11/11/2020	pCi/L	< 6.9E+00	< 7.1E+00	< 9.8E+00	< 8.3E+00	< 1.3E+01	< 6.6E+00	< 1.1E+01	< 1.2E+01	< 7.1E+00	< 6.9E+00	< 3.2E+01	< 1.4E+01

## Annual Radioactive Effluent Release Report

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## Groundwater Monitoring Well Sampling Results

Table 17, Gamma Isotopic Results

Station ID	Sample Date	Units	MN-54	CO-58	FE-59	CO-60	ZN-65	NB-95	ZR-95	I-131	CS-134	CS-137	BA-140	LA-140
MW-134	11/11/2020	pCi/L	< 3.0E+00	< 2.9E+00	< 6.2E+00	< 2.8E+00	< 5.4E+00	< 3.3E+00	< 5.2E+00	< 6.1E+00	< 2.8E+00	< 2.9E+00	< 1.7E+01	< 6.7E+00
MW-14	11/11/2020	pCi/L	< 3.0E+00	< 3.2E+00	< 6.0E+00	< 2.8E+00	< 5.7E+00	< 3.2E+00	< 4.9E+00	< 6.0E+00	< 3.0E+00	< 3.1E+00	< 1.5E+01	< 4.5E+00
MW-151	11/11/2020	pCi/L	< 6.1E+00	< 5.0E+00	< 1.3E+01	< 6.5E+00	< 1.0E+01	< 4.4E+00	< 1.2E+01	< 1.2E+01	< 5.7E+00	< 6.4E+00	< 3.3E+01	< 1.1E+01
MW-153	11/11/2020	pCi/L	< 1.8E+00	< 2.1E+00	< 4.8E+00	< 1.7E+00	< 3.6E+00	< 2.1E+00	< 3.4E+00	< 1.4E+01	< 1.9E+00	< 1.8E+00	< 2.2E+01	< 7.5E+00
MW-161	11/11/2020	pCi/L	< 1.6E+00	< 2.0E+00	< 4.8E+00	< 1.7E+00	< 3.4E+00	< 2.1E+00	< 3.7E+00	< 1.4E+01	< 1.8E+00	< 1.7E+00	< 2.2E+01	< 7.5E+00
MW-164	11/11/2020	pCi/L	< 6.9E+00	< 5.9E+00	< 1.4E+01	< 6.0E+00	< 1.3E+01	< 7.8E+00	< 1.0E+01	< 1.3E+01	< 7.7E+00	< 6.4E+00	< 3.4E+01	< 1.1E+01
MW-165	11/11/2020	pCi/L	< 3.1E+00	< 6.2E+00	< 1.1E+01	< 6.5E+00	< 1.1E+01	< 7.6E+00	< 1.0E+01	< 1.5E+01	< 6.9E+00	< 6.1E+00	< 4.0E+01	< 1.3E+01
MW-165-DUP	11/11/2020	pCi/L	< 6.2E+00	< 7.0E+00	< 1.8E+01	< 7.6E+00	< 1.2E+01	< 5.5E+00	< 1.2E+01	< 1.2E+01	< 8.4E+00	< 7.1E+00	< 2.8E+01	< 1.0E+01
MW-167	11/11/2020	pCi/L	< 7.8E+00	< 6.6E+00	< 1.5E+01	< 7.2E+00	< 1.6E+01	< 6.3E+00	< 1.2E+01	< 1.4E+01	< 6.2E+00	< 7.9E+00	< 3.8E+01	< 1.2E+01
MW-169	11/11/2020	pCi/L	< 6.6E+00	< 7.0E+00	< 1.4E+01	< 8.6E+00	< 1.1E+01	< 6.9E+00	< 1.0E+01	< 1.1E+01	< 7.2E+00	< 5.9E+00	< 3.4E+01	< 7.2E+00
MW-172	11/11/2020	pCi/L	< 3.0E+00	< 2.8E+00	< 6.5E+00	< 3.5E+00	< 6.0E+00	< 3.3E+00	< 4.9E+00	< 6.4E+00	< 3.2E+00	< 3.0E+00	< 1.6E+01	< 5.5E+00
MW-178	11/11/2020	pCi/L	< 1.8E+00	< 2.2E+00	< 4.8E+00	< 2.1E+00	< 3.8E+00	< 2.4E+00	< 3.9E+00	< 1.4E+01	< 2.0E+00	< 2.0E+00	< 2.4E+01	< 8.5E+00

## Annual Radioactive Effluent Release Report

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## Groundwater Monitoring Well Sampling Results

Table 17, Gamma Isotopic Results

Station ID	Sample Date	Units	MN-54	CO-58	FE-59	CO-60	ZN-65	NB-95	ZR-95	I-131	CS-134	CS-137	BA-140	LA-140
MW-179	11/11/2020	pCi/L	< 1.6E+00	< 1.8E+00	< 4.3E+00	< 1.6E+00	< 3.4E+00	< 2.1E+00	< 3.3E+00	< 1.3E+01	< 1.7E+00	< 1.7E+00	< 1.9E+01	< 6.9E+00
MW-179	11/11/2020	pCi/L	< 1.7E+00	< 1.9E+00	< 4.8E+00	< 1.6E+00	< 3.6E+00	< 2.1E+00	< 3.5E+00	< 1.5E+01	< 1.8E+00	< 1.7E+00	< 2.2E+01	< 6.6E+00
MW-18	11/11/2020	pCi/L	< 6.5E+00	< 6.3E+00	< 1.1E+01	< 5.4E+00	< 1.2E+01	< 6.6E+00	< 1.2E+01	< 1.3E+01	< 8.0E+00	< 7.3E+00	< 2.9E+01	< 1.4E+01
MW-185	11/11/2020	pCi/L	< 5.8E+00	< 5.8E+00	< 1.5E+01	< 7.6E+00	< 9.8E+00	< 5.9E+00	< 1.0E+01	< 1.3E+01	< 6.4E+00	< 6.3E+00	< 3.8E+01	< 7.8E+00
MW-186	11/11/2020	pCi/L	< 5.9E+00	< 6.8E+00	< 1.2E+01	< 6.5E+00	< 1.2E+01	< 6.8E+00	< 9.1E+00	< 1.1E+01	< 6.4E+00	< 6.0E+00	< 3.3E+01	< 1.1E+01
MW-187	11/11/2020	pCi/L	< 6.0E+00	< 6.0E+00	< 1.3E+01	< 5.3E+00	< 1.3E+01	< 7.7E+00	< 1.1E+01	< 1.3E+01	< 6.7E+00	< 6.8E+00	< 2.9E+01	< 1.3E+01
MW-201	11/11/2020	pCi/L	< 6.2E+00	< 7.3E+00	< 1.6E+01	< 5.5E+00	< 1.7E+01	< 6.5E+00	< 1.3E+01	< 1.4E+01	< 8.3E+00	< 6.0E+00	< 3.5E+01	< 1.1E+01
MW-203	11/11/2020	pCi/L	< 5.2E+00	< 7.6E+00	< 1.2E+01	< 5.9E+00	< 1.4E+01	< 6.9E+00	< 1.1E+01	< 1.4E+01	< 5.6E+00	< 6.6E+00	< 3.9E+01	< 1.3E+01
MW-205	11/11/2020	pCi/L	< 5.2E+00	< 5.3E+00	< 1.0E+01	< 6.9E+00	< 1.4E+01	< 5.5E+00	< 1.3E+01	< 1.3E+01	< 5.2E+00	< 6.5E+00	< 3.4E+01	< 1.1E+01
MW-207	11/11/2020	pCi/L	< 2.7E+00	< 2.8E+00	< 6.3E+00	< 3.0E+00	< 5.2E+00	< 3.0E+00	< 5.3E+00	< 6.1E+00	< 2.9E+00	< 2.9E+00	< 1.6E+01	< 5.3E+00
MW-209	11/11/2020	pCi/L	< 6.5E+00	< 5.6E+00	< 1.4E+01	< 6.9E+00	< 1.5E+01	< 5.3E+00	< 1.1E+01	< 1.2E+01	< 6.4E+00	< 7.3E+00	< 3.6E+01	< 1.1E+01
MW-209-DUP	11/11/2020	pCi/L	< 6.0E+00	< 6.5E+00	< 1.4E+01	< 5.6E+00	< 1.4E+01	< 7.2E+00	< 1.3E+01	< 1.4E+01	< 7.1E+00	< 7.2E+00	< 3.1E+01	< 1.2E+01

## Annual Radioactive Effluent Release Report

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## Groundwater Monitoring Well Sampling Results

Table 17, Gamma Isotopic Results

Station ID	Sample Date	Units	MN-54	CO-58	FE-59	CO-60	ZN-65	NB-95	ZR-95	I-131	CS-134	CS-137	BA-140	LA-140
MW-211	11/11/2020	pCi/L	< 2.8E+00	< 2.8E+00	< 6.3E+00	< 2.9E+00	< 5.7E+00	< 3.1E+00	< 5.2E+00	< 6.5E+00	< 3.2E+00	< 3.0E+00	< 1.6E+01	< 5.7E+00
MW-211-DUP	11/11/2020	pCi/L	< 7.1E+00	< 7.0E+00	< 1.8E+01	< 6.2E+00	< 1.1E+01	< 8.3E+00	< 1.3E+01	< 1.5E+01	< 6.6E+00	< 7.1E+00	< 2.9E+01	< 8.8E+00
MW-213	11/11/2020	pCi/L	< 3.0E+00	< 3.4E+00	< 6.5E+00	< 3.0E+00	< 6.3E+00	< 3.2E+00	< 5.8E+00	< 7.4E+00	< 3.4E+00	< 3.3E+00	< 1.8E+01	< 6.5E+00
MW-215	11/11/2020	pCi/L	< 5.3E+00	< 7.2E+00	< 1.3E+01	< 6.9E+00	< 1.0E+01	< 7.6E+00	< 1.1E+01	< 1.3E+01	< 7.1E+00	< 6.1E+00	< 3.5E+01	< 1.1E+01
MW-217	11/11/2020	pCi/L	< 7.2E+00	< 6.6E+00	< 1.4E+01	< 6.7E+00	< 1.2E+01	< 7.2E+00	< 1.4E+01	< 1.3E+01	< 9.1E+00	< 7.8E+00	< 4.0E+01	< 1.2E+01
MW-221	11/11/2020	pCi/L	< 2.0E+00	< 2.2E+00	< 5.2E+00	< 2.1E+00	< 3.9E+00	< 2.2E+00	< 3.9E+00	< 1.3E+01	< 2.2E+00	< 2.0E+00	< 2.4E+01	< 8.7E+00
MW-227	11/11/2020	pCi/L	< 6.4E+00	< 5.9E+00	< 1.1E+01	< 8.0E+00	< 1.3E+01	< 7.1E+00	< 1.0E+01	< 1.4E+01	< 8.5E+00	< 6.1E+00	< 3.1E+01	< 1.2E+01
MW-229	11/11/2020	pCi/L	< 2.5E+00	< 2.6E+00	< 5.7E+00	< 2.8E+00	< 5.6E+00	< 3.2E+00	< 5.0E+00	< 5.9E+00	< 2.6E+00	< 2.6E+00	< 1.4E+01	< 5.2E+00
MW-231	11/11/2020	pCi/L	< 5.9E+00	< 6.3E+00	< 1.3E+01	< 8.4E+00	< 1.3E+01	< 7.1E+00	< 9.9E+00	< 1.4E+01	< 8.5E+00	< 5.2E+00	< 3.5E+01	< 1.1E+01
MW-233	11/11/2020	pCi/L	< 6.1E+00	< 7.5E+00	< 1.6E+01	< 7.7E+00	< 1.5E+01	< 6.6E+00	< 1.0E+01	< 1.4E+01	< 8.5E+00	< 7.3E+00	< 3.7E+01	< 1.4E+01
MW-233-DUP	11/11/2020	pCi/L	< 5.7E+00	< 7.1E+00	< 1.3E+01	< 5.2E+00	< 1.2E+01	< 6.1E+00	< 1.4E+01	< 1.1E+01	< 7.2E+00	< 6.8E+00	< 3.0E+01	< 9.1E+00
PZ-01	11/11/2020	pCi/L	< 1.8E+00	< 2.2E+00	< 5.1E+00	< 1.9E+00	< 3.7E+00	< 2.2E+00	< 3.9E+00	< 1.5E+01	< 2.0E+00	< 2.1E+00	< 2.3E+01	< 7.5E+00

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## Groundwater Monitoring Well Sampling Results

Table 17, Gamma Isotopic Results

Station ID	Sample Date	Units	MN-54	CO-58	FE-59	CO-60	ZN-65	NB-95	ZR-95	I-131	CS-134	CS-137	BA-140	LA-140
PZ-03	11/11/2020	pCi/L	< 5.5E+00	< 4.9E+00	< 1.1E+01	< 7.7E+00	< 1.1E+01	< 7.8E+00	< 1.3E+01	< 1.1E+01	< 5.0E+00	< 6.1E+00	< 3.1E+01	< 1.5E+01
T-14	11/11/2020	pCi/L	< 2.9E+00	< 3.4E+00	< 7.4E+00	< 3.5E+00	< 6.8E+00	< 3.4E+00	< 5.5E+00	< 6.7E+00	< 3.3E+00	< 3.2E+00	< 1.7E+01	< 5.3E+00
MW-05	11/12/2020	pCi/L	< 7.4E+00	< 6.7E+00	< 1.3E+01	< 6.3E+00	< 1.5E+01	< 6.8E+00	< 1.0E+01	< 1.3E+01	< 7.1E+00	< 8.5E+00	< 3.4E+01	< 1.4E+01
MW-106	11/12/2020	pCi/L	< 6.1E+00	< 6.2E+00	< 1.6E+01	< 8.9E+00	< 1.3E+01	< 6.4E+00	< 1.1E+01	< 1.3E+01	< 7.9E+00	< 6.2E+00	< 3.2E+01	< 1.2E+01
MW-107	11/12/2020	pCi/L	< 5.2E+00	< 8.4E+00	< 1.7E+01	< 6.5E+00	< 1.9E+01	< 7.6E+00	< 1.6E+01	< 1.3E+01	< 6.5E+00	< 6.9E+00	< 3.8E+01	< 1.4E+01
MW-108	11/12/2020	pCi/L	< 6.1E+00	< 7.0E+00	< 1.5E+01	< 6.8E+00	< 1.7E+01	< 6.2E+00	< 1.4E+01	< 1.3E+01	< 7.9E+00	< 7.3E+00	< 3.8E+01	< 9.3E+00
MW-122R	11/12/2020	pCi/L	< 5.9E+00	< 5.2E+00	< 1.3E+01	< 7.7E+00	< 1.2E+01	< 6.8E+00	< 9.3E+00	< 1.3E+01	< 4.7E+00	< 6.1E+00	< 2.4E+01	< 1.1E+01
MW-139	11/12/2020	pCi/L	< 6.5E+00	< 6.4E+00	< 1.6E+01	< 7.1E+00	< 1.8E+01	< 7.7E+00	< 1.5E+01	< 1.5E+01	< 9.1E+00	< 5.5E+00	< 3.5E+01	< 9.4E+00
MW-170	11/12/2020	pCi/L	< 8.3E+00	< 8.8E+00	< 1.6E+01	< 6.9E+00	< 1.3E+01	< 8.0E+00	< 1.5E+01	< 1.4E+01	< 8.0E+00	< 7.7E+00	< 3.2E+01	< 1.1E+01
MW-180	11/12/2020	pCi/L	< 8.1E+00	< 8.7E+00	< 1.4E+01	< 6.5E+00	< 1.8E+01	< 8.4E+00	< 1.5E+01	< 1.3E+01	< 6.4E+00	< 6.6E+00	< 3.9E+01	< 1.3E+01
MW-182	11/12/2020	pCi/L	< 5.6E+00	< 6.9E+00	< 1.8E+01	< 7.8E+00	< 1.5E+01	< 8.8E+00	< 1.6E+01	< 1.4E+01	< 9.2E+00	< 7.6E+00	< 4.3E+01	< 1.4E+01
MW-219	11/12/2020	pCi/L	< 6.9E+00	< 5.4E+00	< 1.3E+01	< 8.9E+00	< 1.7E+01	< 8.5E+00	< 1.4E+01	< 1.1E+01	< 7.7E+00	< 5.2E+00	< 4.2E+01	< 1.3E+01

**Groundwater Monitoring Well Sampling Results**

**Table 17, Gamma Isotopic Results**

Station ID	Sample Date	Units	MN-54	CO-58	FE-59	CO-60	ZN-65	NB-95	ZR-95	I-131	CS-134	CS-137	BA-140	LA-140
MW-223	11/12/2020	pCi/L	< 6.3E+00	< 5.1E+00	< 1.9E+01	< 8.3E+00	< 1.2E+01	< 6.6E+00	< 1.1E+01	< 1.3E+01	< 8.3E+00	< 8.5E+00	< 2.9E+01	< 1.1E+01
MW-225	11/12/2020	pCi/L	< 4.8E+00	< 8.3E+00	< 1.7E+01	< 5.7E+00	< 1.6E+01	< 7.3E+00	< 1.4E+01	< 1.4E+01	< 5.8E+00	< 6.3E+00	< 2.8E+01	< 1.4E+01
MW-225-DUP	11/12/2020	pCi/L	< 6.4E+00	< 6.9E+00	< 1.2E+01	< 6.2E+00	< 1.4E+01	< 6.4E+00	< 1.2E+01	< 1.3E+01	< 8.9E+00	< 8.6E+00	< 3.4E+01	< 1.3E+01
MW-235	11/12/2020	pCi/L	< 5.6E+00	< 7.7E+00	< 1.4E+01	< 9.0E+00	< 1.1E+01	< 6.0E+00	< 1.6E+01	< 1.3E+01	< 7.8E+00	< 7.4E+00	< 3.8E+01	< 1.4E+01
SW-103	11/12/2020	pCi/L	< 3.0E+00	< 2.9E+00	< 6.3E+00	< 3.1E+00	< 5.7E+00	< 3.3E+00	< 5.5E+00	< 6.5E+00	< 3.4E+00	< 3.2E+00	< 1.7E+01	< 5.4E+00
SW-104	11/12/2020	pCi/L	< 2.5E+00	< 2.7E+00	< 6.3E+00	< 2.7E+00	< 5.3E+00	< 2.8E+00	< 5.0E+00	< 5.8E+00	< 2.9E+00	< 2.7E+00	< 1.5E+01	< 5.1E+00

**Table 18, Hard to Detect Nuclides**

Station ID	Sample Date	Units	FE-55	NI-63	SR-89	SR-90	CM-242	CM-243/244	PU-238
MW-125	2/4/2020	pCi/L	< 7.3E+01	< 2.2E+01	< 9.9E+00	< 2.3E+00	< 7.5E-02	< 8.7E-02	< 4.0E-02

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## Groundwater Monitoring Well Sampling Results

Table 19, Tritium Analysis Results

Station ID	Start Date	Units	H-3		Station ID	Start Date	Units	H-3
MW-100	2/4/2020	pCi/L	< 5.5E+02		MW-156	2/4/2020	pCi/L	4.90E+03
MW-124	2/4/2020	pCi/L	1.70E+05		MW-157	2/4/2020	pCi/L	2.20E+05
MW-125	2/4/2020	pCi/L	6.00E+05		MW-157-DUP	2/4/2020	pCi/L	2.10E+05
MW-126	2/4/2020	pCi/L	4.90E+03		MW-158	2/4/2020	pCi/L	4.20E+05
MW-142	2/4/2020	pCi/L	< 5.1E+02		MW-159	2/4/2020	pCi/L	2.80E+04
MW-144	2/4/2020	pCi/L	< 5.5E+02		MW-162	2/4/2020	pCi/L	< 5.1E+02
MW-146	2/4/2020	pCi/L	1.60E+05		MW-164	2/4/2020	pCi/L	< 5.3E+02
MW-147	2/4/2020	pCi/L	2.00E+04		MW-165	2/4/2020	pCi/L	< 5.6E+02
MW-148	2/4/2020	pCi/L	< 5.2E+02		MW-178	2/4/2020	pCi/L	1.70E+03
MW-151	2/4/2020	pCi/L	< 5.2E+02		MW-179	2/4/2020	pCi/L	1.50E+05
MW-155	2/4/2020	pCi/L	2.20E+05		MW-185	2/4/2020	pCi/L	< 4.7E+02
MW-155-DUP	2/4/2020	pCi/L	1.80E+05		MW-186	2/4/2020	pCi/L	< 5.1E+02



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## Groundwater Monitoring Well Sampling Results

Table 19, Tritium Analysis Results

Station ID	Start Date	Units	H-3		Station ID	Start Date	Units	H-3
MW-187	2/4/2020	pCi/L	< 5.2E+02		MW-118	2/5/2020	pCi/L	5.00E+03
MW-188	2/4/2020	pCi/L	< 5.1E+02		MW-137	2/5/2020	pCi/L	2.00E+04
MW-188-DUP	2/4/2020	pCi/L	< 5.2E+02		MW-139	2/5/2020	pCi/L	< 5.4E+02
MW-201	2/4/2020	pCi/L	< 5.0E+02		MW-141	2/5/2020	pCi/L	2.70E+03
MW-205	2/4/2020	pCi/L	< 5.2E+02		MW-153	2/5/2020	pCi/L	9.50E+02
MW-207	2/4/2020	pCi/L	< 5.2E+02		MW-161	2/5/2020	pCi/L	3.30E+03
MW-227	2/4/2020	pCi/L	< 5.2E+02		MW-170	2/5/2020	pCi/L	< 5.1E+02
MW-229	2/4/2020	pCi/L	< 5.2E+02		MW-170-DUP	2/5/2020	pCi/L	< 5.1E+02
MW-110	2/5/2020	pCi/L	1.90E+04		MW-182	2/5/2020	pCi/L	< 5.2E+02
MW-112	2/5/2020	pCi/L	4.30E+03		MW-209	2/5/2020	pCi/L	< 5.2E+02
MW-114	2/5/2020	pCi/L	1.60E+03		MW-219	2/5/2020	pCi/L	< 5.2E+02
MW-116	2/5/2020	pCi/L	2.20E+04		MW-221	2/5/2020	pCi/L	< 5.5E+02

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Table 19, Tritium Analysis Results

Station ID	Start Date	Units	H-3		Station ID	Start Date	Units	H-3
MW-223	2/5/2020	pCi/L	< 5.7E+02		MW-124	5/12/2020	pCi/L	1.00E+05
MW-223-DUP	2/5/2020	pCi/L	< 5.2E+02		MW-124-DUP	5/12/2020	pCi/L	1.30E+05
MW-225	2/5/2020	pCi/L	< 5.1E+02		MW-125	5/12/2020	pCi/L	6.10E+05
MW-231	2/5/2020	pCi/L	< 5.2E+02		MW-126	5/12/2020	pCi/L	1.60E+04
MW-233	2/5/2020	pCi/L	< 5.1E+02		MW-142	5/12/2020	pCi/L	< 5.2E+02
MW-235	2/5/2020	pCi/L	< 5.1E+02		MW-144	5/12/2020	pCi/L	< 5.4E+02
PZ-01	2/5/2020	pCi/L	3.20E+04		MW-146	5/12/2020	pCi/L	1.80E+05
SW-101	2/5/2020	pCi/L	< 4.6E+02		MW-147	5/12/2020	pCi/L	7.90E+04
SW-102	2/5/2020	pCi/L	< 5.1E+02		MW-148	5/12/2020	pCi/L	< 5.0E+02
SW-103	2/5/2020	pCi/L	< 5.2E+02		MW-155	5/12/2020	pCi/L	1.00E+05
SW-104	2/5/2020	pCi/L	< 5.3E+02		MW-156	5/12/2020	pCi/L	3.70E+03
MW-158	3/16/2020	pCi/L	4.20E+05		MW-157	5/12/2020	pCi/L	2.30E+05

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Table 19, Tritium Analysis Results

Station ID	Start Date	Units	H-3		Station ID	Start Date	Units	H-3
MW-158	5/12/2020	pCi/L	4.30E+05		MW-122R-DUP	5/13/2020	pCi/L	< 5.3E+02
MW-159	5/12/2020	pCi/L	3.50E+04		MW-128	5/13/2020	pCi/L	< 5.2E+02
MW-162	5/12/2020	pCi/L	< 5.3E+02		MW-130	5/13/2020	pCi/L	< 4.5E+02
MW-100	5/13/2020	pCi/L	< 4.9E+02		MW-131	5/13/2020	pCi/L	< 5.3E+02
MW-106	5/13/2020	pCi/L	< 5.2E+02		MW-132	5/13/2020	pCi/L	< 4.6E+02
MW-110	5/13/2020	pCi/L	1.20E+04		MW-137	5/13/2020	pCi/L	7.90E+03
MW-112	5/13/2020	pCi/L	5.10E+03		MW-139	5/13/2020	pCi/L	< 5.3E+02
MW-114	5/13/2020	pCi/L	1.20E+03		MW-141	5/13/2020	pCi/L	2.70E+03
MW-116	5/13/2020	pCi/L	4.60E+03		MW-151	5/13/2020	pCi/L	< 5.0E+02
MW-118	5/13/2020	pCi/L	4.90E+03		MW-153	5/13/2020	pCi/L	1.30E+03
MW-120	5/13/2020	pCi/L	< 5.3E+02		MW-161	5/13/2020	pCi/L	2.10E+03
MW-122R	5/13/2020	pCi/L	< 5.2E+02		MW-164	5/13/2020	pCi/L	< 5.1E+02

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## Groundwater Monitoring Well Sampling Results

Table 19, Tritium Analysis Results

Station ID	Start Date	Units	H-3		Station ID	Start Date	Units	H-3
MW-164-DUP	5/13/2020	pCi/L	< 5.0E+02		MW-186	5/13/2020	pCi/L	< 5.1E+02
MW-165	5/13/2020	pCi/L	< 5.1E+02		MW-187	5/13/2020	pCi/L	< 5.1E+02
MW-167	5/13/2020	pCi/L	< 4.6E+02		MW-201	5/13/2020	pCi/L	< 4.6E+02
MW-169	5/13/2020	pCi/L	< 4.5E+02		MW-207	5/13/2020	pCi/L	< 4.7E+02
MW-170	5/13/2020	pCi/L	< 5.4E+02		MW-211	5/13/2020	pCi/L	< 5.3E+02
MW-170-DUP	5/13/2020	pCi/L	< 5.2E+02		MW-213	5/13/2020	pCi/L	< 4.7E+02
MW-178	5/13/2020	pCi/L	1.60E+03		MW-215	5/13/2020	pCi/L	< 5.1E+02
MW-178-DUP	5/13/2020	pCi/L	1.70E+03		MW-217	5/13/2020	pCi/L	< 5.1E+02
MW-179	5/13/2020	pCi/L	1.40E+05		MW-221	5/13/2020	pCi/L	1.10E+03
MW-180	5/13/2020	pCi/L	< 5.1E+02		MW-223	5/13/2020	pCi/L	< 4.7E+02
MW-185	5/13/2020	pCi/L	< 5.0E+02		MW-229	5/13/2020	pCi/L	< 4.6E+02
MW-185-DUP	5/13/2020	pCi/L	< 5.0E+02		MW-231	5/13/2020	pCi/L	< 5.3E+02

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## Groundwater Monitoring Well Sampling Results

Table 19, Tritium Analysis Results

Station ID	Start Date	Units	H-3		Station ID	Start Date	Units	H-3
PZ-01	5/13/2020	pCi/L	2.10E+04		MW-235	5/14/2020	pCi/L	< 5.0E+02
PZ-01-DUP	5/13/2020	pCi/L	2.10E+04		SW-102	5/14/2020	pCi/L	< 5.2E+02
PZ-03	5/13/2020	pCi/L	< 4.9E+02		SW-103	5/14/2020	pCi/L	< 5.3E+02
MW-134	5/14/2020	pCi/L	< 5.1E+02		SW-104	5/14/2020	pCi/L	< 5.2E+02
MW-182	5/14/2020	pCi/L	< 5.2E+02		MW-100	8/11/2020	pCi/L	< 5.1E+02
MW-188	5/14/2020	pCi/L	< 4.6E+02		MW-100-DUP	8/11/2020	pCi/L	< 5.2E+02
MW-205	5/14/2020	pCi/L	< 5.1E+02		MW-110	8/11/2020	pCi/L	2.30E+04
MW-209	5/14/2020	pCi/L	< 5.3E+02		MW-112	8/11/2020	pCi/L	3.90E+03
MW-219	5/14/2020	pCi/L	< 4.5E+02		MW-118	8/11/2020	pCi/L	4.00E+03
MW-225	5/14/2020	pCi/L	< 4.6E+02		MW-124	8/11/2020	pCi/L	1.10E+05
MW-227	5/14/2020	pCi/L	< 4.7E+02		MW-125	8/11/2020	pCi/L	4.50E+05
MW-233	5/14/2020	pCi/L	< 4.9E+02		MW-126	8/11/2020	pCi/L	2.90E+04

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## Groundwater Monitoring Well Sampling Results

Table 19, Tritium Analysis Results

Station ID	Start Date	Units	H-3		Station ID	Start Date	Units	H-3
MW-137	8/11/2020	pCi/L	1.70E+04		MW-159	8/11/2020	pCi/L	5.60E+04
MW-142	8/11/2020	pCi/L	< 5.2E+02		MW-161	8/11/2020	pCi/L	2.40E+03
MW-144	8/11/2020	pCi/L	< 5.2E+02		MW-162	8/11/2020	pCi/L	< 4.5E+02
MW-146	8/11/2020	pCi/L	8.60E+04		MW-185	8/11/2020	pCi/L	< 5.2E+02
MW-146-DUP	8/11/2020	pCi/L	9.30E+04		MW-188	8/11/2020	pCi/L	< 4.6E+02
MW-147	8/11/2020	pCi/L	2.30E+04		MW-205	8/11/2020	pCi/L	< 5.1E+02
MW-147-DUP	8/11/2020	pCi/L	2.20E+04		MW-207	8/11/2020	pCi/L	< 5.3E+02
MW-148	8/11/2020	pCi/L	< 5.2E+02		MW-221	8/11/2020	pCi/L	1.30E+03
MW-155	8/11/2020	pCi/L	1.30E+05		MW-227	8/11/2020	pCi/L	< 5.2E+02
MW-156	8/11/2020	pCi/L	2.30E+03		MW-229	8/11/2020	pCi/L	< 5.2E+02
MW-157	8/11/2020	pCi/L	2.00E+05		MW-114	8/12/2020	pCi/L	2.10E+03
MW-158	8/11/2020	pCi/L	2.60E+05		MW-116	8/12/2020	pCi/L	1.30E+04

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## Groundwater Monitoring Well Sampling Results

Table 19, Tritium Analysis Results

Station ID	Start Date	Units	H-3		Station ID	Start Date	Units	H-3
MW-139	8/12/2020	pCi/L	< 4.5E+02		MW-187	8/12/2020	pCi/L	< 4.6E+02
MW-141	8/12/2020	pCi/L	2.70E+03		MW-201	8/12/2020	pCi/L	< 4.5E+02
MW-151	8/12/2020	pCi/L	< 5.7E+02		MW-209	8/12/2020	pCi/L	< 5.2E+02
MW-153	8/12/2020	pCi/L	9.60E+02		MW-219	8/12/2020	pCi/L	< 5.1E+02
MW-164	8/12/2020	pCi/L	< 4.5E+02		MW-223	8/12/2020	pCi/L	< 5.1E+02
MW-164-DUP	8/12/2020	pCi/L	< 5.1E+02		MW-225	8/12/2020	pCi/L	< 5.1E+02
MW-165	8/12/2020	pCi/L	< 5.1E+02		MW-231	8/12/2020	pCi/L	< 4.4E+02
MW-170	8/12/2020	pCi/L	< 4.4E+02		MW-233	8/12/2020	pCi/L	< 5.3E+02
MW-178	8/12/2020	pCi/L	1.80E+03		MW-235	8/12/2020	pCi/L	< 4.7E+02
MW-179	8/12/2020	pCi/L	1.30E+05		MW-235-DUP	8/12/2020	pCi/L	< 5.1E+02
MW-182	8/12/2020	pCi/L	< 5.1E+02		PZ-01	8/12/2020	pCi/L	2.10E+04
MW-186	8/12/2020	pCi/L	< 4.6E+02		SW-101	8/12/2020	pCi/L	< 4.6E+02

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Table 19, Tritium Analysis Results

Station ID	Start Date	Units	H-3		Station ID	Start Date	Units	H-3
SW-102	8/12/2020	pCi/L	< 4.4E+02		MW-137	11/10/2020	pCi/L	1.30E+04
SW-103	8/12/2020	pCi/L	< 4.4E+02		MW-141	11/10/2020	pCi/L	3.20E+03
SW-104	8/12/2020	pCi/L	< 4.6E+02		MW-142	11/10/2020	pCi/L	< 5.1E+02
MW-04	11/10/2020	pCi/L	< 5.0E+02		MW-144	11/10/2020	pCi/L	9.30E+02
MW-103	11/10/2020	pCi/L	< 5.0E+02		MW-146	11/10/2020	pCi/L	6.20E+04
MW-104	11/10/2020	pCi/L	< 5.4E+02		MW-147	11/10/2020	pCi/L	7.10E+03
MW-116	11/10/2020	pCi/L	1.80E+04		MW-148	11/10/2020	pCi/L	6.00E+03
MW-120	11/10/2020	pCi/L	< 5.5E+02		MW-155	11/10/2020	pCi/L	1.30E+05
MW-124	11/10/2020	pCi/L	1.20E+05		MW-156	11/10/2020	pCi/L	2.60E+03
MW-125	11/10/2020	pCi/L	4.00E+05		MW-156	11/10/2020	pCi/L	2.60E+03
MW-126	11/10/2020	pCi/L	1.90E+04		MW-157	11/10/2020	pCi/L	2.00E+05
MW-137	11/10/2020	pCi/L	1.30E+04		MW-158	11/10/2020	pCi/L	2.40E+05



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## Groundwater Monitoring Well Sampling Results

Table 19, Tritium Analysis Results

Station ID	Start Date	Units	H-3		Station ID	Start Date	Units	H-3
MW-159	11/10/2020	pCi/L	4.50E+04		MW-130	11/11/2020	pCi/L	< 5.2E+02
MW-162	11/10/2020	pCi/L	< 5.0E+02		MW-131	11/11/2020	pCi/L	< 5.0E+02
MW-174	11/10/2020	pCi/L	< 5.2E+02		MW-132	11/11/2020	pCi/L	< 5.3E+02
MW-188	11/10/2020	pCi/L	< 5.1E+02		MW-134	11/11/2020	pCi/L	< 5.3E+02
MW-08	11/11/2020	pCi/L	< 5.1E+02		MW-14	11/11/2020	pCi/L	< 5.1E+02
MW-100	11/11/2020	pCi/L	< 5.2E+02		MW-151	11/11/2020	pCi/L	< 5.2E+02
MW-110	11/11/2020	pCi/L	2.70E+04		MW-153	11/11/2020	pCi/L	1.20E+03
MW-111	11/11/2020	pCi/L	< 5.5E+02		MW-161	11/11/2020	pCi/L	3.10E+03
MW-112	11/11/2020	pCi/L	3.60E+03		MW-164	11/11/2020	pCi/L	< 5.1E+02
MW-114	11/11/2020	pCi/L	1.80E+03		MW-165	11/11/2020	pCi/L	< 5.1E+02
MW-118	11/11/2020	pCi/L	4.30E+03		MW-165-DUP	11/11/2020	pCi/L	< 5.3E+02
MW-128	11/11/2020	pCi/L	< 5.4E+02		MW-167	11/11/2020	pCi/L	< 5.1E+02

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## Groundwater Monitoring Well Sampling Results

Table 19, Tritium Analysis Results

Station ID	Start Date	Units	H-3		Station ID	Start Date	Units	H-3
MW-169	11/11/2020	pCi/L	< 5.1E+02		MW-207	11/11/2020	pCi/L	< 5.1E+02
MW-172	11/11/2020	pCi/L	< 5.2E+02		MW-209	11/11/2020	pCi/L	< 5.1E+02
MW-178	11/11/2020	pCi/L	1.60E+03		MW-209-DUP	11/11/2020	pCi/L	< 5.5E+02
MW-179	11/11/2020	pCi/L	1.40E+05		MW-211	11/11/2020	pCi/L	< 4.7E+02
MW-179	11/11/2020	pCi/L	1.20E+05		MW-211-DUP	11/11/2020	pCi/L	< 5.1E+02
MW-18	11/11/2020	pCi/L	< 5.0E+02		MW-213	11/11/2020	pCi/L	< 5.2E+02
MW-185	11/11/2020	pCi/L	< 5.0E+02		MW-215	11/11/2020	pCi/L	< 5.2E+02
MW-186	11/11/2020	pCi/L	< 5.2E+02		MW-217	11/11/2020	pCi/L	< 5.1E+02
MW-187	11/11/2020	pCi/L	< 5.2E+02		MW-221	11/11/2020	pCi/L	1.00E+03
MW-201	11/11/2020	pCi/L	< 5.2E+02		MW-227	11/11/2020	pCi/L	< 5.1E+02
MW-203	11/11/2020	pCi/L	< 5.2E+02		MW-229	11/11/2020	pCi/L	< 5.4E+02
MW-205	11/11/2020	pCi/L	< 5.2E+02		MW-231	11/11/2020	pCi/L	< 5.2E+02

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## Groundwater Monitoring Well Sampling Results

Table 19, Tritium Analysis Results

Station ID	Start Date	Units	H-3		Station ID	Start Date	Units	H-3
MW-233	11/11/2020	pCi/L	< 5.5E+02		MW-170	11/12/2020	pCi/L	< 5.0E+02
MW-233-DUP	11/11/2020	pCi/L	< 5.5E+02		MW-180	11/12/2020	pCi/L	< 5.0E+02
PZ-01	11/11/2020	pCi/L	2.50E+04		MW-182	11/12/2020	pCi/L	< 5.0E+02
PZ-03	11/11/2020	pCi/L	< 5.1E+02		MW-219	11/12/2020	pCi/L	< 4.9E+02
T-14	11/11/2020	pCi/L	< 5.2E+02		MW-223	11/12/2020	pCi/L	< 5.0E+02
MW-05	11/12/2020	pCi/L	< 5.5E+02		MW-225	11/12/2020	pCi/L	< 4.9E+02
MW-106	11/12/2020	pCi/L	< 4.9E+02		MW-225-DUP	11/12/2020	pCi/L	< 5.0E+02
MW-107	11/12/2020	pCi/L	< 5.0E+02		MW-235	11/12/2020	pCi/L	< 5.4E+02
MW-108	11/12/2020	pCi/L	< 5.4E+02		SW-102	11/12/2020	pCi/L	< 5.3E+02
MW-122R	11/12/2020	pCi/L	< 5.5E+02		SW-103	11/12/2020	pCi/L	< 5.5E+02
MW-139	11/12/2020	pCi/L	< 5.4E+02		SW-104	11/12/2020	pCi/L	< 5.5E+02