

July 15, 2024

Washington State Department of Ecology Southwest Regional Office
PO Box 47775
Olympia, Washington 98504-7775

Attention: Thomas Praisewater, Site Manager

Subject: Progress Report, Second Quarter 2024
NuStar Terminals Operations Partnership L.P. Vancouver Annex Terminal
Agreed Order No. DE 19602
Vancouver, Washington
File No. 19001-008-13

This letter provides a progress report for the Second Quarter 2024 activities associated with Agreed Order No. DE 19602 (the Order) at the NuStar Terminals Operations Partnership L.P. (NuStar) Vancouver Annex Terminal (the Site). This progress report has been prepared and submitted on behalf of NuStar. The Site is located at 5420 NW Fruit Valley Road in Vancouver, Washington.

The Order was signed into effect on May 10, 2023, and requires NuStar to implement a cleanup action plan. This progress report presents the following per the Order:

- A list of activities conducted during the Second Quarter 2024 to implement the requirements of the Order.
- A description of any deviations from required tasks not otherwise documented in project plans or amendment requests.
- A description of deviations from the Order scope of work and schedule during the current quarter and any planned deviations during the upcoming quarter. For any deviations in schedule, a plan will be included for recovering lost time and maintaining compliance with the schedule.
- Any raw data received during the Second Quarter, if not previously submitted to Ecology, along with a detailed description of the underlying samples collected.
- The list of deliverables for the upcoming year if different from the schedule.

Activities Completed During the Reporting Period

The following activities were completed during the reporting period:

- The First Quarter 2024 Progress Letter was submitted to Ecology on April 9, 2024.
- A reconnaissance groundwater sampling event was completed around MW-5 from April 23 to April 25, 2024. This event was completed to refine the recirculation system pilot study treatment area. The results of the sampling event will be presented in the forthcoming Pilot Study Preliminary Implementation Report expected in December 2024.
- The Remedial Injections Implementation and Initial Results Report was submitted to Ecology on May 17, 2024
- A quarterly groundwater monitoring event was conducted on May 14 and 15, 2024.
- MW-5 Area Pilot Study design and coordination was initiated.

Order Schedule, Deviations from the Order, and Responses

The Order requires implementation of a Cleanup Action Plan (CAP), which is in Appendix B of the Order, and the CAP contemplates groundwater recirculation systems in the well MW-5 and MW-6 areas. As discussed in the 1st Quarter 2024 Progress Report, aquifer testing performed in November 2023 demonstrated that the silt unit in which shallow groundwater beneath the Site is first encountered is less transmissive than anticipated, suggesting that conducting a recirculation system pilot study before designing the full-scale systems for the well MW-5 and MW-6 areas would be beneficial.

Pursuant to the schedule in Appendix C of the Order, an Engineering Design Report (EDR) is required. In a letter to NuStar dated December 26, 2023, Ecology approved the request for extending the EDR submittal date from January 16, 2024 to December 31, 2024 to allow for a pilot recirculation system to be implemented and additional data to be collected to complete the full-scale design for the EDR. Therefore, instead of submittal of an EDR in January 2024, a Groundwater Recirculation System Pilot Study Work Plan was submitted to Ecology on February 2, 2024. Ecology provided email approval of the Work Plan on March 8, 2024.

Installation of the pilot study recirculation system has been delayed due to unexpected complications with the electrical hookup needed to operate the recirculation system. The portable treatment system power requirements require significant electrical improvements. NuStar and GeoEngineers are currently working with an electrician to develop a plan to power the system. As such, installation of the treatment system has been delayed until late summer 2024.

Raw Data Submittals

Analytical data from the Second Quarter 2024 groundwater monitoring event are included in Attachment B. The data include groundwater samples collected from Site monitoring wells MW-1 through MW-12, MW-5D, MW-6D, MW-8D and MW-12D. The samples were submitted to Apex Laboratories (Apex), a Washington-certified analytical laboratory, for analysis of gasoline-range total petroleum hydrocarbons (TPH) by method NWTPHg_x, diesel-range TPH by method NWTPHd_x, and benzene, toluene, ethylbenzene, xylenes, methyl tert-butyl ether and naphthalene by EPA Method 8260B. The data will be included in the Annual 2024 Groundwater Monitoring report anticipated to be submitted to Ecology in the Second Quarter of 2025.

Deliverable Submittals This Year

The following deliverables are anticipated to be submitted in 2024:

- A Quarterly Progress Report will be submitted by October 15, 2024 per the Order.
- A Pilot Study Implementation Report will be submitted three months following system startup; system startup is anticipated in late summer 2024, therefore, the Implementation Report submittal is anticipated to be in December 2024.
- The EDR report will be submitted by December 31, 2024.

Closing

If you have any questions about this progress report, please do not hesitate to call Amanda Spencer at 503.577.1535, Phil Cordell at 503.807.3835 or Victoria Wark with Evergreen Resources Management Operations at 210.918.2257.

Sincerely,
GeoEngineers, Inc.



Phil Cordell, LG
Senior Geologist

PRC:atk

Attachments:

Analytical Laboratory Reports A4E1286–2Q24 Analytical Data.

cc:

Victoria Wark, Evergreen Resources Management Operations (electronic deliverable)

Aaron Flett, Sunoco (electronic deliverable)

Tony Valladares, Sunoco (electronic deliverable)

Disclaimer: Any electronic form, facsimile or hard copy of the original document (email, text, table, and/or figure), if provided, and any attachments are only a copy of the original document. The original document is stored by GeoEngineers, Inc. and will serve as the official document of record.



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Wednesday, June 5, 2024

Philip Cordell
GeoEngineers - Portland
5820 S Kelly Ave Unit B
Portland, OR 97239

RE: A4E1286 - Nustar Vannex GWM 2Q24 - 19001-008-13

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A4E1286, which was received by the laboratory on 5/15/2024 at 2:05:00PM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: DAuvil@apex-labs.com, or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of sample receipt, unless prior arrangements have been made.

Cooler Receipt Information			
<u>Acceptable Receipt Temperature is less than, or equal to, 6 degC (not frozen), or received on ice the same day as sampling.</u>			
(See Cooler Receipt Form for details)			
Cooler #1	0.0	degC	Cooler #2
Cooler #3	4.3	degC	

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.

All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.



Apex Laboratories

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Darrell Auvil, Client Services Manager



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Apex Laboratories, LLC

6700 S.W. Sandburg Street
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503-718-2323
ORELAP ID: OR100062

GeoEngineers - Portland 5820 S Kelly Ave Unit B Portland, OR 97239	Project: Nustar Vannex GWM 2Q24 Project Number: 19001-008-13 Project Manager: Philip Cordell	Report ID: A4E1286 - 06 05 24 1050
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ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1	A4E1286-01	Water	05/14/24 12:14	05/15/24 14:05
MW-2	A4E1286-02	Water	05/15/24 08:53	05/15/24 14:05
MW-3	A4E1286-03	Water	05/14/24 13:26	05/15/24 14:05
MW-4	A4E1286-04	Water	05/15/24 08:00	05/15/24 14:05
MW-5	A4E1286-05	Water	05/14/24 12:56	05/15/24 14:05
MW-5 DUP	A4E1286-06	Water	05/14/24 12:56	05/15/24 14:05
MW-6	A4E1286-07	Water	05/15/24 07:54	05/15/24 14:05
MW-5D	A4E1286-08	Water	05/14/24 12:20	05/15/24 14:05
MW-6D	A4E1286-09	Water	05/15/24 08:38	05/15/24 14:05
MW-7	A4E1286-10	Water	05/14/24 10:18	05/15/24 14:05
MW-8	A4E1286-11	Water	05/14/24 11:02	05/15/24 14:05
MW-8D	A4E1286-12	Water	05/14/24 11:43	05/15/24 14:05
MW-9	A4E1286-13	Water	05/14/24 09:25	05/15/24 14:05
MW-10	A4E1286-14	Water	05/14/24 09:34	05/15/24 14:05
MW-11	A4E1286-15	Water	05/15/24 09:38	05/15/24 14:05
MW-11 DUP	A4E1286-16	Water	05/15/24 09:38	05/15/24 14:05
MW-12	A4E1286-17	Water	05/14/24 10:30	05/15/24 14:05
MW-12D	A4E1286-18	Water	05/14/24 11:19	05/15/24 14:05
MW-11	A4E1286-20	Water	05/15/24 09:38	05/15/24 14:05
MW-11 DUP	A4E1286-21	Water	05/15/24 09:38	05/15/24 14:05

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GeoEngineers - Portland 5820 S Kelly Ave Unit B Portland, OR 97239	Project: Nustar Vannex GWM 2Q24 Project Number: 19001-008-13 Project Manager: Philip Cordell	Report ID: A4E1286 - 06 05 24 1050
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ANALYTICAL SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-1 (A4E1286-01)			Matrix: Water			Batch: 24E0775		
Diesel	0.302	---	0.0800	mg/L	1	05/22/24 19:28	NWTPH-Dx LL	F-11
Oil	ND	---	0.160	mg/L	1	05/22/24 19:28	NWTPH-Dx LL	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 92 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/22/24 19:28</i>	<i>NWTPH-Dx LL</i>
MW-2 (A4E1286-02)			Matrix: Water			Batch: 24E0775		
Diesel	ND	---	0.0800	mg/L	1	05/22/24 19:48	NWTPH-Dx LL	
Oil	ND	---	0.160	mg/L	1	05/22/24 19:48	NWTPH-Dx LL	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 70 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/22/24 19:48</i>	<i>NWTPH-Dx LL</i>
MW-3 (A4E1286-03)			Matrix: Water			Batch: 24E0775		
Diesel	ND	---	0.0784	mg/L	1	05/22/24 20:09	NWTPH-Dx LL	
Oil	ND	---	0.157	mg/L	1	05/22/24 20:09	NWTPH-Dx LL	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 98 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/22/24 20:09</i>	<i>NWTPH-Dx LL</i>
MW-4 (A4E1286-04)			Matrix: Water			Batch: 24E0775		
Diesel	0.117	---	0.0800	mg/L	1	05/22/24 20:30	NWTPH-Dx LL	F-11
Oil	ND	---	0.160	mg/L	1	05/22/24 20:30	NWTPH-Dx LL	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 99 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/22/24 20:30</i>	<i>NWTPH-Dx LL</i>
MW-5 (A4E1286-05)			Matrix: Water			Batch: 24E0775		
Diesel	1.30	---	0.0755	mg/L	1	05/22/24 20:50	NWTPH-Dx LL	F-18
Oil	ND	---	0.151	mg/L	1	05/22/24 20:50	NWTPH-Dx LL	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 79 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/22/24 20:50</i>	<i>NWTPH-Dx LL</i>
MW-5 DUP (A4E1286-06)			Matrix: Water			Batch: 24E0775		
Diesel	1.40	---	0.0792	mg/L	1	05/22/24 21:11	NWTPH-Dx LL	F-18
Oil	ND	---	0.158	mg/L	1	05/22/24 21:11	NWTPH-Dx LL	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 101 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/22/24 21:11</i>	<i>NWTPH-Dx LL</i>
MW-6 (A4E1286-07)			Matrix: Water			Batch: 24E0775		
Diesel	4.13	---	0.0777	mg/L	1	05/22/24 21:31	NWTPH-Dx LL	F-20
Oil	ND	---	0.155	mg/L	1	05/22/24 21:31	NWTPH-Dx LL	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 101 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/22/24 21:31</i>	<i>NWTPH-Dx LL</i>

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Darrell Auvil, Client Services Manager

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GeoEngineers - Portland 5820 S Kelly Ave Unit B Portland, OR 97239	Project: Nustar Vannex GWM 2Q24 Project Number: 19001-008-13 Project Manager: Philip Cordell	Report ID: A4E1286 - 06 05 24 1050
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ANALYTICAL SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-5D (A4E1286-08)			Matrix: Water			Batch: 24E0775		
Diesel	0.533	---	0.0769	mg/L	1	05/22/24 23:14	NWTPH-Dx LL	F-11
Oil	ND	---	0.154	mg/L	1	05/22/24 23:14	NWTPH-Dx LL	
<i>Surrogate: o-Terphenyl (Surr)</i>			<i>Recovery: 100 %</i>	<i>Limits: 50-150 %</i>	<i>1</i>	<i>05/22/24 23:14</i>	<i>NWTPH-Dx LL</i>	
MW-6D (A4E1286-09)			Matrix: Water			Batch: 24E0775		
Diesel	0.198	---	0.0784	mg/L	1	05/22/24 23:34	NWTPH-Dx LL	F-11
Oil	ND	---	0.157	mg/L	1	05/22/24 23:34	NWTPH-Dx LL	
<i>Surrogate: o-Terphenyl (Surr)</i>			<i>Recovery: 95 %</i>	<i>Limits: 50-150 %</i>	<i>1</i>	<i>05/22/24 23:34</i>	<i>NWTPH-Dx LL</i>	
MW-7 (A4E1286-10)			Matrix: Water			Batch: 24E0775		
Diesel	ND	---	0.0769	mg/L	1	05/22/24 23:55	NWTPH-Dx LL	
Oil	ND	---	0.154	mg/L	1	05/22/24 23:55	NWTPH-Dx LL	
<i>Surrogate: o-Terphenyl (Surr)</i>			<i>Recovery: 102 %</i>	<i>Limits: 50-150 %</i>	<i>1</i>	<i>05/22/24 23:55</i>	<i>NWTPH-Dx LL</i>	
MW-8 (A4E1286-11)			Matrix: Water			Batch: 24E0775		
Diesel	ND	---	0.0769	mg/L	1	05/23/24 00:16	NWTPH-Dx LL	
Oil	ND	---	0.154	mg/L	1	05/23/24 00:16	NWTPH-Dx LL	
<i>Surrogate: o-Terphenyl (Surr)</i>			<i>Recovery: 98 %</i>	<i>Limits: 50-150 %</i>	<i>1</i>	<i>05/23/24 00:16</i>	<i>NWTPH-Dx LL</i>	
MW-8D (A4E1286-12)			Matrix: Water			Batch: 24E0775		
Diesel	ND	---	0.0777	mg/L	1	05/23/24 00:36	NWTPH-Dx LL	
Oil	ND	---	0.155	mg/L	1	05/23/24 00:36	NWTPH-Dx LL	
<i>Surrogate: o-Terphenyl (Surr)</i>			<i>Recovery: 91 %</i>	<i>Limits: 50-150 %</i>	<i>1</i>	<i>05/23/24 00:36</i>	<i>NWTPH-Dx LL</i>	
MW-9 (A4E1286-13)			Matrix: Water			Batch: 24E0775		
Diesel	ND	---	0.0755	mg/L	1	05/23/24 00:57	NWTPH-Dx LL	
Oil	ND	---	0.151	mg/L	1	05/23/24 00:57	NWTPH-Dx LL	
<i>Surrogate: o-Terphenyl (Surr)</i>			<i>Recovery: 97 %</i>	<i>Limits: 50-150 %</i>	<i>1</i>	<i>05/23/24 00:57</i>	<i>NWTPH-Dx LL</i>	
MW-10 (A4E1286-14)			Matrix: Water			Batch: 24E0775		
Diesel	ND	---	0.0784	mg/L	1	05/23/24 01:17	NWTPH-Dx LL	
Oil	ND	---	0.157	mg/L	1	05/23/24 01:17	NWTPH-Dx LL	
<i>Surrogate: o-Terphenyl (Surr)</i>			<i>Recovery: 98 %</i>	<i>Limits: 50-150 %</i>	<i>1</i>	<i>05/23/24 01:17</i>	<i>NWTPH-Dx LL</i>	

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

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Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

GeoEngineers - Portland 5820 S Kelly Ave Unit B Portland, OR 97239	Project: Nustar Vannex GWM 2Q24 Project Number: 19001-008-13 Project Manager: Philip Cordell	Report ID: A4E1286 - 06 05 24 1050
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ANALYTICAL SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-12 (A4E1286-17)			Matrix: Water			Batch: 24E0775		
Diesel	0.0867	---	0.0825	mg/L	1	05/23/24 01:37	NWTPH-Dx LL	F-11
Oil	ND	---	0.165	mg/L	1	05/23/24 01:37	NWTPH-Dx LL	
<i>Surrogate: o-Terphenyl (Surr)</i>			<i>Recovery: 99 %</i>	<i>Limits: 50-150 %</i>	<i>1</i>	<i>05/23/24 01:37</i>	<i>NWTPH-Dx LL</i>	
MW-12D (A4E1286-18)			Matrix: Water			Batch: 24E0775		
Diesel	ND	---	0.0777	mg/L	1	05/23/24 01:58	NWTPH-Dx LL	
Oil	ND	---	0.155	mg/L	1	05/23/24 01:58	NWTPH-Dx LL	
<i>Surrogate: o-Terphenyl (Surr)</i>			<i>Recovery: 108 %</i>	<i>Limits: 50-150 %</i>	<i>1</i>	<i>05/23/24 01:58</i>	<i>NWTPH-Dx LL</i>	

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ANALYTICAL SAMPLE RESULTS

Dissolved Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-11 (A4E1286-20)				Matrix: Water		Batch: 24E0775		PRO
Diesel	ND	---	0.0816	mg/L	1	05/23/24 02:18	NWTPH-Dx (Diss)	
Oil	ND	---	0.163	mg/L	1	05/23/24 02:18	NWTPH-Dx (Diss)	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 74 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/23/24 02:18</i>	<i>NWTPH-Dx (Diss)</i>
MW-11 DUP (A4E1286-21)				Matrix: Water		Batch: 24E0775		PRO
Diesel	ND	---	0.0769	mg/L	1	05/23/24 02:39	NWTPH-Dx (Diss)	
Oil	ND	---	0.154	mg/L	1	05/23/24 02:39	NWTPH-Dx (Diss)	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 72 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/23/24 02:39</i>	<i>NWTPH-Dx (Diss)</i>

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ANALYTICAL SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-1 (A4E1286-01)				Matrix: Water		Batch: 24E0641		
Gasoline Range Organics	ND	---	0.100	mg/L	1	05/17/24 14:03	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>			<i>Recovery: 95 %</i>	<i>Limits: 50-150 %</i>	<i>1</i>	<i>05/17/24 14:03</i>	<i>NWTPH-Gx (MS)</i>	
<i>1,4-Difluorobenzene (Sur)</i>			<i>105 %</i>	<i>50-150 %</i>	<i>1</i>	<i>05/17/24 14:03</i>	<i>NWTPH-Gx (MS)</i>	
MW-2 (A4E1286-02)				Matrix: Water		Batch: 24E0641		
Gasoline Range Organics	ND	---	0.100	mg/L	1	05/17/24 14:25	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>			<i>Recovery: 94 %</i>	<i>Limits: 50-150 %</i>	<i>1</i>	<i>05/17/24 14:25</i>	<i>NWTPH-Gx (MS)</i>	
<i>1,4-Difluorobenzene (Sur)</i>			<i>105 %</i>	<i>50-150 %</i>	<i>1</i>	<i>05/17/24 14:25</i>	<i>NWTPH-Gx (MS)</i>	
MW-3 (A4E1286-03)				Matrix: Water		Batch: 24E0641		
Gasoline Range Organics	ND	---	0.100	mg/L	1	05/17/24 14:46	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>			<i>Recovery: 97 %</i>	<i>Limits: 50-150 %</i>	<i>1</i>	<i>05/17/24 14:46</i>	<i>NWTPH-Gx (MS)</i>	
<i>1,4-Difluorobenzene (Sur)</i>			<i>105 %</i>	<i>50-150 %</i>	<i>1</i>	<i>05/17/24 14:46</i>	<i>NWTPH-Gx (MS)</i>	
MW-4 (A4E1286-04)				Matrix: Water		Batch: 24E0641		
Gasoline Range Organics	ND	---	0.100	mg/L	1	05/17/24 15:08	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>			<i>Recovery: 97 %</i>	<i>Limits: 50-150 %</i>	<i>1</i>	<i>05/17/24 15:08</i>	<i>NWTPH-Gx (MS)</i>	
<i>1,4-Difluorobenzene (Sur)</i>			<i>107 %</i>	<i>50-150 %</i>	<i>1</i>	<i>05/17/24 15:08</i>	<i>NWTPH-Gx (MS)</i>	
MW-5 (A4E1286-05)				Matrix: Water		Batch: 24E0641		
Gasoline Range Organics	22.7	---	1.00	mg/L	10	05/17/24 17:20	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>			<i>Recovery: 92 %</i>	<i>Limits: 50-150 %</i>	<i>1</i>	<i>05/17/24 17:20</i>	<i>NWTPH-Gx (MS)</i>	
<i>1,4-Difluorobenzene (Sur)</i>			<i>98 %</i>	<i>50-150 %</i>	<i>1</i>	<i>05/17/24 17:20</i>	<i>NWTPH-Gx (MS)</i>	
MW-5 DUP (A4E1286-06)				Matrix: Water		Batch: 24E0590		
Gasoline Range Organics	22.6	---	1.00	mg/L	10	05/16/24 15:38	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>			<i>Recovery: 98 %</i>	<i>Limits: 50-150 %</i>	<i>1</i>	<i>05/16/24 15:38</i>	<i>NWTPH-Gx (MS)</i>	
<i>1,4-Difluorobenzene (Sur)</i>			<i>101 %</i>	<i>50-150 %</i>	<i>1</i>	<i>05/16/24 15:38</i>	<i>NWTPH-Gx (MS)</i>	
MW-6 (A4E1286-07RE1)				Matrix: Water		Batch: 24E0641		
Gasoline Range Organics	15.1	---	2.50	mg/L	25	05/17/24 17:42	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>			<i>Recovery: 89 %</i>	<i>Limits: 50-150 %</i>	<i>1</i>	<i>05/17/24 17:42</i>	<i>NWTPH-Gx (MS)</i>	
<i>1,4-Difluorobenzene (Sur)</i>			<i>94 %</i>	<i>50-150 %</i>	<i>1</i>	<i>05/17/24 17:42</i>	<i>NWTPH-Gx (MS)</i>	
MW-5D (A4E1286-08)				Matrix: Water		Batch: 24E0590		

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

GeoEngineers - Portland 5820 S Kelly Ave Unit B Portland, OR 97239	Project: Nustar Vannex GWM 2Q24 Project Number: 19001-008-13 Project Manager: Philip Cordell	Report ID: A4E1286 - 06 05 24 1050
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ANALYTICAL SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-5D (A4E1286-08)			Matrix: Water			Batch: 24E0590		
Gasoline Range Organics	0.185	---	0.100	mg/L	1	05/16/24 12:21	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 95 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/16/24 12:21</i>	<i>NWTPH-Gx (MS)</i>
<i>1,4-Difluorobenzene (Sur)</i>		<i>103 %</i>		<i>50-150 %</i>		<i>1</i>	<i>05/16/24 12:21</i>	<i>NWTPH-Gx (MS)</i>
MW-6D (A4E1286-09RE1)			Matrix: Water			Batch: 24E0724		
Gasoline Range Organics	ND	---	0.100	mg/L	1	05/21/24 16:42	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 91 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/21/24 16:42</i>	<i>NWTPH-Gx (MS)</i>
<i>1,4-Difluorobenzene (Sur)</i>		<i>104 %</i>		<i>50-150 %</i>		<i>1</i>	<i>05/21/24 16:42</i>	<i>NWTPH-Gx (MS)</i>
MW-7 (A4E1286-10)			Matrix: Water			Batch: 24E0590		
Gasoline Range Organics	ND	---	0.100	mg/L	1	05/16/24 13:05	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 99 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/16/24 13:05</i>	<i>NWTPH-Gx (MS)</i>
<i>1,4-Difluorobenzene (Sur)</i>		<i>109 %</i>		<i>50-150 %</i>		<i>1</i>	<i>05/16/24 13:05</i>	<i>NWTPH-Gx (MS)</i>
MW-8 (A4E1286-11)			Matrix: Water			Batch: 24E0590		
Gasoline Range Organics	ND	---	0.100	mg/L	1	05/16/24 13:26	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 99 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/16/24 13:26</i>	<i>NWTPH-Gx (MS)</i>
<i>1,4-Difluorobenzene (Sur)</i>		<i>107 %</i>		<i>50-150 %</i>		<i>1</i>	<i>05/16/24 13:26</i>	<i>NWTPH-Gx (MS)</i>
MW-8D (A4E1286-12)			Matrix: Water			Batch: 24E0590		
Gasoline Range Organics	ND	---	0.100	mg/L	1	05/16/24 13:48	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 100 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/16/24 13:48</i>	<i>NWTPH-Gx (MS)</i>
<i>1,4-Difluorobenzene (Sur)</i>		<i>109 %</i>		<i>50-150 %</i>		<i>1</i>	<i>05/16/24 13:48</i>	<i>NWTPH-Gx (MS)</i>
MW-9 (A4E1286-13)			Matrix: Water			Batch: 24E0590		
Gasoline Range Organics	ND	---	0.100	mg/L	1	05/16/24 14:10	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 101 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/16/24 14:10</i>	<i>NWTPH-Gx (MS)</i>
<i>1,4-Difluorobenzene (Sur)</i>		<i>109 %</i>		<i>50-150 %</i>		<i>1</i>	<i>05/16/24 14:10</i>	<i>NWTPH-Gx (MS)</i>
MW-10 (A4E1286-14)			Matrix: Water			Batch: 24E0590		
Gasoline Range Organics	ND	---	0.100	mg/L	1	05/16/24 14:32	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 101 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/16/24 14:32</i>	<i>NWTPH-Gx (MS)</i>
<i>1,4-Difluorobenzene (Sur)</i>		<i>109 %</i>		<i>50-150 %</i>		<i>1</i>	<i>05/16/24 14:32</i>	<i>NWTPH-Gx (MS)</i>
MW-11 (A4E1286-15)			Matrix: Water			Batch: 24E0590		R-04

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

GeoEngineers - Portland 5820 S Kelly Ave Unit B Portland, OR 97239	Project: Nustar Vannex GWM 2Q24 Project Number: 19001-008-13 Project Manager: Philip Cordell	Report ID: A4E1286 - 06 05 24 1050
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ANALYTICAL SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-11 (A4E1286-15)				Matrix: Water		Batch: 24E0590		R-04
Gasoline Range Organics	ND	---	1.00	mg/L	10	05/16/24 16:00	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>			<i>Recovery: 95 %</i>	<i>Limits: 50-150 %</i>	<i>1</i>	<i>05/16/24 16:00</i>	<i>NWTPH-Gx (MS)</i>	
<i>1,4-Difluorobenzene (Sur)</i>			<i>107 %</i>	<i>50-150 %</i>	<i>1</i>	<i>05/16/24 16:00</i>	<i>NWTPH-Gx (MS)</i>	
MW-11 DUP (A4E1286-16RE1)				Matrix: Water		Batch: 24E0641		R-04
Gasoline Range Organics	ND	---	1.00	mg/L	10	05/17/24 16:58	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>			<i>Recovery: 96 %</i>	<i>Limits: 50-150 %</i>	<i>1</i>	<i>05/17/24 16:58</i>	<i>NWTPH-Gx (MS)</i>	
<i>1,4-Difluorobenzene (Sur)</i>			<i>108 %</i>	<i>50-150 %</i>	<i>1</i>	<i>05/17/24 16:58</i>	<i>NWTPH-Gx (MS)</i>	
MW-12 (A4E1286-17)				Matrix: Water		Batch: 24E0590		
Gasoline Range Organics	ND	---	0.100	mg/L	1	05/16/24 14:54	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>			<i>Recovery: 102 %</i>	<i>Limits: 50-150 %</i>	<i>1</i>	<i>05/16/24 14:54</i>	<i>NWTPH-Gx (MS)</i>	
<i>1,4-Difluorobenzene (Sur)</i>			<i>109 %</i>	<i>50-150 %</i>	<i>1</i>	<i>05/16/24 14:54</i>	<i>NWTPH-Gx (MS)</i>	
MW-12D (A4E1286-18)				Matrix: Water		Batch: 24E0590		
Gasoline Range Organics	ND	---	0.100	mg/L	1	05/16/24 15:16	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>			<i>Recovery: 100 %</i>	<i>Limits: 50-150 %</i>	<i>1</i>	<i>05/16/24 15:16</i>	<i>NWTPH-Gx (MS)</i>	
<i>1,4-Difluorobenzene (Sur)</i>			<i>107 %</i>	<i>50-150 %</i>	<i>1</i>	<i>05/16/24 15:16</i>	<i>NWTPH-Gx (MS)</i>	

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ORELAP ID: OR100062

GeoEngineers - Portland 5820 S Kelly Ave Unit B Portland, OR 97239	Project: Nustar Vannex GWM 2Q24 Project Number: 19001-008-13 Project Manager: Philip Cordell	Report ID: A4E1286 - 06 05 24 1050
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ANALYTICAL SAMPLE RESULTS

Selected Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-1 (A4E1286-01)			Matrix: Water			Batch: 24E0641		
Benzene	ND	---	0.200	ug/L	1	05/17/24 14:03	EPA 8260D	
Toluene	ND	---	1.00	ug/L	1	05/17/24 14:03	EPA 8260D	
Ethylbenzene	ND	---	0.500	ug/L	1	05/17/24 14:03	EPA 8260D	
Xylenes, total	ND	---	1.50	ug/L	1	05/17/24 14:03	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	ug/L	1	05/17/24 14:03	EPA 8260D	
Naphthalene	ND	---	5.00	ug/L	1	05/17/24 14:03	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>			<i>Recovery: 109 %</i>	<i>Limits: 80-120 %</i>	<i>1</i>	<i>05/17/24 14:03</i>	<i>EPA 8260D</i>	
<i>Toluene-d8 (Surr)</i>			<i>105 %</i>	<i>80-120 %</i>	<i>1</i>	<i>05/17/24 14:03</i>	<i>EPA 8260D</i>	
<i>4-Bromofluorobenzene (Surr)</i>			<i>96 %</i>	<i>80-120 %</i>	<i>1</i>	<i>05/17/24 14:03</i>	<i>EPA 8260D</i>	
MW-2 (A4E1286-02)			Matrix: Water			Batch: 24E0641		
Benzene	ND	---	0.200	ug/L	1	05/17/24 14:25	EPA 8260D	
Toluene	ND	---	1.00	ug/L	1	05/17/24 14:25	EPA 8260D	
Ethylbenzene	ND	---	0.500	ug/L	1	05/17/24 14:25	EPA 8260D	
Xylenes, total	ND	---	1.50	ug/L	1	05/17/24 14:25	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	ug/L	1	05/17/24 14:25	EPA 8260D	
Naphthalene	ND	---	5.00	ug/L	1	05/17/24 14:25	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>			<i>Recovery: 110 %</i>	<i>Limits: 80-120 %</i>	<i>1</i>	<i>05/17/24 14:25</i>	<i>EPA 8260D</i>	
<i>Toluene-d8 (Surr)</i>			<i>104 %</i>	<i>80-120 %</i>	<i>1</i>	<i>05/17/24 14:25</i>	<i>EPA 8260D</i>	
<i>4-Bromofluorobenzene (Surr)</i>			<i>94 %</i>	<i>80-120 %</i>	<i>1</i>	<i>05/17/24 14:25</i>	<i>EPA 8260D</i>	
MW-3 (A4E1286-03)			Matrix: Water			Batch: 24E0641		
Benzene	ND	---	0.200	ug/L	1	05/17/24 14:46	EPA 8260D	
Toluene	ND	---	1.00	ug/L	1	05/17/24 14:46	EPA 8260D	
Ethylbenzene	ND	---	0.500	ug/L	1	05/17/24 14:46	EPA 8260D	
Xylenes, total	ND	---	1.50	ug/L	1	05/17/24 14:46	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	ug/L	1	05/17/24 14:46	EPA 8260D	
Naphthalene	ND	---	5.00	ug/L	1	05/17/24 14:46	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>			<i>Recovery: 110 %</i>	<i>Limits: 80-120 %</i>	<i>1</i>	<i>05/17/24 14:46</i>	<i>EPA 8260D</i>	
<i>Toluene-d8 (Surr)</i>			<i>104 %</i>	<i>80-120 %</i>	<i>1</i>	<i>05/17/24 14:46</i>	<i>EPA 8260D</i>	
<i>4-Bromofluorobenzene (Surr)</i>			<i>97 %</i>	<i>80-120 %</i>	<i>1</i>	<i>05/17/24 14:46</i>	<i>EPA 8260D</i>	
MW-4 (A4E1286-04)			Matrix: Water			Batch: 24E0641		
Benzene	ND	---	0.200	ug/L	1	05/17/24 15:08	EPA 8260D	

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ANALYTICAL REPORT

Apex Laboratories, LLC

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 503-718-2323
 ORELAP ID: OR100062

GeoEngineers - Portland 5820 S Kelly Ave Unit B Portland, OR 97239	Project: Nustar Vannex GWM 2Q24 Project Number: 19001-008-13 Project Manager: Philip Cordell	Report ID: A4E1286 - 06 05 24 1050
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ANALYTICAL SAMPLE RESULTS

Selected Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-4 (A4E1286-04)			Matrix: Water			Batch: 24E0641		
Toluene	ND	---	1.00	ug/L	1	05/17/24 15:08	EPA 8260D	
Ethylbenzene	ND	---	0.500	ug/L	1	05/17/24 15:08	EPA 8260D	
Xylenes, total	ND	---	1.50	ug/L	1	05/17/24 15:08	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	ug/L	1	05/17/24 15:08	EPA 8260D	
Naphthalene	ND	---	5.00	ug/L	1	05/17/24 15:08	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		Recovery: 110 %		Limits: 80-120 %	1	05/17/24 15:08	EPA 8260D	
<i>Toluene-d8 (Surr)</i>		103 %		80-120 %	1	05/17/24 15:08	EPA 8260D	
<i>4-Bromofluorobenzene (Surr)</i>		96 %		80-120 %	1	05/17/24 15:08	EPA 8260D	
MW-5 (A4E1286-05)			Matrix: Water			Batch: 24E0641		
Benzene	ND	---	2.00	ug/L	10	05/17/24 17:20	EPA 8260D	
Toluene	ND	---	10.0	ug/L	10	05/17/24 17:20	EPA 8260D	
Ethylbenzene	113	---	5.00	ug/L	10	05/17/24 17:20	EPA 8260D	
Xylenes, total	397	---	15.0	ug/L	10	05/17/24 17:20	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND	---	10.0	ug/L	10	05/17/24 17:20	EPA 8260D	
Naphthalene	1700	---	50.0	ug/L	10	05/17/24 17:20	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		Recovery: 102 %		Limits: 80-120 %	1	05/17/24 17:20	EPA 8260D	
<i>Toluene-d8 (Surr)</i>		109 %		80-120 %	1	05/17/24 17:20	EPA 8260D	
<i>4-Bromofluorobenzene (Surr)</i>		97 %		80-120 %	1	05/17/24 17:20	EPA 8260D	
MW-5 DUP (A4E1286-06)			Matrix: Water			Batch: 24E0590		
Benzene	ND	---	2.00	ug/L	10	05/16/24 15:38	EPA 8260D	
Toluene	ND	---	10.0	ug/L	10	05/16/24 15:38	EPA 8260D	
Ethylbenzene	115	---	5.00	ug/L	10	05/16/24 15:38	EPA 8260D	
Xylenes, total	394	---	15.0	ug/L	10	05/16/24 15:38	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND	---	10.0	ug/L	10	05/16/24 15:38	EPA 8260D	
Naphthalene	1670	---	50.0	ug/L	10	05/16/24 15:38	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		Recovery: 106 %		Limits: 80-120 %	1	05/16/24 15:38	EPA 8260D	
<i>Toluene-d8 (Surr)</i>		107 %		80-120 %	1	05/16/24 15:38	EPA 8260D	
<i>4-Bromofluorobenzene (Surr)</i>		100 %		80-120 %	1	05/16/24 15:38	EPA 8260D	
MW-6 (A4E1286-07RE1)			Matrix: Water			Batch: 24E0641		
Benzene	217	---	5.00	ug/L	25	05/17/24 17:42	EPA 8260D	
Toluene	ND	---	25.0	ug/L	25	05/17/24 17:42	EPA 8260D	

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Apex Laboratories, LLC

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503-718-2323

ORELAP ID: OR100062

GeoEngineers - Portland 5820 S Kelly Ave Unit B Portland, OR 97239	Project: Nustar Vannex GWM 2Q24 Project Number: 19001-008-13 Project Manager: Philip Cordell	Report ID: A4E1286 - 06 05 24 1050
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ANALYTICAL SAMPLE RESULTS

Selected Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-6 (A4E1286-07RE1)			Matrix: Water			Batch: 24E0641		
Ethylbenzene	2510	---	12.5	ug/L	25	05/17/24 17:42	EPA 8260D	
Xylenes, total	123	---	37.5	ug/L	25	05/17/24 17:42	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND	---	25.0	ug/L	25	05/17/24 17:42	EPA 8260D	
Naphthalene	460	---	125	ug/L	25	05/17/24 17:42	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>			<i>Recovery: 98 %</i>	<i>Limits: 80-120 %</i>	<i>1</i>	<i>05/17/24 17:42</i>	<i>EPA 8260D</i>	
<i>Toluene-d8 (Surr)</i>			<i>106 %</i>	<i>80-120 %</i>	<i>1</i>	<i>05/17/24 17:42</i>	<i>EPA 8260D</i>	
<i>4-Bromofluorobenzene (Surr)</i>			<i>95 %</i>	<i>80-120 %</i>	<i>1</i>	<i>05/17/24 17:42</i>	<i>EPA 8260D</i>	
MW-5D (A4E1286-08)			Matrix: Water			Batch: 24E0590		
Benzene	ND	---	0.200	ug/L	1	05/16/24 12:21	EPA 8260D	
Toluene	ND	---	1.00	ug/L	1	05/16/24 12:21	EPA 8260D	
Ethylbenzene	ND	---	0.500	ug/L	1	05/16/24 12:21	EPA 8260D	
Xylenes, total	ND	---	1.50	ug/L	1	05/16/24 12:21	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	ug/L	1	05/16/24 12:21	EPA 8260D	
Naphthalene	ND	---	5.00	ug/L	1	05/16/24 12:21	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>			<i>Recovery: 106 %</i>	<i>Limits: 80-120 %</i>	<i>1</i>	<i>05/16/24 12:21</i>	<i>EPA 8260D</i>	
<i>Toluene-d8 (Surr)</i>			<i>103 %</i>	<i>80-120 %</i>	<i>1</i>	<i>05/16/24 12:21</i>	<i>EPA 8260D</i>	
<i>4-Bromofluorobenzene (Surr)</i>			<i>97 %</i>	<i>80-120 %</i>	<i>1</i>	<i>05/16/24 12:21</i>	<i>EPA 8260D</i>	
MW-6D (A4E1286-09RE1)			Matrix: Water			Batch: 24E0724		
Benzene	ND	---	0.200	ug/L	1	05/21/24 16:42	EPA 8260D	
Toluene	ND	---	1.00	ug/L	1	05/21/24 16:42	EPA 8260D	
Ethylbenzene	ND	---	0.500	ug/L	1	05/21/24 16:42	EPA 8260D	
Xylenes, total	ND	---	1.50	ug/L	1	05/21/24 16:42	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	ug/L	1	05/21/24 16:42	EPA 8260D	
Naphthalene	ND	---	5.00	ug/L	1	05/21/24 16:42	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>			<i>Recovery: 108 %</i>	<i>Limits: 80-120 %</i>	<i>1</i>	<i>05/21/24 16:42</i>	<i>EPA 8260D</i>	
<i>Toluene-d8 (Surr)</i>			<i>103 %</i>	<i>80-120 %</i>	<i>1</i>	<i>05/21/24 16:42</i>	<i>EPA 8260D</i>	
<i>4-Bromofluorobenzene (Surr)</i>			<i>96 %</i>	<i>80-120 %</i>	<i>1</i>	<i>05/21/24 16:42</i>	<i>EPA 8260D</i>	
MW-7 (A4E1286-10)			Matrix: Water			Batch: 24E0590		
Benzene	ND	---	0.200	ug/L	1	05/16/24 13:05	EPA 8260D	
Toluene	ND	---	1.00	ug/L	1	05/16/24 13:05	EPA 8260D	
Ethylbenzene	ND	---	0.500	ug/L	1	05/16/24 13:05	EPA 8260D	

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

GeoEngineers - Portland 5820 S Kelly Ave Unit B Portland, OR 97239	Project: Nustar Vannex GWM 2Q24 Project Number: 19001-008-13 Project Manager: Philip Cordell	Report ID: A4E1286 - 06 05 24 1050
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ANALYTICAL SAMPLE RESULTS

Selected Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-7 (A4E1286-10)			Matrix: Water			Batch: 24E0590		
Xylenes, total	ND	---	1.50	ug/L	1	05/16/24 13:05	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	ug/L	1	05/16/24 13:05	EPA 8260D	
Naphthalene	ND	---	5.00	ug/L	1	05/16/24 13:05	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 109 %</i>		<i>Limits: 80-120 %</i>		<i>1</i>	<i>05/16/24 13:05</i>	<i>EPA 8260D</i>
<i>Toluene-d8 (Surr)</i>		<i>104 %</i>		<i>80-120 %</i>		<i>1</i>	<i>05/16/24 13:05</i>	<i>EPA 8260D</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>99 %</i>		<i>80-120 %</i>		<i>1</i>	<i>05/16/24 13:05</i>	<i>EPA 8260D</i>
MW-8 (A4E1286-11)			Matrix: Water			Batch: 24E0590		
Benzene	ND	---	0.200	ug/L	1	05/16/24 13:26	EPA 8260D	
Toluene	ND	---	1.00	ug/L	1	05/16/24 13:26	EPA 8260D	
Ethylbenzene	ND	---	0.500	ug/L	1	05/16/24 13:26	EPA 8260D	
Xylenes, total	ND	---	1.50	ug/L	1	05/16/24 13:26	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	ug/L	1	05/16/24 13:26	EPA 8260D	
Naphthalene	ND	---	5.00	ug/L	1	05/16/24 13:26	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 113 %</i>		<i>Limits: 80-120 %</i>		<i>1</i>	<i>05/16/24 13:26</i>	<i>EPA 8260D</i>
<i>Toluene-d8 (Surr)</i>		<i>102 %</i>		<i>80-120 %</i>		<i>1</i>	<i>05/16/24 13:26</i>	<i>EPA 8260D</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>100 %</i>		<i>80-120 %</i>		<i>1</i>	<i>05/16/24 13:26</i>	<i>EPA 8260D</i>
MW-8D (A4E1286-12)			Matrix: Water			Batch: 24E0590		
Benzene	ND	---	0.200	ug/L	1	05/16/24 13:48	EPA 8260D	
Toluene	ND	---	1.00	ug/L	1	05/16/24 13:48	EPA 8260D	
Ethylbenzene	ND	---	0.500	ug/L	1	05/16/24 13:48	EPA 8260D	
Xylenes, total	ND	---	1.50	ug/L	1	05/16/24 13:48	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	ug/L	1	05/16/24 13:48	EPA 8260D	
Naphthalene	ND	---	5.00	ug/L	1	05/16/24 13:48	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 111 %</i>		<i>Limits: 80-120 %</i>		<i>1</i>	<i>05/16/24 13:48</i>	<i>EPA 8260D</i>
<i>Toluene-d8 (Surr)</i>		<i>100 %</i>		<i>80-120 %</i>		<i>1</i>	<i>05/16/24 13:48</i>	<i>EPA 8260D</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>99 %</i>		<i>80-120 %</i>		<i>1</i>	<i>05/16/24 13:48</i>	<i>EPA 8260D</i>
MW-9 (A4E1286-13)			Matrix: Water			Batch: 24E0590		
Benzene	ND	---	0.200	ug/L	1	05/16/24 14:10	EPA 8260D	
Toluene	ND	---	1.00	ug/L	1	05/16/24 14:10	EPA 8260D	
Ethylbenzene	ND	---	0.500	ug/L	1	05/16/24 14:10	EPA 8260D	
Xylenes, total	ND	---	1.50	ug/L	1	05/16/24 14:10	EPA 8260D	

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503-718-2323
ORELAP ID: OR100062

GeoEngineers - Portland 5820 S Kelly Ave Unit B Portland, OR 97239	Project: Nustar Vannex GWM 2Q24 Project Number: 19001-008-13 Project Manager: Philip Cordell	Report ID: A4E1286 - 06 05 24 1050
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ANALYTICAL SAMPLE RESULTS

Selected Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-9 (A4E1286-13)			Matrix: Water			Batch: 24E0590		
Methyl tert-butyl ether (MTBE)	ND	---	1.00	ug/L	1	05/16/24 14:10	EPA 8260D	
Naphthalene	ND	---	5.00	ug/L	1	05/16/24 14:10	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 112 %</i>		<i>Limits: 80-120 %</i>		<i>1</i>	<i>05/16/24 14:10</i>	<i>EPA 8260D</i>
<i>Toluene-d8 (Surr)</i>		<i>101 %</i>		<i>80-120 %</i>		<i>1</i>	<i>05/16/24 14:10</i>	<i>EPA 8260D</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>101 %</i>		<i>80-120 %</i>		<i>1</i>	<i>05/16/24 14:10</i>	<i>EPA 8260D</i>
MW-10 (A4E1286-14)			Matrix: Water			Batch: 24E0590		
Benzene	ND	---	0.200	ug/L	1	05/16/24 14:32	EPA 8260D	
Toluene	ND	---	1.00	ug/L	1	05/16/24 14:32	EPA 8260D	
Ethylbenzene	ND	---	0.500	ug/L	1	05/16/24 14:32	EPA 8260D	
Xylenes, total	ND	---	1.50	ug/L	1	05/16/24 14:32	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	ug/L	1	05/16/24 14:32	EPA 8260D	
Naphthalene	ND	---	5.00	ug/L	1	05/16/24 14:32	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 111 %</i>		<i>Limits: 80-120 %</i>		<i>1</i>	<i>05/16/24 14:32</i>	<i>EPA 8260D</i>
<i>Toluene-d8 (Surr)</i>		<i>100 %</i>		<i>80-120 %</i>		<i>1</i>	<i>05/16/24 14:32</i>	<i>EPA 8260D</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>98 %</i>		<i>80-120 %</i>		<i>1</i>	<i>05/16/24 14:32</i>	<i>EPA 8260D</i>
MW-11 (A4E1286-15)			Matrix: Water			Batch: 24E0590		R-04
Benzene	ND	---	2.00	ug/L	10	05/16/24 16:00	EPA 8260D	
Toluene	ND	---	10.0	ug/L	10	05/16/24 16:00	EPA 8260D	
Ethylbenzene	ND	---	5.00	ug/L	10	05/16/24 16:00	EPA 8260D	
Xylenes, total	ND	---	15.0	ug/L	10	05/16/24 16:00	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND	---	10.0	ug/L	10	05/16/24 16:00	EPA 8260D	
Naphthalene	ND	---	50.0	ug/L	10	05/16/24 16:00	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 112 %</i>		<i>Limits: 80-120 %</i>		<i>1</i>	<i>05/16/24 16:00</i>	<i>EPA 8260D</i>
<i>Toluene-d8 (Surr)</i>		<i>101 %</i>		<i>80-120 %</i>		<i>1</i>	<i>05/16/24 16:00</i>	<i>EPA 8260D</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>114 %</i>		<i>80-120 %</i>		<i>1</i>	<i>05/16/24 16:00</i>	<i>EPA 8260D</i>
MW-11 DUP (A4E1286-16RE1)			Matrix: Water			Batch: 24E0641		R-04
Benzene	ND	---	2.00	ug/L	10	05/17/24 16:58	EPA 8260D	
Toluene	ND	---	10.0	ug/L	10	05/17/24 16:58	EPA 8260D	
Ethylbenzene	ND	---	5.00	ug/L	10	05/17/24 16:58	EPA 8260D	
Xylenes, total	ND	---	15.0	ug/L	10	05/17/24 16:58	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND	---	10.0	ug/L	10	05/17/24 16:58	EPA 8260D	

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Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

GeoEngineers - Portland 5820 S Kelly Ave Unit B Portland, OR 97239	Project: Nustar Vannex GWM 2Q24 Project Number: 19001-008-13 Project Manager: Philip Cordell	Report ID: A4E1286 - 06 05 24 1050
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ANALYTICAL SAMPLE RESULTS

Selected Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-11 DUP (A4E1286-16RE1)			Matrix: Water			Batch: 24E0641		R-04
Naphthalene	ND	---	50.0	ug/L	10	05/17/24 16:58	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>			<i>Recovery: 111 %</i>	<i>Limits: 80-120 %</i>	<i>1</i>	<i>05/17/24 16:58</i>	<i>EPA 8260D</i>	
<i>Toluene-d8 (Surr)</i>			<i>105 %</i>	<i>80-120 %</i>	<i>1</i>	<i>05/17/24 16:58</i>	<i>EPA 8260D</i>	
<i>4-Bromofluorobenzene (Surr)</i>			<i>102 %</i>	<i>80-120 %</i>	<i>1</i>	<i>05/17/24 16:58</i>	<i>EPA 8260D</i>	
MW-12 (A4E1286-17)			Matrix: Water			Batch: 24E0590		
Benzene	ND	---	0.200	ug/L	1	05/16/24 14:54	EPA 8260D	
Toluene	ND	---	1.00	ug/L	1	05/16/24 14:54	EPA 8260D	
Ethylbenzene	ND	---	0.500	ug/L	1	05/16/24 14:54	EPA 8260D	
Xylenes, total	ND	---	1.50	ug/L	1	05/16/24 14:54	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	ug/L	1	05/16/24 14:54	EPA 8260D	
Naphthalene	ND	---	5.00	ug/L	1	05/16/24 14:54	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>			<i>Recovery: 114 %</i>	<i>Limits: 80-120 %</i>	<i>1</i>	<i>05/16/24 14:54</i>	<i>EPA 8260D</i>	
<i>Toluene-d8 (Surr)</i>			<i>104 %</i>	<i>80-120 %</i>	<i>1</i>	<i>05/16/24 14:54</i>	<i>EPA 8260D</i>	
<i>4-Bromofluorobenzene (Surr)</i>			<i>99 %</i>	<i>80-120 %</i>	<i>1</i>	<i>05/16/24 14:54</i>	<i>EPA 8260D</i>	
MW-12D (A4E1286-18)			Matrix: Water			Batch: 24E0590		
Benzene	ND	---	0.200	ug/L	1	05/16/24 15:16	EPA 8260D	
Toluene	ND	---	1.00	ug/L	1	05/16/24 15:16	EPA 8260D	
Ethylbenzene	ND	---	0.500	ug/L	1	05/16/24 15:16	EPA 8260D	
Xylenes, total	ND	---	1.50	ug/L	1	05/16/24 15:16	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	ug/L	1	05/16/24 15:16	EPA 8260D	
Naphthalene	ND	---	5.00	ug/L	1	05/16/24 15:16	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>			<i>Recovery: 110 %</i>	<i>Limits: 80-120 %</i>	<i>1</i>	<i>05/16/24 15:16</i>	<i>EPA 8260D</i>	
<i>Toluene-d8 (Surr)</i>			<i>102 %</i>	<i>80-120 %</i>	<i>1</i>	<i>05/16/24 15:16</i>	<i>EPA 8260D</i>	
<i>4-Bromofluorobenzene (Surr)</i>			<i>99 %</i>	<i>80-120 %</i>	<i>1</i>	<i>05/16/24 15:16</i>	<i>EPA 8260D</i>	

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

Apex Laboratories, LLC

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503-718-2323
ORELAP ID: OR100062

GeoEngineers - Portland 5820 S Kelly Ave Unit B Portland, OR 97239	Project: Nustar Vannex GWM 2Q24 Project Number: 19001-008-13 Project Manager: Philip Cordell	Report ID: A4E1286 - 06 05 24 1050
---	---	---

QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0775 - EPA 3510C (Fuels/Acid Ext.)						Water						
Blank (24E0775-BLK1)			Prepared: 05/22/24 07:10 Analyzed: 05/22/24 18:05									
<u>NWTPH-Dx LL</u>												
Diesel	ND	---	0.0800	mg/L	1	---	---	---	---	---	---	
Oil	ND	---	0.160	mg/L	1	---	---	---	---	---	---	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 96 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
LCS (24E0775-BS1)			Prepared: 05/22/24 07:10 Analyzed: 05/22/24 18:46									
<u>NWTPH-Dx LL</u>												
Diesel	0.403	---	0.0800	mg/L	1	0.500	---	81	36-132%	---	---	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 54 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
LCS Dup (24E0775-BSD1)			Prepared: 05/22/24 07:10 Analyzed: 05/22/24 19:07									Q-19
<u>NWTPH-Dx LL</u>												
Diesel	0.396	---	0.0800	mg/L	1	0.500	---	79	36-132%	2	30%	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 101 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						

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GeoEngineers - Portland 5820 S Kelly Ave Unit B Portland, OR 97239	Project: Nustar Vannex GWM 2Q24 Project Number: 19001-008-13 Project Manager: Philip Cordell	Report ID: A4E1286 - 06 05 24 1050
---	---	---

QUALITY CONTROL (QC) SAMPLE RESULTS

Dissolved Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0775 - EPA 3510C (Fuels/Acid Ext.)						Water						
Blank (24E0775-BLK2)			Prepared: 05/22/24 07:10 Analyzed: 05/22/24 18:25						FILT3			
<u>NWTPH-Dx (Diss)</u>												
Diesel	ND	---	0.0800	mg/L	1	---	---	---	---	---	---	
Oil	ND	---	0.160	mg/L	1	---	---	---	---	---	---	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 89 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
LCS (24E0775-BS1)			Prepared: 05/22/24 07:10 Analyzed: 05/22/24 18:46									
<u>NWTPH-Dx (Diss)</u>												
Diesel	0.403	---	0.0800	mg/L	1	0.500	---	81	36-132%	---	---	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 54 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
LCS Dup (24E0775-BSD1)			Prepared: 05/22/24 07:10 Analyzed: 05/22/24 19:07						Q-19			
<u>NWTPH-Dx (Diss)</u>												
Diesel	0.396	---	0.0800	mg/L	1	0.500	---	79	36-132%	2	30%	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 101 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						

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---	---	---

QUALITY CONTROL (QC) SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0590 - EPA 5030C						Water						
Blank (24E0590-BLK1)			Prepared: 05/16/24 07:38 Analyzed: 05/16/24 08:20									
<u>NWTPH-Gx (MS)</u>												
Gasoline Range Organics	ND	---	0.100	mg/L	1	---	---	---	---	---	---	---
<i>Surr: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 98 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>1,4-Difluorobenzene (Sur)</i>		<i>105 %</i>		<i>50-150 %</i>		<i>"</i>						
LCS (24E0590-BS2)			Prepared: 05/16/24 07:38 Analyzed: 05/16/24 07:58									
<u>NWTPH-Gx (MS)</u>												
Gasoline Range Organics	0.400	---	0.100	mg/L	1	0.500	---	80	80-120%	---	---	---
<i>Surr: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 92 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>1,4-Difluorobenzene (Sur)</i>		<i>93 %</i>		<i>50-150 %</i>		<i>"</i>						
Duplicate (24E0590-DUP1)			Prepared: 05/16/24 07:38 Analyzed: 05/16/24 10:31									
<u>QC Source Sample: Non-SDG (A4E1254-03)</u>												
Gasoline Range Organics	ND	---	0.100	mg/L	1	---	ND	---	---	---	30%	---
<i>Surr: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 98 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>1,4-Difluorobenzene (Sur)</i>		<i>107 %</i>		<i>50-150 %</i>		<i>"</i>						
Duplicate (24E0590-DUP2)			Prepared: 05/16/24 07:38 Analyzed: 05/16/24 17:27									
<u>QC Source Sample: MW-6 (A4E1286-07)</u>												
<u>NWTPH-Gx (MS)</u>												
Gasoline Range Organics	15.4	---	10.0	mg/L	100	---	15.9	---	---	3	30%	---
<i>Surr: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 102 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>1,4-Difluorobenzene (Sur)</i>		<i>104 %</i>		<i>50-150 %</i>		<i>"</i>						

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

GeoEngineers - Portland 5820 S Kelly Ave Unit B Portland, OR 97239	Project: Nustar Vannex GWM 2Q24 Project Number: 19001-008-13 Project Manager: Philip Cordell	Report ID: A4E1286 - 06 05 24 1050
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QUALITY CONTROL (QC) SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0641 - EPA 5030C						Water						
Blank (24E0641-BLK1)			Prepared: 05/17/24 09:27 Analyzed: 05/17/24 11:28									
<u>NWTPH-Gx (MS)</u>												
Gasoline Range Organics	ND	---	0.100	mg/L	1	---	---	---	---	---	---	
<i>Surr: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 97 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>1,4-Difluorobenzene (Sur)</i>		<i>105 %</i>		<i>50-150 %</i>		<i>"</i>						
LCS (24E0641-BS2)						Prepared: 05/17/24 09:27 Analyzed: 05/17/24 11:06						Q-50
<u>NWTPH-Gx (MS)</u>												
Gasoline Range Organics	0.414	---	0.100	mg/L	1	0.500	---	83	80-120%	---	---	
<i>Surr: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 91 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>1,4-Difluorobenzene (Sur)</i>		<i>91 %</i>		<i>50-150 %</i>		<i>"</i>						

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ORELAP ID: OR100062

GeoEngineers - Portland 5820 S Kelly Ave Unit B Portland, OR 97239	Project: Nustar Vannex GWM 2Q24 Project Number: 19001-008-13 Project Manager: Philip Cordell	Report ID: A4E1286 - 06 05 24 1050
---	---	---

QUALITY CONTROL (QC) SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0724 - EPA 5030C						Water						
Blank (24E0724-BLK1)			Prepared: 05/21/24 06:18 Analyzed: 05/21/24 14:52									
<u>NWTPH-Gx (MS)</u>												
Gasoline Range Organics	ND	---	0.100	mg/L	1	---	---	---	---	---	---	---
<i>Surr: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 89 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>1,4-Difluorobenzene (Sur)</i>		<i>102 %</i>		<i>50-150 %</i>		<i>"</i>						
LCS (24E0724-BS2)						Prepared: 05/21/24 06:18 Analyzed: 05/21/24 13:47						
<u>NWTPH-Gx (MS)</u>												
Gasoline Range Organics	0.438	---	0.100	mg/L	1	0.500	---	88	80-120%	---	---	---
<i>Surr: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 86 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>1,4-Difluorobenzene (Sur)</i>		<i>91 %</i>		<i>50-150 %</i>		<i>"</i>						
Duplicate (24E0724-DUP1)						Prepared: 05/21/24 06:18 Analyzed: 05/21/24 19:59						
<u>QC Source Sample: Non-SDG (A4E1408-02)</u>												
Gasoline Range Organics	ND	---	0.100	mg/L	1	---	ND	---	---	---	30%	---
<i>Surr: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 90 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>1,4-Difluorobenzene (Sur)</i>		<i>106 %</i>		<i>50-150 %</i>		<i>"</i>						
Duplicate (24E0724-DUP2)						Prepared: 05/21/24 06:18 Analyzed: 05/21/24 23:38						
<u>QC Source Sample: Non-SDG (A4E1386-10)</u>												
Gasoline Range Organics	0.941	---	0.100	mg/L	1	---	0.979	---	---	4	30%	---
<i>Surr: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 90 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>1,4-Difluorobenzene (Sur)</i>		<i>94 %</i>		<i>50-150 %</i>		<i>"</i>						

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ORELAP ID: OR100062

GeoEngineers - Portland 5820 S Kelly Ave Unit B Portland, OR 97239	Project: Nustar Vannex GWM 2Q24 Project Number: 19001-008-13 Project Manager: Philip Cordell	Report ID: A4E1286 - 06 05 24 1050
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QUALITY CONTROL (QC) SAMPLE RESULTS

Selected Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0590 - EPA 5030C						Water						
Blank (24E0590-BLK1)			Prepared: 05/16/24 07:38 Analyzed: 05/16/24 08:20									
<u>EPA 8260D</u>												
Benzene	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Toluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Ethylbenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Xylenes, total	ND	---	1.50	ug/L	1	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Naphthalene	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 107 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>		<i>101 %</i>		<i>80-120 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>102 %</i>		<i>80-120 %</i>		<i>"</i>						
LCS (24E0590-BS1)						Prepared: 05/16/24 06:38 Analyzed: 05/16/24 07:22						
<u>EPA 8260D</u>												
Benzene	20.0	---	0.200	ug/L	1	20.0	---	100	80-120%	---	---	
Toluene	19.1	---	1.00	ug/L	1	20.0	---	95	80-120%	---	---	
Ethylbenzene	21.3	---	0.500	ug/L	1	20.0	---	106	80-120%	---	---	
Xylenes, total	58.2	---	1.50	ug/L	1	60.0	---	97	80-120%	---	---	
Methyl tert-butyl ether (MTBE)	19.6	---	1.00	ug/L	1	20.0	---	98	80-120%	---	---	
Naphthalene	15.9	---	5.00	ug/L	1	20.0	---	80	80-120%	---	---	
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 98 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>		<i>95 %</i>		<i>80-120 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>94 %</i>		<i>80-120 %</i>		<i>"</i>						
Duplicate (24E0590-DUP1)						Prepared: 05/16/24 07:38 Analyzed: 05/16/24 10:31						
<u>QC Source Sample: Non-SDG (A4E1254-03)</u>												
Benzene	ND	---	0.200	ug/L	1	---	ND	---	---	---	---	30%
Toluene	ND	---	1.00	ug/L	1	---	ND	---	---	---	---	30%
Ethylbenzene	ND	---	0.500	ug/L	1	---	ND	---	---	---	---	30%
Xylenes, total	ND	---	1.50	ug/L	1	---	ND	---	---	---	---	30%
Methyl tert-butyl ether (MTBE)	ND	---	1.00	ug/L	1	---	ND	---	---	---	---	30%
Naphthalene	ND	---	5.00	ug/L	1	---	ND	---	---	---	---	30%
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 107 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>		<i>102 %</i>		<i>80-120 %</i>		<i>"</i>						

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ORELAP ID: OR100062

GeoEngineers - Portland 5820 S Kelly Ave Unit B Portland, OR 97239	Project: Nustar Vannex GWM 2Q24 Project Number: 19001-008-13 Project Manager: Philip Cordell	Report ID: A4E1286 - 06 05 24 1050
---	---	---

QUALITY CONTROL (QC) SAMPLE RESULTS

Selected Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0590 - EPA 5030C						Water						
Duplicate (24E0590-DUP1)						Prepared: 05/16/24 07:38 Analyzed: 05/16/24 10:31						
QC Source Sample: Non-SDG (A4E1254-03)												
<i>Surr: 4-Bromofluorobenzene (Surr)</i>		Recovery: 98 %		Limits: 80-120 %		Dilution: 1x						
Duplicate (24E0590-DUP2)						Prepared: 05/16/24 07:38 Analyzed: 05/16/24 17:27						
QC Source Sample: MW-6 (A4E1286-07)												
EPA 8260D												
Benzene	199	---	20.0	ug/L	100	---	197	---	---	1	30%	
Toluene	ND	---	100	ug/L	100	---	ND	---	---	---	30%	
Ethylbenzene	2000	---	50.0	ug/L	100	---	1970	---	---	2	30%	
Xylenes, total	ND	---	150	ug/L	100	---	128	---	---	***	30%	
Methyl tert-butyl ether (MTBE)	ND	---	100	ug/L	100	---	ND	---	---	---	30%	
Naphthalene	ND	---	500	ug/L	100	---	253	---	---	***	30%	
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		Recovery: 108 %		Limits: 80-120 %		Dilution: 1x						
<i>Toluene-d8 (Surr)</i>		102 %		80-120 %		"						
<i>4-Bromofluorobenzene (Surr)</i>		100 %		80-120 %		"						
Matrix Spike (24E0590-MS1)						Prepared: 05/16/24 07:38 Analyzed: 05/16/24 09:25						
QC Source Sample: Non-SDG (A4E1282-01)												
EPA 8260D												
Benzene	215	---	2.00	ug/L	10	200	ND	108	79-120%	---	---	
Toluene	206	---	10.0	ug/L	10	200	ND	103	80-121%	---	---	
Ethylbenzene	247	---	5.00	ug/L	10	200	14.8	116	79-121%	---	---	
Xylenes, total	696	---	15.0	ug/L	10	600	43.9	109	79-121%	---	---	
Methyl tert-butyl ether (MTBE)	190	---	10.0	ug/L	10	200	ND	95	71-124%	---	---	
Naphthalene	241	---	50.0	ug/L	10	200	ND	120	61-128%	---	---	
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		Recovery: 99 %		Limits: 80-120 %		Dilution: 1x						
<i>Toluene-d8 (Surr)</i>		96 %		80-120 %		"						
<i>4-Bromofluorobenzene (Surr)</i>		93 %		80-120 %		"						

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GeoEngineers - Portland 5820 S Kelly Ave Unit B Portland, OR 97239	Project: Nustar Vannex GWM 2Q24 Project Number: 19001-008-13 Project Manager: Philip Cordell	Report ID: A4E1286 - 06 05 24 1050
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QUALITY CONTROL (QC) SAMPLE RESULTS

Selected Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0641 - EPA 5030C						Water						
Blank (24E0641-BLK1)			Prepared: 05/17/24 09:27 Analyzed: 05/17/24 11:28									
EPA 8260D												
Benzene	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Toluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Ethylbenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Xylenes, total	ND	---	1.50	ug/L	1	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Naphthalene	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 107 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>		<i>104 %</i>		<i>80-120 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>98 %</i>		<i>80-120 %</i>		<i>"</i>						
LCS (24E0641-BS1)						Prepared: 05/17/24 09:27 Analyzed: 05/17/24 10:06						Q-50
EPA 8260D												
Benzene	20.9	---	0.200	ug/L	1	20.0	---	105	80-120%	---	---	
Toluene	20.1	---	1.00	ug/L	1	20.0	---	101	80-120%	---	---	
Ethylbenzene	22.7	---	0.500	ug/L	1	20.0	---	113	80-120%	---	---	
Xylenes, total	61.1	---	1.50	ug/L	1	60.0	---	102	80-120%	---	---	
Methyl tert-butyl ether (MTBE)	19.5	---	1.00	ug/L	1	20.0	---	97	80-120%	---	---	
Naphthalene	16.5	---	5.00	ug/L	1	20.0	---	83	80-120%	---	---	
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 98 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>		<i>95 %</i>		<i>80-120 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>94 %</i>		<i>80-120 %</i>		<i>"</i>						

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QUALITY CONTROL (QC) SAMPLE RESULTS

Selected Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0724 - EPA 5030C												
Water												
Blank (24E0724-BLK1)												
Prepared: 05/21/24 06:18 Analyzed: 05/21/24 14:52												
EPA 8260D												
Benzene	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Toluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Ethylbenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Xylenes, total	ND	---	1.50	ug/L	1	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Naphthalene	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Isopropylbenzene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2,4-Trimethylbenzene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,3,5-Trimethylbenzene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
<i>Surr: 1,4-Difluorobenzene (Surr) Recovery: 106 % Limits: 80-120 % Dilution: 1x</i> <i>Toluene-d8 (Surr) 106 % 80-120 % "</i> <i>4-Bromofluorobenzene (Surr) 98 % 80-120 % "</i>												
LCS (24E0724-BS1)												
Prepared: 05/21/24 06:18 Analyzed: 05/21/24 12:36												
EPA 8260D												
Benzene	18.7	---	0.200	ug/L	1	20.0	---	94	80-120%	---	---	
Toluene	19.1	---	1.00	ug/L	1	20.0	---	95	80-120%	---	---	
Ethylbenzene	21.4	---	0.500	ug/L	1	20.0	---	107	80-120%	---	---	
Xylenes, total	58.4	---	1.50	ug/L	1	60.0	---	97	80-120%	---	---	
Methyl tert-butyl ether (MTBE)	17.6	---	1.00	ug/L	1	20.0	---	88	80-120%	---	---	
Naphthalene	15.9	---	5.00	ug/L	1	20.0	---	80	80-120%	---	---	
1,2-Dibromoethane (EDB)	21.6	---	0.500	ug/L	1	20.0	---	108	80-120%	---	---	
1,2-Dichloroethane (EDC)	18.3	---	0.400	ug/L	1	20.0	---	91	80-120%	---	---	
Isopropylbenzene	19.1	---	1.00	ug/L	1	20.0	---	96	80-120%	---	---	
1,2,4-Trimethylbenzene	19.0	---	1.00	ug/L	1	20.0	---	95	80-120%	---	---	
1,3,5-Trimethylbenzene	19.2	---	1.00	ug/L	1	20.0	---	96	80-120%	---	---	
<i>Surr: 1,4-Difluorobenzene (Surr) Recovery: 95 % Limits: 80-120 % Dilution: 1x</i> <i>Toluene-d8 (Surr) 99 % 80-120 % "</i> <i>4-Bromofluorobenzene (Surr) 95 % 80-120 % "</i>												
Duplicate (24E0724-DUP1)												
Prepared: 05/21/24 06:18 Analyzed: 05/21/24 19:59												

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QUALITY CONTROL (QC) SAMPLE RESULTS

Selected Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0724 - EPA 5030C												
Water												
Duplicate (24E0724-DUP1)			Prepared: 05/21/24 06:18 Analyzed: 05/21/24 19:59									
QC Source Sample: Non-SDG (A4E1408-02)												
Benzene	ND	---	0.200	ug/L	1	---	ND	---	---	---	30%	
Toluene	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Ethylbenzene	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
Xylenes, total	ND	---	1.50	ug/L	1	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Naphthalene	ND	---	5.00	ug/L	1	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	---	ND	---	---	---	30%	
Isopropylbenzene	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
1,2,4-Trimethylbenzene	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
1,3,5-Trimethylbenzene	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 110 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>		<i>103 %</i>		<i>80-120 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>101 %</i>		<i>80-120 %</i>		<i>"</i>						

Duplicate (24E0724-DUP2)			Prepared: 05/21/24 06:18 Analyzed: 05/21/24 23:38									
QC Source Sample: Non-SDG (A4E1386-10)												
Benzene	56.2	---	0.200	ug/L	1	---	55.5	---	---	1	30%	
Toluene	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Ethylbenzene	1.67	---	0.500	ug/L	1	---	1.64	---	---	2	30%	
Xylenes, total	ND	---	1.50	ug/L	1	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	ug/L	1	---	0.540	---	---	***	30%	
Naphthalene	ND	---	5.00	ug/L	1	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	---	ND	---	---	---	30%	
Isopropylbenzene	7.40	---	1.00	ug/L	1	---	7.42	---	---	0.3	30%	
1,2,4-Trimethylbenzene	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
1,3,5-Trimethylbenzene	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 101 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>		<i>102 %</i>		<i>80-120 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>99 %</i>		<i>80-120 %</i>		<i>"</i>						

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503-718-2323
ORELAP ID: OR100062

GeoEngineers - Portland 5820 S Kelly Ave Unit B Portland, OR 97239	Project: Nustar Vannex GWM 2Q24 Project Number: 19001-008-13 Project Manager: Philip Cordell	Report ID: A4E1286 - 06 05 24 1050
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QUALITY CONTROL (QC) SAMPLE RESULTS

Selected Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0724 - EPA 5030C						Water						
Matrix Spike (24E0724-MS1)						Prepared: 05/21/24 06:18 Analyzed: 05/21/24 15:36						
QC Source Sample: Non-SDG (A4E1420-01)												
EPA 8260D												
Benzene	20.5	---	0.200	ug/L	1	20.0	ND	103	79-120%	---	---	
Toluene	20.3	---	1.00	ug/L	1	20.0	ND	102	80-121%	---	---	
Ethylbenzene	23.2	---	0.500	ug/L	1	20.0	ND	116	79-121%	---	---	
Xylenes, total	63.1	---	1.50	ug/L	1	60.0	ND	105	79-121%	---	---	
Methyl tert-butyl ether (MTBE)	18.4	---	1.00	ug/L	1	20.0	ND	92	71-124%	---	---	
Naphthalene	16.5	---	5.00	ug/L	1	20.0	ND	83	61-128%	---	---	
1,2-Dibromoethane (EDB)	22.0	---	0.500	ug/L	1	20.0	ND	110	77-121%	---	---	
1,2-Dichloroethane (EDC)	18.9	---	0.400	ug/L	1	20.0	ND	95	73-128%	---	---	
Isopropylbenzene	21.3	---	1.00	ug/L	1	20.0	ND	106	72-131%	---	---	
1,2,4-Trimethylbenzene	20.1	---	1.00	ug/L	1	20.0	ND	100	76-124%	---	---	
1,3,5-Trimethylbenzene	20.4	---	1.00	ug/L	1	20.0	ND	102	75-124%	---	---	
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 96 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>		<i>97 %</i>		<i>80-120 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>93 %</i>		<i>80-120 %</i>		<i>"</i>						

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ORELAP ID: OR100062

GeoEngineers - Portland 5820 S Kelly Ave Unit B Portland, OR 97239	Project: Nustar Vannex GWM 2Q24 Project Number: 19001-008-13 Project Manager: Philip Cordell	Report ID: A4E1286 - 06 05 24 1050
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SAMPLE PREPARATION INFORMATION

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Prep: EPA 3510C (Fuels/Acid Ext.)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<u>Batch: 24E0775</u>							
A4E1286-01	Water	NWTPH-Dx LL	05/14/24 12:14	05/22/24 07:10	1000mL/2mL	1000mL/2mL	1.00
A4E1286-02	Water	NWTPH-Dx LL	05/15/24 08:53	05/22/24 07:10	1000mL/2mL	1000mL/2mL	1.00
A4E1286-03	Water	NWTPH-Dx LL	05/14/24 13:26	05/22/24 07:10	1020mL/2mL	1000mL/2mL	0.98
A4E1286-04	Water	NWTPH-Dx LL	05/15/24 08:00	05/22/24 07:10	1000mL/2mL	1000mL/2mL	1.00
A4E1286-05	Water	NWTPH-Dx LL	05/14/24 12:56	05/22/24 07:10	1060mL/2mL	1000mL/2mL	0.94
A4E1286-06	Water	NWTPH-Dx LL	05/14/24 12:56	05/22/24 07:10	1010mL/2mL	1000mL/2mL	0.99
A4E1286-07	Water	NWTPH-Dx LL	05/15/24 07:54	05/22/24 07:10	1030mL/2mL	1000mL/2mL	0.97
A4E1286-08	Water	NWTPH-Dx LL	05/14/24 12:20	05/22/24 07:10	1040mL/2mL	1000mL/2mL	0.96
A4E1286-09	Water	NWTPH-Dx LL	05/15/24 08:38	05/22/24 07:10	1020mL/2mL	1000mL/2mL	0.98
A4E1286-10	Water	NWTPH-Dx LL	05/14/24 10:18	05/22/24 07:10	1040mL/2mL	1000mL/2mL	0.96
A4E1286-11	Water	NWTPH-Dx LL	05/14/24 11:02	05/22/24 07:10	1040mL/2mL	1000mL/2mL	0.96
A4E1286-12	Water	NWTPH-Dx LL	05/14/24 11:43	05/22/24 07:10	1030mL/2mL	1000mL/2mL	0.97
A4E1286-13	Water	NWTPH-Dx LL	05/14/24 09:25	05/22/24 07:10	1060mL/2mL	1000mL/2mL	0.94
A4E1286-14	Water	NWTPH-Dx LL	05/14/24 09:34	05/22/24 07:10	1020mL/2mL	1000mL/2mL	0.98
A4E1286-17	Water	NWTPH-Dx LL	05/14/24 10:30	05/22/24 07:10	970mL/2mL	1000mL/2mL	1.03
A4E1286-18	Water	NWTPH-Dx LL	05/14/24 11:19	05/22/24 07:10	1030mL/2mL	1000mL/2mL	0.97

Dissolved Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Prep: EPA 3510C (Fuels/Acid Ext.)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<u>Batch: 24E0775</u>							
A4E1286-20	Water	NWTPH-Dx (Diss)	05/15/24 09:38	05/22/24 07:10	980mL/2mL	1000mL/2mL	1.02
A4E1286-21	Water	NWTPH-Dx (Diss)	05/15/24 09:38	05/22/24 07:10	1040mL/2mL	1000mL/2mL	0.96

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Prep: EPA 5030C

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<u>Batch: 24E0590</u>							
A4E1286-06	Water	NWTPH-Gx (MS)	05/14/24 12:56	05/16/24 07:38	5mL/5mL	5mL/5mL	1.00
A4E1286-08	Water	NWTPH-Gx (MS)	05/14/24 12:20	05/16/24 07:38	5mL/5mL	5mL/5mL	1.00
A4E1286-10	Water	NWTPH-Gx (MS)	05/14/24 10:18	05/16/24 07:38	5mL/5mL	5mL/5mL	1.00
A4E1286-11	Water	NWTPH-Gx (MS)	05/14/24 11:02	05/16/24 07:38	5mL/5mL	5mL/5mL	1.00
A4E1286-12	Water	NWTPH-Gx (MS)	05/14/24 11:43	05/16/24 07:38	5mL/5mL	5mL/5mL	1.00
A4E1286-13	Water	NWTPH-Gx (MS)	05/14/24 09:25	05/16/24 07:38	5mL/5mL	5mL/5mL	1.00

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ORELAP ID: OR100062

GeoEngineers - Portland 5820 S Kelly Ave Unit B Portland, OR 97239	Project: Nustar Vannex GWM 2Q24 Project Number: 19001-008-13 Project Manager: Philip Cordell	Report ID: A4E1286 - 06 05 24 1050
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SAMPLE PREPARATION INFORMATION

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Prep: EPA 5030C					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
A4E1286-14	Water	NWTPH-Gx (MS)	05/14/24 09:34	05/16/24 07:38	5mL/5mL	5mL/5mL	1.00
A4E1286-15	Water	NWTPH-Gx (MS)	05/15/24 09:38	05/16/24 07:38	5mL/5mL	5mL/5mL	1.00
A4E1286-17	Water	NWTPH-Gx (MS)	05/14/24 10:30	05/16/24 07:38	5mL/5mL	5mL/5mL	1.00
A4E1286-18	Water	NWTPH-Gx (MS)	05/14/24 11:19	05/16/24 07:38	5mL/5mL	5mL/5mL	1.00
<u>Batch: 24E0641</u>							
A4E1286-01	Water	NWTPH-Gx (MS)	05/14/24 12:14	05/17/24 10:27	5mL/5mL	5mL/5mL	1.00
A4E1286-02	Water	NWTPH-Gx (MS)	05/15/24 08:53	05/17/24 10:27	5mL/5mL	5mL/5mL	1.00
A4E1286-03	Water	NWTPH-Gx (MS)	05/14/24 13:26	05/17/24 10:27	5mL/5mL	5mL/5mL	1.00
A4E1286-04	Water	NWTPH-Gx (MS)	05/15/24 08:00	05/17/24 10:27	5mL/5mL	5mL/5mL	1.00
A4E1286-05	Water	NWTPH-Gx (MS)	05/14/24 12:56	05/17/24 10:27	5mL/5mL	5mL/5mL	1.00
A4E1286-07RE1	Water	NWTPH-Gx (MS)	05/15/24 07:54	05/17/24 10:27	5mL/5mL	5mL/5mL	1.00
A4E1286-16RE1	Water	NWTPH-Gx (MS)	05/15/24 09:38	05/17/24 10:27	5mL/5mL	5mL/5mL	1.00
<u>Batch: 24E0724</u>							
A4E1286-09RE1	Water	NWTPH-Gx (MS)	05/15/24 08:38	05/21/24 13:12	5mL/5mL	5mL/5mL	1.00

Selected Volatile Organic Compounds by EPA 8260D

Prep: EPA 5030C					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
<u>Batch: 24E0590</u>							
A4E1286-06	Water	EPA 8260D	05/14/24 12:56	05/16/24 07:38	5mL/5mL	5mL/5mL	1.00
A4E1286-08	Water	EPA 8260D	05/14/24 12:20	05/16/24 07:38	5mL/5mL	5mL/5mL	1.00
A4E1286-10	Water	EPA 8260D	05/14/24 10:18	05/16/24 07:38	5mL/5mL	5mL/5mL	1.00
A4E1286-11	Water	EPA 8260D	05/14/24 11:02	05/16/24 07:38	5mL/5mL	5mL/5mL	1.00
A4E1286-12	Water	EPA 8260D	05/14/24 11:43	05/16/24 07:38	5mL/5mL	5mL/5mL	1.00
A4E1286-13	Water	EPA 8260D	05/14/24 09:25	05/16/24 07:38	5mL/5mL	5mL/5mL	1.00
A4E1286-14	Water	EPA 8260D	05/14/24 09:34	05/16/24 07:38	5mL/5mL	5mL/5mL	1.00
A4E1286-15	Water	EPA 8260D	05/15/24 09:38	05/16/24 07:38	5mL/5mL	5mL/5mL	1.00
A4E1286-17	Water	EPA 8260D	05/14/24 10:30	05/16/24 07:38	5mL/5mL	5mL/5mL	1.00
A4E1286-18	Water	EPA 8260D	05/14/24 11:19	05/16/24 07:38	5mL/5mL	5mL/5mL	1.00
<u>Batch: 24E0641</u>							
A4E1286-01	Water	EPA 8260D	05/14/24 12:14	05/17/24 10:27	5mL/5mL	5mL/5mL	1.00
A4E1286-02	Water	EPA 8260D	05/15/24 08:53	05/17/24 10:27	5mL/5mL	5mL/5mL	1.00
A4E1286-03	Water	EPA 8260D	05/14/24 13:26	05/17/24 10:27	5mL/5mL	5mL/5mL	1.00
A4E1286-04	Water	EPA 8260D	05/15/24 08:00	05/17/24 10:27	5mL/5mL	5mL/5mL	1.00
A4E1286-05	Water	EPA 8260D	05/14/24 12:56	05/17/24 10:27	5mL/5mL	5mL/5mL	1.00

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ORELAP ID: OR100062

GeoEngineers - Portland 5820 S Kelly Ave Unit B Portland, OR 97239	Project: Nustar Vannex GWM 2Q24 Project Number: 19001-008-13 Project Manager: Philip Cordell	Report ID: A4E1286 - 06 05 24 1050
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SAMPLE PREPARATION INFORMATION

Selected Volatile Organic Compounds by EPA 8260D

Prep: EPA 5030C

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A4E1286-07RE1	Water	EPA 8260D	05/15/24 07:54	05/17/24 10:27	5mL/5mL	5mL/5mL	1.00
A4E1286-16RE1	Water	EPA 8260D	05/15/24 09:38	05/17/24 10:27	5mL/5mL	5mL/5mL	1.00
<u>Batch: 24E0724</u>							
A4E1286-09RE1	Water	EPA 8260D	05/15/24 08:38	05/21/24 13:12	5mL/5mL	5mL/5mL	1.00

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

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Table with 3 columns: Client info (GeoEngineers - Portland), Project info (Project: Nustar Vannex GWM 2Q24), and Report ID (A4E1286 - 06 05 24 1050).

QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

Apex Laboratories

- F-11 The hydrocarbon pattern indicates possible weathered diesel, mineral oil, or a contribution from a related component.
F-18 Result for Diesel (Diesel Range Organics, C12-C25) is due to overlap from Gasoline or a Gasoline Range product.
F-20 Result for Diesel is Estimated due to overlap from Gasoline Range Organics or other VOCs.
FILT3 This is a laboratory filtration blank, associated with filtration batch 24E0595. See Prep page of report for associated samples.
PRO Sample has undergone sample processing prior to extraction and analysis.
Q-19 Blank Spike Duplicate (BSD) sample analyzed in place of Matrix Spike/Duplicate samples due to limited sample amount available for analysis.
Q-50 Due to instrument malfunction, not all Batch QC samples were analyzed. The batch is accepted based on the recoveries of the Blank Spike (BS).
R-04 Reporting levels elevated due to preparation and/or analytical dilution necessary for analysis.

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Darrell Auvil signature

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REPORTING NOTES AND CONVENTIONS:

Abbreviations:

- DET Analyte DETECTED at or above the detection or reporting limit.
- ND Analyte NOT DETECTED at or above the detection or reporting limit.
- NR Result Not Reported
- RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

Detection Limits: Limit of Detection (LOD)

Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ).
If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

- Basis: Results for soil samples are generally reported on a 100% dry weight basis.
The Result Basis is listed following the units as "dry", "wet", or " " (blank) designation.
 - "dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")
See Percent Solids section for details of dry weight analysis.
 - "wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.
 - " " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.
- Results for Volatiles analyses on soils and sediments that are reported on a "dry weight" basis include the water miscible solvent (WMS) correction referenced in the EPA 8000 Method guidance documents. Solid and Liquid samples reported on an "As Received" basis do not have the WMS correction applied, as dry weight was not performed.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) may not be included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

- " --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
- " *** " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

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REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to one half of the Reporting Limit (RL). Blank results for gravimetric analyses are evaluated to the Reporting Level, not to half of the Reporting Level.

- For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.
- For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.

For further details, please request a copy of this document.

- Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.

'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level, if results are not reported to the MDL.

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

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ANALYTICAL REPORT

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Table with 3 columns: Client info (GeoEngineers - Portland), Project info (Project: Nustar Vannex GWM 2Q24), and Report ID (A4E1286 - 06 05 24 1050).

LABORATORY ACCREDITATION INFORMATION

ORELAP Certification ID: OR100062 (Primary Accreditation) -
EPA ID: OR01039

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

Apex Laboratories

Table header with columns: Matrix, Analysis, TNI_ID, Analyte, TNI_ID, Accreditation

All reported analytes are included in Apex Laboratories' current ORELAP scope.

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation. Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provided by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

Handwritten signature of Darrell Auvil

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

GeoEngineers - Portland
5820 S Kelly Ave Unit B
Portland, OR 97239

Project: **Nustar Vannex GWM 2024**
Project Number: **19001-008-13**
Project Manager: **Philip Cordell**

Report ID:
A4E1286 - 06 05 24 1050

** Revised **
Lab # A4E1286 coc 1 of 2

LOC modified by Sam Russell on 5/16/24 - Sam Russell
CHAIN OF CUSTODY

APEX LABS
6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323

Company: <u>GeoEngineers</u>		Project Mgr: <u>Phil Cordell</u>		Project Name: <u>Nustar 2024 GWM</u>		Project #: <u>19001-008-13</u>	
Address: <u>5820 S. Kelly Ave, Portland, OR</u>		Phone: _____		Email: <u>pcordell@geoengineers.com</u>		Lab # <u>A4E1286</u> coc <u>1 of 2</u>	
Sampled by: <u>Sam Russell/Colm Watson</u>		ANALYSIS REQUEST					
Site Location:		Priority Metals (13)					
State: <u>WA</u>	County: <u>Clark</u>	RCA Metals (8)					
SAMPLE ID	DATE	TIME	MATRIX	# OF CONTAINERS	NWTR-FCID	NWTR-DX	NWTR-CX
MW-1	5/14/24	12:14	W	5	X	X	X
MW-2	5/15/24	08:55	W	5			
MW-3	5/14/24	13:26					
MW-4	5/15/24	08:00					
MW-5	5/14/24	12:56					
MW-5 DUP	5/14/24	12:56					
MW-6	5/15/24	10:54					
MW-5D	5/14/24	12:20					
MW-6D	5/15/24	08:58					
MW-7	5/14/24	16:18					
TAT Requested (circle)		1 Day		2 Day		3 Day	
Standard Turn Around Time (TAT) = 10 Business Days		5 Day		Standard		Other: _____	
RELIQUISHED BY:		Signature: <u>[Signature]</u>		Date: <u>5/15/24</u>		RECEIVED BY:	
Signature: <u>[Signature]</u>		Date: <u>5/15/24</u>		Signature: <u>[Signature]</u>		Date: _____	
Printed Name: <u>Sam Russell</u>		Time: <u>1405</u>		Printed Name: <u>ANSAWILOR</u>		Time: _____	
Company: <u>GeoEngineers</u>		Company: <u>Apex</u>		Company: _____		Company: _____	

SPECIAL INSTRUCTIONS:
MW-1 and MW-11 OR samples collected in 1L amber bottles were unprocessed. Please filter with 0.7 µm filter before analysis. For VDMS, please centrifuge and, if necessary, decant before analysis. Cont. on Pg. 2/2

Form Y-002 R-00

Apex Laboratories

[Signature]

Darrell Auvil, Client Services Manager

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ANALYTICAL REPORT

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503-718-2323
ORELAP ID: OR100062

GeoEngineers - Portland 5820 S Kelly Ave Unit B Portland, OR 97239	Project: Nustar Vannex GWM 2Q24 Project Number: 19001-008-13 Project Manager: Philip Cordell	Report ID: A4E1286 - 06 05 24 1050
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APEX LABS
6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323

CHAIN OF CUSTODY

Lab # **A4E1286** coc 1 of 2

Company: GeoEngineers	Project Mgr: Phil Cordell	Project Name: Vannex 2Q24 GWM	Project #: 19001-008-13	
Address: 5820 S. Kelly Ave, Portland, OR		Email: pcordell@geoengineers.com		
Sampled by: Sam Russell/Colin Watson		Phone: _____		
ANALYSIS REQUEST				
State <u>WA</u>	County <u>Clark</u>			
SAMPLE ID	DATE	TIME	MATRIX	# OF CONTAINERS
MW-1			W	5
MW-2			W	5
MW-3				
MW-4				
MW-5				
MW-5 DUP				
MW-6				
MW-SD				
MW-60				
MW-7				
Standard Turn Around Time (TAT) = 10 Business Days				
TAT Requested (circle) 1 Day 2 Day 3 Day 5 Day <u>Standard</u> Other: _____				
SPECIAL INSTRUCTIONS: MW-11 and MW-11 DUP samples collected in 1L amber bottles (one unopened). Please filter with 0.7 µm filter before analysis. For VOA's, please centrifuge and, if necessary, decant before analysis. (cont. on pg. 2/2)				
RELIQUISHED BY: Signature: <i>[Signature]</i> Date: <u>5/15/24</u>		RECEIVED BY: Signature: _____ Date: _____		Form 4-002 R-00
Printed Name: Sam Russell Time: 1405		Printed Name: _____ Time: _____		
Company: GeoEngineers		Company: Apex		

Apex Laboratories

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

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ORELAP ID: OR100062

GeoEngineers - Portland 5820 S Kelly Ave Unit B Portland, OR 97239	Project: Nustar Vannex GWM 2024 Project Number: 19001-008-13 Project Manager: Philip Cordell	Report ID: A4E1286 - 06 05 24 1050
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APEX LABS
6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323

Company: GeoEngineers
Address: SRL/CLW
Project Mgr: Philip Cordell
Project Name: Vannex 2024 GWM
Project #: 19001-008-13

CHAIN OF CUSTODY

Shipped by: SRL/CLW
State: WA
County: Clatsop

Revised

Lab # APE1286 coc 2 of 2

SAMPLE ID	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-#			8160 BTEX	8160 Halo VOCs	8260 VOCs Full List	8270 SIM PAHs	8270 Semi-Volat Full List	8082 PCBs	8081 Pesticides	RCRA Metals (9)	Priority Metals (13)	Al, Sb, As, Ba, Be, Bi, Br, Cd, Cr, Cu, Fe, Mn, Mo, Ni, Pb, P, Se, Si, Ti, V, Zn	TOTAL DISS. SOLS	TCIP Metals (9)	MIBK	Naphthalene	Hold Sample	Frozen Archive	
					W	X	Y																	
MW-8	5/14/24	1102	W	5	X	X	X																	
MW-8D	5/14/24	1113																						
MW-9	5/14/24	0725																						
MW-10	5/14/24	0934																						
MW-11	5/15/24	0758																						
MW-11 DUP	5/15/24	0738																						
MW-12	5/14/24	1030																						
MW-12D	5/14/24	1114																						
Trip Blank																								

SPECIAL INSTRUCTIONS:
MW-11 and MW-12 DUP contain small concentration of colloidal activated carbon, approx 1-2 mm in size.

TAT Requested (circle)
1 Day 2 Day 3 Day 5 Day Standard Other: _____

RELINQUISHED BY:
Signature: Sam Russell Date: 5/15/24
Printed Name: Sam Russell Time: _____
Company: Geo Engineers

RECEIVED BY:
Signature: Alissa Wilbur Date: 5/15/24
Printed Name: Alissa Wilbur Time: _____
Company: Apex

Form V-002 R-00

Apex Laboratories

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6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

GeoEngineers - Portland
5820 S Kelly Ave Unit B
Portland, OR 97239
Project: Nustar Vannex GWM 2Q24
Project Number: 19001-008-13
Project Manager: Philip Cordell
Report ID:
A4E1286 - 06 05 24 1050

COC Reads		Container Reads/Comments
WO# <u>A4E1286</u>		
COC/Container Discrepancies		
No DIT on COE AWK for AAW 5/15/24		
MW-1		5/14/24 @ 1214
MW-2		5/15/24 @ 0853
MW-3		5/14/24 @ 1326
MW-4		5/15/24 @ 0800
MW-5		5/14/24 @ 1256
MW-5 DUP		5/14/24 @ 1256
MW-6		5/15/24 @ 0754
MW-5D		5/14/24 @ 1220
MW-6D		5/15/24 @ 0838
MW-7		5/14/24 @ 1018
MW-8		5/14/24 @ 1102
MW-8D		5/14/24 @ 1143
MW-9		5/14/24 @ 0925
MW-10		5/14/24 @ 0934
MW-11		5/15/24 @ 0938
MW-11 DUP		5/15/24 @ 0938
MW-12		5/14/24 @ 1030
MW-12D		5/14/24 @ 1119

Form Y-004 R-00

Apex Laboratories

Darrell Auvil, Client Services Manager

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ORELAP ID: OR100062

GeoEngineers - Portland 5820 S Kelly Ave Unit B Portland, OR 97239	Project: Nustar Vannex GWM 2Q24 Project Number: 19001-008-13 Project Manager: Philip Cordell	Report ID: A4E1286 - 06 05 24 1050
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APEX LABS COOLER RECEIPT FORM

Client: GeoEngineers Element WO#: A4E1286
 Project/Project #: Vannex 2Q24 GWM 19001-008-13

Delivery Info:
 Date/time received: 5/15/24 @ 1405 By: AAW
 Delivered by: Apex Client FedEx UPS Radio Morgan SDS Evergreen Other
 From USDA Regulated Origin? Yes No

Cooler Inspection Date/time inspected: 5/15/24 @ 1408 By: AAW
 Chain of Custody included? Yes No
 Signed/dated by client? Yes No
 Contains USDA Reg. Soils? Yes No Unsure (email RegSoils)

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	<u>0.0</u>	<u>3.9</u>	<u>4.3</u>				
Custody seals? (Y/N)	<u>N</u>	<u>→</u>	<u>→</u>				
Received on ice? (Y/N)	<u>Y</u>	<u>→</u>	<u>→</u>				
Temp. blanks? (Y/N)	<u>N</u>	<u>→</u>	<u>→</u>				
Ice type: (Gel/Real/Other)	<u>Real</u>	<u>→</u>	<u>→</u>				
Condition (In/Out):	<u>In</u>	<u>→</u>	<u>→</u>				

Cooler out of temp? (Y/N) Possible reason why: _____
 Green dots applied to out of temperature samples? Yes/No /No
 Out of temperature samples form initiated? Yes/No /No
Sample Inspection: Date/time inspected: 5/15/24 @ 1517 By: AAW
 All samples intact? Yes No Comments: _____

Bottle labels/COCs agree? Yes No Comments: No DIT on coc. Trip blanks are not listed on the coc. See form and for AAW keys 51.57m

COC/container discrepancies form initiated? Yes No 5/15/24
 Containers/volumes received appropriate for analysis? Yes No Comments: _____

Do VOA vials have visible headspace? Yes No NA
 Comments: _____

Water samples: pH checked: Yes No NA pH appropriate? Yes No NA pH ID: A231172
 Comments: TB# 3542 #3542

Labeled by: AAW Witness: AAW Cooler Inspected by: AAW

Form Y-003 R-02

Apex Laboratories

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Darrell Auvil, Client Services Manager