

DAVID M. PETERSON, PE, PC

A PROFESSIONAL ENGINEERING CORPORATION
SPECIALIZING IN ENVIRONMENTAL SOLUTIONS

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October 15, 2023

Sent via Email

Mr. Dion Novak HSRL-6J
Remedial Project Manager
U.S. Environmental Protection Agency
Region V
77 West Jackson Blvd.
Chicago, IL 60604-3590

**Subject: 3Q2023 Progress Report
Reilly Superfund Site, 1500 S. Tibbs Ave., Indianapolis, Indiana**

Dear Mr. Novak:

This quarterly progress report is being submitted on behalf of 1500 South Tibbs LLC in accordance with Section IX A of the Administrative Order by Consent in the matter of Reilly Industries, Inc. (Reilly), 1500 South Tibbs Avenue, Indianapolis, Indiana 46242, U.S. EPA Docket No. V-W-'87-C-006, effective date July 6, 1987, as amended. This quarterly progress report also satisfies the requirements of Section XI of the RD/RA Consent Decree, Civil Action No. (lodged August 10, 1993), effective June 10, 1993 and Section XI of the Consent Decree for the Second Operable Unit, Civil Action No. IP93-1045-C, effective September 14, 1994 CD for OU3-4-5 Civil Action No. IP-93-1045-C. This report is being submitted on behalf of 1500 South Tibbs LLC, which is not a party to the referenced Administrative Order by Consent or Consent Decrees. 1500 South Tibbs LLC reserves all rights and defenses, including all applicable statutory and common-law defenses.

This quarterly report summarizes the following work elements:

- Groundwater operation and maintenance (O&M)
- Cover inspections and maintenance
- Sewer testing and repairs

1.0 Groundwater O&M

The groundwater pumping system at two locations (PW-1 and PW-2) has been on-line since October 3, 1994. Two additional wells (PW-3 and PW-4) were added during August 1997. PW-1 and PW-2 were replaced in 2002 and 2003. The system now consists of PW-1S, PW-1D, PW-2S, PW-3, and PW-4. The five-well system was on-line from April 2003 to March 2005. Wells PW-3 and PW-4 were shut down following approval from the EPA. **Figure 1** is a site map depicting the locations of pumping and monitoring wells.

The following table presents the total volume of groundwater pumped and average pumping rates for the operating wells during the quarter for PW-1S, PW-1D, and PW-2S. The pumping wells operated continuously (100% uptime) during the quarter.

Pumping Well	July (gallons / average gpm)	August (gallons / average gpm)	September (gallons / average gpm)
PW-1S	117,458 / 2.6	96,145 / 2.2	60,982 / 1.4
PW-1D	943,053 / 21.1	906,026 / 20.3	777,044 / 18.0
PW-2S	176,304 / 3.9	176,367 / 4.0	155,435 / 3.6

The quarterly groundwater monitoring event occurred on September 12-14, 2023 in accordance with the monitoring plan. **Table 1** presents the measured groundwater levels. **Attachment A** contains well monitoring data. The groundwater elevations were inputs to Surfer software to develop groundwater contours. **Figure 2** presents the groundwater contours for the shallow aquifer in both Operating Unit 1 (OU1) and Operating Unit 5 (OU5). Groundwater is generally flowing in an easterly direction except for the capture area around the pumping wells. **Figure 3** presents the deep groundwater contours for the OU1 deep aquifer, OU5 middle aquifer (which corresponds the OU1 deep aquifer), and OU5 deep aquifer. Groundwater is generally flowing in a southeasterly direction and is largely captured by PW-1D, and Rolls Royce pumping wells.

Table 2 presents the groundwater analytical results. **Attachment B** contains laboratory analytical data. The remediation goals (RG) for benzene (B), pyridines (P), and ammonia (A), collectively the compounds of concern (COC), are 0.005 mg/L, 0.035 mg/L for each pyridine, and 30 mg/L, respectively. **Figure 4** depicts the results from the OU1 and OU5 shallow aquifer. Levels of COC were measured above the RG in the OU1 shallow aquifer at RI-4S (P). **Figure 5** depicts the results from the OU1 deep, OU5 middle, and OU5 deep aquifers. Levels of COC were measured above the RG in the OU1 deep aquifer at RI-4D (B, P), RI-5S (P, B), and PW-1D (B). Levels of COC were measured above the RG in the OU5 middle aquifer at RI-15M (B). Levels of COC were measured above the RG in the OU5 deep aquifer at RI-15D (B).

2.0 Cover Inspections and Maintenance

Cover inspections are performed semi-annually and the second half inspection is planned to occur in 4Q2023.

The following table summarizes the amount of material that has been collected for off-site disposal since 2000. The volumes were initially reported in drums and are currently tracked in pounds, as some of the drums in the past were not full.

Annual Disposal from the South Landfill Area					
Year	TDM (lbs)	Year	TDM (lbs)	Year	TDM (lbs)
2000 / 2001	10 / 8 drums	2008 / 2009	363	2015	20
2002 / 2003	1,348 / 2,475	2010	1,280	2016	60
2004	1,430	2011 / 2012	375	2017	300
2005	1,455	2013	800	2018 - 2023	0
2006 / 2007	600	2014	1,825	Total = 18 drums + 12,331 lbs	

3.0 Sewer Testing and Repairs

No sewer testing or repairs were completed in 3Q2023. Updates on sewer testing and repair activities will be provided in future quarterly status reports.

Please feel free to contact me at (216) 554-0413 or via email at dave@dmpetersonpe.com if you have any questions or require additional information.

Sincerely,



David M. Peterson, PE
President

ec: Josh Zaharoff, USEPA – via Email
Courtney Townsend, IDEM – via Email
Brett Fishwild, Jacobs – via Email
Laura Groom, Rolls Royce – via Email

Mark Thrine, Aurorium – via Email
Amy McClure, Aurorium – via Email
Andrea Marrs, Aurorium – via Email
Adam Bates, Aurorium – via Email

Attachments

Table 1 – Groundwater Elevations
Table 2 – Groundwater Concentrations
Figure 1 – Site Map
Figure 2 – Shallow Groundwater Gradient Map
Figure 3 – Deep Groundwater Gradient Map
Figure 4 – Shallow Groundwater Concentrations
Figure 5 – Deep Groundwater Concentrations
Attachment A – Well Monitoring Data
Attachment B – Laboratory Analytical Data

Table 1

Vertellus Integrated Pyridines LLC
3Q2023 Groundwater Elevations

OU1 / OU5 SHALLOW AQUIFER WELLS

Well ID	Op. Unit	Easting	Northing	TOC (ft asl)	DTW (ft)	Elev (ft asl)
PW-1 OLD	OU1	173525	1637340	704.81	23.95	680.86
PW-1S	OU1	173490	1637371	705.67	27.47	678.20
PW-2S	OU1	173512	1638230	700.81	24.08	676.73
RI-1S	OU1	172238	1637556	710.15	22.59	687.56
RI-2S	OU1	172884	1638807	706.46	20.28	686.18
RI-3S	OU1	173229	1638829	703.91	19.39	684.52
RI-4S	OU1	173515	1637705	700.68	18.53	682.15
RI-6S	OU1	173569	1636267	703.09	25.08	678.01
RI-8S	OU1	173537	1634886	702.24	24.78	677.46
RI-10S	OU5	174157	1639338	698.65	18.19	680.46
RI-11S	OU5	174929	1638237	701.96	25.46	676.50
RI-15S	OU5	174082	1638871	699.17	17.69	681.48
RI-17S	OU1	173528	1638419	699.69	16.95	682.74
RI-18S	OU1	172999	1637559	705.98	21.87	684.11
RI-19S	OU5	174298	1636956	697.00	19.77	677.23
RI-20S	OU5	173725	1634877	699.18	21.86	677.32
RI-23S	OU1	172300	1635157	706.97	23.42	683.55
RI-24S	OU1	172313	1636429	705.70	21.77	683.93
RI-25S	OU1	172749	1638611	709.43	22.95	686.48
RI-28S	OU1	172792	1637070	704.78	20.27	684.51
RI-29S	OU1	172906	1637013	706.03	22.50	683.53
RI-30S	OU1	172913	1636921	705.59	21.51	684.08
RI-31S	OU1	172877	1636292	707.48	24.14	683.34
RI-32S	OU1	172998	1636249	706.32	23.31	683.01
RI-33S	OU1	173080	1636254	703.69	20.91	682.78
RI-35S	OU1	173456	1636182	702.02	23.08	678.94

Measurements taken on 9/12/2023

OU1 DEEP / OU5 MEDIUM AQUIFER WELLS

Well ID	Op. Unit	Easting	Northing	TOC (ft asl)	DTW (ft)	Elev (ft asl)
PW-1D	OU1	173499	1637354	705.37	42.98	662.39
PW-2D	OU1	173503	1638216	701.35	18.90	682.45
RI-1D	OU1	172222	1637556	710.12	22.43	687.69
RI-2D	OU1	172875	1638785	707.18	21.42	685.76
RI-3D	OU1	173213	1638830	703.98	19.20	684.78
RI-4D	OU1	173515	1637688	700.69	25.04	675.65
RI-5S	OU1	173583	1636959	703.24	26.07	677.17
RI-10D	OU5	174141	1639338	698.73	23.30	675.43
RI-11M	OU5	174929	1638254	701.85	25.77	676.08
RI-15M	OU5	174110	1638871	699.28	23.32	675.96
RI-17D	OU1	173527	1638406	699.77	14.67	685.10
RI-19D	OU5	174283	1636956	696.72	19.80	676.92
RI-20D	OU5	173741	1634878	699.08	21.77	677.31
RI-23D	OU1	172299	1635142	706.89	29.04	677.85
RI-24D	OU1	172313	1636443	708.79	24.24	684.55
RI-25D	OU1	172749	1638597	709.32	22.94	686.38
RR P8 MW-1	OU5	175258	1635567	695.38	14.09	681.29
RR P8 MW-4	OU5	175410	1635571	693.16	17.76	675.40

OU5 DEEP AQUIFER WELLS

Well ID	Op. Unit	Easting	Northing	TOC (ft asl)	DTW (ft)	Elev (ft asl)
RI-5D	OU1	173568	1636959	703.82	24.96	678.86
RI-11D	OU5	174928	1638222	701.99	27.45	674.54
RI-15D	OU5	174096	1638871	699.60	24.64	674.96
RR P8 PW-1	OU5	174838	1636256	693.03	35.00	658.03
RR P8 PW-2	OU5	174813	1636576	691.98	23.00	668.98
RR P8 PW-3	OU5	174812	1636875	686.25	45.50	640.75

- Notes:
1. Eastings and Northings in Indiana State Plane coordinates.
 2. Well locations are estimated, not surveyed.
 3. RR = Rolls-Royce (former GM Allison), P8 = Plant 8

4. OU1 and OU5 shallow aquifer wells are contoured together.
5. OU1 deep, OU5 medium, and OU5 deep aquifer wells are contoured together.
6. TOC = Top of Casing, DTW = Depth to Water, Elev = Groundwater Elevation

Table 2

Vertellus Integrated Pyridines LLC
3Q2023 Groundwater Concentrations

OU1 / OU5 SHALLOW AQUIFER WELLS

Well Name	Benzene	Ammonia	Pyridine	2-Picoline	3/4-Picoline	2,6-Lutidine	2-Ethyl pyridine	2,4/2,5-Lutidine	2,3-Lutidine	3-Ethyl pyridine	4-Ethyl pyridine	3,5-Lutidine	3,4-Lutidine	2-Methyl-5-ethyl pyridine	2-Methyl-3-ethyl pyridine	3-Ethyl-4-methyl pyridine
PW-2S	<5.0	19.2	<9.1	<9.1	<9.1	<9.1	<9.1	<9.1	<9.1	<9.1	<9.1	<9.1	<9.1	<9.1	<9.1	<9.1
RI-4S	<5.0	7.7	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	39.1	<10.0	<10.0	<10.0	<10.0
RI-6S	<5.0	2.4	<9.5	<9.5	<9.5	<9.5	<9.5	<9.5	<9.5	<9.5	<9.5	<9.5	<9.5	<9.5	<9.5	<9.5
RI-17S	<5.0	10.0	<9.5	<9.5	<9.5	<9.5	<9.5	<9.5	<9.5	<9.5	<9.5	11.3	<9.5	<9.5	<9.5	<9.5
PW-1S	<5.0	Note: PW-1S sampled for discharge compliance only.														

OU1 DEEP / OU5 MEDIUM AQUIFER WELLS

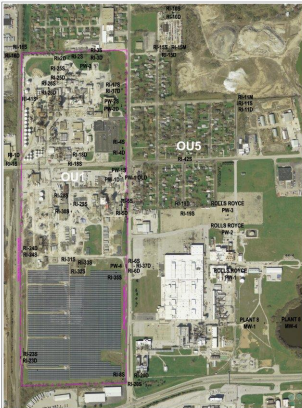
Well Name	Benzene	Ammonia	Pyridine	2-Picoline	3/4-Picoline	2,6-Lutidine	2-Ethyl pyridine	2,4/2,5-Lutidine	2,3-Lutidine	3-Ethyl pyridine	4-Ethyl pyridine	3,5-Lutidine	3,4-Lutidine	2-Methyl-5-ethyl pyridine	2-Methyl-3-ethyl pyridine	3-Ethyl-4-methyl pyridine
RI-4D	15.0	12.4	<9.5	<9.5	<9.5	<9.5	<9.5	<9.5	<9.5	<9.5	<9.5	132	<9.5	<9.5	24.5	<9.5
RI-5S	28.3	7.2	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	49.3	<10.0	<10.0	23.9	<10.0
RI-11M	<5.0	17.2	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
RI-15M	27.9	12.0	<9.5	<9.5	<9.5	<9.5	<9.5	<9.5	<9.5	<9.5	<9.5	10.3	<9.5	<9.5	<9.5	<9.5
RI-19D	<5.0	2.9	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
PW-1D	14.1	Note: PW-1D sampled for discharge compliance only.														

OU5 DEEP AQUIFER WELLS

Well Name	Benzene	Ammonia	Pyridine	2-Picoline	3/4-Picoline	2,6-Lutidine	2-Ethyl pyridine	2,4/2,5-Lutidine	2,3-Lutidine	3-Ethyl pyridine	4-Ethyl pyridine	3,5-Lutidine	3,4-Lutidine	2-Methyl-5-ethyl pyridine	2-Methyl-3-ethyl pyridine	3-Ethyl-4-methyl pyridine
RI-15D	5.9	5.4	<8.7	<8.7	<8.7	<8.7	<8.7	<8.7	<8.7	<8.7	<8.7	16.2	<8.7	<8.7	<8.7	<8.7

Notes:

1. All Results in ug/L except for ammonia which is in mg/L.
2. Bold and shaded text indicate result is above the cleanup objectives (5 ppb for benzene, 30 ppm for ammonia, and 35 ppb for individual pyridines).
3. ND = Non-Detect
4. Samples collected 9/12/23 - 9/14/23



0 350 700
SCALE (feet)

QUARTERLY REPORT

REPORT DATE: 1/25/2024 REPORT TYPE: PLANT DATA

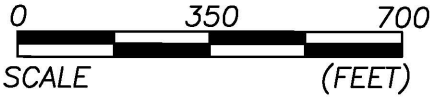
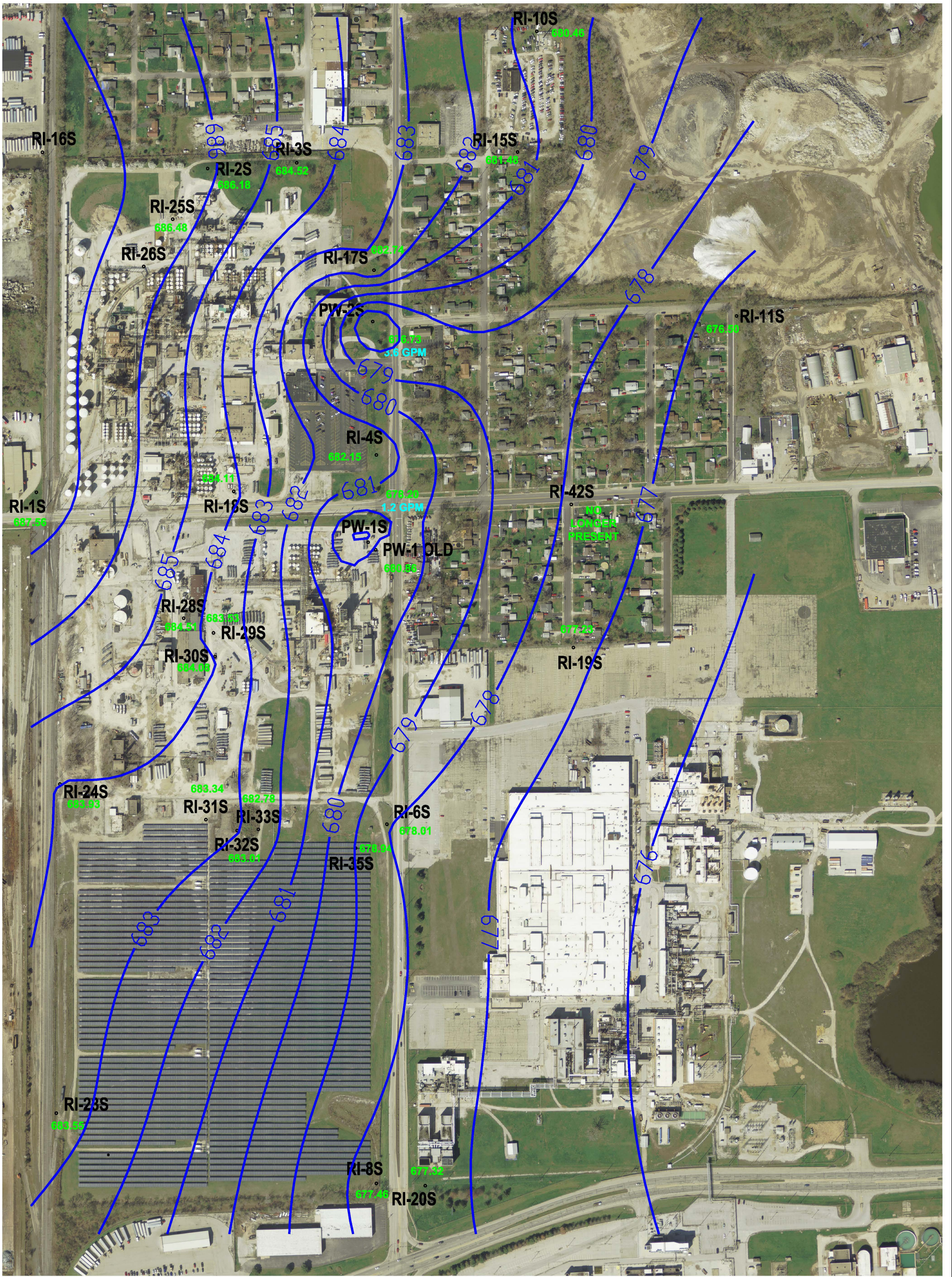
SITE MAP

LOCATION: REEDY SUPERFUND SITE DATE: 1/25/2024

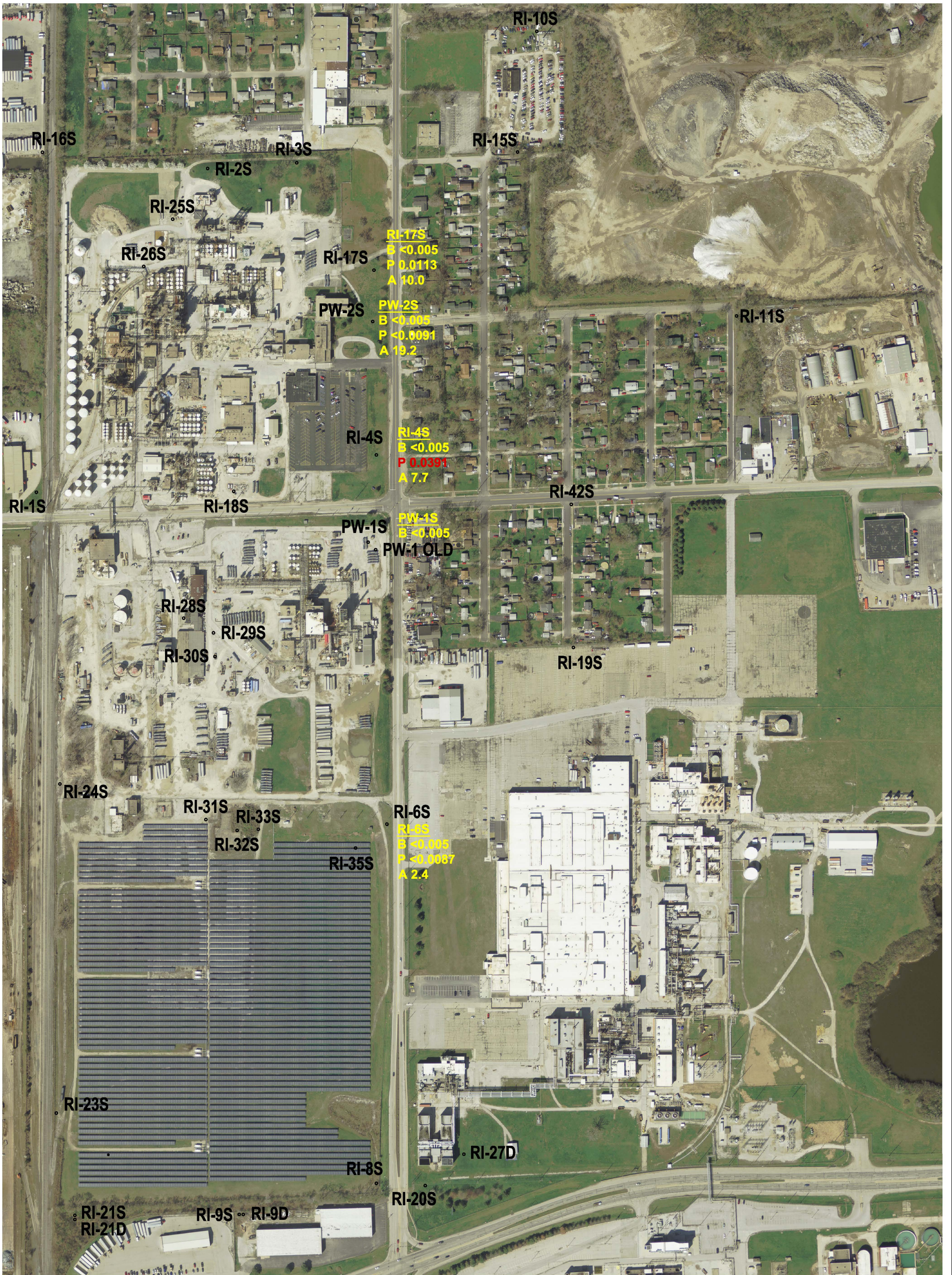
PROJECT: 1000 S. 100th Ave., INDIANAPOLIS, INDIANA

PREPARED BY: GEP DRAWN BY: GEP CHECKED BY: GEP

1

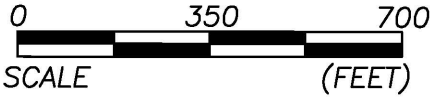


1Q2023 REPORT		
REV. DATE:	DRAWING DATE: APR. 2023	ACAD FILE: INDY PLANT.DWG
SHALLOW GROUNDWATER GRADIENT MAP		
CLIENT:	VERTELLUS INTEGRATED PYRIDINES LLC	PM: DMP
LOCATION:	1500 S. TIBBS AVE. INDIANAPOLIS, INDIANA	DRAWING: 2
DESIGNED: DMP	DETAILED: DMP	PROJECT NO.:



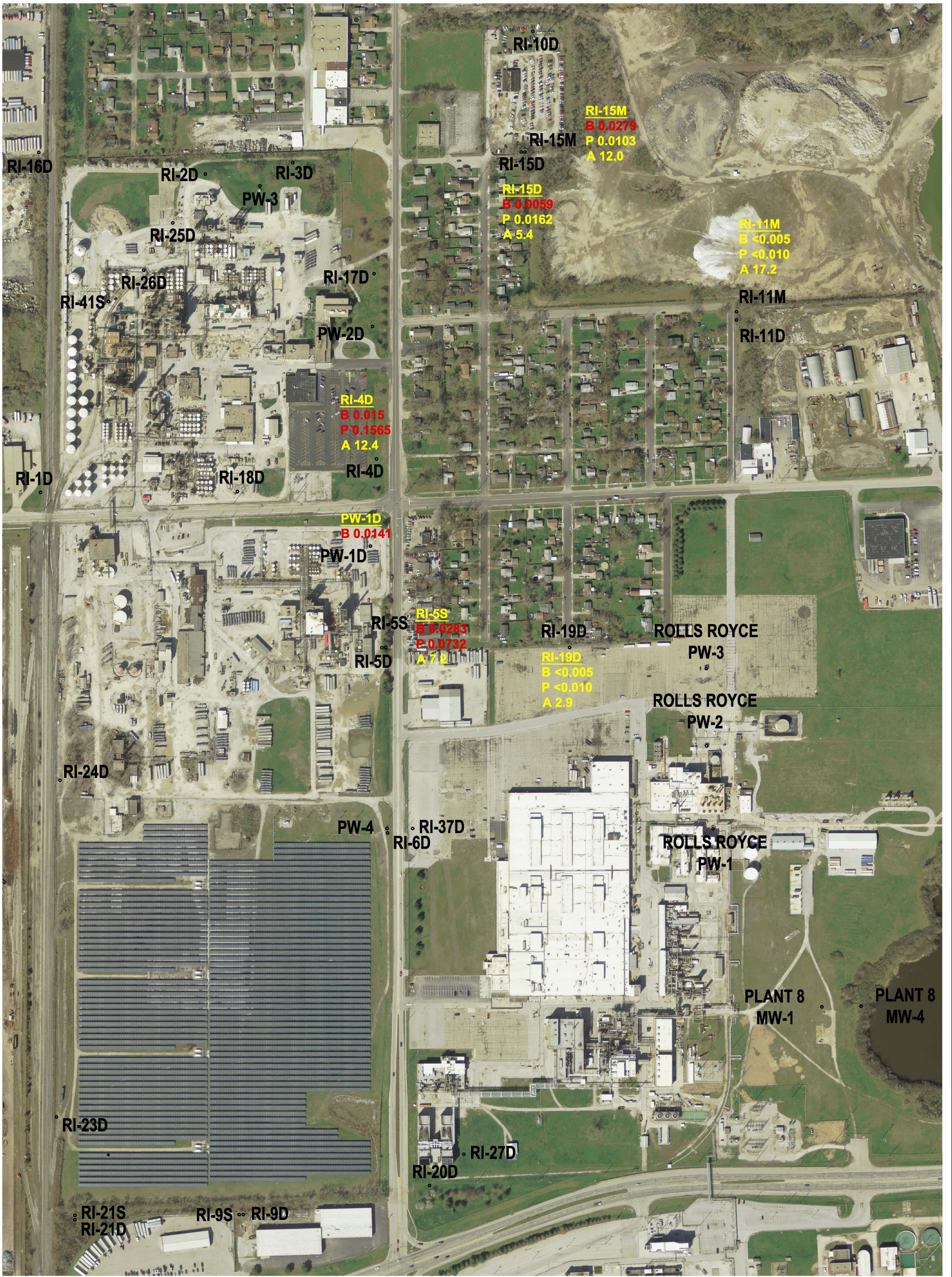
REMEDIAL GOAL (RG)
BENZENE (B) 0.005 MG/L
PYRIDINE (P) 0.035/EACH MG/L
AMMONIA (A) 30 MG/L

NOTE: EXCEEDED RG IS RED



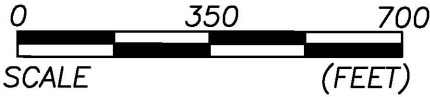
3Q2023 REPORT

REV. DATE:	DRAWING DATE: OCT. 2023	ACAD FILE: INDY PLANT.DWG
SHALLOW GROUNDWATER CONCENTRATIONS		
CLIENT:	VERTELLUS INTEGRATED PYRIDINES LLC	PM: DMP
LOCATION:	1500 S. TIBBS AVE. INDIANAPOLIS, INDIANA	DRAWING: 4
DESIGNED: DMP	DETAILED: DMP	PROJECT NO.:



REMEDIAL GOAL (RG)
BENZENE (B) 0.005 MG/L
PYRIDINE (P) 0.035/EACH MG/L
AMMONIA (A) 30 MG/L

NOTE: EXCEEDED RG IS RED



3Q2023 REPORT		
REV. DATE:	DRAWING DATE: OCT. 2023	ACAD FILE: INDY PLANT.DWG
DEEP GROUNDWATER CONCENTRATIONS		
CLIENT:	VERTELLUS INTEGRATED PYRIDINES LLC	PM: DMP
LOCATION:	1500 S. TIBBS AVE. INDIANAPOLIS, INDIANA	DRAWING: 5
DESIGNED: DMP	DETAILED: DMP	PROJECT NO.:

Attachment A

Well Monitoring Data

GROUNDWATER SAMPLING AND PURGE RECORD

MONITORING WELL PW-15

FACILITY Vertellus Integrated Pyridines LLC

DATE 9/12 / 2023

PURPOSE OF SAMPLING Quarterly Monitoring

SAMPLER G. Stevenson

WEATHER CONDITIONS - Temp 68 °F Precip 0 Wind NW 26

WELL DIAMETER ~10" STICKUP X FLUSHMOUNT

DEPTH TO WATER 27.47' TOTAL DEPTH NA STANDING WATER NA

WELL WATER VOLUME NA gallons

WELL VOLUME CALCULATION FOR 2-inch WELL

Well Depth (ft) - Depth to Water (ft) X 0.1632 = 1 well volume (gallons)

PURGE RECORD

Time	Volume of Water	pH	Conductance	Temp.	Comments
	0 (Before purge)				
<u>1226</u>	<u>~5 gal/10 min</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	

Dissolve Oxygen (DO) [prior to purging] NA

Oxidation Reduction Potential (ORP) [prior to purging] NA

WELL YIELD 1.18 gpm @ 70 psi

High

Low

Recharge Rate (if known)

SAMPLE RECORD

Time Sampled 1232 Turbidity clean Color clean Odor slight

Laboratory Analytical Parameters Benzene only

Laboratory-Supplied Containers (preservative) 3-40ml (HCl)

SAMPLES DELIVERED TO Pace Analytical Services, Inc. - Indianapolis, IN

GROUNDWATER SAMPLING AND PURGE RECORD

MONITORING WELL PW- 1D

FACILITY Vertellus Integrated Pyridines LLC

DATE 9/ 12 / 2023

PURPOSE OF SAMPLING Quarterly Monitoring

SAMPLER G. Stevenson

WEATHER CONDITIONS - Temp 68 °F Precip 0 Wind Nue6

WELL DIAMETER ~12" STICKUP X FLUSHMOUNT

DEPTH TO WATER 42.98' TOTAL DEPTH NA STANDING WATER NA

WELL WATER VOLUME NA gallons

WELL VOLUME CALCULATION FOR 2-inch WELL
Well Depth (ft) - Depth to Water (ft) X 0.1632 = 1 well volume (gallons)

PURGE RECORD

Time	Volume of Water	pH	Conductance	Temp.	Comments
	0 (Before purge)				
<u>1233</u>	<u>~ 5 gal / 16 v</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	

Dissolve Oxygen (DO) [prior to purging] NA

Oxidation Reduction Potential (ORP) [prior to purging] NA

WELL YIELD 21.32 gpm @ 49 psi (High) Low

Recharge Rate (if known)

SAMPLE RECORD

Time Sampled 1240 Turbidity clear Color clear Odor Yes

Laboratory Analytical Parameters Benzene only

Laboratory-Supplied Containers (preservative) 3-40ml (HCl)

SAMPLES DELIVERED TO Pace Analytical Services, Inc. - Indianapolis, IN

GROUNDWATER SAMPLING AND PURGE RECORD

MONITORING WELL PW-2S

FACILITY Vertellus Integrated Pyridines LLC

DATE 9/12 / 2023

PURPOSE OF SAMPLING Quarterly Monitoring

SAMPLER G. Stevenson

WEATHER CONDITIONS - Temp 67 °F Precip 0 Wind Nwe 6

WELL DIAMETER ~10-inch STICKUP X FLUSHMOUNT

DEPTH TO WATER TOTAL DEPTH NA STANDING WATER NA

WELL WATER VOLUME nd gallons

WELL VOLUME CALCULATION FOR 2-inch WELL

Well Depth (ft) - Depth to Water (ft) X 0.1632 = 1 well volume (gallons)

PURGE RECORD

Time	Volume of Water	pH	Conductance	Temp.	Comments
	0 (Before purge)				
<u>1141</u>	<u>~5 gal/100s</u>	<u>nd</u>	<u>nd</u>	<u>nd</u>	

Dissolve Oxygen (DO) [prior to purging]

Oxidation Reduction Potential (ORP) [prior to purging]

WELL YIELD 3.62 gpm @ 43 psi

High

Low

Recharge Rate (if known)

SAMPLE RECORD

Time Sampled 1145 Turbidity clear Color clear Odor slight

Laboratory Analytical Parameters VOCs, SVOCs (incl. pyridines), Ammonia

Laboratory-Supplied Containers (preservative) 3-40ml (HCl), 2-100ml (unpres), 1-250ml plastic (H₂SO₄)

SAMPLES DELIVERED TO Pace Analytical Services, Inc. - Indianapolis, IN

GROUNDWATER SAMPLING AND PURGE RECORD

MONITORING WELL RI-45

FACILITY Vertellus Integrated Pyridines LLC DATE 9/14 / 2023

PURPOSE OF SAMPLING Quarterly Monitoring SAMPLER G. Stevenson

WEATHER CONDITIONS - Temp 63 °F Precip Ø Wind N-E 5

WELL DIAMETER 2-inch STICKUP FLUSHMOUNT X

DEPTH TO WATER 18.53 TOTAL DEPTH 27.4' STANDING WATER 8.87

WELL WATER VOLUME 1.45 gallons

WELL VOLUME CALCULATION FOR 2-inch WELL
Well Depth (ft) - Depth to Water (ft) X 0.1632 = 1 well volume (gallons)

PURGE RECORD

Time	Volume of Water Removed (gallons)	pH	Ms/cm Conductance	°C Temp.	Comments
1035	0 (Before purge)	7.12	1500	18.7	
1242	5X ≈ 7.25 gal	7.17	1550	18.9	

Dissolve Oxygen (DO) [prior to purging] 0.71 mg/l

Oxidation Reduction Potential (ORP) [prior to purging] -106.3

WELL YIELD High Low Recharge Rate (if known)

SAMPLE RECORD

Time Sampled 1248 Turbidity clear Color clear Odor YES

Laboratory Analytical Parameters VOCs, SVOCs (incl. pyridines), Ammonia

Laboratory-Supplied Containers (preservative) 3-40ml (HCl), 2-100ml (unpres), 1-250ml plastic (H₂SO₄)

SAMPLES DELIVERED TO Pace Analytical Services, Inc. - Indianapolis, IN

GROUNDWATER SAMPLING AND PURGE RECORD

MONITORING WELL RI- 4D

FACILITY Vertellus Integrated Pyridines LLC DATE 9/14 / 2023

PURPOSE OF SAMPLING Quarterly Monitoring SAMPLER G. Stevenson

WEATHER CONDITIONS - Temp 68 °F Precip 0 Wind NE @ 5

WELL DIAMETER 2-inch STICKUP FLUSHMOUNT X

DEPTH TO WATER 25.04' TOTAL DEPTH 55.4' STANDING WATER 30.36'

WELL WATER VOLUME 4.95 gallons

WELL VOLUME CALCULATION FOR 2-inch WELL
Well Depth (ft) - Depth to Water (ft) X 0.1632 = 1 well volume (gallons)

PURGE RECORD

Time	Volume of Water Removed (gallons)	pH	^{ms/cm} Conductance	^{°C} Temp.	Comments
<u>1253</u>	<u>0 (Before purge)</u>	<u>7.45</u>	<u>679</u>	<u>18.2</u>	
<u>1332</u>	<u>5X ≈ 25 gals</u>	<u>7.52</u>	<u>931</u>	<u>18.3</u>	

Dissolve Oxygen (DO) [prior to purging] 0.54 ^{mg/l}

Oxidation Reduction Potential (ORP) [prior to purging] -134.1

WELL YIELD High Low Recharge Rate (if known)

SAMPLE RECORD

Time Sampled 1335 Turbidity clear Color clear Odor YES

Laboratory Analytical Parameters VOCs, SVOCs (incl. pyridines), Ammonia

Laboratory-Supplied Containers (preservative) 3-40ml (HCl), 2-100ml (unpres), 1-250ml plastic (H₂SO₄)

SAMPLES DELIVERED TO Pace Analytical Services, Inc. - Indianapolis, IN

GROUNDWATER SAMPLING AND PURGE RECORD

MONITORING WELL RI-55

FACILITY Vertellus Integrated Pyridines LLC DATE 9/14 / 2023

PURPOSE OF SAMPLING Quarterly Monitoring SAMPLER G. Stevenson

WEATHER CONDITIONS - Temp 59 °F Precip Ø Wind N.E. 5

WELL DIAMETER 2-inch STICKUP X FLUSHMOUNT

DEPTH TO WATER 26.07' TOTAL DEPTH 55.1' STANDING WATER 29.03'

WELL WATER VOLUME 4.74 gallons

WELL VOLUME CALCULATION FOR 2-inch WELL

Well Depth (ft) - Depth to Water (ft) X 0.1632 = 1 well volume (gallons)

PURGE RECORD

Time	Volume of Water Removed (gallons)	pH	MS/cn Conductance	°C Temp.	Comments
	0 (Before purge)	7.59	2058	16.4	
0940	* YSI probe will not fit down well, take readings on 1st bailer				
1009	4X ~ 19 gal.	7.54	2216	16.5	

Dissolve Oxygen (DO) [prior to purging] 1.46 mg/l

Oxidation Reduction Potential (ORP) [prior to purging] -107.4

WELL YIELD High Low Recharge Rate (if known)

SAMPLE RECORD

Time Sampled 1015 Turbidity clear Color clear Odor YES

Laboratory Analytical Parameters VOCs, SVOCs (incl. pyridines), Ammonia

Laboratory-Supplied Containers (preservative) 3-40ml (HCl), 2-100ml (unpres), 1-250ml plastic (H₂SO₄)

SAMPLES DELIVERED TO Pace Analytical Services, Inc. - Indianapolis, IN

GROUNDWATER SAMPLING AND PURGE RECORD

MONITORING WELL RI-65

FACILITY Vertellus Integrated Pyridines LLC DATE 9/13 / 2023

PURPOSE OF SAMPLING Quarterly Monitoring SAMPLER G. Stevenson

WEATHER CONDITIONS - Temp 76 °F Precip Ø Wind NW @ 8

WELL DIAMETER 2-inch STICKUP X FLUSHMOUNT

DEPTH TO WATER 25.08' TOTAL DEPTH 37.2' STANDING WATER 12.12'

WELL WATER VOLUME 1.98 gallons

WELL VOLUME CALCULATION FOR 2-inch WELL
Well Depth (ft) - Depth to Water (ft) X 0.1632 = 1 well volume (gallons)

PURGE RECORD

Time	Volume of Water Removed (gallons)	pH	Conductance	Temp.	Comments
1628	0 (Before purge)	7.06	968	15.5	
	* YSI ProDS1 will not fit down MW to reach GW, take 1st reading on first bailer				
1640	4x3 @ gal	7.06	928	14.7	

Dissolve Oxygen (DO) [prior to purging] 0.92 mg/l

Oxidation Reduction Potential (ORP) [prior to purging] -119.1

WELL YIELD High Low Recharge Rate (if known)

SAMPLE RECORD

Time Sampled 1645 Turbidity cloudy, then clear Color 11.0 range, then clear Odor YES

Laboratory Analytical Parameters VOCs, SVOCs (incl. pyridines), Ammonia

Laboratory-Supplied Containers (preservative) 3-40ml (HCl), 2-100ml (unpres), 1-250ml plastic (H₂SO₄)

SAMPLES DELIVERED TO Pace Analytical Services, Inc. - Indianapolis, IN

GROUNDWATER SAMPLING AND PURGE RECORD

MONITORING WELL RI- 11m

FACILITY Vertellus Integrated Pyridines LLC

DATE 9/14 / 2023

PURPOSE OF SAMPLING Quarterly Monitoring

SAMPLER G. Stevenson

WEATHER CONDITIONS - Temp 55 °F Precip 0 Wind NNE 5

WELL DIAMETER 2-inch STICKUP X FLUSHMOUNT

DEPTH TO WATER 25.77 TOTAL DEPTH 54.5' STANDING WATER 28.73'

WELL WATER VOLUME 4.67 gallons

WELL VOLUME CALCULATION FOR 2-inch WELL

Well Depth (ft) - Depth to Water (ft) X 0.1632 = 1 well volume (gallons)

PURGE RECORD

Time	Volume of Water Removed (gallons)	pH	ms/cm Conductance	°C Temp.	Comments
0843	0 (Before purge)	7.31	927	14.4	
0912	4X ≈ 18.75 gal	7.47	943	14.1	

Dissolve Oxygen (DO) [prior to purging] 0.88 mg/l

Oxidation Reduction Potential (ORP) [prior to purging] -0.7

WELL YIELD High Low

Recharge Rate (if known)

SAMPLE RECORD

Time Sampled 0918 Turbidity clear Color clear Odor slight

Laboratory Analytical Parameters VOCs, SVOCs (incl. pyridines), Ammonia

Laboratory-Supplied Containers (preservative) 3-40ml (HCl), 2-100ml (unpres), 1-250ml plastic (H₂SO₄)

SAMPLES DELIVERED TO Pace Analytical Services, Inc. - Indianapolis, IN

GROUNDWATER SAMPLING AND PURGE RECORD

MONITORING WELL RI-15M

FACILITY Vertellus Integrated Pyridines LLC

DATE 9/13/2023

PURPOSE OF SAMPLING Quarterly Monitoring

SAMPLER G. Stevenson

WEATHER CONDITIONS - Temp 75 °F Precip 0 Wind NW @ 7

WELL DIAMETER 2-inch STICKUP FLUSHMOUNT X

DEPTH TO WATER 23.32' TOTAL DEPTH 54.2' STANDING WATER 30.88'

WELL WATER VOLUME 5.04 gallons

WELL VOLUME CALCULATION FOR 2-inch WELL
Well Depth (ft) - Depth to Water (ft) X 0.1632 = 1 well volume (gallons)

PURGE RECORD

Time	Volume of Water Removed (gallons)	pH	ms/cm Conductance	°C Temp.	Comments
1530	0 (Before purge)	7.44	846	14.0	
1605	5x ≈ 26.25 gal	7.53	807	14.9	
	25.25 gal				

Dissolve Oxygen (DO) [prior to purging] 0.26 mg/l

Oxidation Reduction Potential (ORP) [prior to purging] -135.6

WELL YIELD High Low Recharge Rate (if known)

SAMPLE RECORD

Time Sampled 1610 Turbidity clear Color clear Odor slight

Laboratory Analytical Parameters VOCs, SVOCs (incl. pyridines), Ammonia

Laboratory-Supplied Containers (preservative) 3-40ml (HCl), 2-100ml (unpres), 1-250ml plastic (H₂SO₄)

SAMPLES DELIVERED TO Pace Analytical Services, Inc. - Indianapolis, IN

GROUNDWATER SAMPLING AND PURGE RECORD

MONITORING WELL RI-15D

FACILITY Vertellus Integrated Pyridines LLC

DATE 9/13 / 2023

PURPOSE OF SAMPLING Quarterly Monitoring

SAMPLER G. Stevenson

WEATHER CONDITIONS - Temp 75 °F Precip Ø Wind NW 7

WELL DIAMETER 2-inch STICKUP FLUSHMOUNT X

DEPTH TO WATER 24.64 TOTAL DEPTH 89.9' STANDING WATER 65.26

WELL WATER VOLUME 10.65 gallons

WELL VOLUME CALCULATION FOR 2-inch WELL
Well Depth (ft) - Depth to Water (ft) X 0.1632 = 1 well volume (gallons)

PURGE RECORD

Time	Volume of Water Removed (gallons)	pH	<u>µS/cm</u> Conductance	<u>°C</u> Temp.	Comments
<u>01415</u>	0 (Before purge)	<u>7.11</u>	<u>897</u>	<u>14.4</u>	
<u>1520</u>	<u>4X ≈ 43 gal</u>	<u>7.22</u>	<u>1041</u>	<u>15.0</u>	

Dissolve Oxygen (DO) [prior to purging] 0.63 mg/l

Oxidation Reduction Potential (ORP) [prior to purging] -51.1

WELL YIELD High Low Recharge Rate (if known)

SAMPLE RECORD

Time Sampled 1525 Turbidity clear Color clear Odor YES

Laboratory Analytical Parameters VOCs, SVOCs (incl. pyridines), Ammonia

Laboratory-Supplied Containers (preservative) 3-40ml (HCl), 2-100ml (unpres), 1-250ml plastic (H₂SO₄)

SAMPLES DELIVERED TO Pace Analytical Services, Inc. - Indianapolis, IN

GROUNDWATER SAMPLING AND PURGE RECORD

MONITORING WELL RI-175

FACILITY Vertellus Integrated Pyridines LLC

DATE 9/13 / 2023

PURPOSE OF SAMPLING Quarterly Monitoring

SAMPLER G. Stevenson

WEATHER CONDITIONS - Temp 76 °F Precip 0 Wind NWC7

WELL DIAMETER 2-inch STICKUP FLUSHMOUNT X

DEPTH TO WATER 16.95' TOTAL DEPTH 24.0' STANDING WATER 7.05'

WELL WATER VOLUME 1.15 gallons

WELL VOLUME CALCULATION FOR 2-inch WELL

Well Depth (ft) - Depth to Water (ft) X 0.1632 = 1 well volume (gallons)

PURGE RECORD

Time	Volume of Water Removed (gallons)	pH	AS/cu Conductance	Temp. °C	Comments
<u>1713</u>	<u>0 (Before purge)</u>	<u>6.98</u>	<u>1301</u>	<u>16.8</u>	
<u>1728</u>	<u>5x ≈ 5.75 gal</u>	<u>6.99</u>	<u>1321</u>	<u>17.0</u>	

Dissolve Oxygen (DO) [prior to purging] 1.47 mg/L

Oxidation Reduction Potential (ORP) [prior to purging] 65.1

WELL YIELD High Low

Recharge Rate (if known)

SAMPLE RECORD

Time Sampled 1735 Turbidity clear Color clear Odor HyS/light

Laboratory Analytical Parameters VOCs, SVOCs (incl. pyridines), Ammonia

Laboratory-Supplied Containers (preservative) 3-40ml (HCl), 2-100ml (unpres), 1-250ml plastic (H₂SO₄)

SAMPLES DELIVERED TO Pace Analytical Services, Inc. - Indianapolis, IN

GROUNDWATER SAMPLING AND PURGE RECORD

MONITORING WELL RI- 19D

FACILITY Vertellus Integrated Pyridines LLC

DATE 9/14 / 2023

PURPOSE OF SAMPLING Quarterly Monitoring

SAMPLER G. Stevenson

WEATHER CONDITIONS - Temp 53 °F Precip Ø Wind NE @ 4

WELL DIAMETER 2-inch STICKUP FLUSHMOUNT X

DEPTH TO WATER 19.80' TOTAL DEPTH 49.5' STANDING WATER 29.70'

WELL WATER VOLUME 4.85 gallons

WELL VOLUME CALCULATION FOR 2-inch WELL
Well Depth (ft) - Depth to Water (ft) X 0.1632 = 1 well volume (gallons)

PURGE RECORD

Time	Volume of Water Removed (gallons)	pH	<u>µs/cm</u> Conductance	^{oc} Temp.	Comments
0750	0 (Before purge)	7.16	839	15.3	
0810	<u>~4x ≈ 19.5 gal</u>	7.21	1055	14.8	

Dissolve Oxygen (DO) [prior to purging] 0.86 mg/l

Oxidation Reduction Potential (ORP) [prior to purging] -123.0

WELL YIELD High Low Recharge Rate (if known)

SAMPLE RECORD

Time Sampled 0823 Turbidity clear Color clear Odor YES

Laboratory Analytical Parameters VOCs, SVOCs (incl. pyridines), Ammonia

Laboratory-Supplied Containers (preservative) 3-40ml (HCl), 2-100ml (unpres), 1-250ml plastic (H₂SO₄)

SAMPLES DELIVERED TO Pace Analytical Services, Inc. - Indianapolis, IN

Attachment B

Laboratory Analytical Data



September 20, 2023

David Peterson
Vertellus Integrated Pyridines LLC
201 N. Illinois Street
Suite 1500
Indianapolis, IN 46242

RE: Project: Aurorium/Vertellus 3Q23
Pace Project No.: 50353960

Dear David Peterson:

Enclosed are the analytical results for sample(s) received by the laboratory on September 14, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Indianapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Olivia Deck
olivia.deck@pacelabs.com
(317)228-3102
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Aurorium/Vertellus 3Q23

Pace Project No.: 50353960

Pace Analytical Services Indianapolis

7726 Moller Road, Indianapolis, IN 46268

Illinois Accreditation #: 200074

Indiana Drinking Water Laboratory #: C-49-06

Kansas/TNI Certification #: E-10177

Kentucky UST Agency Interest #: 80226

Kentucky WW Laboratory ID #: 98019

Michigan Drinking Water Laboratory #9050

Ohio VAP Certified Laboratory #: CL0065

Oklahoma Laboratory #: 9204

Texas Certification #: T104704355

Wisconsin Laboratory #: 999788130

USDA Foreign Soil Permit #: 525-23-13-23119

USDA Compliance Agreement #: IN-SL-22-001

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Aurorium/Vertellus 3Q23

Pace Project No.: 50353960

Lab ID	Sample ID	Matrix	Date Collected	Date Received
50353960001	PW-1S	Water	09/12/23 12:32	09/14/23 14:20
50353960002	PW-1D	Water	09/12/23 12:40	09/14/23 14:20

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Aurorium/Vertellus 3Q23

Pace Project No.: 50353960

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
50353960001	PW-1S	EPA 8260	BES	4	PASI-I
50353960002	PW-1D	EPA 8260	BES	4	PASI-I

PASI-I = Pace Analytical Services - Indianapolis

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Aurorium/Vertellus 3Q23

Pace Project No.: 50353960

Sample: PW-1S		Lab ID: 50353960001		Collected: 09/12/23 12:32		Received: 09/14/23 14:20		Matrix: Water	
Parameters		Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260/5030 MSV UST		Analytical Method: EPA 8260 Pace Analytical Services - Indianapolis							
Benzene	ND	ug/L	5.0	1		09/19/23 17:07	71-43-2		
Surrogates									
Dibromofluoromethane (S)	114	%.	82-128	1		09/19/23 17:07	1868-53-7		
Toluene-d8 (S)	97	%.	73-122	1		09/19/23 17:07	2037-26-5		
4-Bromofluorobenzene (S)	102	%.	79-124	1		09/19/23 17:07	460-00-4		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Aurorium/Vertellus 3Q23

Pace Project No.: 50353960

Sample: PW-1D		Lab ID: 50353960002		Collected: 09/12/23 12:40		Received: 09/14/23 14:20		Matrix: Water	
Parameters		Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260/5030 MSV UST		Analytical Method: EPA 8260 Pace Analytical Services - Indianapolis							
Benzene Surrogates		14.1	ug/L	5.0	1		09/19/23 17:41	71-43-2	
Dibromofluoromethane (S)		113	%.	82-128	1		09/19/23 17:41	1868-53-7	
Toluene-d8 (S)		97	%.	73-122	1		09/19/23 17:41	2037-26-5	
4-Bromofluorobenzene (S)		102	%.	79-124	1		09/19/23 17:41	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Aurorium/Vertellus 3Q23

Pace Project No.: 50353960

QC Batch:	753296	Analysis Method:	EPA 8260
QC Batch Method:	EPA 8260	Analysis Description:	8260 MSV UST-WATER
		Laboratory:	Pace Analytical Services - Indianapolis

Associated Lab Samples: 50353960001, 50353960002

METHOD BLANK: 3452202 Matrix: Water

Associated Lab Samples: 50353960001, 50353960002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	5.0	09/19/23 11:19	
4-Bromofluorobenzene (S)	%.	101	79-124	09/19/23 11:19	
Dibromofluoromethane (S)	%.	116	82-128	09/19/23 11:19	
Toluene-d8 (S)	%.	97	73-122	09/19/23 11:19	

LABORATORY CONTROL SAMPLE: 3452203

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	50	43.7	87	74-124	
4-Bromofluorobenzene (S)	%.			100	79-124	
Dibromofluoromethane (S)	%.			104	82-128	
Toluene-d8 (S)	%.			98	73-122	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3452204 3452205

Parameter	Units	50353961001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzene	ug/L	ND	50	50	42.6	43.1	85	86	65-137	1	20	
4-Bromofluorobenzene (S)	%.						99	100	79-124			
Dibromofluoromethane (S)	%.						101	103	82-128			
Toluene-d8 (S)	%.						99	98	73-122			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Aurorium/Vertellus 3Q23

Pace Project No.: 50353960

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Aurorium/Vertellus 3Q23

Pace Project No.: 50353960

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
50353960001	PW-1S	EPA 8260	753296		
50353960002	PW-1D	EPA 8260	753296		

REPORT OF LABORATORY ANALYSIS

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W0# : 50353960



Submitting a s

OF-CUSTODY / Analytical Request Document

Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.
ence of the Pace Terms and Conditions found at <https://info.pacelabs.com/hubfs/pas-standard-terms.pdf>.

Section C

Invoice Information:

Page : 1 Of 1

Section A

Required Client Information:

Company: Aurorium/Vertellus
Address: 201 N. Illinois St., Ste. 1800
Indianapolis, IN 46204
Email: dave@dmpetersonPE.com
Phone: 216-554-0413 Fax:
Requested Due Date: STD 10 day TAT

Report To: Dave Peterson, PE
Copy To:
Purchase Order #: 4400009667
Project Name: Aurorium/Vertellus 3Q23
Project #: GS0148c

Attention: Accounts Payable
Company Name: Aurorium/Vertellus
Address: 201 N. Illinois St., Ste. 1800, Indianapolis, IN 46204
Pace Quote:
Pace Project Manager: olivia.deck@pacelabs.com,
Pace Profile #: 6586-1

Regulatory Agency

State / Location

IN

ITEM #	SAMPLE ID One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED				SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives								Analyses Test Y/N	Requested Analysis Filtered (Y/N)												Residual Chlorine (Y/N)		
				START		END				Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other																
				DATE	TIME	DATE	TIME																										
1	PW-1S	WT	G	9/12/23	1232				3					3					X														
2	PW-1D	WT	G	9/12/23	1240				3					3					X														
3																																	
4																																	
5																																	
6																																	
7																																	
8																																	
9																																	
10																																	
11																																	
12																																	

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS		
8270-Pyridines only list	<i>Greg M. Stevenson / CENCON</i>	9/14/23	1420	<i>Jeff K. Helt</i>	9/14/23	1420	2.1	Y	N Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

SIGNATURE of SAMPLER:

DATE Signed:

TEMP in C

Received on

Ice

(Y/N)

Custody

Sealed

Cooler

(Y/N)

Samples

in

contact

(Y/N)

Page 10 of 12



SAMPLE CONDITION UPON RECEIPT FORM

Date/Time and Initials of person examining contents:

9/14/23 1420 TW

1. Courier: ☐ FED EX ☐ UPS ☒ CLIENT ☐ PACE ☐ NOW/JETT ☐ OTHER _____2. Custody Seal on Cooler/Box Present: ☐ Yes ☒ No(If yes)Seals Intact: ☐ Yes ☐ No (leave blank if no seals were present)

3. Thermometer: 1 2 3 4 5 6 7 8 A B C D E F G H

4. Cooler Temperature(s): 2.2/2.1
(Initial/Corrected) RECORD TEMPS OF ALL COOLERS RECEIVED (use Comments below to add more)

5. Packing Material:

☒ Bubble Wrap☒ Bubble Bags☐ None☒ Other Paste

6. Ice Type:

☒ Wet☐ Blue☐ None7. If temp. is over 6°C or under 0°C, was the PM notified?: ☐ Yes ☐ No

Cooler temp should be above freezing to 6°C

All discrepancies will be written out in the comments section below.

	Yes	No		Yes	No	N/A
USDA Regulated Soils? (HI, ID, NY, WA, OR, CA, NM, TX, OK, AR, LA, TN, AL, MS, NC, SC, GA, FL, or Puerto Rico)		/	All containers needing acid/base preservation have been pH CHECKED?: Exceptions: VOA, coliform, LLHg, O&G, RAD CHEM, and any container with a septum cap or preserved with HCl.			
Short Hold Time Analysis (48 hours or less)? Analysis:		/	Circle: HNO3 (<2) H2SO4 (<2) NaOH (>10) NaOH/ZnAc (>9) Any non-conformance to pH recommendations will be noted on the container count form			/
Time 5035A TC placed in Freezer or Short Holds To Lab	Time:		Residual Chlorine Check (SVOC 625 Pest/PCB 608)	Present	Absent	N/A
Rush TAT Requested (4 days or less):		/	Residual Chlorine Check (Total/Amenable/Free Cyanide)			/
Custody Signatures Present?	/		Headspace Wisconsin Sulfide?			/
Containers Intact?:	/		Headspace in VOA Vials (>6mm): See Container Count form for details	Present	Absent	No VOA Vials Sent
Sample Label (IDs/Dates/Times) Match COC?: Except TCs, which only require sample ID	/		Trip Blank Present?		/	
Extra labels on Terracore Vials? (soils only)			Trip Blank Custody Seals?:			/

COMMENTS:

Sample Container Count

** Place a RED dot on containers

that are out of conformance **

COC Line Item	WGFU	WGKU BG1U	MeOH (only)	DG9H V9H	VOA VIAL HS >6mm	VG9U	DG9U	VG9T	AMBER GLASS							PLASTIC							OTHER			Matrix	Nitric	Sulfuric	Sodium Hydroxide	Sodium Hydroxide ZnAc			
			SBS																								Red	Yellow	Green	Black			
			DI																														
			R																														
1				3																												WT	
2				3																												WT	
3																																	
4																																	
5																																	
6																																	
7																																	
8																																	
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10																																	
11																																	
12																																	

Container Codes

Glass

DG9H	40mL HCl amber voa vial	BG1T	glass
DG9P	40mL TSP amber vial	BG1U	1L unpreserved glass
DG9S	40mL H2SO4 amber vial	CG3U	250mL Unpres Clear Glass
DG9T	40mL Na Thio amber vial	AG0U	100mL unpres amber glass
DG9U	40mL unpreserved amber vial	AG1H	1L HCl amber glass
VG9H	40mL HCl clear vial	AG1S	1L H2SO4 amber glass
VG9T	40mL Na Thio. clear vial	AG1T	1L Na Thiosulfate amber glass
VG9U	40mL unpreserved clear vial	AG1U	1liter unpres amber glass
I	40mL w/hexane wipe vial	AG2N	500mL HNO3 amber glass
WGKU	8oz unpreserved clear jar	AG2S	500mL H2SO4 amber glass
WGFU	4oz clear soil jar	AG2U	500mL unpres amber glass
JGFU	4oz unpreserved amber wide	AG3S	250mL H2SO4 amber glass
CG3H	250mL clear glass HCl	AG3SF	250mL H2SO4 amb glass -field filtered
CG3F	250mL clear glass HCl, Field Filter	AG3U	250mL unpres amber glass
BG1H	1L HCl clear glass	AG3B	250mL NaOH amber glass
BG1S	1L H2SO4 clear glass		

Plastic

BP1B	1L NaOH plastic	BP4U	125mL unpreserved plastic
BP1N	1L HNO3 plastic	BP4N	125mL HNO3 plastic
BP1S	1L H2SO4 plastic	BP4S	125mL H2SO4 plastic
BP1U	1L unpreserved plastic	Miscellaneous	
BP1Z	1L NaOH, Zn, Ac		
BP2N	500mL HNO3 plastic	Syringe Kit	LL Cr+6 sampling kit
BP2C	500mL NaOH plastic	ZPLC	Ziploc Bag
BP2S	500mL H2SO4 plastic	R	Terracore Kit
BP2U	500mL unpreserved plastic	SP5T	120mL Coliform Sodium Thiosulfate
BP2Z	500mL NaOH, Zn Ac	GN	General Container
BP3B	250mL NaOH plastic	U	Summa Can (air sample)
BP3N	250mL HNO3 plastic	WT	Water
BP3F	250mL HNO3 plastic-field filtered	SL	Solid
BP3U	250mL unpreserved plastic	OL	Oil
BP3S	250mL H2SO4 plastic	NAL	Non-aqueous liquid
BP3Z	250mL NaOH, ZnAc plastic	WP	Wipe
BP3R	250mL Unpres. FF SO4/OH buffer		



October 02, 2023

David Peterson
Vertellus Integrated Pyridines LLC
201 N. Illinois Street
Suite 1500
Indianapolis, IN 46242

RE: Project: Aurorium/Vertellus 3Q23
Pace Project No.: 50353961

Dear David Peterson:

Enclosed are the analytical results for sample(s) received by the laboratory on September 14, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Indianapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Olivia Deck
olivia.deck@pacelabs.com
(317)228-3102
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Aurorium/Vertellus 3Q23

Pace Project No.: 50353961

Pace Analytical Services Indianapolis

7726 Moller Road, Indianapolis, IN 46268

Illinois Accreditation #: 200074

Indiana Drinking Water Laboratory #: C-49-06

Kansas/TNI Certification #: E-10177

Kentucky UST Agency Interest #: 80226

Kentucky WW Laboratory ID #: 98019

Michigan Drinking Water Laboratory #9050

Ohio VAP Certified Laboratory #: CL0065

Oklahoma Laboratory #: 9204

Texas Certification #: T104704355

Wisconsin Laboratory #: 999788130

USDA Foreign Soil Permit #: 525-23-13-23119

USDA Compliance Agreement #: IN-SL-22-001

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Aurorium/Vertellus 3Q23

Pace Project No.: 50353961

Lab ID	Sample ID	Matrix	Date Collected	Date Received
50353961001	PW-2S	Water	09/12/23 11:45	09/14/23 14:20

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Aurorium/Vertellus 3Q23

Pace Project No.: 50353961

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
50353961001	PW-2S	EPA 8270	GRM	20	PASI-I
		EPA 8260	BES	7	PASI-I
		SM 4500-NH3 G	OAS	1	PASI-I

PASI-I = Pace Analytical Services - Indianapolis

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ANALYTICAL RESULTS

Project: Aurorium/Vertellus 3Q23

Pace Project No.: 50353961

Sample: PW-2S		Lab ID: 50353961001		Collected: 09/12/23 11:45		Received: 09/14/23 14:20		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8270 SVOC App9 Water		Analytical Method: EPA 8270 Preparation Method: EPA 3510 Pace Analytical Services - Indianapolis							
2,3-Lutidine	ND	ug/L	9.1	1	09/19/23 11:03	09/19/23 18:36	583-61-9	N2	
2,4-Lutidine / 2,5-Lutidine	ND	ug/L	9.1	1	09/19/23 11:03	09/19/23 18:36	108-47-4	N2	
3-Ethyl-4-MethylPyridine	ND	ug/L	9.1	1	09/19/23 11:03	09/19/23 18:36	529-21-5	N2	
2-Ethylpyridine	ND	ug/L	9.1	1	09/19/23 11:03	09/19/23 18:36	100-71-0	N2	
3-Ethylpyridine	ND	ug/L	9.1	1	09/19/23 11:03	09/19/23 18:36	536-78-7	N2	
4-Ethylpyridine	ND	ug/L	9.1	1	09/19/23 11:03	09/19/23 18:36	536-75-4	N2	
2,6-Lutidine	ND	ug/L	9.1	1	09/19/23 11:03	09/19/23 18:36	108-48-5	N2	
3,4-Lutidine	ND	ug/L	9.1	1	09/19/23 11:03	09/19/23 18:36	583-58-4	N2	
3,5-Lutidine	ND	ug/L	9.1	1	09/19/23 11:03	09/19/23 18:36	591-22-0	N2	
2-Methyl-5-ethyl pyridine	ND	ug/L	9.1	1	09/19/23 11:03	09/19/23 18:36	104-90-5	N2	
2-Methyl-3-ethyl pyridine	ND	ug/L	9.1	1	09/19/23 11:03	09/19/23 18:36	14159-59-2	N2	
2-Picoline	ND	ug/L	9.1	1	09/19/23 11:03	09/19/23 18:36	109-06-8		
3/4-Picoline	ND	ug/L	9.1	1	09/19/23 11:03	09/19/23 18:36		N2	
Pyridine	ND	ug/L	9.1	1	09/19/23 11:03	09/19/23 18:36	110-86-1		
Surrogates									
Nitrobenzene-d5 (S)	53	%.	17-107	1	09/19/23 11:03	09/19/23 18:36	4165-60-0		
2-Fluorobiphenyl (S)	42	%.	11-105	1	09/19/23 11:03	09/19/23 18:36	321-60-8		
p-Terphenyl-d14 (S)	92	%.	36-149	1	09/19/23 11:03	09/19/23 18:36	1718-51-0		
Phenol-d5 (S)	21	%.	10-58	1	09/19/23 11:03	09/19/23 18:36	4165-62-2		
2-Fluorophenol (S)	29	%.	10-71	1	09/19/23 11:03	09/19/23 18:36	367-12-4		
2,4,6-Tribromophenol (S)	92	%.	35-149	1	09/19/23 11:03	09/19/23 18:36	118-79-6		
8260/5030 MSV UST		Analytical Method: EPA 8260 Pace Analytical Services - Indianapolis							
Benzene	ND	ug/L	5.0	1		09/19/23 18:16	71-43-2		
Toluene	ND	ug/L	5.0	1		09/19/23 18:16	108-88-3		
Ethylbenzene	ND	ug/L	5.0	1		09/19/23 18:16	100-41-4		
Xylene (Total)	ND	ug/L	10.0	1		09/19/23 18:16	1330-20-7		
Surrogates									
Dibromofluoromethane (S)	113	%.	82-128	1		09/19/23 18:16	1868-53-7		
Toluene-d8 (S)	96	%.	73-122	1		09/19/23 18:16	2037-26-5		
4-Bromofluorobenzene (S)	102	%.	79-124	1		09/19/23 18:16	460-00-4		
4500 Ammonia Water		Analytical Method: SM 4500-NH3 G Pace Analytical Services - Indianapolis							
Nitrogen, Ammonia	19.2	mg/L	0.50	1		09/30/23 20:21	7664-41-7		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Aurorium/Vertellus 3Q23

Pace Project No.: 50353961

QC Batch: 753296

Analysis Method: EPA 8260

QC Batch Method: EPA 8260

Analysis Description: 8260 MSV UST-WATER

Laboratory: Pace Analytical Services - Indianapolis

Associated Lab Samples: 50353961001

METHOD BLANK: 3452202

Matrix: Water

Associated Lab Samples: 50353961001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	5.0	09/19/23 11:19	
Ethylbenzene	ug/L	ND	5.0	09/19/23 11:19	
Toluene	ug/L	ND	5.0	09/19/23 11:19	
Xylene (Total)	ug/L	ND	10.0	09/19/23 11:19	
4-Bromofluorobenzene (S)	%	101	79-124	09/19/23 11:19	
Dibromofluoromethane (S)	%	116	82-128	09/19/23 11:19	
Toluene-d8 (S)	%	97	73-122	09/19/23 11:19	

LABORATORY CONTROL SAMPLE: 3452203

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	50	43.7	87	74-124	
Ethylbenzene	ug/L	50	42.7	85	74-125	
Toluene	ug/L	50	41.4	83	72-119	
Xylene (Total)	ug/L	150	131	88	73-123	
4-Bromofluorobenzene (S)	%			100	79-124	
Dibromofluoromethane (S)	%			104	82-128	
Toluene-d8 (S)	%			98	73-122	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3452204 3452205

Parameter	Units	50353961001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzene	ug/L	ND	50	50	42.6	43.1	85	86	65-137	1	20	
Ethylbenzene	ug/L	ND	50	50	38.1	40.6	76	81	50-143	6	20	
Toluene	ug/L	ND	50	50	39.1	40.5	78	81	57-137	4	20	
Xylene (Total)	ug/L	ND	150	150	118	125	78	83	52-137	6	20	
4-Bromofluorobenzene (S)	%						99	100	79-124			
Dibromofluoromethane (S)	%						101	103	82-128			
Toluene-d8 (S)	%						99	98	73-122			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: Aurorium/Vertellus 3Q23

Pace Project No.: 50353961

QC Batch:	753515	Analysis Method:	EPA 8270
QC Batch Method:	EPA 3510	Analysis Description:	8270 Water MSSV
		Laboratory:	Pace Analytical Services - Indianapolis

Associated Lab Samples: 50353961001

METHOD BLANK: 3453132 Matrix: Water

Associated Lab Samples: 50353961001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
2,3-Lutidine	ug/L	ND	10.0	09/19/23 18:04	N2
2,4-Lutidine / 2,5-Lutidine	ug/L	ND	10.0	09/19/23 18:04	N2
2,6-Lutidine	ug/L	ND	10.0	09/19/23 18:04	N2
2-Ethylpyridine	ug/L	ND	10.0	09/19/23 18:04	N2
2-Methyl-3-ethyl pyridine	ug/L	ND	10.0	09/19/23 18:04	N2
2-Methyl-5-ethyl pyridine	ug/L	ND	10.0	09/19/23 18:04	N2
2-Picoline	ug/L	ND	10.0	09/19/23 18:04	
3,4-Lutidine	ug/L	ND	10.0	09/19/23 18:04	N2
3,5-Lutidine	ug/L	ND	10.0	09/19/23 18:04	N2
3-Ethyl-4-MethylPyridine	ug/L	ND	10.0	09/19/23 18:04	N2
3-Ethylpyridine	ug/L	ND	10.0	09/19/23 18:04	N2
3/4-Picoline	ug/L	ND	10.0	09/19/23 18:04	N2
4-Ethylpyridine	ug/L	ND	10.0	09/19/23 18:04	N2
Pyridine	ug/L	ND	10.0	09/19/23 18:04	
2,4,6-Tribromophenol (S)	%	80	35-149	09/19/23 18:04	
2-Fluorobiphenyl (S)	%	42	11-105	09/19/23 18:04	
2-Fluorophenol (S)	%	34	10-71	09/19/23 18:04	
Nitrobenzene-d5 (S)	%	47	17-107	09/19/23 18:04	
p-Terphenyl-d14 (S)	%	106	36-149	09/19/23 18:04	
Phenol-d5 (S)	%	27	10-58	09/19/23 18:04	

LABORATORY CONTROL SAMPLE: 3453133

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Pyridine	ug/L	50	7.2J	14	10-51	
2,4,6-Tribromophenol (S)	%			88	35-149	
2-Fluorobiphenyl (S)	%			47	11-105	
2-Fluorophenol (S)	%			36	10-71	
Nitrobenzene-d5 (S)	%			52	17-107	
p-Terphenyl-d14 (S)	%			97	36-149	
Phenol-d5 (S)	%			27	10-58	

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QUALITY CONTROL DATA

Project: Aurorium/Vertellus 3Q23

Pace Project No.: 50353961

QC Batch:	755200	Analysis Method:	SM 4500-NH3 G
QC Batch Method:	SM 4500-NH3 G	Analysis Description:	4500 Ammonia
		Laboratory:	Pace Analytical Services - Indianapolis

Associated Lab Samples: 50353961001

METHOD BLANK: 3461418 Matrix: Water

Associated Lab Samples: 50353961001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.50	09/30/23 22:24	

LABORATORY CONTROL SAMPLE: 3461419

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	5	5.3	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3461420 3461421

Parameter	Units	50354083003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	ND	5	5	5.1	5.1	103	102	90-110	0	20	

MATRIX SPIKE SAMPLE: 3461422

Parameter	Units	50354083004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	ND	5	5.1	103	90-110	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Aurorium/Vertellus 3Q23

Pace Project No.: 50353961

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Aurorium/Vertellus 3Q23

Pace Project No.: 50353961

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
50353961001	PW-2S	EPA 3510	753515	EPA 8270	753519
50353961001	PW-2S	EPA 8260	753296		
50353961001	PW-2S	SM 4500-NH3 G	755200		

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SAMPLE CONDITION UPON RECEIPT FORM

Date/Time and Initials of person examining contents:

9/14/23 1620 TW

1. Courier: ☐ FED EX ☐ UPS ☒ CLIENT ☐ PACE ☐ NOW/JETT ☐ OTHER

2. Custody Seal on Cooler/Box Present: ☐ Yes ☒ No

(If yes)Seals Intact: ☐ Yes ☐ No (leave blank if no seals were present)

3. Thermometer: 1 2 3 4 5 6 7 8 A B C D E F G H

4. Cooler Temperature(s): 2.2/2.1

5. Packing Material:

☒ Bubble Wrap

☒ Bubble Bags

☐ None

☒ Other Plastic

6. Ice Type:

☒ Wet

☐ Blue

☐ None

7. If temp. is over 6°C or under 0°C, was the PM notified?: ☐ Yes ☐ No

Cooler temp should be above freezing to 6°C

All discrepancies will be written out in the comments section below.

	Yes	No		Yes	No	N/A
USDA Regulated Soils? (HI, ID, NY, WA, OR, CA, NM, TX, OK, AR, LA, TN, AL, MS, NC, SC, GA, FL, or Puerto Rico)		/	All containers needing acid/base preservation have been pH CHECKED?: Exceptions: VOA, coliform, LLHg, O&G, RAD CHEM, and any container with a septum cap or preserved with HCl.	/		
Short Hold Time Analysis (48 hours or less)? Analysis:		/	Circle: HNO3 (<2) H2SO4 (<2) NaOH (>10) NaOH/ZnAc (>9) Any non-conformance to pH recommendations will be noted on the container count form	/		
Time 5035A TC placed in Freezer or Short Holds To Lab	Time:			Present	Absent	N/A
			Residual Chlorine Check (SVOC 625 Pest/PCB 608)			/
Rush TAT Requested (4 days or less):		/	Residual Chlorine Check (Total/Amenable/Free Cyanide)			/
Custody Signatures Present?	/		Headspace Wisconsin Sulfide?			/
	/		Headspace in VOA Vials (>6mm): See Container Count form for details	Present	Absent	No VOA Vials Sent
Containers Intact?:	/				/	
Sample Label (IDs/Dates/Times) Match COC?: Except TCs, which only require sample ID	/		Trip Blank Present?		/	
Extra labels on Terracore Vials? (soils only)			Trip Blank Custody Seals?:			/

COMMENTS:



September 29, 2023

David Peterson
Vertellus Integrated Pyridines LLC
201 N. Illinois Street
Suite 1500
Indianapolis, IN 46242

RE: Project: Aurorium/Vertellus 3Q23
Pace Project No.: 50353978

Dear David Peterson:

Enclosed are the analytical results for sample(s) received by the laboratory on September 14, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Indianapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Olivia Deck
olivia.deck@pacelabs.com
(317)228-3102
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Aurorium/Vertellus 3Q23

Pace Project No.: 50353978

Pace Analytical Services Indianapolis

7726 Moller Road, Indianapolis, IN 46268

Illinois Accreditation #: 200074

Indiana Drinking Water Laboratory #: C-49-06

Kansas/TNI Certification #: E-10177

Kentucky UST Agency Interest #: 80226

Kentucky WW Laboratory ID #: 98019

Michigan Drinking Water Laboratory #9050

Ohio VAP Certified Laboratory #: CL0065

Oklahoma Laboratory #: 9204

Texas Certification #: T104704355

Wisconsin Laboratory #: 999788130

USDA Foreign Soil Permit #: 525-23-13-23119

USDA Compliance Agreement #: IN-SL-22-001

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SAMPLE SUMMARY

Project: Aurorium/Vertellus 3Q23

Pace Project No.: 50353978

Lab ID	Sample ID	Matrix	Date Collected	Date Received
50353978001	RI-4S	Water	09/14/23 12:48	09/14/23 14:20
50353978002	RI-4D	Water	09/14/23 13:35	09/14/23 14:20
50353978003	RI-5S	Water	09/14/23 10:15	09/14/23 14:20
50353978004	RI-11M	Water	09/14/23 09:18	09/14/23 14:20
50353978005	RI-6S	Water	09/13/23 16:45	09/14/23 14:20
50353978006	RI-15M	Water	09/13/23 16:10	09/14/23 14:20
50353978007	RI-15D	Water	09/13/23 15:25	09/14/23 14:20
50353978008	RI-17S	Water	09/13/23 17:35	09/14/23 14:20
50353978009	RI-19D	Water	09/14/23 08:23	09/14/23 14:20

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Aurorium/Vertellus 3Q23

Pace Project No.: 50353978

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
50353978001	RI-4S	EPA 8270	GRM	20	PASI-I
		EPA 8260	BES	7	PASI-I
		SM 4500-NH3 G	OAS	1	PASI-I
50353978002	RI-4D	EPA 8270	GRM	20	PASI-I
		EPA 8260	BES	7	PASI-I
		SM 4500-NH3 G	OAS	1	PASI-I
50353978003	RI-5S	EPA 8270	GRM	20	PASI-I
		EPA 8260	BES	7	PASI-I
		SM 4500-NH3 G	OAS	1	PASI-I
50353978004	RI-11M	EPA 8270	GRM	20	PASI-I
		EPA 8260	BES	7	PASI-I
		SM 4500-NH3 G	OAS	1	PASI-I
50353978005	RI-6S	EPA 8270	GRM	20	PASI-I
		EPA 8260	BES	7	PASI-I
		SM 4500-NH3 G	OAS	1	PASI-I
50353978006	RI-15M	EPA 8270	GRM	20	PASI-I
		EPA 8260	BES	7	PASI-I
		SM 4500-NH3 G	OAS	1	PASI-I
50353978007	RI-15D	EPA 8270	GRM	20	PASI-I
		EPA 8260	BES	7	PASI-I
		SM 4500-NH3 G	OAS	1	PASI-I
50353978008	RI-17S	EPA 8270	GRM	20	PASI-I
		EPA 8260	BES	7	PASI-I
		SM 4500-NH3 G	OAS	1	PASI-I
50353978009	RI-19D	EPA 8270	GRM	20	PASI-I
		EPA 8260	BES	7	PASI-I
		SM 4500-NH3 G	OAS	1	PASI-I

PASI-I = Pace Analytical Services - Indianapolis

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ANALYTICAL RESULTS

Project: Aurorium/Vertellus 3Q23

Pace Project No.: 50353978

Sample: RI-4S		Lab ID: 50353978001		Collected: 09/14/23 12:48		Received: 09/14/23 14:20		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8270 SVOC App9 Water		Analytical Method: EPA 8270 Preparation Method: EPA 3510							
		Pace Analytical Services - Indianapolis							
2,3-Lutidine	ND	ug/L	10.0	1	09/19/23 11:03	09/19/23 19:57	583-61-9	N2	
2,4-Lutidine / 2,5-Lutidine	ND	ug/L	10.0	1	09/19/23 11:03	09/19/23 19:57	108-47-4	N2	
3-Ethyl-4-MethylPyridine	ND	ug/L	10.0	1	09/19/23 11:03	09/19/23 19:57	529-21-5	N2	
2-Ethylpyridine	ND	ug/L	10.0	1	09/19/23 11:03	09/19/23 19:57	100-71-0	N2	
3-Ethylpyridine	ND	ug/L	10.0	1	09/19/23 11:03	09/19/23 19:57	536-78-7	N2	
4-Ethylpyridine	ND	ug/L	10.0	1	09/19/23 11:03	09/19/23 19:57	536-75-4	N2	
2,6-Lutidine	ND	ug/L	10.0	1	09/19/23 11:03	09/19/23 19:57	108-48-5	N2	
3,4-Lutidine	ND	ug/L	10.0	1	09/19/23 11:03	09/19/23 19:57	583-58-4	N2	
3,5-Lutidine	39.1	ug/L	10.0	1	09/19/23 11:03	09/19/23 19:57	591-22-0	N2	
2-Methyl-5-ethyl pyridine	ND	ug/L	10.0	1	09/19/23 11:03	09/19/23 19:57	104-90-5	N2	
2-Methyl-3-ethyl pyridine	ND	ug/L	10.0	1	09/19/23 11:03	09/19/23 19:57	14159-59-2	N2	
2-Picoline	ND	ug/L	10.0	1	09/19/23 11:03	09/19/23 19:57	109-06-8		
3/4-Picoline	ND	ug/L	10.0	1	09/19/23 11:03	09/19/23 19:57		N2	
Pyridine	ND	ug/L	10.0	1	09/19/23 11:03	09/19/23 19:57	110-86-1		
Surrogates									
Nitrobenzene-d5 (S)	52	%.	17-107	1	09/19/23 11:03	09/19/23 19:57	4165-60-0		
2-Fluorobiphenyl (S)	45	%.	11-105	1	09/19/23 11:03	09/19/23 19:57	321-60-8		
p-Terphenyl-d14 (S)	77	%.	36-149	1	09/19/23 11:03	09/19/23 19:57	1718-51-0		
Phenol-d5 (S)	24	%.	10-58	1	09/19/23 11:03	09/19/23 19:57	4165-62-2		
2-Fluorophenol (S)	31	%.	10-71	1	09/19/23 11:03	09/19/23 19:57	367-12-4		
2,4,6-Tribromophenol (S)	85	%.	35-149	1	09/19/23 11:03	09/19/23 19:57	118-79-6		
8260/5030 MSV UST		Analytical Method: EPA 8260							
		Pace Analytical Services - Indianapolis							
Benzene	ND	ug/L	5.0	1		09/20/23 11:43	71-43-2		
Toluene	ND	ug/L	5.0	1		09/20/23 11:43	108-88-3		
Ethylbenzene	ND	ug/L	5.0	1		09/20/23 11:43	100-41-4		
Xylene (Total)	ND	ug/L	10.0	1		09/20/23 11:43	1330-20-7		
Surrogates									
Dibromofluoromethane (S)	117	%.	82-128	1		09/20/23 11:43	1868-53-7		
Toluene-d8 (S)	97	%.	73-122	1		09/20/23 11:43	2037-26-5		
4-Bromofluorobenzene (S)	101	%.	79-124	1		09/20/23 11:43	460-00-4		
4500 Ammonia Water, Distilled		Analytical Method: SM 4500-NH3 G Preparation Method: SM 4500-NH3 B							
		Pace Analytical Services - Indianapolis							
Nitrogen, Ammonia	7.7	mg/L	1.0	2	09/27/23 13:30	09/27/23 17:02	7664-41-7		

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ANALYTICAL RESULTS

Project: Aurorium/Vertellus 3Q23

Pace Project No.: 50353978

Sample: RI-4D		Lab ID: 50353978002		Collected: 09/14/23 13:35		Received: 09/14/23 14:20		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8270 SVOC App9 Water		Analytical Method: EPA 8270 Preparation Method: EPA 3510 Pace Analytical Services - Indianapolis							
2,3-Lutidine	ND	ug/L	9.5	1	09/19/23 11:03	09/19/23 20:13	583-61-9	N2	
2,4-Lutidine / 2,5-Lutidine	ND	ug/L	9.5	1	09/19/23 11:03	09/19/23 20:13	108-47-4	N2	
3-Ethyl-4-MethylPyridine	ND	ug/L	9.5	1	09/19/23 11:03	09/19/23 20:13	529-21-5	N2	
2-Ethylpyridine	ND	ug/L	9.5	1	09/19/23 11:03	09/19/23 20:13	100-71-0	N2	
3-Ethylpyridine	ND	ug/L	9.5	1	09/19/23 11:03	09/19/23 20:13	536-78-7	N2	
4-Ethylpyridine	ND	ug/L	9.5	1	09/19/23 11:03	09/19/23 20:13	536-75-4	N2	
2,6-Lutidine	ND	ug/L	9.5	1	09/19/23 11:03	09/19/23 20:13	108-48-5	N2	
3,4-Lutidine	ND	ug/L	9.5	1	09/19/23 11:03	09/19/23 20:13	583-58-4	N2	
3,5-Lutidine	132	ug/L	9.5	1	09/19/23 11:03	09/19/23 20:13	591-22-0	N2	
2-Methyl-5-ethyl pyridine	ND	ug/L	9.5	1	09/19/23 11:03	09/19/23 20:13	104-90-5	N2	
2-Methyl-3-ethyl pyridine	24.5	ug/L	9.5	1	09/19/23 11:03	09/19/23 20:13	14159-59-2	N2	
2-Picoline	ND	ug/L	9.5	1	09/19/23 11:03	09/19/23 20:13	109-06-8		
3/4-Picoline	ND	ug/L	9.5	1	09/19/23 11:03	09/19/23 20:13		N2	
Pyridine	ND	ug/L	9.5	1	09/19/23 11:03	09/19/23 20:13	110-86-1		
Surrogates									
Nitrobenzene-d5 (S)	53	%.	17-107	1	09/19/23 11:03	09/19/23 20:13	4165-60-0		
2-Fluorobiphenyl (S)	48	%.	11-105	1	09/19/23 11:03	09/19/23 20:13	321-60-8		
p-Terphenyl-d14 (S)	90	%.	36-149	1	09/19/23 11:03	09/19/23 20:13	1718-51-0		
Phenol-d5 (S)	23	%.	10-58	1	09/19/23 11:03	09/19/23 20:13	4165-62-2		
2-Fluorophenol (S)	31	%.	10-71	1	09/19/23 11:03	09/19/23 20:13	367-12-4		
2,4,6-Tribromophenol (S)	93	%.	35-149	1	09/19/23 11:03	09/19/23 20:13	118-79-6		
8260/5030 MSV UST		Analytical Method: EPA 8260 Pace Analytical Services - Indianapolis							
Benzene	15.0	ug/L	5.0	1		09/20/23 12:06	71-43-2		
Toluene	ND	ug/L	5.0	1		09/20/23 12:06	108-88-3		
Ethylbenzene	ND	ug/L	5.0	1		09/20/23 12:06	100-41-4		
Xylene (Total)	ND	ug/L	10.0	1		09/20/23 12:06	1330-20-7		
Surrogates									
Dibromofluoromethane (S)	116	%.	82-128	1		09/20/23 12:06	1868-53-7		
Toluene-d8 (S)	97	%.	73-122	1		09/20/23 12:06	2037-26-5		
4-Bromofluorobenzene (S)	103	%.	79-124	1		09/20/23 12:06	460-00-4		
4500 Ammonia Water, Distilled		Analytical Method: SM 4500-NH3 G Preparation Method: SM 4500-NH3 B Pace Analytical Services - Indianapolis							
Nitrogen, Ammonia	12.4	mg/L	5.0	10	09/27/23 13:30	09/27/23 17:03	7664-41-7		

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ANALYTICAL RESULTS

Project: Aurorium/Vertellus 3Q23

Pace Project No.: 50353978

Sample: RI-5S		Lab ID: 50353978003		Collected: 09/14/23 10:15		Received: 09/14/23 14:20		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8270 SVOC App9 Water		Analytical Method: EPA 8270 Preparation Method: EPA 3510 Pace Analytical Services - Indianapolis							
2,3-Lutidine	ND	ug/L	10.0	1	09/19/23 11:03	09/19/23 20:30	583-61-9	N2	
2,4-Lutidine / 2,5-Lutidine	ND	ug/L	10.0	1	09/19/23 11:03	09/19/23 20:30	108-47-4	N2	
3-Ethyl-4-MethylPyridine	ND	ug/L	10.0	1	09/19/23 11:03	09/19/23 20:30	529-21-5	N2	
2-Ethylpyridine	ND	ug/L	10.0	1	09/19/23 11:03	09/19/23 20:30	100-71-0	N2	
3-Ethylpyridine	ND	ug/L	10.0	1	09/19/23 11:03	09/19/23 20:30	536-78-7	N2	
4-Ethylpyridine	ND	ug/L	10.0	1	09/19/23 11:03	09/19/23 20:30	536-75-4	N2	
2,6-Lutidine	ND	ug/L	10.0	1	09/19/23 11:03	09/19/23 20:30	108-48-5	N2	
3,4-Lutidine	ND	ug/L	10.0	1	09/19/23 11:03	09/19/23 20:30	583-58-4	N2	
3,5-Lutidine	49.3	ug/L	10.0	1	09/19/23 11:03	09/19/23 20:30	591-22-0	N2	
2-Methyl-5-ethyl pyridine	ND	ug/L	10.0	1	09/19/23 11:03	09/19/23 20:30	104-90-5	N2	
2-Methyl-3-ethyl pyridine	23.9	ug/L	10.0	1	09/19/23 11:03	09/19/23 20:30	14159-59-2	N2	
2-Picoline	ND	ug/L	10.0	1	09/19/23 11:03	09/19/23 20:30	109-06-8		
3/4-Picoline	ND	ug/L	10.0	1	09/19/23 11:03	09/19/23 20:30		N2	
Pyridine	ND	ug/L	10.0	1	09/19/23 11:03	09/19/23 20:30	110-86-1		
Surrogates									
Nitrobenzene-d5 (S)	48	%.	17-107	1	09/19/23 11:03	09/19/23 20:30	4165-60-0		
2-Fluorobiphenyl (S)	38	%.	11-105	1	09/19/23 11:03	09/19/23 20:30	321-60-8		
p-Terphenyl-d14 (S)	74	%.	36-149	1	09/19/23 11:03	09/19/23 20:30	1718-51-0		
Phenol-d5 (S)	22	%.	10-58	1	09/19/23 11:03	09/19/23 20:30	4165-62-2		
2-Fluorophenol (S)	32	%.	10-71	1	09/19/23 11:03	09/19/23 20:30	367-12-4		
2,4,6-Tribromophenol (S)	77	%.	35-149	1	09/19/23 11:03	09/19/23 20:30	118-79-6		
8260/5030 MSV UST		Analytical Method: EPA 8260 Pace Analytical Services - Indianapolis							
Benzene	28.3	ug/L	5.0	1		09/20/23 12:50	71-43-2		
Toluene	ND	ug/L	5.0	1		09/20/23 12:50	108-88-3		
Ethylbenzene	ND	ug/L	5.0	1		09/20/23 12:50	100-41-4		
Xylene (Total)	ND	ug/L	10.0	1		09/20/23 12:50	1330-20-7		
Surrogates									
Dibromofluoromethane (S)	119	%.	82-128	1		09/20/23 12:50	1868-53-7		
Toluene-d8 (S)	97	%.	73-122	1		09/20/23 12:50	2037-26-5		
4-Bromofluorobenzene (S)	102	%.	79-124	1		09/20/23 12:50	460-00-4		
4500 Ammonia Water, Distilled		Analytical Method: SM 4500-NH3 G Preparation Method: SM 4500-NH3 B Pace Analytical Services - Indianapolis							
Nitrogen, Ammonia	7.2	mg/L	2.5	5	09/27/23 13:30	09/27/23 17:06	7664-41-7		

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ANALYTICAL RESULTS

Project: Aurorium/Vertellus 3Q23

Pace Project No.: 50353978

Sample: RI-11M		Lab ID: 50353978004		Collected: 09/14/23 09:18		Received: 09/14/23 14:20		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8270 SVOC App9 Water	Analytical Method: EPA 8270 Preparation Method: EPA 3510								
	Pace Analytical Services - Indianapolis								
	2,3-Lutidine	ND	ug/L	10.0	1	09/19/23 11:03	09/19/23 20:46	583-61-9	N2
	2,4-Lutidine / 2,5-Lutidine	ND	ug/L	10.0	1	09/19/23 11:03	09/19/23 20:46	108-47-4	N2
	3-Ethyl-4-MethylPyridine	ND	ug/L	10.0	1	09/19/23 11:03	09/19/23 20:46	529-21-5	N2
	2-Ethylpyridine	ND	ug/L	10.0	1	09/19/23 11:03	09/19/23 20:46	100-71-0	N2
	3-Ethylpyridine	ND	ug/L	10.0	1	09/19/23 11:03	09/19/23 20:46	536-78-7	N2
	4-Ethylpyridine	ND	ug/L	10.0	1	09/19/23 11:03	09/19/23 20:46	536-75-4	N2
	2,6-Lutidine	ND	ug/L	10.0	1	09/19/23 11:03	09/19/23 20:46	108-48-5	N2
	3,4-Lutidine	ND	ug/L	10.0	1	09/19/23 11:03	09/19/23 20:46	583-58-4	N2
	3,5-Lutidine	ND	ug/L	10.0	1	09/19/23 11:03	09/19/23 20:46	591-22-0	N2
	2-Methyl-5-ethyl pyridine	ND	ug/L	10.0	1	09/19/23 11:03	09/19/23 20:46	104-90-5	N2
	2-Methyl-3-ethyl pyridine	ND	ug/L	10.0	1	09/19/23 11:03	09/19/23 20:46	14159-59-2	N2
	2-Picoline	ND	ug/L	10.0	1	09/19/23 11:03	09/19/23 20:46	109-06-8	
	3/4-Picoline	ND	ug/L	10.0	1	09/19/23 11:03	09/19/23 20:46		N2
	Pyridine	ND	ug/L	10.0	1	09/19/23 11:03	09/19/23 20:46	110-86-1	
	Surrogates								
	Nitrobenzene-d5 (S)	50	%.	17-107	1	09/19/23 11:03	09/19/23 20:46	4165-60-0	
2-Fluorobiphenyl (S)	41	%.	11-105	1	09/19/23 11:03	09/19/23 20:46	321-60-8		
p-Terphenyl-d14 (S)	94	%.	36-149	1	09/19/23 11:03	09/19/23 20:46	1718-51-0		
Phenol-d5 (S)	24	%.	10-58	1	09/19/23 11:03	09/19/23 20:46	4165-62-2		
2-Fluorophenol (S)	33	%.	10-71	1	09/19/23 11:03	09/19/23 20:46	367-12-4		
2,4,6-Tribromophenol (S)	88	%.	35-149	1	09/19/23 11:03	09/19/23 20:46	118-79-6		
8260/5030 MSV UST									
Analytical Method: EPA 8260									
Pace Analytical Services - Indianapolis									
Benzene	ND	ug/L	5.0	1		09/20/23 13:12	71-43-2		
Toluene	ND	ug/L	5.0	1		09/20/23 13:12	108-88-3		
Ethylbenzene	ND	ug/L	5.0	1		09/20/23 13:12	100-41-4		
Xylene (Total)	ND	ug/L	10.0	1		09/20/23 13:12	1330-20-7		
Surrogates									
Dibromofluoromethane (S)	117	%.	82-128	1		09/20/23 13:12	1868-53-7		
Toluene-d8 (S)	98	%.	73-122	1		09/20/23 13:12	2037-26-5		
4-Bromofluorobenzene (S)	102	%.	79-124	1		09/20/23 13:12	460-00-4		
4500 Ammonia Water, Distilled									
Analytical Method: SM 4500-NH3 G Preparation Method: SM 4500-NH3 B									
Pace Analytical Services - Indianapolis									
Nitrogen, Ammonia	17.2	mg/L	5.0	10	09/27/23 13:30	09/27/23 17:56	7664-41-7		

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ANALYTICAL RESULTS

Project: Aurorium/Vertellus 3Q23

Pace Project No.: 50353978

Sample: RI-6S		Lab ID: 50353978005		Collected: 09/13/23 16:45		Received: 09/14/23 14:20		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8270 SVOC App9 Water		Analytical Method: EPA 8270 Preparation Method: EPA 3510 Pace Analytical Services - Indianapolis							
2,3-Lutidine	ND	ug/L	9.5	1	09/19/23 11:03	09/19/23 18:52	583-61-9	N2	
2,4-Lutidine / 2,5-Lutidine	ND	ug/L	9.5	1	09/19/23 11:03	09/19/23 18:52	108-47-4	N2	
3-Ethyl-4-MethylPyridine	ND	ug/L	9.5	1	09/19/23 11:03	09/19/23 18:52	529-21-5	N2	
2-Ethylpyridine	ND	ug/L	9.5	1	09/19/23 11:03	09/19/23 18:52	100-71-0	N2	
3-Ethylpyridine	ND	ug/L	9.5	1	09/19/23 11:03	09/19/23 18:52	536-78-7	N2	
4-Ethylpyridine	ND	ug/L	9.5	1	09/19/23 11:03	09/19/23 18:52	536-75-4	N2	
2,6-Lutidine	ND	ug/L	9.5	1	09/19/23 11:03	09/19/23 18:52	108-48-5	N2	
3,4-Lutidine	ND	ug/L	9.5	1	09/19/23 11:03	09/19/23 18:52	583-58-4	N2	
3,5-Lutidine	ND	ug/L	9.5	1	09/19/23 11:03	09/19/23 18:52	591-22-0	N2	
2-Methyl-5-ethyl pyridine	ND	ug/L	9.5	1	09/19/23 11:03	09/19/23 18:52	104-90-5	N2	
2-Methyl-3-ethyl pyridine	ND	ug/L	9.5	1	09/19/23 11:03	09/19/23 18:52	14159-59-2	N2	
2-Picoline	ND	ug/L	9.5	1	09/19/23 11:03	09/19/23 18:52	109-06-8		
3/4-Picoline	ND	ug/L	9.5	1	09/19/23 11:03	09/19/23 18:52		N2	
Pyridine	ND	ug/L	9.5	1	09/19/23 11:03	09/19/23 18:52	110-86-1		
Surrogates									
Nitrobenzene-d5 (S)	55	%.	17-107	1	09/19/23 11:03	09/19/23 18:52	4165-60-0		
2-Fluorobiphenyl (S)	46	%.	11-105	1	09/19/23 11:03	09/19/23 18:52	321-60-8		
p-Terphenyl-d14 (S)	86	%.	36-149	1	09/19/23 11:03	09/19/23 18:52	1718-51-0		
Phenol-d5 (S)	24	%.	10-58	1	09/19/23 11:03	09/19/23 18:52	4165-62-2		
2-Fluorophenol (S)	33	%.	10-71	1	09/19/23 11:03	09/19/23 18:52	367-12-4		
2,4,6-Tribromophenol (S)	84	%.	35-149	1	09/19/23 11:03	09/19/23 18:52	118-79-6		
8260/5030 MSV UST		Analytical Method: EPA 8260 Pace Analytical Services - Indianapolis							
Benzene	ND	ug/L	5.0	1		09/20/23 13:35	71-43-2		
Toluene	ND	ug/L	5.0	1		09/20/23 13:35	108-88-3		
Ethylbenzene	ND	ug/L	5.0	1		09/20/23 13:35	100-41-4		
Xylene (Total)	ND	ug/L	10.0	1		09/20/23 13:35	1330-20-7		
Surrogates									
Dibromofluoromethane (S)	118	%.	82-128	1		09/20/23 13:35	1868-53-7		
Toluene-d8 (S)	95	%.	73-122	1		09/20/23 13:35	2037-26-5		
4-Bromofluorobenzene (S)	101	%.	79-124	1		09/20/23 13:35	460-00-4		
4500 Ammonia Water, Distilled		Analytical Method: SM 4500-NH3 G Preparation Method: SM 4500-NH3 B Pace Analytical Services - Indianapolis							
Nitrogen, Ammonia	2.4	mg/L	0.50	1	09/27/23 13:30	09/27/23 17:09	7664-41-7		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Aurorium/Vertellus 3Q23

Pace Project No.: 50353978

Sample: RI-15M		Lab ID: 50353978006		Collected: 09/13/23 16:10		Received: 09/14/23 14:20		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8270 SVOC App9 Water		Analytical Method: EPA 8270 Preparation Method: EPA 3510 Pace Analytical Services - Indianapolis							
2,3-Lutidine	ND	ug/L	9.5	1	09/19/23 11:03	09/19/23 19:09	583-61-9	N2	
2,4-Lutidine / 2,5-Lutidine	ND	ug/L	9.5	1	09/19/23 11:03	09/19/23 19:09	108-47-4	N2	
3-Ethyl-4-MethylPyridine	ND	ug/L	9.5	1	09/19/23 11:03	09/19/23 19:09	529-21-5	N2	
2-Ethylpyridine	ND	ug/L	9.5	1	09/19/23 11:03	09/19/23 19:09	100-71-0	N2	
3-Ethylpyridine	ND	ug/L	9.5	1	09/19/23 11:03	09/19/23 19:09	536-78-7	N2	
4-Ethylpyridine	ND	ug/L	9.5	1	09/19/23 11:03	09/19/23 19:09	536-75-4	N2	
2,6-Lutidine	ND	ug/L	9.5	1	09/19/23 11:03	09/19/23 19:09	108-48-5	N2	
3,4-Lutidine	ND	ug/L	9.5	1	09/19/23 11:03	09/19/23 19:09	583-58-4	N2	
3,5-Lutidine	10.3	ug/L	9.5	1	09/19/23 11:03	09/19/23 19:09	591-22-0	N2	
2-Methyl-5-ethyl pyridine	ND	ug/L	9.5	1	09/19/23 11:03	09/19/23 19:09	104-90-5	N2	
2-Methyl-3-ethyl pyridine	ND	ug/L	9.5	1	09/19/23 11:03	09/19/23 19:09	14159-59-2	N2	
2-Picoline	ND	ug/L	9.5	1	09/19/23 11:03	09/19/23 19:09	109-06-8		
3/4-Picoline	ND	ug/L	9.5	1	09/19/23 11:03	09/19/23 19:09		N2	
Pyridine	ND	ug/L	9.5	1	09/19/23 11:03	09/19/23 19:09	110-86-1		
Surrogates									
Nitrobenzene-d5 (S)	42	%.	17-107	1	09/19/23 11:03	09/19/23 19:09	4165-60-0		
2-Fluorobiphenyl (S)	37	%.	11-105	1	09/19/23 11:03	09/19/23 19:09	321-60-8		
p-Terphenyl-d14 (S)	90	%.	36-149	1	09/19/23 11:03	09/19/23 19:09	1718-51-0		
Phenol-d5 (S)	23	%.	10-58	1	09/19/23 11:03	09/19/23 19:09	4165-62-2		
2-Fluorophenol (S)	29	%.	10-71	1	09/19/23 11:03	09/19/23 19:09	367-12-4		
2,4,6-Tribromophenol (S)	74	%.	35-149	1	09/19/23 11:03	09/19/23 19:09	118-79-6		
8260/5030 MSV UST		Analytical Method: EPA 8260 Pace Analytical Services - Indianapolis							
Benzene	27.9	ug/L	5.0	1		09/20/23 13:57	71-43-2		
Toluene	ND	ug/L	5.0	1		09/20/23 13:57	108-88-3		
Ethylbenzene	ND	ug/L	5.0	1		09/20/23 13:57	100-41-4		
Xylene (Total)	ND	ug/L	10.0	1		09/20/23 13:57	1330-20-7		
Surrogates									
Dibromofluoromethane (S)	118	%.	82-128	1		09/20/23 13:57	1868-53-7		
Toluene-d8 (S)	96	%.	73-122	1		09/20/23 13:57	2037-26-5		
4-Bromofluorobenzene (S)	102	%.	79-124	1		09/20/23 13:57	460-00-4		
4500 Ammonia Water, Distilled		Analytical Method: SM 4500-NH3 G Preparation Method: SM 4500-NH3 B Pace Analytical Services - Indianapolis							
Nitrogen, Ammonia	12.0	mg/L	2.5	5	09/27/23 13:30	09/27/23 17:10	7664-41-7		

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ANALYTICAL RESULTS

Project: Aurorium/Vertellus 3Q23

Pace Project No.: 50353978

Sample: RI-15D		Lab ID: 50353978007		Collected: 09/13/23 15:25		Received: 09/14/23 14:20		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8270 SVOC App9 Water		Analytical Method: EPA 8270 Preparation Method: EPA 3510							
		Pace Analytical Services - Indianapolis							
2,3-Lutidine	ND	ug/L	8.7	1	09/19/23 11:03	09/19/23 19:25	583-61-9	N2	
2,4-Lutidine / 2,5-Lutidine	ND	ug/L	8.7	1	09/19/23 11:03	09/19/23 19:25	108-47-4	N2	
3-Ethyl-4-MethylPyridine	ND	ug/L	8.7	1	09/19/23 11:03	09/19/23 19:25	529-21-5	N2	
2-Ethylpyridine	ND	ug/L	8.7	1	09/19/23 11:03	09/19/23 19:25	100-71-0	N2	
3-Ethylpyridine	ND	ug/L	8.7	1	09/19/23 11:03	09/19/23 19:25	536-78-7	N2	
4-Ethylpyridine	ND	ug/L	8.7	1	09/19/23 11:03	09/19/23 19:25	536-75-4	N2	
2,6-Lutidine	ND	ug/L	8.7	1	09/19/23 11:03	09/19/23 19:25	108-48-5	N2	
3,4-Lutidine	ND	ug/L	8.7	1	09/19/23 11:03	09/19/23 19:25	583-58-4	N2	
3,5-Lutidine	16.2	ug/L	8.7	1	09/19/23 11:03	09/19/23 19:25	591-22-0	N2	
2-Methyl-5-ethyl pyridine	ND	ug/L	8.7	1	09/19/23 11:03	09/19/23 19:25	104-90-5	N2	
2-Methyl-3-ethyl pyridine	ND	ug/L	8.7	1	09/19/23 11:03	09/19/23 19:25	14159-59-2	N2	
2-Picoline	ND	ug/L	8.7	1	09/19/23 11:03	09/19/23 19:25	109-06-8		
3/4-Picoline	ND	ug/L	8.7	1	09/19/23 11:03	09/19/23 19:25		N2	
Pyridine	ND	ug/L	8.7	1	09/19/23 11:03	09/19/23 19:25	110-86-1		
Surrogates									
Nitrobenzene-d5 (S)	65	%.	17-107	1	09/19/23 11:03	09/19/23 19:25	4165-60-0		
2-Fluorobiphenyl (S)	56	%.	11-105	1	09/19/23 11:03	09/19/23 19:25	321-60-8		
p-Terphenyl-d14 (S)	89	%.	36-149	1	09/19/23 11:03	09/19/23 19:25	1718-51-0		
Phenol-d5 (S)	28	%.	10-58	1	09/19/23 11:03	09/19/23 19:25	4165-62-2		
2-Fluorophenol (S)	38	%.	10-71	1	09/19/23 11:03	09/19/23 19:25	367-12-4		
2,4,6-Tribromophenol (S)	88	%.	35-149	1	09/19/23 11:03	09/19/23 19:25	118-79-6		
8260/5030 MSV UST		Analytical Method: EPA 8260							
		Pace Analytical Services - Indianapolis							
Benzene	5.9	ug/L	5.0	1		09/20/23 14:19	71-43-2		
Toluene	ND	ug/L	5.0	1		09/20/23 14:19	108-88-3		
Ethylbenzene	ND	ug/L	5.0	1		09/20/23 14:19	100-41-4		
Xylene (Total)	ND	ug/L	10.0	1		09/20/23 14:19	1330-20-7		
Surrogates									
Dibromofluoromethane (S)	119	%.	82-128	1		09/20/23 14:19	1868-53-7		
Toluene-d8 (S)	96	%.	73-122	1		09/20/23 14:19	2037-26-5		
4-Bromofluorobenzene (S)	102	%.	79-124	1		09/20/23 14:19	460-00-4		
4500 Ammonia Water, Distilled		Analytical Method: SM 4500-NH3 G Preparation Method: SM 4500-NH3 B							
		Pace Analytical Services - Indianapolis							
Nitrogen, Ammonia	5.4	mg/L	1.0	2	09/27/23 13:30	09/27/23 17:15	7664-41-7		

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ANALYTICAL RESULTS

Project: Aurorium/Vertellus 3Q23

Pace Project No.: 50353978

Sample: RI-17S		Lab ID: 50353978008		Collected: 09/13/23 17:35		Received: 09/14/23 14:20		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8270 SVOC App9 Water	Analytical Method: EPA 8270 Preparation Method: EPA 3510								
	Pace Analytical Services - Indianapolis								
2,3-Lutidine	ND	ug/L	9.5	1	09/19/23 11:03	09/19/23 19:41	583-61-9	N2	
2,4-Lutidine / 2,5-Lutidine	ND	ug/L	9.5	1	09/19/23 11:03	09/19/23 19:41	108-47-4	N2	
3-Ethyl-4-MethylPyridine	ND	ug/L	9.5	1	09/19/23 11:03	09/19/23 19:41	529-21-5	N2	
2-Ethylpyridine	ND	ug/L	9.5	1	09/19/23 11:03	09/19/23 19:41	100-71-0	N2	
3-Ethylpyridine	ND	ug/L	9.5	1	09/19/23 11:03	09/19/23 19:41	536-78-7	N2	
4-Ethylpyridine	ND	ug/L	9.5	1	09/19/23 11:03	09/19/23 19:41	536-75-4	N2	
2,6-Lutidine	ND	ug/L	9.5	1	09/19/23 11:03	09/19/23 19:41	108-48-5	N2	
3,4-Lutidine	ND	ug/L	9.5	1	09/19/23 11:03	09/19/23 19:41	583-58-4	N2	
3,5-Lutidine	11.3	ug/L	9.5	1	09/19/23 11:03	09/19/23 19:41	591-22-0	N2	
2-Methyl-5-ethyl pyridine	ND	ug/L	9.5	1	09/19/23 11:03	09/19/23 19:41	104-90-5	N2	
2-Methyl-3-ethyl pyridine	ND	ug/L	9.5	1	09/19/23 11:03	09/19/23 19:41	14159-59-2	N2	
2-Picoline	ND	ug/L	9.5	1	09/19/23 11:03	09/19/23 19:41	109-06-8		
3/4-Picoline	ND	ug/L	9.5	1	09/19/23 11:03	09/19/23 19:41		N2	
Pyridine	ND	ug/L	9.5	1	09/19/23 11:03	09/19/23 19:41	110-86-1		
Surrogates									
Nitrobenzene-d5 (S)	47	%.	17-107	1	09/19/23 11:03	09/19/23 19:41	4165-60-0		
2-Fluorobiphenyl (S)	39	%.	11-105	1	09/19/23 11:03	09/19/23 19:41	321-60-8		
p-Terphenyl-d14 (S)	65	%.	36-149	1	09/19/23 11:03	09/19/23 19:41	1718-51-0		
Phenol-d5 (S)	24	%.	10-58	1	09/19/23 11:03	09/19/23 19:41	4165-62-2		
2-Fluorophenol (S)	33	%.	10-71	1	09/19/23 11:03	09/19/23 19:41	367-12-4		
2,4,6-Tribromophenol (S)	84	%.	35-149	1	09/19/23 11:03	09/19/23 19:41	118-79-6		
8260/5030 MSV UST		Analytical Method: EPA 8260							
		Pace Analytical Services - Indianapolis							
Benzene	ND	ug/L	5.0	1		09/20/23 14:41	71-43-2		
Toluene	ND	ug/L	5.0	1		09/20/23 14:41	108-88-3		
Ethylbenzene	ND	ug/L	5.0	1		09/20/23 14:41	100-41-4		
Xylene (Total)	ND	ug/L	10.0	1		09/20/23 14:41	1330-20-7		
Surrogates									
Dibromofluoromethane (S)	113	%.	82-128	1		09/20/23 14:41	1868-53-7		
Toluene-d8 (S)	97	%.	73-122	1		09/20/23 14:41	2037-26-5		
4-Bromofluorobenzene (S)	99	%.	79-124	1		09/20/23 14:41	460-00-4		
4500 Ammonia Water, Distilled		Analytical Method: SM 4500-NH3 G Preparation Method: SM 4500-NH3 B							
		Pace Analytical Services - Indianapolis							
Nitrogen, Ammonia	10.0	mg/L	2.5	5	09/27/23 13:30	09/27/23 17:19	7664-41-7		

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ANALYTICAL RESULTS

Project: Aurorium/Vertellus 3Q23

Pace Project No.: 50353978

Sample: RI-19D		Lab ID: 50353978009		Collected: 09/14/23 08:23		Received: 09/14/23 14:20		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8270 SVOC App9 Water	Analytical Method: EPA 8270 Preparation Method: EPA 3510								
	Pace Analytical Services - Indianapolis								
2,3-Lutidine	ND	ug/L	10.0	1	09/19/23 15:35	09/20/23 18:23	583-61-9	N2	
2,4-Lutidine / 2,5-Lutidine	ND	ug/L	10.0	1	09/19/23 15:35	09/20/23 18:23	108-47-4	N2	
3-Ethyl-4-MethylPyridine	ND	ug/L	10.0	1	09/19/23 15:35	09/20/23 18:23	529-21-5	N2	
2-Ethylpyridine	ND	ug/L	10.0	1	09/19/23 15:35	09/20/23 18:23	100-71-0	N2	
3-Ethylpyridine	ND	ug/L	10.0	1	09/19/23 15:35	09/20/23 18:23	536-78-7	N2	
4-Ethylpyridine	ND	ug/L	10.0	1	09/19/23 15:35	09/20/23 18:23	536-75-4	N2	
2,6-Lutidine	ND	ug/L	10.0	1	09/19/23 15:35	09/20/23 18:23	108-48-5	N2	
3,4-Lutidine	ND	ug/L	10.0	1	09/19/23 15:35	09/20/23 18:23	583-58-4	N2	
3,5-Lutidine	ND	ug/L	10.0	1	09/19/23 15:35	09/20/23 18:23	591-22-0	N2	
2-Methyl-5-ethyl pyridine	ND	ug/L	10.0	1	09/19/23 15:35	09/20/23 18:23	104-90-5	N2	
2-Methyl-3-ethyl pyridine	ND	ug/L	10.0	1	09/19/23 15:35	09/20/23 18:23	14159-59-2	N2	
2-Picoline	ND	ug/L	10.0	1	09/19/23 15:35	09/20/23 18:23	109-06-8		
3/4-Picoline	ND	ug/L	10.0	1	09/19/23 15:35	09/20/23 18:23		N2	
Pyridine	ND	ug/L	10.0	1	09/19/23 15:35	09/20/23 18:23	110-86-1	H7,L2	
Surrogates									
Nitrobenzene-d5 (S)	37	%.	17-107	1	09/19/23 15:35	09/20/23 18:23	4165-60-0		
2-Fluorobiphenyl (S)	30	%.	11-105	1	09/19/23 15:35	09/20/23 18:23	321-60-8		
p-Terphenyl-d14 (S)	59	%.	36-149	1	09/19/23 15:35	09/20/23 18:23	1718-51-0		
Phenol-d5 (S)	18	%.	10-58	1	09/19/23 15:35	09/20/23 18:23	4165-62-2		
2-Fluorophenol (S)	26	%.	10-71	1	09/19/23 15:35	09/20/23 18:23	367-12-4		
2,4,6-Tribromophenol (S)	48	%.	35-149	1	09/19/23 15:35	09/20/23 18:23	118-79-6		
8260/5030 MSV UST									
Analytical Method: EPA 8260									
Pace Analytical Services - Indianapolis									
Benzene	ND	ug/L	5.0	1		09/20/23 15:04	71-43-2		
Toluene	ND	ug/L	5.0	1		09/20/23 15:04	108-88-3		
Ethylbenzene	ND	ug/L	5.0	1		09/20/23 15:04	100-41-4		
Xylene (Total)	ND	ug/L	10.0	1		09/20/23 15:04	1330-20-7		
Surrogates									
Dibromofluoromethane (S)	119	%.	82-128	1		09/20/23 15:04	1868-53-7		
Toluene-d8 (S)	97	%.	73-122	1		09/20/23 15:04	2037-26-5		
4-Bromofluorobenzene (S)	102	%.	79-124	1		09/20/23 15:04	460-00-4		
4500 Ammonia Water, Distilled									
Analytical Method: SM 4500-NH3 G Preparation Method: SM 4500-NH3 B									
Pace Analytical Services - Indianapolis									
Nitrogen, Ammonia	2.9	mg/L	0.50	1	09/27/23 13:30	09/27/23 17:20	7664-41-7		

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QUALITY CONTROL DATA

Project: Aurorium/Vertellus 3Q23

Pace Project No.: 50353978

QC Batch:	753507	Analysis Method:	EPA 8260
QC Batch Method:	EPA 8260	Analysis Description:	8260 MSV UST-WATER
		Laboratory:	Pace Analytical Services - Indianapolis
Associated Lab Samples:	50353978001, 50353978002, 50353978003, 50353978004, 50353978005, 50353978006, 50353978007, 50353978008, 50353978009		

METHOD BLANK:	3453104	Matrix:	Water
Associated Lab Samples:	50353978001, 50353978002, 50353978003, 50353978004, 50353978005, 50353978006, 50353978007, 50353978008, 50353978009		

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	5.0	09/20/23 09:52	
Ethylbenzene	ug/L	ND	5.0	09/20/23 09:52	
Toluene	ug/L	ND	5.0	09/20/23 09:52	
Xylene (Total)	ug/L	ND	10.0	09/20/23 09:52	
4-Bromofluorobenzene (S)	%	103	79-124	09/20/23 09:52	
Dibromofluoromethane (S)	%	124	82-128	09/20/23 09:52	
Toluene-d8 (S)	%	93	73-122	09/20/23 09:52	

LABORATORY CONTROL SAMPLE: 3453105

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	50	57.0	114	74-124	
Ethylbenzene	ug/L	50	55.1	110	74-125	
Toluene	ug/L	50	52.9	106	72-119	
Xylene (Total)	ug/L	150	156	104	73-123	
4-Bromofluorobenzene (S)	%			97	79-124	
Dibromofluoromethane (S)	%			99	82-128	
Toluene-d8 (S)	%			98	73-122	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3453106 3453107

Parameter	Units	50353978001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzene	ug/L	ND	50	50	51.8	51.5	104	103	65-137	1	20	
Ethylbenzene	ug/L	ND	50	50	47.0	46.5	94	93	50-143	1	20	
Toluene	ug/L	ND	50	50	46.5	46.4	93	92	57-137	0	20	
Xylene (Total)	ug/L	ND	150	150	134	134	89	89	52-137	0	20	
4-Bromofluorobenzene (S)	%						96	95	79-124			
Dibromofluoromethane (S)	%						98	97	82-128			
Toluene-d8 (S)	%						99	99	73-122			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: Aurorium/Vertellus 3Q23

Pace Project No.: 50353978

QC Batch:	753267	Analysis Method:	EPA 8270
QC Batch Method:	EPA 3510	Analysis Description:	8270 Water MSSV
		Laboratory:	Pace Analytical Services - Indianapolis

Associated Lab Samples: 50353978009

METHOD BLANK: 3452091

Matrix: Water

Associated Lab Samples: 50353978009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
2,3-Lutidine	ug/L	ND	10.0	09/20/23 17:50	N2
2,4-Lutidine / 2,5-Lutidine	ug/L	ND	10.0	09/20/23 17:50	N2
2,6-Lutidine	ug/L	ND	10.0	09/20/23 17:50	N2
2-Ethylpyridine	ug/L	ND	10.0	09/20/23 17:50	N2
2-Methyl-3-ethyl pyridine	ug/L	ND	10.0	09/20/23 17:50	N2
2-Methyl-5-ethyl pyridine	ug/L	ND	10.0	09/20/23 17:50	N2
2-Picoline	ug/L	ND	10.0	09/20/23 17:50	
3,4-Lutidine	ug/L	ND	10.0	09/20/23 17:50	N2
3,5-Lutidine	ug/L	ND	10.0	09/20/23 17:50	N2
3-Ethyl-4-MethylPyridine	ug/L	ND	10.0	09/20/23 17:50	N2
3-Ethylpyridine	ug/L	ND	10.0	09/20/23 17:50	N2
3/4-Picoline	ug/L	ND	10.0	09/20/23 17:50	N2
4-Ethylpyridine	ug/L	ND	10.0	09/20/23 17:50	N2
Pyridine	ug/L	ND	10.0	09/20/23 17:50	
2,4,6-Tribromophenol (S)	%	49	35-149	09/20/23 17:50	
2-Fluorobiphenyl (S)	%	32	11-105	09/20/23 17:50	
2-Fluorophenol (S)	%	26	10-71	09/20/23 17:50	
Nitrobenzene-d5 (S)	%	38	17-107	09/20/23 17:50	1d
p-Terphenyl-d14 (S)	%	70	36-149	09/20/23 17:50	
Phenol-d5 (S)	%	18	10-58	09/20/23 17:50	

LABORATORY CONTROL SAMPLE: 3452092

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Pyridine	ug/L	50	ND	6	10-51	L2
2,4,6-Tribromophenol (S)	%			54	35-149	
2-Fluorobiphenyl (S)	%			34	11-105	
2-Fluorophenol (S)	%			28	10-71	
Nitrobenzene-d5 (S)	%			40	17-107	
p-Terphenyl-d14 (S)	%			60	36-149	
Phenol-d5 (S)	%			20	10-58	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Aurorium/Vertellus 3Q23

Pace Project No.: 50353978

QC Batch:	753515	Analysis Method:	EPA 8270
QC Batch Method:	EPA 3510	Analysis Description:	8270 Water MSSV
		Laboratory:	Pace Analytical Services - Indianapolis
Associated Lab Samples:	50353978001, 50353978002, 50353978003, 50353978004, 50353978005, 50353978006, 50353978007, 50353978008		

METHOD BLANK:	3453132	Matrix:	Water
Associated Lab Samples:	50353978001, 50353978002, 50353978003, 50353978004, 50353978005, 50353978006, 50353978007, 50353978008		

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
2,3-Lutidine	ug/L	ND	10.0	09/19/23 18:04	N2
2,4-Lutidine / 2,5-Lutidine	ug/L	ND	10.0	09/19/23 18:04	N2
2,6-Lutidine	ug/L	ND	10.0	09/19/23 18:04	N2
2-Ethylpyridine	ug/L	ND	10.0	09/19/23 18:04	N2
2-Methyl-3-ethyl pyridine	ug/L	ND	10.0	09/19/23 18:04	N2
2-Methyl-5-ethyl pyridine	ug/L	ND	10.0	09/19/23 18:04	N2
2-Picoline	ug/L	ND	10.0	09/19/23 18:04	
3,4-Lutidine	ug/L	ND	10.0	09/19/23 18:04	N2
3,5-Lutidine	ug/L	ND	10.0	09/19/23 18:04	N2
3-Ethyl-4-MethylPyridine	ug/L	ND	10.0	09/19/23 18:04	N2
3-Ethylpyridine	ug/L	ND	10.0	09/19/23 18:04	N2
3/4-Picoline	ug/L	ND	10.0	09/19/23 18:04	N2
4-Ethylpyridine	ug/L	ND	10.0	09/19/23 18:04	N2
Pyridine	ug/L	ND	10.0	09/19/23 18:04	
2,4,6-Tribromophenol (S)	%	80	35-149	09/19/23 18:04	
2-Fluorobiphenyl (S)	%	42	11-105	09/19/23 18:04	
2-Fluorophenol (S)	%	34	10-71	09/19/23 18:04	
Nitrobenzene-d5 (S)	%	47	17-107	09/19/23 18:04	
p-Terphenyl-d14 (S)	%	106	36-149	09/19/23 18:04	
Phenol-d5 (S)	%	27	10-58	09/19/23 18:04	

LABORATORY CONTROL SAMPLE: 3453133

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Pyridine	ug/L	50	7.2J	14	10-51	
2,4,6-Tribromophenol (S)	%			88	35-149	
2-Fluorobiphenyl (S)	%			47	11-105	
2-Fluorophenol (S)	%			36	10-71	
Nitrobenzene-d5 (S)	%			52	17-107	
p-Terphenyl-d14 (S)	%			97	36-149	
Phenol-d5 (S)	%			27	10-58	

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QUALITY CONTROL DATA

Project: Aurorium/Vertellus 3Q23

Pace Project No.: 50353978

QC Batch:	754546	Analysis Method:	SM 4500-NH3 G
QC Batch Method:	SM 4500-NH3 B	Analysis Description:	4500 Ammonia, Distilled
		Laboratory:	Pace Analytical Services - Indianapolis

Associated Lab Samples: 50353978001, 50353978002, 50353978003, 50353978004, 50353978005, 50353978006

METHOD BLANK: 3458025 Matrix: Water

Associated Lab Samples: 50353978001, 50353978002, 50353978003, 50353978004, 50353978005, 50353978006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.50	09/27/23 17:51	

LABORATORY CONTROL SAMPLE: 3458026

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	1.7	1.6	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3458027 3458028

Parameter	Units	50353955010 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	0.41	1.7	1.7	1.9	1.9	92	89	90-110	2	20	M0

MATRIX SPIKE SAMPLE: 3458029

Parameter	Units	50353978004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	17.2	1.7	18.0	48	90-110	M0

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QUALITY CONTROL DATA

Project: Aurorium/Vertellus 3Q23

Pace Project No.: 50353978

QC Batch:	754548	Analysis Method:	SM 4500-NH3 G
QC Batch Method:	SM 4500-NH3 B	Analysis Description:	4500 Ammonia, Distilled
		Laboratory:	Pace Analytical Services - Indianapolis

Associated Lab Samples: 50353978007, 50353978008, 50353978009

METHOD BLANK: 3458030 Matrix: Water

Associated Lab Samples: 50353978007, 50353978008, 50353978009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.50	09/27/23 17:13	

LABORATORY CONTROL SAMPLE: 3458031

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	1.7	1.6	94	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3458379 3458380

Parameter	Units	50353978007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	5.4	1.7	1.7	7.2	7.1	107	103	90-110	1	20	

MATRIX SPIKE SAMPLE: 3458381

Parameter	Units	50354010001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	14.7	1.7	16.3	94	90-110	

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QUALIFIERS

Project: Aurorium/Vertellus 3Q23

Pace Project No.: 50353978

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

1d	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
H7	Re-extraction or re-analysis could not be performed within method holding time.
L2	Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
N2	The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

REPORT OF LABORATORY ANALYSIS

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**QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: Aurorium/Vertellus 3Q23

Pace Project No.: 50353978

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
50353978001	RI-4S	EPA 3510	753515	EPA 8270	753519
50353978002	RI-4D	EPA 3510	753515	EPA 8270	753519
50353978003	RI-5S	EPA 3510	753515	EPA 8270	753519
50353978004	RI-11M	EPA 3510	753515	EPA 8270	753519
50353978005	RI-6S	EPA 3510	753515	EPA 8270	753519
50353978006	RI-15M	EPA 3510	753515	EPA 8270	753519
50353978007	RI-15D	EPA 3510	753515	EPA 8270	753519
50353978008	RI-17S	EPA 3510	753515	EPA 8270	753519
50353978009	RI-19D	EPA 3510	753267	EPA 8270	753632
50353978001	RI-4S	EPA 8260	753507		
50353978002	RI-4D	EPA 8260	753507		
50353978003	RI-5S	EPA 8260	753507		
50353978004	RI-11M	EPA 8260	753507		
50353978005	RI-6S	EPA 8260	753507		
50353978006	RI-15M	EPA 8260	753507		
50353978007	RI-15D	EPA 8260	753507		
50353978008	RI-17S	EPA 8260	753507		
50353978009	RI-19D	EPA 8260	753507		
50353978001	RI-4S	SM 4500-NH3 B	754546	SM 4500-NH3 G	754676
50353978002	RI-4D	SM 4500-NH3 B	754546	SM 4500-NH3 G	754676
50353978003	RI-5S	SM 4500-NH3 B	754546	SM 4500-NH3 G	754676
50353978004	RI-11M	SM 4500-NH3 B	754546	SM 4500-NH3 G	754676
50353978005	RI-6S	SM 4500-NH3 B	754546	SM 4500-NH3 G	754676
50353978006	RI-15M	SM 4500-NH3 B	754546	SM 4500-NH3 G	754676
50353978007	RI-15D	SM 4500-NH3 B	754548	SM 4500-NH3 G	754680
50353978008	RI-17S	SM 4500-NH3 B	754548	SM 4500-NH3 G	754680
50353978009	RI-19D	SM 4500-NH3 B	754548	SM 4500-NH3 G	754680

REPORT OF LABORATORY ANALYSIS

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W0#: 50353978



Submit



50353978

N-OF-CUSTODY / Analytical Request Document

in-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

acceptance of the Pace Terms and Conditions found at <https://info.pacelabs.com/hubfs/pas-standard-terms.pdf>.

Section A

Required Client Information:

Company: Aurorium/Vertellus
 Address: 201 N. Illinois St., Ste. 1800
 Indianapolis, IN 46204
 Email: dave@dmpetersonPE.com
 Phone: 216-554-0413 Fax:
 Requested Due Date: STD 10 day TAT

Required Project Information:

Report To: Dave Peterson, PE
 Copy To:
 Purchase Order #: 4400009667
 Project Name: Aurorium/Vertellus 3Q23
 Project #: GS0148c

Section C

Invoice Information:

Attention: Accounts Payable
 Company Name: Aurorium/Vertellus
 Address: 201 N. Illinois St., Ste. 1800, Indianapolis, IN 46204
 Pace Quote:
 Pace Project Manager: olivia.deck@pacelabs.com,
 Pace Profile #: 6586-1

Page : 1 Of 1

Regulatory Agency

State / Location

IN

ITEM #		SAMPLE ID One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique	MATRIX Drinking Water Water Waste Water Product Soil/Solid Oil Wipe Air Other Tissue	CODE DW WT WW P SL OL WP AR OT TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED				SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives								Analyses Test	Requested Analysis Filtered (Y/N)										Residual Chlorine (Y/N)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
							START		END				Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2SO3	Methanol	Other		Ammonia	BTEX by 8260	SVOC by 8270																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
8270-Pyridines only list	Gary H. Stevenson / Aurorium	9/14/23	1420	DS	9/14/23	1420	4.2	Y	N	N

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

SIGNATURE of SAMPLER:

DATE Signed: 9/14/23

TEMP in C

Received on

Ice

(Y/N)

Custody

Sealed

Cooler

(Y/N)

Samples

in contact

(Y/N)

Page 21 of 25



SAMPLE CONDITION UPON RECEIPT FORM

Date/Time and Initials of person examining contents: 9/14/23 18:38 JG

1. Courier: ☐ FED EX ☐ UPS ☒ CLIENT ☐ PACE ☐ NOW/JETT ☐ OTHER _____

2. Custody Seal on Cooler/Box Present: ☐ Yes ☒ No

(If yes) Seals Intact: ☐ Yes ☐ No (leave blank if no seals were present)

3. Thermometer: 1 2 3 4 5 6 7 8 A B C D E F G H

4. Cooler Temperature(s): 4.3/4.2
(Initial/Corrected) RECORD TEMPS OF ALL COOLERS RECEIVED (use Comments below to add more)

5. Packing Material: ☐ Bubble Wrap ☒ Bubble Bags
☐ None ☐ Other _____

6. Ice Type: ☒ Wet ☐ Blue ☐ None

7. If temp. is over 6°C or under 0°C, was the PM notified?: ☐ Yes ☐ No
Cooler temp should be above freezing to 6°C

All discrepancies will be written out in the comments section below.

	Yes	No		Yes	No	N/A
USDA Regulated Soils? (HI, ID, NY, WA, OR, CA, NM, TX, OK, AR, LA, TN, AL, MS, NC, SC, GA, FL, or Puerto Rico)		—	All containers needing acid/base preservation have been pH CHECKED?: Exceptions: VOA, coliform, LLHg, O&G, RAD CHEM, and any container with a septum cap or preserved with HCl.			
Short Hold Time Analysis (48 hours or less)? Analysis:		—	Circle: HNO ₃ (<2) <u>H₂SO₄ (<2)</u> NaOH (>10) NaOH/ZnAc (>9) Any non-conformance to pH recommendations will be noted on the container count form	—		
Time 5035A TC placed in Freezer or Short Holds To Lab	Time:			Present	Absent	N/A
			Residual Chlorine Check (SVOC 625 Pest/PCB 608)			—
Rush TAT Requested (4 days or less):		—	Residual Chlorine Check (Total/Amenable/Free Cyanide)			—
Custody Signatures Present?	—		Headspace Wisconsin Sulfide?			—
			Headspace in VOA Vials (>6mm): See Container Count form for details	Present	Absent	No VOA Vials Sent
Containers Intact?:		—			—	
Sample Label (IDs/Dates/Times) Match COC?: Except TCs, which only require sample ID	—		Trip Blank Present?		—	
Extra labels on Terracore Vials? (soils only)		—	Trip Blank Custody Seals?:			—

COMMENTS: Missing sample points upon receipt RI-65 for RI-19D, 5 sample points JG 9/14/23



SAMPLE CONDITION UPON RECEIPT FORM

Date/Time and Initials of person examining contents:

9/14/23 1510 TW

1. Courier: ☐ FED EX ☐ UPS ☒ CLIENT ☐ PACE ☐ NOW/JETT ☐ OTHER

2. Custody Seal on Cooler/Box Present: ☐ Yes ☒ No

(If yes) Seals Intact: ☐ Yes ☐ No (leave blank if no seals were present)

3. Thermometer: 1 2 3 4 5 6 7 8 A B C D E F G H

4. Cooler Temperature(s):

(Initial/Corrected) RECORD TEMPS OF ALL COOLERS RECEIVED (use Comments below to add more)

5. Packing Material:

☒ Bubble Wrap

☒ Bubble Bags

☐ None

☒ Other ZPLC

6. Ice Type:

☒ Wet

☐ Blue

☐ None

7. If temp. is over 6°C or under 0°C, was the PM notified?: ☐ Yes ☐ No

Cooler temp should be above freezing to 6°C

All discrepancies will be written out in the comments section below.

	Yes	No		Yes	No	N/A
USDA Regulated Soils? (HI, ID, NY, WA, OR, CA, NM, TX, OK, AR, LA, TN, AL, MS, NC, SC, GA, FL, or Puerto Rico)			All containers needing acid/base preservation have been pH CHECKED?: Exceptions: VOA, coliform, LLHg, O&G, RAD CHEM, and any container with a septum cap or preserved with HCl.			
Short Hold Time Analysis (48 hours or less)? Analysis:			Circle: HNO3 (<2) H2SO4 (<2) NaOH (>10) NaOH/ZnAc (>9) Any non-conformance to pH recommendations will be noted on the container count form	✓		
Time 5035A TC placed in Freezer or Short Holds To Lab	Time:			Present	Absent	N/A
			Residual Chlorine Check (SVOC 625 Pest/PCB 608)			/
Rush TAT Requested (4 days or less):			Residual Chlorine Check (Total/Amenable/Free Cyanide)			/
Custody Signatures Present?			Headspace Wisconsin Sulfide?			/
			Headspace in VOA Vials (>6mm): See Container Count form for details	Present	Absent	No VOA Vials Sent
Containers Intact?:					/	
Sample Label (IDs/Dates/Times) Match COC?: Except TCs, which only require sample ID			Trip Blank Present?		/	
Extra labels on Terracore Vials? (soils only)			Trip Blank Custody Seals?:			/

COMMENTS:

Received without COC. TW 9/15

Sample Container Count

** Place a RED dot on containers

that are out of conformance **

COC Line Item	WG9U	WG9U BG1U	MeOH (only) SBS DI	R	DG9H VOA VIAL HS >6mm	DG9H VG9H	VG9U	DG9U	VG9T	AMBER GLASS							PLASTIC										OTHER			Matrix	Nitric Red	Sulfuric Yellow	Sodium Hydroxide Green	Sodium Hydroxide/ ZnAc Black																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
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Container Codes

Glass			
DG9H	40mL HCl amber voa vial	BG1T	glass
DG9P	40mL TSP amber vial	BG1U	1L unpreserved glass
DG9S	40mL H2SO4 amber vial	CG3U	250mL Unpres Clear Glass
DG9T	40mL Na Thio amber vial	AG0U	100mL unpres amber glass
DG9U	40mL unpreserved amber vial	AG1H	1L HCl amber glass
VG9H	40mL HCl clear vial	AG1S	1L H2SO4 amber glass
VG9T	40mL Na Thio. clear vial	AG1T	1L Na Thiosulfate amber glass
VG9U	40mL unpreserved clear vial	AG1U	1liter unpres amber glass
I	40mL w/hexane wipe vial	AG2N	500mL HNO3 amber glass
WGKU	8oz unpreserved clear jar	AG2S	500mL H2SO4 amber glass
WGFU	4oz clear soil jar	AG2U	500mL unpres amber glass
JGFU	4oz unpreserved amber wide	AG3S	250mL H2SO4 amber glass
CG3H	250mL clear glass HCl	AG3SF	250mL H2SO4 amb glass -field filtered
CG3F	250mL clear glass HCl, Field Filter	AG3U	250mL unpres amber glass
BG1H	1L HCl clear glass	AG3B	250mL NaOH amber glass
BG1S	1L H2SO4 clear glass		

Plastic			
BP1B	1L NaOH plastic	BP4U	125mL unpreserved plastic
BP1N	1L HNO3 plastic	BP4N	125mL HNO3 plastic
BP1S	1L H2SO4 plastic	BP4S	125mL H2SO4 plastic
BP1U	1L unpreserved plastic	Miscellaneous	
BP1Z	1L NaOH, Zn, Ac		
BP2N	500mL HNO3 plastic	Syringe Kit	LL Cr+6 sampling kit
BP2C	500mL NaOH plastic	ZPLC	Ziploc Bag
BP2S	500mL H2SO4 plastic	R	Terracore Kit
BP2U	500mL unpreserved plastic	SP5T	120mL Coliform Sodium Thiosulfate
BP2Z	500mL NaOH, Zn Ac	GN	General Container
BP3B	250mL NaOH plastic	U	Summa Can (air sample)
BP3N	250mL HNO3 plastic	WT	Water
BP3F	250mL HNO3 plastic-field filtered	SL	Solid
BP3U	250mL unpreserved plastic	OL	Oil
BP3S	250mL H2SO4 plastic	NAL	Non-aqueous liquid
BP3Z	250mL NaOH, ZnAc plastic	WP	Wipe
BP3R	250mL Unpres FF SO4/OH buffer		

Sample Container Count

** Place a RED dot on containers

that are out of conformance **

COC Line Item	WGFLU	WGKU	BG1U	MeOH (only)	VOA VIAL HS >6mm	VG9U	DG9U	VG9T	AMBER GLASS							PLASTIC							OTHER			Matrix	Nitric	Sulfuric	Sodium Hydroxide	Sodium Hydroxide/ ZnAc																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
				SBS					AG0U	AG1H	AG1U	AG3U	AG3S	AG3SF	AG3B	BP1U	BP1N	BP2U	BP3U	BP3N	BP3F	BP3S	BP3B	BP3Z	CG3H						CG3F	Syringe Kit	HNO3 <2	H2SO4 <2	NaOH >10	NaOH/Zn Ac >9																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
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Container Codes

Glass			
DG9H	40mL HCl amber voa vial	BG1T	glass
DG9P	40mL TSP amber vial	BG1U	1L unpreserved glass
DG9S	40mL H2SO4 amber vial	CG3U	250mL Unpres Clear Glass
DG9T	40mL Na Thio amber vial	AG0U	100mL unpres amber glass
DG9U	40mL unpreserved amber vial	AG1H	1L HCl amber glass
VG9H	40mL HCl clear vial	AG1S	1L H2SO4 amber glass
VG9T	40mL Na Thio. clear vial	AG1T	1L Na Thiosulfate amber glass
VG9U	40mL unpreserved clear vial	AG1U	1liter unpres amber glass
I	40mL w/hexane wipe vial	AG2N	500mL HNO3 amber glass
WGKU	8oz unpreserved clear jar	AG2S	500mL H2SO4 amber glass
WGKU	4oz clear soil jar	AG2U	500mL unpres amber glass
JGFU	4oz unpreserved amber wide	AG3S	250mL H2SO4 amber glass
CG3H	250mL clear glass HCl	AG3SF	250mL H2SO4 amb glass -field filtered
CG3F	250mL clear glass HCl, Field Filter	AG3U	250mL unpres amber glass
BG1H	1L HCl clear glass	AG3B	250mL NaOH amber glass
BG1S	1L H2SO4 clear glass		

Plastic			
BP1B	1L NaOH plastic	BP4U	125mL unpreserved plastic
BP1N	1L HNO3 plastic	BP4N	125mL HNO3 plastic
BP1S	1L H2SO4 plastic	BP4S	125mL H2SO4 plastic
BP1U	1L unpreserved plastic	Miscellaneous	
BP1Z	1L NaOH, Zn, Ac		
BP2N	500mL HNO3 plastic	Syringe Kit	LL Cr+6 sampling kit
BP2C	500mL NaOH plastic	ZPLOC	Ziploc Bag
BP2S	500mL H2SO4 plastic	R	Terracore Kit
BP2U	500mL unpreserved plastic	SP5T	120mL Coliform Sodium Thiosulfate
BP2Z	500mL NaOH, Zn Ac	GN	General Container
BP3B	250mL NaOH plastic	U	Summa Can (air sample)
BP3N	250mL HNO3 plastic	WT	Water
BP3F	250mL HNO3 plastic-field filtered	SL	Solid
BP3U	250mL unpreserved plastic	OL	Oil
BP3S	250mL H2SO4 plastic	NAL	Non-aqueous liquid
BP3Z	250mL NaOH, ZnAc plastic	WP	Wipe
BP3R	250mL Unpres. FF SO4/OH buffer		