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April 30, 2025

Constellation Energy Company, LLC
Dresden Generating Station
6500 North Dresden Road
Morris, IL 60450-9709

Subject: 2024 Annual RGPP Monitoring Report
Summary of Results and Conclusions
Dresden Generating Station
Morris, Illinois

This letter report presents the summary of Radiologic Groundwater Protection Plan (RGPP) results for the 2024 groundwater and surface water monitoring rounds conducted at the Constellation Dresden Generating Station. RGPP data for previous monitoring rounds is summarized in AMO's semi-annual/quarterly reports.

Background

In 2006, Conestoga-Rovers & Associates (CRA) was retained by Exelon Nuclear (now Constellation Energy Generation) to perform a hydrogeologic investigation at the Dresden Generating Station to evaluate whether groundwater at or near the Station has been impacted by releases of radionuclides. Prior to performing the investigation, CRA evaluated available information concerning historic releases, as well as components, structures, and areas of the facility that have the potential to release radioactive liquid to the environment.

The results of the 2006 investigation identified that almost half of the 39 wells within the protected are showed measurable concentrations of tritium. It was concluded that the tritium in groundwater within the protected area came from historic spills from above ground tanks and leaks of underground lines within the protected area. Groundwater samples collected outside the protected area showed no detectable tritium for 24 of the 26 wells. The two exceptions for the wells outside the protected area include wells DSP 149(R) and DSP-159-I (M).

The results of the fleet wide study for the Dresden Generating Station (the Station) are presented in the report, entitled *Hydrogeologic Investigation Report, Fleetwide Assessment, Dresden Generating Station, Morris, Illinois* (Conestoga-Rovers & Associates, September 2006). The referenced report also provides detailed descriptions of the Station's location, surrounding features and land use, subsurface geology and hydrogeology, and a summary of groundwater use in the area of the Station.

GHD completed three five-year update hydrogeologic investigation reports for the Station (*NEI 07-07, Hydrogeologic Investigation Report*, dated May 2011, December 2015, and December 2020). The reports summarized station activities since the 2006 hydrogeologic investigation, including changes at the Station that may potentially affect the RGPP, as well as RGPP sampling activities and groundwater flow. Relevant conclusions from the 2020 report are:

- Tritium is not migrating off the Station at concentrations greater than the State of Illinois criteria of 200 pCi/L.
- Tritium in groundwater was detected at concentrations greater than the USEPA drinking water standard. The maximum tritium concentration at the end of 2019 was 33,850 pCi/L (MD-11). Tritium concentrations greater than the USEPA drinking water standard were limited to the "B" CST, south of the Unit 3 Turbine Building.

- No gamma-radionuclides associated with licensed plant operations were detected at concentrations greater than their respective LLDs.
- Select transuranics U-233/234 and U-238 were occasionally detected in several wells since 2016. The concentrations are considered background.
- In 2019, Ni-63 was consistently detected in monitoring wells MW-DN-101I and MW-DN-119I. Per revision 9 of the RGPP, and to investigate Ni-63 in groundwater, the Station includes Ni-63 and Fe-55 analysis for all Source wells and all Long-Term Shutdown wells currently sampled as part of the RGPP.
- In 2019, multiple Sr-90 concentrations were detected above its LLD. Sr-90 was detected in samples collected from MW-DN-105S three of the four sampling rounds in 2019. Sr-90 was also detected in DSP-108 during the second quarter 2019 RGPP sampling round.
- AFE-1 remains an ongoing tritium source to groundwater. No new AFEs were identified in 2020.
- Extraction well RW-DN-100S continued to withdraw tritiated water from the "B" CST area. Up until August/September 2019, groundwater withdrawal from RW-DN-100S was on an intermittent basis. Continuous groundwater extraction of RW-DN-100S began in September 2019. As of December 2020, over one million gallons of groundwater was extracted from RW-DN-100S. The extracted groundwater is discharged to the Kankakee River through a permitted outfall (Outfall 002).

The next hydrogeologic investigation update is due by the end of 2025.

"B" Condensate Storage Tank

Elevated tritium concentrations in surface water (Sewage Treatment Plant (STP) samples and RGPP surface water samples), shallow aquifer samples, and intermediate aquifer samples were detected during the 2nd quarter 2014 RGPP sampling round. The source of the tritiated groundwater was determined to be the "B" Condensate Storage Tank (CST) south of the Turbine Buildings. The groundwater sample collected from shallow aquifer well MD-11, which is in the immediate vicinity of the CST, had a tritium concentration of approximately 1.5 million pCi/L. Subsequent samples collected from MD-11 have had a maximum tritium concentration of approximately 2.3 million pCi/L (June 27, 2014). The CST was taken out of service and water from the CST removed. The CST was inspected and subsequently repaired in August 2015.

A tritium monitoring plan was developed and implemented in June 2014, with weekly sampling of surface water, storm sewer water, sewer treatment plant water, shallow aquifer groundwater, and intermediate aquifer groundwater to evaluate and delineate the tritium plume. A modified tritium monitoring plan was implemented in November 2014. Based on tritium data collected, the plume was relatively small and only encompassed the area between the CST and Turbine Building.

Two groundwater extraction wells (RW-DN-100S and RW-DN-101S) were installed in January 2015 to assist in the mitigation of tritiated groundwater in the area of the CST. Aquifer testing was completed on the two extraction wells near the end of 2015. Results of the aquifer test concluded that only RW-DN-100S produced sufficient water to operate as a viable groundwater extraction well. RW-DN-100S began intermittent operation during the 1st quarter 2016 and continued operating intermittently through August 2019. In August 2019, the extraction well began pumping groundwater on a continuous basis. The extracted water is discharged to the Kankakee River through NPDES permitted Outfall 002. Overall, tritium concentrations in the area of the CST continue to decrease since the CST was repaired.

As of the end of 2024, the maximum tritium concentration in the area of the CST was approximately 5,700 pCi/L (MD-11).

MW-DN-119I Nickel 63

Hard-to-detect radionuclide Nickel-63 was detected at a concentration over 50 pCi/L in a sample collected during the 2nd quarter 2017. An investigation into the source of the Nickel-63 was completed and additional samples were collected from MW-DN-119I and surrounding wells. Results and recommendations of the evaluation are included in AMO's *Evaluation of Nickel -63 detections in MW-DN-119I Update* (March 28, 2018). Hard-to-detects (Fe-55 and Ni-63) are currently analyzed annually to monitor concentrations in the area of MW-DN-119I.

As of the end of 2024, Ni-63 was not detected in the sample collected from MW-DN-119I.

Current RGPP Summary

Dresden Generating Station has 61 wells (twenty Background wells, twenty Source wells, six Mid-Field wells, ten Long-Term Shutdown wells, and five perimeter wells), that are part of the Station RGPP (EN-DR-408-4160 Revision 10). Figure 1a shows the shallow aquifer RGPP sample locations and Figure 1b shows the intermediate aquifer RGPP sample locations.

RGPP sampling at the Station is performed by ATI, under contract to Constellation. Laboratory testing is performed by Teledyne Brown Engineering. The laboratory data, field data, and depth to water readings are uploaded to the RACER website, which is a data repository for the RGPP sampling rounds. The uploaded data is used by AMO for quarterly RGPP reporting.

Gross-Alpha Alert Level

At Dresden Generating Station, gross-alpha (dissolved and suspended fractions) was analyzed annually from 2011 through 2019. In 2020, gross-alpha data was evaluated to establish an Alert Level for the dissolved and suspended gross-alpha fractions. The gross alpha data was evaluated by looking at the average concentration for each gross-alpha fraction for each well. Statistical outlier results were considered during the gross-alpha evaluation. An outlier is a value that is significantly higher or lower than most of the results, that can skew the results and not reflect the true dataset. Therefore, outlier results are not factored into the average gross-alpha concentrations. Outliers were established using methods an online website such as *Statisticshowto.com*. Additional websites identified similar statistical models for removing outlier data.

Procedure EN-DR-408-4160 (Revision 9) established an Alert Level of three times the ongoing average gross-alpha concentration for each RGPP monitoring well that had gross-alpha analyzed more than one time and that will continue to be monitored for during future RGPP sampling rounds. Note that in 2024, the Alert Level changed from three times the ongoing average to three times the ongoing standard deviation. According to the EN-DR-408-4160 (Revision 10), samples from the eighteen Source designated sample points and ten Long-Term Shutdown designated wells will be analyzed once every two years for gross alpha dissolved and suspended fractions in the future. The Alert Level will be able to account for fluctuations in naturally occurring alpha activity in the area of wells, while identifying a result that may be indicative of a potential release. Beginning in 2021, select transuranics were analyzed if a gross alpha concentration exceeded the Alert Level in a particular well, to ensure that the Alert Level is conservative enough to detect whether licensed material could be present in groundwater. If the results of the select transuranics analysis showed no unusual activity, the gross-alpha result that triggered the select transuranics analysis, was incorporated into the ongoing average concentration for that well.

Table 1 provides a gross-alpha (dissolved and suspended) results summary as well as the average concentration and Alert Level for each well. Gross-alpha analysis was most recently performed on samples collected from Long-Term Shutdown and Source designated wells during the 2nd quarter 2023 RGPP sampling round. Note that a sample could not be collected from Long-Term Shutdown well MW-DN-117I because the well was inaccessible in 2023. Gross-alpha detections did not exceed the Alert Level in samples collected in 2023. Per the RGPP, all Long-Term Shutdown and Source designated wells will have gross-alpha analysis performed again in 2025.

Tritium

Dresden Generating Station has 61 monitoring wells that are sampled for tritium. Samples collected from Long-Term Shutdown and Source designated wells are analyzed for tritium quarterly; samples collected from Mid-Field designated wells are analyzed for tritium semi-annually; and samples collected from the Perimeter and Background designated wells are analyzed for tritium annually.

Gamma-Radionuclides

Gamma-radionuclide analysis has been performed on RGPP samples (quarterly to annually) at Dresden Generating Station since 2006. This extensive sampling and analysis produced over 18,400 data records for the Station. Station-related gamma-radionuclides have not been detected at concentrations greater than their respective LLDs, in RGPP samples submitted to the vendor laboratory since 2006. Therefore, in the 2020 RGPP, gamma-radionuclide analysis frequency was reduced from annual to every two years.

Samples collected from all wells were most recently analyzed for gamma-radionuclides during the 2nd quarter 2023 RGPP sampling round. Note that a sample could not be collected from Long-Term Shutdown well MW-MW-DN-106S, MW-DN-108I, and DN-117I because the wells were inaccessible in 2023. Station-related gamma radionuclides were not detected at concentrations greater than their respective LLDs in the samples collected in 2023. All wells will have gamma-radionuclide analysis performed again in 2025.

Select Transuranics

Select transuranics analysis is procedurally required annually for RGPP sample locations that were identified as Elevated designated wells in the historic EN-DR-408-4160 revisions and continued additional evaluation is warranted. At Dresden Generating Station, these monitoring wells include MW-DN-124S, MW-DN-124I, and MD-11. Additionally, the current RGPP requires select transuranics analysis if a gross alpha concentration exceeds the Alert Level in a particular well, there is an unexpected increase in tritium activity, or if a non-tritium licensed material result exceeds the High Level as established by the RGPP.

Select transuranics analysis was performed on former Elevated designated wells MD-11, MW-DN-124S, and MW-DN-124I, during the 2nd quarter 2024 RGPP sampling round. Select Transuranics were not detected at concentrations greater than their respective LLDs in the samples collected during the 2nd quarter 2024 RGPP sampling round. Table 2 provides a summary of select transuranics results (U-233/234 and U-238) since 2006.

Hard-to-Detects (Fe-55 and Ni-63)

Hard-to-detect analysis (Fe-55 and Ni-63) is procedurally required annually for RGPP sample locations that were identified as Elevated designated wells in the historic EN-DR-408-4160 revisions and continued additional evaluation is warranted, as well as Long-Term Shutdown designated wells. Wells previously designated as Elevated include MW-DN-124S, MW-DN-124I, and MD-11. As part of the current EN-DR-408-4160, hard-to-detect analysis is required on samples collected from Source designated wells once every 5 years, starting in 2021. Additionally, hard-to-detect analyses is required if there is an unexpected increase in tritium activity, or if a non-tritium licensed material result exceeds the High Level as established by the RGPP.

In 2024, samples collected from the nine Long-Term Shutdown designated wells, one former Elevated designated well, and two Source designated well were analyzed for hard-to-detects (Fe-55 and Ni-63). Fe-55 and Ni-63 were not detected in the samples collected during the 2nd quarter 2024 RGPP sampling round.

Sr-89 and Sr-90

Sr-89 and Sr-90 have been an annual procedurally required analysis on Detection, Long-Term Shutdown, and Elevated designated wells since sample point designations became part of the RGPP in 2010. The current EN-DR-408-4160 states that Sr-89 and 90 analyses should be performed annually for Source and Long-Term Shutdown

designated sample locations. If a positive result is reported, samples collected from the wells with Sr-89 and Sr-90 detections will be analyzed quarterly to evaluate the activity in the area of the well. In 2024, samples were collected from the eighteen Source designated wells, nine Long-Term Shutdown designated wells, and one Mid-Field designated well (former Elevated designation) were analyzed for Sr-89 and Sr-90. Sr-90 was detected in the sample collected from MW-DN-105S (3.1 pCi/L) and DSP-108 (2.67 pCi/L). Sr-89 and Sr-90 were not detected in any of the other samples collected in 2024.

Precipitation Recapture

Dresden Generating Station is a Boiling Water Reactor (BWR) generating station. The RGPP requires BWR generating stations to sample precipitation on a semi-annual basis. The RGPP states that a minimum of eight samples should be collected from within the protected area in a manner that surrounds the Turbine Building and Reactor Building as well as ancillary structures that could vent tritiated vapor to the atmosphere.

In 2024, four sample rounds were completed in February, May, August, and November to evaluate if tritium was present in the atmosphere at the Station. Three onsite samples were collected in February; nine onsite samples were collected during the May 2024 sampling; eight onsite samples were collected during the August 2024 sampling; and ten onsite samples were collected during the November 2024 sampling round. A summary of 2024 precipitation recapture results is presented in Table 3 and sample locations are depicted on Figure 3. A summary of historic precipitation recapture results is provided in Appendix A.

Tritium was detected in one or more samples during each of the four sampling rounds completed in 2024. The highest tritium concentrations were reported during the February 2024 precipitation recapture sampling round with detected tritium concentrations ranging between 734 pCi/L (FW-1) and 820 pCi/L (FW-3).

Summary of 2024 RGPP Sampling Rounds

February 2024 RGPP Sampling Round Activities (1st Quarter 2024)

Data Summary

A total of 30 groundwater samples were collected during the 1st quarter 2024 sampling round. A sample was not collected from MW-DN-117I due to the well being inaccessible during the 1st quarter 2024. Per the RGPP, the Background, Perimeter, and Mid-Field designated wells were not sampled during the 1st quarter 2024 RGPP sampling round. All samples were analyzed for tritium.

Tritium was detected in eight shallow aquifer samples with a maximum tritium concentration of 11,700 pCi/L (RW-DN-101S). Tritium was detected in seven intermediate aquifer samples with a maximum tritium concentration of 1,560 pCi/L (DSP-122).

The tritium concentration in MW-DN-111S averaged 412 pCi/L since the inception of the RGPP in 2006 through the 4th quarter 2019. The tritium concentration in MW-DN-111S increased from approximately 1,000 pCi/L to almost 3,500 pCi/L between the 4th quarter 2019 and 1st quarter 2020. The tritium concentration in the area of this well has been fluctuating between 1,470 pCi/L and 5,530 pCi/L since the 1st quarter 2020. The 1st quarter 2024 RGPP tritium result for this well was 8,560 pCi/L. The Station reviewed documents and performed an assessment of potential tritium sources in the area of MW-DN-111S and did not find any potential sources. The increased tritium activity in this well could be due to historic plumes migrating around the building structures.

The tritium concentration in MW-DN-141S increased from 2,910 pCi/L to 4,430 pCi/L between the 3rd and 4th quarter 2022 RGPP sampling rounds and shows an increasing tritium concentration trend since the beginning of 2022. The 1st quarter 2024 tritium result is similar to those reported in late 2022, at 2,840 pCi/L. It was recommended that the Station evaluate SSCs in the area of MW-DN-141S for potential sources of the increased

tritium activity and sample MW-DN-141S on a monthly basis to further evaluate the tritium concentration in the area of the well.

Tritium concentrations in samples collected from wells (other than MD-11) used to monitor the CST leak have decreased to less than 2,000 pCi/L, indicating the extent of the CST leak is confined to a small geographic area south of the Turbine Building.

Water Elevations

All groundwater sample locations, with the exception of MW-DN-117I, had depth to water measurements collected during the 1st quarter 2024 sampling round. The 1st quarter 2024 groundwater elevation data was compared to the 1st quarter 2023 sampling round to evaluate if changes in groundwater elevations occurred that may have an effect on groundwater flow direction. The variations in groundwater elevations have no significant effect on groundwater flow direction. Based on comparison of groundwater elevations, the wells sampled effectively monitored groundwater conditions at the Station.

May 2024 RGPP Sampling Round Activities (2nd Quarter 2024)

Data Summary

A total of 58 groundwater samples were collected during the 2nd quarter 2024 sampling round. Samples were not collected from MW-DN-106S, MW-DN-108I, and MW-DN-117I due to inaccessibility or well damage during the 2nd quarter 2024. All samples were analyzed for tritium. The samples collected from Long-Term Shutdown designated wells were also analyzed for hard-to-detects (Fe-55 and Ni-63) and Sr-89/90. Source designated wells were also analyzed for Sr-89/90. Samples collected from mid-field designated well MW-DN-124I; and source designated wells MD-11 and MW-DN-124S were also analyzed for select transuranics and hard-to-detects (Fe-55 and Ni-63).

Tritium was detected in eleven shallow aquifer samples with a maximum tritium concentration of 18,500 pCi/L (RW-DN-101S). Tritium was detected in Thirteen intermediate aquifer samples with a maximum tritium concentration of 1,610 pCi/L (DSP-107).

Elevated tritium activity in the area of MW-DN-111S continued during the 2nd quarter 2024 RGPP sampling round. The 2nd quarter 2024 RGPP tritium result for MW-DN-111S was 6,850 pCi/L. The increased tritium activity in this well could be due to historic plumes migrating around the building structures.

Tritium concentrations in samples collected from wells (other than MD-11) used to monitor the CST leak have generally decreased to less than 1,000 pCi/L, indicating the extent of the CST leak is confined to a small geographic area south of the Turbine Building.

While the tritium concentration in MW-DN-141S has been decreasing since the end of 2023, concentrations remained elevated in the 2nd quarter 2024. Due to the continued elevated tritium concentrations, it was recommended that the Station evaluate SSCs in the area of MW-DN-141S for potential sources of the increased tritium activity and sample MW-DN-141S on a monthly basis to further evaluate the tritium concentration in the area of the well.

Select transuranics analysis was performed on MD-11, MW-DN-124S, and MW-DN-124I, during the 2nd quarter 2024 RGPP sampling round. Select Transuranics were not detected at concentrations greater than their respective LLDs in the samples collected during the 2nd quarter 2024 RGPP sampling round.

Ni-63 has historically been detected in samples collected from MW-DN-119I and MW-DN-101I. Ni-63 was not detected in any of the samples collected during the 2nd quarter 2024 RGPP sampling round.

Sr-90 has historically been detected in samples collected from MW-DN-105S and DSP-108. However, Sr-90 was not detected in the samples collected from these wells during the 2nd quarter 2024 RGPP sampling round. Sr-90 was also not detected in the other samples collected during the 2nd quarter 2024 RGPP sampling round.

Water Elevations

All groundwater sample locations had depth to water measurements collected during the 2nd quarter 2024 sampling round. The 2nd quarter 2024 sampling round groundwater elevation data was compared to the 2nd quarter 2023 sampling round to evaluate if changes in groundwater elevations occurred that may have an effect on groundwater flow direction. The variations in groundwater elevations have no significant effect on groundwater flow direction. Based on comparison of groundwater elevations, the wells sampled effectively monitored groundwater conditions at the facility.

August 2024 RGPP Sampling Round Activities (3rd Quarter 2024)

Data Summary

A total of 31 groundwater samples were collected during the 3rd quarter 2024 sampling round. A sample was not collected from MW-DN-117I due to inaccessibility. All samples were analyzed for tritium. Tritium was detected in eight shallow aquifer samples with a maximum concentration of 6,420 pCi/L (MW-DN-111S). Tritium was detected in seven intermediate aquifer samples with a maximum concentration of 1,370 pCi/L (DSP-122).

Elevated tritium activity in the area of MW-DN-111S continued during the 3rd quarter 2024 RGPP sampling round. The 3rd quarter 2024 RGPP tritium result for MW-DN-111S was 6,420 pCi/L. The increased tritium activity in this well could be due to historic plumes migrating around the building structures.

Elevated tritium activity in the area of MW-DN-141S continued during the 3rd quarter 2024 RGPP sampling round. The tritium concentration increased from 1,910 pCi/L to 2,590 pCi/L between the 2nd and 3rd quarter 2024 RGPP sampling rounds. While tritium concentrations are lower than those reported in 2023 it was recommended that the Station evaluate SSCs in the area of MW-DN-141S for potential sources of the increased tritium activity and sample MW-DN-141S on a monthly basis to further evaluate the tritium concentration in the area of the well.

Tritium concentrations in samples collected from wells (other than MD-11) used to monitor the CST leak have generally decreased to less than 1,000 pCi/L, indicating the extent of the CST leak is confined to a small geographic area south of the Turbine Building.

Water Elevations

All groundwater sample locations had depth to water measurements collected during the 3rd quarter 2024 sampling round. The 3rd quarter 2024 sampling round groundwater elevation data was compared to the 3rd quarter 2023 sampling round to evaluate if changes in groundwater elevations occurred that may have an effect on groundwater flow direction. The variations in groundwater elevations have no significant effect on groundwater flow direction. Based on comparison of groundwater elevations, the wells sampled effectively monitored groundwater conditions at the facility.

October 2024 RGPP Sampling Round Activities (4th Quarter 2024)

Data Summary

A total of 35 groundwater samples were collected during the 4th quarter 2024 sampling round. A sample was not collected from MW-DN-117I due to the well being inaccessible at the time of the 4th quarter 2024 RGPP sampling. All samples were analyzed for tritium. Tritium was detected in nine shallow aquifer samples with a maximum concentration of 5,700 pCi/L (MD-11). Tritium was detected in seven intermediate aquifer samples with a maximum concentration of 1,620 pCi/L (MW-DN-114I).

Elevated tritium activity in the area of MW-DN-111S continued during the 4th quarter 2024 RGPP sampling round. The 4th quarter 2024 RGPP tritium result for MW-DN-111S was 5,570 pCi/L. The increased tritium activity in this well could be due to historic plumes migrating around the building structures.

Elevated tritium activity in the area of MW-DN-141S continued during the 4th quarter 2024 RGPP sampling round. The tritium concentration increased from 2,590 pCi/L to 2,970 pCi/L between the 3rd and 4th quarter 2024 RGPP sampling rounds. While tritium concentrations are lower than those reported in 2023 it was recommended that the Station evaluate SSCs in the area of MW-DN-141S for potential sources of the increased tritium activity and sample MW-DN-141S on a monthly basis to further evaluate the tritium concentration in the area of the well.

Tritium concentrations in samples collected from wells (other than MD-11) used to monitor the CST leak have generally decreased to less than 1,000 pCi/L, indicating the extent of the CST leak is confined to a small geographic area south of the Turbine Building.

Water Elevations

All sampled groundwater locations had depth to water measurements collected during the 4th quarter 2024 sampling round. Groundwater elevations and groundwater flow direction for the shallow aquifer are provided on Figure 2a and groundwater elevations and groundwater flow direction for the intermediate aquifer are provided on Figure 2b. Based on the groundwater flow depicted on figures 2a and 2b, the wells sampled effectively monitored groundwater conditions at the facility.

2025 RGPP Sample Locations

Samples could not be collected from MW-DN-106S, MW-DN-108I, and MW-DN-117I in 2024 due to inaccessibility and/or well damage. Not being able to sample these wells and assess data associated with the area of these wells is considered a data gap. Therefore, these wells should be repaired and made accessible to sampling crews to complete the RGPP.

Summary of 2024 RGPP Conformance

The Station did not conform with its RGPP in 2024 with respect to RGPP sampling protocol because water levels and samples were not collected from one Background designated well, one Perimeter designated well, and one Long Term Shutdown well. These wells have not been accessible for over two years.

Conclusions

Based on the review of the data collected during the 2024 RGPP sampling rounds AMO concludes:

- The Station continued to implement the tritium monitoring plan for the "B" CST. The tritium concentrations in the area of the CST showed a decreasing trend at the Station through 2024. While the tritium concentration in MD-11 decreased from its maximum reported tritium concentration of approximately 2.29 million pCi/L, an elevated concentration persists in the area of the CST. However, tritium concentrations in samples collected from wells (other than MD-11) used to monitor the CST leak have generally decreased to less than 1,000 pCi/L, indicating the extent of the CST leak is confined to a small geographic area south of the Turbine Building.
- The tritium concentration in MW-DN-111S averaged 412 pCi/L since the inception of the RGPP in 2006 through the 4th quarter 2019. The tritium concentration in MW-DN-111S increased from approximately 1,000 pCi/L to almost 3,500 pCi/L between the 4th quarter 2019 and 1st quarter 2020. The tritium concentration in the area of this well has been fluctuating between 1,470 pCi/L and 5,530 pCi/L since the

1st quarter 2020. Tritium concentrations in samples collected from MW-DN-111S showed a decreasing trend in 2024. As of the end of October 2024, the tritium concentration in MW-DN-111S was 5,570 pCi/L. The increased tritium activity in this well is likely due to historic plumes migrating around the building structures.

- The tritium concentration in samples collected from MW-DN-141S ranged between 1,910 pCi/L (May 2024) and 2,970 pCi/L (October 2024).

- Hard-to-detects (Fe-55 and Ni-63), select transuranics, and Sr-89/90 were not detected at concentrations greater than their respective LLDs in the samples collected during the 2nd quarter 2024 RGPP sampling round.

- Based on recapture tritium results, shallow groundwater could potentially be affected by precipitation recapture.

- Samples were not collected from MW-DN-106S, MW-DN-108I, and MW-DN-117I in 2024 due to inaccessibility and/or well damage. Not being able to sample these wells and assess data associated with the area of these wells is considered a data gap.

- Based on the evaluation of groundwater flow direction, the wells sampled effectively monitored groundwater conditions at the facility.

Please call me at 215-230-8282 if you have questions.

Respectfully,

AMO Environmental Decisions

Ralph T. Golia, P.G.
Principal
Hydrogeologist

attachments

File

Dresden Generating Station
Constellation Energy Company

Table 1
Summary of Gross-Alpha Results

SITE	Well ID	Well Average (-Outliers)	ALERT LEVEL (STDEV - Outliers)	ALERT LEVEL (Hist Avg)	Gross Alpha - Dissolved Results																												
					2011				2012			2013			2014		2015		2016				2017			2018				2019		2021	2023
					Feb	Mar	Jun	Dec	Mar	May	Jun	Mar	Jun	Jul	May	Jun	Jun	Nov	May	Jun	Aug	Oct	Feb	May	Nov	Feb	Jun	Sep	Nov	May	Dec	May	Jun
Dresden	DSP-105	1.71	4.0577	5.14	--	--	--	--	--	0.611	--	--	1.15	--	--	3.06	1.9	--	--	2.5	--	--	--	1.79	--	--	1.31	--	--	1.39	--	--	--
	DSP-106	1.39	2.7094	4.17	--	--	--	--	--	1.04	--	--	0.744	--	--	**2.84**	1.61	--	--	1.77	--	--	--	1.53	--	--	1.07	--	--	1.1	--	1.5	2.16
	DSP-107	1.72	4.0696	5.17	1.05	--	--	--	--	0.847	--	--	1.03	--	--	2.96	1.74	--	2.72	--	--	--	--	2.73	--	--	1.17	--	--	1.21	--	1.35	2.14
	DSP-108	3.91	9.9450	11.73	--	--	--	--	--	1.05	--	--	1.37	7.87	--	**12.4**	5.79	--	--	2.95	--	--	--	3.84	--	--	4.71	--	--	3.2	--	4.59	3.74
	DSP-122	5.04	9.9852	15.11	6.93	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.91	4.27
	DSP-123	2.00	3.7347	6.00	0.893	--	--	--	--	1.99	--	--	1.71	--	2.45	--	2.81	--	2.63	--	--	--	--	1.7	--	--	1.86	--	--	1.95	--	**5.29**	**11.4**
	DSP-124	3.37	10.4560	10.11	0.91	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.58	5.62
	DSP-125	8.35	16.4507	25.05	--	--	4.93	--	--	9.1	--	--	6.84	--	6.81	--	**35.4**	--	--	12.6	--	--	--	10.7	--	--	5.11	--	--	9.6	--	6.41	11.4
	MD-11	1.21	1.9594	3.62	--	--	**6.17**	--	--	--	--	--	--	--	--	--	--	0.977	--	--	--	1.22	1.67	--	1.22	1.21	--	--	0.978	0.996	1.59	0.978	1.24
	MW-DN-101-I	2.83	6.5892	8.48	--	--	--	--	--	2.39	--	--	1.25	--	2.32	--	1.26	--	3.05	--	--	--	--	4.81	--	--	4.6	--	--	1.86	--	3.14	3.6
	MW-DN-101-S	4.42	11.7113	13.26	--	--	--	--	--	6.2	--	--	1.54	--	5.96	--	4.33	--	8.7	--	--	--	--	6.55	--	--	4.28	--	--	3.3	--	1.55	1.78
	MW-DN-102-I	2.30	6.7215	6.89	--	--	0.675	--	--	--	1.46	--	1.29	--	--	3.03	4.08	--	2.63	--	--	--	--	**13.8**	--	--	4.46	--	--	0.758	--	--	--
	MW-DN-102-S	19.59	44.9566	58.78	--	--	9.44	--	--	--	13.9	--	15.6	--	--	19.9	28.3	--	**51.8**	--	--	--	--	35.2	--	--	20.2	--	--	14.2	--	--	--
	MW-DN-104-S	6.40	16.9854	19.20	2.44	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7.55	9.21
	MW-DN-105-S	5.39	8.8428	16.16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6.2	4.57
	MW-DN-106-S	#DIV/0!	#DIV/0!	#DIV/0!	--	--	1.42	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	MW-DN-107-S	5.71	19.2653	17.13	--	--	--	6.37	9.86	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.895	--
	MW-DN-108-I	1.53	3.0601	4.58	1.39	--	--	--	--	1.13	--	--	0.828	--	1.73	--	1.87	--	2.22	--	--	--	--	**3.35**	--	--	--	--	--	--	--	--	--
	MW-DN-109-I	3.32	8.9309	9.97	--	--	--	--	--	1.04	--	--	0.499	--	0.936	--	3.81	--	4.29	--	--	--	--	4.02	--	--	3.79	--	--	3.71	--	6.06	5.07
	MW-DN-109-S	5.10	11.4540	15.31	--	--	--	--	--	3.74	--	--	2.74	--	4.01	--	1.97	--	6.52	--	--	--	--	5.93	--	--	5.15	--	--	5.17	--	6.57	9.23
	MW-DN-111-S	0.97	1.6391	2.92	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.816	1.13
	MW-DN-113-I	2.31	6.6897	6.93	--	--	0.485	--	--	--	0.531	--	3.87	--	--	1.54	1.53	--	**8.9**	--	--	--	--	3.91	--	--	3.66	--	--	2.95	--	--	--
	MW-DN-113-S	2.24	4.0151	6.71	--	--	2.34	--	--	--	1.76	--	2.56	--	--	2.08	1.45	--	3.02	--	--	--	--	3.16	--	--	2.1	--	--	1.65	--	--	--
	MW-DN-114-S	1.72	4.2656	5.16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.12	2.32
	MW-DN-115-S	3.13	4.3604	9.39	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.42	2.84
	MW-DN-116-I	3.01	5.8624	9.04	--	--	--	--	--	3.31	--	--	1.64	--	3.01	--	4.16	--	3.77	--	--	--	--	3.79	--	--	1.68	--	--	2.74	--	--	--
	MW-DN-116-S	2.95	7.0515	8.85	--	--	--	--	--	2.53	--	--	3.55	--	1.15	--	5.21	--	4.83	--	--	--	--	3.82	--	--	1.57	--	--	2.08	--	1.97	2.79
	MW-DN-117-I	1.06	1.5277	3.19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	1.24	0.884	--	1.13	--	--
	MW-DN-118-S	1.57	4.7390	4.70	--	--	--	--	--	0.745	--	--	1.24	--	--	1.84	0.897	--	**4.81**	--	--	--	--	2.34	--	--	0.551	--	--	1.11	--	1.41	3.97
	MW-DN-119-I	3.39	6.9550	10.17	--	--	--	--	--	1.86	--	--	3.62	--	2.42	--	3.18	--	--	4.44	--	--	--	**28.9**	6.25	--	2.95	--	3.85	2.24	3.29	2.53	4.03
	MW-DN-119-S	2.78	6.4375	8.34	--	--	--	--	--	2.35	--	--	1.55	--	4.23	--	4.95	--	--	**7.23**	--	--	--	1.57	--	--	3.03	--	--	2.98	--	1.44	2.92
	MW-DN-122-I	#DIV/0!	#DIV/0!	#DIV/0!	--	1.41	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	MW-DN-124-I	3.70	8.9513	11.11	2.13	--	--	--	--	--	2	--	3.35	--	--	**9.99**	4.06	--	5.33	--	--	--	--	7.19	--	--	3.74	--	--	4.15	--	3.99	1.09
	MW-DN-124-S	4.07	8.7647	12.21	--	--	--	--	--	--	2.63	--	1.71	--	--	4.74	5.76	--	5.77	--	--	--	--	6.35	--	--	3.72	--	--	2.96	--	4.26	2.8
	MW-DN-125-S	3.03	7.8080	9.09	--	--	--	--	--	--	2.62	--	1.83	--	--	4.83	1.38	--	--	3.63	--	--	--	**30**	--	--	5.32	--	--	1.6	--	--	--
	MW-DN-126-S	6.47	19.9177	19.40	--	--	--	--	--	--	11.5	--	12.7	--	--	13.1	6.66	--	4.16	--	--	--	--	6.85	--	--	1.56	--	--	3.46	--	2.5	2.18
	MW-DN-127-S	2.45	8.6690	7.35	--	--	--	--	--	2.1	--	--	2.36	--	--	5.27	1.09	--	2.03	--	--	--	--	5.89	--	--	0.476	--	--	0.393	--	--	--
	MW-DN-134-S	2.78	6.1589	8.33	--	--	--	--	--	--	--	1.65	2.62	--	--	3.65	3.77	--	4.38	--	--	--	--	1.06	--	--	2.88	--	--	2.21	--	--	--
	MW-DN-135-S	2.48	5.2802	7.44	--	--	--	--	--	--	--	2.81	4.2	--	--	1.64	1.7	--	3.21	--	--	--	--	2.06	--	--	1.5	--	--	2.71	--	--	--
	MW-DN-136-S	5.24	12.2922	15.72	--	--	--	--	--	--	--	2.31	3.28	--	--	4.51	6.46	--	7.85	--	--	--	--	3.65	--	--	3.27	--	--	8.84	--	4.16	8.06
	MW-DN-137-S	4.88	11.5010	14.63	--	--	--	--	--	--	--	8.52	1.58	--	--	4.9	--	5.57	6.65	--	--	--	--	5.46	--	--	3.43	--	--	2.89	--	--	--
	MW-DN-140-S	3.43	11.9437	10.28	--	--	--	--	--	--	--	6.59	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.1	2.59
	MW-DN-141-S	1.01	2.1690	3.02	--	--	--	--	--	--	--	0.837	0.769	--	2.08	--	1.33	--	1.12	--	--	--	--	0.78	--	--	0.722	--	--	0.852	--	0.757	1.89
	MW-DN-142-S	4.56	10.2241	13.67	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7.27	--	--	2.98	--	--	4.31	--	--	3.66	--	--	--
	MW-DN-143-S	3.10	6.5062	9.31	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.16	--	--	4.71	--	--	3.06	--	--	2.48	--	--	--
	MW-DN-144-S	3.66	6.7243	10.97	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.17	--	--	4.76	--	--	3.27	--	--	2.43	--	--	--
	RW-DN-100-S	5.45	9.1835	16.35	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.57	6.33
	RW-DN-101-S	3.48	11.9653	10.44	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.48	5.48

Results in pCi/L

Dresden Generating Station
Constellation Energy Company

Table 1
Summary of Gross-Alpha Results

SITE	Well ID	Well Average (-Outliers)	ALERT LEVEL (STDEV - Outliers)	ALERT LEVEL (Hist Avg)	Gross Alpha - Suspended Results																													
					2011				2012			2013			2014		2015		2016				2017			2018				2019		2021	2023
					Feb	Mar	Jun	Dec	Mar	May	Jun	Mar	Jun	Jul	May	Jun	Jun	Nov	May	Jun	Aug	Oct	Feb	May	Nov	Feb	Jun	Sep	Nov	May	Dec	May	Jun
Dresden	DSP-105	0.86	1.6990	2.59	--	--	--	--	--	0.82	--	--	0.793	--	--	0.63	0.923	--	--	0.599	--	--	--	0.617	--	--	1.13	--	--	1.39	--	--	--
	DSP-106	0.69	1.4498	2.07	--	--	--	--	--	0.809	--	--	0.793	--	--	0.63	0.923	--	--	0.599	--	--	--	0.617	--	--	1.13	--	--	**4.28**	--	0.367	0.346
	DSP-107	0.60	1.4761	1.79	0.345	--	--	--	--	0.349	--	--	0.361	--	--	0.63	0.918	--	**4.74**	--	--	--	--	0.618	--	--	1.13	--	--	0.896	--	0.367	0.346
	DSP-108	0.68	1.4799	2.04	--	--	--	--	--	0.348	--	--	0.361	0.851	--	0.63	0.933	--	--	0.605	--	--	--	0.619	--	--	1.14	--	--	0.897	--	**1.83**	0.432
	DSP-122	2.08	7.1817	6.25	0.245	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.4	3.6
	DSP-123	0.66	1.4235	1.99	0.614	--	--	--	--	0.347	--	--	0.601	--	**1.9**	--	0.923	--	0.608	--	--	--	--	0.617	--	--	1.16	--	--	0.719	--	0.369	**1.74**
	DSP-124	0.80	1.2818	2.40	0.616	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.912	0.872
	DSP-125	1.68	3.5783	5.03	--	--	1.28	--	--	0.66	--	--	1.69	--	1.9	--	0.892	--	--	2.88	--	--	--	2.21	--	--	1.65	--	--	**3.72**	--	1.84	1.75
	MD-11	0.66	1.1995	1.98	--	--	0.639	--	--	--	--	--	--	--	--	--	--	0.711	--	--	--	0.777	0.347	--	0.822	0.624	--	--	0.844	0.898	0.628	0.366	0.6
	MW-DN-101-I	0.78	1.7349	2.34	--	--	--	--	--	0.78	--	--	0.267	--	1.24	--	0.923	--	1.04	--	--	--	--	0.62	--	--	1.14	--	--	0.719	--	0.717	0.347
	MW-DN-101-S	1.88	5.1353	5.63	--	--	--	--	--	1.12	--	--	0.695	--	1.24	--	0.962	--	3.41	--	--	--	--	**13.55**	--	--	1.73	--	--	3.82	--	2.14	1.77
	MW-DN-102-I	1.02	3.3470	3.05	--	--	2	--	--	--	0.495	--	0.496	--	--	0.63	0.359	--	0.361	--	--	--	--	2.33	--	--	1.73	--	--	0.752	--	--	--
	MW-DN-102-S	2.82	7.6781	8.45	--	--	3.58	--	--	--	1.8	--	1.88	--	--	0.63	2.14	--	4.99	--	--	--	--	3.8	--	--	1.37	--	--	5.16	--	--	--
	MW-DN-104-S	3.45	11.7380	10.35	0.62	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.59	6.14
	MW-DN-105-S	6.84	20.6710	20.52	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.58	10.1
	MW-DN-106-S	#DIV/0!	#DIV/0!	#DIV/0!	--	--	1.17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	MW-DN-107-S	3.40	13.0167	10.20	--	--	--	2.5	6.96	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.742	--
	MW-DN-108-I	2.12	11.2784	6.37	0.64	--	--	--	--	0.781	--	--	0.608	--	1.24	--	1.15	--	8.33	--	--	--	--	**36.3**	--	--	--	--	--	--	--	--	--
	MW-DN-109-I	1.07	2.7943	3.22	--	--	--	--	--	0.502	--	--	0.604	--	1.24	--	0.51	--	0.357	--	--	--	--	1.84	--	--	1.6	--	--	1.48	--	**3.56**	1.52
	MW-DN-109-S	1.62	4.8092	4.87	--	--	--	--	--	0.396	--	--	0.503	--	1.24	--	0.508	--	2.05	--	--	--	--	1.84	--	--	1.6	--	--	1.48	--	3.56	3.04
	MW-DN-111-S	0.57	0.7791	1.70	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.517	0.617
	MW-DN-113-I	2.70	11.8613	8.09	--	--	1.18	--	--	--	0.499	--	1.3	--	--	1.21	0.361	--	**20.18**	--	--	--	--	1.85	--	--	7.89	--	--	7.27	--	--	--
	MW-DN-113-S	4.70	19.8243	14.10	--	--	0.649	--	--	--	1.63	--	0.446	--	--	2.47	3.24	--	15.7	--	--	--	--	7.59	--	--	8.62	--	--	1.94	--	--	--
	MW-DN-114-S	0.77	1.4579	2.31	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.931	0.606
	MW-DN-115-S	0.85	1.7410	2.55	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.06	0.64
	MW-DN-116-I	0.70	1.5728	2.11	--	--	--	--	--	1.02	--	--	0.503	--	1.24	--	0.503	--	0.374	--	--	--	--	0.623	--	--	0.627	--	--	0.726	--	--	--
	MW-DN-116-S	0.77	1.4963	2.31	--	--	--	--	--	0.69	--	--	0.502	--	1.24	--	0.506	--	0.746	--	--	--	--	1.02	--	--	0.871	--	--	0.747	--	3.35	0.608
	MW-DN-117-I	0.82	1.6274	2.46	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.807	--	--	0.491	0.831	--	1.15	--	--
	MW-DN-118-S	0.72	1.2529	2.15	--	--	--	--	--	0.622	--	--	0.491	--	--	**1.79**	0.511	--	0.938	--	--	--	--	0.809	--	--	0.862	--	--	0.892	--	**1.66**	0.605
	MW-DN-119-I	0.91	1.8339	2.74	--	--	--	--	--	0.62	--	--	1.03	--	**2.83**	--	0.515	--	--	0.912	--	--	--	**2.78**	0.85	--	0.501	--	0.981	1.54	1.03	0.849	1.22
	MW-DN-119-S	2.35	8.0503	7.06	--	--	--	--	--	0.622	--	--	0.557	--	1.24	--	0.509	--	--	2.38	--	--	--	3.73	--	--	4.28	--	--	5.52	--	4.07	0.616
	MW-DN-122-I	#DIV/0!	#DIV/0!	#DIV/0!	--	3.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	MW-DN-124-I	1.21	3.4084	3.63	0.345	--	--	--	--	--	0.491	--	0.665	--	--	1.21	1.28	--	1.73	--	--	--	--	2.78	--	--	1.5	--	--	1.5	--	**4.33**	0.613
	MW-DN-124-S	1.83	5.9504	5.50	--	--	--	--	--	--	0.356	--	0.49	--	--	1.21	1.28	--	2.41	--	--	--	--	2.87	--	--	3.46	--	--	0.982	--	4.4	0.889
	MW-DN-125-S	1.14	2.7651	3.43	--	--	--	--	--	--	0.362	--	0.798	--	--	1.21	1.94	--	--	0.739	--	--	--	**2.87**	--	--	1.51	--	--	1.44	--	--	--
	MW-DN-126-S	1.81	3.5834	5.42	--	--	--	--	--	--	1.33	--	1.5	--	--	1.21	1.29	--	1.79	--	--	--	--	2.77	--	--	1.5	--	--	2.57	--	**4.54**	2.31
	MW-DN-127-S	0.92	1.7664	2.77	--	--	--	--	--	0.817	--	--	0.488	--	--	1.21	1.34	--	0.731	--	--	--	--	0.815	--	--	0.862	--	--	1.13	--	--	--
	MW-DN-134-S	0.72	1.3220	2.15	--	--	--	--	--	--	--	0.925	0.513	--	--	0.657	0.345	--	0.721	--	--	--	--	0.807	--	--	0.868	--	--	0.886	--	--	--
	MW-DN-135-S	0.75	1.4555	2.25	--	--	--	--	--	--	--	1.08	0.538	--	--	0.657	0.345	--	0.721	--	--	--	--	0.843	--	--	0.932	--	--	0.884	--	--	--
	MW-DN-136-S	1.64	5.5701	4.92	--	--	--	--	--	--	--	0.4	0.545	--	--	0.657	0.346	--	2.55	--	--	--	--	1.76	--	--	1.36	--	--	1.43	--	4.33	3.01
	MW-DN-137-S	1.41	3.8084	4.24	--	--	--	--	--	--	--	1.25	0.645	--	--	1.1	--	0.351	2.5	--	--	--	--	2.61	--	--	1.42	--	--	1.44	--	--	--
	MW-DN-140-S	1.20	2.1319	3.59	--	--	--	--	--	--	--	1.49	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.869	1.23
	MW-DN-141-S	0.84	1.5436	2.52	--	--	--	--	--	--	--	0.973	0.513	--	1.24	--	0.504	--	0.894	--	--	--	--	0.83	--	--	1.03	--	--	0.884	--	0.909	0.608
	MW-DN-142-S	1.16	2.6527	3.49	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.591	--	--	1.47	--	--	1.43	--	--	--
	MW-DN-143-S	1.26	2.6054	3.78	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.819	--	--	1.81	--	--	1.43	--	--	0.982	--	--	--
	MW-DN-144-S	1.89	4.7607	5.66	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.23	--	--	1.85	--	--	1.44	--	--	1.02	--	--	--
	RW-DN-100-S	13.84	44.2173	41.52	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6.68	21
	RW-DN-101-S	1.05	1.7026	3.14	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.89	1.2

Explanation:

2.83	Historic data outlier removed from the calculation of the average concentration that was used to calculate the Alert Level.
3.35	Alert Level Exceedance where select transuranics were analyzed and found to be less than their respective LLDs. The result is now used in generating the Alert Level.
3.56	Alert Level Exceedance However, the result is ND and less than LLD

Dresden Generating Station
Constellation Energy Company

Table 2
Summary of U-233/234
and U238 Results

U-233/234 Results

Station	Well ID	2011				2012		2013		2014	2015		2016		2017			2018					2019				2020			2021	2022	2023	2024
		Feb	Mar	Jun	Dec	Mar	Jun	Mar	Jun	Jun	Jun	Nov	May	Oct	Feb	May	Nov	Jan	Feb	Jun	Oct	Nov	Mar	May	Aug	Dec	Mar	Jul	Nov	May	Jun	Jun	May
Dresden	DSP-107	0.09023																														
	DSP-122	0.1733																														
	DSP-123	0.1647																														
	DSP-124	0.03502																														
	DSP-125			0.1329																										0.08067		
	MD-11			0.05616								0.1496		0.1019	0.03347		0.1252		0.1154			0.1121		0.04995		0.1377			0.1474	0.1156	0.1418	0.07021	0.0272
	MW-DN-101-I																	0.3894	0.05872	0.4567		0.2605	0.527	0.4477	0.2788	0.5173	0.2971					
	MW-DN-102-I			0.5784																												
	MW-DN-102-S			0.1116																												
	MW-DN-104-S	0.8506																														
	MW-DN-106-S			1.091																												
	MW-DN-107-S				0.371	0.9135																										
	MW-DN-108-I	0.3799																														
	MW-DN-111S																													0.03651		
	MW-DN-113-I			0.09059																												
	MW-DN-113-S			0.544																												
	MW-DN-116-S																													0.07296		
	MW-DN-119-I																0.8408	0.09179		0.1428	0.0229	0.0217	0.04698	0.1045	0.1441	0.1718	0.1187	0.08836		0.06477			
	MW-DN-122-I		0.324																													
	MW-DN-124-I	0.05192					0.06465	0.08076	0.1292	0.143	0.08868		0.1273			0.104				0.1055				0.03858					0.1186	0.1395	0.04893	0.1451	0.07568
	MW-DN-124-S							0.05753	0.9742	0.1876	0.7096		0.03498			0.113				0.02586				0.1175					0.1191	0.1802	0.092303	0.07651	0.07268
	RW-DN-100S																													0.1454			
	RW-DN-101S																													0.05042			
	SW-DN-101			0.4082																												
	SW-DN-102			0.441																												
	SW-DN-103			0.6737																												
	SW-DN-104			0.7946																												
	SW-DN-105			0.553																												
	SW-DN-106			0.489																												

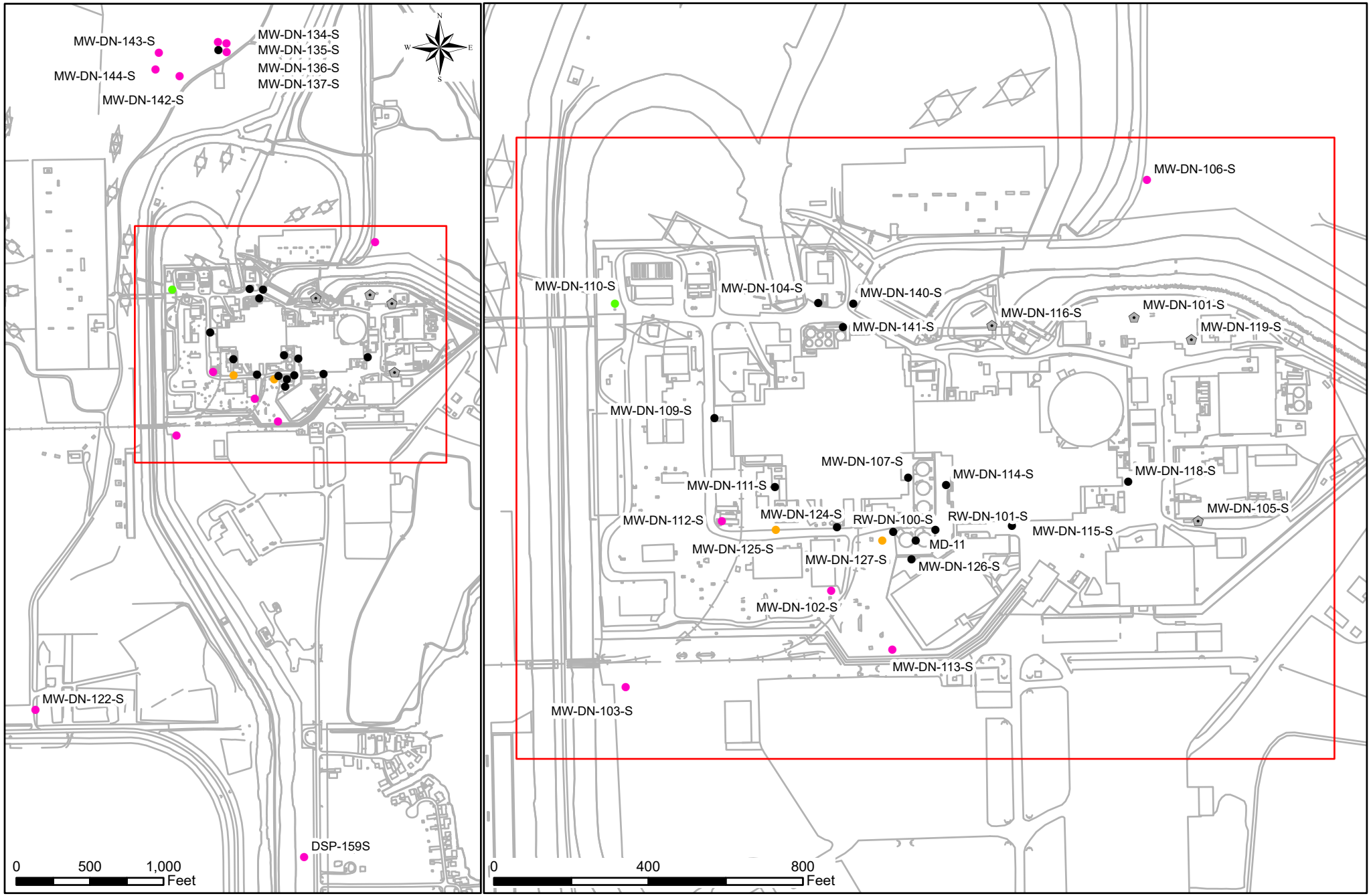
U-238 Results

Station	Well ID	2011				2012		2013		2014	2015		2016		2017			2018					2019				2020			2021	2022	2023	2024
		Feb	Mar	Jun	Dec	Mar	Jun	Mar	Jun	Jun	Jun	Nov	May	Oct	Feb	May	Nov	Jan	Feb	Jun	Oct	Nov	Mar	May	Aug	Dec	Mar	Jul	Nov	May	Jun	Jun	May
Dresden	DSP-107	0.07626																														
	DSP-122	0.1605																														
	DSP-123	0.0743																														
	DSP-124	0.06065																														
	DSP-125			0.1879																										0.0433		
	MD-11			0.07942								0.1058		0.09531	0.05797		0.1252		0.1233			0.1068		0.06118		0.1124			0.1575	0.03103	0.07612	0.05733	0.07166
	MW-DN-101-I																	0.1488	0.08303	0.1215		0.1775	0.2164	0.1499	0.1993	0.124	0.1755					
	MW-DN-102-I			0.1066																												
	MW-DN-102-S			0.1116																												
	MW-DN-104-S	0.4353																														
	MW-DN-106-S			0.845																												
	MW-DN-107-S				0.4338	0.6638																										
	MW-DN-108-I	0.2105																														
	MW-DN-111S																													0.06802		
	MW-DN-113-I			0.06406																												
	MW-DN-113-S			0.2991																												
	MW-DN-116-S																													0.07296		
	MW-DN-119-I																0.4422	0.1124		0.08746	0.04265	0.0217	0.08136	0.08333	0.1556	0.1403	0.1346	0.1141		0.1295			
	MW-DN-122-I		0.3512																													
	MW-DN-124-I	0.1465					0.07465	0.08076	0.0914	0.1891	0.05121		0.2437			0.1644				0.08823				0.122					0.08389	0.1801	0.04893	0.1451	0.1993
	MW-DN-124-S							0.04069	0.3889	0.1532	0.2626		0.1399			0.04273				0.1274				0.06283					0.1191	0.1472	0.09203	0.1803	0.07268
	RW-DN-100S																													0.1781			
	RW-DN-101S																													0.05042			
	SW-DN-101			0.5516																												
	SW-DN-102			0.5302																												
	SW-DN-103			0.4086																												
	SW-DN-104			0.4812																												
	SW-DN-105			0.3978																												
	SW-DN-106			0.5952																												

Notes:
1 - If a sample was re-analyzed on a particular date, only the highest concentration is noted.

Sample Location	Sample Date	Directional Sector	Result	Qual
FW-11	2/27/2024	ESE	187	U
FW-3	2/28/2024	NNW	820	+
FW-1	2/28/2024	NW	734	+
FW-13	5/28/2024	S	190	U
FW-5	5/29/2024	NE	191	U
FW-14	5/30/2024	N	231	+
FW-1	5/30/2024	NW	615	+
FW-2	5/30/2024	NNE	249	+
FW-3	5/30/2024	NNW	567	+
FW-10	5/30/2024	E	190	U
FW-12	5/31/2024	SSE	187	U
FW-11	5/31/2024	ESE	189	U
FW-11	8/15/2024	ESE	190	U
FW-13	8/15/2024	S	186	U
FW-1	8/15/2024	NW	291	+
FW-14	8/15/2024	N	221	+
FW-2	8/15/2024	NNE	196	U
FW-10	8/15/2024	E	192	U
FW-12	8/15/2024	SSE	188	U
FW-5	8/15/2024	NE	189	U
FW-12	11/26/2024	SSE	182	U
FW-4	11/26/2024	SW	177	U
FW-13	11/26/2024	S	186	U
FW-1	11/26/2024	NW	519	+
FW-14	11/26/2024	N	340	+
FW-2	11/26/2024	NNE	245	+
FW-3	11/26/2024	NNW	390	+
FW-10	11/26/2024	E	179	U
FW-11	11/26/2024	ESE	185	U
FW-5	11/26/2024	NE	182	U

Explanation:
U - Tritium not detected at a concentration greater than the laboratory detection limit.
+ - Tritium detected at a Concentration greater than the laboratory detection limit.
- All results presented in pCi/L.

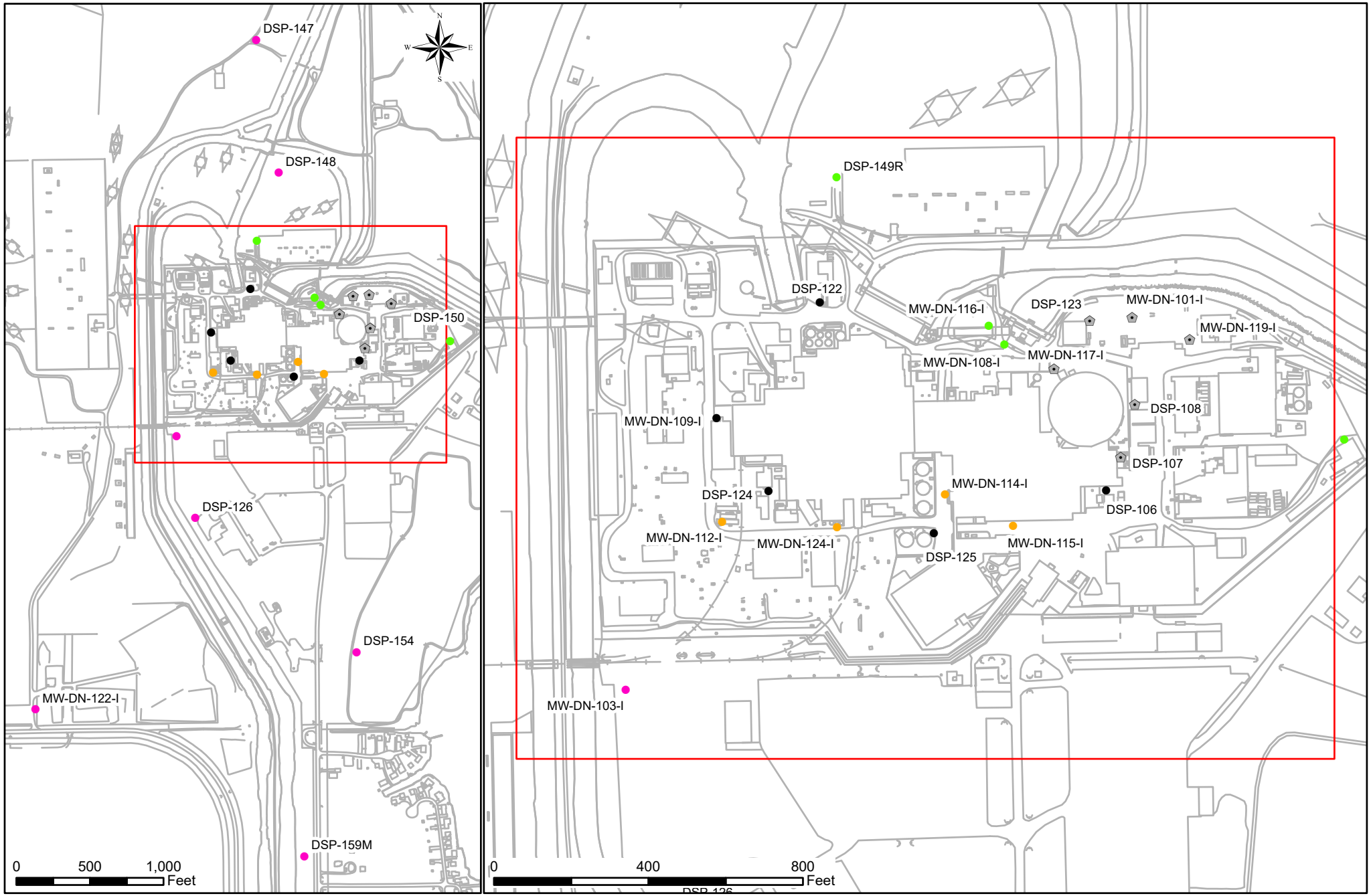


Explanation:

Shallow Aquifer RGPP Monitoring Location

- Background
- Long-Term Shutdown
- Mid-Field
- Perimeter
- Source

Figure 1a
RGPP Sample Locations Shallow Aquifer
Constellation Energy Corporation
Dresden Generating Station

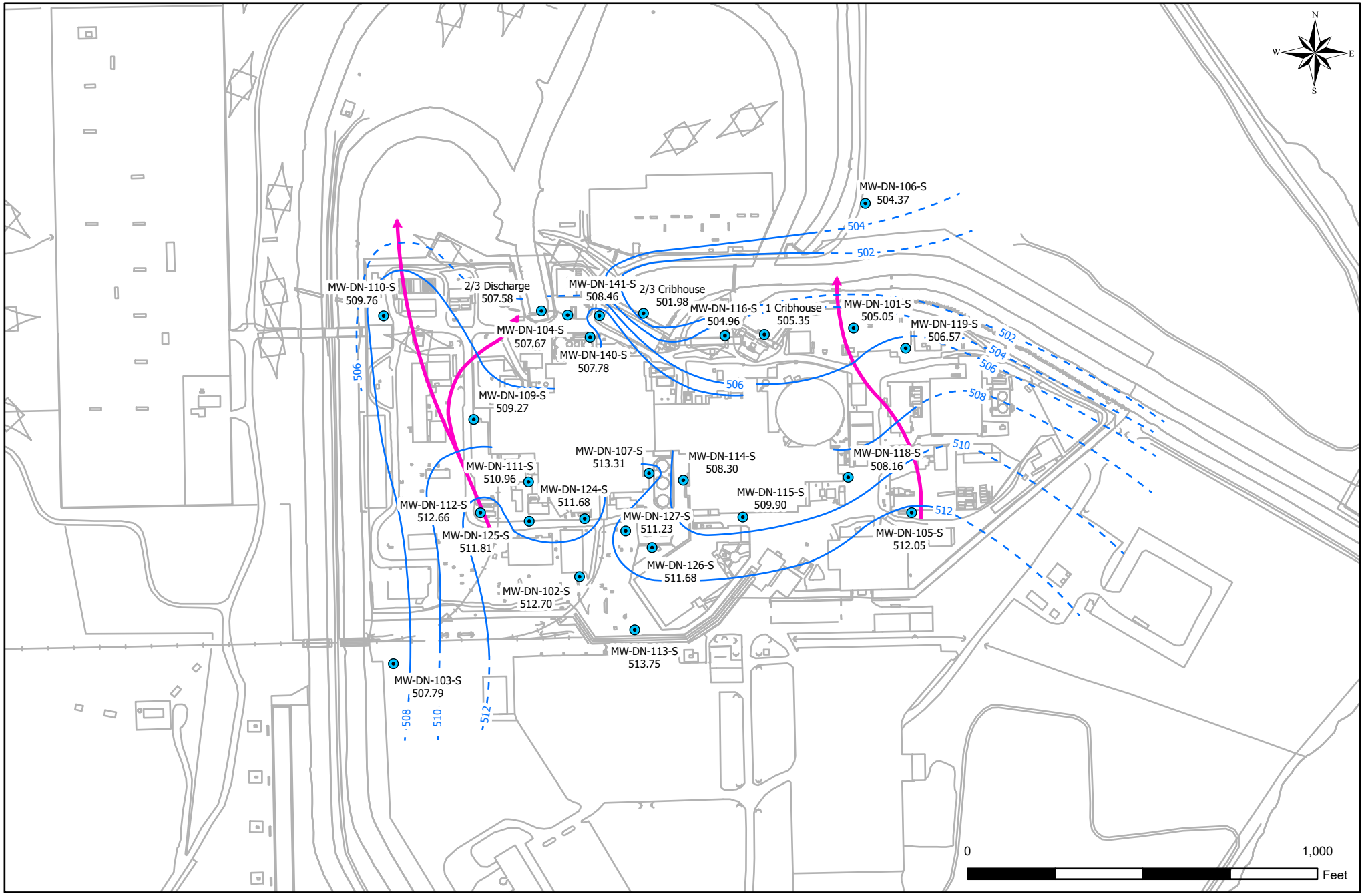


Explanation:

Intermediate Aquifer RGPP Monitoring Location

- Background
- Long-Term Shutdown
- Mid-Field
- Perimeter
- Source

Figure 1b
RGPP Sample Locations
Intermediate Aquifer
Constellation Energy Corporation
Dresden Generating Station



Explanation:

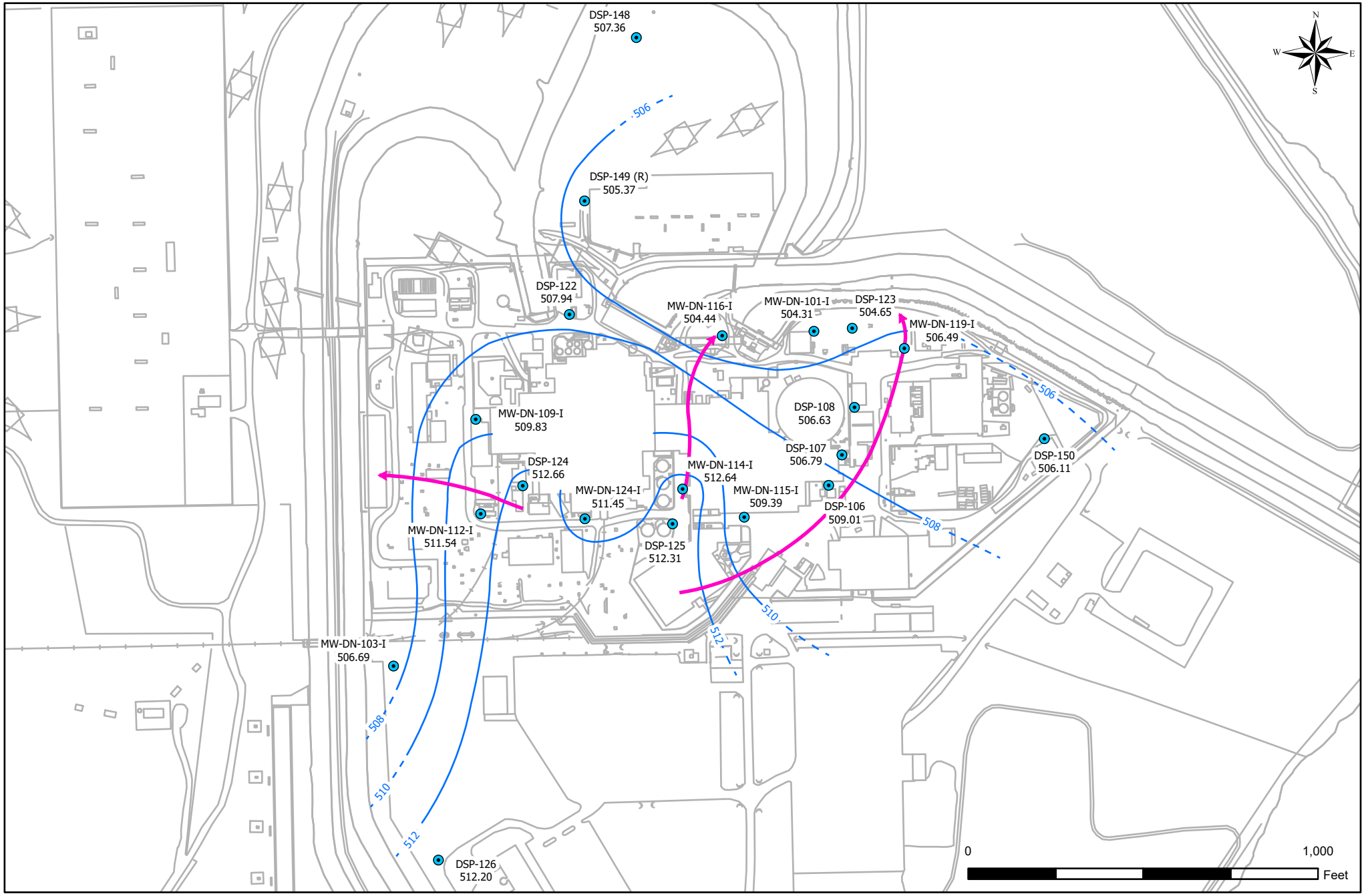
- October 2024 RGPP Shallow Aquifer Monitoring Locations

October 2024 Shallow Aquifer Groundwater Elevation Contours

- Inferred Groundwater Elevation Contour
- Groundwater Elevation Contour
- Shallow Aquifer Estimated Flow Direction

508.45 - Groundwater elevation with respect to mean sea level

Figure 2a
4th Quarter 2024 (October) RGPP
Groundwater Elevations and
Water Elevation Contours
Surface Water and Shallow Aquifer
Constellation Energy Corporation
Dresden Generating Station

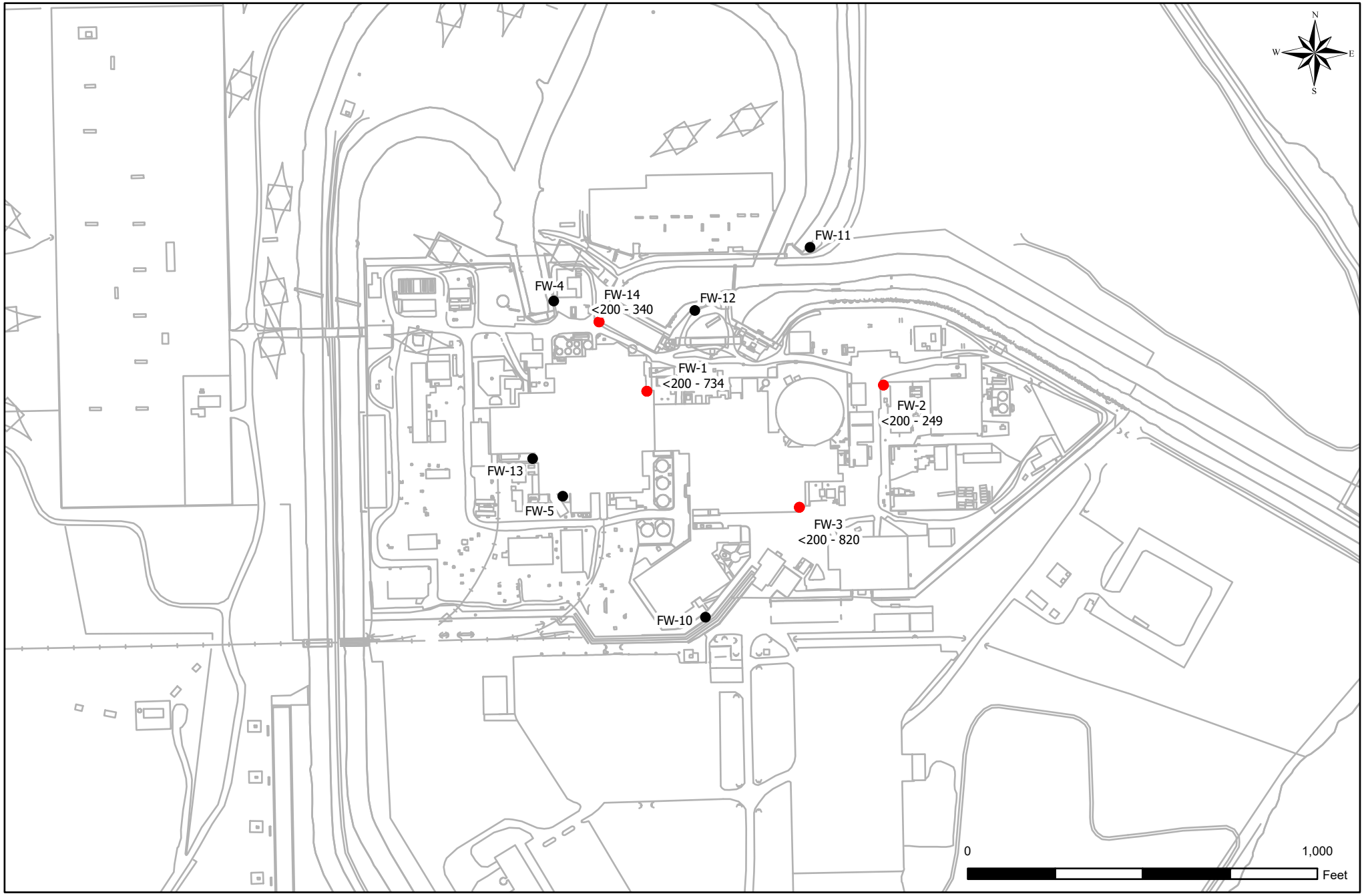


Explanation:

- October 2024 Intermediate Aquifer Monitoring Location
- Groundwater Elevation Contour
- Inferred Groundwater Elevation Contour
- Intermediate Aquifer Estimated Groundwater Flow Direction

508.45 - Groundwater elevation with respect to mean sea level

Figure 2b
4th Quarter 2024 (October) RGPP
Groundwater Elevations and
Water Elevation Contours
Intermediate Aquifer
Constellation Energy Corporation
Dresden Generating Station



Explanation:

2024 Precipitation Recapture Sample Locations

- Result <200 pCi/L
- Result >200 pCi/L

- Precipitation sampling completed in February, May, August, and November in 2024.

404 - Tritium concentration in pico-curies per liter (pCi/L).

Figure 3
2024 Precipitation Recapture
Sample Locations
Constellation Energy Corporation
Dresden Generating Station

Appendix A
Summary of 2011 - 2024 Precipitation Sample Tritium Results

Sample ID	Date	Directional Sector	Result	Qual	Units
RB-1	7/28/2011	NW	400	+	pCi/L
RB-10	7/28/2011	E	630	+	pCi/L
RB-11	7/28/2011	ESE	300	+	pCi/L
RB-12	7/28/2011	SSE	100	U	pCi/L
RB-2	7/28/2011	NNE	630	+	pCi/L
RB-3	7/28/2011	NNW	200	U	pCi/L
RB-4	7/28/2011	SW	100	U	pCi/L
RB-5	7/28/2011	NE	100	U	pCi/L
RB-6	7/28/2011	ENE	200	U	pCi/L
RB-7	7/28/2011	SE	200	U	pCi/L
RB-8	7/28/2011	S	100	U	pCi/L
RB-9	7/28/2011	SSW	100	U	pCi/L
RB-1	10/21/2011	NW	300	+	pCi/L
RB-10	10/21/2011	E	0	U	pCi/L
RB-11	10/21/2011	ESE	200	+	pCi/L
RB-12	10/21/2011	SSE	100	U	pCi/L
RB-2	10/21/2011	NNE	300	+	pCi/L
RB-3	10/21/2011	NNW	300	+	pCi/L
RB-4	10/21/2011	SW	400	+	pCi/L
RB-5	10/21/2011	NE	300	+	pCi/L
RB-6	10/21/2011	ENE	200	U	pCi/L
RB-7	10/21/2011	SE	200	U	pCi/L
RB-8	10/21/2011	S	100	U	pCi/L
RB-9	10/21/2011	SSW	0	U	pCi/L
RB-1	1/11/2012	NW	400	+	pCi/L
RB-10	1/11/2012	E	300	+	pCi/L
RB-11	1/11/2012	ESE	100	U	pCi/L
RB-12	1/11/2012	SSE	300	+	pCi/L
RB-2	1/11/2012	NNE	600	+	pCi/L
RB-3	1/11/2012	NNW	600	+	pCi/L
RB-4	1/11/2012	SW	500	+	pCi/L
RB-5	1/11/2012	NE	400	+	pCi/L
RB-6	1/11/2012	ENE	300	+	pCi/L
RB-7	1/11/2012	SE	400	+	pCi/L
RB-8	1/11/2012	S	300	+	pCi/L
RB-9	1/11/2012	SSW	100	U	pCi/L
RB-1	5/23/2012	NW	191	U	pCi/L
RB-10	5/23/2012	E	199	U	pCi/L
RB-11	5/30/2012	ESE	168	U	pCi/L
RB-12	5/30/2012	SSE	167	U	pCi/L
FW-1	6/6/2013	NW	161	U	pCi/L
FW-10	6/7/2013	E	160	U	pCi/L
FW-11	6/13/2013	ESE	169	U	pCi/L
FW-12	6/14/2013	SSE	168	U	pCi/L
FW-1	5/29/2014	NW	194	U	pCi/L
FW-10	5/30/2014	E	191	U	pCi/L
FW-11	5/30/2014	ESE	194	U	pCi/L
FW-12	5/30/2014	SSE	196	U	pCi/L
FW-1	6/1/2015	NW	190	U	pCi/L
FW-10	6/2/2015	E	188	U	pCi/L
FW-11	6/3/2015	ESE	182	U	pCi/L
FW-12	6/8/2015	SSE	175	U	pCi/L
FW-1	06/07/2016	NW	181	U	pCi/L
FW-10	06/01/2016	E	183	U	pCi/L
FW-11	06/01/2016	ESE	181	U	pCi/L
FW-12	06/01/2016	SSE	182	U	pCi/L
FW-1	05/15/2017	NW	177	U	pCi/L
FW-10	05/23/2017	E	177	U	pCi/L
FW-11	05/17/2017	ESE	175	U	pCi/L
FW-12	05/24/2017	SSE	178	U	pCi/L
FW-1	06/12/2018	NW	193	U	pCi/L

Sample ID	Date	Directional Sector	Result	Qual	Units
FW-10	06/12/2018	E	193	U	pCi/L
FW-11	06/12/2018	ESE	196	U	pCi/L
FW-12	06/02/2018	SSE	196	U	pCi/L
FW-1	5/28/2019	NW	188	U	pCi/L
FW-10	5/28/2019	E	181	U	pCi/L
FW-11	5/28/2019	ESE	186	U	pCi/L
FW-12	5/28/2019	SSE	187	U	pCi/L
FW-1	11/12/2020	NW	207	+	pCi/L
FW-10	11/12/2020	E	170	U	pCi/L
FW-11	11/12/2020	ESE	175	U	pCi/L
FW-12	11/12/2020	SSE	276	U	pCi/L
FW-11	3/8/2021	ESE	182	U	pCi/L
FW-10	3/8/2021	E	187	U	pCi/L
FW-1	3/9/2021	NW	404	+	pCi/L
FW-4	3/11/2021	SW	180	U	pCi/L
FW-12	3/11/2021	SSE	186	U	pCi/L
FW-2	3/11/2021	NNE	184	U	pCi/L
FW-3	3/11/2021	NNW	182	U	pCi/L
FW-5	3/11/2021	NE	182	U	pCi/L
FW-11	8/10/2021	ESE	169	U	pCi/L
FW-5	8/10/2021	NE	169	U	pCi/L
FW-10	8/11/2021	E	161	U	pCi/L
FW-2	8/11/2021	NNE	176	U	pCi/L
FW-3	8/11/2021	NNW	421	+	pCi/L
FW-1	8/12/2021	NW	177	U	pCi/L
FW-4	8/12/2021	SW	176	U	pCi/L
FW-12	8/12/2021	SSE	173	U	pCi/L
FW-4	11/8/2021	SW	193	U	pCi/L
FW-5	11/8/2021	NE	177	U	pCi/L
FW-12	11/9/2021	SSE	187	U	pCi/L
FW-11	11/9/2021	ESE	181	U	pCi/L
FW-10	11/9/2021	E	186	U	pCi/L
FW-2	11/9/2021	NNE	192	+	pCi/L
FW-3	11/9/2021	NNW	239	+	pCi/L
FW-1	11/10/2021	NW	215	+	pCi/L
FW-1	3/15/2022	NW	229	+	pCi/L
FW-10	3/15/2022	E	195	U	pCi/L
FW-11	3/15/2022	ESE	193	U	pCi/L
FW-12	3/15/2022	SSE	175	U	pCi/L
FW-2	3/15/2022	NNE	360	+	pCi/L
FW-3	3/15/2022	NNW	589	+	pCi/L
FW-4	3/15/2022	SW	171	U	pCi/L
FW-5	3/16/2022	NE	172	U	pCi/L
FW-1	6/7/2022	NW	735	+	pCi/L
FW-10	6/7/2022	E	204	+	pCi/L
FW-11	6/7/2022	ESE	173	U	pCi/L
FW-12	6/7/2022	SSE	182	+	pCi/L
FW-2	6/7/2022	NNE	377	+	pCi/L
FW-3	6/7/2022	NNW	394	+	pCi/L
FW-4	6/7/2022	SW	470	+	pCi/L
FW-5	6/6/2022	NE	229	+	pCi/L
FW-1	7/27/2022	NW	418	+	pCi/L
FW-10	7/27/2022	E	196	U	pCi/L
FW-11	7/26/2022	ESE	194	U	pCi/L
FW-12	7/28/2022	SSE	195	U	pCi/L
FW-2	7/27/2022	NNE	234	+	pCi/L
FW-3	7/27/2022	NNW	266	+	pCi/L
FW-4	7/27/2022	SW	195	U	pCi/L
FW-5	7/25/2022	NE	196	U	pCi/L
FW-1	11/16/2022	NW	1,860	+	pCi/L
FW-10	11/16/2022	E	176	U	pCi/L

Sample ID	Date	Directional Sector	Result	Qual	Units
FW-11	11/16/2022	ESE	242	+	pCi/L
FW-12	11/16/2022	SSE	230	+	pCi/L
FW-2	11/16/2022	NNE	902	+	pCi/L
FW-3	11/16/2022	NNW	1,330	+	pCi/L
FW-4	11/16/2022	SW	353	+	pCi/L
FW-5	11/16/2022	NE	191	U	pCi/L
FW-4	3/15/2023	SW	212	+	pCi/L
FW-12	3/15/2023	SSE	281	+	pCi/L
FW-1	3/15/2023	NW	332	+	pCi/L
FW-2	3/15/2023	NNE	218	+	pCi/L
FW-3	3/15/2023	NNW	422	+	pCi/L
FW-10	3/15/2023	E	196	U	pCi/L
FW-5	3/15/2023	NE	198	U	pCi/L
FW-11	3/16/2023	ESE	193	U	pCi/L
FW-5	9/18/2023	NE	197	U	pCi/L
FW-4	9/20/2023	SW	264	+	pCi/L
FW-11	9/21/2023	ESE	195	U	pCi/L
FW-10	9/21/2023	E	198	U	pCi/L
FW-12	9/21/2023	SSE	197	U	pCi/L
FW-2	9/22/2023	NNE	189	U	pCi/L
FW-3	9/22/2023	NNW	188	U	pCi/L
FW-1	9/22/2023	NW	369	+	pCi/L
FW-5	12/5/2023	NE	190	U	pCi/L
FW-4	12/6/2023	SW	191	U	pCi/L
FW-1	12/6/2023	NW	619	+	pCi/L
FW-2	12/7/2023	NNE	524	+	pCi/L
FW-3	12/7/2023	NNW	914	+	pCi/L
FW-10	12/7/2023	E	184	U	pCi/L
FW-11	12/7/2023	ESE	189	U	pCi/L
FW-12	12/7/2023	SSE	191	U	pCi/L
FW-11	2/27/2024	ESE	187	U	pCi/L
FW-3	2/28/2024	NNW	820	+	pCi/L
FW-1	2/28/2024	NW	734	+	pCi/L
FW-13	5/28/2024	S	190	U	pCi/L
FW-5	5/29/2024	NE	191	U	pCi/L
FW-14	5/30/2024	N	231	+	pCi/L
FW-1	5/30/2024	NW	615	+	pCi/L
FW-2	5/30/2024	NNE	249	+	pCi/L
FW-3	5/30/2024	NNW	567	+	pCi/L
FW-10	5/30/2024	E	190	U	pCi/L
FW-12	5/31/2024	SSE	187	U	pCi/L
FW-11	5/31/2024	ESE	189	U	pCi/L
FW-11	8/15/2024	ESE	190	U	pCi/L
FW-13	8/15/2024	S	186	U	pCi/L
FW-1	8/15/2024	NW	291	+	pCi/L
FW-14	8/15/2024	N	221	+	pCi/L
FW-2	8/15/2024	NNE	196	U	pCi/L
FW-10	8/15/2024	E	192	U	pCi/L
FW-12	8/15/2024	SSE	188	U	pCi/L
FW-5	8/15/2024	NE	189	U	pCi/L
FW-12	11/26/2024	SSE	182	U	pCi/L
FW-4	11/26/2024	SW	177	U	pCi/L
FW-13	11/26/2024	S	186	U	pCi/L
FW-1	11/26/2024	NW	519	+	pCi/L
FW-14	11/26/2024	N	340	+	pCi/L
FW-2	11/26/2024	NNE	245	+	pCi/L
FW-3	11/26/2024	NNW	390	+	pCi/L
FW-10	11/26/2024	E	179	U	pCi/L
FW-11	11/26/2024	ESE	185	U	pCi/L
FW-5	11/26/2024	NE	182	U	pCi/L