



Advanced Environmental Concepts, Inc.

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Groundwater Sampling Report Q3 2022

Site:

**Chesapeake City Eagle's Nest
2754 Augustine Herman Highway
Chesapeake City, MD 21930**

**MDE Case # 23-0161CE
Facility ID 2682**

Prepared For:

**Chesapeake City Eagle's Nest
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TABLE OF CONTENTS

1.0 Introduction.....	1
2.0 Groundwater Monitoring.....	1
2.1 Monitoring Well Sampling & Gauging.....	1
3.0 Results of Groundwater Sampling.....	1
3.1 Groundwater Elevation.....	1
3.2 Groundwater Sampling Results	1
4.0 Appendices.....	2
Appendix A.....	3
Site Maps	3
Appendix B.....	4
Analytical Summary Tables	4
Appendix C.....	5
Report of Analysis & Chain of Custody Record	5

1.0 Introduction

This monitoring well (MW) sampling report has been prepared by Advanced Environmental Concepts, Inc. (AEC) for the Chesapeake City Eagle's Nest located at 2754 Augustine Herman Hwy Chesapeake City, MD 21915; referred to herein as the "site". This purpose of this report is to satisfy the requirements set forth by the Maryland Department of the Environment (MDE) in the Report of Observations dated September 30, 2022.

2.0 Groundwater Monitoring

2.1 Monitoring Well Sampling & Gauging

On 9/23/2022 AEC personnel arrived on site to gauge and sample all site monitoring wells. Prior to sampling each well was gauged for presence/absence of LNAPL as well as depth to groundwater with an electronic oil/water interface meter. MW-1 was not accessible and LNAPL was detected in MW-2 at a thickness of 0.30 ft on 9/23/2022. Presence of LNAPL in MW-2 was reported to MDE's Oil Control Program (OCP) during the afternoon of 9/23/2022. The groundwater sample collected from MW-3 on 9/23/2022 was not submitted for laboratory analysis.

On 9/30/2022, MDE personnel Lindley Campbell, Michael Jester, and Kelly Hilton were on site to follow up on the initial report of LNAPL presence I MW-2. The MDE's full Report of Observation with an outline of site requirements can be found in Appendix B.

On 10/5/2022 AEC personnel arrived on site to gauge and sample all site monitoring wells. Prior to sampling each well was gauged for presence/absence of LNAPL as well as depth to groundwater with an electronic oil/water interface meter. LNAPL was detected in MW-2 at a thickness of 0.16 ft on 10/5/2022. LNAPL removed from MW-2 via bailing, quantified, and transported to AEC's shop for storage in a 55 gallon drum for disposal at a future date. Approximately 0.23 gallons of LNAPL was recovered via bailing on 10/5/2022. After LNAPL was removed to the maximum extent practicable, a grab sample was collected from MW-2. No indication of the presence of LNAPL was observed in the remaining MWs.

After gauging, MW-1 and MW-3 were purged a total of three well volumes of water. Purged groundwater was treated with activated carbon prior to being discharged to the ground. After purging, groundwater was allowed to recover to a minimum of 90% pre purge levels prior to sample collection. Groundwater samples were collected using pre-packaged, single use, disposable bailers and placed in laboratory supplied VOAs and then placed in a cooler with ice and chain of custody record for delivery to the laboratory. Groundwater samples collected were delivered to AEC's laboratory to be analyzed by EPA Method 8260 for volatile organic compounds (VOCs) and by EPA Method 8015 for total petroleum hydrocarbons - diesel and gasoline range organics (TPH-DRO/GRO).

3.0 Results of Groundwater Sampling

3.1 Groundwater Elevation

AEC constructed a groundwater elevation contour map based upon depth to groundwater measurements collected on 10/5/2022 which depicts groundwater flow to be to the southwest. Relative groundwater elevation observed during the sampling event ranged from 45.73 feet in MW-1 (highest) to 43.61 feet in MW-3 (lowest). The groundwater elevation contour map can be found in Appendix A.

3.2 Groundwater Sampling Results

Laboratory method detectable concentrations of VOCs/TPH were not observed in the groundwater samples collected from MW-1 and MW-3 during the 10/5/2022 sampling event.

Elevated levels of VOCs and TPH-GRO were observed the groundwater sample collected and submitted for chemical analysis on 10/5/2022 at location MW-2. A summary of the concentrations of compounds of concern observed above MDE Generic Numeric Cleanup Standards (GNCS) for Type I and II aquifers are as follows:

- Benzene - 6520 ug/L
- Toluene - 75200
- Ethylbenzene - 18400 ug/L
- Xylenes - 120800 ug/L
- Isopropylbenzene - 2300 ug/L
- 1,3,5-Trimethylbenzene - 26800 ug/L
- 1,2,4-Trimethylbenzene - 101200 ug/L
- Naphthalene - 26800 ug/L
- TPH-GRO - 547300 ug/L

A Quick Reference Analytical Summary Table can be found in Appendix B. A full Certificate of Analysis and Chain of Custody Record for all groundwater samples collected as a part of this investigation can be found in Appendix C.

4.0 Appendices

Appendix A

Site Maps

Appendix B
Analytical Summary Tables

Appendix C

Report of Analysis & Chain of Custody Record