September 1, 2022

Sent via email

Mr. Michael Regan, EPA Administrator
United States Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Mail Code 50304-P
Washington DC, 20460

RE: Alternate Liner Demonstration Extension Request Due to Analytical Limitations
DTE Electric Company Monroe Power Plant
Fly Ash Basin Coal Combustion Residuals Unit
7955 East Dunbar Road, Monroe, Michigan

Dear Administrator Regan:

In accordance with 40 C.F.R. §257.71(d)(2)(ii)(A), the DTE Electric Company (DTE Electric) submitted an extension request to the U.S. Environmental Protection Agency (EPA) for approval on September 1, 2021, for the Monroe Power Plant Fly Ash Basin, to extend the November 30, 2021, deadline to submit an alternate liner demonstration (ALD). A Preliminary ALD was submitted to EPA on November 30, 2021, using preliminary data, that concluded that the low permeability natural clay soils underlying the Monroe Power Plant Fly Ash Basin are consistently present across the basin and have sufficiently low hydraulic conductivity to prevent groundwater contamination at the solid waste boundary through the active life of the unit. This letter is intended to provide an update to the extension request submitted September 1, 2021, using the most recent data and projected termination dates certified by the lab, to continue to extend the deadline to submit a final Alternate Liner Demonstration (ALD).

The enclosed memorandum, prepared by Geosyntec and Excel Geotechnical Testing laboratory, provides the information requested by the rule, a date by which termination criteria is anticipated to be achieved, how the anticipated dates are estimated, and a discussion of results. The memorandum demonstrates that DTE Electric qualifies for and should be granted the requested extension to submit an Alternate Liner Demonstration after November 30, 2021.

Electronic files were submitted to Richard Huggins, Mary Jackson, Michelle Long, and Jason Mills via email. If you have any questions regarding this submittal, please contact me at 313.235.0153 or christopher.scieszka@dteenergy.com

Sincerely,

Christopher Scieszka
Project Manager, Environmental Management and Safety, DTE Energy

Enclosure

cc: Richard Huggins, Mary Jackson, Michelle Long, and Jason Mills

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Detroit, Michigan 48202
PH 313.209.5610
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Memorandum

Date:	September 1, 2022
To:	Michael Regan (USEPA)
Copies to:	Richard Huggins, Mary Jackson, Michelle Long, and Jason Mills (USEPA), Christopher Scieszka (DTE Electric Company), John Seymour, P.E., Mike Coram (Geosyntec Consultants)
From:	Clinton Carlson, Ph.D., P.E., Isaiah Vaught (Geosyntec Consultants), Nader Rad, Ph.D., P.E. (Excel Geotechnical Testing)
Subject:	Extension Request for Monroe Power Plant Fly Ash Basin Alternative Liner Demonstration Geosyntec Project: GLP8014

This technical memorandum has been prepared to request an additional extension for the Alternative Liner Demonstration (ALD) of the Monroe Fly Ash Basin on behalf of DTE Electric Company (DTE) and in accordance with 40 CFR Part 257 (CCR Rule) as amended on November 20, 2020. An initial extension request was sent on September 1, 2021 with expected completion date information. However, recent laboratory data show trends indicating the project reaching the required termination criteria beyond the original request. Therefore, this request is being made in accordance with 40 CFR Part 257.71(d)(2)(ii)(A) *Extension due to analytical limitations.* This memorandum updates the prior request and provides the basis and information required by the CCR Rule for the extension request and serves as the written certification from the lab.

BACKGROUND

DTE submitted the ALD application to the United States Environmental Protection Agency (USEPA) on November 30, 2020, in accordance with the CCR Rule. USEPA has not yet commented on the ALD application.

DTE took an expeditious approach and initiated the field and laboratory investigations to support the ALD in December 2020. The field investigation was completed in December 2020. The laboratory testing program was initiated on February 19, 2021. An initial request for *Extension due to analytical limitations* was submitted on September 1, 2021. The laboratory study is still

underway and expected to last for the foreseeable future until the requirements of the CCR Rule are met, as demonstrated in this extension request.

The CCR Rule requires that representative samples from the site are tested for hydraulic conductivity with site-specific contact water and that the tests last until chemical equilibrium is reached. If chemical equilibrium is not reached within a reasonable time to complete the ALD, it is considered an "analytical limitation" and the CCR Rule gives the ALD applicant the right to request an extension.

The CCR Rule [§257.71(d)(2)(ii)(A)] states:

"*Extension due to analytical limitations. If the owner or operator cannot meet the demonstration deadline due to analytical limitations related to the measurement of hydraulic conductivity, the owner or operator must submit a request for an extension no later than September 1, 2021, that includes a summary of the data that have been analyzed to date for the samples responsible for the delay and an alternate timeline for completion that has been certified by the laboratory. The extension request must include all of the following:*

(1) A timeline of fieldwork to confirm that samples were collected expeditiously;

(2) A chain of custody documenting when samples were sent to the laboratory;

(3) Written certification from the lab identifying how long it is projected for the tests to reach the relevant termination criteria related to solution chemistry, and

(4) Documentation of the progression towards all test termination metrics to date."

The remainder of this memorandum provides the information necessary to address the CCR Rule extension requirements. The following are provided:

- Field and laboratory investigation timeline and chain of custody;
- Termination criteria used for hydraulic conductivity testing;
- Summary of test results as of August 12, 2022, and projected timeline for reaching termination criteria; and
- Laboratory certification.

FIELD AND LABORATORY INVESTIGATION TIMELINE

DTE retained Geosyntec to develop and implement a detailed field and laboratory investigation plan soon after the ALD application was submitted to USEPA. The field investigation portion of the study started on December 1, 2020, (one day after the ALD application was submitted to USEPA) and was completed on December 8, 2020. Soil samples collected during the field investigation were sent to Excel Geotechnical Testing (EGT) immediately and were registered by EGT on December 10, 2020. The chain of custody (proof of shipping and delivery) is provided in **Appendix A**. Sample identification was provided to EGT at the time of shipment. Testing details for each sample were provided to EGT after Geosyntec reviewed the field investigation results in more detail. The testing program is provided in **Appendix B**.

TERMINATION CRITERIA FOR HYDRAULIC CONDUCTIVITY TESTING

Hydraulic conductivity testing is being conducted in general accordance with ASTM D7100 - Standard Test Method for Hydraulic Conductivity Compatibility Testing of Soils with Aqueous Solutions, using site-specific contact water. The use of ASTM D7100 is discussed in the preamble of the CCR Rule and deemed appropriate by USEPA.

ASTM D7100 termination criteria require the following conditions:

- The ratio of outflow to inflow is between 0.75 and 1.25. Note that results do not include inflow versus outflow data because the project team decided to keep the inflow constant, which provides a more stable hydraulic gradient across the sample, more accurate estimation of hydraulic conductivity, faster testing, and more control in the testing procedure. It is our opinion that the inflow/outflow criterion would be reached by the time other criteria are reached;
- The hydraulic conductivity is considered steady if four or more consecutive hydraulic conductivity determinations fall within ±25 percent of the mean value for hydraulic conductivity (k) greater than or equal to 3.0E-08 centimeters per second (cm/s) or within ±50 percent for k less than 1.0E-08 cm/s, and a plot or tabulation of the hydraulic conductivity versus time shows no significant upward or downward trend;
- At least 2.0 pore volumes (PV) of flow has passed through the sample;
- pH of effluent is within 10 percent of that for the influent with no significant increasing or decreasing trends; and
- Electrical conductivity (EC) of effluent is within 10 percent of that for the influent with no significant increasing or decreasing trends.

TEST RESULTS & PROJECTED TIMELINE FOR TERMINATION CRITERIA

Eight samples from the Monroe Fly Ash Basin are being tested by EGT. Preliminary results as of August 12, 2022, are provided in **Appendix A** and summarized in **Tables 1** through **4**. In addition, figures are provided for each sample showing the following:

- PV of flow with time;
- hydraulic conductivity with time;
- hydraulic conductivity versus PV passed through the sample;
- pH of inflow and outflow with time; and
- EC of inflow and outflow with time.

Table 5 provides figure numbers for quick reference to the various plots listed above.

Table 1 provides the sample ID, the start date for testing, amount of PV passed through the sample, hydraulic conductivity (k) measurements, and the actual or projected date at which 2.0 PV is passed through the samples. Overall, the average k values of samples range from 2.9E-09 to 1.2E-08 cm/s. Hydraulic conductivity values have been stable or slightly decreased since the beginning of testing. The PV of flow that has passed through the samples ranges from 1.29 to 7.26. As of August 12, 2022, seven of the samples have reached the criterion for 2.0 PV passed through the sample. The remaining sample is projected to have 2.0 PV passed through the sample around June 2023. The estimated date for achieving this criterion is based on linear extrapolation of PV to a value of 2.0 and assumes k stays constant, as it has up to this point of testing. Overall, the PV of flow is progressing steadily towards the criterion for 2.0 PV passed through the sample.

pH values are provided in **Table 2**. The average pH of inflow ranges from 12.5 to 12.6, and the average pH of outflow ranges from 8.5 to 8.7. The pH values of outflow are not within 10 percent of the inflow, as required for the pH termination criterion. The pH of the outflow are projected to meet the termination criterion (i.e., within 10 percent of the pH of the inflow) between October 2025 and June 2028. The estimated date range for achieving this criterion is based on the convergence of linear extrapolations for the inflow and outflow pH to within 10 percent.

EC values are provided in **Table 3**. The average EC of inflow ranges from 5,261 to 5,723, and the average EC of outflow ranges from 1,093 to 1,737. The EC values of outflow are not within 10 percent of the inflow, as required for the EC termination criterion. Trends in the inflow and outflow EC are not converging and thus, an estimated date for achieving the EC termination criterion cannot be provided.

Table 4 summarizes if samples have reached the termination criteria for PV, pH, and EC, and if not, the approximate projected date for reaching the termination criteria. As summarized in **Table 4**, none of the samples have reached the termination criteria.

DISCUSSION

The length of testing for the samples to reach the termination criteria is much longer than anticipated. EGT has indicated, in their experience, hydraulic conductivity compatibility tests are typically completed after passing approximately 3.0 PV through the samples. EGT has noted the laboratory test equipment is starting to exhibit signs of deterioration (e.g., cell water becoming cloudier, discoloration of the latex membranes encapsulating the samples) due to the length of testing time. Geosyntec and EGT are uncertain of the cause(s) for the long testing time required to reach the termination criteria. Possible causes could be the low hydraulic conductivity of the samples, a reaction with the leachate, a reaction within the soil samples, or a combination of these possible causes.

Although the samples have not met the termination criteria, it is Geosyntec's professional opinion that the laboratory testing has demonstrated the alternate liner is not expected to deteriorate (i.e., increase in hydraulic conductivity) for the remaining active life of the unit and the post-closure care period because of the following observations.

- The hydraulic conductivity values of the samples are low (average values between 2.9E-09 and 1.2E-08 cm/s) and have remained steady or slightly decreased for the 19 months of testing.
- The average pore volume passed through the samples is 4.8, with minimum and maximum PV passed of 1.3 and 7.3. Only 2.0 PV passed through the samples is required for the termination criterion.

Although the hydraulic conductivity values of the samples have not been observed to decrease in the laboratory testing, Geosyntec performed a sensitivity analysis as part of the fate and transport analyses presented in the ALD report to examine the potential effects of the alternative liner if it were to deteriorate (i.e., increased hydraulic conductivity). The sensitivity analysis used Darcy velocity values double the baseline value (6.08E-03 m/year) to assess the impact of deterioration of the alternative liner on the fate and transport analyses. The baseline Darcy velocity was calculated using a hydraulic conductivity value of 1.4E-08 cm/s, which represents the largest hydraulic conductivity observed in the initial year of this study. The model yielded groundwater concentrations that were between one to four orders of magnitude less than the groundwater

protection standards. Consequently, the preliminary data and modeling indicate that there is no reasonable probability that continued operation of the surface impoundment will result in adverse effects to human health or the environment even using elevated Darcy velocities/hydraulic conductivities.

On behalf of DTE, Geosyntec is requesting an additional extension for the laboratory testing in the ALD demonstration until June 2028. The projected termination dates are based on the latest estimated date to reach the termination criteria for the PV and pH (an accurate termination date cannot be predicted for the EC termination criterion). As noted, laboratory test equipment may begin to fail prior to June 2028. Testing will continue until termination criteria are reached or the laboratory test equipment fails due to deterioration.

CONCLUSIONS

As summarized in **Table 4**, none of the samples have achieved the required termination criteria. Their approximate projected termination dates (based on pH) range from October 2025 to June 2028. An additional extension of the ALD demonstration is requested for the Monroe Fly Ash Basin until June 2028. Testing will continue until termination criteria are reached or the laboratory test equipment fails due to deterioration, in which case, test results up to the failure of the setup will be presented in the ALD report. However, it is Geosyntec's professional opinion that the laboratory testing up to this point has demonstrated the alternate liner is not expected to deteriorate (i.e., increase in hydraulic conductivity) within the remaining active life and post-closure care period of the Monroe Fly Ash Basin.

LABORATORY CERTIFICATION

The hydraulic conductivity compatibility testing for the Monroe Power Plant Fly Ash Basin samples is projected to last through June 2028, based on results as of August 12, 2022, to meet termination criteria, with the exception of EC criterion as explained in this memorandum. If the extension is granted, DTE will submit the completed demonstration within 45 days of June 1, 2028, in accordance with §257.71(d)(2)(ii)(B).

Nader Rad, Ph.D., P.E. (LA)
President, Excel Geotechnical Testing

TABLES

Table 1. Summary of Hydraulic Conductivity and Pore Volumes Passed

ID	Date	Days After Injection	Hydraulic Conductivity (cm/s)	Pore Volumes Passed After Injection	Estimated Days to Target PV	Date Target PV Reached
B2-ST-1 (20-22')	February 19, 2021	0	5.9E-09	0.0000		
	August 12, 2022	539	5.2E-09	2.9397	Complete	March 4, 2022
B4-ST-2 (40-42')	February 26, 2021	7	3.6E-09	0.0176		
	August 12, 2022	539	3.4E-09	1.2906	296	June 4, 2023
B4-ST-4 (70-72.5')	February 26, 2021	7	1.4E-08	0.1220		
	August 12, 2022	539	8.7E-09	6.6944	Complete	July 2, 2021
B6-ST-1 (25-27')	February 19, 2021	0	9.7E-09	0.0000		
	August 12, 2022	539	7.4E-09	3.4821	Complete	December 24, 2021
B6-ST-3 (55-57.5')	February 19, 2021	0	1.2E-08	0.0000		
	August 12, 2022	539	1.1E-08	5.2379	Complete	September 3, 2021
B6-ST-4 (65-67.5')	February 26, 2021	7	1.3E-08	0.1209		
	August 12, 2022	539	8.4E-09	6.4848	Complete	July 12, 2021
B9-ST-2 (40-42')	February 19, 2021	0	1.1E-08	0.0000		
	August 12, 2022	539	1.1E-08	5.3528	Complete	September 10, 2021
B9-ST-3 (55-57')	March 19, 2021	28	1.7E-08	0.5500		
	August 12, 2022	539	8.0E-09	7.2617	Complete	June 11, 2021

Table 2. Summary of pH Results

Sample ID	Parameter	pH Inflow	pH Outflow	Is pH of outflow within termination boundaries?	Approximate Projected Termination Date
B2-ST-1 (20-22')	Min	11.4	8.2	No	November 1, 2027
	Max	13.1	9.1		
	Average	12.5	8.6		
B4-ST-2 (40-42')	Min	12.1	8.2	No	August 1, 2027
	Max	13.4	9.8		
	Average	12.6	8.6		
B5-ST-4 (70-72.5')	Min	12.1	8.0	No	December 1, 2026
	Max	13.2	10.1		
	Average	12.6	8.7		
B6-ST-1 (25-27')	Min	12.1	8.2	No	February 1, 2026
	Max	13.6	9.9		
	Average	12.6	8.7		
B6-ST-3 (55-57.5')	Min	12.1	8.0	No	October 1, 2025
	Max	13.0	9.6		
	Average	12.6	8.6		
B6-ST-4(65.67.5')	Min	12.1	7.8	No	November 1, 2025
	Max	13.6	10.9		
	Average	12.6	8.6		
B9-ST-2(40-42')	Min	11.7	7.9	No	October 1, 2026
	Max	13.1	9.5		
	Average	12.5	8.7		
B9-ST-3(55-57')	Min	12.1	7.9	No	June 1, 2028
	Max	13.2	9.6		
	Average	12.6	8.5		

Table 3. Electrical Conductivity Results

Sample ID	Parameter	EC Inflow (µs/cm)	EC Outflow (µs/cm)	Is EC of Outflow within Termination Criterion?	Approximate Projected Termination Date
B2-ST-1 (20-22')	Min	4200	1067	No	N/A
	Max	6350	3000		
	Average	5585	1560		
B4-ST-2 (40-42')	Min	4780	990	No	N/A
	Max	6330	1163		
	Average	5723	1093		
B4-ST-4 (70-72.5')	Min	4120	1082	No	N/A
	Max	6580	2310		
	Average	5578	1436		
B6-ST-1 (25-27')	Min	4370	928	No	N/A
	Max	6340	2660		
	Average	5594	1431		
B6-ST-3 (55-57.5')	Min	4350	1128	No	N/A
	Max	6300	3930		
	Average	5525	1737		
B6-ST-4 (65.67.5')	Min	3330	963	No	N/A
	Max	6570	1708		
	Average	5261	1198		
B9-ST-2 (40-42')	Min	4380	976	No	N/A
	Max	6570	3190		
	Average	5659	1466		
B9-ST-3 (55-57')	Min	4230	885	No	N/A
	Max	6380	2430		
	Average	5518	1230		

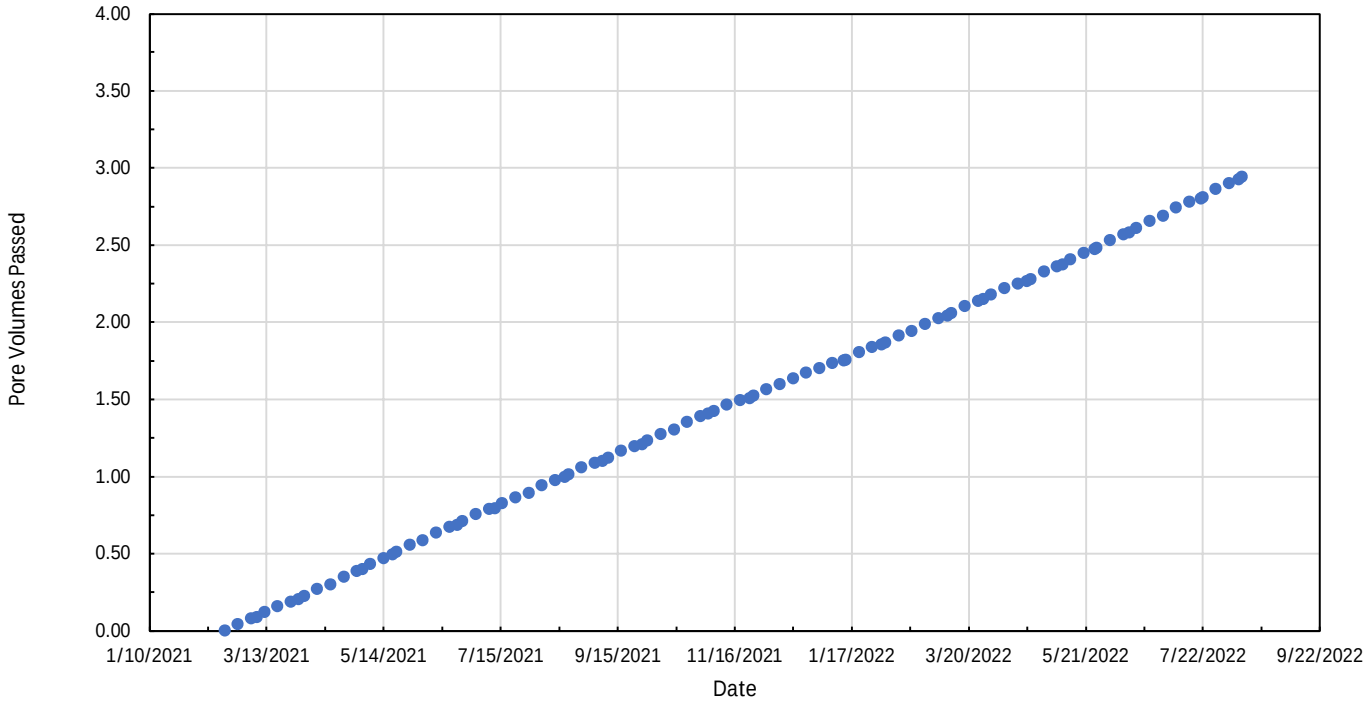
Table 4. Summary of Termination Criteria

	Termination Criterion Reached				
Sample ID	Pore Volumes Passed, PV	pH	Electrical Conductivity, EC	Approximate Projected Termination Date	Date Based On
B2-ST-1 (20-22')	Yes	No	No	November 1, 2027	pH
B4-ST-2 (40-42')	No	No	No	August 1, 2027	pH
B4-ST-4 (70-72.5')	Yes	No	No	December 1, 2026	pH
B6-ST-1 (25-27')	Yes	No	No	February 1, 2026	pH
B6-ST-3 (55-57.5')	Yes	No	No	October 1, 2025	pH
B6-ST-4 (65.67.5')	Yes	No	No	November 1, 2025	pH
B9-ST-2 (40-42')	Yes	No	No	October 1, 2026	pH
B9-ST-3 (55-57')	Yes	No	No	June 1, 2028	pH

Table 5. Summary of Figures

ID	PV of Flow with Time	Hydraulic Conductivity with Time	Hydraulic Conductivity with PV	pH of Inflow and Outflow with Time	Electrical Conductivity (EC) with Time
B2-ST-1 (20-22')	Figure 1	Figure 2	Figure 3	Figure 4	Figure 5
B4-ST-2 (40-42')	Figure 6	Figure 7	Figure 8	Figure 9	Figure 10
B4-ST-4 (70-72.5')	Figure 11	Figure 12	Figure 13	Figure 14	Figure 15
B6-ST-1 (25-27')	Figure 16	Figure 17	Figure 18	Figure 19	Figure 20
B6-ST-3 (55-57.5')	Figure 21	Figure 22	Figure 23	Figure 24	Figure 25
B6-ST-4 (65.67.5')	Figure 26	Figure 27	Figure 28	Figure 29	Figure 30
B9-ST-2 (40-42')	Figure 31	Figure 32	Figure 33	Figure 34	Figure 35
B9-ST-3 (55-57')	Figure 36	Figure 37	Figure 38	Figure 39	Figure 40

FIGURES



B2-ST-1 (20-22 ft bgs) PV of Flow with Time

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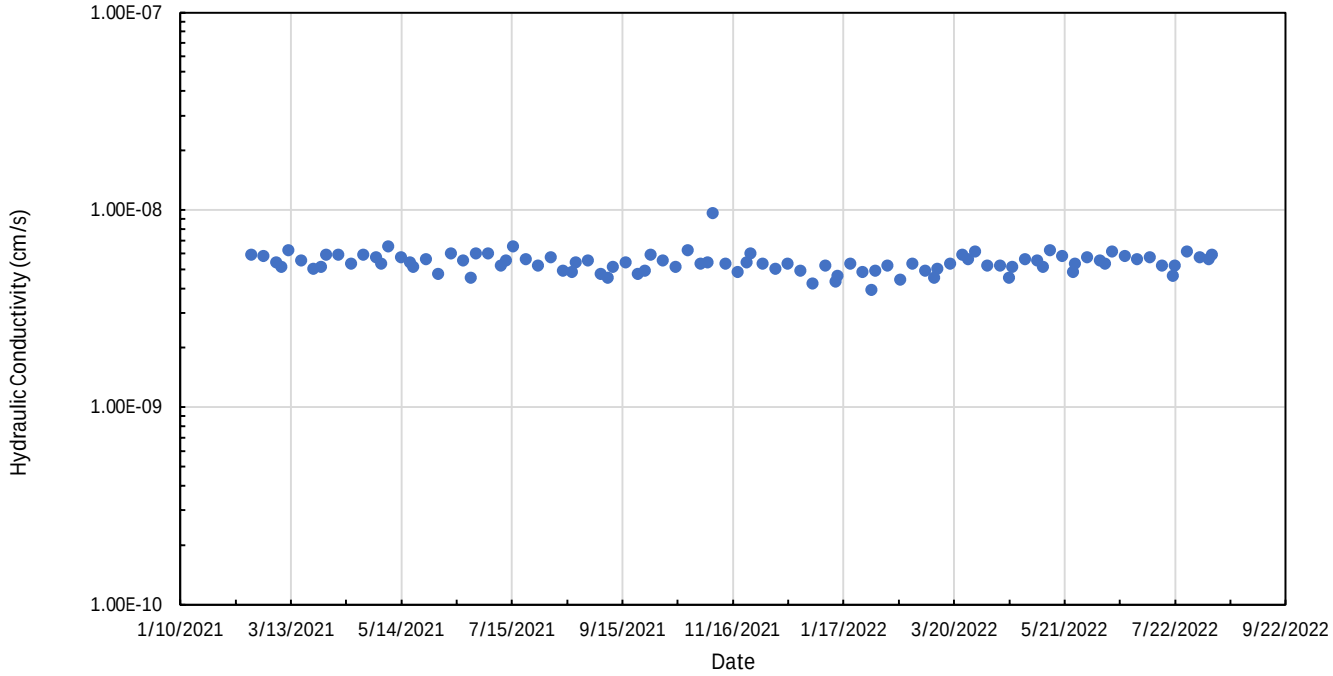
Figure 1



B2-ST-1 (20-22 ft bgs) Hydraulic Conductivity with Time

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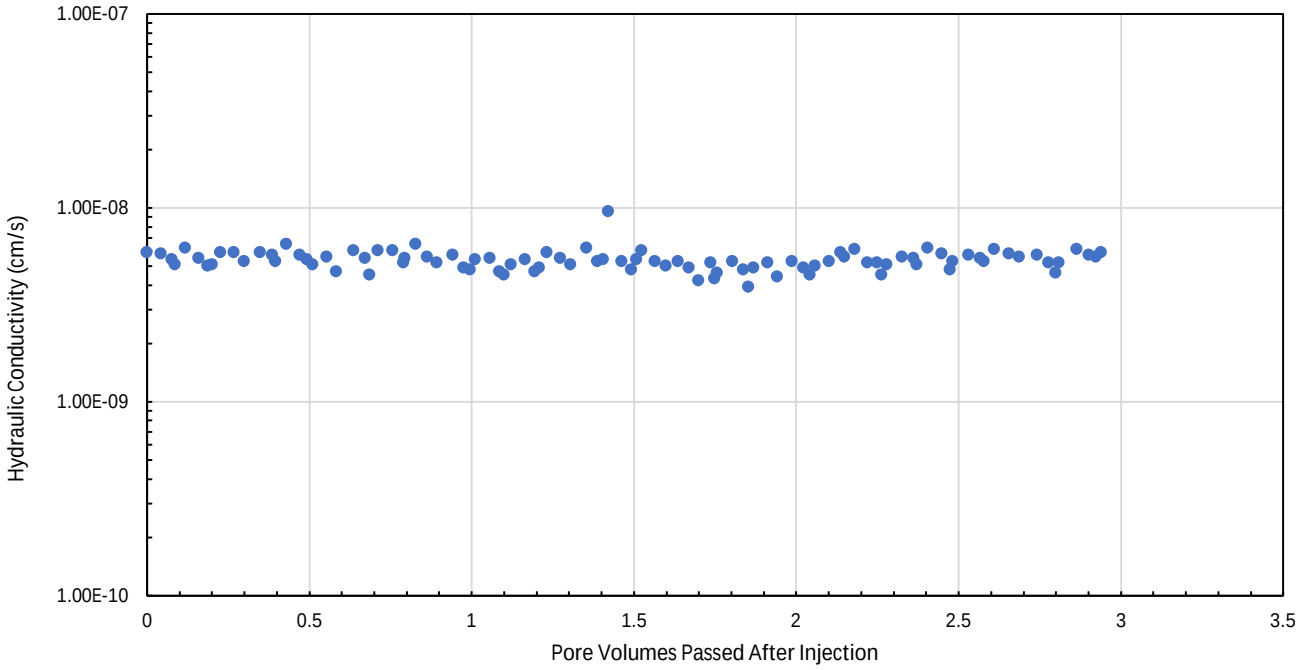
Figure 2



B2-ST-1 (20-22 ft bgs) Hydraulic Conductivity with PV

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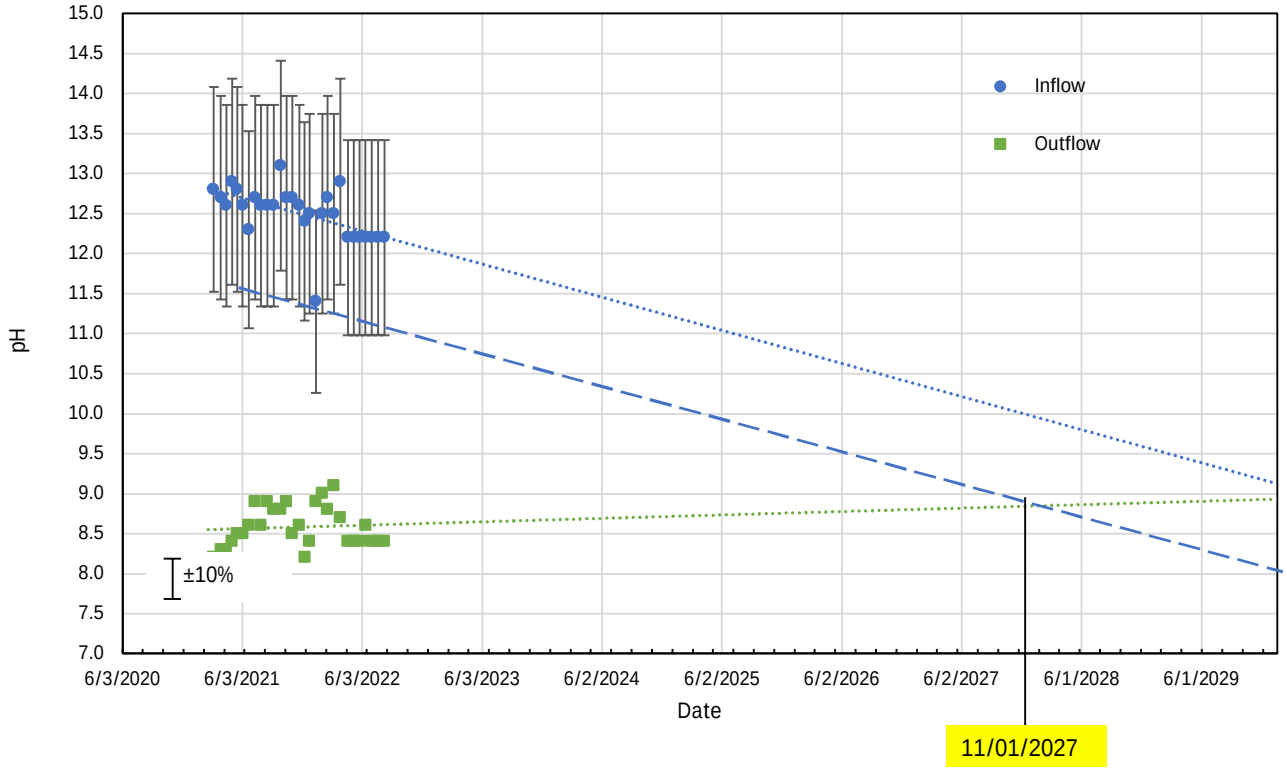
Figure 3



B2-ST-1 (20-22 ft bgs) pH of Inflow and Outflow with Time

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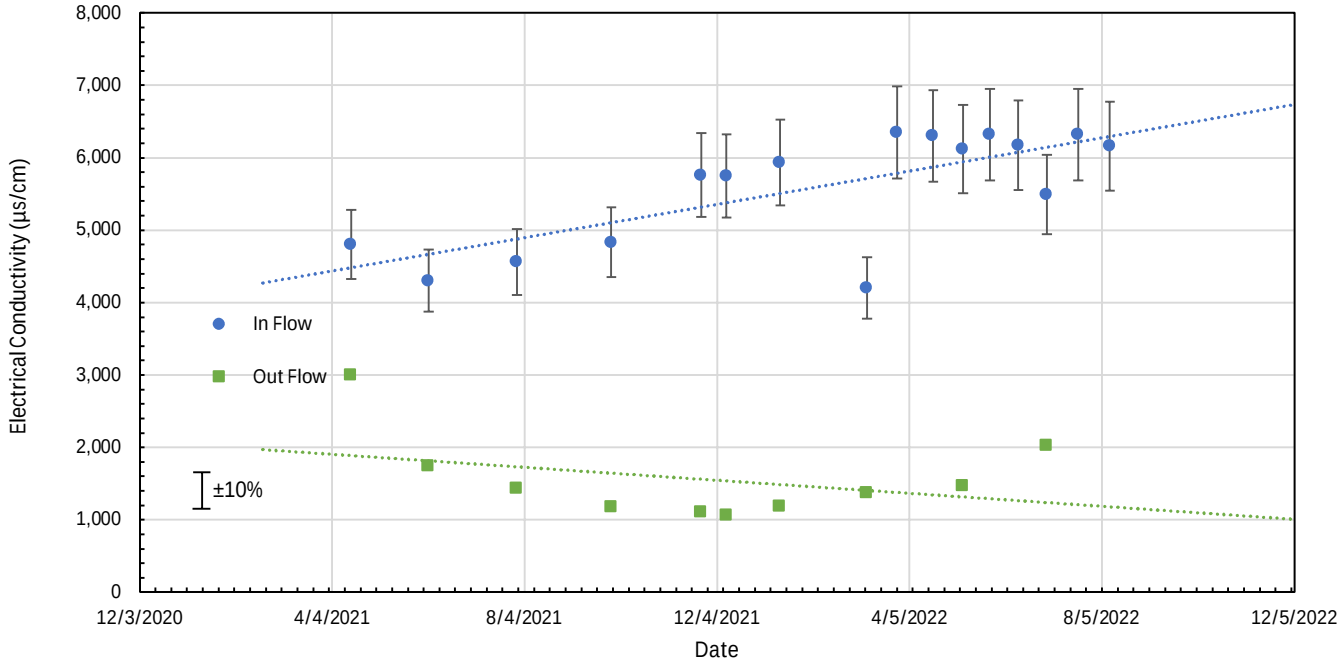
Figure 4



B2-ST-1 (20-22 ft bgs) Electrical Conductivity (EC) with Time

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Figure

5

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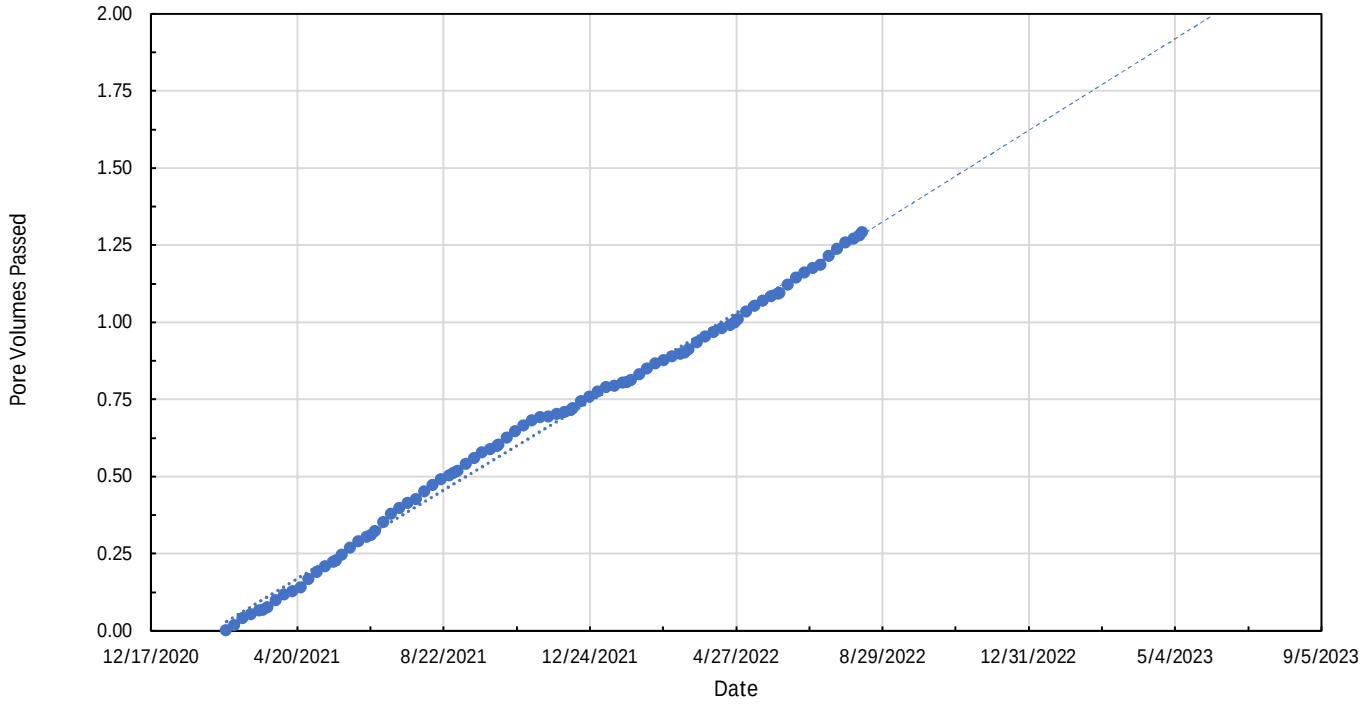

B4-ST-2 (40-42 ft bgs) PV of Flow with Time

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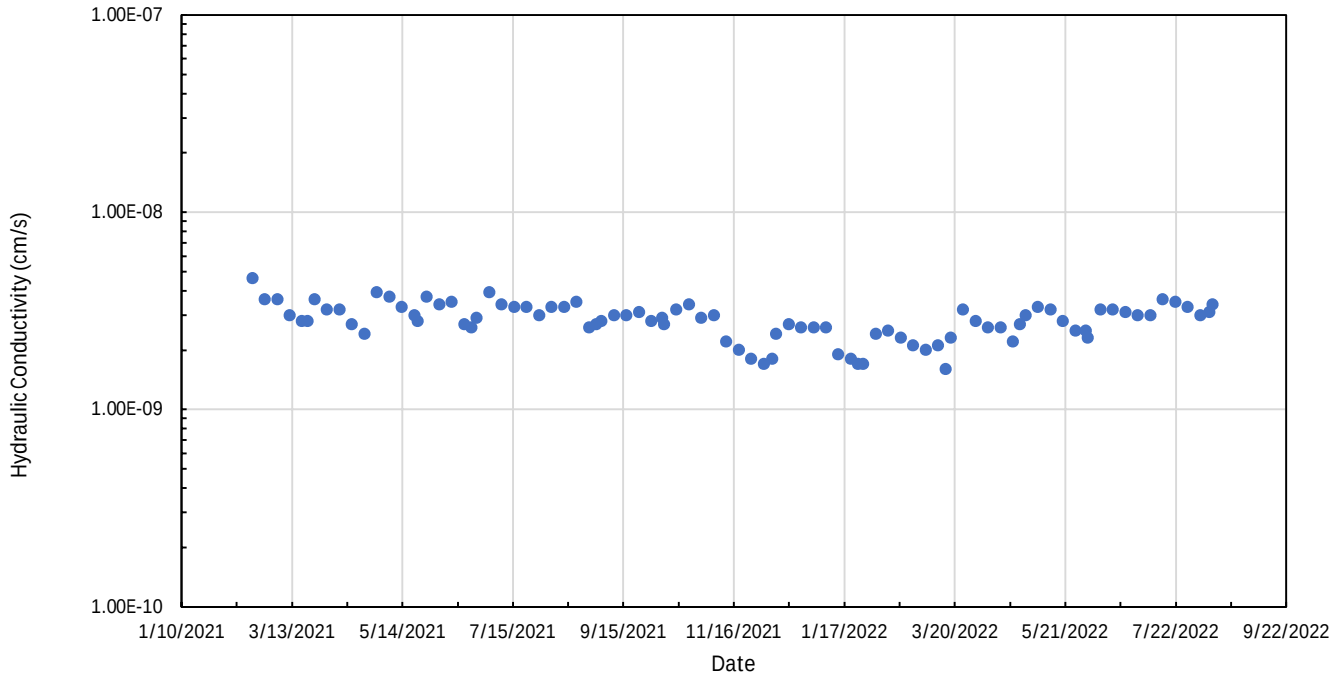
Figure 6



B4-ST-2 (40-42 ft bgs) Hydraulic Conductivity with Time

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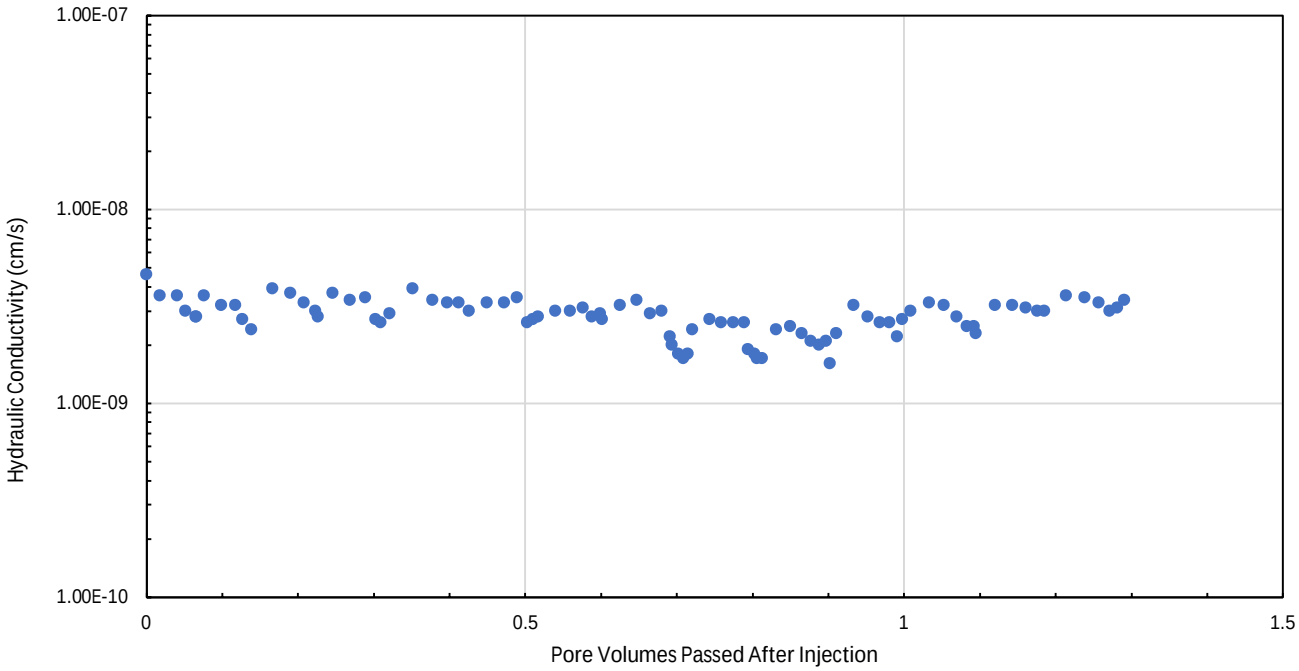
Figure 7



B4-ST-2 (40-42 ft bgs) Hydraulic Conductivity with PV

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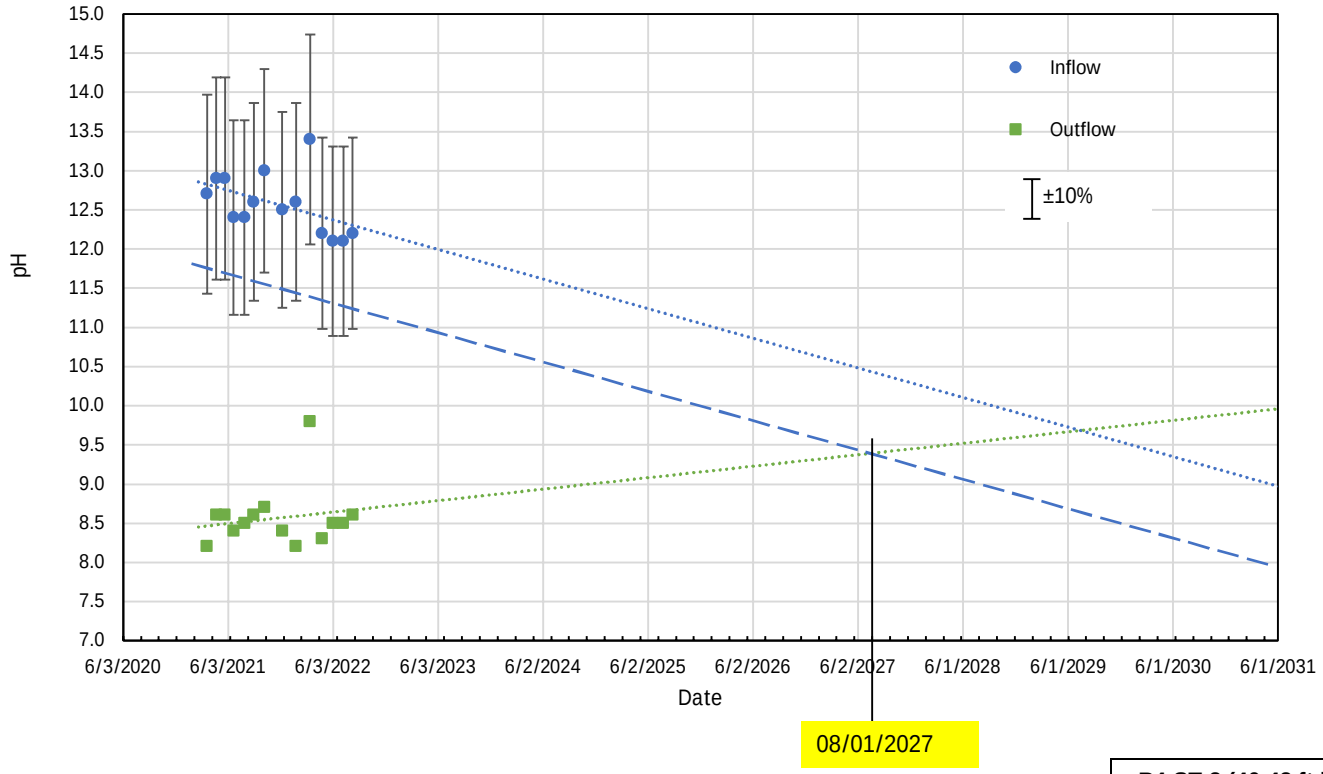
Figure 8



B4-ST-2 (40-42 ft bgs) pH of Inflow and Outflow with Time

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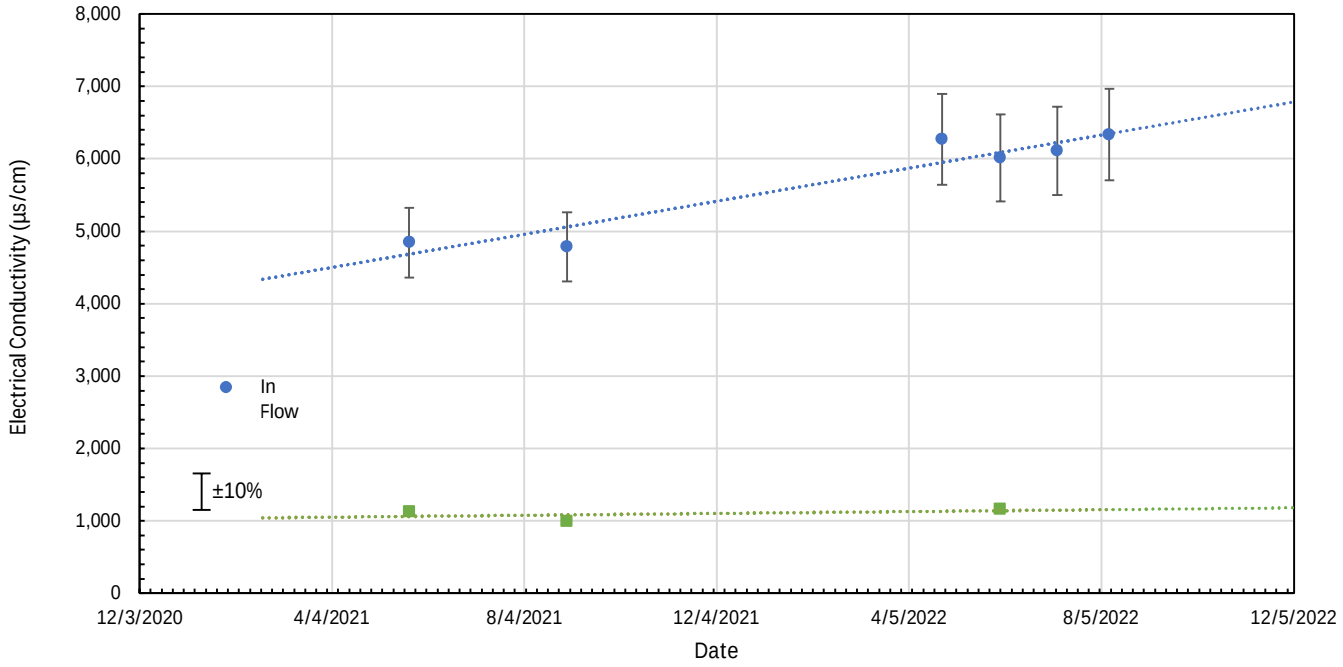
Figure 9



B4-ST-2 (40-42 ft bgs) Electrical Conductivity (EC) with Time

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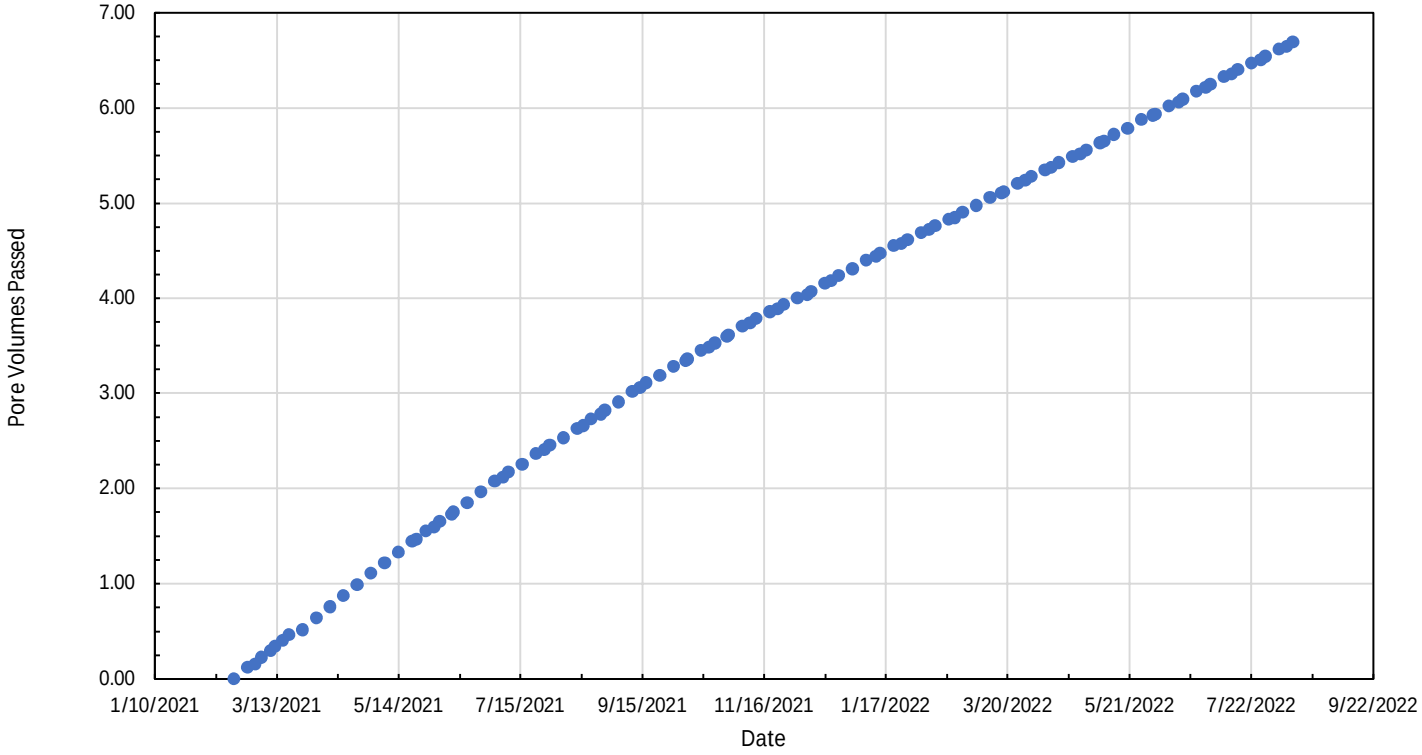
Figure 10



B4-ST-4 (70-72.5 ft bgs) PV of Flow with Time

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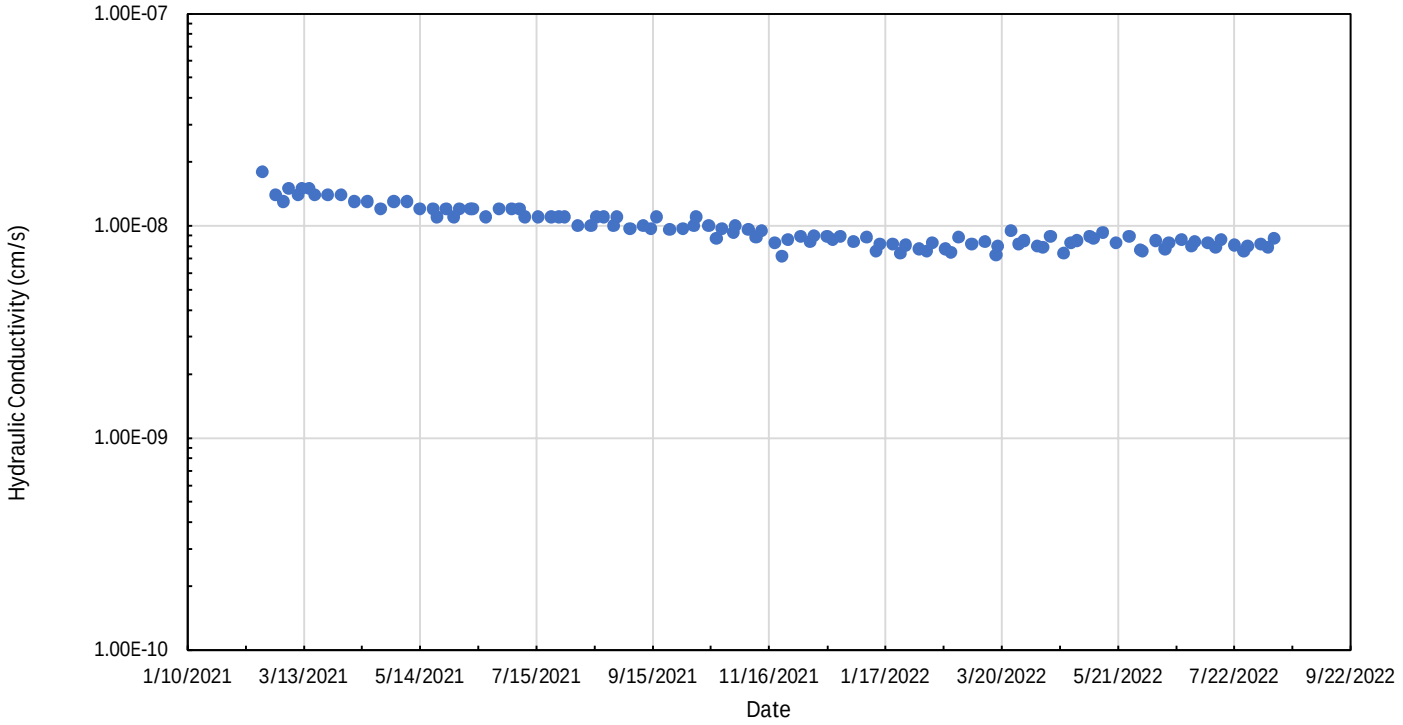
Figure

11



B4-ST-4 (70-72.5 ft bgs) Hydraulic Conductivity with Time

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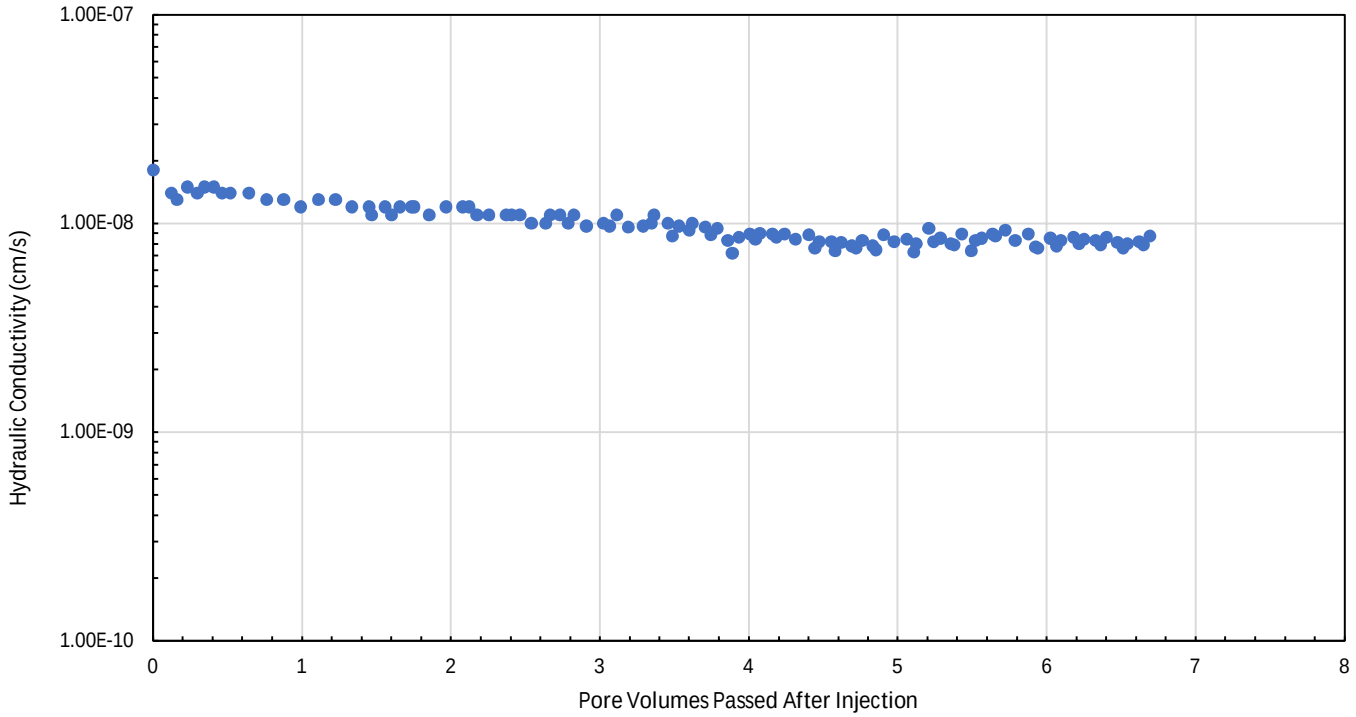
Figure 12



B4-ST-4 (70-72.5 ft bgs) Hydraulic Conductivity with PV

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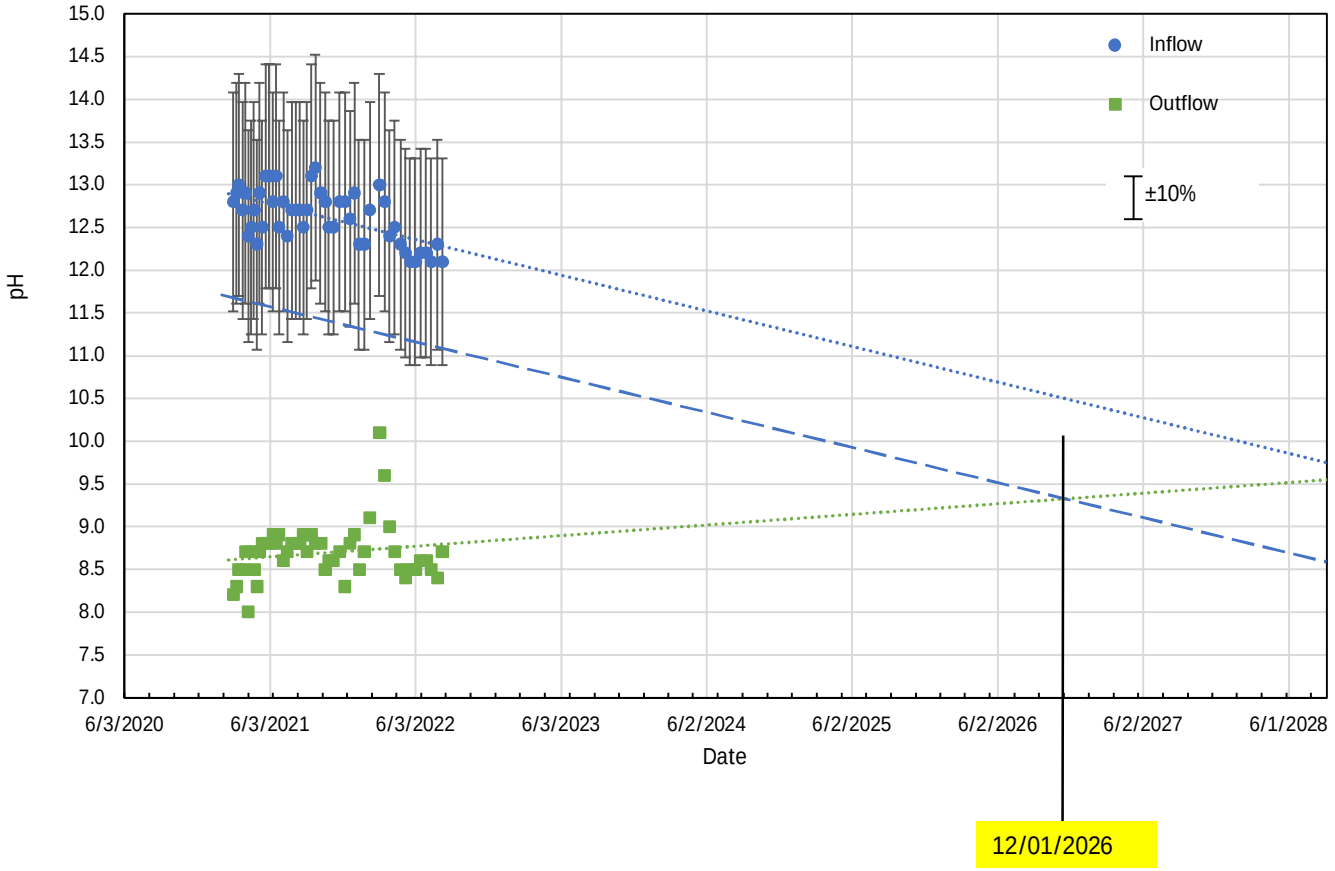
Figure 13



B4-ST-4 (70-72.5 ft bgs) pH of Inflow and Outflow with Time

MONROE POWER PLANT
MONROE, MICHIGAN

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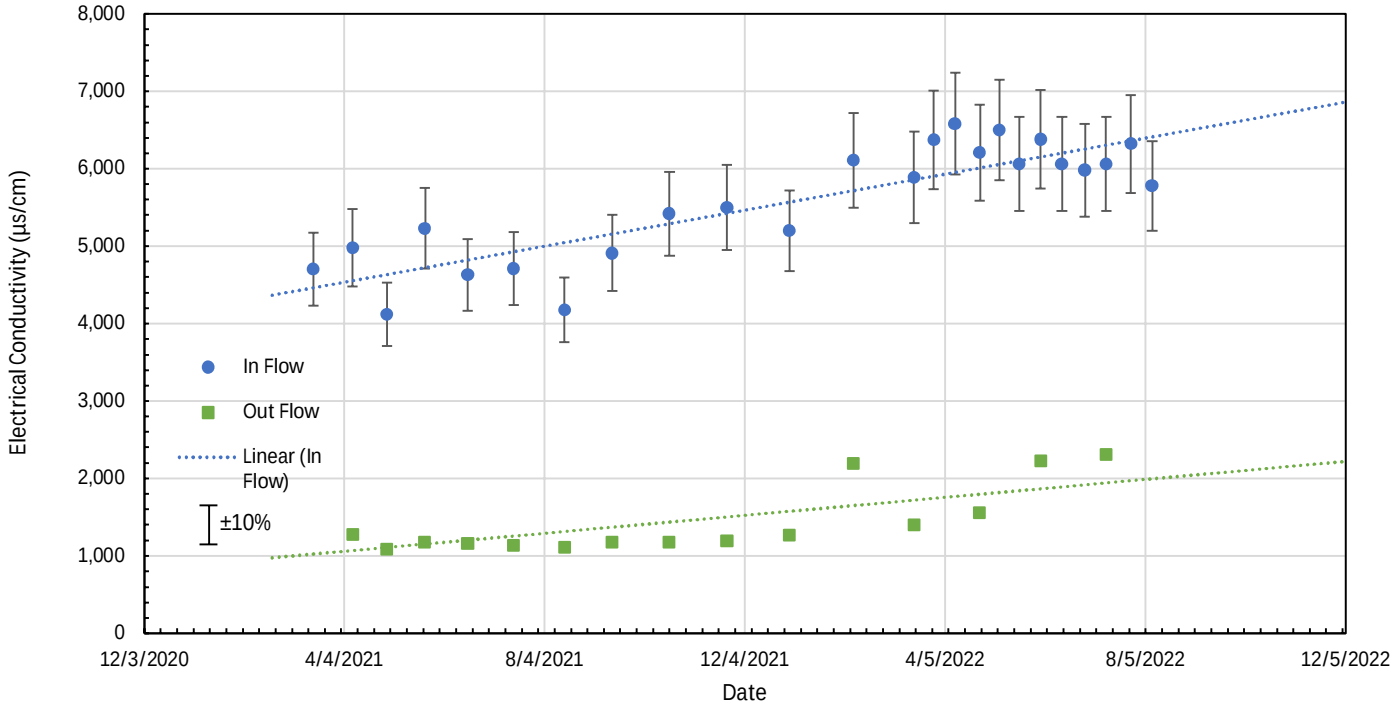
Figure 14



B4-ST-4 (70-72.5 ft bgs) Electrical Conductivity (EC) with Time

MONROE POWER PLANT
MONROE, MICHIGAN

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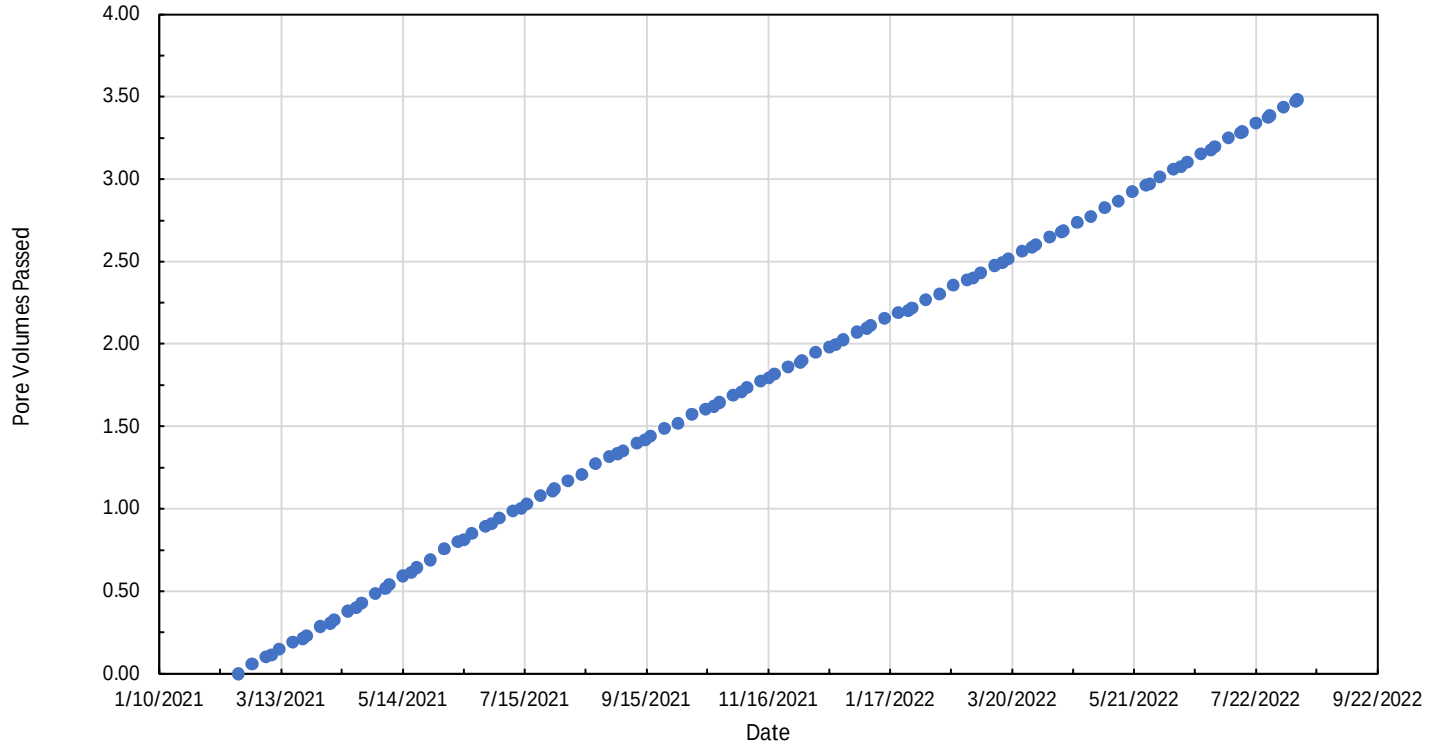
Figure 15



B6-ST-1 (25-27 ft bgs) PV of Flow with Time

MONROE POWER PLANT
MONROE, MICHIGAN

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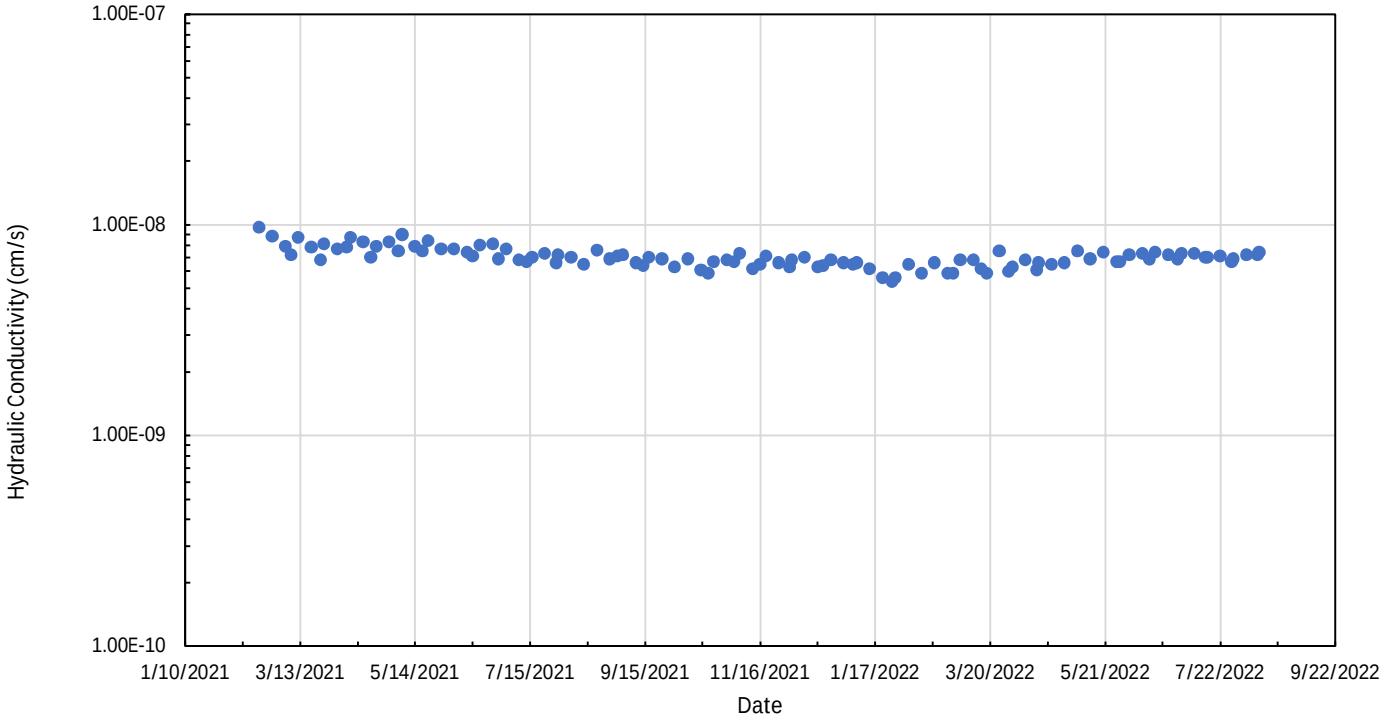
Figure 16



B6-ST-1 (25-27 ft bgs) Hydraulic Conductivity with Time

MONROE POWER PLANT
MONROE, MICHIGAN

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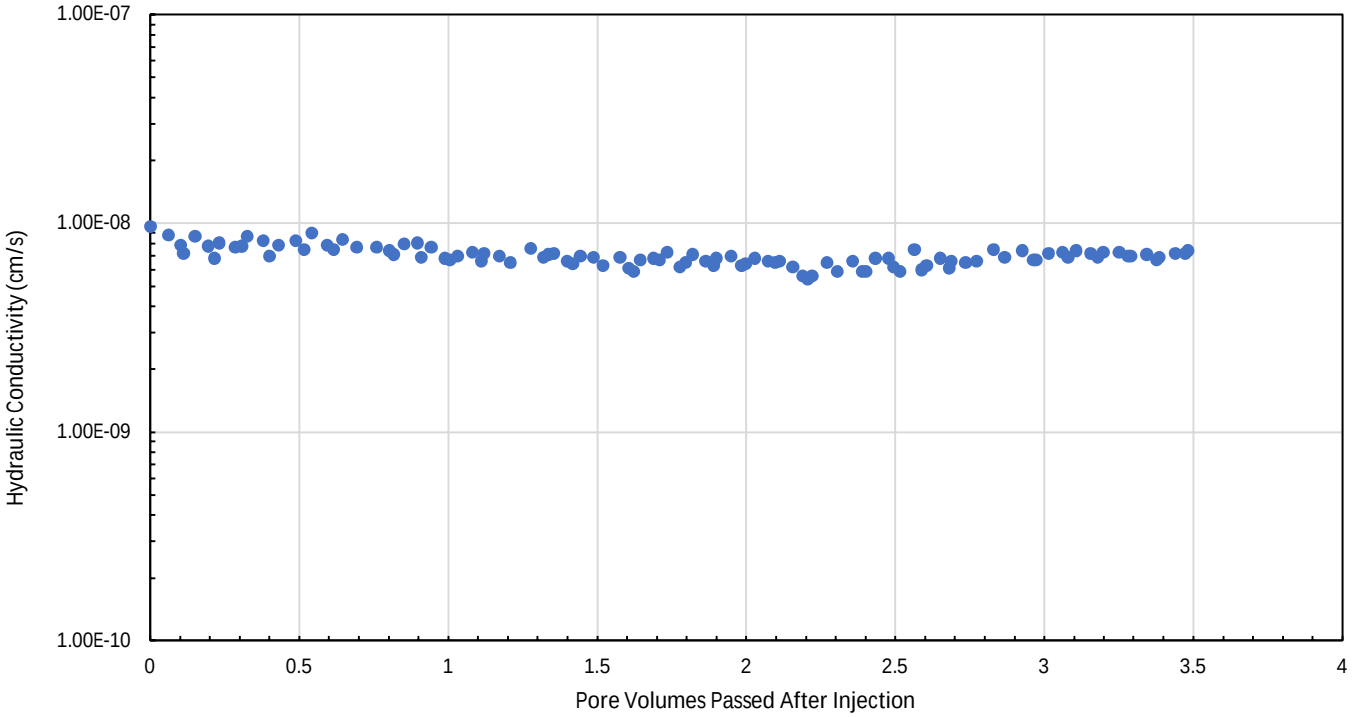
Figure 17



B6-ST-1 (25-27 ft bgs) Hydraulic Conductivity with PV

MONROE POWER PLANT
MONROE, MICHIGAN

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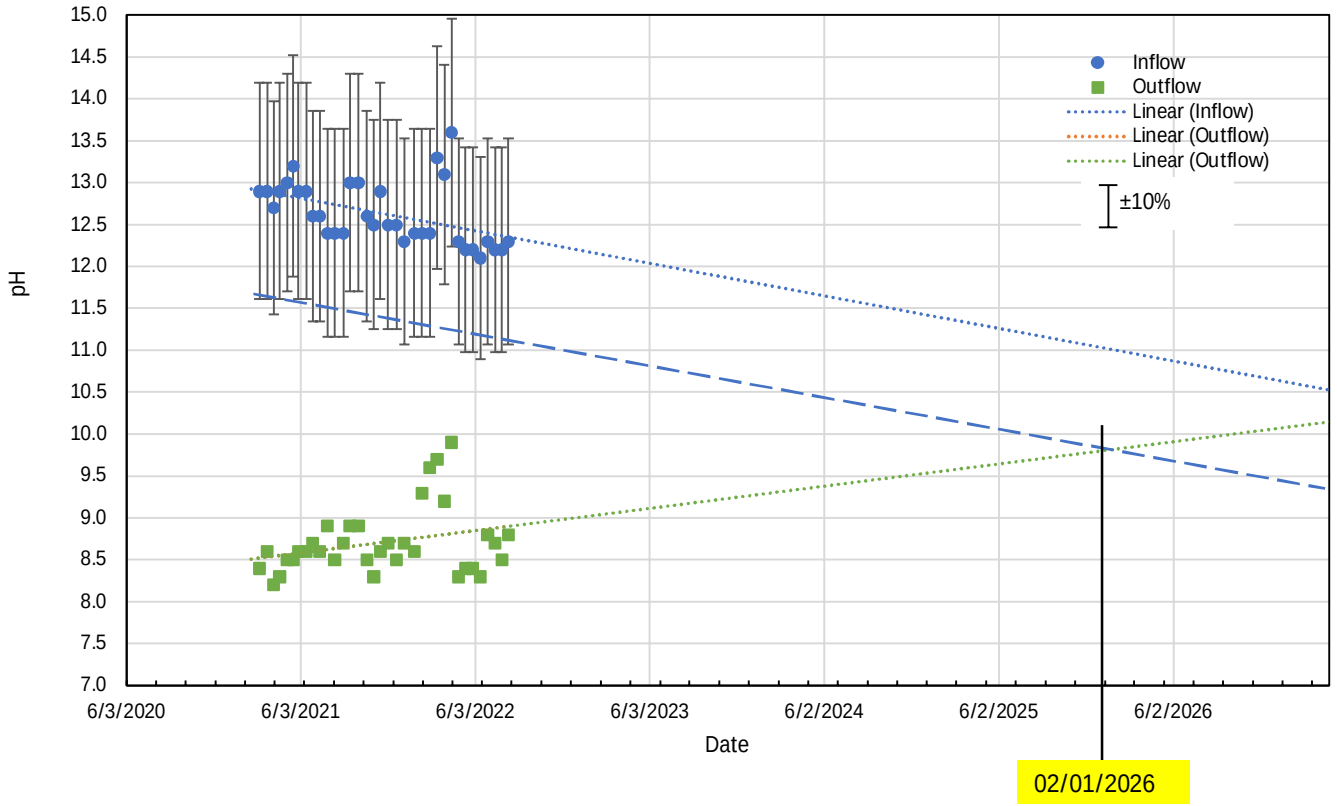
Figure 18



B6-ST-1 (25-27 ft bgs) pH of Inflow and Outflow with Time

MONROE POWER PLANT
MONROE, MICHIGAN

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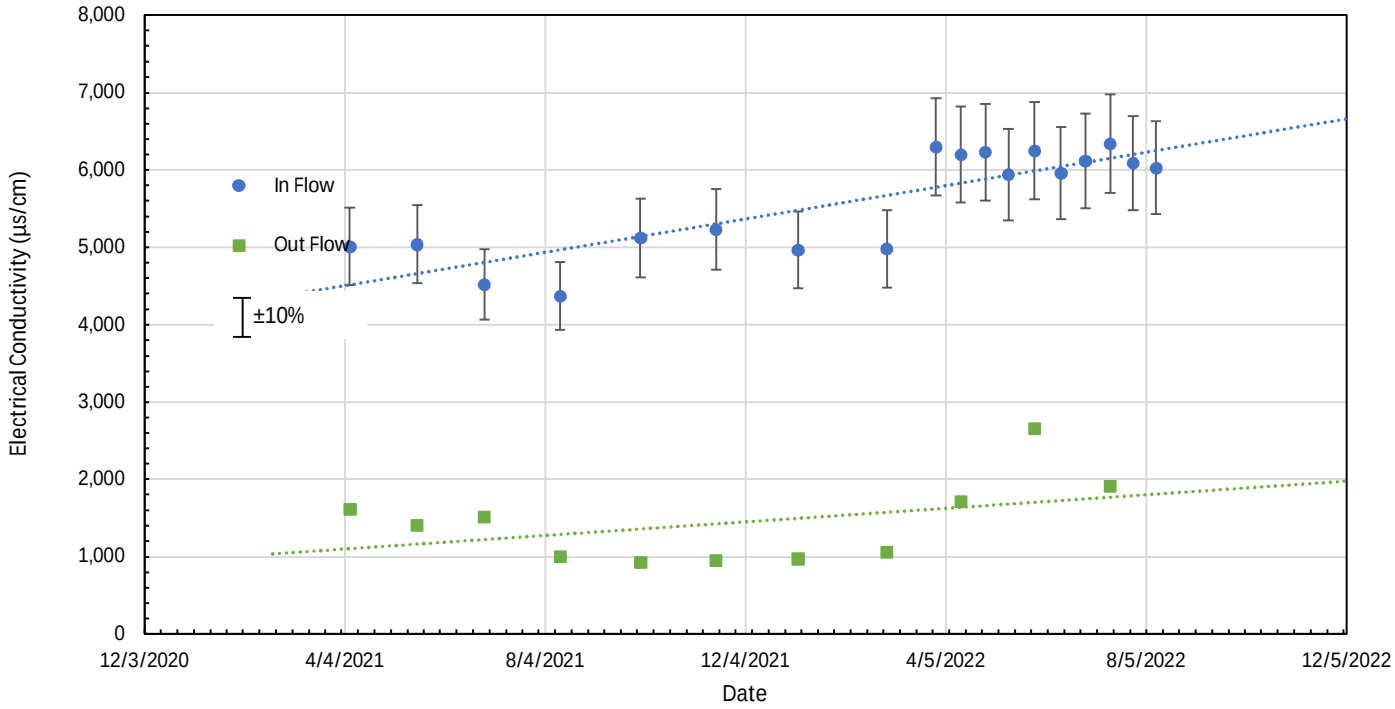
Figure 19



B6-ST-1 (25-27 ft bgs) Electrical Conductivity (EC) with Time

MONROE POWER PLANT
MONROE, MICHIGAN

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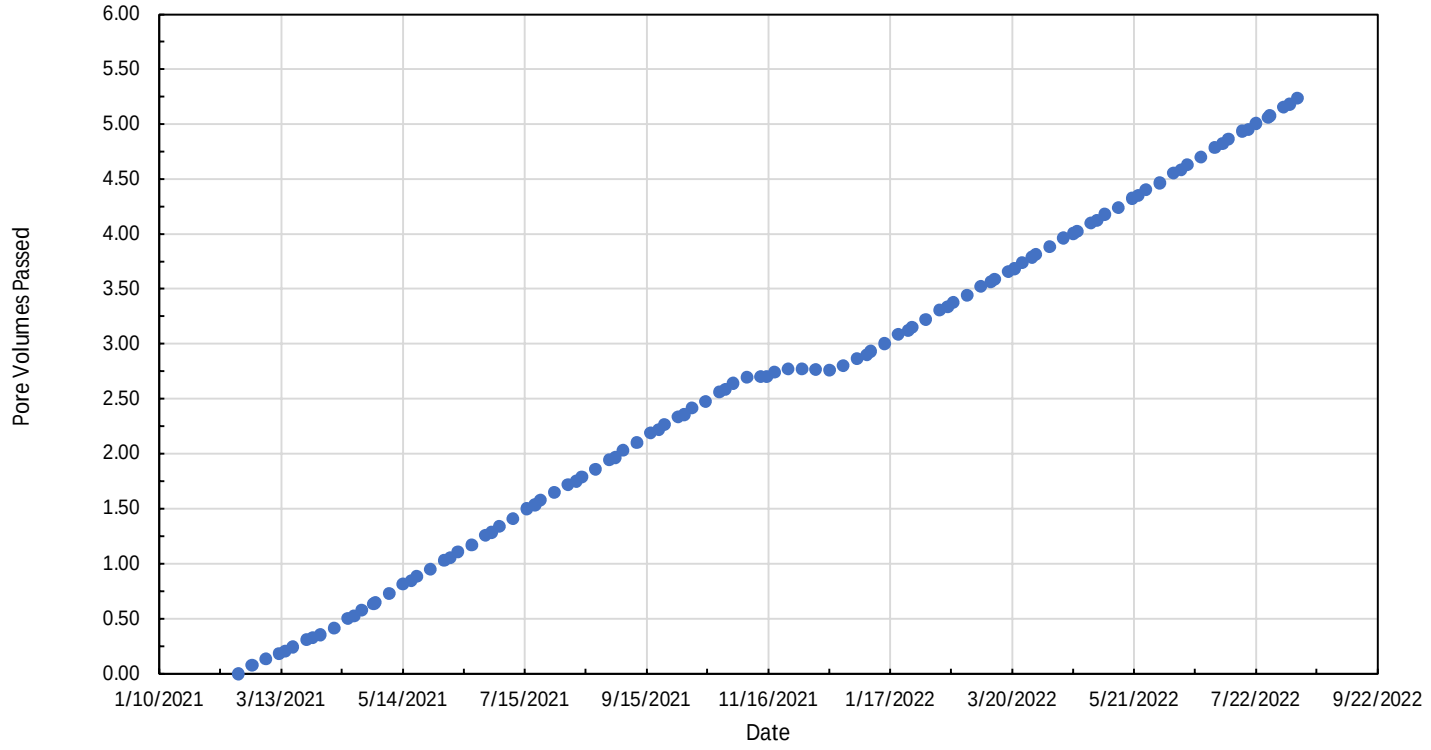
Figure 20



B6-ST-3 (55-57.5 ft bgs) PV of Flow with Time

MONROE POWER PLANT
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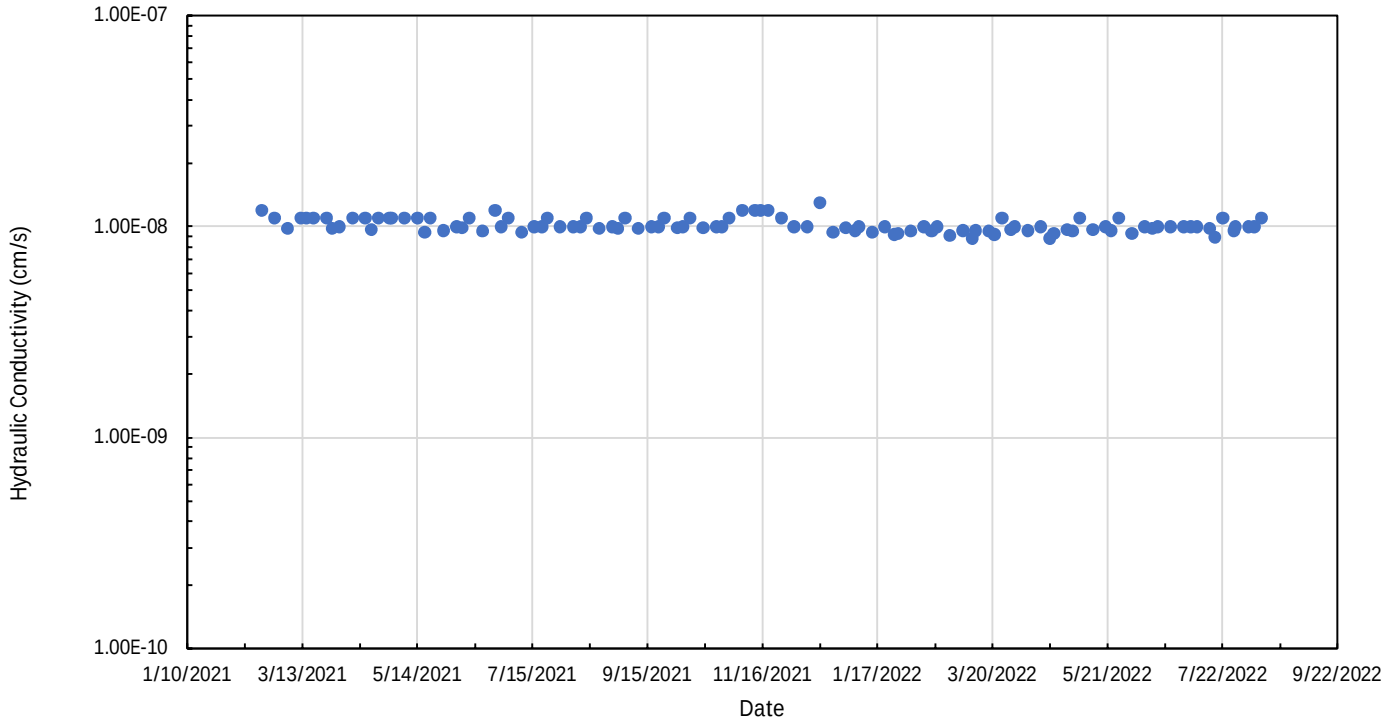
Figure

21



B6-ST-3 (55-57.5 ft bgs) Hydraulic Conductivity with Time

MONROE POWER PLANT
MONROE, MICHIGAN

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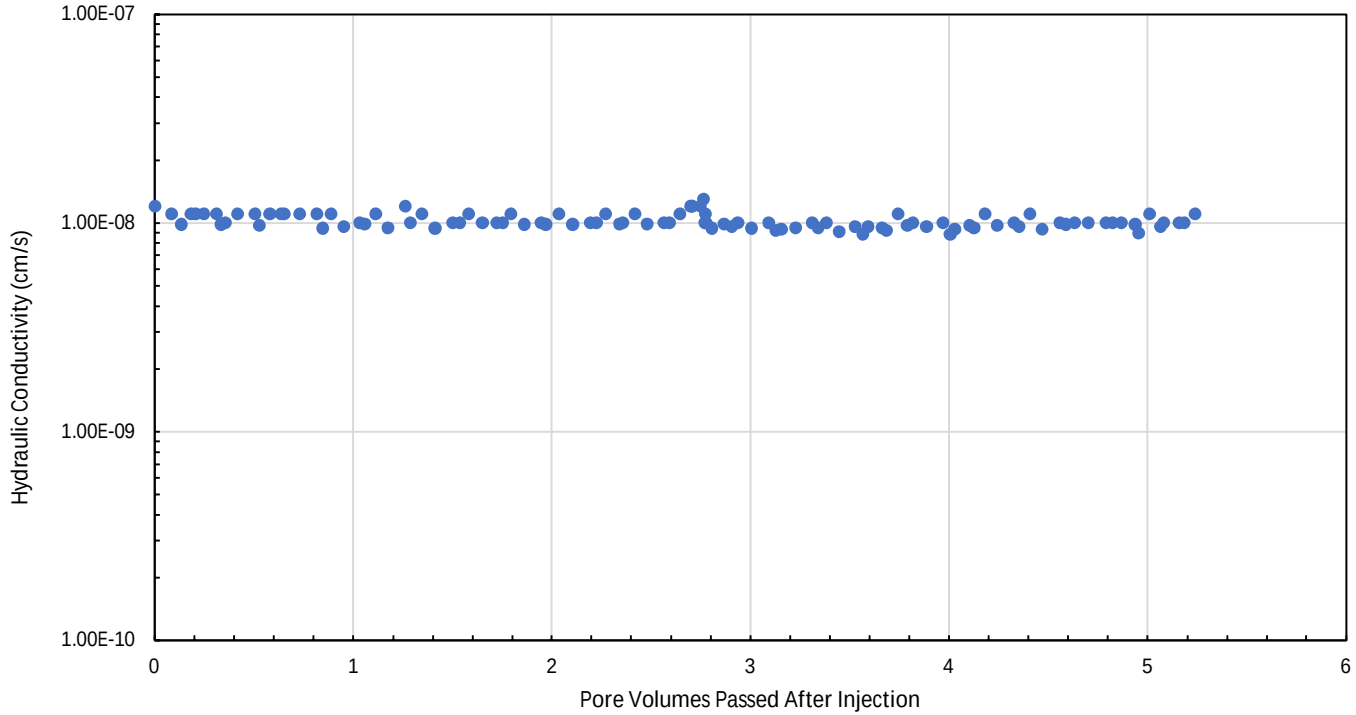
Figure 22



B6-ST-3 (55-57.5 ft bgs) Hydraulic Conductivity with PV

MONROE POWER PLANT
MONROE, MICHIGAN

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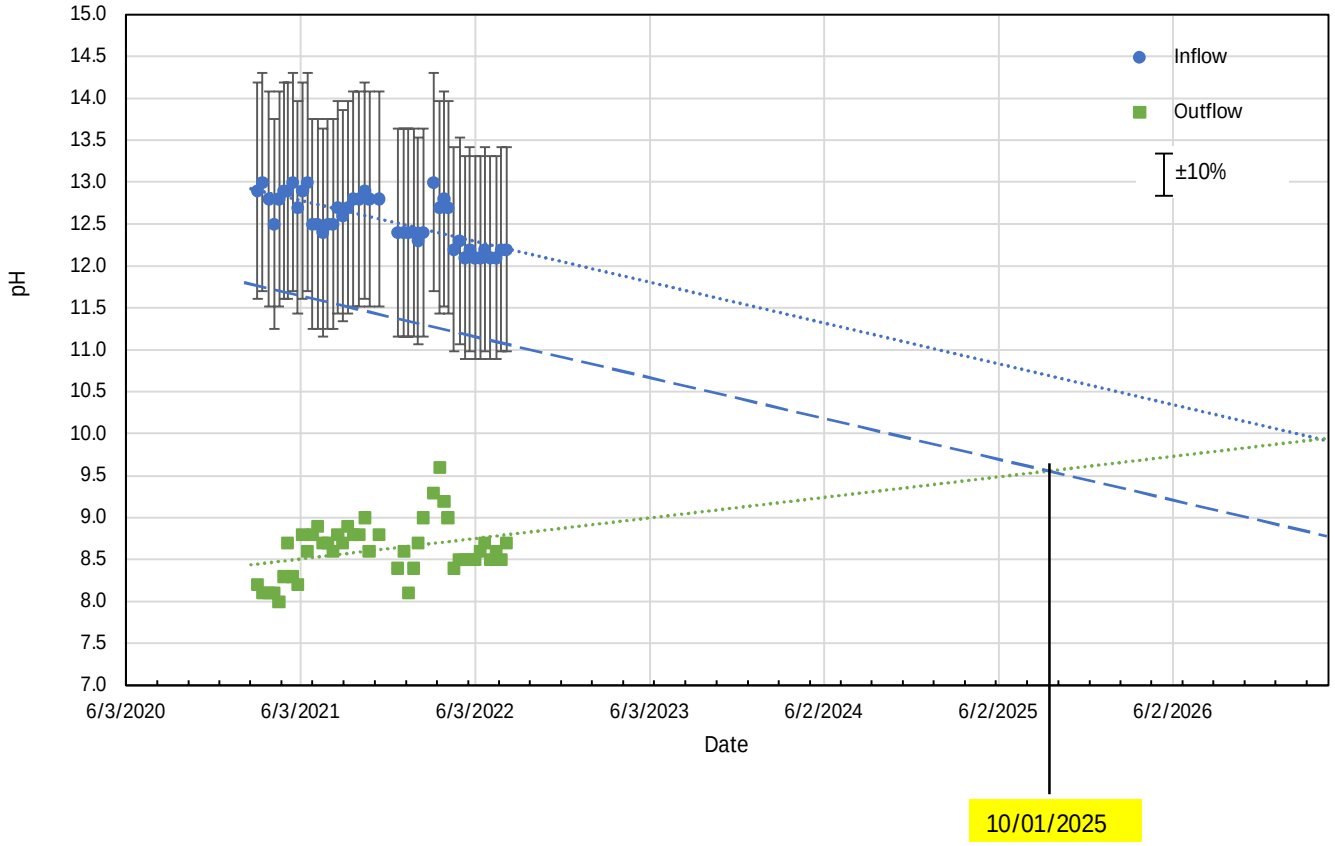
Figure 23



B6-ST-3 (55-57.5 ft bgs) pH of Inflow and Outflow with Time

MONROE POWER PLANT
MONROE, MICHIGAN

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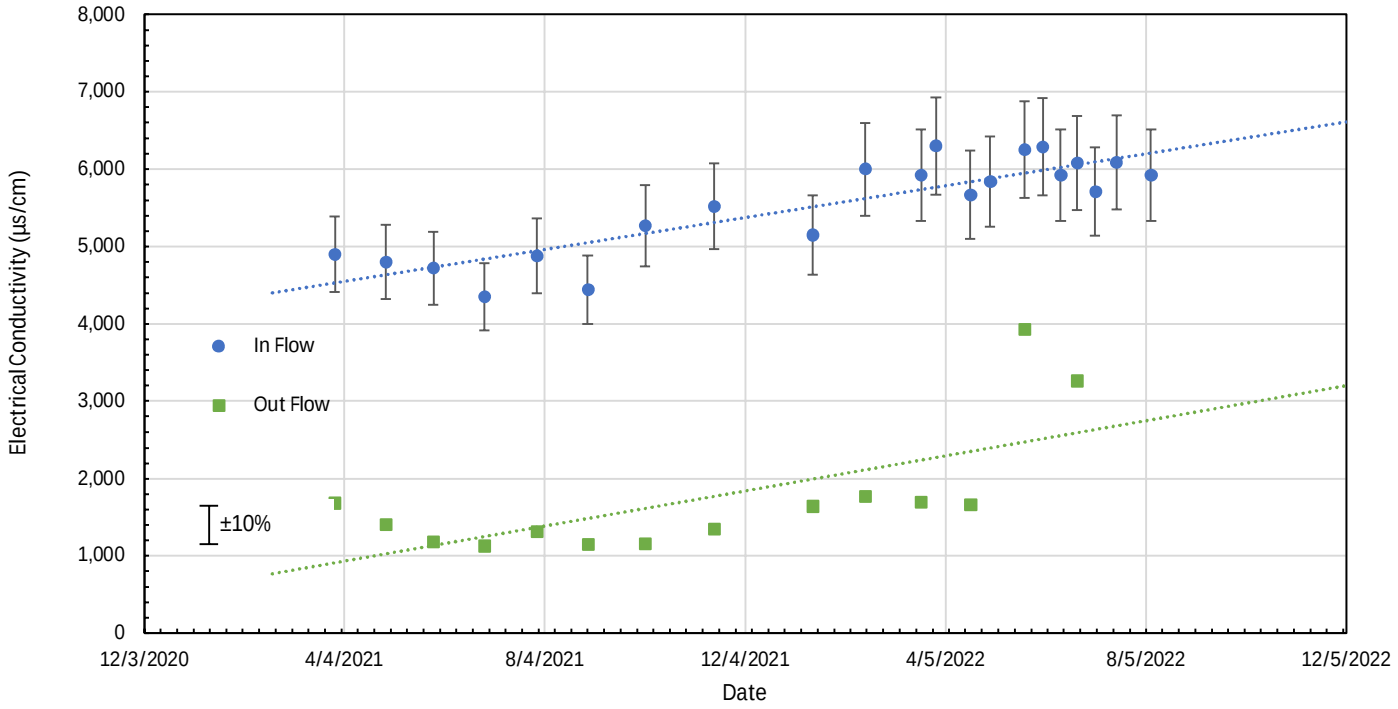
Figure 24



B6-ST-3 (55-57.5 ft bgs) Electrical Conductivity (EC) with Time

MONROE POWER PLANT
MONROE, MICHIGAN

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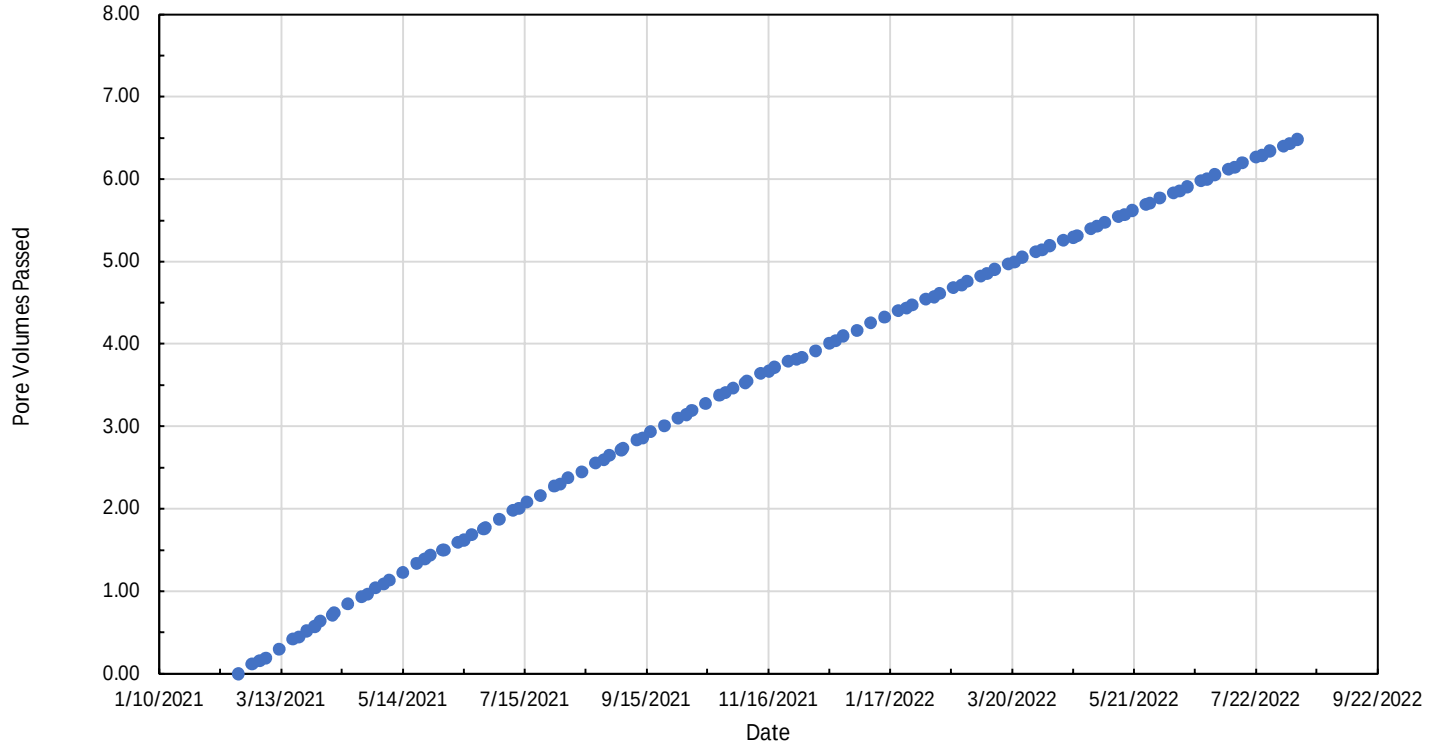
Figure 25



B6-ST-4 (65-67.5 ft bgs) PV of Flow with Time

MONROE POWER PLANT
MONROE, MICHIGAN

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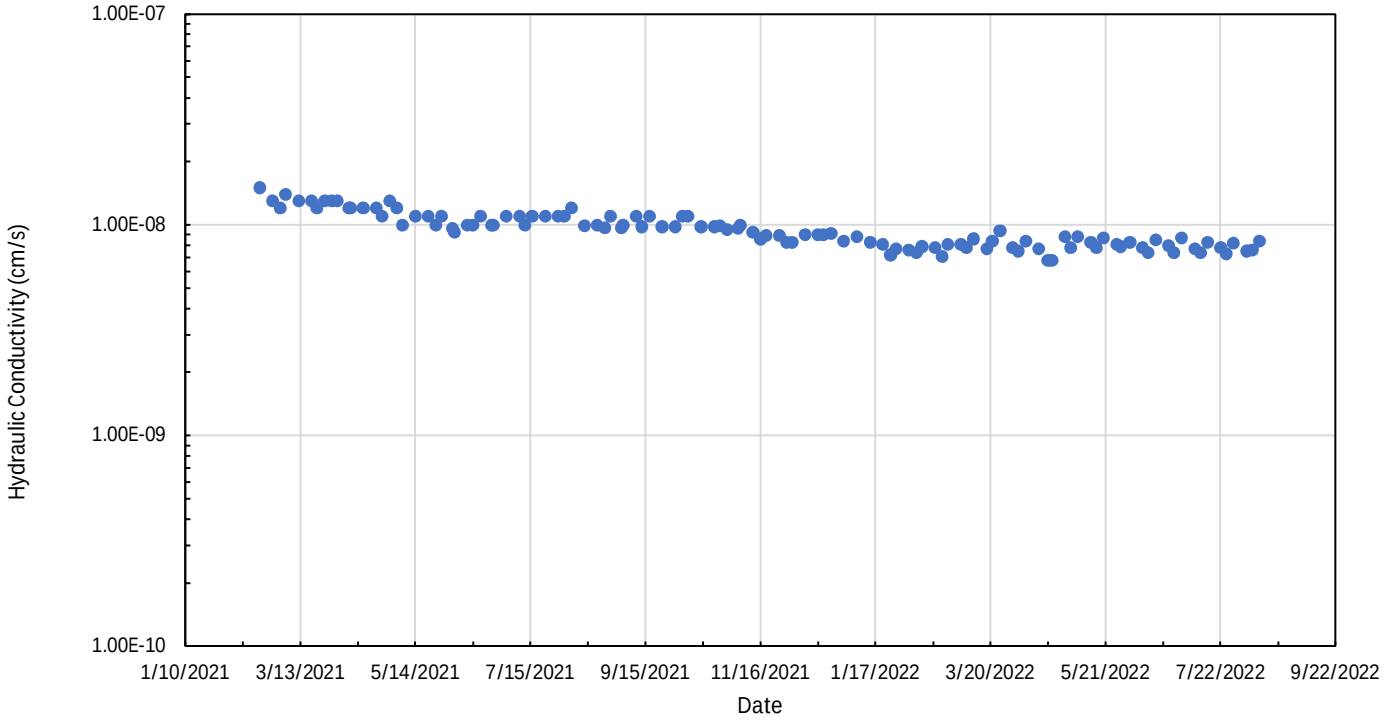
Figure

26



B6-ST-4 (65-67.5 ft bgs) Hydraulic Conductivity with Time

MONROE POWER PLANT
MONROE, MICHIGAN

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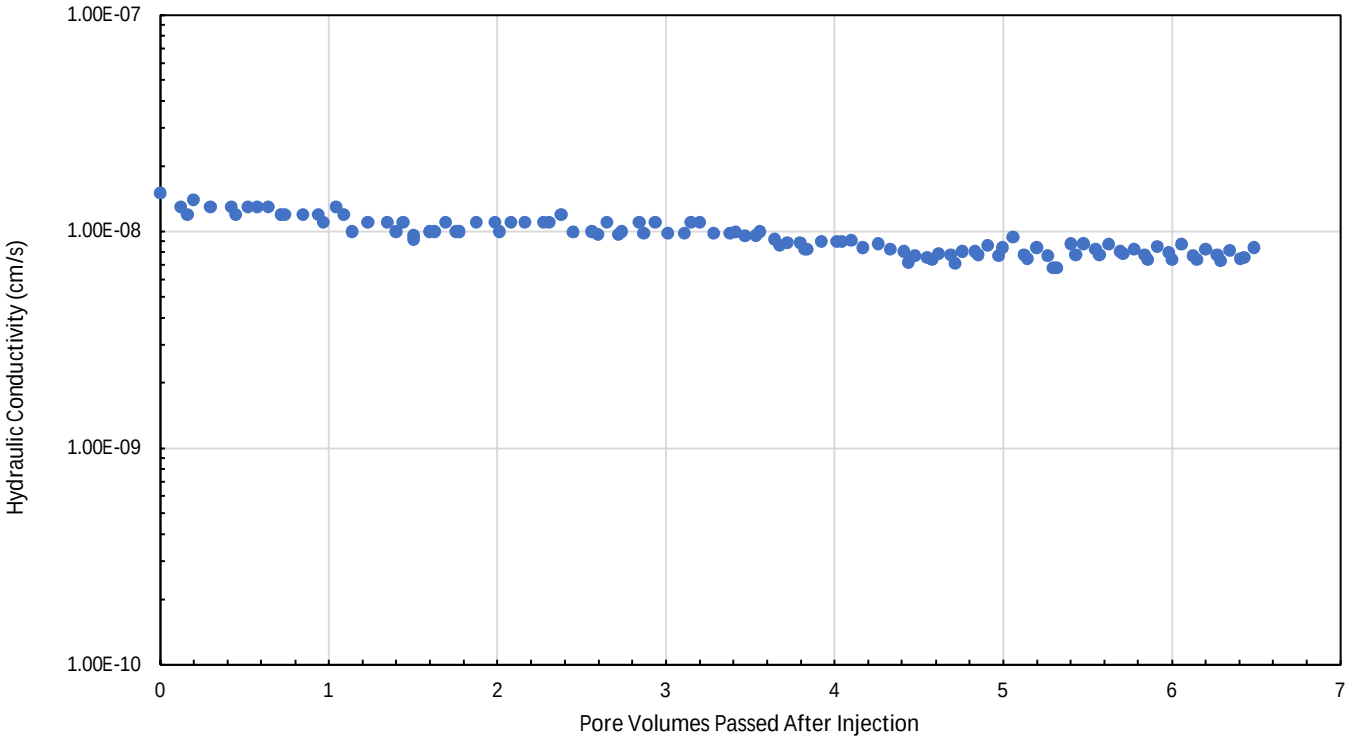
Figure 27



B6-ST-4 (65-67.5 ft bgs) Hydraulic Conductivity with PV

MONROE POWER PLANT
MONROE, MICHIGAN

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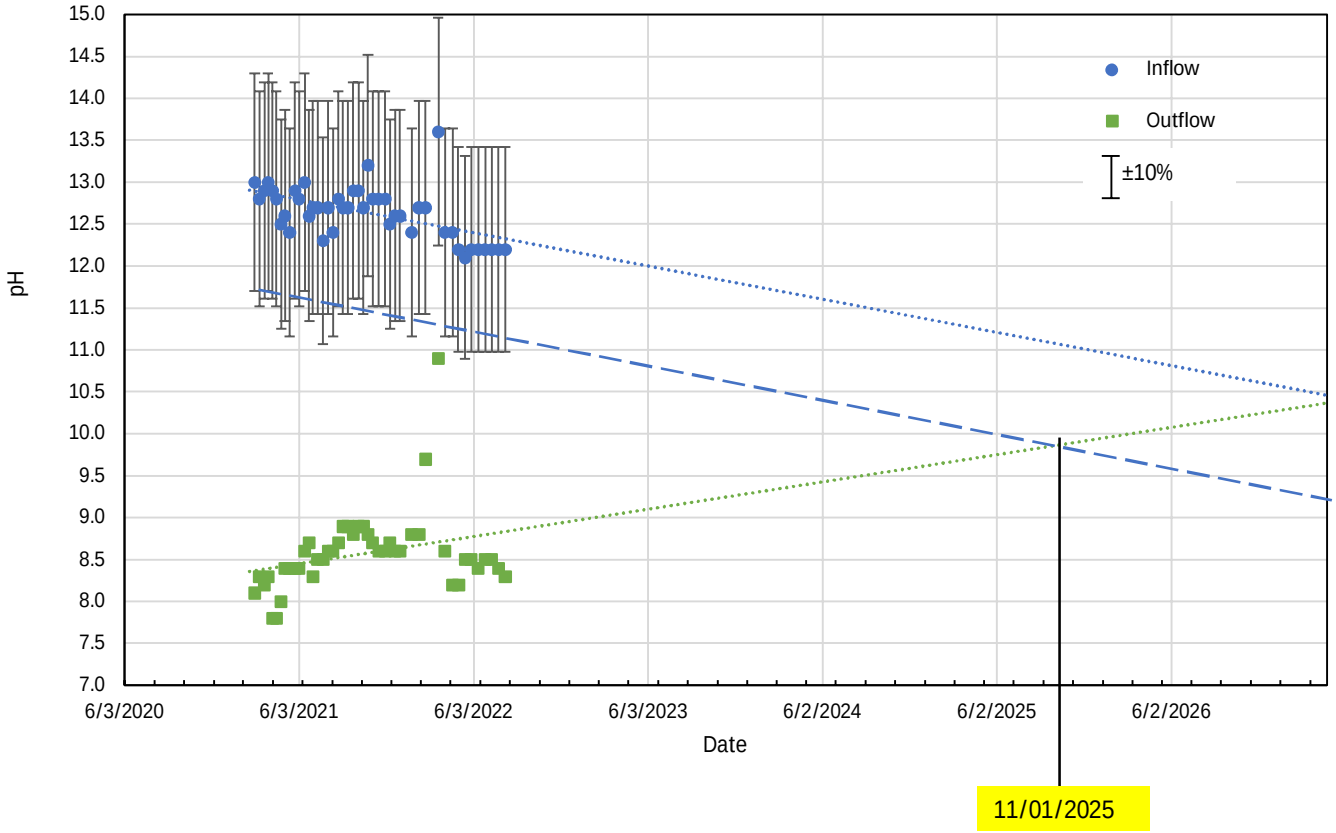
Figure 28



B6-ST-4 (65-67.5 ft bgs) pH of Inflow and Outflow with Time

MONROE POWER PLANT
MONROE, MICHIGAN

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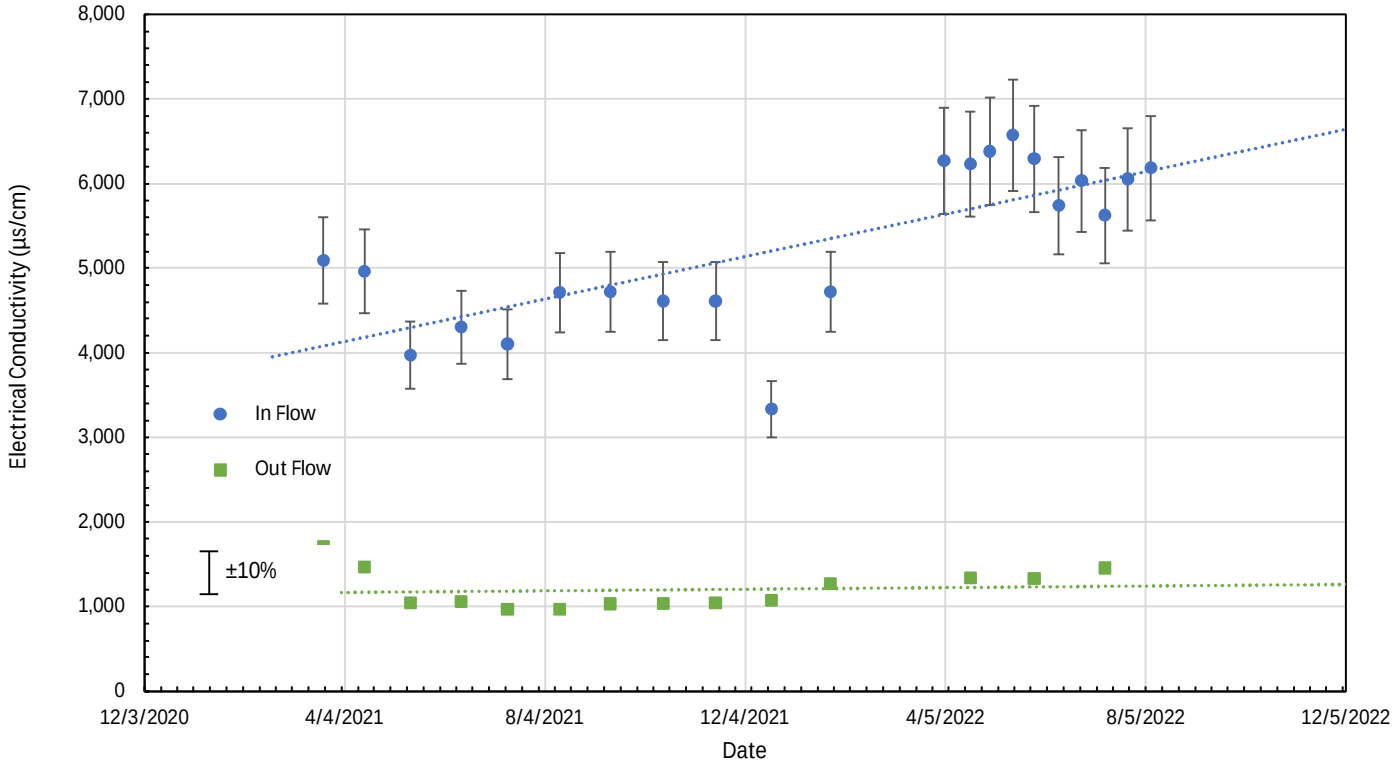
Figure 29



B6-ST-4 (65-67.5 ft bgs) Electrical Conductivity (EC) with Time

MONROE POWER PLANT
MONROE, MICHIGAN

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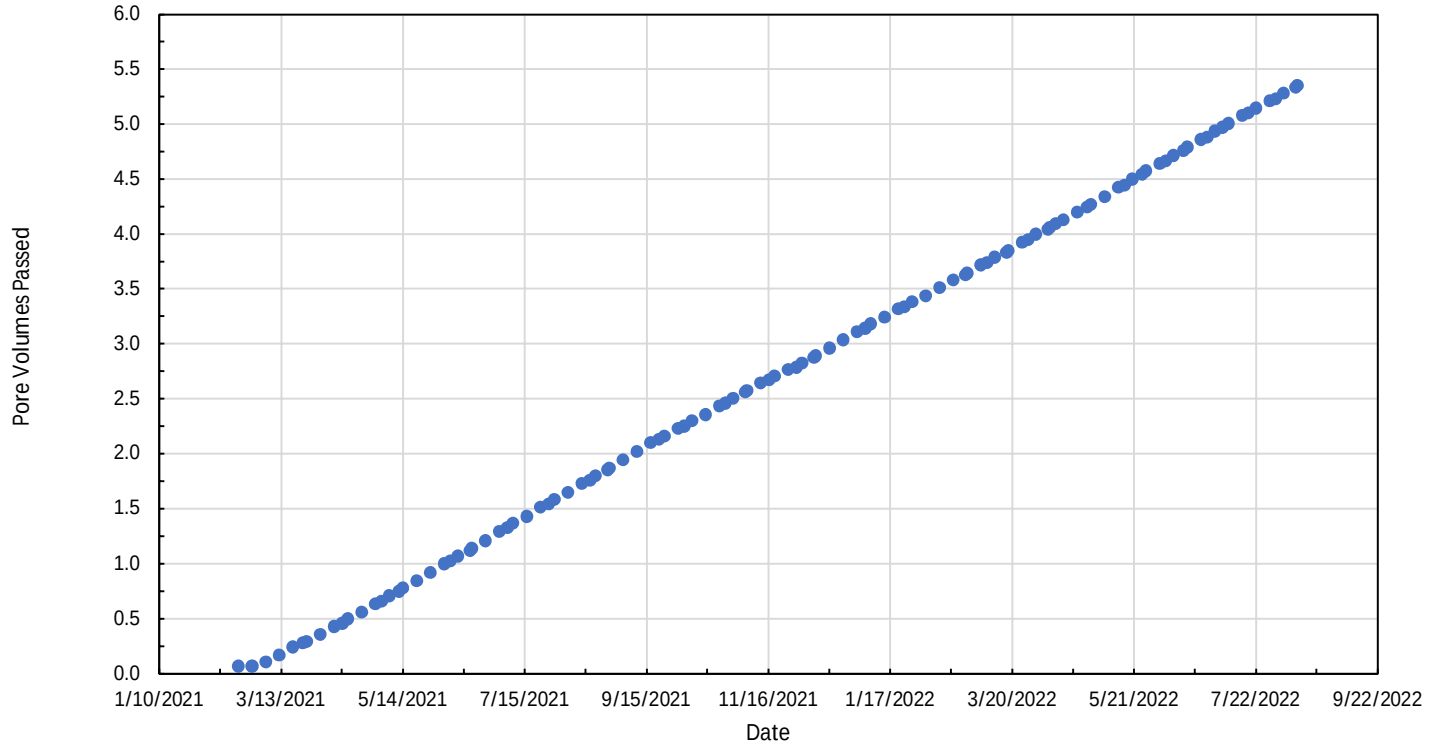
Figure 30



B9-ST-2 (40-42 ft bgs) PV of Flow with Time

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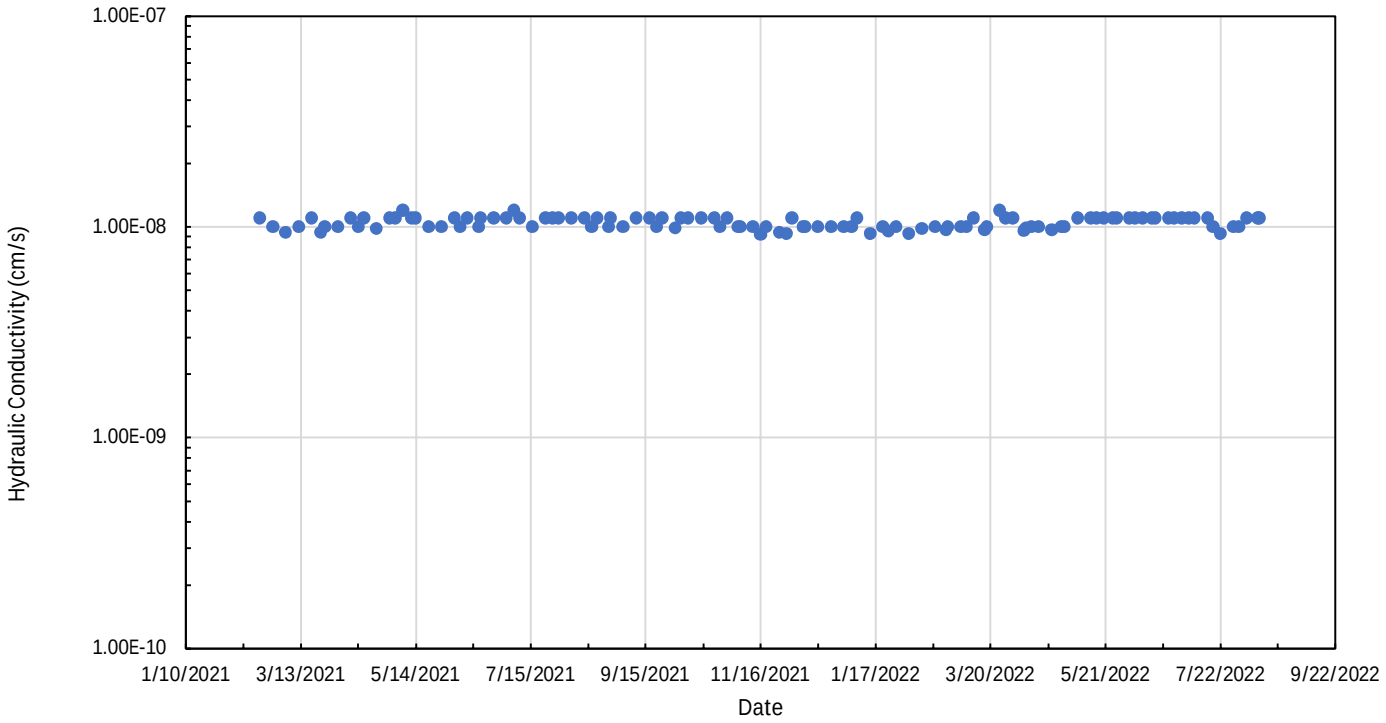
Figure

31



B9-ST-2 (40-42 ft bgs) Hydraulic Conductivity with Time

MONROE POWER PLANT
MONROE, MICHIGAN

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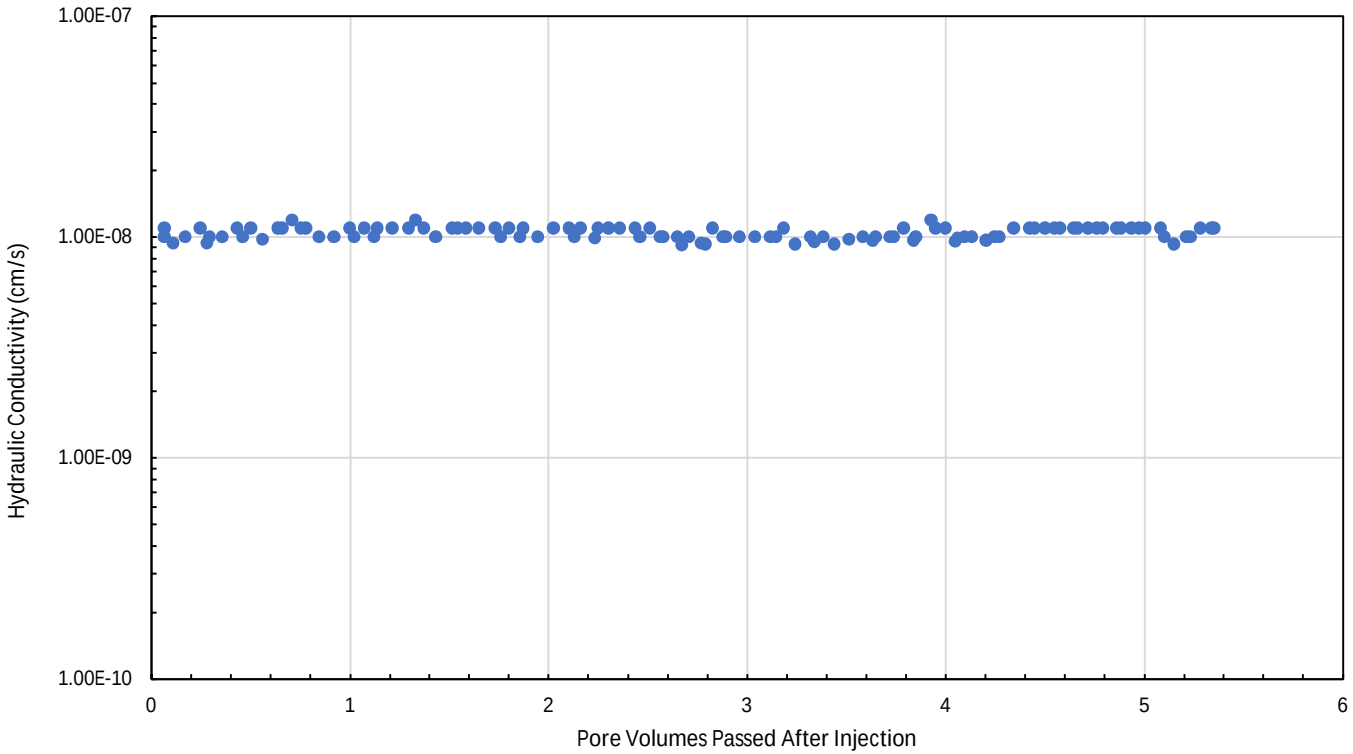
Figure 32



B9-ST-2 (40-42 ft bgs) Hydraulic Conductivity with PV

MONROE POWER PLANT
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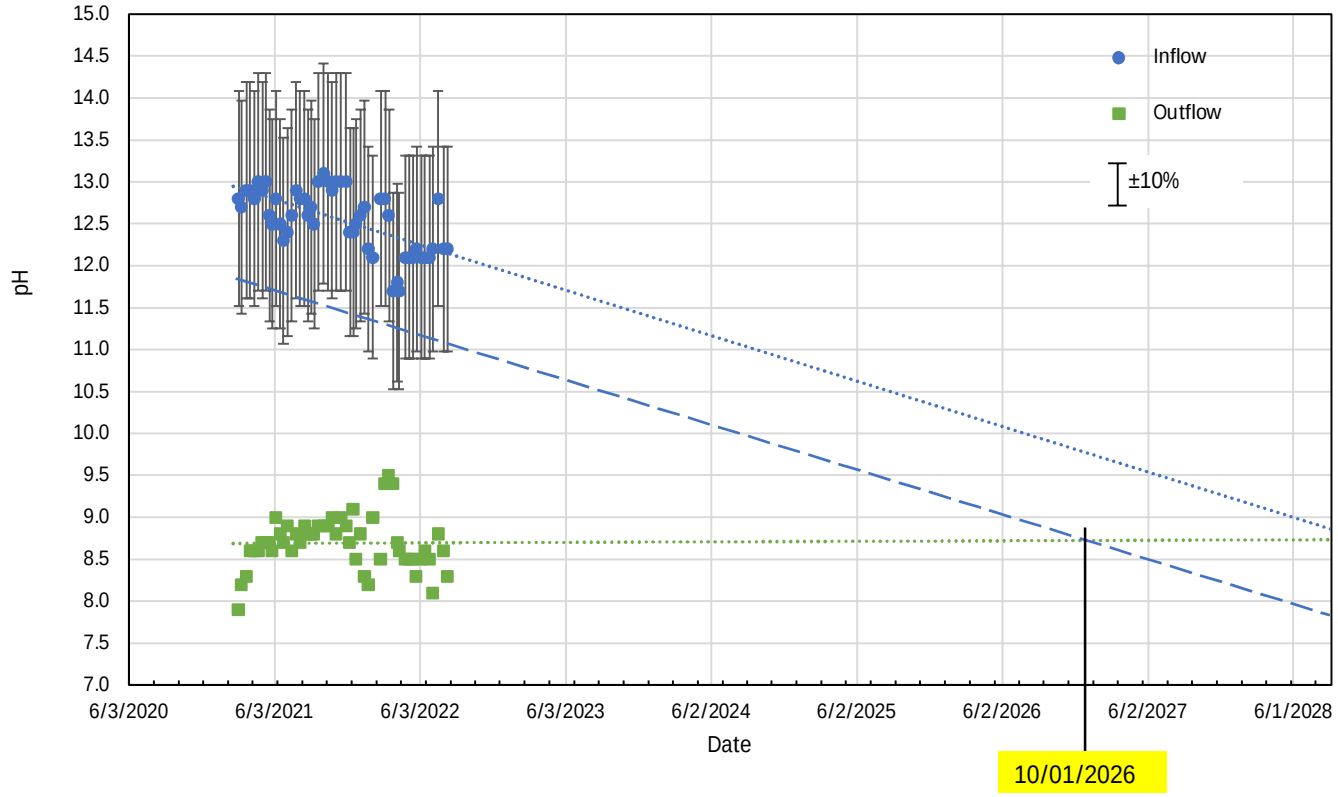
Figure 33



B9-ST-2 (40-42 ft bgs) pH of Inflow and Outflow with Time

MONROE POWER PLANT
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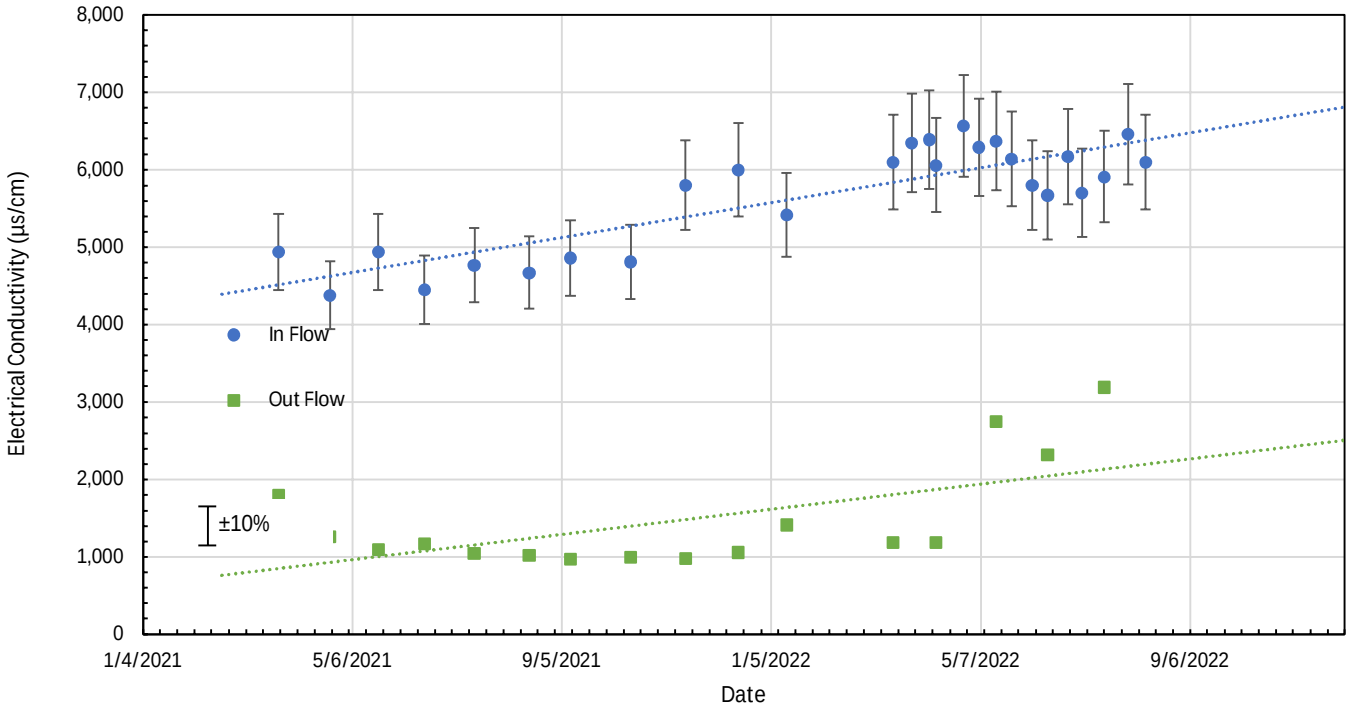
Figure 34



B9-ST-2 (40-42 ft bgs) Electrical Conductivity (EC) with Time

MONROE POWER PLANT
MONROE, MICHIGAN

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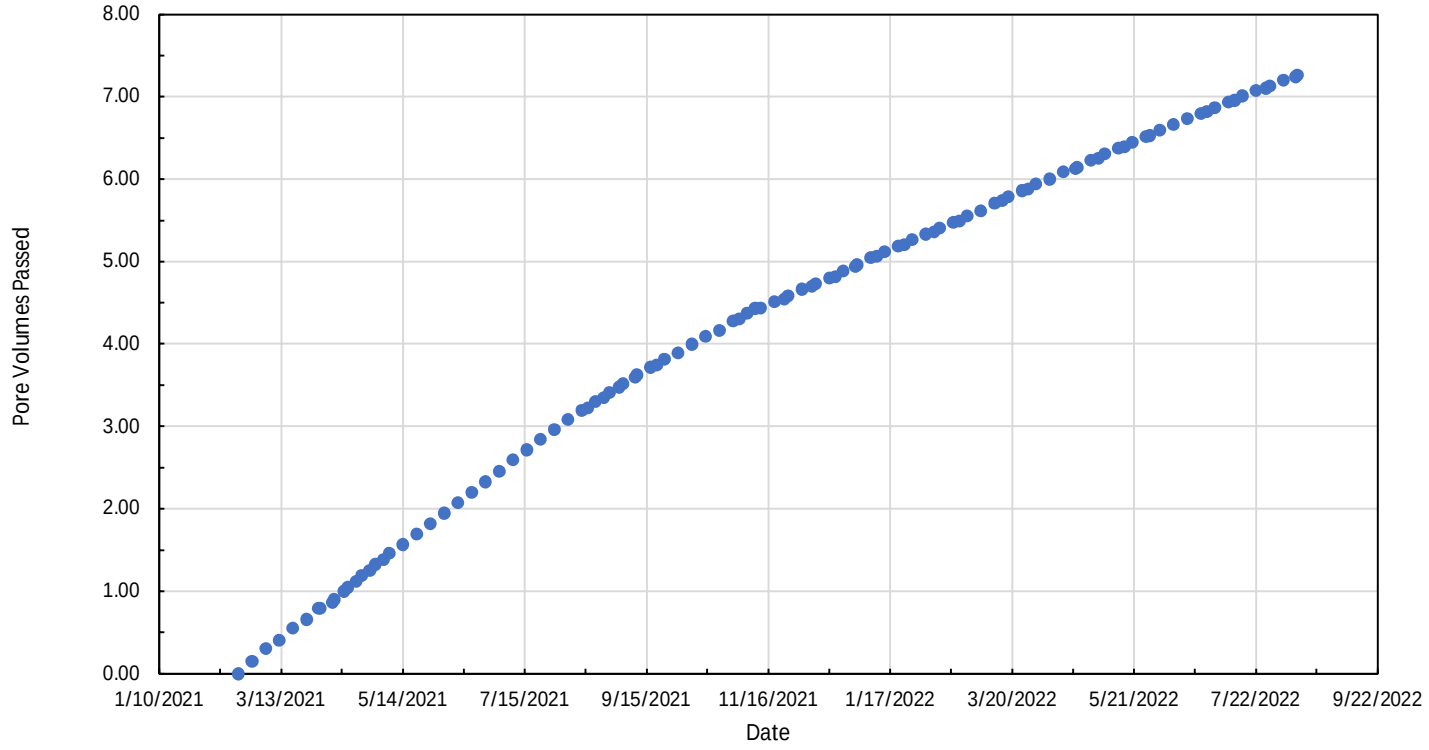
Figure 35



B9-ST-3 (55-57 ft bgs) PV of Flow with Time

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MONROE, MICHIGAN

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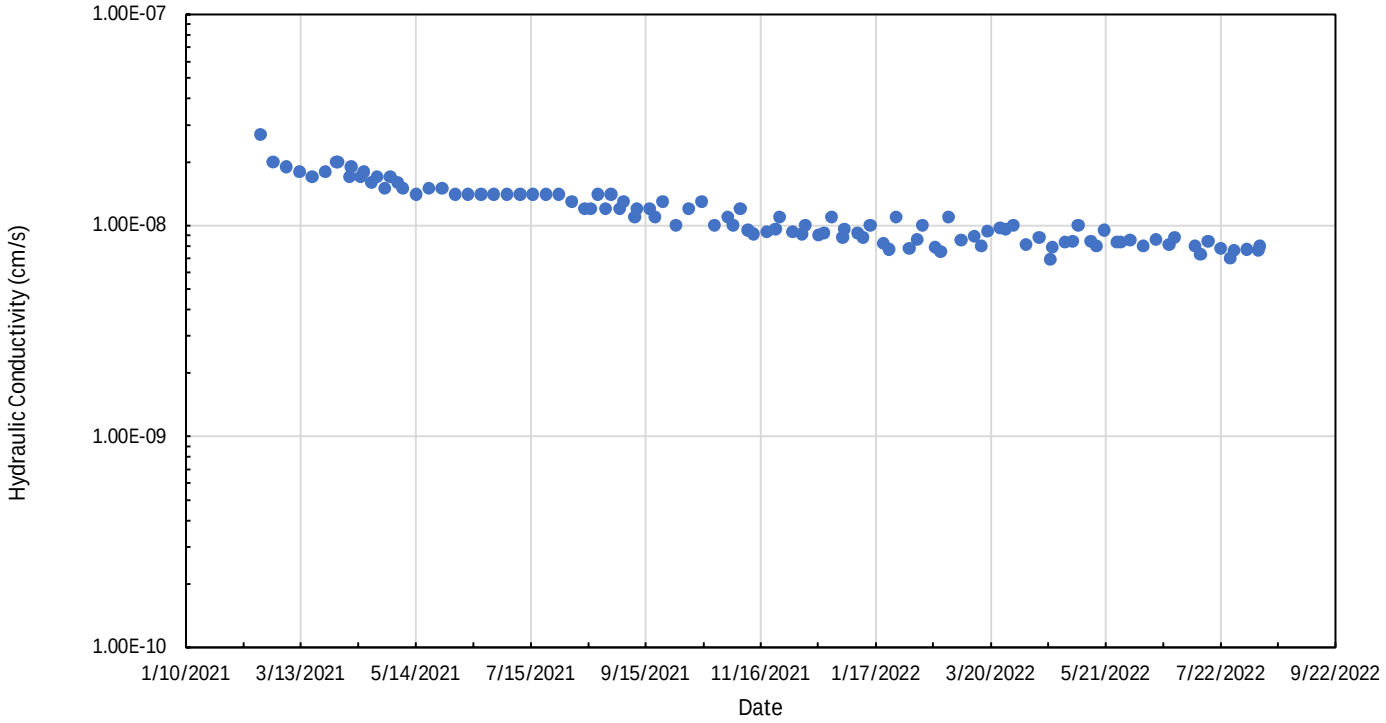
Figure

36



B9-ST-3 (55-57 ft bgs) Hydraulic Conductivity with Time

MONROE POWER PLANT
MONROE, MICHIGAN

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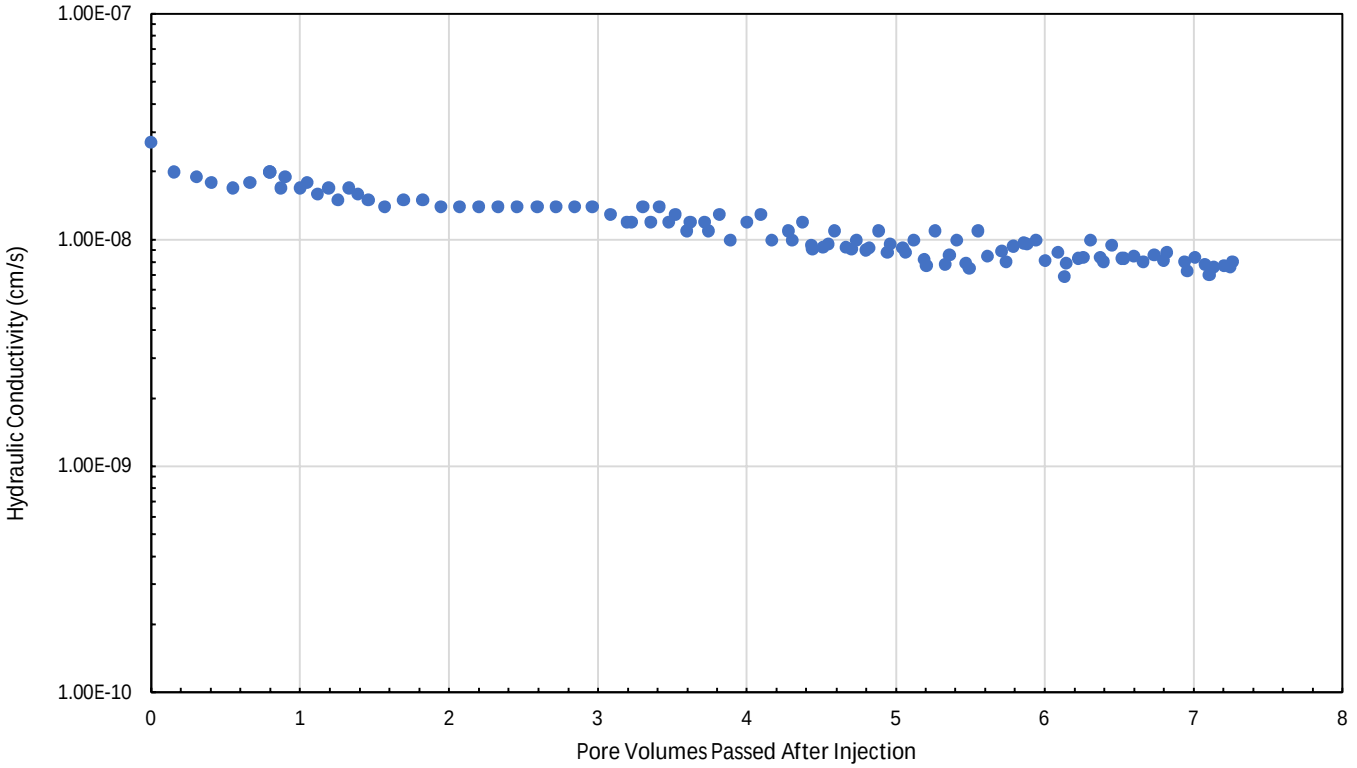
Figure

37



B9-ST-3 (55-57 ft bgs) Hydraulic Conductivity with PV

MONROE POWER PLANT
MONROE, MICHIGAN

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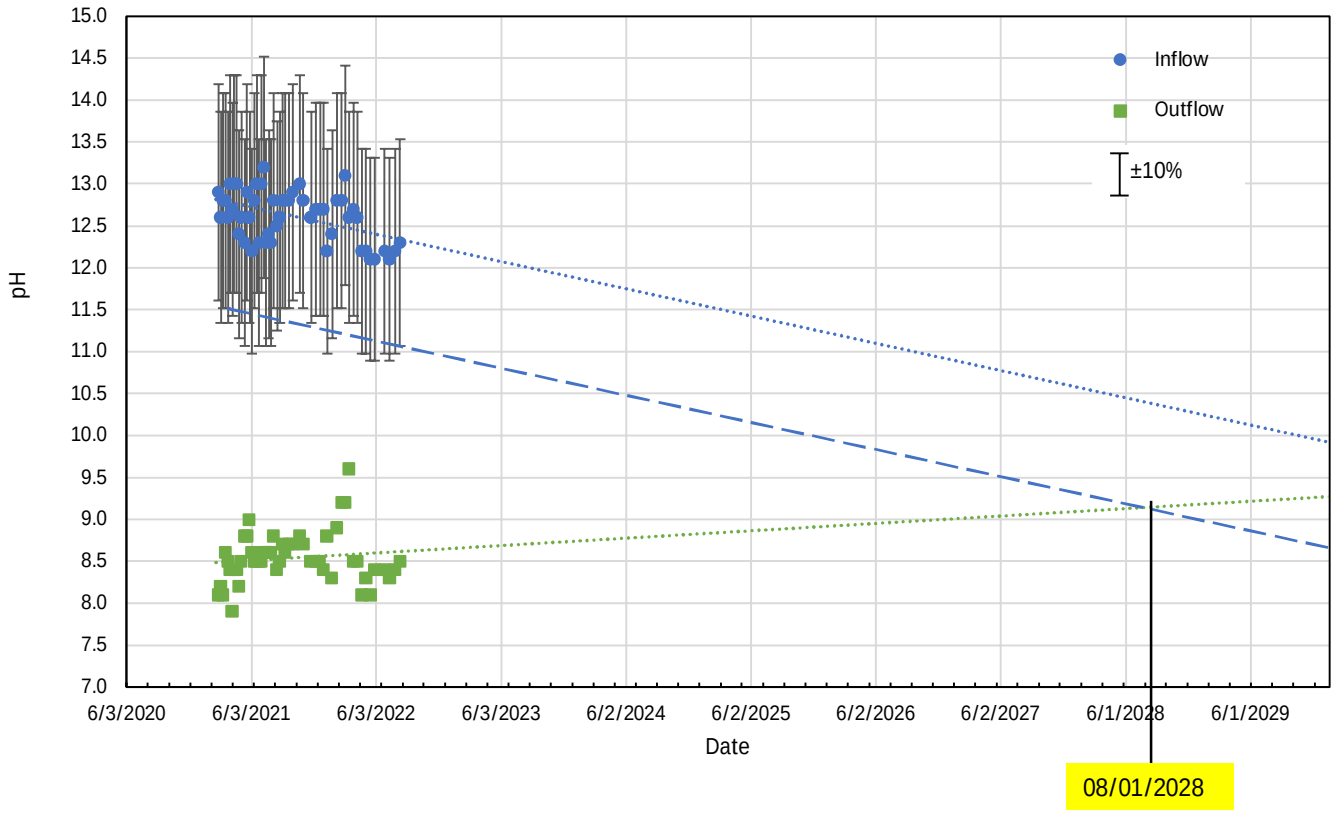
Figure 38



B9-ST-3 (55-57 ft bgs) pH of Inflow and Outflow with Time

MONROE POWER PLANT
MONROE, MICHIGAN

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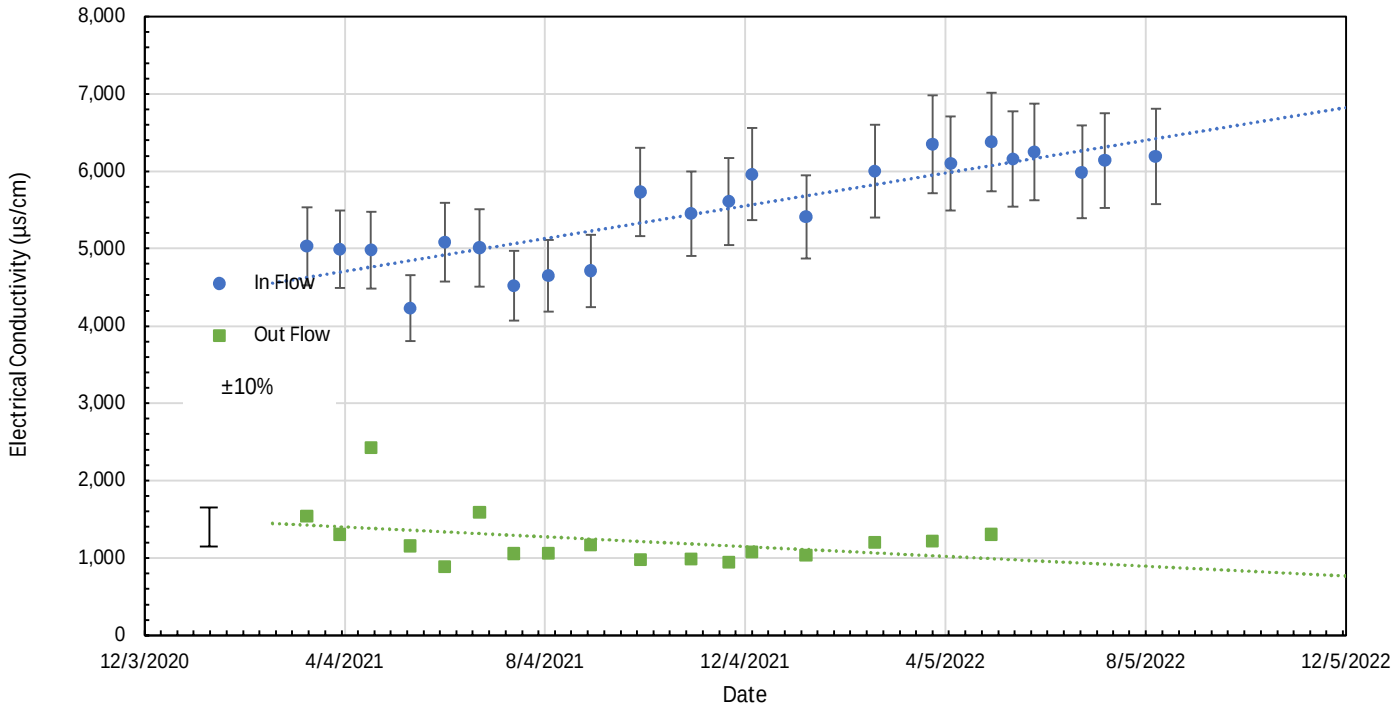
Figure 39



B9-ST-3 (55-57 ft bgs) Electrical Conductivity (EC) with Time

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Figure 40

APPENDIX A

FedEx Express Shipment Summary By Reference

FedEx Express Shipments (Original)

Reference	Shipments	Rated Weight lbs	Transportation Charges	Special Handling Charges	Ret Chg/Tax Credits/Other	Discounts	Total Charges
NO REFERENCE INFORMATION	9	682.0	3,979.46	302.50		-2,626.46	1,655.50
FROM: ALICIA REVEZZO	2	28.0	180.50	23.54		-119.13	84.91
Total FedEx Express	**11**	**710.0**	**$4,159.96**	**$326.04**		**-$2,745.59**	**$1,740.41**

TOTAL THIS INVOICE **USD** **$1,740.41**

FedEx Express Shipment Detail By Reference (Original)

Ship Date: Dec 09, 2020 **Cust. Ref.:** NO REFERENCE INFORMATION **Ref.#2:**
Payor: Third Party **Ref.#3:**

The Earned Discount for this ship date has been calculated based on a revenue threshold of $ 1120417.46
Fuel Surcharge - FedEx has applied a fuel surcharge of 4.50% to this shipment.
Distance Based Pricing, Zone 4
FedEx has audited this shipment for correct packages, weight, and service. Any changes made are reflected in the invoice amount.
We calculated your charges based on a dimensional weight of 71.0 lbs, 31 in x 21 in x 15 in, using a dimensional factor of 139.

		Sender	**Recipient**	
Automation	SSFO			
Tracking ID	781132675820	Sean Karoly	Nader S. Rad	
Service Type	FedEx Standard Overnight	Geosentec consultants	Excel Geotechnical Testing Inc	
Package Type	Customer Packaging	SUITE 100	953 Forrest Street	
Zone	04	ANN ARBOR MI 48105 US	ROSWELL GA 30075 US	
Packages	1			
Actual Weight	57.0 lbs, 25.9 kgs	Transportation Charge		412.80
Rated Weight	71.0 lbs, 32.2 kgs	Discount		-231.17
Declared Value	USD 1.00	Earned Discount		-41.28
Delivered	Dec 10, 2020 13:04	Fuel Surcharge		7.62
Svc Area	A1	Declared Value Charge		0.00
Signed by	N.RAD	Additional Handling Charge - Weight		24.00
FedEx Use	000000000/1327/_	Peak - AHS Charge		4.90
		Total Charge	**USD**	**$176.87**

Ship Date: Dec 09, 2020 **Cust. Ref.:** NO REFERENCE INFORMATION **Ref.#2:**
Payor: Third Party **Ref.#3:**

The Earned Discount for this ship date has been calculated based on a revenue threshold of $ 1120417.46
Fuel Surcharge - FedEx has applied a fuel surcharge of 4.50% to this shipment.
Distance Based Pricing, Zone 4
FedEx has audited this shipment for correct packages, weight, and service. Any changes made are reflected in the invoice amount.
We calculated your charges based on a dimensional weight of 71.0 lbs, 31 in x 21 in x 15 in, using a dimensional factor of 139.

		Sender	**Recipient**		
Automation	SSFO				
Tracking ID	781132675830	Sean Karoly	Nader S. Rad		
Service Type	FedEx Standard Overnight	Geosentec consultants	Excel Geotechnical Testing Inc		
Package Type	Customer Packaging	SUITE 100	953 Forrest Street		
Zone	04	ANN ARBOR MI 48105 US	ROSWELL GA 30075 US		
Packages	1				
Actual Weight	60.0 lbs, 27.2 kgs	Transportation Charge			412.80
Rated Weight	71.0 lbs, 32.2 kgs	Discount			-231.17
Declared Value	USD 1.00	Earned Discount			-41.28
Delivered	Dec 10, 2020 13:04	Fuel Surcharge			7.62
Svc Area	A1	Declared Value Charge			0.00
Signed by	N.RAD	Additional Handling Charge - Weight			24.00
FedEx Use	000000000/1327/_	Peak - AHS Charge			4.90
		Total Charge		**USD**	**$176.87**

Ship Date: Dec 09, 2020 **Cust. Ref.:** NO REFERENCE INFORMATION **Ref.#2:**
Payor: Third Party **Ref.#3:**

The Earned Discount for this ship date has been calculated based on a revenue threshold of $ 1120417.46
Fuel Surcharge - FedEx has applied a fuel surcharge of 4.50% to this shipment.
Distance Based Pricing, Zone 4
FedEx has audited this shipment for correct packages, weight, and service. Any changes made are reflected in the invoice amount.
We calculated your charges based on a dimensional weight of 71.0 lbs, 31 in x 21 in x 15 in, using a dimensional factor of 139.

		Sender	**Recipient**		
Automation	SSFO				
Tracking ID	781132675841	Sean Karoly	Nader S. Rad		
Service Type	FedEx Standard Overnight	Geosentec consultants	Excel Geotechnical Testing Inc		
Package Type	Customer Packaging	SUITE 100	953 Forrest Street		
Zone	04	ANN ARBOR MI 48105 US	ROSWELL GA 30075 US		
Packages	1				
Actual Weight	61.0 lbs, 27.7 kgs	Transportation Charge			412.80
Rated Weight	71.0 lbs, 32.2 kgs	Discount			-231.17
Declared Value	USD 1.00	Earned Discount			-41.28
Delivered	Dec 10, 2020 13:04	Fuel Surcharge			7.62
Svc Area	A1	Declared Value Charge			0.00
Signed by	N.RAD	Additional Handling Charge - Weight			24.00
FedEx Use	000000000/1327/_	Peak - AHS Charge			4.90
		Total Charge		**USD**	**$176.87**

Ship Date: Dec 09, 2020 **Cust. Ref.:** NO REFERENCE INFORMATION **Ref.#2:**
Payor: Third Party **Ref.#3:**

The Earned Discount for this ship date has been calculated based on a revenue threshold of $ 1120417.46
Fuel Surcharge - FedEx has applied a fuel surcharge of 4.50% to this shipment.
Distance Based Pricing, Zone 4
FedEx has audited this shipment for correct packages, weight, and service. Any changes made are reflected in the invoice amount.
We calculated your charges based on a dimensional weight of 71.0 lbs, 31 in x 21 in x 15 in, using a dimensional factor of 139.

		Sender	**Recipient**		
Automation	SSFO				
Tracking ID	781132675852	Sean Karoly	Nader S. Rad		
Service Type	FedEx Standard Overnight	Geosentec consultants	Excel Geotechnical Testing Inc		
Package Type	Customer Packaging	SUITE 100	953 Forrest Street		
Zone	04	ANN ARBOR MI 48105 US	ROSWELL GA 30075 US		
Packages	1				
Actual Weight	59.0 lbs, 26.8 kgs	Transportation Charge			412.80
Rated Weight	71.0 lbs, 32.2 kgs	Discount			-231.17
Declared Value	USD 1.00	Earned Discount			-41.28
Delivered	Dec 10, 2020 13:04	Fuel Surcharge			7.62
Svc Area	A1	Declared Value Charge			0.00
Signed by	N.RAD	Additional Handling Charge - Weight			24.00
FedEx Use	000000000/1327/_	Peak - AHS Charge			4.90
		Total Charge		**USD**	**$176.87**

Ship Date: Dec 09, 2020 **Cust. Ref.:** NO REFERENCE INFORMATION **Ref.#2:**
Payor: Third Party **Ref.#3:**

The Earned Discount for this ship date has been calculated based on a revenue threshold of $ 1120417.46
Fuel Surcharge - FedEx has applied a fuel surcharge of 4.50% to this shipment.
Distance Based Pricing, Zone 4
FedEx has audited this shipment for correct packages, weight, and service. Any changes made are reflected in the invoice amount.
We calculated your charges based on a dimensional weight of 78.0 lbs, 42 in x 16 in x 16 in, using a dimensional factor of 139.

		Sender	**Recipient**	
Automation	SSFO			
Tracking ID	781143770416	Sean Koroly	Nader S. Rad	
Service Type	FedEx Standard Overnight	Geosyntec Consultants	Excel Geotechical Testing Inc.	
Package Type	Customer Packaging	SUITE 100	953 Forrest Street	
Zone	04	ANN ARBOR MI 48105 US	ROSWELL GA 30075 US	
Packages	1			
Actual Weight	64.0 lbs, 29.0 kgs	Transportation Charge		457.62
Rated Weight	78.0 lbs, 35.4 kgs	Discount		-256.27
Declared Value	USD 1.00	Earned Discount		-45.76
Delivered	Dec 10, 2020 13:04	Fuel Surcharge		8.30
Svc Area	A1	Declared Value Charge		0.00
Signed by	N.RAD	Additional Handling Charge - Weight		24.00
FedEx Use	000000000/1327/_	Peak - AHS Charge		4.90
		Total Charge	**USD**	**$192.79**

Ship Date: Dec 09, 2020 **Cust. Ref.:** NO REFERENCE INFORMATION **Ref.#2:**
Payor: Third Party **Ref.#3:**

The Earned Discount for this ship date has been calculated based on a revenue threshold of $ 1120417.46
Fuel Surcharge - FedEx has applied a fuel surcharge of 4.50% to this shipment.
Distance Based Pricing, Zone 4
FedEx has audited this shipment for correct packages, weight, and service. Any changes made are reflected in the invoice amount.

		Sender	**Recipient**	
Automation	SSFO			
Tracking ID	781143770427	Sean Koroly	Nader S. Rad	
Service Type	FedEx Standard Overnight	Geosyntec Consultants	Excel Geotechical Testing Inc.	
Package Type	Customer Packaging	SUITE 100	953 Forrest Street	
Zone	04	ANN ARBOR MI 48105 US	ROSWELL GA 30075 US	
Packages	1			
Rated Weight	86.0 lbs, 39.0 kgs	Transportation Charge		497.78
Declared Value	USD 1.00	Discount		-278.76
Delivered	Dec 10, 2020 13:04	Earned Discount		-49.78
Svc Area	A1	Fuel Surcharge		8.92
Signed by	N.RAD	Declared Value Charge		0.00
FedEx Use	000000000/1327/_	Additional Handling Charge - Weight		24.00
		Peak - AHS Charge		4.90
		Total Charge	**USD**	**$207.06**

Ship Date: Dec 09, 2020 **Cust. Ref.:** NO REFERENCE INFORMATION **Ref.#2:**
Payor: Third Party **Ref.#3:**

The Earned Discount for this ship date has been calculated based on a revenue threshold of $ 1120417.46
Fuel Surcharge - FedEx has applied a fuel surcharge of 4.50% to this shipment.
Distance Based Pricing, Zone 4
FedEx has audited this shipment for correct packages, weight, and service. Any changes made are reflected in the invoice amount.
We calculated your charges based on a dimensional weight of 78.0 lbs, 42 in x 16 in x 16 in, using a dimensional factor of 139.

		Sender	**Recipient**	
Automation	SSFO			
Tracking ID	781143770438	Sean Koroly	Nader S. Rad	
Service Type	FedEx Standard Overnight	Geosyntec Consultants	Excel Geotechical Testing Inc.	
Package Type	Customer Packaging	SUITE 100	953 Forrest Street	
Zone	04	ANN ARBOR MI 48105 US	ROSWELL GA 30075 US	
Packages	1			
Actual Weight	64.0 lbs, 29.0 kgs	Transportation Charge		457.62
Rated Weight	78.0 lbs, 35.4 kgs	Discount		-256.27
Declared Value	USD 1.00	Earned Discount		-45.76
Delivered	Dec 10, 2020 13:04	Fuel Surcharge		8.30
Svc Area	A1	Declared Value Charge		0.00
Signed by	N.RAD	Additional Handling Charge - Weight		24.00
FedEx Use	000000000/1327/_	Peak - AHS Charge		4.90
		Total Charge	**USD**	**$192.79**

Ship Date: Dec 09, 2020 **Cust. Ref.:** NO REFERENCE INFORMATION **Ref.#2:**
Payor: Third Party **Ref.#3:**

The Earned Discount for this ship date has been calculated based on a revenue threshold of $ 1120417.46
Fuel Surcharge - FedEx has applied a fuel surcharge of 4.50% to this shipment.
Distance Based Pricing, Zone 4
FedEx has audited this shipment for correct packages, weight, and service. Any changes made are reflected in the invoice amount.
We calculated your charges based on a dimensional weight of 78.0 lbs, 42 in x 16 in x 16 in, using a dimensional factor of 139.

		Sender	**Recipient**		
Automation	SSFO				
Tracking ID	781143770449	Sean Koroly	Nader S. Rad		
Service Type	FedEx Standard Overnight	Geosyntec Consultants	Excel Geotechical Testing Inc.		
Package Type	Customer Packaging	SUITE 100	953 Forrest Street		
Zone	04	ANN ARBOR MI 48105 US	ROSWELL GA 30075 US		
Packages	1				
Actual Weight	50.0 lbs, 22.7 kgs				
Rated Weight	78.0 lbs, 35.4 kgs	Transportation Charge			457.62
Declared Value	USD 1.00	Discount			-256.27
Delivered	Dec 10, 2020 13:04	Earned Discount			-45.76
Svc Area	A1	Fuel Surcharge			7.00
Signed by	N.RAD	Declared Value Charge			0.00
FedEx Use	000000000/1327/_	**Total Charge**		**USD**	**$162.59**

Ship Date: Dec 09, 2020 **Cust. Ref.:** NO REFERENCE INFORMATION **Ref.#2:**
Payor: Third Party **Ref.#3:**

The Earned Discount for this ship date has been calculated based on a revenue threshold of $ 1120417.46
Fuel Surcharge - FedEx has applied a fuel surcharge of 4.50% to this shipment.
Distance Based Pricing, Zone 4
FedEx has audited this shipment for correct packages, weight, and service. Any changes made are reflected in the invoice amount.
We calculated your charges based on a dimensional weight of 78.0 lbs, 42 in x 16 in x 16 in, using a dimensional factor of 139.

		Sender	**Recipient**		
Automation	SSFO				
Tracking ID	781143770450	Sean Koroly	Nader S. Rad		
Service Type	FedEx Standard Overnight	Geosyntec Consultants	Excel Geotechical Testing Inc.		
Package Type	Customer Packaging	SUITE 100	953 Forrest Street		
Zone	04	ANN ARBOR MI 48105 US	ROSWELL GA 30075 US		
Packages	1				
Actual Weight	59.0 lbs, 26.8 kgs	Transportation Charge			457.62
Rated Weight	78.0 lbs, 35.4 kgs	Discount			-256.27
Declared Value	USD 1.00	Earned Discount			-45.76
Delivered	Dec 10, 2020 13:04	Fuel Surcharge			8.30
Svc Area	A1	Declared Value Charge			0.00
Signed by	N.RAD	Additional Handling Charge - Weight			24.00
FedEx Use	000000000/1327/_	Peak - AHS Charge			4.90
		Total Charge		**USD**	**$192.79**

NO REFERENCE INFORMATION Reference Subtotal USD $1,655.50

Ship Date: Dec 10, 2020 **Cust. Ref.:** FROM: ALICIA REVEZZO **Ref.#2:**
Payor: Third Party **Ref.#3:**

The Earned Discount for this ship date has been calculated based on a revenue threshold of $ 1120417.46
Fuel Surcharge - FedEx has applied a fuel surcharge of 4.50% to this shipment.
Distance Based Pricing, Zone 3

		Sender	**Recipient**		
Automation	CAFE				
Tracking ID	102139850093	GAIL GRAHAM	SAMPLES RECEIVING		
Service Type	FedEx Standard Overnight	GS SHIPPING STORE & MORE, INC	ALS ENVIRONMENTAL		
Package Type	Customer Packaging	10952 N STRAITS HWY	3352 128TH AVENUE		
Zone	03	CHEBOYGAN MI 49721 US	HOLLAND MI 49424 US		
Packages	1				
Rated Weight	20.0 lbs, 9.1 kgs	Transportation Charge			85.69
Delivered	Dec 11, 2020 09:46	Discount			-47.99
Svc Area	A4	Earned Discount			-8.57
Signed by	A.WIERENGA	Fuel Surcharge			2.12
FedEx Use	000000000/1305/_	Additional Handling Charge - Package			13.00
		Third Party Billing			1.23
		Peak - AHS Charge			4.90
		Total Charge		**USD**	**$50.38**

Ship Date: Dec 10, 2020 **Cust. Ref.:** FROM: ALICIA REVEZZO **Ref.#2:**
Payor: Third Party **Ref.#3:**

The Earned Discount for this ship date has been calculated based on a revenue threshold of $ 1120417.46
Fuel Surcharge - FedEx has applied a fuel surcharge of 4.50% to this shipment.
Distance Based Pricing, Zone 4
We calculated your charges based on a dimensional weight of 8.0 lbs, 12 in x 10 in x 9 in, using a dimensional factor of 139.
Package Delivered to Recipient Address - Release Authorized

Automation	CAFE	**Sender**	**Recipient**
Tracking ID	102139850108	GAIL GRAHAM	GEOSYNTEC CONSULTANTS
Service Type	FedEx Standard Overnight	GS SHIPPING STORE & MORE, INC	930 HARVEST DRIVE
Package Type	Customer Packaging	10952 N STRAITS HWY	BLUE BELL PA 19422 US
Zone	04	CHEBOYGAN MI 49721 US	
Packages	1		
Actual Weight	5.0 lbs, 2.3 kgs	Transportation Charge	94.81
Rated Weight	8.0 lbs, 3.6 kgs	Discount	-53.09
Delivered	Dec 11, 2020 12:24	Earned Discount	-9.48
Svc Area	A2	Fuel Surcharge	1.45
Signed by	see above	Third Party Billing	0.84
FedEx Use	000000000/1327/02	**Total Charge**	**USD** **$34.53**

FROM: ALICIA REVEZZO Reference Subtotal **USD** **$84.91**

Total FedEx Express **USD** **$1,740.41**

APPENDIX B

ALTERNATE LINER DEMONSTRATION LABORATORY STUDY FOR MONROE ASH BASIN

BORING NO	SAMPLE NO	Sample Interval (ft bgs)	Sample Layer	Moisture Content (ASTM D2216)	Grain Size - Sieve (ASTM D6913)	Grain Size - Hydrometer (ASTM D7928)	Specific Gravity (ASTM D854)	Atterberg (ASTM D4318)	Flex. Wall Permeability (ASTM D5084)	Flex. Wall Permeability / COMPATABILITY (ASTM D7100)
1	B-1-1	0-6	Embankment	1						
	B-1-2	6-16		1	1			1		
	B-1-3	16-20		1						
	B-1-ST-1	20-22		1	1			1	1	
	B-1-4	22-26		1						
	B-1-5	26-36		1	1			1		
	B-1-6	36-40		1						
	B-1-ST-2	40-42		1	1			1	1	
	B-1-7	42-46	~43 Native 1	1						
	B-1-8	46-56	~46 Native 2	1	1			1		
	B-1-9	56-60		1						
	B-1-ST-3	60-62	CPT refusal at 60	1	1			1	1	
	B-1-10	62-66	~65 Native 3	1						
	B-1-11	66-76		1	1			1		
2	B-2-1	0-6		1						
	B-2-2	6-16		1	1			1		
	B-2-3	16-20		1						
	B-2-ST-1	20-22		1	1			1	1	1
	B-2-4	22-26		1						
	B-2-5	26-36		1						
	B-2-6	36-46		1	1			1		
	B-2-7	46-56	~50 Native 2	1	1			1		
	B-2-8	56-66	CPT Refusal at 60	1						
	B-2-9	66-76		1	1			1		
3	B-3-1	0-10		1	1			1		
	B-3-2	10-16		1	1			1		
	B-3-3	16-26		1	1			1		
	B-3-4	26-36		1	1			1		
	B-3-5	36-46		1	1			1		
	B-3-6	46-56	Native 2 at ~48	1	1			1		
	B-3-7	56-66	Native 3 at ~63	1	1			1		
	B-3-8	66-76		1	1			1		
4	B-4-1	0-6		1	1			1		
	B-4-2	6-15		1						
	B-4-ST-1	15-17		1	1		1	1	1	
	B-4-3	17-21		1						
	B-4-4	21-26		1	1			1		
	B-4-5	26-30		1						
	B-4-6	30-35		1	1			1		

Note: The initial testing program was provided to EGT on December 16, 2020 and completed on February 10, 2021.

ALTERNATE LINER DEMONSTRATION LABORATORY STUDY FOR MONROE ASH BASIN

Geosyntec consultants

BORING NO	SAMPLE NO	Sample Interval (ft bgs)	Sample Layer	Moisture Content (ASTM D2216)	Grain Size - Sieve (ASTM D6913)	Grain Size - Hydrometer (ASTM D7928)	Specific Gravity (ASTM D854)	Atterberg (ASTM D4318)	Flex. Wall Permeability (ASTM D5084)	Flex. Wall Permeability / COMPATABILITY (ASTM D7100)
4	B-4-7	35-40		1						
	B-4-ST-2	40-42	40 ft Native 1	1	1		1	1	1	1
	B-4-8	42-46		1						
	B-4-9	46-51		1	1			1		
	B-4-10	51-55	~52 Native 2	1						
	B-4-ST-3	55-57.5		1	1		1	1	1	
	B-4-11	57.5-63	~62 Native 3	1						
	B-4-12	63-66		1	1			1		
	B-4-13	66-70		1						
	B-4-ST-4	70-72.5		1	1		1	1	1	1
	B-4-14	72.5-76		1						
5	B-5-1	0-6		1						
	B-5-2	6-11		1	1			1		
	B-5-3	11-16		1						
	B-5-4	16-21		1	1			1		
	B-5-5	21-26		1						
	B-5-6	26-31		1	1			1		
	B-5-7	31-36		1						
	B-5-8	36-42		1	1			1		
	B-5-9	42-46	~45 Native 1	1						
	B-5-10	46-51		1	1			1		
	B-5-11	51-56	~50 Native 2	1	1			1		
	B-5-12	56-61		1						
	B-5-13	61-66		1	1			1		
	B-5-14	66-70	CPT Refusal at 68	1						
	B-5-ST-1	73.5-76		1	1		1	1	1	
6	B-6-1	0-6		1						
	B-6-2	6-11		1	1			1		
	B-6-3	11-16		1						
	B-6-4	16-21		1	1			1		
	B-6-5	21-25		1						
	B-6-ST-1	25-27		1	1			1	1	1
	B-6-6	27-31		1						
	B-6-7	31-36		1	1			1		
	B-6-8	36-40		1						
	B-6-ST-2	40-42.5		1	1		1	1	1	
	B-6-9	42.5-45	45 Native 1	1						
	B-6-10	45-50		1	1			1		
	B-6-11	50-55	~49 Native 2	1						
	B-6-ST-3	55-57.5		1	1			1	1	1
	B-6-12	57.5-60		1						

ALTERNATE LINER DEMONSTRATION LABORATORY STUDY FOR MONROE ASH BASIN

BORING NO	SAMPLE NO	Sample Interval (ft bgs)	Sample Layer	Moisture Content (ASTM D2216)	Grain Size - Sieve (ASTM D6913)	Grain Size - Hydrometer (ASTM D7928)	Specific Gravity (ASTM D854)	Atterberg (ASTM D4318)	Flex. Wall Permeability (ASTM D5084)	Flex. Wall Permeability / COMPATABILITY (ASTM D7100)
6	B-6-13	60-65	~60 Native 3	1	1			1		
	B-6-ST-4	65-67.5		1	1			1	1	1
	B-6-14	67.5-70		1						
	B-6-15	70-76		1	1			1		
7	B-7-1	0-6		1	1			1		
	B-7-2	6-11		1						
	B-7-3	11-16		1	1			1		
	B-7-4	16-21		1						
	B-7-5	21-26		1	1			1		
	B-7-6	26-31	Native 1 at 30 ft	1						
	B-7-7	31-36		1	1			1		
	B-7-8	36-41		1						
	B-7-9	41-46		1	1			1		
	B-7-10	46-51	Native 2 at 49 ft	1						
	B-7-11	51-56		1						
	B-7-12	56-61		1	1			1		
	B-7-13	61-65	CPT Refusal at 60 ft	1						
	B-7-ST-1	65-67.5		1	1			1	1	
	B-7-14	67.5-71		1						
	B-7-15	71-76		1	1			1		
8	B-8-1	0-6		1						
	B-8-2	6-11		1	1			1		
	B-8-3	11-16		1						
	B-8-4	16-21		1	1			1		
	B-8-5	21-26		1						
	B-8-6	26-31		1	1			1		
	B-8-7	31-36	Native 1 at 35	1						
	B-8-8	36-41		1	1			1		
	B-8-9	41-46		1						
	B-8-10	46-51	Native 2 at 50	1	1			1		
	B-8-11	51-56		1						
	B-8-12	56-61	Native 3 at 59	1	1			1		
	B-8-13	61-66		1						
	B-8-14	66-71		1	1			1		
	B-8-15	71-76		1						
9	B-9-1	0-6		1						
	B-9-2	6-11		1						
	B-9-3	11-16		1						
	B-9-4	16-21		1	1			1		
	B-9-5	21-25		1						
	B-9-ST-1	25-27		1	1			1	1	

BORING NO	SAMPLE NO	Sample Interval (ft bgs)	Sample Layer	Moisture Content (ASTM D2216)	Grain Size - Sieve (ASTM D6913)	Grain Size - Hydrometer (ASTM D7928)	Specific Gravity (ASTM D854)	Atterberg (ASTM D4318)	Flex. Wall Permeability (ASTM D5084)	Flex. Wall Permeability / COMPATABILITY (ASTM D7100)
9	B-9-6	27-30		1						
	B-9-7	30-36		1						
	B-9-8	36-40		1	1			1		
	B-9-ST-2	40-42	41 Native 1	1	1		1	1	1	1
	B-9-9	42-46		1						
	B-9-10	46-50		1	1			1		
	B-9-11	50-55	~52 Native 2	1						
	B-9-ST-3	55-57		1	1		1	1	1	1
	B-9-12	57-60	CPT refusal at 59	1						
	B-9-13	60-65	59 Native 3	1						
	B-9-ST-4	65-67		1	1			1	1	