Stormwater Pollution Prevention Plan (SWPPP)

For Construction Activities At:

Former Tinley Park Mental Health Center
7600 West 183rd Street
Tinley Park, IL 60477

SWPPP Prepared For:

Tinley Park-Park District
Attention: Shawn Roby
125 W. 121st Street
Tinley Park, IL 60477

SWPPP Prepared By:

Tetra Tech, Inc.
1 S. Wacker Drive
Chicago, IL 60606

7/24/2024

Estimated Project Dates:

Project Start Date: 08/15/2024

Project Completion Date: 9/14/2024

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Attachments

SECTION 1: CONTACT INFORMATION/RESPONSIBLE PARTIES

1.1 Operator(s) / Subcontractor(s)

Operator(s):

Tinley Park Park District/United Rentals
Shawn Roby, Executive Director, Tinley Park District
125 West 121st Street
Tinley Park, IL 60477
Insert Telephone Number: 708-342-4115
Insert Fax/Email 708-342-4291/Shawn.Roby@tinleyparkdistrict.org

Contractor(s):

United Rentals
Aleks Damceski
2205 E. Lincoln Highway
Lynwood, IL 60411
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Tetra Tech
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815-715-1519

SECTION 2: SITE EVALUATION, ASSESSMENT, AND PLANNING

2.1 Project/Site Information

The site is located at 7600 West 183rd Street, Tinley Park, Illinois. Currently, the basement of a vacant building and surrounding area outside the building is flooded. This building is part of the larger 280-acre Former Tinley Park Mental Health Center. The Site utilities have ceased to operate, and stormwater has accumulated in the southeast portion of the site (see Figure 1). It is expected that no soil will be disturbed until site remediation activities commence sometime in the late summer or early fall of 2024. Presently, the only activities planned are to dewater the flooded building area and to discharge stormwater to the Wetland 2 area and stormwater ditch on 183rd Street (Figure 1). Wetland 2 is parallel to Harlem Avenue and 183rd Street.

Project Name and Address

Project/Site Name: Former Tinley Park Mental Health Center
Street/Location: 7600 West 183rd Street
City: Tinley Park
State: Illinois
ZIP Code: 60477
County or Similar Government Division: Cook County

Project Latitude/Longitude

Latitude: 41°33'39.23 N (decimal degrees)

Longitude: - 87 °47'46.92 W (decimal degrees)

Latitude/longitude data source: ☐ Map ☐ GPS ☒ Other (please specify): Google Earth Pro

2.2 Discharge Information

Does your project/site discharge stormwater into a Municipal Separate Storm Sewer System (MS4)? ☐ Yes ☒ No

Are there any waters of the U.S. within 50 feet of your project's earth disturbances? ☐ Yes ☒ No

Point of Discharge ID	Name of receiving water that receives stormwater discharge:	Is the receiving water impaired (on the CWA 303(d) list)?	If yes, list the pollutants that are causing the impairment:	Has a TMDL been completed for this receiving waterbody?	If yes, list TMDL Name and ID:	Pollutant(s) for which there is a TMDL:	Is this receiving water designated as a Tier 2, Tier 2.5, or Tier 3 water?	If yes, specify which Tier (2, 2.5, or 3)?
1	Wetland 2	☐ Yes ☒ No		☐ Yes ☒ No			☐ Yes ☒ No	
2	Union Ditch	☒ Yes ☐ No	Dissolved Oxygen; Sedimentation/Siltation; Alteration in Side-Stream or Littoral Vegetative Covers; Flow Regime Modification	☐ Yes ☒ No			☐ Yes ☒ No	

2.3 Nature of the Construction Activities

General Description of Project

The southeast portion of the Site, located at 7600 West 183rd Street in Tinley Park, IL including about 2-acres of land including an abandoned building and adjacent asphalt parking lot and loading area has become flooded with stormwater. The site was formerly occupied by the Tinley Park Mental Health Center (TPMHC) which included the Howe Development Center (Site). The property is owned by the Tinley Park Park District (Park District) which acquired the Site from the State of Illinois Central Management Services (CMS). The Site was an active mental health center and residential treatment center until it was closed by the State of Illinois in 2012. The Park District intends to dewater the flooded area located in the southeast portion of the Site (Figure 1). The area that is flooded to the outside is approximately 1-acre based on a field survey performed by Tetra Tech. Tetra Tech did not enter the abandoned buildings. When including the flooded area within the abandoned buildings and outside flooded area, acreage of flooded water is approximately 2 acres. Water depths were not fully determined but the field inspector noted it looked to be anywhere from 1-5 feet deep. The water will be discharged after filtration to an adjacent Wetland 2 (Figure 1) located along the 183rd Street stormwater ditch. Filtered water discharged to Wetland 2 will empty into the 183rd Street stormwater ditch after additional wetland filtration. Wetland 2 is 2.6 acres.

Flooded water will be pumped through a sediment filtration bag as specified in the Illinois Urban Manual 813 (Attachment 1). A sediment filtration bag will be placed on a stabilized surface at the edge of Wetland 2 or in a vegetated wetland area that discharges to Wetland 2. Filtered water will be allowed to enter the discharge point via overland flow through a vegetated area. The water will be filtered through a sediment filter bag. The pump discharge rate will not exceed the design discharge rate for the selected sediment filter bag. Table 2, Class I in the Illinois Urban Manual specification 592 shall be followed for the material of the sediment filtration bag with a minimum tensile strength of 200 pounds, or Table 1, Class 4 value (Attachment 2). The sediment filter bag will be sized based on manufacturer recommendations and the size of the pump. The largest diameter size pump hose to be used with a sediment filtration bag is 4-inches. Sediment filtration bags will be removed and replaced when half full of sediment or when the design flow rate of the filter bag is no longer being maintained.

Business days and hours for the project are Monday – Friday, 7 AM – 7 PM.

Size of Construction Site

Size of Property	Approximately 2 acres of flooded area
Total Area Expected to be Disturbed by Construction Activities	0 acres of disturbance. Water from the flooded area will be discharged to a wetland located along a stormwater ditch on 183rd Street.
Maximum Area Expected to be Disturbed at Any One Time, Including On-site and Off-site Construction Support Areas	0 acres

Type of Construction Site:

☐ Single-Family Residential ☐ Multi-Family Residential ☐ Commercial ☐ Industrial

☐ Institutional ☐ Highway or Road ☐ Utility ☒ Other Abandoned Commercial Area

Will you be discharging dewatering water from your site? ☒ Yes ☐ No

If yes, will you be discharging dewatering water from a current or former Federal or State remediation site? ☐ Yes ☒ No

Pollutant-Generating Activities

During this phase of the site project, the flooded area will be dewatered and discharged to Wetland 2 (Figure 1). Because the dewater area includes a basement that is flooded, there were concerns that pollutants from inside the building could contaminate the water. Possible contaminants include suspended sediment, asbestos, and oil and grease. Tetra Tech obtained a sample of the water on June 18, 2024, that did not detect hazardous compounds, including asbestos, petroleum hydrocarbons, polychlorinated biphenyls, semivolatile organic compounds, volatile organic compounds, oil and grease, or toxic metals (see Appendix L - Table 1 for a complete list of sampled compounds and the results of analyses and Attachment 4 for the laboratory data package). Total suspended solids were not measured during this sampling activity, but water appeared to be clear and free of excess turbidity; turbidity (suspended solids) will be measured as turbidity (nephelometric turbidity units) during discharge.

Pollutant-Generating Activity	Pollutants or Pollutant Constituents
Dewatering flooded area	Possible sedimentation

2.4 Sequence and Estimated Dates of Construction Activities

Phase I

Dewater Flooded Area	
Estimated Start Date of Construction Activities for this Phase	This activity will precede any construction or demolition activities; dewatering will start in mid-August 2024.
Estimated End Date of Construction Activities for this Phase	Construction activities will not be conducted during this phase of dewatering.
Estimated Date(s) of Application of Stabilization Measures for Areas of the Site Required to be Stabilized	Not Applicable
Estimated Date(s) when Stormwater Controls will be Removed	9/15/2024

2.5 Authorized Non-Stormwater Discharges

List of Authorized Non-Stormwater Discharges Present at the Site

Authorized Non-Stormwater Discharge	**Will or May Occur at Your Site?**
Discharges from emergency fire-fighting activities	☐ Yes ☒ No
Fire hydrant flushing	☐ Yes ☒ No
Landscape irrigation	☐ Yes ☒ No
Water used to wash vehicles and equipment	☐ Yes ☒ No
Water used to control dust	☐ Yes ☒ No
Potable water including uncontaminated water line flushing	☐ Yes ☒ No
External building washdown (soaps/solvents are not used and external surfaces do not contain hazardous substances)	☐ Yes ☒ No
Pavement wash waters	☐ Yes ☒ No
Uncontaminated air conditioning or compressor condensate	☐ Yes ☒ No
Uncontaminated, non-turbid discharges of ground water or spring water	☐ Yes ☒ No
Foundation or footing drains	☐ Yes ☒ No
Uncontaminated construction dewatering water*	☒ Yes ☐ No
*No construction activities resulting in land disturbance will be taking place at this time; stormwater discharges only.	

2.6 Site Maps

Figure 1 shows the location of the flooded area, the water discharge areas, and the receiving waters. Water will be discharged to Wetland 2 located along stormwater ditches on 183rd Street or Harlem Avenue. Both ditches flow to the south and east and merge at Harlem and 183rd Street. The nearest body of water to Wetland 2 is the Union Ditch located some distance south of 183rd Street. It is assumed that all site stormwater to be discharged under this permit eventually drains to Union Ditch (Receiving Water 2).

SECTION 3: DOCUMENTATION OF COMPLIANCE WITH OTHER FEDERAL REQUIREMENTS

3.1 Endangered Species Protection

The U.S. Fish and Wildlife Service's (USFWS) Information for Planning and Consultation (IPaC) tool indicates that the northern long-eared bat (Myotic septentrionalis), the rufa red knot (Calidris canutus rufa), the whooping crane (Grus americana), the eastern massasauga (Sistrurus catenatus), the hine's emerald dragonfly (Somatochlora hineana), the eastern prairie fringed orchid (Platanthera leucophaea), and the leafy prairie-clover (Dalea foliosa) are E&T species that may be within the survey area. The Illinois Natural Heritage Database was reviewed using the Ecological Compliance Assessment Tool (EcoCAT) of the Illinois Department of Natural Resources (IDNR). The database showed that the northern harrier (Circus cyaneus) and short-eared owl (Asio flammeus) may be within the site.

From the site visit, Tetra Tech identified eight wetlands, which encompassed approximately 13 acres (Figure 1). The rest of the site that was not wetland was either (1) abandoned buildings, (2) paved surfaces, (3) open fields or (4) shrub/interspersed woods.

The Indiana bat and northern long-eared bat will roost and forage in tree species with exfoliating bark, such as the silver maple (Acer saccharinum).[1] Silver maple is on the site. However, trees will not be cut down for dewatering and discharging the flooded waters.

The eastern prairie fringed orchid habitats range from mesic prairie to wetlands and require full sun for optimum growth and a grassy habitat with little or no woody encroachment.[2] These types of habitat occur within the wetlands outside of the forested areas, but the eastern prairie fringed orchid was not identified during the wetland survey. The leafy prairie clover habitat occurs in dolomite prairies within Illinois, which is not present at the site.[3]

In general, dewatering and discharging activities under this SWPPP are not activities that would disturb the potential E&T species listed above.

3.2 Historic Property Screening Process

No subsurface earth-disturbing stormwater controls will be installed; therefore, no further documentation is required for the historic property screening process.

3.3 Safe Drinking Water Act Underground Injection Control Requirements

No controls will be installed that require communication with the State agency or EPA regional office in relation to the Safe Drinking Water Act Underground Injection Control requirements.

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[1] Illinois Department of Natural Resources (IDNR). 2017. Cnservation guidance for the Indiana bat (*Myotis sodalist*). Illinois Department of Natural Resources, Division of Natural Heritage.

[2] USFWS. 2023. Eastern prairie fringed orchid (*Platanthera leucophaea*). ECOS Environmental Conservation Online System. Available online at https://ecos.fws.gov/ecp/species/601

[3] IDNR 2024. Dolomite Prairie. Available at https://dnr.illinois.gov/education/cdhabitatmain/cdhabitatdolomite.html

SECTION 4: EROSION AND SEDIMENT CONTROLS AND DEWATERING PRACTICES

4.1 Natural Buffers or Equivalent Sediment Controls

There is no discharge of stormwater to waters of the U.S. through the area between the disturbed portions of the site and any waters of the U.S. located within 50 feet of the site. The water will be filtered prior to discharge to an undisturbed vegetated area and then flow to the adjacent stormwater ditch (Wetland 2)

4.2 Perimeter Controls

There are no downslope areas from the flooded area. This flooded area that will be dewatered is at a low point of the site.

4.3 Sediment Track-Out

Sediment track-out is not a concern during dewatering activities. Vehicles used for dewatering will remain on impervious surface and paved surfaces and will not come in contact with the discharge area or sediment.

4.4 Stockpiles or Land Clearing Debris Piles Comprised of Sediment or Soil

Sediment or soil will not be stockpiled onsite during dewatering activity. No controls are required.

4.5 Minimize Dust

Dust will not be generated during dewatering activity. No controls are required.

4.6 Minimize Steep Slope Disturbances

Steep slope disturbance is not a concern during dewatering activities onsite. No control measures are necessary.

4.7 Topsoil

Dewatering activities will not disturb topsoil found onsite. Most of the flooded area is asphalt or pavement. Any topsoil damaged by flood area will be replaced in accordance with the Illinois Urban Manual 981, "Topsoiling" (USDA - Natural Resources Conservation Service - Illinois).

4.8 Soil Compaction

Vegetation stabilization will not occur during this phase and infiltration practices will not be installed onsite. No controls are required.

4.9 Storm Drain Inlets

No controls are required at this time. Flooded water will be pumped through a sediment filtration bag before it is pumped into Wetland 2, which is further discussed below in section 4.10.

4.10 Dewatering Practices

Flooded water will be pumped through a sediment filtration bag to Wetland 2 along the stormwater ditch on183rd Street or Harlem Avenue. This practice is in compliance with the Illinois Urban Manual Dewatering Standard Code 813 (Attachment 1). The sediment filtration bag will be placed on a stabilized vegetated surface in an upland area of the wetland berm. Filtered water will be allowed to enter the discharge area downstream of the flooded area via overland flow through a vegetated area. The water discharged from site dewatering devices will be visually clear and released at a non-erosive velocity. Turbidity will be monitored both visually and with a turbidity meter. The pump discharge rate will not exceed the design discharge rate for the selected sediment filter bag. Table 2, Class I in the Illinois Urban Manual specification 592 shall be followed for the material of the sediment filtration bag with a minimum tensile strength of 200 pounds, or Table 1, Class 4 value (Attachment 2).

The sediment filter bag will be sized based on manufacturer recommendations and the size of the pump. The largest diameter size pump hose to be used with a sediment filtration bag is 4-inches. Sediment filtration bags will be removed and replaced when half full of sediment or when the design flow rate of the filter bag is no longer being maintained. Secondary sediment containment will be established as needed to ensure that sediment will not impact the wetland.

If discharge to Wetland 2 shows signs of turbid water, erosion, or sediment accumulation, or turbidity monitoring shows levels higher than requirements discussed in Section 7, the dewatering contractor's site supervisor or technician must assess the situation and stop the dewatering and evaluate the integrity and performance of the sediment bag, and evaluate the intake area. Corrective actions will be implemented including: moving the pump intake as necessary, reducing flow, or providing additional filtration to ensure discharge does not include excess turbidity. Turbidity monitoring levels will be evaluated and if turbidity levels are higher than the requirements discussed in Section 7 of this SWPPP, than a temporary sump pit may be installed in accordance with the Illinois Urban Manual 950 (USDA - Natural Resources Conservation Service – Illinois) to trap and filter water for pumping before discharging to Wetland 2 (Attachment 3). The sump pit will consist of a vertical perforated standpipe placed in the center of the pit to collect filtered water. The water will then be pumped from the center of the pipe to Wetland 2. Filter fabric will be wrapped around the standpipe to prevent releases if oil or sheen is observed, prior to discharge to Wetland 2. The sump pit will not be constructed in an area that disturbs "steep slopes".

If an oily sheen or debris is observed during regular visual checks of water in the pumping area, then booms, filter dikes or another media filtration system will be placed around the sheen and the pump will be moved to a location with no observable sheen or debris and the intake is protected. If a visual check of the water indicates excess turbidity post-filter, then the sediment filtration bag will be checked. If necessary, it will be replaced with a new sediment filtration bag.

Water intake and discharge from the sediment filter bag will be assessed for evidence of debris that may contain asbestos. If necessary, sampling for asbestos fibers will be considered either within the flooded area, within discharge, or both. If potential asbestos debris is identified in the stormwater, an additional filter media will be applied and sampling of effluent for asbestos fibers will be implemented. Water sampling will include analysis by transmission electron microscopy (TEM).

Specific Dewatering Practices

Sediment Filter Bag	
Description: Sediment filtration bag	
Installation	TBD
Maintenance Requirements	The sediment filtration bag will be placed on a stabilized surface in an upland area raised on a surface. The pump discharge rate will not exceed the design discharge rate for the selected sediment filter bag. The sediment filter bag will be sized based on manufacturer recommendations and the size of the pump. The largest diameter size pump hose to be used with a sediment filtration bag is 4-inches. Sediment filtration bags will be removed and replaced when half full of sediment or when the design flow rate of the filter bag is no longer being maintained. Secondary sediment containment shall be established to ensure that sediment will not impact the wetland or ditch.
Design Specifications	Design specifications will depend on the pump chosen. Table 2, Class I in the Illinois Urban Manual specification 592 shall be followed for the material of the sediment filtration bag with a minimum tensile strength of 200 pounds, or Table 1, Class 4 value. The sediment filter bag will be sized based on manufacturer recommendations and the size of the pump. The largest diameter size pump hose to be used with a sediment filtration bag is 4-inches.

Sump Pit	
Description: Sump Pit	
Installation	TBD
Maintenance Requirements	The sump pit may have to be replaced if the pit and filter fabric plugs with sediment.
Design Specifications	Illinois Urban Manual 950 will be followed for the design, installation, and operation specifications.

SECTION 5: POLLUTION PREVENTION CONTROLS

5.1 Potential Sources of Pollution

The only activity is to dewater the flooded area and discharge it to Wetland 2. Because the dewatering area is a basement that is flooded, pollutants from inside the building could be a concern and will be monitored. Specific concerns include possible oil and grease, petroleum hydrocarbons, asbestos, or suspended sediment. To assess these concerns, Tetra Tech collected a water sample on June 18, 2024, that showed no indicators of hazardous compounds, asbestos or oil and grease (Appendix L – Table 1). Total suspended solids were not measured during this sampling activity; however, water appeared to be clear without excess turbidity. Field measurement of turbidity will be implemented to assess suspended solids in discharge. Visual monitoring of intake and discharge will also be implemented for petroleum sheen.

Pollutant-Generating Activity	**Pollutants or Pollutant Constituents** (That could be discharged if exposed to stormwater)	**Location on Site**
Dewater flooded area	sedimentation	Figure 1 – flooded area

5.2 Spill Prevention and Response

The pump will use diesel as a fuel. The pump area will be protected from spills associated with fuel use by use of a containment berm surrounding the pump.

5.3 Fueling and Maintenance of Equipment or Vehicles

As noted above, 5.2, the pump will use gasoline as fuel. This is the only use of fuel during the operations.

5.4 Washing of Equipment and Vehicles

Equipment and vehicles will not be washed on site.

5.5 Storage, Handling, and Disposal of Building Products, Materials, and Wastes

Sediment filter bags will be disposed of in accordance with the Illinois EPA regulations.

5.5.1 Pesticides, Herbicides, Insecticides, Fertilizers, and Landscape Materials

Pesticides, herbicides, insecticides, fertilizers, and landscape materials will not be used during the dewatering activities.

5.5.2 Diesel Fuel, Oil, Hydraulic Fluids, Other Petroleum Products, and Other Chemicals

The dewatering pump will be gasoline powered and placed on a containment berm as a precautionary measure to prevent leaks or spills from entering the environment. The containment berm will be constructed by the dewatering contractor.

If an oily sheen is observed during regular visual checks of water in the pumping area, then booms, filter dikes or another media filtration system will be placed around the sheen and the pump will be moved to a location with no observable oily sheen and the intake protected.

5.5.3 Hazardous or Toxic Waste

Hazardous or toxic waste will not be generated or managed during the dewatering process.

5.5.4 Construction and Domestic Waste

Construction and domestic waste generated by the dewatering contractor will be collected and disposed of properly off site.

SECTION 6: INSPECTION, MAINTENANCE, AND CORRECTIVE ACTION

6.1 Inspection Personnel and Procedures

Site and Dewatering Operation Inspection Schedule

Standard Frequency:
☒ Every day dewatering is conducted on site and within 24 hours of either: ▪ A storm event that produces 0.25 inches or more of rain within a 24-hour period (including when there are multiple, smaller storms that alone produce less than 0.25 inches but together produce 0.25 inches or more in 24 hours), or ▪ A storm event that produces 0.25 inches or more of rain within a 24-hour period on the first day of a storm and continues to produce 0.25 inches or more of rain on subsequent days (you conduct an inspection within 24 hours of the first day of the storm and within 24 hours after the last day of the storm that produces 0.25 inches or more of rain (i.e., only two inspections would be required for such a storm event)), or

Dewatering Inspection
▪ Inspections will be conducted to ensure proper operation and compliance with all permits and water quality standards. ▪ Accumulated sediment will be removed from the flow area and temporary diversions shall be repaired, as required. ▪ Outlet areas shall be checked and repairs shall be made in a timely manner, as needed. ▪ Pump outlets shall be inspected for erosion, and sumps shall be inspected for accumulated sediment. ▪ Sediment filtration bags shall be removed and replaced when half full of sediment, or when the design flow rate of the filter bag is no longer being maintained. ▪ If the receiving area is showing any signs of turbid water, erosion, or sediment accumulation, discharges shall be stopped immediately once safety and property damage concerns have been addressed.

6.2 Corrective Action

During the dewatering phase, the Inspection will consist of checking all equipment and vehicles for signs of leaking or spills and monitoring the discharge from the sediment bags as required (see Section 7.0).

All leaks or spills will be cleaned up immediately upon observation. The dewatering contractor's site supervisor is responsible for corrective actions for leaks and spills discovered during daily

inspections. The contractor's site supervisor is also responsible for documenting the leak or spill and the corrective action implemented to address the leak or spill.

If the discharge from the sediment bags shows excessive turbidity the dewatering contractor's site supervisor or technician will evaluate the integrity and performance of the sediment bag, evaluate intake area, move intake as necessary, reduce flow, or provide additional filtration to ensure discharge does not include excess turbidity. Turbidity monitoring levels will be evaluated and if turbidity levels are higher than the requirements discussed in Section 7 of this SWPPP, than a temporary sump pit will be installed in accordance with the Illinois Urban Manual 950 (USDA - Natural Resources Conservation Service – Illinois) to trap and filter water for pumping before discharging to Wetland 2 (Attachment 3). The sump pit will consist of a vertical perforated standpipe placed in the center of the pit to collect filtered water. The water will then be pumped from the center of the pipe to Wetland 2. Filter fabric will be wrapped around the standpipe to prevent possible oil or petroleum sheen from being transferred to either of the discharge area. The sump pit will not be constructed in an area that disturbs "steep slopes".

The dewatering pump must be maintained according to specifications. If the dewatering pump malfunctions during operation, the pump must be shut off and repaired.

SECTION 7: TURBIDITY BENCHMARK MONITORING FOR DEWATERING DISCHARGES

Procedures:

Collecting and evaluating samples	Turbidity is made up of suspended and colloidal matter such as clay, silt, organic and inorganic matter and microscopic organisms. Numerous methods are acceptable for the measurement of turbidity including turbidimeters and optical probes. An instrument, such as the HACH 2100Q Turbidimeter or equivalent, will be used to measure turbidity. The manufacturer's instruction manual will be consulted. Depending on the meter, the sample measurement procedure will slightly differ. Due to the availability of various technologies for measuring turbidity, it has been determined by the United States Geological Survey (USGS) and the American Society for Testing and Materials (ASTM) that data collected using different methods are not directly comparable and should be reported in units reflecting the specific technology used.[4] Turbidity will be measured from the post-sediment filtration bag once a day in accordance with USEPA Region 4 operating procedure (Attachment 4) for collecting field turbidity measurements.[4]
Reporting results and keeping monitoring information records	Turbidity results will be recorded in a logbook. Recorded results will be reported in an email to the Park District at the end of each day.
Taking corrective action when necessary	If there is excess turbidity post-sediment filtration bag, the pump will be turned off immediately. If a visual check of the water indicates oil, then booms will be placed around the area. If a visual check of the water indicates sedimentation post-filter, then the sediment filtration bag will be checked. If necessary, it will be replaced with a new sediment filtration bag. If the water looks visually clear but the turbidity meter is still reading high, then the turbidity meter will be checked and recalibrated. Occasional operational checks to determine if an increase in temperature has impacted the meter's performance will be done. Dewatering activities will not continue until turbidity is at or below the turbidity readings at discharge points.

Turbidity Meter:

Type of turbidity meter	Turbidity meter will meet criteria specified in EPA Region 4 Operating Procedure (Attachment 4)[4]

[4] USEPA. 2023. Field Turbidity Measurement, Operating Procedure. ID LSASDPROC-103-R6. April 22.

Turbidity Meter:

Turbidity meter manuals and manufacturer instructions
The manufacturer's instruction manual will be consulted for specific procedures regarding their calibration, maintenance and use. Calibration of measuring instruments will be conducted and verified prior to each use or on a daily basis, whichever is appropriate. If the instrument readings do not agree within 10% of the calibration standards, the unit will be recalibrated, repaired, or replaced.

Coordinating Arrangements for Turbidity Monitoring (if applicable):

Permitted operator name	Tetra Tech or Park District designee
Permitted operator NPDES ID	Not applicable
Coordinating Arrangement	To be determined

Alternate turbidity benchmark (if applicable):

Alternate turbidity benchmark (NTU)	To be determined.
Data and documentation used to request the alternate benchmark	Not applicable.

SECTION 8: CERTIFICATION AND NOTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: Tom Hahne Title: Project Manager

Signature:  Date: 7/23/2024

SWPPP APPENDICES

- ***A*** ***Site Map***
- ***B*** ***NOI and IEPA Authorization Email***
- ***C*** ***Dewatering Inspection Form***
- ***D*** ***Corrective Action Log***
- ***E*** ***SWPPP Amendment Log***
- ***F*** ***Subcontractor Certifications/Agreements***
- ***G*** ***Training Documentation [NOT APPLICABLE FOR DEWATERING PHASE]***
- ***H*** ***Delegation of Authority [NOT APPLICABLE FOR DEWATERING PHASE]***
- ***I*** ***Endangered Species Documentation***
- ***J*** ***Rainfall Gauge Recording***
- ***K*** **Turbidity Monitoring Sampling Documentation**
- ***L*** ***June 18, 2024, Water Sampling Results Table***

Appendix A – Site Maps

Legend

- Approximate Site Boundary
- Wetlands
- Flooded area

Survey Point

- Upland Survey Point
- Wetland Survey Point
- Culverts
- Stormwater manholes
- Storm sewer

N

0 750 1,500

Feet

Former Tinley Park Mental Health Center
Tinley Park, Cook County, Illinois

FIGURE 1
Wetlands and Dewatering Discharge Locations

TETRA TECH

7/23/2024 C:\Users\helen.fournet\OneDrive - Tetra Tech, Inc\Documents\ArcGIS\Projects\TinleyPark\TinleyPark.aprx

Appendix B – Copy of NOI and IEPA Authorization Email

Appendix C – Dewatering Inspection Forms

Dewatering Discharges Inspection Form Complete this section within 24 hours of completing the inspection. (If necessary, complete additional inspection reports for each separate inspection location.)	
Inspector Information	
Inspector Name:	**Title:**
Company Name:	**Email:**
Address:	**Phone Number:**
Inspection Details	
Inspection Date:	**Inspection Location:**
Discharge Start Time:	**Discharge End Time:**
Rate of Discharge (gallons per day):	**Corrective Action Required?**[1] ☐ Yes ☐ No
Describe Indicators of Pollutant Discharge at Point of Dewatering Discharge:[1]	
Attach Photographs of: 1. Dewatering water prior to treatment by a dewatering control(s) and the final discharge after treatment; and 2. Dewatering control(s); and 3. Point of discharge to any receiving waters flowing through or immediately adjacent to the site and/or to constructed or natural site drainage features, storm drain inlets, and other conveyances to receiving waters.	

[1] If you observe any of the following indicators of pollutant discharge, you are required to take corrective action:

- a sediment plume, suspended solids, unusual color, presence of odor, decreased clarity, or presence of foam; or
- a visible sheen on the water surface or visible oily deposits on the bottom or shoreline of the receiving water.

Appendix D – Corrective Action Log

Corrective Action Log
Project Name: _____
NPDES ID Number: _____

Section A – Individual Completing this Log	
Name:	**Title:**
Company Name:	**Email:**
Address:	**Phone Number:**
Section B – Details of the Problem (CGP Part 5.4.1.a) Complete this section within 24 hours of discovering the condition that triggered corrective action.	
Date problem was first identified:	**Time problem was first identified**:
What site conditions triggered this corrective action? *(Check the box that applies. See instructions for a description of each triggering condition (1 thru 6).)* ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5a ☐ 5b ☐ 6	
Specific location where problem identified:	
Provide a description of the specific condition that triggered the need for corrective action and the cause (if identifiable):	
Section C – Corrective Action Completion (CGP Part 5.4.1.b) Complete this section within 24 hours after completing the corrective action.	
For site condition # 1, 2, 3, 4, or 6 (those not related to a dewatering discharge) confirm that you met the following deadlines (CGP Part 5.2.1):	
☐ Immediately took all reasonable steps to address the condition, including cleaning up any contaminated surfaces so the material will not discharge in subsequent storm events. **AND**	
☐ Completed corrective action by the close of the next business day, unless a new or replacement control, or significant repair, was required. **OR**	
☐ Completed corrective action within seven (7) calendar days from the time of discovery because a new or replacement control, or significant repair, was necessary to complete the installation of the new or modified control or complete the repair. **OR**	
☐ It was infeasible to complete the installation or repair within 7 calendar days from the time of discovery. Provide the following additional information: Explain why 7 calendar days was infeasible to complete the installation or repair:	
Provide your schedule for installing the stormwater control and making it operational as soon as feasible after the 7 calendar days:	

For site condition # 5a, 5b, or 6 (those related to a dewatering discharge), confirm that you met the following deadlines:

- ☐ Immediately took all reasonable steps to minimize or prevent the discharge of pollutants until a solution could be implemented, including shutting off the dewatering discharge as soon as possible depending on the severity of the condition taking safety considerations into account.
- ☐ Determined whether the dewatering controls were operating effectively and whether they were causing the conditions.
- ☐ Made any necessary adjustments, repairs, or replacements to the dewatering controls to lower the turbidity levels below the benchmark or remove the visible plume or sheen.

Describe any modification(s) made as part of corrective action: (Insert additional rows below if applicable)	**Date of completion:**	**SWPPP update necessary?**	**If yes, date SWPPP was updated:**
1.		☐ Yes ☐ No	
2.		☐ Yes ☐ No	

Section D - Signature and Certification (CGP Part 5.4.2)

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information contained therein. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information contained is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

MANDATORY: Signature of Operator or "Duly Authorized Representative:"	
Signature:	**Date:**
Printed Name:	**Affiliation:**
OPTIONAL: Signature of Contractor or Subcontractor	
Signature:	**Date:**
Printed Name:	**Affiliation:**

Appendix E – SWPPP Amendment Log

No.	Description of the Amendment	Date of Amendment	Amendment Prepared by [Name(s) and Title]
		INSERT DATE	
		INSERT DATE	
		INSERT DATE	
		INSERT DATE	
		INSERT DATE	
		INSERT DATE	
		INSERT DATE	
		INSERT DATE	

Appendix F – Subcontractor Certifications/Agreements

SUBCONTRACTOR CERTIFICATION
STORMWATER POLLUTION PREVENTION PLAN

Project Number: _____

Project Title: _____

Operator(s): _____

As a subcontractor, you are required to comply with the Stormwater Pollution Prevention Plan (SWPPP) for any work that you perform on-site. Any person or group who violates any condition of the SWPPP may be subject to substantial penalties or loss of contract. You are encouraged to advise each of your employees working on this project of the requirements of the SWPPP. A copy of the SWPPP is available for your review at the office trailer.

Each subcontractor engaged in activities at the construction site that could impact stormwater must be identified and sign the following certification statement:

I certify under the penalty of law that I have read and understand the terms and conditions of the SWPPP for the above designated project and agree to follow the practices described in the SWPPP.

This certification is hereby signed in reference to the above named project:

Company: _____

Address: _____

Telephone Number: _____

Type of construction service to be provided: _____

_____

_____

Signature: _____

Title: _____

Date: _____

Appendix G –Training Documentation [Not applicable for dewatering phase]

Appendix H –Delegation of Authority Form [Not applicable for dewatering phase]

Appendix I – Endangered Species Documentation

EcoCAT
Ecological Compliance Assessment Tool

ILLINOIS DEPARTMENT OF NATURAL RESOURCES

Applicant: Tinley Park-Park District
Contact: Jennifer Swilik
Address: 8125 W 171st St
Tinley Park, IL 60477

Project: Former Tinley Mental Health Center
Address: 18050 Forest Drive, Tinley Park

IDNR Project Number: 2408145
Date: 12/19/2023

Description: To build a regional recreational center

Natural Resource Review Results

This project was submitted for information only. It is not a consultation under Part 1075.

The Illinois Natural Heritage Database shows the following protected resources may be in the vicinity of the project location:

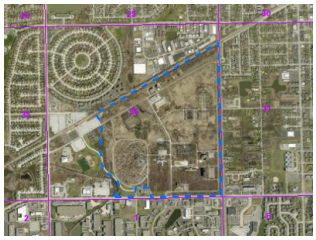
Northern Harrier *(Circus cyaneus)*
Short-Eared Owl *(Asio flammeus)*

Location

The applicant is responsible for the accuracy of the location submitted for the project.

County: Cook

Township, Range, Section:
36N, 12E, 36



IL Department of Natural Resources Contact
Impact Assessment Section
217-785-5500
Division of Ecosystems & Environment

Disclaimer

The Illinois Natural Heritage Database cannot provide a conclusive statement on the presence, absence, or condition of natural resources in Illinois. This review reflects the information existing in the Database at the time of this inquiry, and should not be regarded as a final statement on the site being considered, nor should it be a substitute for detailed site surveys or field surveys required for environmental assessments. If additional protected resources are encountered during the project's implementation, compliance with applicable statutes and regulations is required.

Terms of Use

By using this website, you acknowledge that you have read and agree to these terms. These terms may be revised by IDNR as necessary. If you continue to use the EcoCAT application after we post changes to these terms, it will mean that you accept such changes. If at any time you do not accept the Terms of Use, you may not continue to use the website.

1. The IDNR EcoCAT website was developed so that units of local government, state agencies and the public could request information or begin natural resource consultations on-line for the Illinois Endangered Species Protection Act, Illinois Natural Areas Preservation Act, and Illinois Interagency Wetland Policy Act. EcoCAT uses databases, Geographic Information System mapping, and a set of programmed decision rules to determine if proposed actions are in the vicinity of protected natural resources. By indicating your agreement to the Terms of Use for this application, you warrant that you will not use this web site for any other purpose.

2. Unauthorized attempts to upload, download, or change information on this website are strictly prohibited and may be punishable under the Computer Fraud and Abuse Act of 1986 and/or the National Information Infrastructure Protection Act.

3. IDNR reserves the right to enhance, modify, alter, or suspend the website at any time without notice, or to terminate or restrict access.

Security

EcoCAT operates on a state of Illinois computer system. We may use software to monitor traffic and to identify unauthorized attempts to upload, download, or change information, to cause harm or otherwise to damage this site. Unauthorized attempts to upload, download, or change information on this server is strictly prohibited by law.

Unauthorized use, tampering with or modification of this system, including supporting hardware or software, may subject the violator to criminal and civil penalties. In the event of unauthorized intrusion, all relevant information regarding possible violation of law may be provided to law enforcement officials.

Privacy

EcoCAT generates a public record subject to disclosure under the Freedom of Information Act. Otherwise, IDNR uses the information submitted to EcoCAT solely for internal tracking purposes.

EcoCAT
Ecological Compliance Assessment Tool

ILLINOIS DEPARTMENT OF NATURAL RESOURCES

EcoCAT Receipt

Project Code 2408145

APPLICANT	DATE
Tinley Park-Park District Jennifer Swilik 8125 W 171st St Tinley Park, IL 60477	12/19/2023

DESCRIPTION	FEE	CONVENIENCE FEE	TOTAL PAID
EcoCAT Consultation	$ 25.00	$ 1.00	$ 26.00

TOTAL PAID $ 26.00

Illinois Department of Natural Resources
One Natural Resources Way
Springfield, IL 62702
217-785-5500
dnr.ecocat@illinois.gov

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Cook County, Illinois

Local office

Chicago Ecological Service Field Office

(312) 485-9337

U.s. Fish And Wildlife Service Chicago Ecological Services Office

230 South Dearborn St., Suite 2938
Chicago, IL 60604-1507

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

---

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).

2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Northern Long-eared Bat Myotis septentrionalis Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9045	Endangered

Birds

NAME	STATUS
Rufa Red Knot Calidris canutus rufa Wherever found There is **proposed** critical habitat for this species. https://ecos.fws.gov/ecp/species/1864	Threatened
Whooping Crane Grus americana No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/758	EXPN

Reptiles

NAME	STATUS
Eastern Massasauga (=rattlesnake) Sistrurus catenatus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/2202	Threatened

Insects

NAME	STATUS
Hine's Emerald Dragonfly Somatochlora hineana Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/7877	Endangered

Monarch Butterfly Danaus plexippus Wherever found	Candidate

No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/9743

Flowering Plants

NAME	STATUS
Eastern Prairie Fringed Orchid Platanthera leucophaea Wherever found	Threatened

This species only needs to be considered if the following condition applies:

- Follow the guidance provided at https://www.fws.gov/midwest/endangered/section7/s7process/plants/epfos7guide.html

No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/601

Leafy Prairie-clover Dalea foliosa	Endangered

No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/5498

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act[1] and the Migratory Bird Treaty Act[2].

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats[3], should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below.

Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

There are bald and/or golden eagles in your project area.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Oct 15 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey

effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

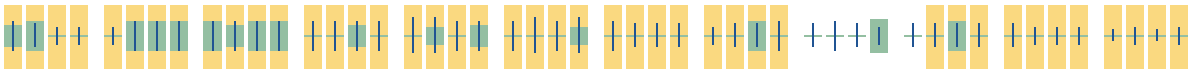
No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

■ probability of presence ■ breeding season | survey effort – no data

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC

Bald Eagle
Non-BCC
Vulnerable



What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply). To see a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs of bald and golden eagles in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats[3] should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Oct 15 to Aug 31
Black-billed Cuckoo Coccyzus erythropthalmus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10

Bobolink Dolichonyx oryzivorus — Breeds May 20 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Chimney Swift Chaetura pelagica — Breeds Mar 15 to Aug 25
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Eastern Whip-poor-will Antrostomus vociferus — Breeds May 1 to Aug 20
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Henslow's Sparrow Ammodramus henslowii — Breeds May 1 to Aug 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3941

Kentucky Warbler Oporornis formosus — Breeds Apr 20 to Aug 20
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Lesser Yellowlegs Tringa flavipes — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9679

Prothonotary Warbler Protonotaria citrea — Breeds Apr 1 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Red-headed Woodpecker Melanerpes erythrocephalus — Breeds May 10 to Sep 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Rusty Blackbird Euphagus carolinus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Wood Thrush Hylocichla mustelina — Breeds May 10 to Aug 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

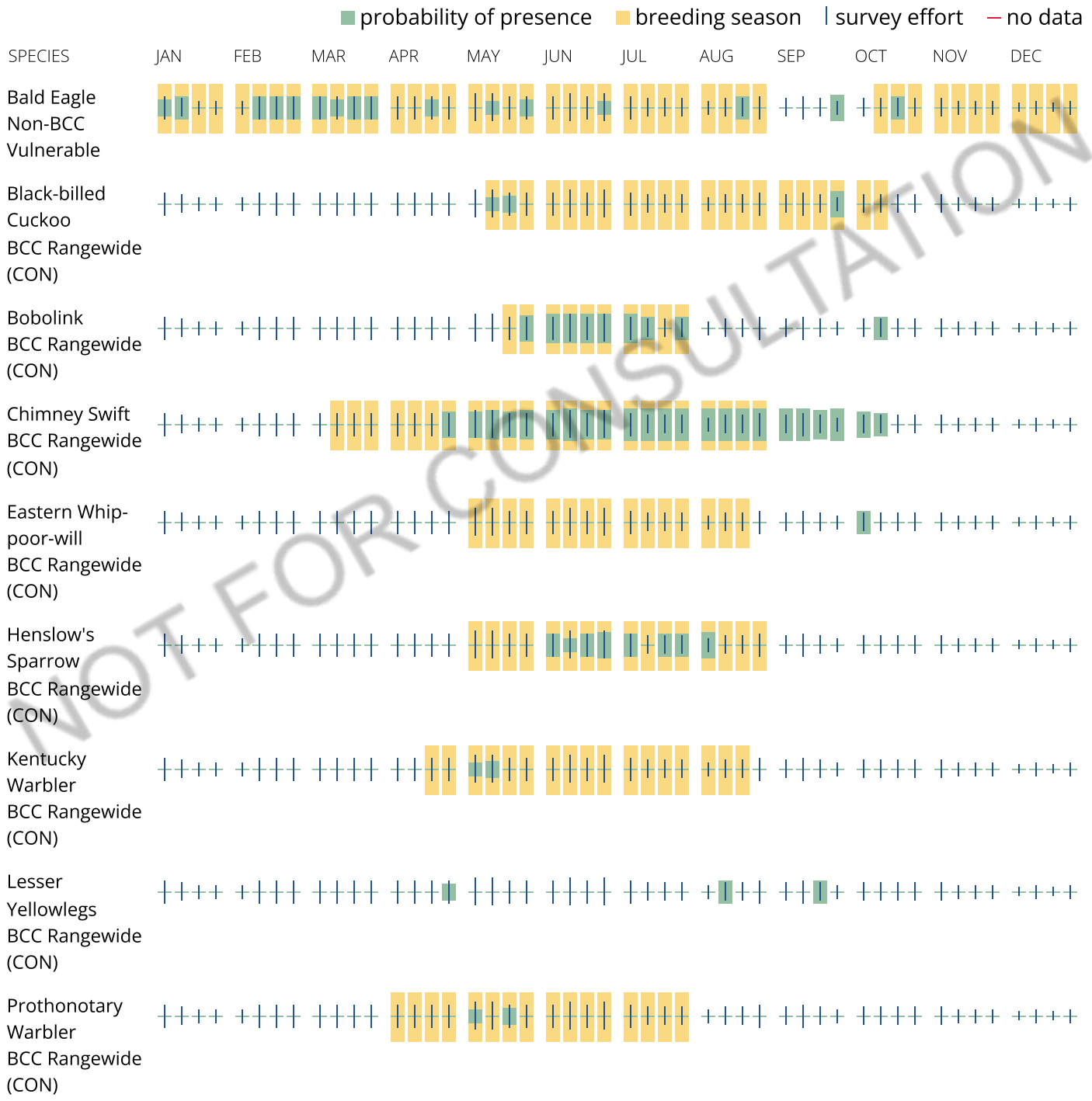
Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

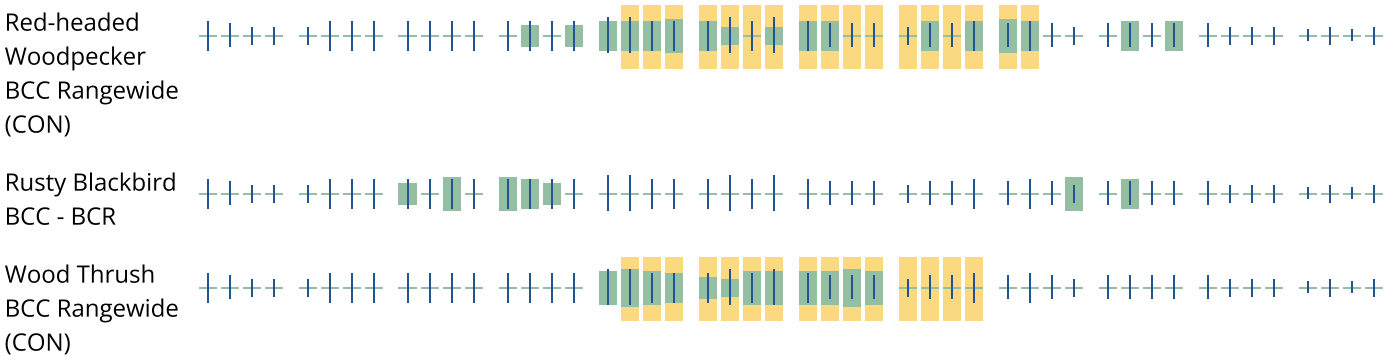
Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of

presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Wetland information is not available at this time

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the NWI map to view wetlands at this location.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Appendix J – Rainfall Gauge Recording

Use the table below to record the rainfall gauge readings at the beginning and end of each work day. An example table follows.

Month/Year			Month/Year			Month/Year		
Day	Start time	End time	Day	Start time	End time	Day	Start time	End time
1			1			1		
2			2			2		
3			3			3		
4			4			4		
5			5			5		
6			6			6		
7			7			7		
8			8			8		
9			9			9		
10			10			10		
11			11			11		
12			12			12		
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21			21			21		
22			22			22		
23			23			23		
24			24			24		
25			25			25		
26			26			26		
27			27			27		
28			28			28		
29			29			29		
30			30			30		
31			31			31		

Appendix K – Turbidity Monitoring Sampling Documentation

Turbidity Benchmark Monitoring Data Table

Operator:	**Project Name:**
Dewatering Discharge Point ID (if multiple discharge points)**:**	**Sample Location:**
Turbidity Meter (make and model)**:**	**Test Method** (e.g., EPA 180.1)**:**

Sample Collection			Turbidity Analysis					
Name of Individual Collecting Sample	**Date**	**Time**	**Name of Individual Analyzing Sample**	**Date**	**Time**	**Meter Calibrated?**	**Turbidity Result (NTUs)**	**Notes**
						☐ Yes		
						☐ Yes		
						☐ Yes		
						☐ Yes		
						☐ Yes		
						☐ Yes		
						☐ Yes		
						☐ Yes		
						☐ Yes		
						☐ Yes		
						☐ Yes		
						☐ Yes		

Appendix L – *June 18, 2024 Water Sampling Results Table*

Table 1: Former Tinley Park Mental Health Center Flood Sample

Sample TP-L-SW June 18, 2024	Result	Units	Relative Standard and Source
Compound or Compound Group:			
Volatile Organic Compunds	ND	mg/L	Not applicable
Semivolatile Organic Compounds	ND	mg/L	Not applicable
Polychlorinated Biphenyls	ND	ug/L	Not applicable
Metals (Detected Compounds Only):			
Barium	0.0323	mg/L	5.0 mg/L (35 Part 302 Subpart B)
Boron	0.269	mg/L	7,600 ug/L[e] (35 Part 302 Subpart B)
Calcium	109	mg/L	
Magnesium	41	mg/L	
Manganese	0.104	mg/L	1000 ug/L (Hickory Creek Watershed Planning Group 2011)
Zinc	0.0997	mg/L	277 ug/L (acute) or 72 ug/L (chronic)[f] (35 Part 302 Subpart B)
Other Toxic Compounds:			
Cyanide	ND	mg/L	
Anions:			
Chloride	29.1	mg/L	500 mg/L (Hickory Creek Watershed Planning Group 2011 and 35 Part 302 Subpart B)
Fluoride	0.252	mg/L	
Sulfate	156	mg/L	2725[d] (35 Part 302 Subpart B)
Wet Chemistry:			
Oil and Grease	ND	mg/L	
Nitrogen, Nitrate/Nitrite	ND	mg/L	
Alkalinity	268	mg/L as CaCO3	
Ammonia	ND	mg/L	15 mg/L (Hickory Creek Watershed Planning Group 2011 and 35 Part 302 Subpart B); 50 NTU is USEPA's benchmark (USEPA 2022)
Phosphorous	ND	mg/L	
Phenolics, Total Recoverable	ND	mg/L	
Other:			
E. coli	Pass	CFU/100ml	
Total Coliform	Pass	CFU/100ml	From May-Oct, 200 CFU/100ml[a] (Hickory Creek Watershed Planning Group 2011)
Asbestos (by TEM)	ND	asbestos structures	
Indicators of Water Quality:		To be measured in field	
Dissolved Oxygen	NM	Percent	Instantaneous criterion of 3.5 mg/L. Spring/summer criterion of 6.0 mg/L[c] (Hickory Creek Watershed Planning Group 2011)
Turbidity	NM	NTU	116 mg/L[b] (Hickory Creek Watershed Planning Group 2011)
pH	NM	pH units	
Temperature	NM	Degrees Farenheit	

Notes:

ND- Not detected; NTU - Nephelometric Turbidity Units; CFU - colony forming units; mg/L - milligrams per liter;
ml - milliliter; ug/L - micrograms per liter; ND - not detected; NM - not measured; USEPA - United States Environmental Protection Agency
Sample collected June 18, 2024 by Tom Hahne of Tetra Tech

a - Fecal coliform is based on a minimum of 5 samples taken over not more than a 30 day period. No more than 10% may exceed 400 cfu/100mL during any 30-day period.

b - IEPA uses non-standards-based TSS criterion of 116 mg/L to determine impairment.

c - Dissolved oxygen data compiled for Union Ditch do not clearly indicate DO impairement issues. Only 5 discrete DO samples were taken at the segment for the Hickory Watershed Plan. More DO data would be necessary to properly assess union Ditch for Criteria attainment.

d - At any point where water is withdrawn for purposes of livestock watering; the average of sulfate concentrations must not exceed 2,000 mg/L when measured at a representative frequency over a 30-day period. Otherwise, the sulfate water quality standards depend on hardness and chloride as calculated here.

e - chronic standard

f - This criteria is based on dissolved zinc and hardness at the time of sampling. See Section 302.208 in 35 Part 302 Subpart B.

Sources:

USEPA. 2022. National Pollution Discharge Elimination System Construction General Permit for Stormwater Discharges from Construction Activities. February 17. Expires February 16, 2027.

Geosyntec Consultant, Cowhey Gudmundson Leder, Clark Dietz and Chicago Metropolitan Agency for Planning (Hickory Creek Watershed Planning Group). 2011. Hickory Creek Watershed Plan Technical Report. June.

Illinois Pollution Control Board. Title 35: Environmental Protection Subtitle C: Water Pollution Chapter I: Pollution Control Board.

SWPPP Attachments

1 Illinois Urban Manual Practice Standard Dewatering Code 813

2 Material Specification 592 Geotextile

3 U.S. Environmental Protection Agency Field Turbidity Measurement Operating Procedures LSASDPROC-103-R6

4 Laboratory Data Package

ILLINOIS URBAN MANUAL
PRACTICE STANDARD

DEWATERING

(no.)
CODE 813

(Source: Illinois Urban Manual Technical Committee)

DEFINITION

The controlled removal of water from construction sites.

PURPOSE

The purposes of this practice are as follows:

1. To minimize construction impacts in areas with surface water or a high water table.
2. To prevent sediment transport.
3. To provide work site safety.
4. To prevent pollution of groundwater or surface water from suspended soil particles carried in construction site dewatering operations.
5. To preserve down-gradient natural resources and property.

CONDITIONS WHERE PRACTICE APPLIES

Construction sites, including any onsite and offsite excavated areas, where the presence of water creates unsafe conditions, potential damage, or restricts construction operations.

Construction sites where water is present in any form, including stormwater runoff, stormwater ponding, intermittent runoff, streams, standing water, ground water, or other bodies of water.

Where water pumping operations occur.

Where the water table is intercepted.

Where work is performed in-stream.

Where collected stormwater runoff is removed from construction sites.

Not for the removal of water that is polluted by chemicals, fuel, etc. This standard only addresses a suspended solid in the form of uncontaminated sediment.

CRITERIA

Dewatering shall consist of the removal of surface water and/or ground water by diverting and/or removing water from construction sites to perform the required construction in accordance with the plans and specifications.

Discharging sediment to upland vegetated areas shall not be used as a stand-alone sediment control practice during dewatering operations.

Construction projects may be subject to local, county, state and federal rules and regulations.

Accumulated sediment from dewatering operations shall be disposed of in accordance with all applicable laws and regulations.

Diverting Surface Water – Cofferdams, channels, sumps, flumes and temporary diversions shall be built and maintained, according to contract plans, specifications, and respective IUM Practice Standards.

For the installation of cofferdams and sumps, follow the requirements as outlined in Practice Standards COFFERDAM 803 and SUMP PIT 950.

Excess surface runoff shall be diverted from the construction area as outlined in the IUM Practice Standards TEMPORARY DIVERSION 955, TEMPORARY SWALE 980, DIVERSION 815 and DIVERSION DIKE 820.

A permanent stream or other concentrated flow shall be diverted away from the construction area as outlined in Practice Standard TEMPORARY STREAM DIVERSION 976.

Removing Water – Drains, sumps, pumps, casings, well points and all other practices required to dewater the site shall be furnished, installed and maintained according to contract plans, specifications, and respective IUM Practice Standards.

When dewatering by well points and deep wells is utilized, the wells shall be placed at intervals along the construction area as necessary to depress the groundwater table during construction. Monitoring wells shall be installed where measurement of the pumping effectiveness is required. Well point and deep well dewatering shall be terminated and sealed immediately upon completion of the dewatering operation.

Sediment Control - All dewatering activities shall be performed in a manner that does not negatively impact the water quality of the water table, cause erosion, or transport sediment to wetlands, water bodies, water conveyance features, etc. on or off site.

In poorly drained soil areas where well dewatering is not practical, pumping directly from construction trenches is permitted provided appropriate sediment control practices are incorporated with the pumping activity.

All outlets and drainage pathways for dewatering discharges shall be stable and protected from erosion.

Sediment Removal Practices -
Sediment removal shall be provided using the following practices, or combination of practices, depending on the soil type, suitability of dewatering method, volume of sediment to be removed, location, and amount of dewatering.

Practice Standard. TEMPORARY SEDIMENT TRAP 960 shall be used to detain water and remove sediment from pumping and diversion operations where space is available.

Practice Standard, PORTABLE SEDIMENT TANK 895 shall be used to retain sediment during dewatering operations where there is limited space,

Practice Standards POLYACRYLAMIDE (PAM) FOR TURBIDITY REDUCTION AND SEDIMENT CONTROL 894.

Pumps with Sediment Filtration Bags.
Where there is low, intermittent pumping activity, pumps with sediment filtration bags attached to pump discharges shall be used. Sediment filtration bags shall be placed on a stabilized surface area. Sediment filtration bags shall not be

placed, whole or partially, within aquatic areas (wetlands, streams, etc.), or water conveyance features (ditches, swales, etc.). Sediment filtration bags shall be raised above the supporting ground on a surface, or material, that allows water to flow out of the bottom of the bag at the respective design discharge rate for the sediment filter bag selected. The pump discharge rate shall not exceed the design discharge rate for the sediment filter bag.

Materials, structures, etc. that are used to ensure that water flows out of the bottom of a sediment filter bag must be non-erodible and be placed atop a stabilized surface area.

The material for the sediment filtration bag shall meet the requirements of Material Specification 592 GEOTEXTILE, Table 2, Class I with a minimum tensile strength of 200 lbs, or Table 1, Class 4 value. The sediment filter bag shall be sized per manufacturer recommendations and based on the size of the pump however, the minimum bag size shall be 10 feet x 15 feet with a usable surface drainage area of 300 square feet (10 x 15 x 2) sides, top & bottom) The largest diameter size pump hose to be used with a sediment filtration bag is 4-inch**.** Multiple hoses/pipes shall not be attached to a single filtration bag inlet sleeve.

Removal of Dewatering Facilities - The temporary dewatering areas shall be removed after they have served their purpose. The dewatering areas shall be graded where necessary, and stabilized with appropriate erosion control practices. Shall not create any obstruction of normal water flow, or any other interference with the operation of, or access to the permanent works.

CONSIDERATIONS

Federal, State, County and local water quality requirements also need to be considered when choosing a dewatering method and may include requirements for sampling and evaluating discharges for clarity.

Base the location, method of dewatering, and configuration on site conditions. The following items should be considered when selecting the proper dewatering method:

1. Amount of water to remove.
2. The amount of sediment to be removed.
3. Maintenance and operation required as a result of the construction operations.
4. Length of time to complete the work.
5. The space available in the work area.
6. Ability to supervise pump operation.

Evaluate function, need, velocity control, outlet stability, and site aesthetics. The location and capacity of temporary diversion and protective works should be based on the characteristics of the site, accessibility, and the potential for off-site, or on-site damage during the construction phase.

Secondary Containment.
Secondary sediment containment practices may be required to ensure that sediment from a dewatering activity does not adversely impact a particular body of water, wetland, or water conveyance feature (ditch, swale, etc.). Secondary containment may be required if the method of sediment removal concentrates the sediment in one location or practice. Secondary containment measures shall be placed

between the area of control and the receiving area and/or aquatic resource.

Winter conditions and freezing temperatures can impact the effectiveness and functionality of sediment filter bags and anionic polymers for sediment removal during dewatering. If dewatering activities are likely to occur over winter, dewatering practices for sediment control should be included in the development of the Stormwater Pollution Prevention Plan that can be effective in freezing temperatures.

An analysis of the effects of dewatering a site should also be considered. For example, permanent dewatering of a site may cause subsidence of surface areas and settlement of foundations and pavements, Additionally, temporary dewatering may create dry areas during construction but the effect of allowing water tables to rise after construction may result in excess pressure on subsurface structures, potentially causing damage and/or excessive sump pump cycling.

PLANS AND SPECIFICATIONS

Plans and specifications for installing and building dewatering facilities shall be in keeping with this standard and shall describe the requirements for applying the practice to achieve its intended purpose. At a minimum include:

1. Approximate location and proposed type of dewatering method shown on plans.
2. Drawings, specifications, etc. for all items of work as needed for dewatering.
3. Include the dewatering plan as part of the Storm Water Pollution Prevention Plan (SWPPP) and/or the erosion and sediment control plan, detailing the location of dewatering activities, presence of aquatic areas, equipment, fuel storage, and discharge point.
4. Any total maximum daily load (TMDL) requirements for the receiving waters or turbidity standards shall be stated on the plan set.
5. A brief narrative outlining a construction sequence for the dewatering operation.
6. Drawing details for proper installation of the various dewatering facilities as needed.

All plans shall include installation, inspection, and maintenance schedules with the responsible party identified.

Methods of dewatering shall be constructed to meet the requirements of Construction Specification **REMOVAL OF WATER 11.**

OPERATION AND MAINTENANCE

The frequency of inspections shall depend on the dewatering method, amount of discharge, potential damage, and quality of the receiving bodies of water. The frequency of inspections, responsible party and specific tasks shall be identified.

1. Inspections shall be conducted to ensure proper operation and compliance with all permits and water quality standards.
2. Accumulated sediment shall be removed from the flow area and temporary diversions shall be repaired, as required.
3. Outlet areas shall be checked and repairs shall be made in a timely manner, as needed.

4. Pump outlets shall be inspected for erosion, and sumps shall be inspected for accumulated sediment.
5. Sediment filtration bags shall be removed and replaced when half full of sediment, or when the design flow rate of the filter bag is no longer being maintained.
6. If the receiving area is showing any signs of turbid water, erosion, or sediment accumulation, discharges shall be stopped immediately once safety and property damage concerns have been addressed.
7.

REFERENCES

Maine Department of Environmental Protection, Bureau of Land and Water Quality. Maine Erosion and Sediment Control BMPs. G-3 Construction Dewatering. Augusta, ME. March 2003.

IDOT Erosion and Sediment Control Field Guide for Construction Inspection, July 1, 2010

January, 2019

urbst813.doc

MATERIAL SPECIFICATION

592. GEOTEXTILE

1. SCOPE

This specification covers the performance requirements and quality of geotextiles.

2. GENERAL REQUIREMENTS

Fibers (threads and yarns) used in the manufacture of geotextile shall consist of synthetic polymers composed of a minimum of 95 percent by weight polypropylenes, polyesters, polyethylene, or polyvinylidene-chlorides. They shall be formed into a stable network of filaments or yarns retaining dimensional stability relative to each other. The filaments shall be resistant to delamination. The geotextile shall be uniform in texture, thickness, and appearance, and be free of defects, flaws or tears. The geotextile shall conform to the physical requirements contained in Tables 1 and 2. The geotextile shall be free of any chemical treatment or coating that significantly reduces its porosity. Fibers shall contain stabilizers and/or inhibitors to enhance resistance to ultraviolet light.

Thread used for factory or field sewing shall be of contrasting color to the fabric and made of high strength polypropylene, polyester, or polyamide thread. Thread shall be as resistant to ultraviolet light as the geotextile being sewn.

3. CLASSIFICATION

Geotextiles shall be classified based on the method used to place the threads or yarns forming the fabric. The geotextiles will be grouped into the types described below.

a. Woven. Fabrics formed by the uniform and regular interweaving of the threads or yarns in two directions.

   Woven fabrics shall be manufactured from slit-tape or monofilament yarn formed into a uniform pattern with distinct and measurable openings, retaining their position relative to each other.

   The edges of fabric shall be selvedged or otherwise finished to prevent the outer yarn from unraveling.

b. Nonwoven. Fabrics formed by a random placement of threads in a mat and bonded by heat-bonding, resin-bonding, needle punching, or a combination thereof.

   Nonwoven fabrics shall be manufactured from individual fibers formed into a random pattern with distinct but variable small openings, retaining their position relative to each other when bonded by needle punching, heat, or resin bonding. The use of nonwovens, other than the needle punched geotextiles, is somewhat restricted (see Note 3 on Table 2).

4. CERTIFICATION, SAMPLING AND TESTING

Along with each shipment of geotextile, a Certificate of Compliance shall be furnished by the supplier, along with a document stating the manufacturer's minimum average roll values (MARV) for the geotextile. The geotextile shall meet the specified requirements (Table 1 or 2) for the product style shown on the label.

Product properties as listed in the "Specifier's Guide" (current version), Geotechnical Fabrics Report, Industrial Fabrics Association International, 1801 County Road BW Roseville, Minnesota 55113; and that represents minimum average roll values, will be acceptable documentation that the product style meets the requirements of these specifications.

For products that do not appear in the above directory, or do not have minimum average roll values listed, typical test data from the identified production run of the geotextile will be required for each of the specified tests (Table 1 or 2) as covered under clause AGAR 452.236-76. These tests must be conducted by third party research institutions.

5. SHIPPING AND STORAGE

The geotextile shall be shipped in rolls wrapped with a cover for protection against moisture, dust, dirt, debris, and ultraviolet light. The cover shall be kept in place to the maximum extent possible prior to placement.

Each roll of geotextile shall be labeled or tagged to clearly identify the manufacturer, class and the individual production run in accordance with ASTM D4873.

TABLE 1

REQUIREMENTS FOR WOVEN GEOTEXTILES

Property	Test Method	Class I	Class II	Class III	Class IV
Tensile Strength (lb.) 1/	ASTM D 4632 Grab Test	250 min. in any principal dir.	120 min. in any principal dir.	180 min. in any principal dir.	200 min. in any principal dir.
Elongation at (percent) 1/	ASTM D 4632 Grab Test	20 max.	35 max.	35 max.	24 max.
Trapezoidal Tear Strength (lb)	ASTM D 4533	115 min.	50 min.	70 min.	115 min.
Puncture (CBR)	ASTM D 6241	900 min.	250 min.	550 min.	675 min.
Ultraviolet Light (percent residual tensile strength)	ASTM D 4355 150 hours exposure	70 min.	70 min.	70 min.	70 min.
Apparent Opening Size – AOS	ASTM D 4751	As specified or # 40/2	As specified or # 30/2	As specified or # 40/2	As specified or # 40/2
Percent Open Area (percent)	CWO-02215-86	1.0 min.	1.0 min.	1.0 min.	10 min.
Permitivity ($sec.^{-1}$) (gal/min/sf)	ASTM D 4491	0.050 min. 4 min.	0.150 min. 10 min.	0.080 min. 6 min.	2.14 min. 145 min.

1/ Minimum average roll value (weakest principal direction).
2/ U.S. standard sieve size.

TABLE 2

REQUIREMENTS FOR NONWOVEN GEOTEXTILES

Property	Test Method	Class I	Class II	Class III	Class IV 3/
Tensile Strength (lb.) 1/	ASTM D 4632 Grab Test	180 min.	120 min.	90	180
Elongation at (percent) 1/	ASTM D 4632 Grab Test	>50	>50	>50	>50
Puncture (CBR)	ASTM D 6241	475 min.	340 min.	265 min.	310 min.
Ultraviolet Light (percent residual tensile strength)	ASTM D 4355 150 hours exposure	70 min.	70 min.	70 min.	70 min.
Apparent Opening Size – AOS	ASTM D 4751	As specified or max of #100 /2	As specified or max of #70 2/	As specified or max of #70 2/	As specified or max of #100 2/
Permitivity ($sec.^{-1}$)	ASTM D 4491	1.5 min.	1.8 min.	2.1 min.	0.30 min.
(gal/min/sf)		110 min.	135 min.	155 min.	29 min.

1/ Minimum average roll value (weakest principal direction).
2/ U.S. standard sieve size.
3/ Heat-bonded or resin bonded geotextile may be used for Class IV only, and are particularly well suited for this use. Needle punched geotextiles are required for all other classes.

Region 4 U.S. Environmental Protection Agency Laboratory Services & Applied Science Division Athens, Georgia	
Operating Procedure	
Title: Field Turbidity Measurement	ID: LSASDPROC-103-R6
Issuing Authority: Field Services Branch Supervisor	
Effective Date: April 22, 2023	Review Due Date: November 02, 2025
Method Reference: N/A	SOP Author: Michael Roberts

Purpose

This document describes general and specific procedures, methods and considerations to be used and observed when conducting field turbidity measurements in aqueous phase environmental media, including groundwater, surface water and certain wastewaters. This Standard Operating Procedure (SOP) is specific to the Field Services Branch (FSB) to maintain conformance to technical and quality system requirements. While this SOP may be informative for other businesses, it is not intended for and may not be directly applicable to operations in other organizations. Mention of trade names or commercial products in this operating procedure does not constitute endorsement or recommendation for use.

Scope/Application

The procedures contained in this document are to be used by field personnel when measuring turbidity of various, aqueous phase environmental media in the field. On the occasion that LSASD field personnel determine that any of the procedures described in this section cannot be used to obtain turbidity measurements of the media being sampled, and that another method or turbidity measurement instrument must be used to obtain said measurements, the variant instrument and measurement procedure will be documented in the field logbook, along with a description of the circumstances requiring its use.

Note: LSASD is currently migrating to a paperless organization. As a result, this SOP will allow for the use of electronic logbooks, checklists, signatures, SOPs, and forms as they are developed, which will also be housed on the Local Area Network (LAN) and traceable to each project.

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Procedural Section

1. General Information

1.1. Documentation/Verification

1.1.1. This procedure was prepared by persons deemed technically competent by LSASD management, based on their knowledge, skills and abilities and has been tested in practice and reviewed in print by a subject matter expert. The official copy of this procedure resides on the LSASD local area network (LAN). The Document Control Coordinator is responsible for ensuring the most recent version of the procedure is placed on the LAN and for maintaining records of review conducted prior to its issuance.

1.2. General Precautions

1.2.1. Safety

1.2.1.1 Proper safety precautions must be observed when conducting field turbidity measurements. Refer to the LSASD Safety, Health and Environmental Management Program (SHEMP) Manual (Most Recent Version) and any pertinent site-specific Health and Safety Plans (HASPs) for guidelines on safety precautions. These guidelines, however, should only be used to complement the judgment of an experienced professional. When using this procedure, minimize exposure to potential health hazards through the use of protective clothing, eye wear and gloves. Address chemicals that pose specific toxicity or safety concerns and follow any other relevant requirements, as appropriate.

1.2.2. Procedural Precautions

1.2.2.1 All field turbidity measurements pertinent to the sampling event should be recorded in the field logbook for the event. All records should be entered according to the procedures outlined in the LSASD Operating Procedure for Logbooks (LSASDPROC-010).

2. Quality Control

2.1. All turbidity meters and probes shall be maintained and operated in accordance with the manufacturer's instructions and the LSASD Operating Procedure for Equipment Inventory and Management (LSASDPROC-108). Before a meter or probe is taken to the field, it shall be properly calibrated or verified, according to Sections 3.2 of this procedure, to ensure it is operating properly. These calibration and verification checks shall be documented and maintained in a logbook.

2.2. The ambient temperature in the immediate vicinity of the meter should be measured and recorded in the field logbook to ensure the instrument is operated within the manufacturer's specified range of operating temperatures. For instruments that are deployed for in-situ measurements, the temperature of the medium being monitored should be measured and recorded in the logbook prior to deployment. In-situ monitoring equipment may be utilized in unattended deployments where autonomous logging may preclude temperature measurement prior to deployment. Because in situ instrumentation generally has a wide range of operating temperature, the field investigator may utilize professional judgment in determining if the operating environment is suitable for unattended deployment.

2.3. If at any time during a field investigation, it appears that the environmental conditions could jeopardize the quality of the measurement results, the measurements will be stopped. This will be documented in the field logbook.

3. Field Turbidity Measurement Procedures

3.1. General

3.1.1. Turbidity is caused by suspended and colloidal matter such as clay, silt, organic and inorganic matter and microscopic organisms. Many methods are available for the measurement of turbidity including turbidimeters and optical probes. Turbidity is measured by determining the amount of scatter when a light is passed through a sample.

3.2. Instrument Calibration and Verification

3.2.1. Many brands of instruments are commercially available for the measurement of turbidity incorporating a wide variety of technologies (See Section 3.5 for further discussion). The manufacturer's instruction manual should be consulted for specific procedures regarding their calibration, maintenance and use. Calibration of any measurement instrument must be conducted and/or verified prior to each use or on a daily basis, whichever is most appropriate. Depending on the instrument, the verification and calibration can differ slightly. If the instrument readings do not agree within ± 10 % of the calibration standards, the unit must be recalibrated, repaired or replaced. The following are basic guidelines for calibration/verification of meters and are provided as an example:

3.2.2. Meter Calibration and Verification

3.2.1.1 HACH 2100Q Turbidimeter:

- Portable turbidimeters are calibrated with Formazin Primary Standards. The manufacturer recommends calibration with a primary standard such as StablCal® Stabilized Standards or with formazin standards every three months.

- Generally only a calibration verification measurement is required in the field; however, if a calibration is needed, record a post calibration reading for each calibration standard used.

3.2.1.2 Meter Verification:

- Push Verify Cal to enter the Verify menu.

- Gently invert the liquid standard several times prior to insertion into meter. Insert the 10.0 NTU (or other defined value) Verification Standard and close the lid.

- Push Read. The display shows “Stabilizing” and then shows the result and tolerance range.

- Push Done to return to the reading display. Repeat the calibration verification if the verification failed. If a meter is unable to pass verification, then that meter will need to be calibrated.

3.2.1.3 Meter Calibration:

- Push the CALIBRATION key to enter the Calibration mode. Follow the instructions on the display. Note: Gently invert each standard several times before inserting the standard and use a non-abrasive, lint-free paper or cloth to wipe off the standards.

- Insert the 20 NTU StablCal Standard and close the lid. Push Read. The
- display shows “Stabilizing” and then shows the result. Record the result.

- Repeat Step 2 with the 100 NTU and 800 NTU StablCal Standard. Record both results.

- Push Done to review the calibration details.

- Push Store to save the results. After a calibration is complete, the meter automatically goes into the Verify Cal mode.

3.2.2 Probe Calibration and Verification

3.2.2.1 The manufacturer's instruction manual should be consulted for specific procedures regarding probe's calibration, maintenance and use. Their calibration must be conducted and/or verified prior to each use or on a daily basis, whichever is most appropriate. The following are basic guidelines for calibration/verification of probes and are provided as an example:

- Turn the meter "ON" and allow it to stabilize
- Immerse the probe in the first standard solution and calibrate the probe against the solution.
- Rinse the probe with de-ionized water, remove excess rinse water and calibrate the probe using additional standards as appropriate.
- Record the standard values used to calibrate the meter.

3.3 Sample Measurement Procedures

3.3.1 Depending on the meter, the sample measurement procedure can differ slightly.

3.3.2 Grab Sample Measurement

3.3.2.1 These procedures should be followed when conducting turbidity measurements of grab samples:

- Collect a representative sample and pour off enough to fill the cell to the fill line (about 15 mL) and replace the cap on the cell.

- Gently wipe off excess water and any streaks from surface of sampling vial.

- Turn instrument on. Place the meter on a flat, sturdy surface. Do not hold the instrument while making measurements.

- Insert the sample cell in the instrument so the diamond or orientation mark aligns with the raised orientation mark in the front of the cell compartment. Close the lid.

- If appropriate, select manual or automatic range selection by pressing the range key.

- If appropriate, select signal averaging mode by pressing the Signal Average key. Use signal average mode if the sample causes a noisy signal (display changes constantly).

- Press Read. The display will show -----NTU. Then the turbidity is displayed in NTU. Record the result to the correct range dependent significant digits as required by EPA Method 180.1 Rev. 2.0 (USEPA, 1993) and SM 2130B (APHA, 1992) (Table 1).

- Rinse the cell with de-ionized water or rinse out with sample water prior to the next reading.

Table 1: Reporting Requirements (APHA, 1992)

Turbidity Range *NTU*	Report to the Nearest *NTU*
0–1.0	0.05
1–10	0.1
10–40	1
40–100	5
100–400	10
400–1000	50
>1000	100

3.3.3 In-Situ Measurement

3.3.3.1 These procedures should be followed when conducting in-situ turbidity measurements:

- Place the probe into the media to be measured and allow the turbidity reading to stabilize. Once the reading has stabilized, record the measurement in the logbook.

- When deploying meters for extended periods of time, ensure the measurement location is representative of average media conditions.

3.4 Operational check

3.4.1 Even though it is not necessary to re-calibrate turbidity meters at regular intervals during the day, depending on the instrument, it may be appropriate to occasionally perform operational checks to determine if site conditions, such as an increase in temperature, have impacted the meter's performance. If an operational check is warranted, the following procedure should be followed to ensure that the performance of the meter has not changed.

3.4.2 While in use, periodically check the turbidity by rinsing the probe with de-ionized water, blot dry or otherwise remove excess rinse water and immerse it into the appropriate calibration standard. If the measured turbidity differs by ± 10 % (depending on the application) from the calibration standard, the meter must be re-calibrated.

3.4.3 A post-operation instrument verification check will be performed using the appropriate standard(s) at the end of the day or after all measurements have been taken for a particular period of operation. These measurements must be recorded in the field logbook.

3.5 Units and Application

3.5.1 Due to the availability of various technologies for measuring turbidity, the USGS (United States Geological Survey) in collaboration with ASTM International (American Society for Testing and Materials) has determined that data collected using different methods are not directly comparable and should be reported in units reflecting the specific technology used (USGS 2004; ASTM International 2012) (Table 2).

3.5.2 Measurements taken for regulatory purposes (i.e., National Primary Drinking Water Regulations (NPDWR) monitoring, National Pollution Discharge Elimination System (NPDES) reporting) must be in compliance with EPA approved methods. Approved methods for Clean Water Act programs and Safe Drinking Water Act programs can be found in 40 C.F.R. § 136.3 and 40 C.F.R. § 141.74(a)(1), respectively.

3.5.3 Project leaders should consult the decision tree depicted in Figure 1 to determine the appropriate turbidity method that will meet the project specific Data Quality Objectives. For more detailed information on the different methods and their associated units, refer to the USGS National Field Manual for the Collection of Water-Quality Data, Section 6.7 (USGS 2005) and ASTM designation D7315 (ASTM International 2012). A sensor specific spreadsheet detailing methods and associated units can be found on the USGS Field Manual website under turbidity parameter and methods codes (USGS 2012).

References

APHA (1992). Turbidity: Method 2130B. Standard Methods for the Examination of Water and Wastewater, 18th Edition, pp. 2-11.

ASTM International (2012). D7315-12 Standard test method for determination of turbidity above 1 turbidity unit in static mode: ASTM International, Annual Book of Standards, Water and Environmental Technology, v. 11.01, West Conshohocken, Pennsylvania.

LSASD Operating Procedure for Equipment Inventory and Management, LSASDPROC-108, Most Recent Version

LSASD Operating Procedure for Logbooks, LSASDPROC-010, Most Recent Version

USEPA (1993). Method 180.1: Determination of Turbidity by Nephelometry. Rev. 2.0. Environmental Systems Monitoring Laboratory, Office of Research and Development, Cincinnati, Ohio.

USEPA (2001). Environmental Investigations Standard Operating Procedures and Quality Assurance Manual. Region 4 Science and Ecosystem Support Division (SESD), Athens, GA.

USEPA. Safety, Health and Environmental Management Program Procedures and Policy Manual. Region 4 LSASD, Athens, GA, Most Recent Version

USGS (2004). Office of Water Quality Technical Memorandum 2004.03: Revision of NFM Chapter 6, Section 6.7- Turbidity, available online at: http://water.usgs.gov/admin/memo/QW/qw04.03.html

USGS (2005). National field manual for the collection of water-quality data: U.S. Geological Survey Techniques of Water-Resources Investigations, book 9, chaps. A6.7, available online at http://pubs.water.usgs.gov/twri9A.

USGS (2012). Turbidity parameter and methods codes, available online at: https://water.usgs.gov/owq/turbidity/Turbidity_parameter_codes_and_methods_codes_(May2012)%20(2).xlsx

Revision History

History	Effective Date
Replaced Chief with Supervisor; General formatting revisions.	April 22, 2023
LSASDPROC-103-R5, Field Turbidity Measurement, replaces LSASDPROC-103-R4 Title Page: Changed the author from Timothy Simpson to Michael Roberts. Changed the Field Services Branch Supervisor from John Deatrick to Sandra Aker. Deleted Hunter Johnson the as Field Quality Manager. Replaces SESD with LSASD	
LSASDPROC-103-R4, Field Turbidity Measurement, replaces LSASDPROC-103-R3 General: Added to Section 3.6 to include application of various turbidity units and associated methods relative to various applications.	November 03, 2021
Title Page: Changed Enforcement and Investigations Branch to the Field Services Branch and changed the Supervisor from Danny France to John Deatrick. Changed Field Quality Manager from Bobby Lewis to Hunter Johnson. Section 1.4: Added new references cited in Section 3.5 Section 3.2: Added reference to Section 3.5 Section 3.3.1: Added Table 1 outlining reporting requirements. Section 3.5: Introduced different turbidity units associated with various methods and stated importance of using EPA approved methods for regulatory purposes. Also added Figure 1, a decision tree to assist project leaders in selecting the appropriate method to satisfy Data Quality Objectives, and Table 2, outlining technologies, associated units, application, and design.	July 27, 2017
LSASDPROC-103-R3, Field Turbidity Measurement, replaces LSASDPROC-103-R2	January 29, 2013
LSASDPROC-103-R2, Field Turbidity Measurement, replaces LSASDPROC-103-R1	June 13, 2008
LSASDPROC-103-R1, Field Turbidity Measurement, replaces LSASDPROC-103-R0	November 1, 2007
LSASDPROC-103-R0, Field Turbidity Measurement, Original Issue	February 05, 2007

Figure 1: Turbidity Method Decision Tree, adapted from Figure 6.7-2 (USGS 2005)

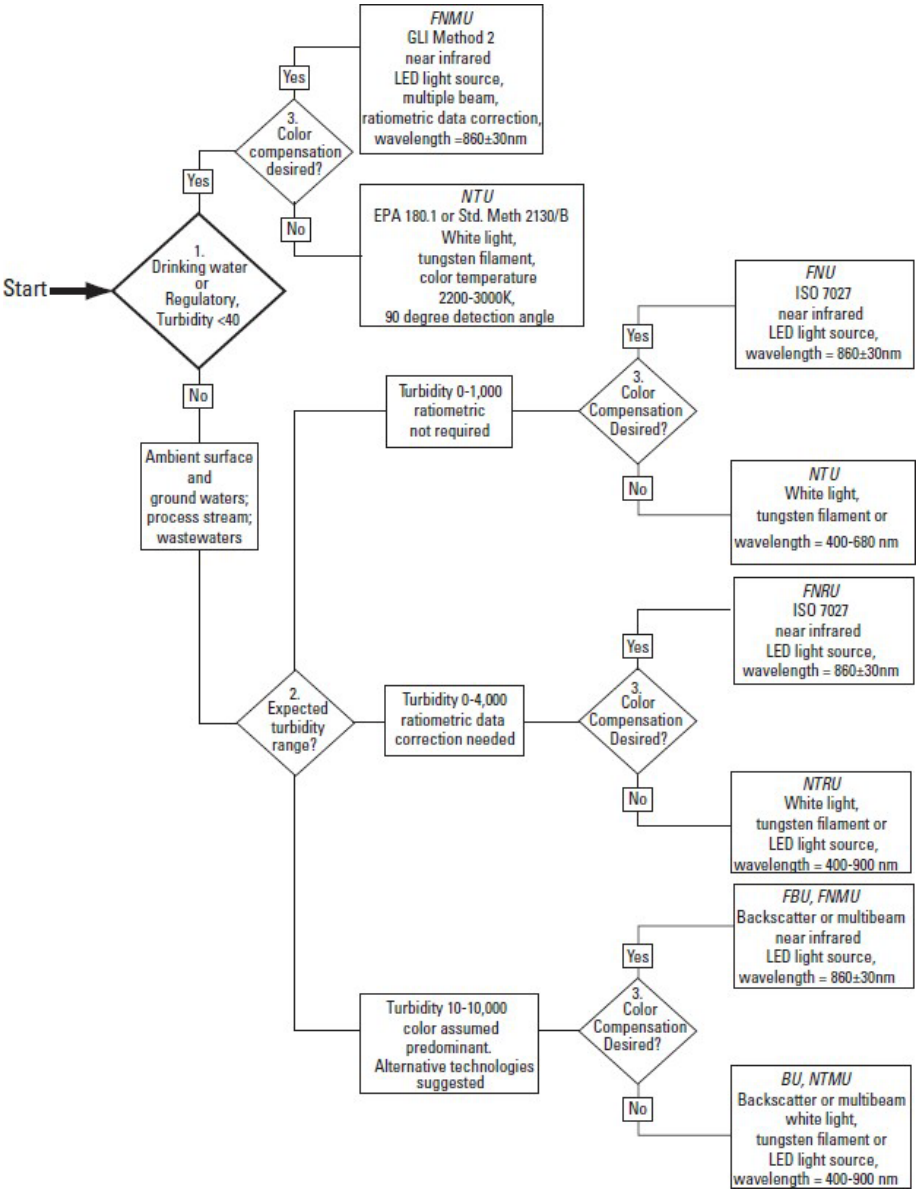

Table 2: Turbidity Technology, Units, Application, & Design (adapted from ASTM International 2012)

Design and Reporting Unit	Prominent Application	Key Design Features
Nephelometric non-ratio (NTU)	White light turbidimeters. Comply with USEPA Method 180.1 for low level turbidity monitoring.	Detector centered at 90° relative to the incident light beam. Uses a white light spectral source.
Ratio White Light turbidimeters (NTRU)	Complies with ISWTR regulations and Standard Method 2130B. Can be used for both low and high level measurement.	Used a white light spectral source. Primary detector centered at 90°. Other detectors located at other angles. An instrument algorithm uses a combination of detector readings to generate the turbidity reading.
Nephelometric, near-IR turbidimeters, non-ratiometric (FNU)	Complies with ISO 7027. The wavelength is less susceptible to color interferences. Applicable for samples with color and good for low level monitoring.	Detector centered at 90° relative to the incident light beam. Uses a near-IR (780–900 nm) monochromatic light source.
Nephelometric near-IR turbidimeters, ratio metric (FNRU)	Complies with ISO 7027. Applicable for samples with high levels of color and for monitoring to high turbidity levels.	Uses a near-IR monochromatic light source (780–900 nm). Primary detector centered at 90°. Other detectors located at other angles. An instrument algorithm uses a combination of detector readings to generate the turbidity reading.
Surface Scatter Turbidimeters (NTU)	Turbidity is determined through light scatter from or near the surface of a sample.	Detector centered at 90° relative to the incident light beam. Uses a white light spectral source.
Formazin Back Scatter (FBU)	Not applicable for regulatory purposes. Best applied to high turbidity samples. Backscatter is common with but not all only probe technology and is best applied in higher turbidity samples.	Uses a near-IR monochromatic light source in the 780–900 nm range. Detector geometry is between 90° and 180° relative to the incident light beam.
Backscatter Unit (BU)	Not applicable for regulatory purposes. Best applied for samples with high level turbidity.	Uses a white light spectral source (400–680 nm range). Detector geometry is between 90° and 180° relative to the incident light beam.
Formazin attenuation unit (FAU)	May be applicable for some regulatory purposes. This is commonly applied with spectrophotometers. Best applied for samples with high level turbidity.	Detector is geometrically centered at 0° relative to incident beam (attenuation). Wavelength is 780–900 nm.
Light attenuation unit (AU)	Not applicable for some regulatory purposes. This is commonly applied with spectrophotometers.	Detector is geometrically centered at 0° relative to incident beam (attenuation). Wavelength is 400–680 nm.
Nephelometric Turbidity Multibeam Unit (NTMU)	Is applicable to EPA regulatory method GLI Method 2. Applicable to drinking water and wastewater monitoring applications.	Detectors are geometrically centered at 0° and 90°. An instrument algorithm uses a combination of detector readings, which may differ for turbidities varying magnitude.

sterling labs - O'Hare Location

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Analytical Report

Tom Hahne
Tetra Tech
1 South Wacker Drive, STE 3700
Chicago, IL 60606

June 26, 2024

Work Order: O24F0847

RE: 2024 Water Analysis
Tinley Park, IL

Dear Tom Hahne:

Enclosed are the analytical reports for the Sterling Labs Work Order listed. Also included with this analytical report is a copy of the chain of custody associated with these samples. If you have any questions, please contact me.

Sincerely,

Olga Karplyuk
Project Manager
okarplyuk@TheSterlingLab.com
Approved: 6/26/2024 10:32:08AM

State of Illinois, NELAP Accredited Lab No. 100256, Cert No. 100256

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Sample Summary

Sample ID	Laboratory	Laboratory ID	Matrix	Date Sampled	Date Received
TP-L-SW	Sterling Labs	O24F0847-01	Water	06/18/24 12:45	06/18/24 15:26

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Case Narrative

Work Order: O24F0847
The samples were received on 6/18/2024 3:26:00 PM. The temperature of the cooler(s) at receipt was:

Cooler:	**Temp C**
Default Cooler	5.9

Sample 01A contains larger than 6 mm air bubbles and was not used for analysis.

Inorganics, IC

9056_IC
B24F1019-BS1 The Laboratory Control Sample (LCS) (Preparation Batch B24F1019) had recovery of Chloride outside of control limits (178% recovery, QC Limits 90-110%), this BS was for the low calibration. B24F1019-BS2 for the high calibration was in control. All samples are reported from the high calibration for Chloride.

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Client Sample Results

Client: Tetra Tech
Project: 2024 Water Analysis
Tinley Park, IL
Work Order: O24F0847

Client Sample ID: TP-L-SW
Report Date: 06/26/2024
Collection Date: 06/18/2024 12:45
Matrix: Water
Lab ID: O24F0847-01

Sterling Labs

Volatile Organic Compounds by GC/MS

Method: SW8260B / SW5030

Analyses	Result	Reporting Limit	Qual	Units	MDL	Date/Time Analyzed	Batch	Analyst	DF
1,1,1-Trichloroethane	< 0.00400	0.00400		mg/L	0.000719	06/20/24 16:58	B24F1010	WH1	1
1,1,2,2-Tetrachloroethane	< 0.00400	0.00400		mg/L	0.000713	06/20/24 16:58	B24F1010	WH1	1
1,1,2-Trichloroethane	< 0.00400	0.00400		mg/L	0.000198	06/20/24 16:58	B24F1010	WH1	1
1,1-Dichloroethane	< 0.00200	0.00200		mg/L	0.000190	06/20/24 16:58	B24F1010	WH1	1
1,1-Dichloroethene	< 0.00400	0.00400		mg/L	0.00110	06/20/24 16:58	B24F1010	WH1	1
1,2-Dichloroethane	< 0.00400	0.00400		mg/L	0.000731	06/20/24 16:58	B24F1010	WH1	1
1,2-Dichloropropane	< 0.00400	0.00400		mg/L	0.000557	06/20/24 16:58	B24F1010	WH1	1
2-Butanone	< 0.0280	0.0280		mg/L	0.00479	06/20/24 16:58	B24F1010	WH1	1
2-Hexanone	< 0.0280	0.0280		mg/L	0.00474	06/20/24 16:58	B24F1010	WH1	1
4-Methyl-2-pentanone	< 0.0280	0.0280		mg/L	0.00440	06/20/24 16:58	B24F1010	WH1	1
Acetone	< 0.0700	0.0700		mg/L	0.00921	06/20/24 16:58	B24F1010	WH1	1
Benzene	< 0.00200	0.00200		mg/L	0.000362	06/20/24 16:58	B24F1010	WH1	1
Bromodichloromethane	< 0.00200	0.00200		mg/L	0.000458	06/20/24 16:58	B24F1010	WH1	1
Bromoform	< 0.00400	0.00400		mg/L	0.000570	06/20/24 16:58	B24F1010	WH1	1
Bromomethane	< 0.0400	0.0400		mg/L	0.00607	06/20/24 16:58	B24F1010	WH1	1
Carbon disulfide	< 0.00400	0.00400		mg/L	0.000739	06/20/24 16:58	B24F1010	WH1	1
Carbon tetrachloride	< 0.0200	0.0200		mg/L	0.00307	06/20/24 16:58	B24F1010	WH1	1
Chlorobenzene	< 0.00200	0.00200		mg/L	0.000350	06/20/24 16:58	B24F1010	WH1	1
Chloroethane	< 0.00400	0.00400		mg/L	0.000621	06/20/24 16:58	B24F1010	WH1	1
Chloroform	< 0.00400	0.00400		mg/L	0.000450	06/20/24 16:58	B24F1010	WH1	1
Chloromethane	< 0.00800	0.00800		mg/L	0.000130	06/20/24 16:58	B24F1010	WH1	1
cis-1,2-Dichloroethene	< 0.00400	0.00400		mg/L	0.000625	06/20/24 16:58	B24F1010	WH1	1
cis-1,3-Dichloropropene	< 0.00400	0.00400		mg/L	0.000408	06/20/24 16:58	B24F1010	WH1	1
Dibromochloromethane	< 0.00400	0.00400		mg/L	0.000632	06/20/24 16:58	B24F1010	WH1	1
Ethylbenzene	< 0.00400	0.00400		mg/L	0.000580	06/20/24 16:58	B24F1010	WH1	1
Methyl tert-butyl ether	< 0.00400	0.00400		mg/L	0.000838	06/20/24 16:58	B24F1010	WH1	1
Methylene chloride	< 0.0200	0.0200		mg/L	0.000450	06/20/24 16:58	B24F1010	WH1	1
Styrene	< 0.00800	0.00800		mg/L	0.000117	06/20/24 16:58	B24F1010	WH1	1
Tetrachloroethene	< 0.00400	0.00400		mg/L	0.000646	06/20/24 16:58	B24F1010	WH1	1
Toluene	< 0.00400	0.00400		mg/L	0.000510	06/20/24 16:58	B24F1010	WH1	1
trans-1,2-Dichloroethene	< 0.00400	0.00400		mg/L	0.000566	06/20/24 16:58	B24F1010	WH1	1
trans-1,3-Dichloropropene	< 0.00800	0.00800		mg/L	0.000117	06/20/24 16:58	B24F1010	WH1	1
Trichloroethene	< 0.00400	0.00400		mg/L	0.000939	06/20/24 16:58	B24F1010	WH1	1
Vinyl chloride	< 0.00400	0.00400		mg/L	0.000528	06/20/24 16:58	B24F1010	WH1	1
Xylenes, Total	< 0.0120	0.0120		mg/L	0.00162	06/20/24 16:58	B24F1010	WH1	1
Surrogate: Dibromofluoromethane				*Recovery: 95%*	*Limits: 85-123*	*06/20/24 16:58*	*B24F1010*	*WH1*	1
Surrogate: 1,2-Dichloroethane-d4				*Recovery: 95%*	*Limits: 86-119*	*06/20/24 16:58*	*B24F1010*	*WH1*	1

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Client Sample Results

(Continued)

Client: Tetra Tech
Project: 2024 Water Analysis
Tinley Park, IL
Work Order: O24F0847

Client Sample ID: TP-L-SW
Report Date: 06/26/2024
Collection Date: 06/18/2024 12:45
Matrix: Water
Lab ID: O24F0847-01 (Continued)

Analyses	Result	Reporting Limit	Qual	Units	MDL	Date/Time Analyzed	Batch	Analyst	DF
Sterling Labs									
Volatile Organic Compounds by GC/MS (Continued)									
Method: SW8260B / SW5030 (Continued)									
Surrogate: Toluene-d8				*Recovery: 99%*	*Limits: 91-109*	*06/20/24 16:58*	*B24F1010*	*WH1*	1
Surrogate: 4-Bromofluorobenzene				*Recovery: 99%*	*Limits: 79-114*	*06/20/24 16:58*	*B24F1010*	*WH1*	1
Surrogate: 1,2-Dichlorobenzene-d4				*Recovery: 101%*	*Limits: 91-127*	*06/20/24 16:58*	*B24F1010*	*WH1*	1
Semivolatile Organic Compounds by GC/MS									
Method: SW8270D / SW3510									
1,2,4-Trichlorobenzene	< 0.000405	0.000405		mg/L	0.0000567	06/21/24 23:28	B24F0955	LP	1
1,2-Dichlorobenzene	< 0.000405	0.000405		mg/L	0.0000608	06/21/24 23:28	B24F0955	LP	1
1,3-Dichlorobenzene	< 0.000405	0.000405		mg/L	0.0000628	06/21/24 23:28	B24F0955	LP	1
1,4-Dichlorobenzene	< 0.000405	0.000405		mg/L	0.0000567	06/21/24 23:28	B24F0955	LP	1
2,4,5-Trichlorophenol	< 0.000203	0.000203		mg/L	0.0000262	06/21/24 23:28	B24F0955	LP	1
2,4,6-Trichlorophenol	< 0.000203	0.000203		mg/L	0.0000494	06/21/24 23:28	B24F0955	LP	1
2,4-Dichlorophenol	< 0.000203	0.000203		mg/L	0.0000160	06/21/24 23:28	B24F0955	LP	1
2,4-Dimethylphenol	< 0.000405	0.000405		mg/L	0.0000238	06/21/24 23:28	B24F0955	LP	1
2,4-Dinitrophenol	< 0.00608	0.00608	S1	mg/L	0.000671	06/21/24 23:28	B24F0955	LP	1
2,4-Dinitrotoluene	< 0.000405	0.000405		mg/L	0.0000511	06/21/24 23:28	B24F0955	LP	1
2,6-Dinitrotoluene	< 0.000203	0.000203		mg/L	0.0000466	06/21/24 23:28	B24F0955	LP	1
2-Chloronaphthalene	< 0.000122	0.000122		mg/L	0.0000215	06/21/24 23:28	B24F0955	LP	1
2-Chlorophenol	< 0.000203	0.000203		mg/L	0.0000311	06/21/24 23:28	B24F0955	LP	1
2-Methylnaphthalene	< 0.000811	0.000811		mg/L	0.000130	06/21/24 23:28	B24F0955	LP	1
2-Methylphenol	< 0.000203	0.000203		mg/L	0.0000371	06/21/24 23:28	B24F0955	LP	1
2-Nitroaniline	< 0.000608	0.000608		mg/L	0.000519	06/21/24 23:28	B24F0955	LP	1
2-Nitrophenol	< 0.000203	0.000203		mg/L	0.0000424	06/21/24 23:28	B24F0955	LP	1
3,3´-Dichlorobenzidine	< 0.00405	0.00405		mg/L	0.000641	06/21/24 23:28	B24F0955	LP	1
3 & 4-Methylphenol	< 0.000203	0.000203		mg/L	0.0000363	06/21/24 23:28	B24F0955	LP	1
3-Nitroaniline	< 0.000405	0.000405		mg/L	0.0000729	06/21/24 23:28	B24F0955	LP	1
4,6-Dinitro-2-methylphenol	< 0.00304	0.00304	S1	mg/L	0.000497	06/21/24 23:28	B24F0955	LP	1
4-Bromophenyl-phenylether	< 0.000203	0.000203		mg/L	0.0000324	06/21/24 23:28	B24F0955	LP	1
4-Chloro-3-methylphenol	< 0.000101	0.000101		mg/L	0.0000144	06/21/24 23:28	B24F0955	LP	1
4-Chloroaniline	< 0.000122	0.000122		mg/L	0.0000216	06/21/24 23:28	B24F0955	LP	1
4-Chlorophenyl-phenylether	< 0.000203	0.000203		mg/L	0.0000295	06/21/24 23:28	B24F0955	LP	1
4-Nitroaniline	< 0.00608	0.00608		mg/L	0.000765	06/21/24 23:28	B24F0955	LP	1
4-Nitrophenol	< 0.00304	0.00304		mg/L	0.000291	06/21/24 23:28	B24F0955	LP	1
Aniline	< 0.000203	0.000203		mg/L	0.0000179	06/21/24 23:28	B24F0955	LP	1
Benzidine	< 0.0162	0.0162		mg/L	0.00336	06/21/24 23:28	B24F0955	LP	1
Benzoic acid	< 0.00811	0.00811		mg/L	0.00238	06/21/24 23:28	B24F0955	LP	1
Benzyl alcohol	< 0.000811	0.000811		mg/L	0.000111	06/21/24 23:28	B24F0955	LP	1

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Client Sample Results

(Continued)

Client: Tetra Tech
Project: 2024 Water Analysis
Tinley Park, IL
Work Order: O24F0847

Client Sample ID: TP-L-SW
Report Date: 06/26/2024
Collection Date: 06/18/2024 12:45
Matrix: Water
Lab ID: O24F0847-01 (Continued)

Sterling Labs

Semivolatile Organic Compounds by GC/MS (Continued)

Method: SW8270D / SW3510 (Continued)

Analyses	Result	Reporting Limit	Qual	Units	MDL	Date/Time Analyzed	Batch	Analyst	DF
Bis(2-chloroethoxy)methane	< 0.000203	0.000203		mg/L	0.0000274	06/21/24 23:28	B24F0955	LP	1
Bis(2-chloroethyl)ether	< 0.000203	0.000203		mg/L	0.0000356	06/21/24 23:28	B24F0955	LP	1
Bis(2-chloroisopropyl)ether	< 0.000203	0.000203		mg/L	0.0000260	06/21/24 23:28	B24F0955	LP	1
Bis(2-ethylhexyl)phthalate	< 0.000203	0.000203		mg/L	0.000152	06/21/24 23:28	B24F0955	LP	1
Butyl benzyl phthalate	< 0.000203	0.000203		mg/L	0.0000474	06/21/24 23:28	B24F0955	LP	1
Carbazole	< 0.000203	0.000203		mg/L	0.0000350	06/21/24 23:28	B24F0955	LP	1
Dibenzofuran	< 0.000122	0.000122		mg/L	0.0000248	06/21/24 23:28	B24F0955	LP	1
Diethyl phthalate	< 0.00122	0.00122		mg/L	0.000236	06/21/24 23:28	B24F0955	LP	1
Dimethyl phthalate	< 0.000600	0.000600		mg/L	0.0000179	06/21/24 23:28	B24F0955	LP	1
Di-n-butyl phthalate	< 0.00203	0.00203		mg/L	0.000584	06/21/24 23:28	B24F0955	LP	1
Di-n-octyl phthalate	< 0.00203	0.00203		mg/L	0.000383	06/21/24 23:28	B24F0955	LP	1
Hexachlorobenzene	< 0.000203	0.000203		mg/L	0.0000334	06/21/24 23:28	B24F0955	LP	1
Hexachlorobutadiene	< 0.000203	0.000203		mg/L	0.0000507	06/21/24 23:28	B24F0955	LP	1
Hexachlorocyclopentadiene	< 0.00304	0.00304		mg/L	0.000443	06/21/24 23:28	B24F0955	LP	1
Hexachloroethane	< 0.000203	0.000203		mg/L	0.0000446	06/21/24 23:28	B24F0955	LP	1
Isophorone	< 0.000122	0.000122		mg/L	0.0000224	06/21/24 23:28	B24F0955	LP	1
Nitrobenzene	< 0.000122	0.000122		mg/L	0.0000283	06/21/24 23:28	B24F0955	LP	1
N-Nitrosodimethylamine	< 0.000203	0.000203		mg/L	0.0000316	06/21/24 23:28	B24F0955	LP	1
N-Nitrosodi-n-propylamine	< 0.000203	0.000203		mg/L	0.0000648	06/21/24 23:28	B24F0955	LP	1
N-Nitrosodiphenylamine	< 0.000122	0.000122		mg/L	0.0000211	06/21/24 23:28	B24F0955	LP	1
Pentachlorophenol	< 0.000101	0.000101		mg/L	0.0000792	06/21/24 23:28	B24F0955	LP	1
Phenol	< 0.000203	0.000203		mg/L	0.0000346	06/21/24 23:28	B24F0955	LP	1
Pyridine	< 0.00203	0.00203		mg/L	0.000369	06/21/24 23:28	B24F0955	LP	1
Acenaphthene	< 0.000122	0.000122		mg/L	0.0000211	06/21/24 23:28	B24F0955	LP	1
Acenaphthylene	< 0.000122	0.000122		mg/L	0.0000263	06/21/24 23:28	B24F0955	LP	1
Anthracene	< 0.000122	0.000122		mg/L	0.0000226	06/21/24 23:28	B24F0955	LP	1
Benzo(a)anthracene	< 0.000122	0.000122		mg/L	0.0000250	06/21/24 23:28	B24F0955	LP	1
Benzo(a)pyrene	< 0.000405	0.000405		mg/L	0.0000761	06/21/24 23:28	B24F0955	LP	1
Benzo(b)fluoranthene	< 0.000405	0.000405		mg/L	0.0000754	06/21/24 23:28	B24F0955	LP	1
Benzo(g,h,i)perylene	< 0.000405	0.000405		mg/L	0.0000809	06/21/24 23:28	B24F0955	LP	1
Benzo(k)fluoranthene	< 0.000405	0.000405		mg/L	0.0000504	06/21/24 23:28	B24F0955	LP	1
Chrysene	< 0.000122	0.000122		mg/L	0.0000257	06/21/24 23:28	B24F0955	LP	1
Dibenzo(a,h)anthracene	< 0.000405	0.000405		mg/L	0.0000895	06/21/24 23:28	B24F0955	LP	1
Fluoranthene	< 0.000203	0.000203		mg/L	0.0000398	06/21/24 23:28	B24F0955	LP	1
Fluorene	< 0.000122	0.000122		mg/L	0.0000251	06/21/24 23:28	B24F0955	LP	1
Indeno(1,2,3-cd)pyrene	< 0.000405	0.000405		mg/L	0.000102	06/21/24 23:28	B24F0955	LP	1
Naphthalene	< 0.000811	0.000811		mg/L	0.000165	06/21/24 23:28	B24F0955	LP	1

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Client Sample Results

(Continued)

Client: Tetra Tech
Project: 2024 Water Analysis
Tinley Park, IL
Work Order: O24F0847

Client Sample ID: TP-L-SW
Report Date: 06/26/2024
Collection Date: 06/18/2024 12:45
Matrix: Water
Lab ID: O24F0847-01 (Continued)

Sterling Labs

Analyses	Result	Reporting Limit	Qual	Units	MDL	Date/Time Analyzed	Batch	Analyst	DF
Semivolatile Organic Compounds by GC/MS (Continued)									
Method: SW8270D / SW3510 (Continued)									
Phenanthrene	< 0.000203	0.000203		mg/L	0.0000417	06/21/24 23:28	B24F0955	LP	1
Pyrene	< 0.000203	0.000203		mg/L	0.0000422	06/21/24 23:28	B24F0955	LP	1
Surrogate: 2-Fluorophenol				*Recovery: 37%*	*Limits: 21-110*	*06/21/24 23:28*	*B24F0955*	*LP*	1
Surrogate: Phenol-d5				*Recovery: 35%*	*Limits: 10-110*	*06/21/24 23:28*	*B24F0955*	*LP*	1
Surrogate: Nitrobenzene-d5				*Recovery: 75%*	*Limits: 35-114*	*06/21/24 23:28*	*B24F0955*	*LP*	1
Surrogate: 2-Fluorobiphenyl				*Recovery: 71%*	*Limits: 43-116*	*06/21/24 23:28*	*B24F0955*	*LP*	1
Surrogate: 2,4,6-Tribromophenol				*Recovery: 80%*	*Limits: 10-123*	*06/21/24 23:28*	*B24F0955*	*LP*	1
Surrogate: 4-Terphenyl-d14				*Recovery: 81%*	*Limits: 33-141*	*06/21/24 23:28*	*B24F0955*	*LP*	1
Polychlorinated Biphenyls (PCBs) by GC/ECD									
Method: SW8082A / SW3510									
Aroclor 1016	< 0.496	0.496		ug/L	0.211	06/24/24 23:45	B24F0972	CS2	1
Aroclor 1221	< 0.496	0.496		ug/L	0.190	06/24/24 23:45	B24F0972	CS2	1
Aroclor 1232	< 0.496	0.496		ug/L	0.161	06/24/24 23:45	B24F0972	CS2	1
Aroclor 1242	< 0.496	0.496		ug/L	0.162	06/24/24 23:45	B24F0972	CS2	1
Aroclor 1248	< 0.496	0.496		ug/L	0.159	06/24/24 23:45	B24F0972	CS2	1
Aroclor 1254	< 0.496	0.496		ug/L	0.174	06/24/24 23:45	B24F0972	CS2	1
Aroclor 1260	< 0.496	0.496		ug/L	0.144	06/24/24 23:45	B24F0972	CS2	1
Total PCB	< 0.496	0.496		ug/L	0.272	06/24/24 23:45	B24F0972	CS2	1
Surrogate: Decachlorobiphenyl				*Recovery: 77%*	*Limits: 40-135*	*06/24/24 23:45*	*B24F0972*	*CS2*	1
Surrogate: 2,4,5,6-Tetrachloro-m-xylene				*Recovery: 60%*	*Limits: 13-133*	*06/24/24 23:45*	*B24F0972*	*CS2*	1
Metals by ICP-MS									
Method: SW6020 B / SW3015									
Arsenic	< 0.0250	0.0250		mg/L	0.00200	06/20/24 13:54	B24F0901	KJ1	5
Barium	**0.0322**	0.0250		mg/L	0.00200	06/20/24 13:54	B24F0901	KJ1	5
Boron	**0.269**	0.0125		mg/L	0.00500	06/20/24 13:54	B24F0901	KJ1	5
Cadmium	< 0.00250	0.00250		mg/L	0.000500	06/20/24 13:54	B24F0901	KJ1	5
Chromium	< 0.0250	0.0250		mg/L	0.00250	06/20/24 13:54	B24F0901	KJ1	5
Copper	< 0.0250	0.0250		mg/L	0.00250	06/20/24 13:54	B24F0901	KJ1	5
Iron	< 0.125	0.125		mg/L	0.0500	06/20/24 13:54	B24F0901	KJ1	5
Lead	< 0.0250	0.0250		mg/L	0.00150	06/20/24 13:54	B24F0901	KJ1	5
Manganese	**0.104**	0.0250		mg/L	0.00250	06/20/24 13:54	B24F0901	KJ1	5
Nickel	< 0.0250	0.0250		mg/L	0.00250	06/20/24 13:54	B24F0901	KJ1	5
Selenium	< 0.0250	0.0250		mg/L	0.00300	06/20/24 13:54	B24F0901	KJ1	5
Silver	< 0.00250	0.00250		mg/L	0.000400	06/20/24 13:54	B24F0901	KJ1	5
Zinc	**0.0997**	0.0250		mg/L	0.0100	06/20/24 13:54	B24F0901	KJ1	5

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Client Sample Results

(Continued)

Client: Tetra Tech
Project: 2024 Water Analysis
Tinley Park, IL
Work Order: O24F0847

Client Sample ID: TP-L-SW
Report Date: 06/26/2024
Collection Date: 06/18/2024 12:45
Matrix: Water
Lab ID: O24F0847-01 (Continued)

Analyses	Result	Reporting Limit	Qual	Units	MDL	Date/Time Analyzed	Batch	Analyst	DF
Sterling Labs									
Metals by ICP-MS (Continued)									
Method: SW6020B / SM2340 B / SW3015									
Hardness	**441**			mg CaCO3/L		06/20/24 18:18	B24F0901	KJ1	2
Calcium	**109**	1.25		mg/L	0.500	06/20/24 13:56	B24F0901	KJ1	50
Magnesium	**41.0**	1.25		mg/L	0.200	06/20/24 13:56	B24F0901	KJ1	50
Mercury by CVAA									
Method: SW7470A									
Mercury	< 0.00040	0.00040		mg/L	0.00013	06/20/24 12:36	B24F0892	SAS	1
Anions by Ion Chromatography									
Method: SW9056A									
Chloride	**29.1**	0.500		mg/L	0.200	06/23/24 13:15	B24F1019	EH1	10
Fluoride	**0.252**	0.250		mg/L	0.100	06/23/24 13:15	B24F1019	EH1	10
Sulfate	**156**	1.50		mg/L	0.500	06/23/24 13:15	B24F1019	EH1	10
Wet Chemistry									
Method: SM4500-CN E 2011									
Cyanide	< 0.0200	0.0200		mg/L	0.00500	06/24/24 17:19	B24F1079	LN2	1
Method: E1664B									
Oil and Grease (HEM)	< 4.00	4.00		mg/L	1.40	06/24/24 08:30	B24F0937	KW1	1
Method: Modified 4500-NO3 E/ HACH 8171									
Nitrogen, Nitrate/Nitrite (as N)	< 0.500	0.500		mg/L	0.200	06/24/24 14:35	B24F1026	KW1	1
Method: SM2320 B 2011									
Alkalinity, Total (As CaCO3)	**268**	10.0		mg CaCO3/L	2.40	06/25/24 15:06	B24F1155	CC2	1
Method: SM4500-NH3-B-C 2011									
Ammonia	< 1.03	1.03		mg/L	0.0221	06/24/24 13:40	B24F1072	ES2	1.4735
Method: SM4500-P E 2011									
Phosphorus, Total (as P)	< 0.100	0.100		mg/L	0.0200	06/25/24 13:50	B24F1140	ES2	1
Method: SW9065									
Phenolics, Total Recoverable	< 0.0150	0.0150		mg/L	0.00730	06/21/24 13:45	B24F0997	LN2	1

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Dates Report

Client: Tetra Tech
Project: 2024 Water Analysis
Tinley Park, IL
Work Order: O24F0847

Report Date: 06/26/2024

Sample ID	Client Sample ID	Collection	Matrix	Test Name	Leached Prep Date	Prep Date	Analysis Date	Batch ID	Sequence
O24F0847-01	TP-L-SW	06/18/24	Water	Mercury, Total CCVA		06/20/24 08:37	06/20/24 12:36	B24F0892	S24F0474
				ICP-MS Metals, Total		06/20/24 10:33	06/20/24 13:54	B24F0901	S24F0510
				Fats, Oils, & Grease (HEM)		06/20/24 15:29	06/24/24 08:30	B24F0937	
				Semivolatile Organic Compounds by GC/MS		06/21/24 08:00	06/21/24 23:28	B24F0955	S24F0577
				Polychlorinated Biphenyls by GC/ECD		06/21/24 13:50	06/24/24 23:45	B24F0972	S24F0625
				Phenol, Total		06/20/24 13:30	06/21/24 13:45	B24F0997	S24F0541
				Volatile Organic Compounds by GC/MS		06/20/24 12:52	06/20/24 16:58	B24F1010	S24F0553
				Nitrogen, Nitrate/Nitrite as N		06/24/24 08:17	06/24/24 14:35	B24F1026	S24F0565
				Ammonia (NH3) as N, Total		06/24/24 10:30	06/24/24 13:40	B24F1072	
				Cyanide, Total		06/24/24 10:30	06/24/24 17:19	B24F1079	S24F0582
				Alkalinity as CaCO3		06/25/24 15:06	06/25/24 15:06	B24F1155	
O24F0847-01 DL1				Calculated Hardness by ICPMS		06/20/24 10:33	06/20/24 18:18	B24F0901	S24F0510
				Calculated Hardness by ICPMS		06/20/24 10:33	06/20/24 13:56		
O24F0847-01 RX1				Phosphorous, Total (Manual)		06/24/24 01:15	06/25/24 13:50	B24F1140	S24F0623
O24F0847-01 RX2				Anions by IC 28 day hold		06/22/24 17:24	06/23/24 13:15	B24F1019	S24F0566

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Quality Control

Client: Tom Hahne
Project: 2024 Water Analysis
Tinley Park, IL
Work Order: O24F0847

Report Date: 06/26/2024
Matrix: Water

Volatile Organic Compounds by GC/MS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual	DF
Batch: B24F1010 - SW5030											
(B24F1010-BLK1), Blank				*Prepared: 06/20/2024 12:52 Analyzed: 06/20/2024 16:31*							
1,1,1-Trichloroethane	< 0.00400	0.00400	mg/L								1
1,1,2,2-Tetrachloroethane	< 0.00400	0.00400	mg/L								1
1,1,2-Trichloroethane	< 0.00400	0.00400	mg/L								1
1,1-Dichloroethane	< 0.00200	0.00200	mg/L								1
1,1-Dichloroethene	< 0.00400	0.00400	mg/L								1
1,2-Dichloroethane	< 0.00400	0.00400	mg/L								1
1,2-Dichloropropane	< 0.00400	0.00400	mg/L								1
2-Butanone	< 0.0280	0.0280	mg/L								1
2-Hexanone	< 0.0280	0.0280	mg/L								1
4-Methyl-2-pentanone	< 0.0280	0.0280	mg/L								1
Acetone	< 0.0700	0.0700	mg/L								1
Benzene	< 0.00200	0.00200	mg/L								1
Bromodichloromethane	< 0.00200	0.00200	mg/L								1
Bromoform	< 0.00400	0.00400	mg/L								1
Bromomethane	< 0.0400	0.0400	mg/L								1
Carbon disulfide	< 0.00400	0.00400	mg/L								1
Carbon tetrachloride	< 0.0200	0.0200	mg/L								1
Chlorobenzene	< 0.00200	0.00200	mg/L								1
Chloroethane	< 0.00400	0.00400	mg/L								1
Chloroform	< 0.00400	0.00400	mg/L								1
Chloromethane	< 0.00800	0.00800	mg/L								1
cis-1,2-Dichloroethene	< 0.00400	0.00400	mg/L								1
cis-1,3-Dichloropropene	< 0.00400	0.00400	mg/L								1
Dibromochloromethane	< 0.00400	0.00400	mg/L								1
Ethylbenzene	< 0.00400	0.00400	mg/L								1
Methyl tert-butyl ether	< 0.00400	0.00400	mg/L								1
Methylene chloride	< 0.0200	0.0200	mg/L								1
Styrene	< 0.00800	0.00800	mg/L								1
Tetrachloroethene	< 0.00400	0.00400	mg/L								1
Toluene	< 0.00400	0.00400	mg/L								1
trans-1,2-Dichloroethene	< 0.00400	0.00400	mg/L								1
trans-1,3-Dichloropropene	< 0.00800	0.00800	mg/L								1
Trichloroethene	< 0.00400	0.00400	mg/L								1
Vinyl chloride	< 0.00400	0.00400	mg/L								1
Xylenes, Total	< 0.0120	0.0120	mg/L								1
Surrogate: Dibromofluoromethane	*18.4*		*ug/L*	*20.0*		*92*	*85-123*				1
Surrogate: 1,2-Dichloroethane-d4	*19.0*		*ug/L*	*20.0*		*95*	*86-119*				1
Surrogate: Toluene-d8	*20.0*		*ug/L*	*20.0*		*100*	*91-109*				1
Surrogate: 4-Bromofluorobenzene	*9.92*		*ug/L*	*10.0*		*99*	*79-114*				1
Surrogate: 1,2-Dichlorobenzene-d4	*19.9*		*ug/L*	*20.0*		*99*	*91-127*				1

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Quality Control

(Continued)

Client: Tom Hahne
Project: 2024 Water Analysis
Tinley Park, IL
Work Order: O24F0847

Report Date: 06/26/2024
Matrix: Water

Volatile Organic Compounds by GC/MS

(Continued)

Batch: B24F1010 - SW5030 *(Continued)*

(B24F1010-BS1), LCS *Prepared: 06/20/2024 12:52 Analyzed: 06/20/2024 15:35*

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual	DF
1,1,1-Trichloroethane	0.0143	0.00400	mg/L	0.0150		95	70-130				1
1,1,2,2-Tetrachloroethane	0.0136	0.00400	mg/L	0.0150		91	70-130				1
1,1,2-Trichloroethane	0.0143	0.00400	mg/L	0.0150		96	70-130				1
1,1-Dichloroethane	0.0136	0.00200	mg/L	0.0150		91	70-130				1
1,1-Dichloroethene	0.0133	0.00400	mg/L	0.0150		88	70-130				1
1,2-Dichloroethane	0.0140	0.00400	mg/L	0.0150		93	70-130				1
1,2-Dichloropropane	0.0143	0.00400	mg/L	0.0150		95	70-130				1
2-Butanone	0.0495	0.0280	mg/L	0.0525		94	70-130				1
2-Hexanone	0.0507	0.0280	mg/L	0.0525		96	70-130				1
4-Methyl-2-pentanone	0.0498	0.0280	mg/L	0.0525		95	70-130				1
Acetone	0.0463	0.0700	mg/L	0.0525		88	50-150				1
Benzene	0.0147	0.00200	mg/L	0.0150		98	70-130				1
Bromodichloromethane	0.0144	0.00200	mg/L	0.0150		96	70-130				1
Bromoform	0.0138	0.00400	mg/L	0.0150		92	70-130				1
Bromomethane	0.0193	0.0400	mg/L	0.0150		128	70-130				1
Carbon disulfide	0.0161	0.00400	mg/L	0.0150		107	70-130				1
Carbon tetrachloride	0.0146	0.0200	mg/L	0.0150		98	70-130				1
Chlorobenzene	0.0142	0.00200	mg/L	0.0150		95	70-130				1
Chloroethane	0.0145	0.00400	mg/L	0.0150		97	70-130				1
Chloroform	0.0137	0.00400	mg/L	0.0150		91	70-130				1
Chloromethane	0.0146	0.00800	mg/L	0.0150		98	70-130				1
cis-1,2-Dichloroethene	0.0141	0.00400	mg/L	0.0150		94	70-130				1
cis-1,3-Dichloropropene	0.0143	0.00400	mg/L	0.0150		96	70-130				1
Dibromochloromethane	0.0140	0.00400	mg/L	0.0150		93	70-130				1
Ethylbenzene	0.0142	0.00400	mg/L	0.0150		95	70-130				1
Methyl tert-butyl ether	0.0131	0.00400	mg/L	0.0150		87	50-150				1
Methylene chloride	0.0155	0.0200	mg/L	0.0150		104	70-130				1
Styrene	0.0141	0.00800	mg/L	0.0150		94	70-130				1
Tetrachloroethene	0.0137	0.00400	mg/L	0.0150		91	70-130				1
Toluene	0.0145	0.00400	mg/L	0.0150		97	70-130				1
trans-1,2-Dichloroethene	0.0139	0.00400	mg/L	0.0150		93	70-130				1
trans-1,3-Dichloropropene	0.0141	0.00800	mg/L	0.0150		94	70-130				1
Trichloroethene	0.0149	0.00400	mg/L	0.0150		99	70-130				1
Vinyl chloride	0.0143	0.00400	mg/L	0.0150		95	70-130				1
Xylenes, Total	0.0424	0.0120	mg/L	0.0450		94	70-130				1
Surrogate: Dibromofluoromethane	*18.7*		*ug/L*	*20.0*		*93*	*85-123*				1
Surrogate: 1,2-Dichloroethane-d4	*18.4*		*ug/L*	*20.0*		*92*	*86-119*				1
Surrogate: Toluene-d8	*20.0*		*ug/L*	*20.0*		*100*	*91-109*				1
Surrogate: 4-Bromofluorobenzene	*9.89*		*ug/L*	*10.0*		*99*	*79-114*				1

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Quality Control

(Continued)

Client: Tom Hahne
Project: 2024 Water Analysis
Tinley Park, IL
Work Order: O24F0847

Report Date: 06/26/2024
Matrix: Water

Volatile Organic Compounds by GC/MS

(Continued)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual	DF
Batch: B24F1010 - SW5030 *(Continued)*											
(B24F1010-BS1), LCS (Continued)				*Prepared: 06/20/2024 12:52*			*Analyzed: 06/20/2024 15:35*				
Surrogate: 1,2-Dichlorobenzene-d4	*19.6*		*ug/L*	*20.0*		*98*	*91-127*				1
(B24F1010-BSD1), LCS Dup				*Prepared: 06/20/2024 12:52*			*Analyzed: 06/20/2024 16:03*				
1,1,1-Trichloroethane	0.0146	0.00400	mg/L	0.0150		97	70-130	2	20		1
1,1,2,2-Tetrachloroethane	0.0135	0.00400	mg/L	0.0150		90	70-130	0.7	20		1
1,1,2-Trichloroethane	0.0137	0.00400	mg/L	0.0150		91	70-130	5	20		1
1,1-Dichloroethane	0.0138	0.00200	mg/L	0.0150		92	70-130	2	20		1
1,1-Dichloroethene	0.0134	0.00400	mg/L	0.0150		89	70-130	0.8	20		1
1,2-Dichloroethane	0.0138	0.00400	mg/L	0.0150		92	70-130	1	20		1
1,2-Dichloropropane	0.0141	0.00400	mg/L	0.0150		94	70-130	1	20		1
2-Butanone	0.0462	0.0280	mg/L	0.0525		88	70-130	7	20		1
2-Hexanone	0.0493	0.0280	mg/L	0.0525		94	70-130	3	20		1
4-Methyl-2-pentanone	0.0507	0.0280	mg/L	0.0525		97	70-130	2	20		1
Acetone	0.0471	0.0700	mg/L	0.0525		90	50-150	2	20		1
Benzene	0.0145	0.00200	mg/L	0.0150		97	70-130	1	20		1
Bromodichloromethane	0.0142	0.00200	mg/L	0.0150		95	70-130	2	20		1
Bromoform	0.0144	0.00400	mg/L	0.0150		96	70-130	4	20		1
Bromomethane	0.0188	0.0400	mg/L	0.0150		125	70-130	3	20		1
Carbon disulfide	0.0160	0.00400	mg/L	0.0150		107	70-130	0.06	20		1
Carbon tetrachloride	0.0146	0.0200	mg/L	0.0150		97	70-130	0.5	20		1
Chlorobenzene	0.0140	0.00200	mg/L	0.0150		93	70-130	2	20		1
Chloroethane	0.0150	0.00400	mg/L	0.0150		100	70-130	4	20		1
Chloroform	0.0137	0.00400	mg/L	0.0150		91	70-130	0.4	20		1
Chloromethane	0.0147	0.00800	mg/L	0.0150		98	70-130	0.4	20		1
cis-1,2-Dichloroethene	0.0140	0.00400	mg/L	0.0150		93	70-130	0.9	20		1
cis-1,3-Dichloropropene	0.0148	0.00400	mg/L	0.0150		98	70-130	3	20		1
Dibromochloromethane	0.0138	0.00400	mg/L	0.0150		92	70-130	2	20		1
Ethylbenzene	0.0144	0.00400	mg/L	0.0150		96	70-130	0.8	20		1
Methyl tert-butyl ether	0.0136	0.00400	mg/L	0.0150		90	50-150	4	20		1
Methylene chloride	0.0158	0.0200	mg/L	0.0150		105	70-130	2	20		1
Styrene	0.0140	0.00800	mg/L	0.0150		94	70-130	0.4	20		1
Tetrachloroethene	0.0136	0.00400	mg/L	0.0150		90	70-130	0.7	20		1
Toluene	0.0144	0.00400	mg/L	0.0150		96	70-130	0.9	20		1
trans-1,2-Dichloroethene	0.0136	0.00400	mg/L	0.0150		91	70-130	2	20		1
trans-1,3-Dichloropropene	0.0143	0.00800	mg/L	0.0150		96	70-130	2	20		1
Trichloroethene	0.0150	0.00400	mg/L	0.0150		100	70-130	0.4	20		1
Vinyl chloride	0.0147	0.00400	mg/L	0.0150		98	70-130	3	20		1
Xylenes, Total	0.0421	0.0120	mg/L	0.0450		93	70-130	0.7	20		1
Surrogate: Dibromofluoromethane	*19.1*		*ug/L*	*20.0*		*96*	*85-123*				1

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Quality Control

(Continued)

Client: Tom Hahne
Project: 2024 Water Analysis
Tinley Park, IL
Work Order: O24F0847

Report Date: 06/26/2024
Matrix: Water

Volatile Organic Compounds by GC/MS

(Continued)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual	DF
Batch: B24F1010 - SW5030 *(Continued)*											
(B24F1010-BSD1), LCS Dup (Continued)				*Prepared: 06/20/2024 12:52*			*Analyzed: 06/20/2024 16:03*				
Surrogate: 1,2-Dichloroethane-d4	*19.4*		*ug/L*	*20.0*		*97*	*86-119*				1
Surrogate: Toluene-d8	*20.1*		*ug/L*	*20.0*		*101*	*91-109*				1
Surrogate: 4-Bromofluorobenzene	*10.1*		*ug/L*	*10.0*		*101*	*79-114*				1
Surrogate: 1,2-Dichlorobenzene-d4	*19.3*		*ug/L*	*20.0*		*97*	*91-127*				1

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Quality Control

(Continued)

Client: Tom Hahne
Project: 2024 Water Analysis
Tinley Park, IL
Work Order: O24F0847

Report Date: 06/26/2024
Matrix: Water

Semivolatile Organic Compounds by GC/MS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual	DF
Batch: B24F0955 - SW3510											
(B24F0955-BLK1), Blank				*Prepared: 06/21/2024 08:00*			*Analyzed: 06/21/2024 18:34*				
1,2,4-Trichlorobenzene	< 0.000400	0.000400	mg/L								1
1,2-Dichlorobenzene	< 0.000400	0.000400	mg/L								1
1,3-Dichlorobenzene	< 0.000400	0.000400	mg/L								1
1,4-Dichlorobenzene	< 0.000400	0.000400	mg/L								1
2,4,5-Trichlorophenol	< 0.000200	0.000200	mg/L								1
2,4,6-Trichlorophenol	< 0.000200	0.000200	mg/L								1
2,4-Dichlorophenol	< 0.000200	0.000200	mg/L								1
2,4-Dimethylphenol	< 0.000400	0.000400	mg/L								1
2,4-Dinitrophenol	< 0.00600	0.00600	mg/L								1
2,4-Dinitrotoluene	< 0.000400	0.000400	mg/L								1
2,6-Dinitrotoluene	< 0.000200	0.000200	mg/L								1
2-Chloronaphthalene	< 0.000120	0.000120	mg/L								1
2-Chlorophenol	< 0.000200	0.000200	mg/L								1
2-Methylnaphthalene	< 0.000800	0.000800	mg/L								1
2-Methylphenol	< 0.000200	0.000200	mg/L								1
2-Nitroaniline	< 0.000600	0.000600	mg/L								1
2-Nitrophenol	< 0.000200	0.000200	mg/L								1
3,3´-Dichlorobenzidine	< 0.00400	0.00400	mg/L								1
3 & 4-Methylphenol	< 0.000200	0.000200	mg/L								1
3-Nitroaniline	< 0.000400	0.000400	mg/L								1
4,6-Dinitro-2-methylphenol	< 0.00300	0.00300	mg/L								1
4-Bromophenyl-phenylether	< 0.000200	0.000200	mg/L								1
4-Chloro-3-methylphenol	< 0.000100	0.000100	mg/L								1
4-Chloroaniline	< 0.000120	0.000120	mg/L								1
4-Chlorophenyl-phenylether	< 0.000200	0.000200	mg/L								1
4-Nitroaniline	< 0.00600	0.00600	mg/L								1
4-Nitrophenol	< 0.00300	0.00300	mg/L								1
Aniline	< 0.000200	0.000200	mg/L								1
Benzidine	< 0.0160	0.0160	mg/L								1
Benzoic acid	< 0.00800	0.00800	mg/L								1
Benzyl alcohol	< 0.000800	0.000800	mg/L								1
Bis(2-chloroethoxy)methane	< 0.000200	0.000200	mg/L								1
Bis(2-chloroethyl)ether	< 0.000200	0.000200	mg/L								1
Bis(2-chloroisopropyl)ether	< 0.000200	0.000200	mg/L								1
Bis(2-ethylhexyl)phthalate	< 0.000200	0.000200	mg/L								1
Butyl benzyl phthalate	< 0.000200	0.000200	mg/L								1
Carbazole	< 0.000200	0.000200	mg/L								1
Dibenzofuran	< 0.000120	0.000120	mg/L								1
Diethyl phthalate	< 0.00120	0.00120	mg/L								1
Dimethyl phthalate	< 0.000600	0.000600	mg/L								1

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Quality Control

(Continued)

Client: Tom Hahne
Project: 2024 Water Analysis
Tinley Park, IL
Work Order: O24F0847

Report Date: 06/26/2024
Matrix: Water

Semivolatile Organic Compounds by GC/MS

(Continued)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual	DF
Batch: B24F0955 - SW3510 *(Continued)*											
(B24F0955-BLK1), Blank (Continued)				*Prepared: 06/21/2024 08:00*			*Analyzed: 06/21/2024 18:34*				
Di-n-butyl phthalate	< 0.00200	0.00200	mg/L								1
Di-n-octyl phthalate	< 0.00200	0.00200	mg/L								1
Hexachlorobenzene	< 0.000200	0.000200	mg/L								1
Hexachlorobutadiene	< 0.000200	0.000200	mg/L								1
Hexachlorocyclopentadiene	< 0.00300	0.00300	mg/L								1
Hexachloroethane	< 0.000200	0.000200	mg/L								1
Isophorone	< 0.000120	0.000120	mg/L								1
Nitrobenzene	< 0.000120	0.000120	mg/L								1
N-Nitrosodimethylamine	< 0.000200	0.000200	mg/L								1
N-Nitrosodi-n-propylamine	< 0.000200	0.000200	mg/L								1
N-Nitrosodiphenylamine	< 0.000120	0.000120	mg/L								1
Pentachlorophenol	< 0.000100	0.000100	mg/L								1
Phenol	< 0.000200	0.000200	mg/L								1
Pyridine	< 0.00200	0.00200	mg/L								1
Acenaphthene	< 0.000120	0.000120	mg/L								1
Acenaphthylene	< 0.000120	0.000120	mg/L								1
Anthracene	< 0.000120	0.000120	mg/L								1
Benzo(a)anthracene	< 0.000120	0.000120	mg/L								1
Benzo(a)pyrene	< 0.000400	0.000400	mg/L								1
Benzo(b)fluoranthene	< 0.000400	0.000400	mg/L								1
Benzo(g,h,i)perylene	< 0.000400	0.000400	mg/L								1
Benzo(k)fluoranthene	< 0.000400	0.000400	mg/L								1
Chrysene	< 0.000120	0.000120	mg/L								1
Dibenzo(a,h)anthracene	< 0.000400	0.000400	mg/L								1
Fluoranthene	< 0.000200	0.000200	mg/L								1
Fluorene	< 0.000120	0.000120	mg/L								1
Indeno(1,2,3-cd)pyrene	< 0.000400	0.000400	mg/L								1
Naphthalene	< 0.000800	0.000800	mg/L								1
Phenanthrene	< 0.000200	0.000200	mg/L								1
Pyrene	< 0.000200	0.000200	mg/L								1
Surrogate: 2-Fluorophenol	*6.65*		*ug/L*	*13.3*		*50*	*21-110*				1
Surrogate: Phenol-d5	*5.04*		*ug/L*	*13.3*		*38*	*10-110*				1
Surrogate: Nitrobenzene-d5	*9.96*		*ug/L*	*13.3*		*75*	*35-114*				1
Surrogate: 2-Fluorobiphenyl	*8.49*		*ug/L*	*13.3*		*64*	*43-116*				1
Surrogate: 2,4,6-Tribromophenol	*8.94*		*ug/L*	*13.3*		*67*	*10-123*				1
Surrogate: 4-Terphenyl-d14	*10.5*		*ug/L*	*13.3*		*79*	*33-141*				1
(B24F0955-BS1), LCS				*Prepared: 06/21/2024 08:00*			*Analyzed: 06/21/2024 19:16*				
1,2,4-Trichlorobenzene	0.0345	0.00200	mg/L	0.0500		69	21-101				1

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Quality Control

(Continued)

Client: Tom Hahne
Project: 2024 Water Analysis
Tinley Park, IL
Work Order: O24F0847

Report Date: 06/26/2024
Matrix: Water

Semivolatile Organic Compounds by GC/MS

(Continued)

Batch: B24F0955 - SW3510 *(Continued)*

(B24F0955-BS1), LCS (Continued) *Prepared: 06/21/2024 08:00 Analyzed: 06/21/2024 19:16*

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual	DF
1,2-Dichlorobenzene	0.0334	0.00200	mg/L	0.0500		67	22-97				1
1,3-Dichlorobenzene	0.0328	0.00200	mg/L	0.0500		66	20-96				1
1,4-Dichlorobenzene	0.0329	0.00200	mg/L	0.0500		66	21-97				1
2,4,5-Trichlorophenol	0.0428	0.00100	mg/L	0.0500		86	61-126				1
2,4,6-Trichlorophenol	0.0411	0.00100	mg/L	0.0500		82	58-124				1
2,4-Dichlorophenol	0.0382	0.00100	mg/L	0.0500		76	58-117				1
2,4-Dimethylphenol	0.0383	0.00200	mg/L	0.0500		77	36-112				1
2,4-Dinitrophenol	0.0508	0.0300	mg/L	0.0500		102	54-113				1
2,4-Dinitrotoluene	0.0467	0.00200	mg/L	0.0500		93	63-124				1
2,6-Dinitrotoluene	0.0460	0.00100	mg/L	0.0500		92	61-125				1
2-Chloronaphthalene	0.0390	0.000600	mg/L	0.0500		78	45-113				1
2-Chlorophenol	0.0380	0.00100	mg/L	0.0500		76	56-109				1
2-Methylnaphthalene	0.0380	0.00400	mg/L	0.0500		76	38-112				1
2-Methylphenol	0.0364	0.00100	mg/L	0.0500		73	55-105				1
2-Nitroaniline	0.0498	0.00300	mg/L	0.0500		100	64-127				1
2-Nitrophenol	0.0434	0.00100	mg/L	0.0500		87	55-118				1
3,3´-Dichlorobenzidine	0.0644	0.0200	mg/L	0.0800		81	62-104				1
3 & 4-Methylphenol	0.0345	0.00100	mg/L	0.0500		69	56-102				1
3-Nitroaniline	0.0476	0.00200	mg/L	0.0500		95	66-122				1
4,6-Dinitro-2-methylphenol	0.0550	0.0150	mg/L	0.0500		110	65-131				1
4-Bromophenyl-phenylether	0.0425	0.00100	mg/L	0.0500		85	59-104				1
4-Chloro-3-methylphenol	0.0419	0.000500	mg/L	0.0500		84	65-119				1
4-Chloroaniline	0.0386	0.000600	mg/L	0.0500		77	62-116				1
4-Chlorophenyl-phenylether	0.0412	0.00100	mg/L	0.0500		82	60-118				1
4-Nitroaniline	0.0456	0.0300	mg/L	0.0500		91	67-128				1
4-Nitrophenol	0.0237	0.0150	mg/L	0.0500		47	35-68				1
Aniline	0.0371	0.00100	mg/L	0.0500		74	24-102				1
Benzidine	0.0624	0.0800	mg/L	0.0800		78	17-134				1
Benzoic acid	0.0408	0.0400	mg/L	0.160		26	7-112				1
Benzyl alcohol	0.0368	0.00400	mg/L	0.0500		74	31-112				1
Bis(2-chloroethoxy)methane	0.0391	0.00100	mg/L	0.0500		78	58-114				1
Bis(2-chloroethyl)ether	0.0371	0.00100	mg/L	0.0500		74	56-109				1
Bis(2-chloroisopropyl)ether	0.0404	0.00100	mg/L	0.0500		81	54-112				1
Bis(2-ethylhexyl)phthalate	0.0445	0.00100	mg/L	0.0500		89	67-114				1
Butyl benzyl phthalate	0.0449	0.00100	mg/L	0.0500		90	67-113				1
Carbazole	0.0444	0.00100	mg/L	0.0500		89	65-106				1
Dibenzofuran	0.0417	0.000600	mg/L	0.0500		83	60-112				1
Diethyl phthalate	0.0431	0.00600	mg/L	0.0500		86	63-117				1
Dimethyl phthalate	0.0427	0.000600	mg/L	0.0500		85	64-117				1
Di-n-butyl phthalate	0.0438	0.0100	mg/L	0.0500		88	66-114				1

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Quality Control

(Continued)

Client: Tom Hahne
Project: 2024 Water Analysis
Tinley Park, IL
Work Order: O24F0847

Report Date: 06/26/2024
Matrix: Water

Semivolatile Organic Compounds by GC/MS

(Continued)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual	DF
Batch: B24F0955 - SW3510 *(Continued)*											
(B24F0955-BS1), LCS (Continued)				*Prepared: 06/21/2024 08:00*			*Analyzed: 06/21/2024 19:16*				
Di-n-octyl phthalate	0.0492	0.0100	mg/L	0.0500		98	65-115				1
Hexachlorobenzene	0.0420	0.00100	mg/L	0.0500		84	61-112				1
Hexachlorobutadiene	0.0314	0.00100	mg/L	0.0500		63	11-100				1
Hexachlorocyclopentadiene	0.0347	0.0150	mg/L	0.0500		69	12-95				1
Hexachloroethane	0.0322	0.00100	mg/L	0.0500		64	13-98				1
Isophorone	0.0400	0.000600	mg/L	0.0500		80	62-113				1
Nitrobenzene	0.0411	0.000600	mg/L	0.0500		82	57-111				1
N-Nitrosodimethylamine	0.0301	0.00100	mg/L	0.0500		60	25-110				1
N-Nitrosodi-n-propylamine	0.0392	0.00100	mg/L	0.0500		78	56-115				1
N-Nitrosodiphenylamine	0.0436	0.000600	mg/L	0.0500		87	64-111				1
Pentachlorophenol	0.0413	0.000500	mg/L	0.0500		83	54-109				1
Phenol	0.0214	0.00100	mg/L	0.0500		43	34-71				1
Pyridine	0.0293	0.0100	mg/L	0.0500		59	4-65				1
Acenaphthene	0.0404	0.000600	mg/L	0.0500		81	58-115				1
Acenaphthylene	0.0405	0.000600	mg/L	0.0500		81	49-116				1
Anthracene	0.0439	0.000600	mg/L	0.0500		88	62-124				1
Benzo(a)anthracene	0.0430	0.000600	mg/L	0.0500		86	66-115				1
Benzo(a)pyrene	0.0426	0.00200	mg/L	0.0500		85	55-115				1
Benzo(b)fluoranthene	0.0428	0.00200	mg/L	0.0500		86	59-112				1
Benzo(g,h,i)perylene	0.0431	0.00200	mg/L	0.0500		86	62-112				1
Benzo(k)fluoranthene	0.0421	0.00200	mg/L	0.0500		84	50-122				1
Chrysene	0.0430	0.000600	mg/L	0.0500		86	64-114				1
Dibenzo(a,h)anthracene	0.0420	0.00200	mg/L	0.0500		84	59-112				1
Fluoranthene	0.0432	0.00100	mg/L	0.0500		86	60-109				1
Fluorene	0.0423	0.000600	mg/L	0.0500		85	64-116				1
Indeno(1,2,3-cd)pyrene	0.0431	0.00200	mg/L	0.0500		86	62-134				1
Naphthalene	0.0362	0.00400	mg/L	0.0500		72	32-109				1
Phenanthrene	0.0438	0.00100	mg/L	0.0500		88	61-114				1
Pyrene	0.0431	0.00100	mg/L	0.0500		86	63-109				1
Surrogate: 2-Fluorophenol	*36.9*		*ug/L*	*66.7*		*55*	*21-110*				1
Surrogate: Phenol-d5	*25.7*		*ug/L*	*66.7*		*39*	*10-110*				1
Surrogate: Nitrobenzene-d5	*56.4*		*ug/L*	*66.7*		*84*	*35-114*				1
Surrogate: 2-Fluorobiphenyl	*48.9*		*ug/L*	*66.7*		*73*	*43-116*				1
Surrogate: 2,4,6-Tribromophenol	*56.4*		*ug/L*	*66.7*		*85*	*10-123*				1
Surrogate: 4-Terphenyl-d14	*56.4*		*ug/L*	*66.7*		*85*	*33-141*				1
(B24F0955-MS1), Matrix Spike				**ource: O24F0737-01RX1**			*Prepared: 06/21/2024 08:00*	*Analyzed: 06/21/2024 19:37*			
1,2,4-Trichlorobenzene	0.359	0.0194	mg/L	0.484		74	20-101				1
1,2-Dichlorobenzene	0.334	0.0194	mg/L	0.484		69	21-91				1

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Quality Control

(Continued)

Client: Tom Hahne
Project: 2024 Water Analysis
Tinley Park, IL
Work Order: O24F0847

Report Date: 06/26/2024
Matrix: Water

Semivolatile Organic Compounds by GC/MS

(Continued)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual	DF
Batch: B24F0955 - SW3510 *(Continued)*											
(B24F0955-MS1), Matrix Spike (Continued)				**ource: O24F0737-01RX1**		*Prepared: 06/21/2024 08:00*		*Analyzed: 06/21/2024 19:37*			
1,3-Dichlorobenzene	0.321	0.0194	mg/L	0.484		66	18-96				1
1,4-Dichlorobenzene	0.325	0.0194	mg/L	0.484		67	61-100				1
2,4,5-Trichlorophenol	0.432	0.00969	mg/L	0.484		89	60-126				1
2,4,6-Trichlorophenol	0.417	0.00969	mg/L	0.484		86	57-124				1
2,4-Dichlorophenol	0.404	0.00969	mg/L	0.484		83	57-117				1
2,4-Dimethylphenol	0.402	0.0194	mg/L	0.484		83	35-112				1
2,4-Dinitrophenol	0.567	0.291	mg/L	0.484		117	53-113			S	1
2,4-Dinitrotoluene	0.466	0.0194	mg/L	0.484		96	62-124				1
2,6-Dinitrotoluene	0.450	0.00969	mg/L	0.484		93	60-125				1
2-Chloronaphthalene	0.401	0.00581	mg/L	0.484		83	44-113				1
2-Chlorophenol	0.396	0.00969	mg/L	0.484		82	55-109				1
2-Methylnaphthalene	0.393	0.0388	mg/L	0.484		81	37-112				1
2-Methylphenol	0.387	0.00969	mg/L	0.484		80	54-105				1
2-Nitroaniline	0.498	0.0291	mg/L	0.484		103	63-127				1
2-Nitrophenol	0.469	0.00969	mg/L	0.484		97	54-118				1
3,3´-Dichlorobenzidine	0.640	0.194	mg/L	0.775		83	62-105				1
3 & 4-Methylphenol	0.364	0.00969	mg/L	0.484		75	55-102				1
3-Nitroaniline	0.471	0.0194	mg/L	0.484		97	66-122				1
4,6-Dinitro-2-methylphenol	0.544	0.145	mg/L	0.484		112	66-131				1
4-Bromophenyl-phenylether	0.411	0.00969	mg/L	0.484		85	59-105				1
4-Chloro-3-methylphenol	0.418	0.00484	mg/L	0.484		86	66-119				1
4-Chloroaniline	0.398	0.00581	mg/L	0.484		82	61-116				1
4-Chlorophenyl-phenylether	0.412	0.00969	mg/L	0.484		85	60-118				1
4-Nitroaniline	0.450	0.291	mg/L	0.484		93	67-128				1
4-Nitrophenol	0.275	0.145	mg/L	0.484		57	35-68				1
Aniline	0.384	0.00969	mg/L	0.484		79	24-102				1
Benzidine	0.588	0.775	mg/L	0.775		76	17-134				1
Benzoic acid	0.836	0.388	mg/L	1.55		54	7-112				1
Benzyl alcohol	0.395	38.8	mg/L	0.484		82	31-112				1
Bis(2-chloroethoxy)methane	0.409	0.00969	mg/L	0.484		84	49-114				1
Bis(2-chloroethyl)ether	0.389	0.00969	mg/L	0.484		80	48-109				1
Bis(2-chloroisopropyl)ether	0.417	0.00969	mg/L	0.484		86	43-112				1
Bis(2-ethylhexyl)phthalate	0.440	0.00969	mg/L	0.484		91	64-114				1
Butyl benzyl phthalate	0.463	0.00969	mg/L	0.484		95	64-113				1
Carbazole	0.428	0.00969	mg/L	0.484		88	62-106				1
Dibenzofuran	0.418	0.00581	mg/L	0.484		86	50-112				1
Diethyl phthalate	0.419	0.0581	mg/L	0.484		86	58-117				1
Dimethyl phthalate	0.421	0.00581	mg/L	0.484		87	59-117				1
Di-n-butyl phthalate	0.435	0.0969	mg/L	0.484		90	66-114				1
Di-n-octyl phthalate	0.490	0.0969	mg/L	0.484		101	62-115				1

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Quality Control

(Continued)

Client: Tom Hahne
Project: 2024 Water Analysis
Tinley Park, IL
Work Order: O24F0847

Report Date: 06/26/2024
Matrix: Water

Semivolatile Organic Compounds by GC/MS

(Continued)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual	DF
Batch: B24F0955 - SW3510 *(Continued)*											
(B24F0955-MS1), Matrix Spike (Continued)				**ource: O24F0737-01RX1**		*Prepared: 06/21/2024 08:00*		*Analyzed: 06/21/2024 19:37*			
Hexachlorobenzene	0.402	0.00969	mg/L	0.484		83	52-113				1
Hexachlorobutadiene	0.331	0.00969	mg/L	0.484		68	10-100				1
Hexachlorocyclopentadiene	0.401	0.145	mg/L	0.484		83	10-95				1
Hexachloroethane	0.313	0.00969	mg/L	0.484		65	11-98				1
Isophorone	0.413	0.00581	mg/L	0.484		85	55-113				1
Nitrobenzene	0.438	0.00581	mg/L	0.484		90	48-113				1
N-Nitrosodimethylamine	0.328	0.00969	mg/L	0.484		68	25-110				1
N-Nitrosodi-n-propylamine	0.402	0.00969	mg/L	0.484		83	50-116				1
N-Nitrosodiphenylamine	0.419	0.00581	mg/L	0.484		86	62-114				1
Pentachlorophenol	0.410	0.00484	mg/L	0.484		85	15-115				1
Phenol	0.251	0.00969	mg/L	0.484		52	10-84				1
Pyridine	0.309	0.0969	mg/L	0.484		64	4-65				1
Acenaphthene	0.409	0.00581	mg/L	0.484		84	58-115				1
Acenaphthylene	0.408	0.00581	mg/L	0.484		84	50-116				1
Anthracene	0.426	0.00581	mg/L	0.484		88	62-124				1
Benzo(a)anthracene	0.416	0.00581	mg/L	0.484		86	64-115				1
Benzo(a)pyrene	0.412	0.0194	mg/L	0.484		85	51-115				1
Benzo(b)fluoranthene	0.414	0.0194	mg/L	0.484		85	53-112				1
Benzo(g,h,i)perylene	0.409	0.0194	mg/L	0.484		84	56-112				1
Benzo(k)fluoranthene	0.400	0.0194	mg/L	0.484		83	46-122				1
Chrysene	0.420	0.00581	mg/L	0.484		87	60-114				1
Dibenzo(a,h)anthracene	0.402	0.0194	mg/L	0.484		83	58-112				1
Fluoranthene	0.432	0.00969	mg/L	0.484		89	59-109				1
Fluorene	0.415	0.00581	mg/L	0.484		86	59-116				1
Indeno(1,2,3-cd)pyrene	0.414	0.0194	mg/L	0.484		85	61-137				1
Naphthalene	0.380	0.0388	mg/L	0.484		78	19-109				1
Phenanthrene	0.423	0.00969	mg/L	0.484		87	60-114				1
Pyrene	0.424	0.00969	mg/L	0.484		88	60-109				1
Surrogate: 2-Fluorophenol	*424*		*ug/L*	*646*		*66*	*21-110*				1
Surrogate: Phenol-d5	*314*		*ug/L*	*646*		*49*	*10-110*				1
Surrogate: Nitrobenzene-d5	*602*		*ug/L*	*646*		*93*	*35-114*				1
Surrogate: 2-Fluorobiphenyl	*518*		*ug/L*	*646*		*80*	*43-116*				1
Surrogate: 2,4,6-Tribromophenol	*560*		*ug/L*	*646*		*87*	*10-123*				1
Surrogate: 4-Terphenyl-d14	*561*		*ug/L*	*646*		*87*	*33-141*				1
(B24F0955-MSD1), Matrix Spike Dup				**ource: O24F0737-01RX1**		*Prepared: 06/21/2024 08:00*		*Analyzed: 06/21/2024 19:58*			
1,2,4-Trichlorobenzene	0.339	0.0193	mg/L	0.482		70	20-101	6	27		1
1,2-Dichlorobenzene	0.310	0.0193	mg/L	0.482		64	21-91	7	29		1
1,3-Dichlorobenzene	0.298	0.0193	mg/L	0.482		62	18-96	7	33		1

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Quality Control

(Continued)

Client: Tom Hahne
Project: 2024 Water Analysis
Tinley Park, IL
Work Order: O24F0847

Report Date: 06/26/2024
Matrix: Water

Semivolatile Organic Compounds by GC/MS

(Continued)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual	DF
Batch: B24F0955 - SW3510 *(Continued)*											
(B24F0955-MSD1), Matrix Spike Dup (Continue				**ource: O24F0737-01RX1**		*Prepared: 06/21/2024 08:00*		*Analyzed: 06/21/2024 19:58*			
1,4-Dichlorobenzene	0.302	0.0193	mg/L	0.482		63	61-100	7	32		1
2,4,5-Trichlorophenol	0.409	0.00963	mg/L	0.482		85	60-126	5	25		1
2,4,6-Trichlorophenol	0.411	0.00963	mg/L	0.482		85	57-124	2	33		1
2,4-Dichlorophenol	0.388	0.00963	mg/L	0.482		81	57-117	4	31		1
2,4-Dimethylphenol	0.384	0.0193	mg/L	0.482		80	35-112	5	32		1
2,4-Dinitrophenol	0.551	0.289	mg/L	0.482		114	53-113	3	34	S	1
2,4-Dinitrotoluene	0.450	0.0193	mg/L	0.482		93	62-124	4	26		1
2,6-Dinitrotoluene	0.439	0.00963	mg/L	0.482		91	60-125	3	24		1
2-Chloronaphthalene	0.386	0.00578	mg/L	0.482		80	44-113	4	38		1
2-Chlorophenol	0.382	0.00963	mg/L	0.482		79	55-109	4	37		1
2-Methylnaphthalene	0.380	0.0385	mg/L	0.482		79	37-112	3	38		1
2-Methylphenol	0.377	0.00963	mg/L	0.482		78	54-105	3	35		1
2-Nitroaniline	0.481	0.0289	mg/L	0.482		100	63-127	3	31		1
2-Nitrophenol	0.455	0.00963	mg/L	0.482		94	54-118	3	34		1
3,3´-Dichlorobenzidine	0.618	0.193	mg/L	0.771		80	62-105	4	29		1
3 & 4-Methylphenol	0.368	0.00963	mg/L	0.482		76	55-102	1	36		1
3-Nitroaniline	0.454	0.0193	mg/L	0.482		94	66-122	4	28		1
4,6-Dinitro-2-methylphenol	0.526	0.145	mg/L	0.482		109	66-131	3	21		1
4-Bromophenyl-phenylether	0.400	0.00963	mg/L	0.482		83	59-105	3	25		1
4-Chloro-3-methylphenol	0.407	0.00482	mg/L	0.482		84	66-119	3	22		1
4-Chloroaniline	0.385	0.00578	mg/L	0.482		80	61-116	3	27		1
4-Chlorophenyl-phenylether	0.392	0.00963	mg/L	0.482		81	60-118	5	26		1
4-Nitroaniline	0.433	0.289	mg/L	0.482		90	67-128	4	24		1
4-Nitrophenol	0.284	0.145	mg/L	0.482		59	35-68	3	31		1
Aniline	0.373	0.00963	mg/L	0.482		77	24-102	3	20		1
Benzidine	0.602	0.771	mg/L	0.771		78	17-134	2	20		1
Benzoic acid	0.879	0.385	mg/L	1.54		57	7-112	5	20		1
Benzyl alcohol	0.391	38.5	mg/L	0.482		81	31-112	1	20		1
Bis(2-chloroethoxy)methane	0.396	0.00963	mg/L	0.482		82	49-114	3	30		1
Bis(2-chloroethyl)ether	0.371	0.00963	mg/L	0.482		77	48-109	5	35		1
Bis(2-chloroisopropyl)ether	0.404	0.00963	mg/L	0.482		84	43-112	3	41		1
Bis(2-ethylhexyl)phthalate	0.423	0.00963	mg/L	0.482		88	64-114	4	27		1
Butyl benzyl phthalate	0.446	0.00963	mg/L	0.482		93	64-113	4	30		1
Carbazole	0.416	0.00963	mg/L	0.482		86	62-106	3	24		1
Dibenzofuran	0.405	0.00578	mg/L	0.482		84	50-112	3	28		1
Diethyl phthalate	0.404	0.0578	mg/L	0.482		84	58-117	4	27		1
Dimethyl phthalate	0.404	0.00578	mg/L	0.482		84	59-117	4	25		1
Di-n-butyl phthalate	0.417	0.0963	mg/L	0.482		87	66-114	4	25		1
Di-n-octyl phthalate	0.477	0.0963	mg/L	0.482		99	62-115	3	29		1
Hexachlorobenzene	0.389	0.00963	mg/L	0.482		81	52-113	4	24		1

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Quality Control

(Continued)

Client: Tom Hahne
Project: 2024 Water Analysis
Tinley Park, IL
Work Order: O24F0847

Report Date: 06/26/2024
Matrix: Water

Semivolatile Organic Compounds by GC/MS

(Continued)

Batch: B24F0955 - SW3510 *(Continued)*

(B24F0955-MSD1), Matrix Spike Dup (Continue **ource: O24F0737-01RX1** *Prepared: 06/21/2024 08:00 Analyzed: 06/21/2024 19:58*

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual	DF
Hexachlorobutadiene	0.308	0.00963	mg/L	0.482		64	10-100	7	50		1
Hexachlorocyclopentadiene	0.384	0.145	mg/L	0.482		80	10-95	4	50		1
Hexachloroethane	0.292	0.00963	mg/L	0.482		61	11-98	7	50		1
Isophorone	0.397	0.00578	mg/L	0.482		82	55-113	4	25		1
Nitrobenzene	0.414	0.00578	mg/L	0.482		86	48-113	6	33		1
N-Nitrosodimethylamine	0.328	0.00963	mg/L	0.482		68	25-110	0.2	20		1
N-Nitrosodi-n-propylamine	0.398	0.00963	mg/L	0.482		83	50-116	1	33		1
N-Nitrosodiphenylamine	0.406	0.00578	mg/L	0.482		84	62-114	3	23		1
Pentachlorophenol	0.403	0.00482	mg/L	0.482		84	15-115	2	23		1
Phenol	0.260	0.00963	mg/L	0.482		54	10-84	4	43		1
Pyridine	0.306	0.0963	mg/L	0.482		63	4-65	1	20		1
Acenaphthene	0.392	0.00578	mg/L	0.482		81	58-115	4	29		1
Acenaphthylene	0.393	0.00578	mg/L	0.482		82	50-116	4	29		1
Anthracene	0.407	0.00578	mg/L	0.482		84	62-124	5	24		1
Benzo(a)anthracene	0.396	0.00578	mg/L	0.482		82	64-115	5	26		1
Benzo(a)pyrene	0.398	0.0193	mg/L	0.482		83	51-115	3	25		1
Benzo(b)fluoranthene	0.393	0.0193	mg/L	0.482		82	53-112	5	26		1
Benzo(g,h,i)perylene	0.397	0.0193	mg/L	0.482		82	56-112	3	26		1
Benzo(k)fluoranthene	0.388	0.0193	mg/L	0.482		81	46-122	3	24		1
Chrysene	0.401	0.00578	mg/L	0.482		83	60-114	5	25		1
Dibenzo(a,h)anthracene	0.392	0.0193	mg/L	0.482		81	58-112	2	25		1
Fluoranthene	0.415	0.00963	mg/L	0.482		86	59-109	4	28		1
Fluorene	0.402	0.00578	mg/L	0.482		83	59-116	3	23		1
Indeno(1,2,3-cd)pyrene	0.405	0.0193	mg/L	0.482		84	61-137	2	26		1
Naphthalene	0.359	0.0385	mg/L	0.482		75	19-109	6	30		1
Phenanthrene	0.406	0.00963	mg/L	0.482		84	60-114	4	25		1
Pyrene	0.405	0.00963	mg/L	0.482		84	60-109	5	30		1
Surrogate: 2-Fluorophenol	*407*		*ug/L*	*643*		*63*	*21-110*				1
Surrogate: Phenol-d5	*315*		*ug/L*	*643*		*49*	*10-110*				1
Surrogate: Nitrobenzene-d5	*570*		*ug/L*	*643*		*89*	*35-114*				1
Surrogate: 2-Fluorobiphenyl	*500*		*ug/L*	*643*		*78*	*43-116*				1
Surrogate: 2,4,6-Tribromophenol	*534*		*ug/L*	*643*		*83*	*10-123*				1
Surrogate: 4-Terphenyl-d14	*536*		*ug/L*	*643*		*83*	*33-141*				1

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Quality Control

(Continued)

Client: Tom Hahne
Project: 2024 Water Analysis
Tinley Park, IL
Work Order: O24F0847

Report Date: 06/26/2024
Matrix: Water

Polychlorinated Biphenyls (PCBs) by GC/ECD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual	DF
Batch: B24F0972 - SW3510											
(B24F0972-BLK1), Blank				*Prepared: 06/21/2024 11:30 Analyzed: 06/24/2024 22:54*							
Aroclor 1016 [2C]	< 0.500	0.500	ug/L								1
Aroclor 1221 [2C]	< 0.500	0.500	ug/L								1
Aroclor 1232 [2C]	< 0.500	0.500	ug/L								1
Aroclor 1242 [2C]	< 0.500	0.500	ug/L								1
Aroclor 1248 [2C]	< 0.500	0.500	ug/L								1
Aroclor 1254 [2C]	< 0.500	0.500	ug/L								1
Aroclor 1260 [2C]	< 0.500	0.500	ug/L								1
Total PCB [2C]	< 0.500	0.500	ug/L								1
Surrogate: Decachlorobiphenyl [2C]	*Not Detected*		*ug/L*	*0.100*		*104*	*40-135*				1
Surrogate: 2,4,5,6-Tetrachloro-m-xylene [2C]	*Not Detected*		*ug/L*	*0.100*		*105*	*13-133*				1
(B24F0972-BS1), LCS				*Prepared: 06/21/2024 11:30 Analyzed: 06/25/2024 00:02*							
Aroclor 1016 [2C]	0.312	0.500	ug/L	0.400		78	30-150				1
Aroclor 1260 [2C]	0.308	0.500	ug/L	0.400		77	30-150				1
Surrogate: Decachlorobiphenyl [2C]	*0.0819*		*ug/L*	*0.100*		*82*	*40-135*				1
Surrogate: 2,4,5,6-Tetrachloro-m-xylene [2C]	*0.0569*		*ug/L*	*0.100*		*57*	*13-133*				1
(B24F0972-BSD1), LCS Dup				*Prepared: 06/21/2024 11:30 Analyzed: 06/25/2024 00:19*							
Aroclor 1016 [2C]	0.296	0.500	ug/L	0.400		74	30-150	5	25		1
Aroclor 1260 [2C]	0.295	0.500	ug/L	0.400		74	30-150	4	25		1
Surrogate: Decachlorobiphenyl [2C]	*0.0780*		*ug/L*	*0.100*		*78*	*40-135*				1
Surrogate: 2,4,5,6-Tetrachloro-m-xylene [2C]	*0.0525*		*ug/L*	*0.100*		*52*	*13-133*				1

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Quality Control

(Continued)

Client: Tom Hahne
Project: 2024 Water Analysis
Tinley Park, IL
Work Order: O24F0847

Report Date: 06/26/2024
Matrix: Water

Metals by ICP-MS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual	DF
Batch: B24F0901 - SW3015											
(B24F0901-BLK1), BLK				*Prepared: 06/20/2024 10:33*			*Analyzed: 06/20/2024 18:18*				
Hardness	0		mg CaCO3/L								2
Arsenic	< 0.00200	0.0250	mg/L								5
Barium	< 0.00200	0.0250	mg/L								5
Boron	< 0.00500	0.0125	mg/L								5
Cadmium	< 0.000500	0.00250	mg/L								5
Calcium	< 0.0500	0.125	mg/L								5
Chromium	< 0.00250	0.0250	mg/L								5
Copper	< 0.00250	0.0250	mg/L								5
Iron	< 0.0500	0.125	mg/L								5
Lead	< 0.00150	0.0250	mg/L								5
Magnesium	< 0.0200	0.125	mg/L								5
Manganese	< 0.00250	0.0250	mg/L								5
Nickel	< 0.00250	0.0250	mg/L								5
Selenium	< 0.00300	0.0250	mg/L								5
Silver	< 0.000400	0.00250	mg/L								5
Zinc	< 0.0100	0.0250	mg/L								5
(B24F0901-BS1), BS				*Prepared: 06/20/2024 10:33*			*Analyzed: 06/20/2024 13:52*				
Arsenic	0.597	0.0250	mg/L	0.625		96	80-120				5
Barium	0.616	0.0250	mg/L	0.625		99	80-120				5
Boron	0.620	0.0125	mg/L	0.625		99	80-120				5
Cadmium	0.602	0.00250	mg/L	0.625		96	80-120				5
Calcium	7.36	0.125	mg/L	7.50		98	80-120				5
Chromium	0.624	0.0250	mg/L	0.625		100	80-120				5
Copper	0.622	0.0250	mg/L	0.625		100	80-120				5
Iron	7.49	0.125	mg/L	7.50		100	80-120				5
Lead	0.625	0.0250	mg/L	0.625		100	80-120				5
Magnesium	7.38	0.125	mg/L	7.50		98	80-120				5
Manganese	0.609	0.0250	mg/L	0.625		97	80-120				5
Nickel	0.632	0.0250	mg/L	0.625		101	80-120				5
Selenium	0.553	0.0250	mg/L	0.625		88	80-120				5
Silver	0.272	0.00250	mg/L	0.250		109	80-120				5
Zinc	0.579	0.0250	mg/L	0.625		93	80-120				5
(B24F0901-DUP1), Serial Dilution		**Source: O24F0844-01**		*Prepared: 06/20/2024 10:33*			*Analyzed: 06/20/2024 18:18*				
Hardness	489		mg CaCO3/L		0				200		2
Arsenic	< 0.0100	0.125	mg/L		ND				20		25
Barium	0.0727	0.125	mg/L		0.0724			0.3	20		25

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Quality Control

(Continued)

Client: Tom Hahne
Project: 2024 Water Analysis
Tinley Park, IL
Work Order: O24F0847

Report Date: 06/26/2024
Matrix: Water

Metals by ICP-MS

(Continued)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual	DF
Batch: B24F0901 - SW3015 *(Continued)*											
(B24F0901-DUP1), Serial Dilution (Continued)			**Source: O24F0844-01**		*Prepared: 06/20/2024 10:33*		*Analyzed: 06/20/2024 14:06*				
Boron	0.652	0.0625	mg/L		0.650			0.3	20		25
Cadmium	< 0.00250	0.0125	mg/L		ND				20		25
Calcium	102	0.625	mg/L		100			2	20		25
Chromium	< 0.0125	0.125	mg/L		ND				20		25
Copper	< 0.0125	0.125	mg/L		ND				20		25
Iron	< 0.250	0.625	mg/L		ND				20		25
Lead	< 0.00750	0.125	mg/L		ND				20		25
Magnesium	56.9	0.625	mg/L		54.5			4	20		25
Manganese	0.0307	0.125	mg/L		0.0256			18	20		25
Nickel	< 0.0125	0.125	mg/L		ND				20		25
Selenium	< 0.0150	0.125	mg/L		ND				20		25
Silver	< 0.00200	0.0125	mg/L		ND				20		25
Zinc	< 0.0500	0.125	mg/L		ND				20		25
(B24F0901-MS1), MS			**Source: O24F0844-01**		*Prepared: 06/20/2024 10:33*		*Analyzed: 06/20/2024 14:00*				
Arsenic	0.609	0.0250	mg/L	0.625	ND	97	75-125				5
Barium	0.668	0.0250	mg/L	0.625	0.0724	95	75-125				5
Boron	1.28	0.0125	mg/L	0.625	0.650	101	75-125				5
Cadmium	0.585	0.00250	mg/L	0.625	ND	94	75-125				5
Calcium	108	0.125	mg/L	7.50	100	112	75-125				5
Chromium	0.629	0.0250	mg/L	0.625	ND	101	75-125				5
Copper	0.605	0.0250	mg/L	0.625	ND	97	75-125				5
Iron	7.81	0.125	mg/L	7.50	0.214	101	75-125				5
Lead	0.608	0.0250	mg/L	0.625	ND	97	75-125				5
Magnesium	62.2	0.125	mg/L	7.50	54.5	102	75-125				5
Manganese	0.649	0.0250	mg/L	0.625	0.0256	100	75-125				5
Nickel	0.616	0.0250	mg/L	0.625	ND	99	75-125				5
Selenium	0.564	0.0250	mg/L	0.625	ND	90	75-125				5
Silver	0.213	0.00250	mg/L	0.250	ND	85	75-125				5
Zinc	0.624	0.0250	mg/L	0.625	0.0400	93	75-125				5
(B24F0901-MSD1), MSD			**Source: O24F0844-01**		*Prepared: 06/20/2024 10:33*		*Analyzed: 06/20/2024 14:02*				
Arsenic	0.601	0.0250	mg/L	0.625	ND	96	75-125	1	20		5
Barium	0.663	0.0250	mg/L	0.625	0.0724	95	75-125	0.7	20		5
Boron	1.28	0.0125	mg/L	0.625	0.650	100	75-125	0.3	20		5
Cadmium	0.584	0.00250	mg/L	0.625	ND	93	75-125	0.2	20		5
Calcium	107	0.125	mg/L	7.50	100	95	75-125	1	20		5
Chromium	0.629	0.0250	mg/L	0.625	ND	101	75-125	0.08	20		5
Copper	0.596	0.0250	mg/L	0.625	ND	95	75-125	1	20		5

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Quality Control

(Continued)

Client: Tom Hahne
Project: 2024 Water Analysis
Tinley Park, IL
Work Order: O24F0847

Report Date: 06/26/2024
Matrix: Water

Metals by ICP-MS

(Continued)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual	DF
Batch: B24F0901 - SW3015 *(Continued)*											
(B24F0901-MSD1), MSD (Continued)			**Source: O24F0844-01**		*Prepared: 06/20/2024 10:33*		*Analyzed: 06/20/2024 14:02*				
Iron	7.81	0.125	mg/L	7.50	0.214	101	75-125	0.07	20		5
Lead	0.610	0.0250	mg/L	0.625	ND	98	75-125	0.4	20		5
Magnesium	60.8	0.125	mg/L	7.50	54.5	84	75-125	2	20		5
Manganese	0.645	0.0250	mg/L	0.625	0.0256	99	75-125	0.6	20		5
Nickel	0.609	0.0250	mg/L	0.625	ND	97	75-125	1	20		5
Selenium	0.556	0.0250	mg/L	0.625	ND	89	75-125	1	20		5
Silver	0.199	0.00250	mg/L	0.250	ND	80	75-125	7	20		5
Zinc	0.608	0.0250	mg/L	0.625	0.0400	91	75-125	3	20		5
(B24F0901-PS1), PS			**Source: O24F0844-01**		*Prepared: 06/20/2024 10:33*		*Analyzed: 06/20/2024 14:04*				
Arsenic	0.301	0.0250	mg/L	0.312	ND	96	80-120				1
Barium	0.384	0.0250	mg/L	0.312	0.0724	100	80-120				1
Boron	0.948	0.0125	mg/L	0.312	0.650	95	80-120				1
Cadmium	0.295	0.00250	mg/L	0.312	ND	94	80-120				1
Calcium	101	0.125	mg/L	1.56	100	72	80-120			S	1
Chromium	0.319	0.0250	mg/L	0.312	ND	102	80-120				1
Copper	0.307	0.0250	mg/L	0.312	ND	98	80-120				1
Iron	1.81	0.125	mg/L	1.56	0.214	102	80-120				1
Lead	0.309	0.0250	mg/L	0.312	ND	99	80-120				1
Magnesium	55.3	0.125	mg/L	1.56	54.5	48	80-120			S	1
Manganese	0.340	0.0250	mg/L	0.312	0.0256	101	80-120				1
Nickel	0.309	0.0250	mg/L	0.312	ND	99	80-120				1
Selenium	0.280	0.0250	mg/L	0.312	ND	90	80-120				1
Silver	0.323	0.00250	mg/L	0.312	ND	103	80-120				1
Zinc	0.341	0.0250	mg/L	0.312	0.0400	96	80-120				1

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Quality Control

(Continued)

Client: Tom Hahne
Project: 2024 Water Analysis
Tinley Park, IL
Work Order: O24F0847

Report Date: 06/26/2024
Matrix: Water

Mercury by CVAA

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual	DF
Batch: B24F0892											
(B24F0892-BLK1), Blank				*Prepared: 06/20/2024 08:37*			*Analyzed: 06/20/2024 11:15*				
Mercury	< 0.00040	0.00040	mg/L								1
(B24F0892-BS1), LCS				*Prepared: 06/20/2024 08:37*			*Analyzed: 06/20/2024 11:26*				
Mercury	0.00491	0.00040	mg/L	0.00500		98	88-112				1
(B24F0892-LBK1), Leach Fluid Blank				*Prepared: 06/20/2024 08:37*			*Analyzed: 06/20/2024 11:27*				
Mercury	< 0.00013	0.00040	mg/L								1
(B24F0892-MRL1), MRL Check				*Prepared: 06/20/2024 08:37*			*Analyzed: 06/20/2024 11:05*				
Mercury	0.00048	0.00040	mg/L	0.000400		120	70-130				1
(B24F0892-MS1), Matrix Spike		**Source: O24F0312-03**		*Prepared: 06/20/2024 08:37*			*Analyzed: 06/20/2024 11:43*				
Mercury	0.00212	0.00040	mg/L	0.00200	0.116	NR	75-125				1
(B24F0892-MS2), Matrix Spike		**Source: O24F0546-01**		*Prepared: 06/20/2024 08:37*			*Analyzed: 06/20/2024 12:03*				
Mercury	0.00208	0.00040	mg/L	0.00200	ND	104	75-125				1
(B24F0892-MS3), Matrix Spike		**Source: O24F0858-01**		*Prepared: 06/20/2024 08:37*			*Analyzed: 06/20/2024 12:32*				
Mercury	0.00237	0.00040	mg/L	0.00200	0.00015	111	75-125				1
(B24F0892-MSD1), Matrix Spike Dup		**Source: O24F0312-03**		*Prepared: 06/20/2024 08:37*			*Analyzed: 06/20/2024 11:45*				
Mercury	0.00208	0.00040	mg/L	0.00200	0.116	NR	75-125		20		1
(B24F0892-MSD2), Matrix Spike Dup		**Source: O24F0546-01**		*Prepared: 06/20/2024 08:37*			*Analyzed: 06/20/2024 12:04*				
Mercury	0.00217	0.00040	mg/L	0.00200	ND	108	75-125	4	20		1
(B24F0892-MSD3), Matrix Spike Dup		**Source: O24F0858-01**		*Prepared: 06/20/2024 08:37*			*Analyzed: 06/20/2024 12:34*				
Mercury	0.00231	0.00040	mg/L	0.00200	0.00015	108	75-125	3	20		1

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Quality Control

(Continued)

Client: Tom Hahne
Project: 2024 Water Analysis
Tinley Park, IL
Work Order: O24F0847

Report Date: 06/26/2024
Matrix: Water

Anions by Ion Chromatography

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual	DF
Batch: B24F1019											
(B24F1019-BLK1), Blank				*Prepared: 06/22/2024 17:25*			*Analyzed: 06/23/2024 09:04*				
Chloride	< 0.0500	0.0500	mg/L								1
Fluoride	< 0.0250	0.0250	mg/L								1
Sulfate	< 0.150	0.150	mg/L								1
(B24F1019-BS1), LCS				*Prepared: 06/22/2024 17:25*			*Analyzed: 06/23/2024 09:32*				
Chloride	0.535	0.0500	mg/L	0.300		178	90-110			S	1
Fluoride	0.208	0.0250	mg/L	0.200		104	90-110				1
Sulfate	0.625	0.150	mg/L	0.600		104	90-110				1
(B24F1019-BS2), LCS				*Prepared: 06/22/2024 17:25*			*Analyzed: 06/23/2024 09:59*				
Chloride	7.62	0.0500	mg/L	7.50		102	90-110				1
Fluoride	5.25	0.0250	mg/L	5.00		105	90-110				1
Sulfate	15.1	0.150	mg/L	15.0		101	90-110				1
(B24F1019-MS1), Matrix Spike			**ource: O24E1032-01RX1**	*Prepared: 06/22/2024 17:25*			*Analyzed: 06/23/2024 16:30*				
Chloride	530	5.00	mg/L	250	276	101	80-120				1
Fluoride	254	2.50	mg/L	250	ND	101	80-120				1
Sulfate	396	15.0	mg/L	250	149	99	80-120				1
(B24F1019-MSD1), Matrix Spike Dup			**ource: O24E1032-01RX1**	*Prepared: 06/22/2024 17:25*			*Analyzed: 06/23/2024 16:57*				
Chloride	530	5.00	mg/L	250	276	102	80-120	0.04	15		1
Fluoride	255	2.50	mg/L	250	ND	102	80-120		15		1
Sulfate	397	15.0	mg/L	250	149	99	80-120	0.2	20		1

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Quality Control

(Continued)

Client: Tom Hahne
Project: 2024 Water Analysis
Tinley Park, IL
Work Order: O24F0847

Report Date: 06/26/2024
Matrix: Water

Wet Chemistry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual	DF
Batch: B24F0397											
(B24F0397-BLK1), Blank				*Prepared: 06/20/2024 12:40*			*Analyzed: 06/21/2024 11:14*				
Phosphorus, Total (as P)	< 0.100	0.100	mg/L								1
(B24F0397-BS1), LCS				*Prepared: 06/20/2024 12:40*			*Analyzed: 06/21/2024 11:14*				
Phosphorus, Total (as P)	0.0270	0.100	mg/L	0.250		11	85-115			S	1
(B24F0397-BS2), LCS				*Prepared: 06/20/2024 12:40*			*Analyzed: 06/21/2024 11:14*				
Phosphorus, Total (as P)	0.0210	0.100	mg/L	0.400		5	85-115			S	1
(B24F0397-MS1), Matrix Spike		**Source: O24F0101-03**		*Prepared: 06/20/2024 12:40*			*Analyzed: 06/21/2024 11:14*				
Phosphorus, Total (as P)	< 3.20	16.0	mg/L	40.0	ND	0	80-120			S	1
(B24F0397-MSD1), Matrix Spike Dup		**Source: O24F0101-03**		*Prepared: 06/20/2024 12:40*			*Analyzed: 06/21/2024 11:14*				
Phosphorus, Total (as P)	10.4	16.0	mg/L	40.0	ND	26	80-120		10	S	1
Batch: B24F0937											
(B24F0937-BLK1), Blank				*Prepared: 06/20/2024 15:29*			*Analyzed: 06/24/2024 08:30*				
Oil and Grease (HEM)	< 4.00	4.00	mg/L								1
(B24F0937-BS1), LCS				*Prepared: 06/20/2024 15:29*			*Analyzed: 06/24/2024 08:30*				
Oil and Grease (HEM)	34.9	4.00	mg/L	40.2		87	78-114				1
(B24F0937-MS1), Matrix Spike		**Source: O24F0584-02**		*Prepared: 06/20/2024 15:29*			*Analyzed: 06/24/2024 08:30*				
Oil and Grease (HEM)	123	4.00	mg/L	100	3.44	119	78-114			Q, S	1
(B24F0937-MSD1), Matrix Spike Dup		**Source: O24F0584-02**		*Prepared: 06/20/2024 15:29*			*Analyzed: 06/24/2024 08:30*				
Oil and Grease (HEM)	75.3	4.00	mg/L	100	3.44	72	78-114	48	18	Q, S	1
Batch: B24F0997											
(B24F0997-BLK1), Blank				*Prepared: 06/20/2024 13:30*			*Analyzed: 06/21/2024 13:35*				
Phenolics, Total Recoverable	< 0.0150	0.0150	mg/L								1
(B24F0997-BS1), LCS				*Prepared: 06/20/2024 13:30*			*Analyzed: 06/21/2024 13:37*				
Phenolics, Total Recoverable	0.0477	0.0150	mg/L	0.0500		95	85-115				1
(B24F0997-MS1), Matrix Spike		**Source: O24F0847-01**		*Prepared: 06/20/2024 13:30*			*Analyzed: 06/21/2024 13:47*				
Phenolics, Total Recoverable	0.0491	0.0150	mg/L	0.0500	0.00930	80	80-120				1

509 N. 3rd Avenue Des Plaines, IL 60016-1162 P 847.967.6666 800.246.0663 F 847.967.6735 www.thesterlinglab.com

Quality Control
(Continued)

Client: Tom Hahne
Project: 2024 Water Analysis
Tinley Park, IL
Work Order: O24F0847

Report Date: 06/26/2024
Matrix: Water

Wet Chemistry
(Continued)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual	DF
Batch: B24F0997 *(Continued)*											
(B24F0997-MSD1), Matrix Spike Dup		**Source: O24F0847-01**		*Prepared: 06/20/2024 13:30*			*Analyzed: 06/21/2024 13:48*				
Phenolics, Total Recoverable	0.0483	0.0150	mg/L	0.0500	0.00930	78	80-120	2	20	S	1
Batch: B24F1026											
(B24F1026-BLK1), Blank				*Prepared: 06/24/2024 08:17*			*Analyzed: 06/24/2024 11:57*				
Nitrogen, Nitrate/Nitrite (as N)	< 0.500	0.500	mg/L								1
(B24F1026-BS1), LCS				*Prepared: 06/24/2024 08:17*			*Analyzed: 06/24/2024 11:58*				
Nitrogen, Nitrate/Nitrite (as N)	2.60	0.500	mg/L	2.50		106	90-110				1
(B24F1026-BS2), LCS				*Prepared: 06/24/2024 08:17*			*Analyzed: 06/24/2024 14:44*				
Nitrogen, Nitrate/Nitrite (as N)	2.60	0.500	mg/L	2.50		104	90-110				1
(B24F1026-MS1), Matrix Spike		**Source: O24F0847-01**		*Prepared: 06/24/2024 08:17*			*Analyzed: 06/24/2024 14:40*				
Nitrogen, Nitrate/Nitrite (as N)	2.70	0.500	mg/L	2.50	ND	108	80-120				1
(B24F1026-MSD1), Matrix Spike Dup		**Source: O24F0847-01**		*Prepared: 06/24/2024 08:17*			*Analyzed: 06/24/2024 14:40*				
Nitrogen, Nitrate/Nitrite (as N)	2.60	0.500	mg/L	2.50	ND	104	80-120	4	10		1
Batch: B24F1072											
(B24F1072-BLK1), Blank				*Prepared: 06/24/2024 10:30*			*Analyzed: 06/24/2024 13:40*				
Ammonia	< 1.03	1.03	mg/L								1.473
(B24F1072-BS1), LCS				*Prepared: 06/24/2024 10:30*			*Analyzed: 06/24/2024 13:40*				
Ammonia	10.3	1.03	mg/L	10.0		103	88-115				1.473
(B24F1072-MS1), Matrix Spike		**Source: O24F0945-01**		*Prepared: 06/24/2024 10:30*			*Analyzed: 06/24/2024 13:40*				
Ammonia	10.6	1.03	mg/L	10.0	0.147	104	88-115				1.473
(B24F1072-MSD1), Matrix Spike Dup		**Source: O24F0945-01**		*Prepared: 06/24/2024 10:30*			*Analyzed: 06/24/2024 13:40*				
Ammonia	10.7	1.03	mg/L	10.0	0.147	105	88-115	0.8	10		1.473
Batch: B24F1079											
(B24F1079-BLK1), Blank				*Prepared: 06/24/2024 10:30*			*Analyzed: 06/24/2024 14:46*				
Cyanide	< 0.0200	0.0200	mg/L								1

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Quality Control
(Continued)

Client: Tom Hahne
Project: 2024 Water Analysis
Tinley Park, IL
Work Order: O24F0847

Report Date: 06/26/2024
Matrix: Water

Wet Chemistry
(Continued)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual	DF
Batch: B24F1079 *(Continued)*											
(B24F1079-BS1), LCS				*Prepared: 06/24/2024 10:30*			*Analyzed: 06/24/2024 17:03*				
Cyanide	0.0558	0.0200	mg/L	0.0500		112	85-115				1
(B24F1079-MS1), Matrix Spike		**Source: O24F0832-02**		*Prepared: 06/24/2024 10:30*			*Analyzed: 06/24/2024 17:47*				
Cyanide	0.232	0.0200	mg/L	0.200	ND	116	80-120				1
(B24F1079-MSD1), Matrix Spike Dup		**Source: O24F0832-02**		*Prepared: 06/24/2024 10:30*			*Analyzed: 06/24/2024 17:50*				
Cyanide	0.184	0.0200	mg/L	0.200	ND	92	80-120	23	20	P	1
Batch: B24F1140											
(B24F1140-BLK1), Blank				*Prepared: 06/24/2024 01:15*			*Analyzed: 06/25/2024 13:50*				
Phosphorus, Total (as P)	< 0.100	0.100	mg/L								1
(B24F1140-BS1), LCS				*Prepared: 06/24/2024 01:15*			*Analyzed: 06/25/2024 13:50*				
Phosphorus, Total (as P)	0.279	0.100	mg/L	0.250		112	85-115				1
(B24F1140-BS2), LCS				*Prepared: 06/24/2024 01:15*			*Analyzed: 06/25/2024 13:50*				
Phosphorus, Total (as P)	0.385	0.100	mg/L	0.400		96	85-115				1
(B24F1140-MS1), Matrix Spike		**ource: O24F0102-03DL1**		*Prepared: 06/24/2024 01:15*			*Analyzed: 06/25/2024 13:50*				
Phosphorus, Total (as P)	82.1	16.0	mg/L	40.0	41.6	101	80-120				1
(B24F1140-MS1DL1), Matrix Spike		**ource: O24F0102-03DL1**		*Prepared: 06/24/2024 01:15*			*Analyzed: 06/25/2024 13:50*				
Phosphorus, Total (as P)	79.2	80.0	mg/L	40.0	41.6	94	80-120				5
(B24F1140-MSD1), Matrix Spike Dup		**ource: O24F0102-03DL1**		*Prepared: 06/24/2024 01:15*			*Analyzed: 06/25/2024 13:50*				
Phosphorus, Total (as P)	82.9	16.0	mg/L	40.0	41.6	103	80-120	5	10		1
(B24F1140-MSD1DL1), Matrix Spike Dup		**ource: O24F0102-03DL1**		*Prepared: 06/24/2024 01:15*			*Analyzed: 06/25/2024 13:50*				
Phosphorus, Total (as P)	80.0	80.0	mg/L	40.0	41.6	96	80-120	1	10		5
Batch: B24F1155											
(B24F1155-BLK1), Blank				*Prepared: 06/25/2024 14:22*			*Analyzed: 06/25/2024 14:22*				
Alkalinity, Total (As CaCO3)	< 10.0	10.0	mg CaCO3/L								1
(B24F1155-BS1), LCS				*Prepared: 06/25/2024 14:24*			*Analyzed: 06/25/2024 14:24*				

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Quality Control

(Continued)

Client: Tom Hahne
Project: 2024 Water Analysis
Tinley Park, IL
Work Order: O24F0847

Report Date: 06/26/2024
Matrix: Water

Wet Chemistry

(Continued)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual	DF
Batch: B24F1155 *(Continued)*											
(B24F1155-BS1), LCS (Continued)				*Prepared: 06/25/2024 14:24*			*Analyzed: 06/25/2024 14:24*				
Alkalinity, Total (As CaCO3)	102	10.0	mg CaCO3/L	100		102	80-120				1
(B24F1155-DUP1), Duplicate		**Source: O24F0847-01**		*Prepared: 06/25/2024 15:16*			*Analyzed: 06/25/2024 15:16*				
Alkalinity, Total (As CaCO3)	271	10.0	mg CaCO3/L		268			1	10		1

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Uncertified Analyses

Sterling Labs O'Hare location does not hold certification for the following analytes under the program listed on the cover page of this report.

Analyte	CAS #
SW6020B / SM2340 B	
Hardness	

509 N. 3rd Avenue Des Plaines, IL 60016-1162 P 847.967.6666 800.246.0663 F 847.967.6735 www.thesterlinglab.com

Qualifiers and Definitions

Item	Description
P	The quality control sample %RPD is above the laboratory control limit.
Q	One or more quality control results were outside of the acceptance limits (e.g. LCS recovery, surrogate spike recovery, or CCV recovery).
S	The quality control sample recovery is outside of the laboratory control limits.
S1	The percent recovery is above the limits (e.g. LCS recovery or surrogate spike recovery), but the analyte was not detected in the sample. Data is acceptable.
%Rec	Percent Recovery

ENVIRONMENTAL MONITORING A TECHNOLOGIES, I...
509 N. 3rd Avenue
Des Plaines, IL 60016
847-967-6666
FAX: 847-967-6735
www.emt.com

O24F0847
PM: Olga Karplyuk
Tetra Tech
2024 Water Analysis

...ain of Custody Record

TURNAROUND TIME:
☐ RUSH
____ day turnaround
☐ ROUTINE

Due Date: ____-____-____ COC #: 263187

Company: Tetra Tech
Address: 37th Floor 1 S. WACKER
CHICAGO, IL 60606
Phone #: (815) 404-1508 Fax #: (____) ____-____
P.O. #: TPMHC Proj. #: ____-____
Client Contact: ~~TE~~ Tom HAHN
Project ID / Location: TINLEY PARK, IL

Sample Type:
1. Waste Water 4. Sludge 7. Groundwater (filtered)
2. Drinking Water 5. Oil 8. Other
3. Soil 6. Groundwater Surface Water

Container Type:
P - Plastic V - VOC Vial O - Other
G - Glass B - Tedlar Bag

Preservative:
1. None 4. NaOH 7. Zn Ace
2. H_2SO_4 5. HCl 8. Other
3. HNO_3 6. MeOH

Analyses

EMT USE ONLY
EMT WORKORDER #024F0847

Sample I.D.	Sample Type	Container Size	Container Type	Container No.	Sampling By	Sampling Date	Sampling Time	Preservation pH	Preservation Temp.	Preservation Field	Preservation Lab	Oil & Grease	Total Pet. Hydrocarbons	SVOCs	Cyanide	Aluminum	Nitrate	Nitrite	Phenols	Metals	PCBs	VOCs	
TP-L-SW	G	1L	Amber	(2)	12:15	6/18						2											01D-01F
TP-L-SW	G	1L	Amber	(3)	12:20								1	2									01R-01T
TP-L-SW	G	250	HDPE	1	12:45										X								01M
TP-L-SW	G	250	HDPE	1	12:45											X							01L
TP-L-SW	G	250	HDPE	2	12:45												X	X					01I
TP-L-SW	G	250	HDPE	1	12:45														X				01P
TP-L-SW	G	250	HDPE	1	12:45															X			01K
TP-L-SW	G	1L	Amber	1	12:20																X		01Q
TP-L-SW	G	VOA	-	(3)	12:45																	X	01A-01C
TP-L-SW	G	250	HDPE	2	12:45																		01M-01N

Relinquished By: [signature] Date: 6/18/24 Time: 3:26
Received By: [signature] Date: 6-18-24 Time: 15:26
EMT USE ONLY
Client Code:
EMT Project I.D.
Jar Lot No.
☒ SAMPLE RECEIVED ON ICE
☐ TEMPERATURE
5.9
EMT SAMPLE RETURN POLICY ON BACK

Relinquished By: Date: - - Time: :
Received By: Date: - - Time: :

Relinquished By: Date: - - Time: :
Received For Lab By: Date: - - Time: :

SPECIAL INSTRUCTIONS:

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ENVIRONMENTAL MONITORING AND TECHNOLOGIES, INC.

509 N. 3rd Avenue
Des Plaines, IL 60016

847-967-6666
FAX: 847-967-6735
www.emt.com

Chain of Custody Record

TURNAROUND TIME:
☐ RUSH
____ day turnaround
☐ ROUTINE

Due Date: ____-____-____ COC #: 263186

Company: Tetra Tech
Address: 37th Floor 1 S. Wacker
Chicago, IL. 60606
Phone #: (815) 404-~~8800~~ Fax #: (____) ____-____
P.O. #: TPHC 1508 Proj. #: ____-____
Client Contact: Tom Hahn
Project ID / Location: Tinley Park

Sample Type:
1. Waste Water 4. Sludge 7. Groundwater (filtered)
2. Drinking Water 5. Oil 8. Other Surface H2O
3. Soil 6. Groundwater

Container Type:
P - Plastic V - VOC Vial O - Other
G - Glass B - Tedlar Bag ____

Preservative:
1. None 4. NaOH 7. Zn Ace
2. H_2SO_4 5. HCl 8. Other see container
3. HNO_3 6. MeOH

Analyses

EMT USE ONLY

EMT WORKORDER #0241847

Sample I.D.	Sample Type	Container Size	Container Type	Container No.	Sampling By	Sampling Date	Sampling Time	Sampling pH	Sampling Temp.	Preservation Field	Preservation Lab	TSM - Ashcraft	Phenol / Anions	Total Coliform	
TP-L-SW	G	500m	HDPE	1	T.H	6/18	12:25					X			2 1 0
TP-L-SW	G	250ml	Glass	1	T.H	6/18	12:45						X		0 1 P
TP-L-SW	P	250	HDPE	1			12:45						X		~~0 1 N~~ 0 1 N
TP-L-SW	G	100m	HDPE	2			12:45							X	G I F 0 1 6

Relinquished By: [signature] Date: 6/18/20 Time: 3:26
Received By: [signature] Date: 6-18-20 Time: 15:26
EMT USE ONLY Client Code:
☒ SAMPLE RECEIVED ON ICE
☐ TEMPERATURE 5.9

Relinquished By: Date: - - Time: :
Received By: Date: - - Time: :
EMT Project I.D.

Relinquished By: Date: - - Time: :
Received For Lab By: Date: - - Time: :
Jar Lot No.

EMT SAMPLE RETURN POLICY ON BACK

SPECIAL INSTRUCTIONS:

EAS 06/18/2020

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Sample Receipt Checklist

Work Order: O24F0847

Printed: 6/18/2024 6:01:11PM

Client: Tetra Tech
Project: 2024 Water Analysis

Date Due: Friday, June 28, 2024

Received By: Connor Speidel
Logged In By: Connor Speidel

Date Received: 6/18/2024 3:26:00PM
Date Logged In: 6/18/2024 4:39:00PM

Cooler Name: Default Cooler

How were samples received: Client

Cooler temperature at of below 6 degrees Celsius: Yes

Chain of Custody present and properly completed : Yes

Turnaround Time is indicated and specified: Yes

Chain of Custody agrees with sample labels: Yes

Samples received within hold time: Yes

Proper sample containers received intact: Yes

Sufficient sample volume: Yes

Containers properly preserved: Yes

Custody seals present: No

Volatile water vials received: Yes

Vials contain larger than pea sized aire bubbles: Yes

Samples going out of hold time within 24 hours:

_____

_____

_____

_____

Sample Receipt Comments

Work Order: O24F0847

The samples were received on 6/18/2024 3:26:00 PM. The temperature of the cooler(s) at receipt was:

Cooler:	Temp C
Default Cooler	5.9

Sample 01A contains larger than 6 mm air bubbles and was not used for analysis

Reviewed By: _____ Date: 06/18/2024

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SUBURBAN LABORATORIES, Inc.

1950 S. Batavia Ave., Suite 150 Geneva, Illinois 60134
Tel. (708) 544-3260 • Toll Free (800) 783-LABS
Fax (708) 544-8587
www.suburbanlabs.com

June 20, 2024

Workorder: 2406C70

Adam Szafran
Environmental Monitoring and Technologies, Inc.
509 N. 3rd Ave
Des Plaines, IL 60016

TEL:
FAX:
RE: 024F0847-01

Dear Adam Szafran:

Suburban Laboratories, Inc. received 1 sample(s) on 6/19/2024 for the analyses presented in the following report.

All data for the associated quality control (QC) met EPA, method, or internal laboratory specifications except where noted in the case narrative. If you are comparing these results to external QC specifications or compliance limits and have any questions, please contact us.

This final report of laboratory analysis consists of this cover letter, case narrative, analytical report, dates report, and any accompanying documentation including, but not limited to, chain of custody records, raw data, and letters of explanation or reliance. This report may not be reproduced, except in full, without the prior written approval of Suburban Laboratories, Inc.

If you have any questions regarding these test results, please call me at (708) 544-3260.

Sincerely,

Dan Galeher
Project Manager
708-544-3260 ext 216
dan@SuburbanLabs.com

Suburban Laboratories, Inc.
1950 S. Batavia Ave., Suite 150, Geneva, IL 60134 (708) 544-3260

Case Narrative

Client: Environmental Monitoring and Technologie
Project: 024F0847-01
WorkOrder: 2406C70
Temperature of samples upon receipt at SLI: C

Date: June 20, 2024
PO #:
QC Level:
Chain of Custody #:

General Comments:
- All results reported in wet weight unless otherwise indicated. (dry = Dry Weight)
- Sample results relate only to the analytes of interest tested and to sample as received by the laboratory.
- Environmental compliance sample results meet the requirements of 35 IAC Part 186 unless otherwise indicated.
- Waste water analysis follows the rules set forth in 40 CFR part 136 except where otherwise noted.
- Accreditation by the State of Illinois is not an endorsement or a guarantee of the validity of data generated.
- For more information about the laboratories' scope of accreditation, please contact us at (708) 544-3260 or the Agency at (217) 782-6455.
- All radiological results are reported to the 95% confidence level.

Abbreviations:
- Reporting Limit: The concentration at which an analyte can be routinely detected on a day to day basis, and which also meets regulatory and client needs.
- Quantitation Limit: The lowest concentration at which results can be accurately quantitated.
- J: The analyte was positively identified above our Method Detection Limit and is considered detectable and usable; however, the associated numerical value is the approximate concentration of the analyte in the sample.
- ATC: Automatic Temperature Correction. - TNTC: Too Numerous To Count
- TIC: Tentatively Identified Compound (GCMS library search identification, concentration estimated to nearest internal standard).
- SS: (Surrogate Standard): Quality control compound added to the sample by the lab.
-LA: Lab Accident - No valid data to report.
-VO: Insufficient Volume provided
-BR: Received broken
-IP: Invalid Sampling

Method References:
For a complete list of method references please contact us.
- E: USEPA Reference methods
- SW: USEPA, Test Methods for Evaluating Solid Waste (SW-846)
- M: Standard Methods for the Examination of Water and Wastewater
- USP: Latest version of United States Pharmacopeia

Workorder Specific Comments:

Suburban Laboratories, Inc.

1950 S. Batavia Ave., Suite 150, Geneva, IL 60134 (708) 544-3260

Laboratory Results

Client ID: Environmental Monitoring and Technologies, Inc
Report Date: June 20, 2024
Project Name: 024F0847-01
Workorder: **2406C70**

Client Sample ID: **024F0847-01**
Matrix: WATER
Lab ID: 2406C70-001
Date Received: 06/19/2024 10:43 AM
Collection Date: 06/18/2024 12:45 PM

Parameter	Result	Report Limit	MCL	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
COLIFORM, PRESENCE-ABSENCE-COLILERT, 18 HR	Method: SM-9223B-PA-Rev 1997 Rev. Online					Analyst: VA		
E. coli	P	0			CFU/100ml	1	06/20/2024 8:42 AM	98603
Total Coliform	P	0			CFU/100ml	1	06/20/2024 8:42 AM	98603

Created: 6/20/2024 5:49:15 PM

Suburban Laboratories, Inc.
1950 S. Batavia Ave., Suite 150, Geneva, IL 60134 (708) 544-3260

PREP DATES REPORT

Client: Environmental Monitoring and Technologies, Inc.
Report Date: June 20, 2024
Project: 024F0847-01
Lab Order: **2406C70**

Sample ID	Collection Date	Batch ID	Prep Test Name	TCLP Date	Prep Date
2406C70-001A	6/18/2024 12:45:00 PM	98603	Total Coliform Prep		6/19/2024

Suburban Laboratories, Inc.
1950 S. Batavia Ave., Suite 150, Geneva, IL 60134 (708) 544-3260

Qualifier Definitions

WO#: **2406C70**
Date: **6/20/2024**

Qualifiers:

*/x	Value exceeds Maximum Contaminant Level
B	Analyte detected in the associated Method Blank
C	Value is below Minimum Concentration Limit
c	Analyte not in TNI/NELAC scope of accreditation
E	Estimated, detected above quantitation range
G	Refer to case narrative page for specific comments
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limit (QL)
N	Tentatively identified compounds
ND	Not Detected at the Reporting Limit
P	Present
Q	Accreditation is not available from Wisconsin
R	RPD outside accepted recovery limits
S	Spike Recovery outside accepted recovery limits
T	Analyte detected in sample trip blank
V	EPA requires field analysis/filtration. Lab analysis would be considered past hold time.
WI	This sample was ran at the Wisconsin Laboratory, WI DNR Certified #246179890

2406C71

SUBCONTRACT ORDER

Sterling Labs

O24F0847

SENDING LABORATORY:

Sterling Labs
509 N. Third Avenue
Des Plaines, IL 60016
Phone: 847-967-6666
Fax: 847.967.6735
Project Manager: Olga Karplyuk
okarplyuk@TheSterlingLab.

RECEIVING LABORATORY:

Suburban Laboratories, Subcontract
1950 S. Batavia Ave, Ste 150 Geneva, IL 60134
Geneva, IL 60134
Phone :(800) 783-5227
Fax: (708) 544-8587

Analysis	Due	Expires	Laboratory ID / Comments
TP-L-SW			
Sample ID: O24F0847-01 **Water**	**Sampled: 6/18/2024 12:45:00PM**		
9222D Fecal Coliform Sub	Due 6/28/2024	Exp 6/18/2024	Total Coliforms. PO# 12322684
SM9222D			
Containers Supplied:			
100 ml HDPE sterile, Na2S2(100 ml HDPE sterile, Na2S2(			

Released By 06/19/2024 06:00 Date — Received By 06/19/2024 0930 Date

Released By 06/19/2024 1022 Date — Received By 6/19/24 1023 Date

-1.6 C TOIIS

STAT Analysis Corporation:
2242 W. Harrison, Suite 200, Chicago, Illinois 60612
Tel: 312.733.0551; Fax: 312.733.2386; e-mail address: STATinfo@STATAnalysis.com

ASBESTOS ANALYSIS BY TRANSMISSION ELECTRON MICROSCOPY

EPA Method: 100.2, EPA 600/R-94/134
OSHA reg. 29 CFR 1910.1450

Sterling Labs
509 N. Third Avenue
Des Plaines, Illinois 6060116
Phone: (847)-967-6666
Fax: (847)-967-6735

Stat Batch: 371139
Project No.: 024F0847
Stat Client:
Average G.O. 0.013001 mm2
Filter diam. 201 mm

Date Received: 06/18/24
Date Analyzed: 06/25/24
Date Reported: 06/25/24

Laboratory Sample Number	Client Sample Number	Filtered Volume (ml)	Grid Openings Counted	Number of Asbestos Structures		Asbestos Structures (MFL)		Analytical Sensitivity (MFL)
371139-001	024F0847-01	10	5	0	≤	0.31	≤	0.31

Analyzed By:
Date: 06/25/24

**MFL=Million Fibers per Liter

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SUBCONTRACT ORDER

Sterling Labs

O24F0847

SENDING LABORATORY:

Sterling Labs
509 N. Third Avenue
Des Plaines, IL 60016
Phone: 847-967-6666
Fax: 847.967.6735
Project Manager: Olga Karplyuk
okarplyuk@TheSterlingLab.

RECEIVING LABORATORY:

Sterling Labs Chicago
2242 W. Harrison, Ste 200
Chicago, IL 60612-
Phone :(312) 733-0551
Fax: (312) 733-2386

Analysis	Due	Expires	Laboratory ID / Comments
TP-L-SW			
Sample ID: O24F0847-01 **Water**	**Sampled: 6/18/2024 12:45:00PM**		
TEM Asbestos Sub	Due 6/28/2024	Exp 12/15/2024	TEM Asbestos
TEM-Chatfield Method			
Containers Supplied:			
500 ml HDPE (O)			

Released By	Date	Received By	Date
06/19/2024 06:00		06/14/2024 8:00	
Released By	Date	Received By	Date
06/18/2024 15:08		6/14/24 15:08	