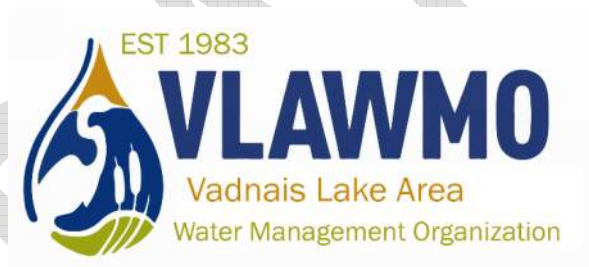


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**Specifications/Bid Package**  
**for**  
**Wilkinson Lake Deep-Water Wetland**  
**Restoration**  
**Prepared for the**  
**Vadnais Lake Area Water Management Organization**  
**April 2023**



**by**



7550 Meridian Circle North, Suite 120  
Maple Grove, MN 55369

DRAFT

SPECIFICATIONS/BID PACKAGE FOR

**Wilkinson Lake Deep-Water Wetland Restoration**

in

Ramsey County, MN

Owner (for purpose of this contract):  
Vadnais Lake Area Water Management  
Organization (VLAWMO)  
800 East County Road E  
Vadnais Heights, MN 55127  
Phone: 651-204-6070

Prepared By:

Houston Engineering, Inc.  
7550 Meridian Circle North, Suite 120  
Maple Grove, MN 55369  
(763) 493-4522

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Print Name: Adam Nies, PE

Sign Name: DRAFT

Date: \_\_\_\_\_ License No. 53358

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DIVISION

0

**SECTION 00030  
ADVERTISEMENT FOR BIDS**

**Wilkinson Lake Deep-Water Wetland Restoration  
Vadnais Lake Area Water Management Organization  
Ramsey County, MN**

**NOTICE IS HEREBY GIVEN THAT:**

Bids for the Wilkinson Lake Deep-Water Wetland Restoration, Vadnais Lake Area Water Management Organization (VLAWMO), Ramsey County, MN, will be received by the Board of Directors of the Vadnais Lake Area Water Management Organization, 800 East County Road E, Vadnais Heights, Minnesota, 55127 through QuestCDN (vBid) until 2:00 p.m., Central Time on Wednesday June 7, 2023, at which time they will be opened, read aloud, and tabulated. The bid opening can be accessed via the following:

1. Microsoft Teams using Meeting ID: 232 301 955 503 and Passcode: PQAdtm
2. Visit <https://bit.ly/WilkBMP>
3. Call in (audio only) at +1 218-302-5994 with Conference ID: 896 480 227#.

It is the intent to provide a recommendation of award to the Board of Directors for its consideration and possible award of the contract at its meeting scheduled to start at 7:00 p.m. on Wednesday June 28, 2023.

**General Description**

The major items of work consist of the following approximate quantities:

- Common Excavation (P), 10,100 cubic yards.
- Spoil Management, 14,150 cubic yards
- Wetland Seeding (P), 1.7 acres
- Upland Seeding, 1.5 acres

**Contract Description**

The contract is a unit price contract described in detail in Division 0 of the Project Specifications.

**Project Schedule**

No work shall commence sooner than August 16, 2023. Work shall be substantially completed by March 1, 2024, and final completion with vegetation established by July 1, 2024.

**Project Plans and Documents**

The bid set including plans and specifications may be downloaded from QuestCDN.com, project #8443103, for a fee of \$22.00. Bids MUST be submitted via the online electronic bid services through QuestCDN for a fee of \$42.00.

The plan holders list and bid results will be available for viewing on the Houston Engineering web site: [www.houstoneng.com](http://www.houstoneng.com).

**Pre-Bid Meeting**

A **mandatory** pre-bid meeting will be held on Wednesday, May 31, 2023 at 1:30 p.m. at North Oaks Community Room, 100 Village Center Drive North Oaks, MN 55127, starting at the Community Room and then visiting the project site.

**Bid Bond**

A bid bond in an amount equal to five (5) percent of the bid price is required for this project.

VLAWMO reserves all authority to accept or reject any or all bids and to waive informalities therein.

\_\_\_\_\_  
Date

\_\_\_\_\_  
Phil Belfiori, Administrator  
VLAWMO  
800 East County Road E  
Vadnais Heights, MN 55127

**SECTION 00200**  
**INSTRUCTIONS TO BIDDERS**

Wilkinson Lake Deep-Water Wetland Restoration

Owner:                   Vadnais Lake Area Water Management Organization (VLAWMO)

The Specifications hereto attached, including therein drawings incorporated by reference and a complete set of forms of Bid Form, Agreement, and other Contract Documents, are furnished for the convenience of bidders and are not to be detached, filled out or executed. Separate copies of Bid Form will be furnished for the purpose of submission of bids. In submitted Bid Form, bidders shall comply with the following instructions that shall control as to the submission of bids.

Bidders are responsible to review insurance requirements and ensure that conforming certificates and endorsements can be provided as required.

VLAWMO is the OWNER for all purposes related to the bidding and administration of this Work. Accordingly, under the Contract to be awarded, VLAWMO is to be considered beneficiary of the Work. All warranties, insurance, hold harmless obligations, indemnification obligations and bonds in the Contract Documents are to run to the benefit of VLAWMO and to others where so stated.

**1.     DEFINED TERMS**

- A. The term “General Conditions” refers to Section 00700 of these Specifications and is EJCDC C-700 Standard General Conditions of the Construction Contract, Copyright 2007 National Society of Professional Engineers for EJCDC.
- B. The term “Mn/DOT” in reference to a specification shall mean the latest published edition of the Minnesota Department of Transportation's Standard Specifications for Highway Construction, as modified by any Mn/DOT Supplemental Specification edition published prior to the date of the Advertisement.
- C. The term “Bidder” means one that submits a Bid directly to OWNER, as distinct from a sub-bidder, who submits a bid to the Bidder.
- D. The term “Successful Bidder” means the lowest responsible and responsive Bidder to whom OWNER (on the basis of OWNER’S evaluation as



hereinafter provided) makes an award. The Successful Bidder becomes the CONTRACTOR upon execution of the Agreement.

- E. The term “Bidding Documents” includes this Information Available to Bidders, the Bid Proposal, and the other Contract Documents (including all addenda issued prior to receipt of Bids).
- F. The term “Bidding Requirements” means those set forth in this Information Available to Bidders and on the Bid Form and otherwise in the Contract Documents.
- G. The term “Mn/DOT” means Minnesota Department of Transportation.
- H. The term “ENGINEER” means Houston Engineering, Inc.

## **2. CONTRACT DOCUMENTS**

The Contract Documents consist of the following:

- Modifications (field orders, change orders and directives)
- Notice to Proceed
- Construction Agreement
- Addenda
- Completed Bid Form
- Instructions to Bidders
- Contract Drawings
- Technical Specifications (Divisions 1 and 2)
- Payment Bond
- Performance Bond
- Supplementary Conditions
- General Conditions
- Advertisement for Bids

In the case of a discrepancy between or among any of the terms and conditions set forth in any of the Contract Documents, the order listed above shall be the order of precedence for resolving any such discrepancy in the terms and conditions of the Contract Documents, that is, the governing document shall be the Modifications (starting with the most recently dated first followed in descending chronological order by the remaining Modifications) followed by the Notice, and so on.

A term used in a specific contract document shall have the meaning given by a specific definition of the term in that document. If there is not a specific definition, the term shall be governed by its plain and intended meaning or its customary meaning in the industry, if there is one. Notwithstanding, terms in the Supplementary Conditions, if not defined therein, will be governed first by definition in the General Conditions, if there so defined.

## **3. COPIES OF PROPOSED CONTRACT DOCUMENTS**

A. This Section not applicable due to online bidding only, through Quest vBid.

#### 4. QUALIFICATIONS OF BIDDERS

A. To demonstrate qualifications to perform the Work, Bidders must complete the Bidders' Qualification Statement available in Section 00400 Bid Form. In addition, the Successful Bidder, if requested by the OWNER, shall submit to OWNER (with copy to ENGINEER) within seven (7) calendar days following the request by the OWNER written documentation which demonstrates the Bidder's ability to complete the Work as specified. This documentation may include, but shall not be limited to, a description of present commitments; description of the Bidder's project experience within a specified number of years including nature of project, owner's name, dollar value and name of bonding company; a description of the Bidder's equipment, key personnel and resources that demonstrate the Bidder's ability to successfully complete the Work; a list of subcontractors Bidder proposes to use; and such other information the OWNER believes is necessary.

B. As required by Minnesota Statutes §16C.285, Bidder shall submit to OWNER as a part of its bid a signed statement under oath verifying compliance with each of the following minimum criteria of responsibility. An electronic verification of compliance made and submitted as part of an electronic bid shall be an acceptable verification of compliance under this section provided that it contains an electronic signature as defined in Minnesota Statutes §325L.02, paragraph (h).

(1) Bidder:

- (i) is in compliance with workers' compensation and unemployment insurance requirements;
- (ii) is in compliance with the Department of Revenue and the Department of Employment and Economic Development registration requirements if it has employees;
- (iii) has a valid federal tax identification number or a valid Social Security number if an individual; and
- (iv) has filed a certificate of authority to transact business in Minnesota with the secretary of state if a foreign corporation or cooperative;

(2) Bidder or related entity is in compliance with and, during the three-year period before submitting the verification, has not violated Minnesota States §§177.24, 177.25, 177.41 to 177.44, 181.13, 181.14, or 181.722, and has not violated United States Code, title 29, sections 201 to 219, or United States Code, title 40, sections 3141 to 3148. For purposes of this clause, a violation occurs when a contractor or related entity:

- (i) repeatedly fails to pay statutorily required wages or penalties on one or more separate projects for a total underpayment of \$25,000 or more within the three-year period, provided that a failure to pay is "repeated" only if it

involves two or more separate and distinct occurrences of underpayment during the three-year period;

- (ii) has been issued an order to comply by the commissioner of labor and industry that has become final;
- (iii) has been issued at least two determination letters within the three-year period by the Department of Transportation finding an underpayment by the contractor or related entity to its own employees;
- (iv) has been found by the commissioner of labor and industry to have repeatedly or willfully violated any of the sections referenced in this clause pursuant to Minnesota Statutes §177.27;
- (v) has been issued a ruling or findings of underpayment by the administrator of the Wage and Hour Division of the United States Department of Labor that have become final or have been upheld by an administrative law judge or the Administrative Review Board; or
- (vi) has been found liable for underpayment of wages or penalties or misrepresenting a construction worker as an independent contractor in an action brought in a court having jurisdiction.

Provided that, if the contractor or related entity contests a determination of underpayment by the Department of Transportation in a contested case proceeding, a violation does not occur until the contested case proceeding has concluded with a determination that the contractor or related entity underpaid wages or penalties;

(3) Bidder or related entity is in compliance with and, during the three-year period before submitting the verification, has not violated Minnesota Statutes, chapter 326B. For purposes of this clause, a violation occurs when a contractor or related entity has been issued a final administrative or licensing order;

(4) Bidder or related entity has not, more than twice during the three-year period before submitting the verification, had a certificate of compliance under Minnesota Statutes §363A.36 revoked or suspended based on the provisions of §363A.36, with the revocation or suspension becoming final because it was upheld by the Office of Administrative Hearings or was not appealed to the office;

(5) Bidder or related entity has not received a final determination assessing a monetary sanction from the Department of Administration or Transportation for failure to meet targeted group business, disadvantaged business enterprise, or veteran-owned business goals, due to a lack of good faith effort, more than once during the three-year period before submitting the verification; and

(6) Bidder or related entity is not currently suspended or debarred by the federal government or the state of Minnesota or any of its departments, commissions, agencies, or political subdivisions that have authority to debar a contractor.

Any violations, suspensions, revocations or sanctions, as defined in clauses (2) to (5), above, occurring before July 1, 2014, will not be considered in determining whether Bidder or related entity meets the minimum criteria.

In its verification, Bidder shall include a list of all of its first-tier subcontractors. If Bidder is awarded the construction contract, before execution of the contract, and as a condition precedent to execution of the contract, Bidder shall submit to OWNER a supplemental verification under oath confirming the following:

All subcontractors and motor carriers that the contractor intends to use to perform project work have verified to the contractor through a signed statement under oath by an owner or officer that they meet the minimum criteria listed in clauses (1) through (6), above.

Each contractor or subcontractor shall obtain from all subcontractors with which it will have a direct contractual relationship a signed statement under oath by an owner or officer verifying that they meet all of the minimum criteria in clauses (1) through (6) above before execution of a construction contract with each subcontractor.

If Bidder or any subcontractor retains an additional subcontractor after submitting its verification of compliance, it shall obtain verification of compliance from each additional subcontractor with which it has a direct contractual relationship and shall submit a supplemental verification to OWNER confirming compliance with clauses (1) through (6) above within 14 days of retaining the additional subcontractor. On OWNER's request, Bidder shall submit copies of signed verifications of compliance from all subcontractors of any tier. Bidder or a subcontractor shall not be responsible for a false statement of a subcontractor with which it does not have a direct contractual relationship. Bidder or a subcontractor shall be responsible for a false statement of a first-tier subcontractor with which it has a direct contractual relationship only if it accepts the verification of compliance with actual knowledge that it contains a false statement.

If Bidder, a subcontractor or a motor carrier fails to meet the above minimum criteria or fails to verify that it meets those criteria, it is not a "responsible contractor" under the cited statute and is not eligible to be awarded the contract. A false statement under oath verifying compliance with any of the minimum criteria shall render Bidder, the subcontractor or the motor carrier that makes the false statement ineligible to be awarded the contract and may result in termination of a contract with such an entity that submits a false statement.

Terms within are as defined at Minnesota Statutes §16C.285, subdivision 1(i).

## **5. EXAMINATION OF CONTRACT DOCUMENTS AND SITE**

- A. It is the responsibility of each Bidder before submitting a Bid, to (a) examine the Contract Documents and become thoroughly familiar with all terms, conditions, and requirements; (b) visit the site to become familiar with local conditions that may affect cost, progress, performance or furnishing of the Work; (c) consider federal, state and local Laws, Codes, Ordinances, and Regulations that may affect cost,

progress, performance or furnishing of the Work; (d) study and carefully correlate Bidder's observations with the Contract Documents; (e) assure itself of the timely fabrication and availability of any structural elements of the work; and (f) notify ENGINEER of all conflicts, errors or discrepancies in the Contract Documents.

B. Reference is made to the General Conditions for identification of:

1. Existing Structures: All existing above and below ground structures at the site may not be shown on the Drawings and Bidder shall be responsible to verify the existence and location of all above and below ground structures. Bidder's Bid shall include the costs necessary for the performance, progress, furnishing, and installing of the Work as relates to existing above and below-ground structures.

(a) The OWNER and ENGINEER do not imply that the existing above and below ground structure information represented by the Drawings is necessarily representative, exhaustive, or comprehensive and expressly disclaim any warranties as to their accuracy or reliability for Bidder's purposes or purposes of construction. The Bidder may use this information and the data Bidder judges appropriate, but Bidder is not entitled to rely on any of the information, technical data, non-technical data, interpretations, or opinions contained therein or the completeness thereof. Bidder's reliance on such for Bidder's purposes is solely at Bidder's own risk.

(b) The OWNER and ENGINEER have no reliable information regarding the existence of subsurface structures at or contiguous to the Work other than those indicated in the Drawings. If the Bidder suspects or verifies the existence of subsurface structures which may affect the cost, performance, progress, furnishing, or installing of the Work in accordance with the Contract Documents prior to the time for the opening of bids, the Bidder shall notify OWNER and ENGINEER promptly, in writing, of the conflict. If such an existing subsurface structure is located at any time thereafter, OWNER and ENGINEER may consider the existing subsurface structure under the provisions for differing conditions as set forth in the General Conditions.

2. Underground Facilities and Utilities: Information and data concerning Underground Facilities and Utilities at or contiguous to the site, and known to OWNER and ENGINEER, are available for review by any Bidder at the ENGINEER'S office by appointment but are not a part of the Contract Documents. OWNER and ENGINEER do not imply that this information is necessarily representative, exhaustive, or comprehensive and expressly disclaim responsibility for or any warranties as to its accuracy. Whether Underground Facilities and Utilities are shown or indicated, or not shown or indicated, on the Drawings the CONTRACTOR shall have the full responsibility for locating all Underground Facilities and Utilities prior to the performance of all elements of the Work. The additional responsibilities

of Bidder regarding Underground Facilities and Utilities are set forth in the General Conditions.

- C. Before submitting a Bid, each Bidder will, at Bidder's own expense, make or obtain such reasonable additional examinations, investigations, explorations, tests and studies, and obtain any additional information and data which pertain to the physical conditions (surface, subsurface, Underground Facilities and Utilities) at or contiguous to the site or otherwise which may affect the cost, progress, performance or furnishing of the Work, and which Bidder deems necessary to determine its Bid for performing and furnishing the Work in accordance with the time, price, and other terms and conditions of the Contract Documents. Bidder's failure to conduct or perform such reasonable examinations, investigations, explorations, tests, and studies or obtain additional information, shall represent that Bid has included adequate cost contingencies as Bidder deems necessary for performing and furnishing the Work in accordance with the time, price, and other terms and conditions of the Contract Documents.
- D. It is the Bidder's responsibility to timely request access to the site from OWNER to conduct such explorations and tests as Bidder deems necessary for submission of a Bid, and OWNER will make reasonable arrangements for access. Bidder shall be responsible to restore all such lands to a condition equal to or better than the existing condition of such lands.
- E. The approximate boundaries of lands upon which the Work is to be performed, rights-of-way, and easements for access thereto, and other lands designated for use by CONTRACTOR in performing the Work are identified in the Contract Documents.
- F. The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Paragraph 5.0 of this section and that without exception the Bid is premised upon performing and furnishing the Work required by the Contract Documents and by such means, methods, techniques, sequences or procedures of construction as may be specifically indicated in or required by the Contract Documents, if any, and that the Contract Documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work. Except where means, methods, techniques, sequences or procedures of construction are explicitly and specifically stated in the Contract Documents, the CONTRACTOR shall choose same in order to achieve the specified results.
- G. The Contract Documents specify permits and easements specifically to be provided for by the ENGINEER and OWNER. All other permits and easements are the responsibility of CONTRACTOR.
- H. Prior to the submittal of Bids, if any potential Bidder is in doubt as to the true meaning, or finds discrepancies in or omissions from the Contract Documents, that potential Bidder shall submit to the ENGINEER a written request for an interpretation

or clarification thereof. The Bidder submitting the request shall be responsible for prompt delivery. Interpretations and clarifications considered necessary by the ENGINEER in response to such requests will be issued by Addenda mailed or delivered to all parties recorded by the ENGINEER as having received the Contract Documents. Requests received less than ten (10) calendar days prior to the date for opening of Bids may not be answered. Only interpretations and clarifications issued by Addenda will be binding. Oral interpretations and clarifications will be without legal effect.

- I. The estimate of quantities as shown in Section 00400, Bid Forms, shall be used as the basis for calculation upon which the award of Contract will be made and for calculation of the initial Contract Price, but these quantities are not guaranteed to be accurate and are furnished without liability on the part of OWNER and ENGINEER. The CONTRACTOR shall cooperate with and assist the ENGINEER as necessary to obtain the actual measurements required for the ENGINEER's determination of the actual quantities. The CONTRACTOR may also be required to furnish to the Resident Project Representative or OWNER's representative, on a daily basis, daily reports stating information such as quantities of work performed, labor force used, hours worked, equipment used, and the amount of time the equipment was operated. It is CONTRACTOR's obligation to demonstrate the basis of actual quantities for which payment is requested.
- J. It is the intent of the Contract Documents to cover all aspects of the Work. Should there be some item or items shown on the Drawings or described in the Specifications which are required to complete the Work, but not specifically included in any of the unit prices on the bid form or as amended by modifications to the Contract, these items and the furnishing of all necessary labor, materials and equipment shall be considered incidental to the Work and no additional compensation will be provided.
- K. Addenda may be issued during the time of the bidding or forming a part of the Contract. Receipt of each Addendum shall be acknowledged in the Bid Form.

## **6. CONTRACT TIME**

No work shall commence sooner than August 16, 2023. The Successful Bidder shall commence the Work following receipt of the Notice to Proceed and the Work shall thereafter be substantially completed by March 1, 2024 and final completion with vegetation established by July 1, 2024.

## **7. LIQUIDATED DAMAGES AND EARLY COMPLETION INCENTIVES**

All time limits stated in the Contract Documents are of the essence in and to the Agreement. OWNER and CONTRACTOR recognize that time is of the essence with regard to completion of the Work, and that OWNER will suffer financial loss, water quality and water management opportunity loss and other loss if the Work is not substantially completed or completed by the respective time specified in Paragraph 6.0

above, plus any extensions thereof allowed in accordance with the General Conditions. Accordingly, OWNER and CONTRACTOR agree that as liquidated damages for delay (but not as penalty), CONTRACTOR shall pay OWNER One Thousand Five Hundred dollars (\$1,500.00) for each working day that expires after the Substantial Completion or Completion Date to compensate OWNER for additional costs related to losses described above and engineering and administration for the extended time period. Both parties agree that the specified amount is a reasonable approximation of the damages that would be suffered by the OWNER, which damages are difficult precisely to calculate.

## 8. SUBSTITUTE OR “OR-EQUAL” ITEMS

The Agreement, if awarded, will be on the basis of materials and equipment described in the Drawings or stated in the Specifications without consideration of possible substitute or “or-equal” items. The procedure for submission of any application and consideration of application for Substitute or “Or-Equal” materials is set forth in the General Conditions.

## 9. BID FORM

- A. The Bid Form is included with the Bidding Documents for reference only. **Bids will ONLY be received and accepted via the online electronic bid service through QuestCDN.com.**
- B. The blank spaces on the Bid Form may be filled in correctly where indicated for each and every item submitted on QuestCDN.com. The Unit Prices Form and Alternates Form (if applicable) are for reference only. The Unit Prices shall be submitted through the QuestCDN.com “Bid Worksheet” and must be filled in correctly for each and every item for which a quantity is given, and the Bidder shall clearly indicate prices for which the Bidder proposed to do each item of Work completed.
- C. Bids by corporations must be executed in the corporate name by the president or a vice-president (or other corporate officer accompanied by evidence of authority to sign) and the corporate seal must be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation must be shown below the signature.
- D. Bids by partnerships must be executed in the partnership name and signed by a partner, whose title must appear under the signature and the official address of the partnership must be shown below the signature.
- E. Acknowledgement of receipt of all Addenda shall be documented in QuestCDN.
- F. The address and telephone number for communications regarding the Bid must be shown.

## 10. BID BOND



A bid bond in an amount equal to five (5) percent of the bid price is required for this project.

## **11. SUBMISSION OF BIDS**

Bids shall be submitted as set forth in the Agreement as follows:

- A. Bid proposals must be submitted via the online electronic bid services through QuestCDN for a non-refundable fee of \$42.00. Bidding information can be downloaded at [www.questCDN.com](http://www.questCDN.com) Reference QuestCDN project #8443103 for a non-refundable charge of \$22. Contact QuestCDN Customer Support at 952-233-1632 or [info@questcdn.com](mailto:info@questcdn.com) for assistance in membership registration, downloading digital project information, and vBid online bid submittal. Project documents must be downloaded from QuestCDN, which will add your company to the Planholder List and allow access to vBid online bidding for the submittal of your bid.
- B. It is the sole responsibility of the Bidder to see that the submitted bid proposal is received in proper time. Any proposal received after the scheduled closing time for receipt of the proposals will be rejected.
- C. Discrepancies in the multiplication of units of Work with unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.

## **12. WITHDRAWAL OF BIDS**

No Bid Proposal shall be withdrawn except with the consent of the OWNER for a period of sixty (60) days after the date set for the opening of bids, or until the Bid Proposal is returned by OWNER, or the Agreement is executed by the successful bidder.

## **13. OPENING OF BIDS**

Bids will be opened publicly, and the bidders' names and base bid amounts will be read aloud at such place, time, and date as designated in the Advertisement for Bids. Bidders or their authorized agents are invited to be present. The balance of the data included in the bid is private or non-public until completion of the selection process.

## **14. BIDS TO REMAIN SUBJECT TO ACCEPTANCE**

All bids will remain subject to acceptance for sixty (60) calendar days after the Bid opening, but OWNER may, in its sole discretion, release any Bid prior to that date.

## **15. REJECTION OF BIDS AND AWARD OF CONTRACT**

- A. To the extent of its lawful authority, OWNER reserves the right to reject any and all Bids, to waive any and all irregularities, informalities, or discrepancies in the Work

and to negotiate contract terms with the Successful Bidder, and the right to disregard all non-conforming, non-responsive, unbalanced or conditional Bids. Also, OWNER reserves the right to reject the Bid of any Bidder if OWNER believes that it would not be in the best interest of the project to make an award to that Bidder, whether because the Bid is not responsive or the Bidder is unqualified or of doubtful financial ability or fails to meet any other pertinent standard or criteria of responsibility established by OWNER.

- B. If the Contract is to be awarded, it will be awarded to the lowest responsible and responsive Bidder whose evaluation by OWNER indicates to OWNER that the Award will be in the best interest of the Project.

## **16. CONTRACT SECURITY**

Performance and payment bonds will be submitted and maintained by CONTRACTOR in accordance with Sections 00610 and 00620 and the remaining Contract Documents. When the Successful Bidder delivers the executed Agreement to OWNER, it must be accompanied by the required Performance and Payment Bonds.

## **17. SIGNING OF AGREEMENT**

When OWNER gives a Notice of Award to the Successful Bidder, it will be accompanied by the required number of unsigned counterparts of the Agreement with all other written Contract Documents attached. Within ten (10) calendar days thereafter, Successful Bidder shall sign and deliver the required number of counterparts of the Agreement and attached documents to OWNER along with the required Bonds, evidence of insurance, and any other required submittals. OWNER or ENGINEER will review required submittals and may require Successful Bidder to make revisions. Successful Bidder shall make required revisions and resubmit to OWNER within five (5) calendar days of OWNER'S request for such revision. Within thirty (30) days of final receipt of all acceptable materials, OWNER will deliver one (1) fully signed counterpart of the Contract Documents to CONTRACTOR. Each counterpart is to be accompanied by a complete set of the Contract Documents with appropriate identification. Failure to deliver a complete set of Contract Documents does not have the effect of modifying the term "Contract Documents."

## **18. PAYMENT AND RETAINAGE**

- A. Provisions concerning progress payments and final payment are set forth in the General Conditions and the other Contract Documents.
- B. No payment amounts on account of materials and equipment delivered to the site prior to installation will be made. Progress payments will only be made when materials are completely installed in accordance with the Contract Documents.
- C. Retainage shall be five percent (5%) of the value of the Work completed to date. Out of-state contractors are subject to Minnesota Statutes 290.9705.

**19. PRE-BID MEETING**

A mandatory pre-bid meeting will be held for this project. The Engineer will be available onsite for a pre-bid meeting on May 31, 2023 at 1:30 PM at North Oaks Community Room, 100 Village Center Drive North Oaks, MN 55127, starting at the Community Room and visiting the project site.

**20. PRE-CONSTRUCTION MEETING**

Prior to the beginning of construction operations, a pre-construction meeting will be held at which time the CONTRACTOR will supply for the ENGINEER's approval a copy of the CONTRACTOR proposed project schedule as provided for in the General Conditions.

**\*\*END OF SECTION\*\***

DRAFT

**SECTION 00400**  
**BID FORM**

Wilkinson Lake Deep-Water Wetland Restoration

Owner: Vadnais Lake Area Water Management Organization  
\_\_\_\_\_

To: Vadnais Lake Area Water Management Organization  
\_\_\_\_\_, 20\_\_\_\_ Date  
800 East County Road E  
Vadnais Heights, MN 55127  
Attn: Houston Engineering, Inc.

Proposal of \_\_\_\_\_  
Bidder  
\_\_\_\_\_  
Address

Pursuant to the bid for the Wilkinson Lake Deep-Water Wetland Restoration to furnish all necessary machinery, equipment, tools, labor, materials and other means of construction and deliver materials and to do and perform all work set forth below (the "Work") at rates and at a total price or prices as hereinafter set forth, in accordance with the Contract Documents including the Drawings and Specifications and addenda thereto on file in the office of the OWNER and OWNER'S ENGINEER, Houston Engineering, Inc. 7550 Meridian Circle North, Suite 120, Maple Grove, MN 55369.

First: In submitting this Bid Proposal, the undersigned bidder understands and agrees that the Instructions to Bidders and other Contract Documents referred to therein control and, without limiting the foregoing, that this Bid Proposal is based upon the following undertakings:

1. That Bidder to the extent it deems necessary, has performed reasonable inspection of the site of the work, existing construction in the areas of the proposed work, and is informed as to the condition thereof as the same bears on the work to be performed.
2. That Bidder has received and examined the Drawings and Specifications, and is informed of all addenda thereto, and of the forms of the Contract Documents, including but not limited to the Agreement, performance and payment bonds and insurance certificates and endorsements to be furnished in the event an Agreement is awarded.

3. Certain types of equipment and kinds of material are described in the specifications by means of trade names and catalog numbers and/or manufacturer's names. The Agreement, if awarded, will be on the basis of materials and equipment described in the Drawings or stated in the Specifications without consideration of possible substitute or "or-equal" items. In some cases, it is indicated in the Drawings or stated in the Specifications that a substitute or "or-equal" item of material or equipment may be furnished or used by CONTRACTOR on ENGINEER's approval. Application for any such approval will not be considered by ENGINEER until after the signing of the Agreement. The procedure for submission of any such application and consideration of application is set forth in the Contract Documents. Bidder acknowledges that this proposal is submitted in strict accord with specified requirements, and other requirements of these documents.

Second: The undersigned Bidder agrees, if it is the successful Bidder, to execute the Agreement as set forth at Section 00500 of the Contract Documents, and to furnish the required performance and payment bonds as set forth at Sections 00610 and 00620 of the Contract Documents and furnish insurance certificates and endorsements, all within ten (10) days of receiving the Notice of Award of contract from the OWNER.

Third: The undersigned Bidder further agrees to begin work within timeframe listed in contract and following receipt of the Notice to Proceed and to prosecute said work so as to complete the same as specified in the Information Available to Bidders, subject to Liquidated Damages and other remedies.

Fourth: The undersigned Bidder further agrees to guarantee performance of all work in accordance with Drawings and Specifications and in a good and workmanlike manner, and to renew or repair any work that may be rejected due to defective materials or workmanship prior to final completion and acceptance of the material and installation by the OWNER.

Fifth: The undersigned Bidder further agrees prior to or with the signing of the Agreement, to provide the following upon OWNER'S request, or any other information relevant to OWNER's determination of Bidder's status as a responsive and responsible bidder:

1. Such catalogs, photographs, drawings, specifications, descriptive information and other details as to special equipment or materials bidder proposes to furnish for the work, to permit a valuation of the merits thereof and determination whether such special equipment or materials comply with the specifications.
2. A properly executed affidavit of non-collusion.
3. A statement of Bidder's qualifications.
4. A statement setting forth all items of work that the Bidder proposes to subcontract, and names of the subcontractors to whom such items shall be subcontracted.

Sixth: Following is a tabulation of the undersigned Bidder's bid for all work to be performed

to carry out the aforementioned construction being understood that this bid contemplates all machinery, equipment, tools, labor, materials and other means of construction and all materials and times specified in accordance with the Contract Documents, drawings and specifications and all Addenda thereto. At the opening of Bid Proposals, the total contract price will be read out loud for the primary bid. The undersigned Bidder proposes to do all unclassified work required to complete the contemplated Work, at a unit price contract as provided by the specifications and other Contract Documents.

Seventh: This bid is genuine and not made in the interest or on behalf of any undisclosed person, firm, or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization, or corporation; Bidder has not directly or indirectly induced or solicited any other bidder to submit a false or sham Bid; Bidder has not solicited or induced any person, firm or a corporation to refrain from bidding; and Bidder has not sought by collusion to obtain for itself any advantage over any other bidder or over OWNER.

Bidder agrees to complete the Work for the Primary Bid at the unit prices and/or lump sums as listed and set forth on the Bid Tabulation Schedules that follow.

Eight: **Responsible Contractor Verification.** Per Minnesota Statute § 16C.285, bidders must complete and attach “Attachment A – Responsible Contractor Verification and Certification of Compliance.”

**Bid Tabulations:**

Note: For reference only. Bids MUST be submitted online through QuestCDN.

<b>Item Number</b>	<b>Description</b>	<b>Units</b>	<b>Quantity</b>	<b>Unit Cost</b>	<b>Total Estimated Price</b>
1	Mobilization	Lump Sum	1		
2	Demolition, Removals, and Salvage	Lump Sum	1		
3	Clearing & Chipping (P)	Acre	0.5		
4	Construction Matting	Lump Sum	1		
5	Common Excavation (P)	Cubic Yard	10,100		
6	Spoil Management (P)	Cubic Yard	14,150		
7	Access Road Grading	Lump Sum	1		
8	Water Control	Lump Sum	1		
9	Random Riprap Class III	Cubic Yard	18		
10	Silt Fence	Linear Foot	1,615		
11	Ditch Check	Each	1		
12	Floating Silt Curtain	Linear Foot	80		
13	Erosion Control Blanket	Square Yard	3,500		
14	Upland Seeding and Mulch	Acre	1.5		
15	Wetland Seeding (P)	Acre	1.7		
16	Herbicide Treatment	Acre	1.0		
17	Rock Construction Entrance	Lump Sum	1		
18	SWPPP Documentation and Management	Lump Sum	1		
				<b>TOTAL</b>	

**BIDDER'S QUALIFICATION STATEMENT**

1. The name, address and phone/fax number of the bidder.

Name \_\_\_\_\_

Address \_\_\_\_\_

Phone \_\_\_\_\_

2. Years in business \_\_\_\_\_

3. List of contractor owned equipment available for this project.

**Attach as separate submittal, if necessary.**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4. List of equivalent type projects performed within the last ten- (10) years. [The list of references should include at least three projects involving pond dredging and one with wetland restoration.]

Attach as submittal, if necessary.

1. Name of Client \_\_\_\_\_ Date \_\_\_\_\_

Name of Contact \_\_\_\_\_ Phone \_\_\_\_\_

Description of Project \_\_\_\_\_

2. Name of Client \_\_\_\_\_ Date \_\_\_\_\_

Name of Contact \_\_\_\_\_ Phone \_\_\_\_\_

Description of Project \_\_\_\_\_

3. Name of Client \_\_\_\_\_ Date \_\_\_\_\_

Name of Contact \_\_\_\_\_ Phone \_\_\_\_\_

Description of Project \_\_\_\_\_

4. Name of Client \_\_\_\_\_ Date \_\_\_\_\_

Name of Contact \_\_\_\_\_ Phone \_\_\_\_\_

Description of Project \_\_\_\_\_

5. Name of Client \_\_\_\_\_ Date \_\_\_\_\_

Name of Contact \_\_\_\_\_ Phone \_\_\_\_\_

Description of Project \_\_\_\_\_

5. List of person(s) who are employed by you and will supervise and be available to perform the work on this project and the number of years of experience.

Names: \_\_\_\_\_ Years of experience \_\_\_\_\_

Project Manager: \_\_\_\_\_

Superintendent: \_\_\_\_\_

Foreman: \_\_\_\_\_

Personnel: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



\_\_\_\_\_  
\_\_\_\_\_

6. Such additional information as will assist the Owner and Engineer in determining whether the bidder is adequately prepared to fulfill the contract. Attach as submittal, if necessary.

\_\_\_\_\_

7. The undersigned hereby authorizes and requests any person, firm or corporation to furnish any information requested by the Owner in verification of the recitals constituting this statement of contractor's qualifications.

State the true, exact correct and complete name of the partnership, corporation or trade name under which you do business, and the address of the place of business. If a corporation, state the name of the President and secretary. If a partnership, state the names of the partners. If a trade name, state the names of the firms and/or individuals who do business under the trade name. **It is absolutely necessary that this information be provided.**

7.1 Correct and complete name of bidder: \_\_\_\_\_

7.2 The Business is a: \_\_\_\_\_

7.3 The address of the principal place of business is: \_\_\_\_\_

7.4 Telephone Number: \_\_\_\_\_

Dated at: \_\_\_\_\_ this \_\_\_\_\_ day  
of \_\_\_\_\_, 20\_\_.

\_\_\_\_\_

By: \_\_\_\_\_

Attest: \_\_\_\_\_

**AFFIDAVIT OF RESPONSIBLE CONTRACTOR COMPLIANCE TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID**

**CERTIFICATE OF EXECUTION**

Receipt is acknowledged of the following addenda:

Addenda \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_.

Witness this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Company: \_\_\_\_\_

Signature: \_\_\_\_\_

**STATEMENT OF NONCOLLUSION**

\_\_\_\_\_, of \_\_\_\_\_, the party making the foregoing bid, states that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and further, that the bidder has not, directly or indirectly, submitted his or her bid price or breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

Signed: \_\_\_\_\_

**\*\*END OF SECTION\*\***

DRAFT

**SECTION 00410**  
**RESPONSIBLE CONTRACTOR VERIFICATION OF COMPLIANCE**  
**(Attachment A)**

Minnesota Statutes, Section [16C.285](#), subdivision 3. **Responsible Contractor, Minimum Criteria.** “Responsible Contractor” means a contractor that conforms to the responsibility requirements in the solicitation document for its portion of the work on the project and verifies that it meets the minimum criteria set forth below. Each contractor or subcontractor shall obtain from all subcontractors with which it will have a direct contractual relationship a signed statement under oath by an owner or officer verifying that they meet all of the minimum criteria in subdivision 3 prior to execution of a construction contract with each subcontractor.

1. The Contractor:
  - i. is in compliance with workers' compensation and unemployment insurance requirements;
  - ii. is in compliance with the Department of Revenue and the Department of Employment and Economic Development registration requirements if it has employees;
  - iii. has a valid federal tax identification number or a valid Social Security number if an individual; and
  - iv. has filed a certificate of authority to transact business in Minnesota with the secretary of state if a foreign corporation or cooperative.
  
2. The contractor or related entity is in compliance with and, during the three-year period before submitting verification, has not violated Minnesota Statutes, sections [177.24](#), [177.25](#), [177.41](#) to [177.44](#), [181.13](#), [181.14](#), or [181.722](#), and has not violated United States Code, [title 29, sections 201 to 219](#), or United States Code, [title 40, section 3141 to 3148](#). For purposes of this clause, a violation occurs when a contractor or related entity:
  - i. repeatedly fails to pay statutorily required wages or penalties on one or more separate projects for a total underpayment of \$25,000 or more within the three-year period, provided that a failure to pay is “repeated” only if it involves two or more separate and distinct occurrences of underpayment during the three-year period;
  - ii. has been issued an order to comply by the commissioner of labor and industry that has become final;
  - iii. has been issued at least two determination letters within the three-year period by the Department of Transportation finding an underpayment by the contractor or related entity to its own employees;
  - iv. has been found by the commissioner of labor and industry to have repeatedly or willfully violated any of the sections referenced in this clause pursuant to Minnesota Statutes, section [177.27](#);
  - v. has been issued a ruling or findings of underpayment by the administrator of the Wage and Hour Division of the United States Department of Labor that have become final or have been upheld by an administrative law judge or the Administrative Review Board; or
  - vi. has been found liable for underpayment of wages or penalties or misrepresenting a construction worker as an independent contractor in an action brought in a court having jurisdiction.
  
3. The contractor or related entity is in compliance with and, during the three-year period before submitting the verification, has not violated Minnesota Statutes, section [181.723](#) or Minnesota Statutes, chapter [326B](#). For purposes of this clause, a violation occurs when a contractor or related entity has been issued a final administrative or licensing order;\*
  
4. The contractor or related entity has not, more than twice during the three-year period before submitting the verification, had a certificate of compliance under Minnesota Statutes, section [363A.36](#) revoked or suspended based on the provisions of Minnesota Statutes, section [363A.36](#),

with the revocation or suspension becoming final because it was upheld by the Office of Administrative Hearings or was not appealed to the office;\*

5. The contractor or related entity has not received a final determination assessing a monetary sanction from the Department of Administration or Transportation for failure to meet targeted group business, disadvantaged business enterprise, or veteran-owned business goals, due to a lack of good faith effort, more than once during the three-year period before submitting the verification; and\*
6. The contractor or related entity is not currently suspended or debarred by the federal government or the state of Minnesota or any of its departments, commissions, agencies, or political subdivisions that have authority to debar a contractor.

**Certification**

**By signing this document, I am certifying that I am an owner or officer of the contractor and am verifying under oath that:**

1. Contractor is in compliance with Minnesota Statutes, Section [16C.285](#),
2. I have included Attachment A-1

_____ Contractor Company Name	_____ Date
_____ Authorized Signature of Owner or Officer	_____ Printed Name
_____ Title	



**SECTION 00500**  
**CONSTRUCTION AGREEMENT**

THIS AGREEMENT made the \_\_\_\_\_ day of \_\_\_\_\_ in the year Two Thousand and \_\_\_\_\_ by \_\_\_\_\_ and \_\_\_\_\_ between \_\_\_\_\_, hereinafter called the Contractor, and the Vadnais Lake Area Water Management Organization, hereinafter called the Owner.

WITNESSETH, that the Contractor and the Owner for the considerations hereinafter named agree as follows:

**Article I. Scope of Work:**

The Contractor shall furnish all the materials, equipment, supplies and labor, including all Contractor's superintendents, and perform all of the work described in the specifications and other contract documents entitled Wilkinson Lake Deep-Water Wetland Restoration prepared by Houston Engineering Inc, Maple Grove, Minnesota, acting as and in these contract documents entitled the Engineer, and shall do everything required by the contract documents as hereinafter specified.

**Article II. Engineer:**

The project has been designed by Houston Engineering, Inc. who is hereinafter called ENGINEER and who is to act as OWNER'S representative, assume all duties and responsibilities and have the rights and authority assigned to ENGINEER in the Contract Documents in connection with the completion of the work.

**Article III. Time of Completion**

The Work shall be initiated and completed in accordance with the times set forth in Section 00200, Instructions to Bidders.

**Article IV. Liquidated Damages:**

Liquidated damages are as set forth in Section 00200, Instructions to Bidders.

**Article V. The Contract Sum:**

The Owner shall pay the Contractor for the performance of the contract, subject to additions and deductions therein, in current funds as follows:

\_\_\_\_\_ (\$ \_\_\_\_\_).

**Article VI. Payment of Contract:**

The Contractor shall submit and the Engineer shall process the Applications for payment in accordance with Article 14 of the General Conditions.

The Owner shall make progress payments on account of the contract price on the basis of the Contractor's Application for Payment as recommended by the Engineer each month during construction. The Contractor will be paid ninety-five percent (95%) of the Engineer's estimate of the value of acceptable work completed by the end of the preceding month. Out-of-state contractors are subject to Minnesota Statutes 290.9705.

Upon receipt of written notice that the work is ready for final inspection and acceptance, the Engineer shall promptly make such inspection and when he finds the work acceptable under the contract and the contract fully performed, he shall promptly issue a final certificate over his own signature, stating that the work provided for in the contract has been completed and is acceptable by him under the terms and conditions hereof, and the entire amount found to be due the Contractor shall be paid to the Contractor at the office of the Owner in the manner specified in the General Conditions.

Before issuance of final certificate, the Contractor shall submit evidence satisfactory to the Engineer that all payrolls, material bills and other indebtedness connected with the work have been paid and shall make all submittals and fulfill other requirements as provided for in Section 01700, Project Closeout. The making and acceptance of the final payment shall constitute a waiver of all claims by the Owner, other than those arising from unsettled liens, from faulty work appearing after the final payment, or from requirements of the specifications still unsettled.



**Article VII. The Contract Documents:**

The Contract Documents, which constitute the entire agreement between the Owners and the Contractor regarding the work, consist of the following:

- Modifications (change orders and directives)
- Notice to Proceed
- Construction Agreement
- Addenda
- Completed Bid Form
- Instruction to Bidders
- Contract Drawings
- Technical Specifications
- Payment Bond
- Performance Bond
- Insurance
- Supplementary Conditions
- General Conditions
- Advertisement for Bids

**Article VIII. Contractor's Representations:**

The Contractor is familiar with the nature and extent of the Contract Documents, the Work, site locality, and all local conditions and Laws and Regulations that may affect the project.

The Contractor has studied all tests and reports of explanation of subsurface conditions, and has studied any drawings of physical conditions included with the Contract Documents.

The Contractor agrees to take full responsibility for any damage to public or private property caused by him, his representatives or his subcontractors during all phases of construction, and agrees that the Owner will not be held liable for any said damage.

The Contractor agrees to renew or repair any work or materials found to be defective within one (1) year after acceptance of the project by the Owner.

**Article IX. Miscellaneous:**

Pursuant to Minnesota Statutes, section 16C.05, subdivision 5, the books, records, documents, and accounting procedures of Contractor relevant to the Work are subject to examination by Owner and either the legislative auditor or the state auditor, as appropriate, for a minimum of six years.

Pursuant to Minnesota Statutes, section 471.425, subdivision 4a, Contractor must pay any subcontractors within 10 days of Contractor's receipt of payment from Owner for undisputed services provided by the subcontractor. Any undisputed amounts not paid to a subcontractor within 10 days shall be subject to, and Contractor shall pay, interest of 1-1/2 percent per month. The minimum monthly interest penalty Contractor shall pay for an unpaid balance of \$100 or more is \$10. For an unpaid balance of less than \$100, Contractor shall pay the actual penalty due to the subcontractor. A subcontractor who prevails in a civil action to collect interest penalties from Contractor must be awarded its costs and disbursements, including attorney's fees, incurred in bringing the action.

Pursuant to Minnesota Statutes, section 270C.66, Contractor must provide, as part of the documentation required for final payment, a completed IC-134 form signed by the Minnesota Department of Revenue showing Contractor's compliance with the withholding requirements contained in Minnesota Statutes, section 290.92.

The Contactor agrees to comply with the requirements of Minnesota Statutes, section 181.59 regarding nondiscrimination.

Pursuant to Minnesota Statutes § 13.05, Subd. 11, all of the data created, collected, received, stored, used, maintained, or disseminated by the Contractor in performing this contract is subject to the requirements of the Minnesota Government Data Practices Act, Minnesota Statutes Chapter 13, and the Contractor must comply with those requirements as if it were a government entity. The remedies in Minnesota Statutes § 13.08 apply to the Contractor. The Contractor does not have a duty to provide access to public data to the public if the public data is available from the Owner, except as required by the terms of this Agreement.

The Contractor and the Owner agree that all of the terms of this Agreement shall be binding upon themselves, their heirs, administrators, executors, legal and personal representatives, successors and assigns.

This Agreement is entered into under and pursuant to the laws of the State of Minnesota and shall in all respects be construed in accordance with the laws of said State.

IN WITNESS WHEREOF, the parties hereto have executed this instrument under their several seals this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

OWNER: Vadnais Lake Area Water Management Organization

CONTRACTOR:

\_\_\_\_\_

By: \_\_\_\_\_

By: \_\_\_\_\_

Title: Board Chair

Title: \_\_\_\_\_

(CORPORATE SEAL)

Address for giving notices:

Address for giving notices:



**SECTION 00550  
NOTICE TO PROCEED**

To: \_\_\_\_\_

Date: \_\_\_\_\_

Project: Wilkinson Lake Deep-Water Wetland Restoration

You are hereby notified to commence WORK in accordance with the Agreement dated \_\_\_\_\_, on or after \_\_\_\_\_, and you are to substantially complete the WORK on or before, March 1, 2024.

\_\_ Vадnais Lake Area Water Management

Organization \_\_\_\_\_

(OWNER)

By: \_\_\_\_\_

Title: Administrator \_\_\_\_\_

**ACCEPTANCE OF NOTICE**

Receipt of this above Notice to Proceed is hereby acknowledged by \_\_\_\_\_ this  
the \_\_\_ day of \_\_\_\_\_, 20\_\_.

By: \_\_\_\_\_

Title: \_\_\_\_\_

\*\*END OF SECTION\*\*

**SECTION C-700 AUG 3, 2007-FINAL (TY019315).DOC**  
**CONSTRUCTION TY019315;1**

**NOTE TO BIDDERS: SECTION 00610 PERFORMANCE BOND LANGUAGE CONTAINS CHANGES FROM EJCDC BOND LANGUAGE AS INDICATED IN ITALICS AND STRIKETHROUGH BELOW.**

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Any singular reference to CONTRACTOR, SURETY, OWNER, or other party shall be considered plural where applicable.

CONTRACTOR (Name and Address)

SURETY (Name and Principal Place of Business)

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OWNER (Name and Address)

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CONSTRUCTION CONTRACT

DATE: \_\_\_\_\_, 20 \_\_\_\_

AMOUNT: \_\_\_\_\_

(Written Amount) \_\_\_\_\_

Description (Project Name and Location):

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BOND

DATE: \_\_\_\_\_, 20\_\_

AMOUNT: \_\_\_\_\_

(Written Amount) \_\_\_\_\_

Contractor (Corporate Seal)

Surety (Corporate Seal)

Company Name: \_\_\_\_\_

Company Name: \_\_\_\_\_

By: \_\_\_\_\_  
(Signature)

By: \_\_\_\_\_  
(Signature)

\_\_\_\_\_  
Name:(Typewritten)

\_\_\_\_\_  
Name:(Typewritten)

ITS: \_\_\_\_\_  
(Title)

ITS: \_\_\_\_\_  
(Title)

On this \_\_\_\_ day of \_\_\_\_\_, 20\_\_, before me personally appeared \_\_\_\_\_

and

\_\_\_\_\_, on behalf of the CONTRACTOR and SURETY named in this Performance Bond above, respectively, and each of them, as their free act and deed, caused this Performance Bond to be executed as of this date.

\_\_\_\_\_  
Notary Public

ATTACH POWER OF ATTORNEY FROM SURETY TO THIS BOND

For Information Only (Name, Address and Telephone)

Agent or Broker:

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Owner's Representative (Engineer)

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1. Contractor and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.
2. If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except to participate in conferences as provided in Subparagraph 3.1.
3. ~~If there is no Owner Default~~, *Unless lawfully excused*, the Surety's obligation under this Bond shall arise after:
  - 3.1. The Owner has notified the Contractor and the Surety at its address described in Paragraph 10 below, that the Owner is considering declaring a Contractor Default and has requested and attempted to arrange a conference with the Contractor and the Surety to be held not later than fifteen days after receipt of such notice to discuss methods of performing the Construction Contract. If the Owner, the Contractor and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default; and
  - 3.2. The Owner has declared a Contractor Default and formally terminated the Contractor's right to complete the contract. Such Contractor Default shall not be declared earlier than twenty days after the Contractor and the Surety have received notice as provided in Subparagraph 3.1: and
  - 3.3. The Owner has agreed to pay the Balance of the Contract Price to the Surety in accordance with the terms of the Construction Contract or to a contractor selected to perform the Construction Contract in accordance with the terms of the contract with the Owner.
4. When the Owner has satisfied the conditions of Paragraph 3, the Surety shall ~~promptly~~ *within 15 calendar days* and at the Surety's expense take one of the following actions:
  - 4.1. Arrange for the Contractor, with consent of the Owner, to perform and complete the Construction Contract; or
  - 4.2. Undertake to perform and complete the Construction Contract itself, through its agents or through independent contractors: or
  - 4.3. Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and the contractor selected with the Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 6 in excess of the Balance of the Contract Price incurred by the Owner resulting from the Contractor's default: or
  - 4.4. Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances:
    1. After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, tender payment therefore to the Owner; or
    2. Deny liability in whole or in part and notify the Owner citing reasons therefore.
5. If the Surety does not proceed as provided in Paragraph 4 with reasonable promptness, the Surety shall be deemed to be in default on this Bond fifteen days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any ~~remedy~~ *and all remedies* available to the Owner. If the Surety proceeds as provided in Subparagraph 4.4, and the Owner refuses the payment tendered or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.
6. After the Owner has terminated the Contractor's right to complete the Construction Contract, and if the Surety elects to act under Subparagraph 4.1, 4.2, or 4.3 above, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. To the limit of the amount of this Bond, but subject to commitment by the Owner of the Balance of the Contract Price to mitigation of costs and damages on the Construction Contract, the Surety is obligated without duplication for:
  - 6.1. The responsibilities of the contractor for correction of defective work and completion of the Construction Contract;
  - 6.2. Additional *costs incurred by the OWNER, including without limitation* legal, design professional and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Paragraph 4; and
  - 6.3. Liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.
7. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, or successors.
8. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.
9. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after Contractor Default *is declared by the OWNER or within two years after Surety provides OWNER written notice of its refusal or failure* ~~or within two years after the Contractor ceased working or within two years after the Surety refuses or fails~~ to perform its obligations under this Bond,

whichever occurs first. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

10. Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the signature page.
11. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory bond and not as a common law bond.
12. Definitions.
  - 12.1. Balance of the Contract Price: The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made, including allowance to the Contractor of any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.
  - 12.2. Construction Contract: The agreement between the Owner and the Contractor identified in the signature page, including all Contract Documents and changes thereto.
  - 12.3. Contractor Default: Failure of the Contractor, which has neither been remedied nor waived, to perform or otherwise to comply with the terms of the Construction Contract.
  - 12.4. Owner Default: Failure of the Owner, which has neither been remedied nor waived, to pay the Contractor as required by the Construction Contract or to perform and complete or comply with the other terms thereof.
  - 12.5 *CONTRACTOR: CONTRACTOR is defined to include any subcontractor or sub-subcontractor.*

**\*\*END OF SECTION\*\***

**SECTION C-700 AUG 3, 2007-FINAL (TY019315).DOC**  
**CONSTRUCTION TY019315;1**

**NOTE TO BIDDERS: SECTION 00620 PAYMENT BOND LANGUAGE CONTAINS CHANGES FROM EJCDC BOND LANGUAGE AS INDICATED IN ITALICS AND STRIKETHROUGH BELOW.**

---

Any singular reference to CONTRACTOR, SURETY, OWNER, or other party shall be considered plural where applicable.

CONTRACTOR (Name and Address)

SURETY (Name and Principal Place of Business)

---

---

---

---

---

---

---

---

OWNER (Name and Address)

---

---

---

---

CONSTRUCTION CONTRACT

DATE: \_\_\_\_\_, 20 \_\_\_\_

AMOUNT: \_\_\_\_\_

(Written Amount) \_\_\_\_\_

Description (Project Name and Location):

---

---

---

---

BOND

DATE: \_\_\_\_\_, 20\_\_

AMOUNT: \_\_\_\_\_

(Written Amount) \_\_\_\_\_

Contractor (Corporate Seal)

Surety (Corporate Seal)

Company Name: \_\_\_\_\_

Company Name: \_\_\_\_\_

By: \_\_\_\_\_  
(Signature)

By: \_\_\_\_\_  
(Signature)

\_\_\_\_\_  
Name:(Typewritten)

\_\_\_\_\_  
Name:(Typewritten)

ITS: \_\_\_\_\_  
(Title)

ITS: \_\_\_\_\_  
(Title)

On this \_\_\_\_ day of \_\_\_\_\_, 20\_\_, before me personally appeared \_\_\_\_\_

and

\_\_\_\_\_, on behalf of the CONTRACTOR and SURETY named in this Payment Bond above, respectively, and each of them, as their free act and deed, caused this Payment Bond to be executed as of this date.

\_\_\_\_\_

Notary Public

ATTACH POWER OF ATTORNEY FROM SURETY TO THIS BOND

\_\_\_\_\_

For Information Only (Name, Address and Telephone)

Agent or Broker:

---

---

---

---

Owner's Representative (Engineer)

---

---

---

---

1. The Contractor and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner to pay for labor, materials and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference.
2. With respect to the Owner, this obligation shall be null and void if the Contractor:
  - 2.1. Promptly makes payment, directly or indirectly, for all sums due Claimants, and
  - 2.2. Defends, indemnifies and holds harmless the Owner from all claims, demands, liens or suits by any person or entity who furnished labor, materials or equipment for use in the performance of the Construction Contract, provided the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 12) of any claims, demands, liens or suits and tendered defense of such claims, demands liens or suits to the Contractor and the Surety, and ~~provided there is no~~ *unless CONTRACTOR is lawfully excused due to Owner Default.*
3. With respect to Claimants, this obligation shall be null and void if the Contractor promptly makes payment, directly or indirectly, for all sums due.
4. The Surety shall have no obligation to Claimants under this Bond until *Claimants*:
  - 4.1. ~~Claimants who are employed by or have direct contract with the Contractor have given notice to the Surety (at the address described in Paragraph 12) and send a copy, or notice thereof, to the Owner, stating that a claim is being made under this Bond and, with substantial accuracy, the amount of the claim.~~
  - 4.2. ~~Claimants who do not have a direct contract with the Contractor:~~
    - 4.1. Have furnished written notice to the Contractor *and Surety* and sent a copy, or notice thereof, to the Owner, within ~~90~~ *120* days after having last performed labor or last furnished materials or equipment included in the claim stating, with substantial accuracy, *the date on which labor and materials were last furnished*, the amount of the claim and the name of the party to whom the materials were furnished or supplied or for whom the labor was done or performed: and
    - 4.2. Have either received a rejection in whole or in part from the Contractor, or not received within 30 days of furnishing the above notice any communication from the Contractor by which the Contractor has indicated the claim will be paid directly or indirectly; and
    - 4.3. Not having been paid within the above 30 days, have send a written notice to the Surety (at the address described in Paragraph 12) and sent a copy, or notice thereof, to the Owner, stating that a claim is being made under this Bond and enclosing a copy of the previous written notice furnished to the Contractor.
5. If a notice required by Paragraph 4 is given by the Owner to the Contractor or to the Surety, that is sufficient compliance.
6. When the Claimant has satisfied the conditions of Paragraph 4, the Surety shall promptly and at the Surety's expense take the following actions:
  - 6.1. Send an answer to the Claimant, with a copy to the Owner within 45 days after receipt of the claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed.
  - 6.2. Pay or arrange for payment of any undisputed amounts.
7. The Surety's total obligation shall not exceed the amount of this Bond, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.
8. Amounts owed by the Owner to the Contractor under the Construction Contract shall be used *by the Contractor* for the performance of the construction Contract and to satisfy claims, if any, under any Construction Performance Bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the contractor and the Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work *and the Owner's right to retain said funds as provided by the Construction Contract.*
9. The Surety shall not be liable to the Owner, Claimants or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligations to make payments to, give notices on behalf of, or otherwise have obligations to Claimants under this Bond.
10. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.
11. No suite or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the location in which the work or part of the work is located ~~or after the expiration of one year from the date (1) on which the Claimant gave the notice required by Subparagraph 4.1 or Clause 4.2 (iii), or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable in accordance with the applicable period specified by Minnesota Law.~~
12. Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the signature page. Actual receipt of notice by Surety, the Owner or the Contractor, however accomplished, shall be sufficient compliance as of the date received at the address shown on the signature page.
13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is, that this Bond shall be construed as a statutory bond and not as a common law bond.
14. Upon request by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor shall promptly furnish a copy of this Bond or shall permit a copy to be made.
15. DEFINITIONS
  - 15.1. Claimant: An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials or equipment for use in the performance of the Contract. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the

Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.

- 15.2. Construction Contract: The agreement between the Owner and the Contractor identified on the signature page, including all Contract Documents and changes thereto.
- 15.3 Owner Defaults: Failure of the Owner, which has neither been remedied nor waived, to pay the Contractor as required by the Construction Contract or to perform and complete or comply with the other terms thereof.

**\*\*END OF SECTION\*\***

This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the controlling Laws and Regulations.

**SECTION 00700  
STANDARD GENERAL CONDITIONS  
OF THE CONSTRUCTION CONTRACT**

Prepared by

**ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE**

and

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Endorsed by



CONSTRUCTION SPECIFICATIONS INSTITUTE

These General Conditions have been prepared for use with the Suggested Forms of Agreement Between Owner and Contractor (EJCDC C-520 or C-525, 2007 Editions). Their provisions are interrelated and a

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change in one may necessitate a change in the other. Comments concerning their usage are contained in the Narrative Guide to the EJCDC Construction Documents (EJCDC C-001, 2007 Edition). For guidance in the preparation of Supplementary Conditions, see Guide to the Preparation of Supplementary Conditions (EJCDC C-800, 2007 Edition).

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# STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

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## ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

### 1.01 *Defined Terms*

- A. Wherever used in the Bidding Requirements or Contract Documents and printed with initial capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.
  2. *Agreement*—The written instrument which is evidence of the agreement between Owner and Contractor covering the Work.
  3. *Application for Payment*—The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
  4. *Asbestos*—Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.
  5. *Bid*—The offer or proposal of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
  6. *Bidder*—The individual or entity who submits a Bid directly to Owner.
  7. *Bidding Documents*—The Bidding Requirements and the proposed Contract Documents (including all Addenda).
  8. *Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid security of acceptable form, if any, and the Bid Form with any supplements.
  9. *Change Order*—A document recommended by Engineer which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Agreement.
  10. *Claim*—A demand or assertion by Owner or Contractor seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.
  11. *Contract*—The entire and integrated written agreement between the Owner and Contractor concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.

12. *Contract Documents*—Those items so designated in the Agreement. Only printed or hard copies of the items listed in the Agreement are Contract Documents. Approved Shop Drawings, other Contractor submittals, and the reports and drawings of subsurface and physical conditions are not Contract Documents.
13. *Contract Price*—The moneys payable by Owner to Contractor for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of Paragraph 11.03 in the case of Unit Price Work).
14. *Contract Times*—The number of days or the dates stated in the Agreement to: (i) achieve Milestones, if any; (ii) achieve Substantial Completion; and (iii) complete the Work so that it is ready for final payment as evidenced by Engineer's written recommendation of final payment.
15. *Contractor*—The individual or entity with whom Owner has entered into the Agreement.
16. *Cost of the Work*—See Paragraph 11.01 for definition.
17. *Drawings*—That part of the Contract Documents prepared or approved by Engineer which graphically shows the scope, extent, and character of the Work to be performed by Contractor. Shop Drawings and other Contractor submittals are not Drawings as so defined.
18. *Effective Date of the Agreement*—The date indicated in the Agreement on which it becomes effective, but if no such date is indicated, it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.
19. *Engineer*—The individual or entity named as such in the Agreement.
20. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but which does not involve a change in the Contract Price or the Contract Times.
21. *General Requirements*—Sections of Division 1 of the Specifications.
22. *Hazardous Environmental Condition*—The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto.
23. *Hazardous Waste*—The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.
24. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
25. *Liens*—Charges, security interests, or encumbrances upon Project funds, real property, or personal property.
26. *Milestone*—A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.

27. *Notice of Award*—The written notice by Owner to the Successful Bidder stating that upon timely compliance by the Successful Bidder with the conditions precedent listed therein, Owner will sign and deliver the Agreement.
28. *Notice to Proceed*—A written notice given by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work under the Contract Documents.
29. *Owner*—The individual or entity with whom Contractor has entered into the Agreement and for whom the Work is to be performed.
30. *PCBs*—Polychlorinated biphenyls.
31. *Petroleum*—Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.
32. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor’s plan to accomplish the Work within the Contract Times.
33. *Project*—The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part.
34. *Project Manual*—The bound documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents.
35. *Radioactive Material*—Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.
36. *Resident Project Representative*—The authorized representative of Engineer who may be assigned to the Site or any part thereof.
37. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.
38. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements to support scheduled performance of related construction activities.
39. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor’s Applications for Payment.



40. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work.
41. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by Owner which are designated for the use of Contractor.
42. *Specifications*—That part of the Contract Documents consisting of written requirements for materials, equipment, systems, standards and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable thereto.
43. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work at the Site.
44. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion thereof.
45. *Successful Bidder*—The Bidder submitting a responsive Bid to whom Owner makes an award.
46. *Supplementary Conditions*—That part of the Contract Documents which amends or supplements these General Conditions.
47. *Supplier*—A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or Subcontractor.
48. *Underground Facilities*—All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.
49. *Unit Price Work*—Work to be paid for on the basis of unit prices.
50. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.
51. *Work Change Directive*—A written statement to Contractor issued on or after the Effective Date of the Agreement and signed by Owner and recommended by Engineer ordering an addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work

Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

## 1.02 *Terminology*

A. The words and terms discussed in Paragraph 1.02.B through F are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.

### B. *Intent of Certain Terms or Adjectives:*

1. The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Paragraph 9.09 or any other provision of the Contract Documents.

### C. *Day:*

1. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.

### D. *Defective:*

1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
  - a. does not conform to the Contract Documents; or
  - b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
  - c. has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 14.04 or 14.05).

### E. *Furnish, Install, Perform, Provide:*

1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.

2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
  3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.
  4. When “furnish,” “install,” “perform,” or “provide” is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of Contractor, “provide” is implied.
- F. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

## **ARTICLE 2 – PRELIMINARY MATTERS**

### *2.01 Delivery of Bonds and Evidence of Insurance*

- A. When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.
- B. *Evidence of Insurance:* Before any Work at the Site is started, Contractor and Owner shall each deliver to the other, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which either of them or any additional insured may reasonably request) which Contractor and Owner respectively are required to purchase and maintain in accordance with Article 5.

### *2.02 Copies of Documents*

- A. Owner shall furnish to Contractor up to ten printed or hard copies of the Drawings and Project Manual. Additional copies will be furnished upon request at the cost of reproduction.

### *2.03 Commencement of Contract Times; Notice to Proceed*

- A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Agreement or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Agreement. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Agreement, whichever date is earlier.

### *2.04 Starting the Work*

- A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to the date on which the Contract Times commence to run.

## 2.05 *Before Starting Construction*

- A. *Preliminary Schedules:* Within 10 days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), Contractor shall submit to Engineer for timely review:
1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract Documents;
  2. a preliminary Schedule of Submittals; and
  3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

## 2.06 *Preconstruction Conference; Designation of Authorized Representatives*

- A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.05.A, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.
- B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit instructions, receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

## 2.07 *Initial Acceptance of Schedules*

- A. At least 10 days before submission of the first Application for Payment a conference attended by Contractor, Engineer, and others as appropriate will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.05.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.
1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.
  2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.

3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the Work.

## **ARTICLE 3 – CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE**

### **3.01 *Intent***

- A. The Contract Documents are complementary; what is required by one is as binding as if required by all.
- B. It is the intent of the Contract Documents to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents. Any labor, documentation, services, materials, or equipment that reasonably may be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the indicated result will be provided whether or not specifically called for, at no additional cost to Owner.
- C. Clarifications and interpretations of the Contract Documents shall be issued by Engineer as provided in Article 9.

### **3.02 *Reference Standards***

- A. Standards, Specifications, Codes, Laws, and Regulations
  1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.
  2. No provision of any such standard, specification, manual, or code, or any instruction of a Supplier, shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees, from those set forth in the Contract Documents. No such provision or instruction shall be effective to assign to Owner, Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

### **3.03 *Reporting and Resolving Discrepancies***

#### **A. *Reporting Discrepancies:***

1. *Contractor's Review of Contract Documents Before Starting Work:* Before undertaking each part of the Work, Contractor shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy which Contractor discovers, or has actual knowledge of, and shall obtain a written interpretation or clarification from Engineer before proceeding with any Work affected thereby.

2. *Contractor's Review of Contract Documents During Performance of Work:* If, during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) any standard, specification, manual, or code, or (c) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in Paragraph 3.04.
3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

B. *Resolving Discrepancies:*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:
  - a. the provisions of any standard, specification, manual, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference in the Contract Documents); or
  - b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Amending and Supplementing Contract Documents*

- A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof by either a Change Order or a Work Change Directive.
- B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, by one or more of the following ways:
  1. A Field Order;
  2. Engineer's approval of a Shop Drawing or Sample (subject to the provisions of Paragraph 6.17.D.3); or
  3. Engineer's written interpretation or clarification.

3.05 *Reuse of Documents*

- A. Contractor and any Subcontractor or Supplier shall not:
  1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media editions; or

2. reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer.
- B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

### 3.06 *Electronic Data*

- A. Unless otherwise stated in the Supplementary Conditions, the data furnished by Owner or Engineer to Contractor, or by Contractor to Owner or Engineer, that may be relied upon are limited to the printed copies (also known as hard copies). Files in electronic media format of text, data, graphics, or other types are furnished only for the convenience of the receiving party. Any conclusion or information obtained or derived from such electronic files will be at the user's sole risk. If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.
- B. Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within 60 days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the 60-day acceptance period will be corrected by the transferring party.
- C. When transferring documents in electronic media format, the transferring party makes no representations as to long term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used by the data's creator.

## **ARTICLE 4 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS; REFERENCE POINTS**

### 4.01 *Availability of Lands*

- A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work. Owner will obtain in a timely manner and pay for easements for permanent structures or permanent changes in existing facilities. If Contractor and Owner are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of any delay in Owner's furnishing the Site or a part thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.
- B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which the Work is to be performed and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.
- C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

#### 4.02 *Subsurface and Physical Conditions*

A. *Reports and Drawings:* The Supplementary Conditions identify:

1. those reports known to Owner of explorations and tests of subsurface conditions at or contiguous to the Site; and
2. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities).

B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the “technical data” contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such “technical data” is identified in the Supplementary Conditions. Except for such reliance on such “technical data,” Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:

1. the completeness of such reports and drawings for Contractor’s purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or
2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
3. any Contractor interpretation of or conclusion drawn from any “technical data” or any such other data, interpretations, opinions, or information.

#### 4.03 *Differing Subsurface or Physical Conditions*

A. *Notice:* If Contractor believes that any subsurface or physical condition that is uncovered or revealed either:

1. is of such a nature as to establish that any “technical data” on which Contractor is entitled to rely as provided in Paragraph 4.02 is materially inaccurate; or
2. is of such a nature as to require a change in the Contract Documents; or
3. differs materially from that shown or indicated in the Contract Documents; or
4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.



B. *Engineer's Review*: After receipt of written notice as required by Paragraph 4.03.A, Engineer will promptly review the pertinent condition, determine the necessity of Owner's obtaining additional exploration or tests with respect thereto, and advise Owner in writing (with a copy to Contractor) of Engineer's findings and conclusions.

C. *Possible Price and Times Adjustments*:

1. The Contract Price or the Contract Times, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
  - a. such condition must meet any one or more of the categories described in Paragraph 4.03.A; and
  - b. with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraphs 9.07 and 11.03.
2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times if:
  - a. Contractor knew of the existence of such conditions at the time Contractor made a final commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract; or
  - b. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such final commitment; or
  - c. Contractor failed to give the written notice as required by Paragraph 4.03.A.
3. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefor as provided in Paragraph 10.05. However, neither Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors shall be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

#### 4.04 *Underground Facilities*

A. *Shown or Indicated*: The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

1. Owner and Engineer shall not be responsible for the accuracy or completeness of any such information or data provided by others; and

2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:
  - a. reviewing and checking all such information and data;
  - b. locating all Underground Facilities shown or indicated in the Contract Documents;
  - c. coordination of the Work with the owners of such Underground Facilities, including Owner, during construction; and
  - d. the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.

B. *Not Shown or Indicated:*

1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer. Engineer will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the Underground Facility. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.
2. If Engineer concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued to reflect and document such consequences. An equitable adjustment shall be made in the Contract Price or Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated or not shown or indicated with reasonable accuracy in the Contract Documents and that Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment in Contract Price or Contract Times, Owner or Contractor may make a Claim therefor as provided in Paragraph 10.05.

4.05 *Reference Points*

- A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

#### 4.06 *Hazardous Environmental Condition at Site*

- A. *Reports and Drawings:* The Supplementary Conditions identify those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at the Site.
- B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the “technical data” contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such “technical data” is identified in the Supplementary Conditions. Except for such reliance on such “technical data,” Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:
1. the completeness of such reports and drawings for Contractor’s purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or
  2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or
  3. any Contractor interpretation of or conclusion drawn from any “technical data” or any such other data, interpretations, opinions or information.
- C. Contractor shall not be responsible for any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work. Contractor shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible.
- D. If Contractor encounters a Hazardous Environmental Condition or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, Contractor shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 6.16.A); and (iii) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 4.06.E.
- E. Contractor shall not be required to resume Work in connection with such condition or in any affected area until after Owner has obtained any required permits related thereto and delivered written notice to Contractor: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, either party may make a Claim therefor as provided in Paragraph 10.05.

- F. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefor as provided in Paragraph 10.05. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 7.
- G. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition: (i) was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be included within the scope of the Work, and (ii) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.G shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- H. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.H shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- I. The provisions of Paragraphs 4.02, 4.03, and 4.04 do not apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

## **ARTICLE 5 – BONDS AND INSURANCE**

### **5.01 *Performance, Payment, and Other Bonds***

- A. Contractor shall furnish performance and payment bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all of Contractor's obligations under the Contract Documents. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 13.07, whichever is later, except as provided otherwise by Laws or Regulations or by the Contract Documents. Contractor shall also furnish such other bonds as are required by the Contract Documents.
- B. All bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as

Acceptable Reinsuring Companies” as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All bonds signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual’s authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed each bond.

- C. If the surety on any bond furnished by Contractor is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of Paragraph 5.01.B, Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the requirements of Paragraphs 5.01.B and 5.02.

#### 5.02 *Licensed Sureties and Insurers*

- A. All bonds and insurance required by the Contract Documents to be purchased and maintained by Owner or Contractor shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

#### 5.03 *Certificates of Insurance*

- A. Contractor shall deliver to Owner, with copies to each additional insured and loss payee identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Owner or any other additional insured) which Contractor is required to purchase and maintain.
- B. Owner shall deliver to Contractor, with copies to each additional insured and loss payee identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Contractor or any other additional insured) which Owner is required to purchase and maintain.
- C. Failure of Owner to demand such certificates or other evidence of Contractor's full compliance with these insurance requirements or failure of Owner to identify a deficiency in compliance from the evidence provided shall not be construed as a waiver of Contractor’s obligation to maintain such insurance.
- D. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor.
- E. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor’s liability under the indemnities granted to Owner in the Contract Documents.

#### 5.04 *Contractor’s Insurance*

- A. Contractor shall purchase and maintain such insurance as is appropriate for the Work being performed and as will provide protection from claims set forth below which may arise out of or result from Contractor’s performance of the Work and Contractor’s other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier,

or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable:

1. claims under workers' compensation, disability benefits, and other similar employee benefit acts;
2. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees;
3. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees;
4. claims for damages insured by reasonably available personal injury liability coverage which are sustained:
  - a. by any person as a result of an offense directly or indirectly related to the employment of such person by Contractor, or
  - b. by any other person for any other reason;
5. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and
6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.

B. The policies of insurance required by this Paragraph 5.04 shall:

1. with respect to insurance required by Paragraphs 5.04.A.3 through 5.04.A.6 inclusive, be written on an occurrence basis, include as additional insureds (subject to any customary exclusion regarding professional liability) Owner and Engineer, and any other individuals or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;
2. include at least the specific coverages and be written for not less than the limits of liability provided in the Supplementary Conditions or required by Laws or Regulations, whichever is greater;
3. include contractual liability insurance covering Contractor's indemnity obligations under Paragraphs 6.11 and 6.20;
4. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the Contractor pursuant to Paragraph 5.03 will so provide);

5. remain in effect at least until final payment and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work in accordance with Paragraph 13.07; and
6. include completed operations coverage:
  - a. Such insurance shall remain in effect for two years after final payment.
  - b. Contractor shall furnish Owner and each other additional insured identified in the Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to Owner and any such additional insured of continuation of such insurance at final payment and one year thereafter.

#### 5.05 *Owner's Liability Insurance*

- A. In addition to the insurance required to be provided by Contractor under Paragraph 5.04, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.

#### 5.06 *Property Insurance*

- A. Unless otherwise provided in the Supplementary Conditions, Owner shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:
  1. include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as a loss payee;
  2. be written on a Builder's Risk "all-risk" policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage (other than that caused by flood), and such other perils or causes of loss as may be specifically required by the Supplementary Conditions.
  3. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);
  4. cover materials and equipment stored at the Site or at another location that was agreed to in writing by Owner prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by Engineer;
  5. allow for partial utilization of the Work by Owner;
  6. include testing and startup; and

7. be maintained in effect until final payment is made unless otherwise agreed to in writing by Owner, Contractor, and Engineer with 30 days written notice to each other loss payee to whom a certificate of insurance has been issued.
- B. Owner shall purchase and maintain such equipment breakdown insurance or additional property insurance as may be required by the Supplementary Conditions or Laws and Regulations which will include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as a loss payee.
  - C. All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 5.06 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other loss payee to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with Paragraph 5.07.
  - D. Owner shall not be responsible for purchasing and maintaining any property insurance specified in this Paragraph 5.06 to protect the interests of Contractor, Subcontractors, or others in the Work to the extent of any deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount will be borne by Contractor, Subcontractors, or others suffering any such loss, and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.
  - E. If Contractor requests in writing that other special insurance be included in the property insurance policies provided under this Paragraph 5.06, Owner shall, if possible, include such insurance, and the cost thereof will be charged to Contractor by appropriate Change Order. Prior to commencement of the Work at the Site, Owner shall in writing advise Contractor whether or not such other insurance has been procured by Owner.

#### 5.07 *Waiver of Rights*

- A. Owner and Contractor intend that all policies purchased in accordance with Paragraph 5.06 will protect Owner, Contractor, Subcontractors, and Engineer, and all other individuals or entities identified in the Supplementary Conditions as loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) in such policies and will provide primary coverage for all losses and damages caused by the perils or causes of loss covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or loss payees thereunder. Owner and Contractor waive all rights against each other and their respective officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them for all losses and damages caused by, arising out of or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Subcontractors and Engineer, and all other individuals or entities identified in the Supplementary Conditions as loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have



to the proceeds of insurance held by Owner as trustee or otherwise payable under any policy so issued.

- B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them for:
  - 1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and
  - 2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial utilization pursuant to Paragraph 14.05, after Substantial Completion pursuant to Paragraph 14.04, or after final payment pursuant to Paragraph 14.07.
- C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 5.07.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them.

#### 5.08 *Receipt and Application of Insurance Proceeds*

- A. Any insured loss under the policies of insurance required by Paragraph 5.06 will be adjusted with Owner and made payable to Owner as fiduciary for the loss payees, as their interests may appear, subject to the requirements of any applicable mortgage clause and of Paragraph 5.08.B. Owner shall deposit in a separate account any money so received and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof, and the Work and the cost thereof covered by an appropriate Change Order.
- B. Owner as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within 15 days after the occurrence of loss to Owner's exercise of this power. If such objection be made, Owner as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, Owner as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, Owner as fiduciary shall give bond for the proper performance of such duties.

#### 5.09 *Acceptance of Bonds and Insurance; Option to Replace*

- A. If either Owner or Contractor has any objection to the coverage afforded by or other provisions of the bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract Documents, the objecting party shall so notify the other party in writing within 10 days after receipt of the certificates (or other evidence requested) required by Paragraph 2.01.B. Owner and Contractor shall each provide to the other such additional information in respect of insurance provided as the other may reasonably

request. If either party does not purchase or maintain all of the bonds and insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent bonds or insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

5.10 *Partial Utilization, Acknowledgment of Property Insurer*

- A. If Owner finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 14.05, no such use or occupancy shall commence before the insurers providing the property insurance pursuant to Paragraph 5.06 have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy.

**ARTICLE 6 – CONTRACTOR'S RESPONSIBILITIES**

6.01 *Supervision and Superintendence*

- A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction. Contractor shall not be responsible for the negligence of Owner or Engineer in the design or specification of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents.
- B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

6.02 *Labor; Working Hours*

- A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.
- B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours. Contractor will not permit the performance of Work on a Saturday, Sunday, or any legal holiday without Owner's written consent (which will not be unreasonably withheld) given after prior written notice to Engineer.

### 6.03 *Services, Materials, and Equipment*

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start-up, and completion of the Work.
- B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.
- C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

### 6.04 *Progress Schedule*

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.07 as it may be adjusted from time to time as provided below.
  - 1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.07) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times. Such adjustments will comply with any provisions of the General Requirements applicable thereto.
  - 2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 12. Adjustments in Contract Times may only be made by a Change Order.

### 6.05 *Substitutes and "Or-Equals"*

- A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or-equal" item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to Engineer for review under the circumstances described below.
  - 1. *"Or-Equal" Items:* If in Engineer's sole discretion an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by Engineer as an "or-equal" item, in which case review and approval of the proposed item may, in Engineer's sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this Paragraph 6.05.A.1, a proposed item of material or equipment will be considered functionally equal to an item so named if:

- a. in the exercise of reasonable judgment Engineer determines that:
  - 1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;
  - 2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole; and
  - 3) it has a proven record of performance and availability of responsive service.
- b. Contractor certifies that, if approved and incorporated into the Work:
  - 1) there will be no increase in cost to the Owner or increase in Contract Times; and
  - 2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.

2. *Substitute Items:*

- a. If in Engineer's sole discretion an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item under Paragraph 6.05.A.1, it will be considered a proposed substitute item.
- b. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. Requests for review of proposed substitute items of material or equipment will not be accepted by Engineer from anyone other than Contractor.
- c. The requirements for review by Engineer will be as set forth in Paragraph 6.05.A.2.d, as supplemented by the General Requirements, and as Engineer may decide is appropriate under the circumstances.
- d. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:
  - 1) shall certify that the proposed substitute item will:
    - a) perform adequately the functions and achieve the results called for by the general design,
    - b) be similar in substance to that specified, and
    - c) be suited to the same use as that specified;
  - 2) will state:
    - a) the extent, if any, to which the use of the proposed substitute item will prejudice Contractor's achievement of Substantial Completion on time,

- b) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item, and
    - c) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty;
  - 3) will identify:
    - a) all variations of the proposed substitute item from that specified, and
    - b) available engineering, sales, maintenance, repair, and replacement services; and
  - 4) shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change.
- B. *Substitute Construction Methods or Procedures:* If a specific means, method, technique, sequence, or procedure of construction is expressly required by the Contract Documents, Contractor may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by Engineer. Contractor shall submit sufficient information to allow Engineer, in Engineer's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The requirements for review by Engineer will be similar to those provided in Paragraph 6.05.A.2.
- C. *Engineer's Evaluation:* Engineer will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to Paragraphs 6.05.A and 6.05.B. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No "or equal" or substitute will be ordered, installed or utilized until Engineer's review is complete, which will be evidenced by a Change Order in the case of a substitute and an approved Shop Drawing for an "or equal." Engineer will advise Contractor in writing of any negative determination.
- D. *Special Guarantee:* Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
- E. *Engineer's Cost Reimbursement:* Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor pursuant to Paragraphs 6.05.A.2 and 6.05.B. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.
- F. *Contractor's Expense:* Contractor shall provide all data in support of any proposed substitute or "or-equal" at Contractor's expense.

6.06 *Concerning Subcontractors, Suppliers, and Others*

- A. Contractor shall not employ any Subcontractor, Supplier, or other individual or entity (including those acceptable to Owner as indicated in Paragraph 6.06.B), whether initially or as a replacement, against whom Owner may have reasonable objection. Contractor shall not be required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom Contractor has reasonable objection.
- B. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to Owner in advance for acceptance by Owner by a specified date prior to the Effective Date of the Agreement, and if Contractor has submitted a list thereof in accordance with the Supplementary Conditions, Owner's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of Owner or Engineer to reject defective Work.
- C. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions. Nothing in the Contract Documents:
  - 1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier or other individual or entity; nor
  - 2. shall create any obligation on the part of Owner or Engineer to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.
- D. Contractor shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with Contractor.
- E. Contractor shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with Engineer through Contractor.
- F. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.
- G. All Work performed for Contractor by a Subcontractor or Supplier will be pursuant to an appropriate agreement between Contractor and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract

Documents for the benefit of Owner and Engineer. Whenever any such agreement is with a Subcontractor or Supplier who is listed as a loss payee on the property insurance provided in Paragraph 5.06, the agreement between the Contractor and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against Owner, Contractor, Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, Contractor will obtain the same.

#### 6.07 *Patent Fees and Royalties*

- A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.
- B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.
- C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

#### 6.08 *Permits*

- A. Unless otherwise provided in the Supplementary Conditions, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

## 6.09 *Laws and Regulations*

- A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.
- B. If Contractor performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work. However, it shall not be Contractor's responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.
- C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance of the Work shall be the subject of an adjustment in Contract Price or Contract Times. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

## 6.10 *Taxes*

- A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

## 6.11 *Use of Site and Other Areas*

### A. *Limitation on Use of Site and Other Areas:*

- 1. Contractor shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.
- 2. Should any claim be made by any such owner or occupant because of the performance of the Work, Contractor shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law.
- 3. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by



any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused by or based upon Contractor's performance of the Work.

- B. *Removal of Debris During Performance of the Work:* During the progress of the Work Contractor shall keep the Site and other areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.
- C. *Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.
- D. *Loading Structures:* Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

#### 6.12 *Record Documents*

- A. Contractor shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, and written interpretations and clarifications in good order and annotated to show changes made during construction. These record documents together with all approved Samples and a counterpart of all approved Shop Drawings will be available to Engineer for reference. Upon completion of the Work, these record documents, Samples, and Shop Drawings will be delivered to Engineer for Owner.

#### 6.13 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:
  - 1. all persons on the Site or who may be affected by the Work;
  - 2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
  - 3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify

owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property.

- C. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. The Supplementary Conditions identify any Owner's safety programs that are applicable to the Work.
- D. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.
- E. All damage, injury, or loss to any property referred to in Paragraph 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).
- F. Contractor's duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

#### 6.14 *Safety Representative*

- A. Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

#### 6.15 *Hazard Communication Programs*

- A. Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

#### 6.16 *Emergencies*

- A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent threatened damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If Engineer determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

## 6.17 *Shop Drawings and Samples*

- A. Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals (as required by Paragraph 2.07). Each submittal will be identified as Engineer may require.
1. *Shop Drawings:*
    - a. Submit number of copies specified in the General Requirements.
    - b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 6.17.D.
  2. *Samples:*
    - a. Submit number of Samples specified in the Specifications.
    - b. Clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 6.17.D.
- B. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.
- C. *Submittal Procedures:*
1. Before submitting each Shop Drawing or Sample, Contractor shall have:
    - a. reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
    - b. determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;
    - c. determined and verified the suitability of all materials offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and
    - d. determined and verified all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.
  2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review and approval of that submittal.

3. With each submittal, Contractor shall give Engineer specific written notice of any variations that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be both a written communication separate from the Shop Drawings or Sample submittal; and, in addition, by a specific notation made on each Shop Drawing or Sample submitted to Engineer for review and approval of each such variation.

D. *Engineer's Review:*

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
3. Engineer's review and approval shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 6.17.C.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer's review and approval shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 6.17.C.1.

E. *Resubmittal Procedures:*

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.

6.18 *Continuing the Work*

- A. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by Paragraph 15.04 or as Owner and Contractor may otherwise agree in writing.

6.19 *Contractor's General Warranty and Guarantee*

- A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on representation of Contractor's warranty and guarantee.

- B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or
  2. normal wear and tear under normal usage.
- C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:
1. observations by Engineer;
  2. recommendation by Engineer or payment by Owner of any progress or final payment;
  3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;
  4. use or occupancy of the Work or any part thereof by Owner;
  5. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by Engineer;
  6. any inspection, test, or approval by others; or
  7. any correction of defective Work by Owner.

#### 6.20 *Indemnification*

- A. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable .
- B. In any and all claims against Owner or Engineer or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 6.20.A shall not be limited in any way by any limitation on the amount or type of damages,

compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

- C. The indemnification obligations of Contractor under Paragraph 6.20.A shall not extend to the liability of Engineer and Engineer's officers, directors, members, partners, employees, agents, consultants and subcontractors arising out of:
  - 1. the preparation or approval of, or the failure to prepare or approve maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
  - 2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

#### 6.21 *Delegation of Professional Design Services*

- A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable law.
- B. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.
- C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.
- D. Pursuant to this Paragraph 6.21, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 6.17.D.1.
- E. Contractor shall not be responsible for the adequacy of the performance or design criteria required by the Contract Documents.

## ARTICLE 7 – OTHER WORK AT THE SITE

### 7.01 *Related Work at Site*

- A. Owner may perform other work related to the Project at the Site with Owner's employees, or through other direct contracts therefor, or have other work performed by utility owners. If such other work is not noted in the Contract Documents, then:
  - 1. written notice thereof will be given to Contractor prior to starting any such other work; and
  - 2. if Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times that should be allowed as a result of such other work, a Claim may be made therefor as provided in Paragraph 10.05.
- B. Contractor shall afford each other contractor who is a party to such a direct contract, each utility owner, and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work, and properly coordinate the Work with theirs. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected. The duties and responsibilities of Contractor under this Paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of Contractor in said direct contracts between Owner and such utility owners and other contractors.
- C. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 7, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

### 7.02 *Coordination*

- A. If Owner intends to contract with others for the performance of other work on the Project at the Site, the following will be set forth in Supplementary Conditions:
  - 1. the individual or entity who will have authority and responsibility for coordination of the activities among the various contractors will be identified;
  - 2. the specific matters to be covered by such authority and responsibility will be itemized; and
  - 3. the extent of such authority and responsibilities will be provided.
- B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

### 7.03 *Legal Relationships*

- A. Paragraphs 7.01.A and 7.02 are not applicable for utilities not under the control of Owner.
- B. Each other direct contract of Owner under Paragraph 7.01.A shall provide that the other contractor is liable to Owner and Contractor for the reasonable direct delay and disruption costs incurred by Contractor as a result of the other contractor's wrongful actions or inactions.
- C. Contractor shall be liable to Owner and any other contractor under direct contract to Owner for the reasonable direct delay and disruption costs incurred by such other contractor as a result of Contractor's wrongful action or inactions.

## **ARTICLE 8 – OWNER'S RESPONSIBILITIES**

### 8.01 *Communications to Contractor*

- A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

### 8.02 *Replacement of Engineer*

- A. In case of termination of the employment of Engineer, Owner shall appoint an engineer to whom Contractor makes no reasonable objection, whose status under the Contract Documents shall be that of the former Engineer.

### 8.03 *Furnish Data*

- A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

### 8.04 *Pay When Due*

- A. Owner shall make payments to Contractor when they are due as provided in Paragraphs 14.02.C and 14.07.C.

### 8.05 *Lands and Easements; Reports and Tests*

- A. Owner's duties with respect to providing lands and easements and providing engineering surveys to establish reference points are set forth in Paragraphs 4.01 and 4.05. Paragraph 4.02 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of subsurface conditions and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

### 8.06 *Insurance*

- A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 5.

### 8.07 *Change Orders*

- A. Owner is obligated to execute Change Orders as indicated in Paragraph 10.03.



8.08 *Inspections, Tests, and Approvals*

- A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 13.03.B.

8.09 *Limitations on Owner's Responsibilities*

- A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

8.10 *Undisclosed Hazardous Environmental Condition*

- A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 4.06.

8.11 *Evidence of Financial Arrangements*

- A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents.

8.12 *Compliance with Safety Program*

- A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed pursuant to Paragraph 6.13.D.

**ARTICLE 9 – ENGINEER'S STATUS DURING CONSTRUCTION**

9.01 *Owner's Representative*

- A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract Documents.

9.02 *Visits to Site*

- A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.

- B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 9.09. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

### 9.03 *Project Representative*

- A. If Owner and Engineer agree, Engineer will furnish a Resident Project Representative to assist Engineer in providing more extensive observation of the Work. The authority and responsibilities of any such Resident Project Representative and assistants will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 9.09. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

### 9.04 *Authorized Variations in Work*

- A. Engineer may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and will be binding on Owner and also on Contractor, who shall perform the Work involved promptly. If Owner or Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, and the parties are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

### 9.05 *Rejecting Defective Work*

- A. Engineer will have authority to reject Work which Engineer believes to be defective, or that Engineer believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Engineer will also have authority to require special inspection or testing of the Work as provided in Paragraph 13.04, whether or not the Work is fabricated, installed, or completed.

### 9.06 *Shop Drawings, Change Orders and Payments*

- A. In connection with Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, see Paragraph 6.17.
- B. In connection with Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, see Paragraph 6.21.

- C. In connection with Engineer's authority as to Change Orders, see Articles 10, 11, and 12.
- D. In connection with Engineer's authority as to Applications for Payment, see Article 14.

9.07 *Determinations for Unit Price Work*

- A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of Paragraph 10.05.

9.08 *Decisions on Requirements of Contract Documents and Acceptability of Work*

- A. Engineer will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. All matters in question and other matters between Owner and Contractor arising prior to the date final payment is due relating to the acceptability of the Work, and the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, will be referred initially to Engineer in writing within 30 days of the event giving rise to the question.
- B. Engineer will, with reasonable promptness, render a written decision on the issue referred. If Owner or Contractor believes that any such decision entitles them to an adjustment in the Contract Price or Contract Times or both, a Claim may be made under Paragraph 10.05. The date of Engineer's decision shall be the date of the event giving rise to the issues referenced for the purposes of Paragraph 10.05.B.
- C. Engineer's written decision on the issue referred will be final and binding on Owner and Contractor, subject to the provisions of Paragraph 10.05.
- D. When functioning as interpreter and judge under this Paragraph 9.08, Engineer will not show partiality to Owner or Contractor and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity.

9.09 *Limitations on Engineer's Authority and Responsibilities*

- A. Neither Engineer's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.
- B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

- C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.
- D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 14.07.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with, the Contract Documents.
- E. The limitations upon authority and responsibility set forth in this Paragraph 9.09 shall also apply to the Resident Project Representative, if any, and assistants, if any.

#### 9.10 *Compliance with Safety Program*

- A. While at the Site, Engineer's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Engineer has been informed pursuant to Paragraph 6.13.D.

### **ARTICLE 10 – CHANGES IN THE WORK; CLAIMS**

#### 10.01 *Authorized Changes in the Work*

- A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work by a Change Order, or a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).
- B. If Owner and Contractor are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change Directive, a Claim may be made therefor as provided in Paragraph 10.05.

#### 10.02 *Unauthorized Changes in the Work*

- A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents as amended, modified, or supplemented as provided in Paragraph 3.04, except in the case of an emergency as provided in Paragraph 6.16 or in the case of uncovering Work as provided in Paragraph 13.04.D.

#### 10.03 *Execution of Change Orders*

- A. Owner and Contractor shall execute appropriate Change Orders recommended by Engineer covering:
  - 1. changes in the Work which are: (i) ordered by Owner pursuant to Paragraph 10.01.A, (ii) required because of acceptance of defective Work under Paragraph 13.08.A or Owner's correction of defective Work under Paragraph 13.09, or (iii) agreed to by the parties;

2. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive; and
3. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by Engineer pursuant to Paragraph 10.05; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, Contractor shall carry on the Work and adhere to the Progress Schedule as provided in Paragraph 6.18.A.

#### 10.04 *Notification to Surety*

- A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

#### 10.05 *Claims*

- A. *Engineer's Decision Required:* All Claims, except those waived pursuant to Paragraph 14.09, shall be referred to the Engineer for decision. A decision by Engineer shall be required as a condition precedent to any exercise by Owner or Contractor of any rights or remedies either may otherwise have under the Contract Documents or by Laws and Regulations in respect of such Claims.
- B. *Notice:* Written notice stating the general nature of each Claim shall be delivered by the claimant to Engineer and the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto. The responsibility to substantiate a Claim shall rest with the party making the Claim. Notice of the amount or extent of the Claim, with supporting data shall be delivered to the Engineer and the other party to the Contract within 60 days after the start of such event (unless Engineer allows additional time for claimant to submit additional or more accurate data in support of such Claim). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of Paragraph 12.01.B. A Claim for an adjustment in Contract Times shall be prepared in accordance with the provisions of Paragraph 12.02.B. Each Claim shall be accompanied by claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The opposing party shall submit any response to Engineer and the claimant within 30 days after receipt of the claimant's last submittal (unless Engineer allows additional time).
- C. *Engineer's Action:* Engineer will review each Claim and, within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any, take one of the following actions in writing:
  1. deny the Claim in whole or in part;
  2. approve the Claim; or

3. notify the parties that the Engineer is unable to resolve the Claim if, in the Engineer's sole discretion, it would be inappropriate for the Engineer to do so. For purposes of further resolution of the Claim, such notice shall be deemed a denial.
- D. In the event that Engineer does not take action on a Claim within said 30 days, the Claim shall be deemed denied.
- E. Engineer's written action under Paragraph 10.05.C or denial pursuant to Paragraphs 10.05.C.3 or 10.05.D will be final and binding upon Owner and Contractor, unless Owner or Contractor invoke the dispute resolution procedure set forth in Article 16 within 30 days of such action or denial.
- F. No Claim for an adjustment in Contract Price or Contract Times will be valid if not submitted in accordance with this Paragraph 10.05.

## **ARTICLE 11 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK**

### *11.01 Cost of the Work*

- A. *Costs Included:* The term Cost of the Work means the sum of all costs, except those excluded in Paragraph 11.01.B, necessarily incurred and paid by Contractor in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to Contractor will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by Owner, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 11.01.B, and shall include only the following items:
  1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.
  2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.
  3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable

to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 11.01.

4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.
5. Supplemental costs including the following:
  - a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.
  - b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.
  - c. Rentals of all construction equipment and machinery, and the parts thereof whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.
  - d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.
  - e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.
  - f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 5.06.D), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.
  - g. The cost of utilities, fuel, and sanitary facilities at the Site.

- h. Minor expenses such as telegrams, long distance telephone calls, telephone service at the Site, express and courier services, and similar petty cash items in connection with the Work.
- i. The costs of premiums for all bonds and insurance Contractor is required by the Contract Documents to purchase and maintain.

B. *Costs Excluded:* The term Cost of the Work shall not include any of the following items:

1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 11.01.A.1 or specifically covered by Paragraph 11.01.A.4, all of which are to be considered administrative costs covered by the Contractor's fee.
2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.
5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraphs 11.01.A.

C. *Contractor's Fee:* When all the Work is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 12.01.C.

D. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to Paragraphs 11.01.A and 11.01.B, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

## 11.02 Allowances

A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.

B. *Cash Allowances:*



1. Contractor agrees that:
  - a. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and
  - b. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.

C. *Contingency Allowance:*

1. Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.
- D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

11.03 *Unit Price Work*

- A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.
- B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by Contractor will be made by Engineer subject to the provisions of Paragraph 9.07.
- C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.
- D. Owner or Contractor may make a Claim for an adjustment in the Contract Price in accordance with Paragraph 10.05 if:
  1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and
  2. there is no corresponding adjustment with respect to any other item of Work; and
  3. Contractor believes that Contractor is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

## ARTICLE 12 – CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES

### 12.01 *Change of Contract Price*

- A. The Contract Price may only be changed by a Change Order. Any Claim for an adjustment in the Contract Price shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.
- B. The value of any Work covered by a Change Order or of any Claim for an adjustment in the Contract Price will be determined as follows:
1. where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 11.03); or
  2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 12.01.C.2); or
  3. where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached under Paragraph 12.01.B.2, on the basis of the Cost of the Work (determined as provided in Paragraph 11.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 12.01.C).
- C. *Contractor's Fee:* The Contractor's fee for overhead and profit shall be determined as follows:
1. a mutually acceptable fixed fee; or
  2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
    - a. for costs incurred under Paragraphs 11.01.A.1 and 11.01.A.2, the Contractor's fee shall be 15 percent;
    - b. for costs incurred under Paragraph 11.01.A.3, the Contractor's fee shall be five percent;
    - c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 12.01.C.2.a and 12.01.C.2.b is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of 15 percent of the costs incurred by such Subcontractor under Paragraphs 11.01.A.1 and 11.01.A.2 and that any higher tier Subcontractor and Contractor will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;
    - d. no fee shall be payable on the basis of costs itemized under Paragraphs 11.01.A.4, 11.01.A.5, and 11.01.B;
    - e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and

- f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 12.01.C.2.a through 12.01.C.2.e, inclusive.

#### 12.02 *Change of Contract Times*

- A. The Contract Times may only be changed by a Change Order. Any Claim for an adjustment in the Contract Times shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.
- B. Any adjustment of the Contract Times covered by a Change Order or any Claim for an adjustment in the Contract Times will be determined in accordance with the provisions of this Article 12.

#### 12.03 *Delays*

- A. Where Contractor is prevented from completing any part of the Work within the Contract Times due to delay beyond the control of Contractor, the Contract Times will be extended in an amount equal to the time lost due to such delay if a Claim is made therefor as provided in Paragraph 12.02.A. Delays beyond the control of Contractor shall include, but not be limited to, acts or neglect by Owner, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, abnormal weather conditions, or acts of God.
- B. If Owner, Engineer, or other contractors or utility owners performing other work for Owner as contemplated by Article 7, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- C. If Contractor is delayed in the performance or progress of the Work by fire, flood, epidemic, abnormal weather conditions, acts of God, acts or failures to act of utility owners not under the control of Owner, or other causes not the fault of and beyond control of Owner and Contractor, then Contractor shall be entitled to an equitable adjustment in Contract Times, if such adjustment is essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays described in this Paragraph 12.03.C.
- D. Owner, Engineer, and their officers, directors, members, partners, employees, agents, consultants, or subcontractors shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.
- E. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delays within the control of Contractor. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of Contractor.

## **ARTICLE 13 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK**

### *13.01 Notice of Defects*

- A. Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor. Defective Work may be rejected, corrected, or accepted as provided in this Article 13.

### *13.02 Access to Work*

- A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and governmental agencies with jurisdictional interests will have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's safety procedures and programs so that they may comply therewith as applicable.

### *13.03 Tests and Inspections*

- A. Contractor shall give Engineer timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.
- B. Owner shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:
  - 1. for inspections, tests, or approvals covered by Paragraphs 13.03.C and 13.03.D below;
  - 2. that costs incurred in connection with tests or inspections conducted pursuant to Paragraph 13.04.B shall be paid as provided in Paragraph 13.04.C; and
  - 3. as otherwise specifically provided in the Contract Documents.
- C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.
- D. Contractor shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to Owner and Engineer.
- E. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation.

- F. Uncovering Work as provided in Paragraph 13.03.E shall be at Contractor's expense unless Contractor has given Engineer timely notice of Contractor's intention to cover the same and Engineer has not acted with reasonable promptness in response to such notice.

#### 13.04 *Uncovering Work*

- A. If any Work is covered contrary to the written request of Engineer, it must, if requested by Engineer, be uncovered for Engineer's observation and replaced at Contractor's expense.
- B. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment.
- C. If it is found that the uncovered Work is defective, Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05.
- D. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

#### 13.05 *Owner May Stop the Work*

- A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work shall not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

#### 13.06 *Correction or Removal of Defective Work*

- A. Promptly after receipt of written notice, Contractor shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by Engineer, remove it from the Project and replace it with Work that is not defective. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others).

- B. When correcting defective Work under the terms of this Paragraph 13.06 or Paragraph 13.07, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.

### 13.07 *Correction Period*

- A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents) or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for Contractor's use by Owner or permitted by Laws and Regulations as contemplated in Paragraph 6.11.A is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:
  - 1. repair such defective land or areas; or
  - 2. correct such defective Work; or
  - 3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
  - 4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom.
- B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by Contractor.
- C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.
- D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this Paragraph 13.07, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.
- E. Contractor's obligations under this Paragraph 13.07 are in addition to any other obligation or warranty. The provisions of this Paragraph 13.07 shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

### 13.08 *Acceptance of Defective Work*

- A. If, instead of requiring correction or removal and replacement of defective Work, Owner (and, prior to Engineer's recommendation of final payment, Engineer) prefers to accept it, Owner may do so. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness) and for the diminished value of the Work to the extent not otherwise paid by Contractor pursuant to this sentence. If any such acceptance occurs prior to Engineer's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work, and Owner shall be entitled to an appropriate decrease in the Contract Price, reflecting the diminished value of Work so accepted. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05. If the acceptance occurs after such recommendation, an appropriate amount will be paid by Contractor to Owner.

### 13.09 *Owner May Correct Defective Work*

- A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace rejected Work as required by Engineer in accordance with Paragraph 13.06.A, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, Owner may, after seven days written notice to Contractor, correct, or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 13.09, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, take possession of Contractor's tools, appliances, construction equipment and machinery at the Site, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this Paragraph.
- C. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 13.09 will be charged against Contractor, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, Owner may make a Claim therefor as provided in Paragraph 10.05. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.
- D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 13.09.

## ARTICLE 14 – PAYMENTS TO CONTRACTOR AND COMPLETION

### 14.01 *Schedule of Values*

- A. The Schedule of Values established as provided in Paragraph 2.07.A will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed.

### 14.02 *Progress Payments*

#### A. *Applications for Payments:*

1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.
2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

#### B. *Review of Applications:*

1. Engineer will, within 10 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to Owner or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.
2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:
  - a. the Work has progressed to the point indicated;



- b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 9.07, and any other qualifications stated in the recommendation); and
    - c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.
3. By recommending any such payment Engineer will not thereby be deemed to have represented that:
  - a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract Documents; or
  - b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.
4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:
  - a. to supervise, direct, or control the Work, or
  - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or
  - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or
  - d. to make any examination to ascertain how or for what purposes Contractor has used the moneys paid on account of the Contract Price, or
  - e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.
5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 14.02.B.2. Engineer may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in Engineer's opinion to protect Owner from loss because:
  - a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;
  - b. the Contract Price has been reduced by Change Orders;

- c. Owner has been required to correct defective Work or complete Work in accordance with Paragraph 13.09; or
- d. Engineer has actual knowledge of the occurrence of any of the events enumerated in Paragraph 15.02.A.

C. *Payment Becomes Due:*

1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended will (subject to the provisions of Paragraph 14.02.D) become due, and when due will be paid by Owner to Contractor.

D. *Reduction in Payment:*

1. Owner may refuse to make payment of the full amount recommended by Engineer because:
  - a. claims have been made against Owner on account of Contractor's performance or furnishing of the Work;
  - b. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;
  - c. there are other items entitling Owner to a set-off against the amount recommended; or
  - d. Owner has actual knowledge of the occurrence of any of the events enumerated in Paragraphs 14.02.B.5.a through 14.02.B.5.c or Paragraph 15.02.A.
2. If Owner refuses to make payment of the full amount recommended by Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, when Contractor remedies the reasons for such action.
3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 14.02.C.1 and subject to interest as provided in the Agreement.

14.03 *Contractor's Warranty of Title*

- A. Contractor warrants and guarantees that title to all Work, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to Owner no later than the time of payment free and clear of all Liens.

14.04 *Substantial Completion*

- A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete (except for items specifically listed by Contractor as incomplete) and request that Engineer issue a certificate of Substantial Completion.

- B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.
- C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the tentative certificate during which to make written objection to Engineer as to any provisions of the certificate or attached list. If, after considering such objections, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the tentative certificate to Owner, notify Contractor in writing, stating the reasons therefor. If, after consideration of Owner's objections, Engineer considers the Work substantially complete, Engineer will, within said 14 days, execute and deliver to Owner and Contractor a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as Engineer believes justified after consideration of any objections from Owner.
- D. At the time of delivery of the tentative certificate of Substantial Completion, Engineer will deliver to Owner and Contractor a written recommendation as to division of responsibilities pending final payment between Owner and Contractor with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless Owner and Contractor agree otherwise in writing and so inform Engineer in writing prior to Engineer's issuing the definitive certificate of Substantial Completion, Engineer's aforesaid recommendation will be binding on Owner and Contractor until final payment.
- E. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the tentative list.

#### 14.05 *Partial Utilization*

- A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:
  - 1. Owner at any time may request Contractor in writing to permit Owner to use or occupy any such part of the Work which Owner believes to be ready for its intended use and substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 14.04.A through D for that part of the Work.
  - 2. Contractor at any time may notify Owner and Engineer in writing that Contractor considers any such part of the Work ready for its intended use and substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.

3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 14.04 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.
4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 5.10 regarding property insurance.

#### 14.06 *Final Inspection*

- A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

#### 14.07 *Final Payment*

##### A. *Application for Payment:*

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, marked-up record documents (as provided in Paragraph 6.12), and other documents, Contractor may make application for final payment following the procedure for progress payments.
2. The final Application for Payment shall be accompanied (except as previously delivered) by:
  - a. all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by Paragraph 5.04.B.6;
  - b. consent of the surety, if any, to final payment;
  - c. a list of all Claims against Owner that Contractor believes are unsettled; and
  - d. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of or Liens filed in connection with the Work.
3. In lieu of the releases or waivers of Liens specified in Paragraph 14.07.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full,

Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien.

*B. Engineer's Review of Application and Acceptance:*

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract Documents have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of payment and present the Application for Payment to Owner for payment. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable subject to the provisions of Paragraph 14.09. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

*C. Payment Becomes Due:*

1. Thirty days after the presentation to Owner of the Application for Payment and accompanying documentation, the amount recommended by Engineer, less any sum Owner is entitled to set off against Engineer's recommendation, including but not limited to liquidated damages, will become due and will be paid by Owner to Contractor.

14.08 *Final Completion Delayed*

- A. If, through no fault of Contractor, final completion of the Work is significantly delayed, and if Engineer so confirms, Owner shall, upon receipt of Contractor's final Application for Payment (for Work fully completed and accepted) and recommendation of Engineer, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by Owner for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if bonds have been furnished as required in Paragraph 5.01, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by Contractor to Engineer with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

14.09 *Waiver of Claims*

- A. The making and acceptance of final payment will constitute:
  1. a waiver of all Claims by Owner against Contractor, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 14.06, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from Contractor's continuing obligations under the Contract Documents; and

2. a waiver of all Claims by Contractor against Owner other than those previously made in accordance with the requirements herein and expressly acknowledged by Owner in writing as still unsettled.

## **ARTICLE 15 – SUSPENSION OF WORK AND TERMINATION**

### *15.01 Owner May Suspend Work*

- A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by notice in writing to Contractor and Engineer which will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be granted an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if Contractor makes a Claim therefor as provided in Paragraph 10.05.

### *15.02 Owner May Terminate for Cause*

- A. The occurrence of any one or more of the following events will justify termination for cause:
  1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule established under Paragraph 2.07 as adjusted from time to time pursuant to Paragraph 6.04);
  2. Contractor's disregard of Laws or Regulations of any public body having jurisdiction;
  3. Contractor's repeated disregard of the authority of Engineer; or
  4. Contractor's violation in any substantial way of any provisions of the Contract Documents.
- B. If one or more of the events identified in Paragraph 15.02.A occur, Owner may, after giving Contractor (and surety) seven days written notice of its intent to terminate the services of Contractor:
  1. exclude Contractor from the Site, and take possession of the Work and of all Contractor's tools, appliances, construction equipment, and machinery at the Site, and use the same to the full extent they could be used by Contractor (without liability to Contractor for trespass or conversion);
  2. incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere; and
  3. complete the Work as Owner may deem expedient.
- C. If Owner proceeds as provided in Paragraph 15.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Owner arising out of or relating to completing the Work, such excess will be paid to Contractor. If such claims, costs, losses, and damages exceed such unpaid balance,

Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this Paragraph, Owner shall not be required to obtain the lowest price for the Work performed.

- D. Notwithstanding Paragraphs 15.02.B and 15.02.C, Contractor's services will not be terminated if Contractor begins within seven days of receipt of notice of intent to terminate to correct its failure to perform and proceeds diligently to cure such failure within no more than 30 days of receipt of said notice.
- E. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue. Any retention or payment of moneys due Contractor by Owner will not release Contractor from liability.
- F. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 5.01.A, the termination procedures of that bond shall supersede the provisions of Paragraphs 15.02.B and 15.02.C.

#### 15.03 *Owner May Terminate For Convenience*

- A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):
  - 1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
  - 2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;
  - 3. all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; and
  - 4. reasonable expenses directly attributable to termination.
- B. Contractor shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

#### 15.04 *Contractor May Stop Work or Terminate*

- A. If, through no act or fault of Contractor, (i) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (ii) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (iii) Owner fails for 30 days

to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the Contract and recover from Owner payment on the same terms as provided in Paragraph 15.03.

- B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this Paragraph 15.04 are not intended to preclude Contractor from making a Claim under Paragraph 10.05 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this Paragraph.

## **ARTICLE 16 – DISPUTE RESOLUTION**

### *16.01 Methods and Procedures*

- A. Either Owner or Contractor may request mediation of any Claim submitted to Engineer for a decision under Paragraph 10.05 before such decision becomes final and binding. The mediation will be governed by the Construction Industry Mediation Rules of the American Arbitration Association in effect as of the Effective Date of the Agreement. The request for mediation shall be submitted in writing to the American Arbitration Association and the other party to the Contract. Timely submission of the request shall stay the effect of Paragraph 10.05.E.
- B. Owner and Contractor shall participate in the mediation process in good faith. The process shall be concluded within 60 days of filing of the request. The date of termination of the mediation shall be determined by application of the mediation rules referenced above.
- C. If the Claim is not resolved by mediation, Engineer's action under Paragraph 10.05.C or a denial pursuant to Paragraphs 10.05.C.3 or 10.05.D shall become final and binding 30 days after termination of the mediation unless, within that time period, Owner or Contractor:
1. elects in writing to invoke any dispute resolution process provided for in the Supplementary Conditions; or
  2. agrees with the other party to submit the Claim to another dispute resolution process; or
  3. gives written notice to the other party of the intent to submit the Claim to a court of competent jurisdiction.

## **ARTICLE 17 – MISCELLANEOUS**

### *17.01 Giving Notice*

- A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:



1. delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended; or
2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

#### 17.02 *Computation of Times*

- A. When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

#### 17.03 *Cumulative Remedies*

- A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract Documents. The provisions of this Paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

#### 17.04 *Survival of Obligations*

- A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

#### 17.05 *Controlling Law*

- A. This Contract is to be governed by the law of the state in which the Project is located.

#### 17.06 *Headings*

- A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

**SECTION 00800**  
**SUPPLEMENTARY CONDITIONS**

**These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract (EJCDC C-700, 2007 Edition) and other provisions of the Contract Documents as indicated below. All provisions which are not so amended or supplemented remain in full force and effect.**

**The terms used in these Supplementary Conditions will have the meanings indicated in the General Conditions except as a term may be specifically defined herein.**

SC-1.01.A: Revise to delete opening paragraph.

SC-2.03.A: Revise to delete last sentence.

SC-3.02 Reference Standards: Add the following new paragraph immediately after paragraph 3.02.A.2

3. All materials used and tests made shall be judged by applicable standards of the American Society for Testing Materials (A.S.T.M.), American Association of State Highway Transportation Officials (A.A.S.H.T.O.), Minnesota Department of Transportation (Mn/DOT), City Engineers Association of Minnesota (C.E.A.M.), and other standards applicable to the particular phase of the construction being performed.

SC-4.01 Add the following after the first sentence of paragraph 4.01.A

The construction limits as provided by Owner are shown on the Drawings except as may be otherwise described in the Specifications.

SC-4.01 Delete paragraphs 4.01B and 4.01C in their entirety, and insert the following in its place:

- B. Contractor shall provide for all additional lands and access thereto that Contractor may require for performance of the Work, temporary construction facilities, or storage of materials and equipment.

SC-4.02 Delete paragraph 4.02 in its entirety and insert the following in its place:

Refer to the Instructions for Bidders for the provisions relating to Subsurface and Physical Conditions.

SC-4.04 Underground Facilities: Add the following language at the end of the first sentence of paragraph 4.04.A: The Contractor shall be required to complete a Gopher State One Call locate request prior to the commencement of any construction operations.

SC 5.01 Performance, Payment, and Other Bonds

Delete “These bonds” in paragraph 5.01.A and replace with “The performance bond”.

Add the following after the second sentence of paragraph 5.01.A:

The payment bond shall remain in effect until one year and 120 days after the date when final payment becomes due or when the completions period specified in paragraph 13.07 has ended, whichever is later, except as provided otherwise by Laws or Regulations or by the Contract Documents.

SC 5.04 Contractors Liability Insurance: Add the following limits of liability and coverages to Paragraph 5.04:

The Contractor and Subcontractors shall maintain insurance for Commercial General Liability on an occurrence basis, including Contractual Liability and Completed Operations Liability and without any exclusion for Explosion, Collapse and Underground Property Damage. The provisions must include coverage for Bodily Injury Liability which includes bodily injury claims from the Contractor’s and Subcontractors’ employees. Minimum coverage shall be as follows:

A. Workmen's Compensation.

1. Statutory Requirements.

B. Commercial General Liability Insurance.

Bodily Injury and Property Damage Combined  
\$1,500,000 per occurrence.  
\$2,000,000 aggregate limit.

C. Automobile Liability Insurance

Bodily Injury and Property Damage Combined  
\$1,500,000 per occurrence.  
\$2,000,000 aggregate limit.

D. Umbrella Liability Insurance.

Bodily Injury and Property Damage Combined  
\$2,000,000 per occurrence.

E. In the alternative to the limits of B. and C. above, Contractor may provide Commercial General Liability insurance with minimum a per occurrence limit of \$1,000,000 and aggregate limit of \$2,000,000 and Auto Liability Insurance with minimum a per occurrence limit of \$1,000,000 and aggregate limit of \$2,000,000, if

Contractor also provides an excess liability or umbrella policy in the minimum amount of \$3,000,000 that follows the underlying Commercial General Liability and Auto Liability Insurance policies. Any such excess liability or umbrella policy must list the Owner as an additional insured.

The insurance policy or policies require by this Paragraph 5.04 shall include the interests of the Owner, the Engineer, North Oaks Farms and all of whom shall be listed as insured or additional insured parties with primary coverage on a non-contributory basis. As used in this Section 5.04, “per occurrence” means the most the insurer will pay for damages arising out of any one occurrence; “aggregate limit” for excess liability or umbrella insurance shall apply in the same manner as the underlying insurance.

The insurance required by the Paragraph 5.04 shall include policy or policies which afford coverage to damage to property of others arising out of the perils of chemical spills. The policy or policies shall afford the same limits of liability as set forth in these Supplementary Conditions for liability assumed under the Contract.

The limits of liability of any excess liability or umbrella insurance policy provided by the Contractor under this Section 5.04 will be maintained except for any reduction or exhaustion of the aggregate limits by payment of loss in claims or suits covered by the underlying insurance policies. All such excess liability or umbrella insurance policy must drop down and pay for damages in excess of any underlying policy sublimits.

All responsibility for payment of any sums resulting from any deductible profession, corridor, or self-insured retention conditions of the policy or policies shall remain with the Contractor.

These insurance requirements are minimum required amounts and are not to be construed as recommended or maximum amounts. Contractor is solely responsible for determining the appropriate limits of insurance coverage for injuries or damages resulting from the performance of the work under the Contract Documents.

Notwithstanding the availability of, or limits on, or deductible provisions in, any insurance provided by the Contractor under this Section 5.04, Contractor shall defend, indemnify and hold harmless the Owner, Engineer and North Oaks Farms, from any and all claims or causes of action alleged to arise from or on account of acts or omissions of Contractor, its officers, employees, agents or subcontractors, in performing the work called for in the Contract Documents.

Contractor shall furnish with the certificate(s) of insurance and copies of all endorsements providing additional insured status of Owner and Engineer.

SC-5.06 Delete paragraph 5.06 in its entirety, including all subparagraphs.

- SC-5.07 Delete paragraph 5.07 in its entirety, including all subparagraphs.
- SC-5.08 Delete paragraph 5.08 in its entirety, including all subparagraphs.
- SC-5.09 Delete the first sentence of paragraph 5.09A.
- SC-5.10 Delete paragraph 5.10 in its entirety, including all subparagraphs.
- SC-6.06 Delete paragraph 6.06B.
- SC-6.08 Permits: In paragraph 6.08.A, “Supplementary Conditions” is changed to “Contract Documents.”
- SC-6.08 Permits: Add the following new paragraph immediately after paragraph 6.08.A:
- B. The Contractor shall complete section V. General Contractor Certification of the MPCA Application for General Storm Water Permit for Construction (#MNR100000) available from the Engineer, if applicable to the Work. The Contractor shall comply with all conditions of this permit.
- SC-6.09 Law and Regulations: Add the following new paragraph immediately after paragraph 6.09.C:
- D. The Contractor will be required to comply with laws, rules and ordinances, permit requirements and zoning requirements insofar as they may apply. It shall not be the duty or responsibility of the Engineer to review or inspect the Contractors performance relating to this requirement.
- SC-6.11 Use of Site and Other Areas/Facilities: Add the following sub-paragraph to paragraph 6.11.A.1
- a. Hydrants, poles, guy wires or other obstructions encroaching on the work will be relocated by their respective owners. The Contractor is cautioned, however, to avoid injury to all such property, and shall give reasonable notice to the parties concerned so they will have ample opportunity to move them out of the way. Contractor shall maintain reasonable access to private drives.
- SC-6.13 Safety and Protection: Add the following new paragraphs immediately after paragraph 6.13.F:
- G. The Contractor shall make every effort to schedule and conduct his work in such a manner that the public will be inconvenienced as little as possible. The

Contractor shall provide all barricades, lights, and signs required to protect his work. Any activities affecting local traffic shall be coordinated with the local road authority.

- H. In accordance with generally accepted construction practices, the Contractor will be solely and completely responsible for conditions of the job site, including security of the site and all materials and equipment thereon, and the safety of all persons and property during the performance of work, including but not limited to the general public. This requirement will apply continuously and not be limited to normal working hours. Additionally, the Contractor shall install a child-proof barrier completely around all excavations every night, and whenever the construction site is to be left unattended by authorized workmen, when said excavations are not backfilled to the level of the surrounding grade. Observation of the Contractor's performance by Engineer is not intended to include review of the adequacy of the Contractor's safety measures on or near the Site.
- I. The Contractor shall be responsible for furnishing the Contractor's and any Subcontractor's employees with all safety equipment, including but not limited to, hard hats, eye protection, respiratory protection equipment and all other protection devices needed to comply with Laws and Regulations or with accepted safety practices. The Contractor shall be responsible for any safety violation and/or fine that may occur because of any neglect by the Contractor, the Contractor's employees or any third party.

SC-6.22 Right of Entry: Add the following paragraph 6.22A:

- A. The Contractor shall permit entry and inspection by authorized representatives of Federal, State, County and local governmental agencies and the Owner, as well as to the authorized project representative or representatives of the Engineer and his subcontractors.

SC-9.11 Inspection and Testing: Add the following paragraph 9.11A:

- A. The Owner may employ and pay for, services of an independent testing laboratory to perform testing. The Contractor shall furnish at his own expense such labor, materials and facilities as may be required by the Engineer for compaction and other inspection. This shall not include the expense of the project observer or representative of the Engineer. Any inspections, tests, or approvals, or waiver of tests will in no way relieve the Contractor of full responsibility for meeting the guaranteed performance and requirements of the Contract.

SC-12.01 Change of Contract Price: Delete the first sentence of Paragraph 12.01.B and insert the

following in its place:

The value of any work covered by a change order or of any claim for an adjustment on the Contract Price will be determined in the following order of precedence.

SC-12.03 Delays Beyond Contractor's Control: Add the following new paragraph immediately after paragraph 12.03.E:

F. Time extensions to the Contract construction time period due to unusually inclement weather may be requested by the Contractor and considered by the Engineer. However, the Contractor shall provide actual climatological data prepared by the United States Weather Bureau listing the average days of wet weather and the average amount of precipitation that can be expected during the construction period at the Project site. The Engineer will then base his decision on the anticipated average and the actual average data and foreseeable variations thereof and recommend additional days of extension if warranted. If warranted, a change order will be prepared and executed.

SC-13-02 Access to Work: Add the following paragraph 13.02.B

B. Said access shall conform to all requirements of the regulatory agency or agencies who claim jurisdiction over the safety of the project site. Failure by the Contractor to provide safe access for the above parties will be a violation in a substantial way of the provisions of the Contract Documents as provided for in paragraph 15.02.A.4 of the General Conditions.

SC-13.06 Correction or Removal of Defective Work: Delete the word "Engineer" in Paragraph 13.06.A and insert the word "Owner" in its place.

SC-13.07 Correction Period: Delete the word "Substantial" in Paragraph 13.07.A and insert the word "Final" in its place.

SC-13.09 Owner May Correct Defective Work: Delete the word "Engineer" wherever it appears in Paragraph 13.09.A and insert the word "Owner" in its place.

SC-14.01 Schedule of Values: Delete the word "Engineer" in Paragraph 14.01.A and insert the word "Owner" in its place.

SC-14.02 Progress Payment: Delete "Ten days" in Paragraph 14.02.C.1 and replace with "Thirty days".

SC-16.01 Methods and Procedures: Delete the entire Article 16.01 and insert the following in its place:

16.1 Importance of Adherence to Claims and Dispute Resolution Procedures

- A. This contract includes carefully designed dispute resolution provisions designed to assure that all issues are brought to the attention of the Engineer at the earliest possible time and at the first responsible level to increase the possibility for such matters to be resolved or for appropriate action to be taken promptly.
  - 1. Strict compliance with the notification, mediation, and arbitration provisions of this contract are important for several reasons. Adherence to these provisions affords appropriate public oversight of the cost, or potential cost of the project and prevents increases in costs without the opportunity for that oversight. Adherence to these provisions assures that the Owner can provide early notification to funding sources in the event that the Contractor is contemplating a claim for additional compensation under the terms of the contract. Adherence to these provisions are essential because they provide each party an equal opportunity to maintain records and obtain evidence necessary for dispute resolution. One of the fundamental purposes of the mediation provisions of this contract is to assure that parties provide information about the nature, factual basis, and amount of claims during initial dispute resolution. The arbitration provisions contemplate cost effective dispute resolution with limited discovery. Those provisions require early disclosure of claims notification, exchange of full and complete information during mediation.
  - 2. The intent of this contract is that compensation arising from this contract shall be strictly contractual, in accordance with the provisions of this contract. Any requests or demands for additional compensation, however characterized, must be submitted to the Engineer under the claims provisions of Article 10. No claim for additional compensation may be considered for subsequent dispute resolution unless it has been timely submitted and reviewed and acted upon in accord with Article 10 by the Engineer as provided by Section 10.05(C). Timely appeals from the Engineer's decision must follow the mediation procedure provided for in this contract before submission to arbitration.
- 16.2 Methods and Procedures
- A. Either Owner or Contractor may request mediation of any Claim submitted to Engineer for a decision under Paragraph 10.05 before such decision becomes final and binding. The mediation will be governed by the Construction Industry Mediation Rules of the American Arbitration Association in effect as of the Effective Date of the Agreement. The request for mediation shall be submitted in writing to the American Arbitration Association and the other party to the Contract. Timely submission of the request shall stay the effect of Paragraph 10.05.E.
  - B. Owner and Contractor shall participate in the mediation process in good faith. The process shall be concluded within 60 days of filing of the request. The date of termination of the mediation shall be determined by application of the mediation rules referenced above.



- C. If the Claim is not resolved by mediation, Engineer's action under Paragraph 10.05.C or a denial pursuant to Paragraphs 10.05.C.3 or 10.05.D shall become final and binding 30 days after termination of the mediation unless, within that time period, Owner or Contractor:
- (1) agrees with the other party to submit the Claim to another dispute resolution process, or
  - (2) gives written notice to the other party of their intent to submit the Claim to arbitration
- D. Arbitration. The intent of this special provision is to override any provision of the EJCDC general provisions which would otherwise allow dispute resolution by litigation and instead to require arbitration. Any controversy or claim arising out of or relating to this contract, or breach thereof, shall be settled by arbitration administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules, as modified by this special provision. A judgment on the award by the arbitrator may be entered in Minnesota State District Court venued in Ramsey County, Minnesota.
- (1) Notwithstanding the amount of the claim, arbitration shall occur before a single arbitrator under the rules for cases on the "Regular Track" The arbitrator shall be an attorney qualified by experience to handle construction cases.
  - (2) The following preconditions to a demand for arbitration apply.
    - (a) The Contractor must establish that the Contractor complied with the claims provisions of Article 10, including timely submission of claims.
    - (b) Any party seeking arbitration must demonstrate that the Engineer's decision on the claim has not become final and binding under 10.05(E) of the contract as a result of failure of the party to seek further dispute resolution on a timely basis. If the engineer's decision has become final and binding and a claim dispute resolution has not been timely perfected, all claims for relief, however characterized, in tort, contract, equity or otherwise are absolutely barred.
    - (c) Any party seeking arbitration must demonstrate that it timely sought mediation under the contract. During that mediation process, the Contractor must fully disclose the factual basis for any claim, must provide detailed documentation for the amount of any claim, and must disclose the amount claimed. A Contractor may not assert a claim, nor may a Contractor assert a claim in amounts, not timely submitted during the claims provisions under Article 10, and during the mediation process.
    - (d) All subcontracts for work done on this project shall contain an agreement requiring binding arbitration of disputes with the Contractor, upon provisions satisfactory to the Owner. The Contractor shall present forms of such subcontracts to the Owner, on request, for review of compliance with these provisions. Nothing in this contract shall be deemed to provide direct

rights of action in arbitration or otherwise by the subcontractor against the Owner.

## **ADDITIONAL SUPPLEMENTARY CONDITIONS**

### 1. Confined Space

The workplace in which the Work is to be performed may include permit-required confined spaces as defined in 29 CFR 1910.146 and, if so, permit space entry is allowed only through compliance with a confined space entry program meeting the requirements of 29 CFR 1910.146.

### 2. Prevailing Wages/Hours of Labor

Pursuant to Minnesota Statutes sections 177.41 to 177.44 and corresponding Minnesota Rules 5200.1000 to 5200.1120, this agreement is subject to the prevailing wages as described by the Minnesota Department of Labor and Industry (provided in Attachment 2 attached to and made part of this agreement). Specifically, all contractors and subcontractors must pay all laborers and mechanics the established prevailing wages for work performed under the contract. Failure to comply with the aforementioned may result in civil or criminal penalties. CONTRACTOR and all subcontractors shall furnish to the contracting agency copies of any or all payrolls not more than 14 days after the end of each pay period. LFLWD may examine all records relating to wages paid laborers or mechanics on work to which sections 177.41 to 177.44 apply.]

### 3. Prompt Payment

OWNER will pay CONTRACTOR obligations within 35 days of the date of receipt of invoice from CONTRACTOR, unless OWNER in good faith disputes the obligation. The rate of interest calculated and paid by OWNER on the outstanding balance of the obligation not paid according to the terms of the contract or during the standard payment period shall be 1-1/2 percent per month or part of a month. No interest penalties will accrue against OWNER if payment is delayed due to a good faith dispute regarding the fitness of the product or service, contract compliance, or any defect, error or omission related thereto. The minimum monthly interest penalty payment that OWNER shall calculate and pay CONTRACTOR for the unpaid balance for any one overdue bill of \$100 or more is \$10. For unpaid balances of less than \$100, OWNER shall calculate and pay the actual interest penalty due CONTRACTOR.

CONTRACTOR must pay any subcontractor within ten days of CONTRACTOR's receipt of payment from OWNER for undisputed services provided by the subcontractor. CONTRACTOR must pay interest of 1-1/2 percent per month or any part of a month to the subcontractor on any undisputed amount not paid on time to the

subcontractor. The minimum monthly interest penalty payment for an unpaid balance of \$100 or more is \$10. For an unpaid balance of less than \$100, CONTRACTOR shall pay the actual penalty due to the subcontractor. A subcontractor who prevails in a civil action to collect interest penalties from CONTRACTOR must be awarded its costs and disbursements, including attorney's fees, incurred in bringing the action.

4. Civil Rights

CONTRACTOR agrees as follows:

- (1) In the hiring of common or skilled labor for the performance of any work under any contract, or any subcontract, CONTRACTOR will not, by reason of race, creed, or color, discriminate against the person or persons who are citizens of the United States or resident aliens who are qualified and available to perform the work to which the employment relates;
- (2) CONTRACTOR will not, in any manner, discriminate against, or intimidate, or prevent the employment of any person or persons identified in clause (1) of this section, or on being hired, prevent, or conspire to prevent, the person or persons from the performance of work under any contract on account of race, creed, or color;
- (3) A violation of this section is a misdemeanor; and
- (4) The contract may be canceled or terminated, and all money due, or to become due under the contract, may be forfeited for a second or any subsequent violation of these terms.

5. Final Documentation

Contractor must submit Form IC-134, record drawings, warranties, lien waivers and all other documents specified in the Contract Documents before final payment. OWNER will not make final payment until CONTRACTOR has given proof of compliance with state income tax withholding requirements pursuant to Minnesota Statutes section 270C.66

CONTRACTOR will maintain all records pertaining to fees or costs incurred in connection with the contract for six years from the date of completion of the work. CONTRACTOR agrees that any authorized representative of OWNER or the state auditor may have access to and the right to examine, audit and copy any such records during normal business hours.

6. Out-of-State Contractor Surety Deposit

Minnesota Statutes §290.9705 regarding payment withholding for surety purposes applies if CONTRACTOR is an out-of-state contractor within the meaning of that statute.

7. Minnesota Data Practices Act

If CONTRACTOR receives a request for data pursuant to the Data Practices Act, Minnesota Statutes chapter 13 (DPA), that may encompass data (as that term is defined in the DPA) CONTRACTOR possesses or has created as a result of this agreement, it will inform OWNER immediately and transmit a copy of the request. If the request is addressed to OWNER, CONTRACTOR will not provide any information or documents, but will direct the inquiry to OWNER. If the request is addressed to CONTRACTOR, CONTRACTOR will be responsible to determine whether it is legally required to respond to the request and otherwise what its legal obligations are, but will notify and consult with OWNER and its legal counsel before replying. Nothing in the preceding sentence supersedes CONTRACTOR's obligations under this agreement with respect to protection of OWNER's data, property rights in data or confidentiality. Nothing in this section constitutes a determination that CONTRACTOR is performing a governmental function within the meaning of Minnesota Statutes §13.05, subdivision 11, or otherwise expands the applicability of the DPA beyond its scope under governing law.

**SECTION 00920  
PARTIAL PAYMENT CERTIFICATION**

OWNER: Vadnais Lake Area Water Management  
Organization  
PROJECT: Wilkinson Lake Deep-Water  
Wetland Restoration

CONTRACTOR:  
ENGINEER: Houston Engineering Inc.

PARTIAL PAYMENT:  
PERIOD OF ESTIMATE:

CONTRACT TIME:  
Original Days:  
Revisions:  
Days Remaining:  
On Schedule (y/n):  
Starting Date:  
Projected Completion: March 1, 2024 (substantial)  
July 1, 2024 (final)

CONTRACT CHANGE ORDER SUMMARY

No.	Deduction	Additions
Totals		
Net Change to Contract		

ESTIMATE

Original Contract Amount.....	\$ _____
Change Orders.....	\$ _____
Revised Contract Amount.....	\$ _____
Completed to Date Amount.....	\$ _____
Materials On-Site.....	\$ _____
Subtotal.....	\$ _____
Retainage.....	\$ _____
Previous Payments.....	\$ _____
Amount Due This Payment.....	\$ _____

(see attached breakdown)

CONTRACTOR'S CERTIFICATION

The undersigned Contractor certifies that to the best of their knowledge, information and belief, the work covered by this payment estimate has been completed in accordance with the contract documents, that all amounts have been paid by the Contractor for work for which previous payment estimates were issued and for which payments were received from the Owner, and that current payment shown herein is now due.

RELEASE OF CLAIMS AND WAIVER OF LIEN: NOW THEREFORE, upon receipt of the above payment amount, the undersigned does hereby irrevocably releases and waives any and all claims for payment of any type for any work up through and including the date of this application, and irrevocably releases and waives all bond claims, construction liens, mechanic's liens, and/or other liens, or right to claim any against the above project or any part thereof.

Contractor: \_\_\_\_\_

By: \_\_\_\_\_

Date: \_\_\_\_\_

ENGINEER'S CERTIFICATION

The undersigned certifies that the work has been carefully inspected and to the best of their knowledge and belief, the quantities shown in this estimate are correct and the work has been performed in accordance with the contract documents.

Engineer: Houston Engineering, Inc.

By: \_\_\_\_\_

Date: \_\_\_\_\_

OWNER'S APPROVAL

Owner: Vadnais Lake Area Water Management Organization

By: \_\_\_\_\_

Date: \_\_\_\_\_

**SECTION 00925  
FIELD ORDER**

PROJECT: Wilkinson Lake Deep-Water  
Wetland Restoration

FIELD ORDER NUMBER: FO-

FIELD ORDER DATE:  
HEI Project No. 7057-0014

**Contractor**

**Consultant**

Houston Engineering, Inc.  
7550 Meridian Circle North, Suite 120  
Maple Grove, MN 55369

**Field Order Description/Rationale:**

**Method of Payment:**

**Attachments:**

Consultant:  
**Houston Engineering, Inc.**  
By: \_\_\_\_\_  
Title: Construction Engineer (on behalf of  
Project Manager  
Date: \_\_\_\_\_

Contractor:  
By: \_\_\_\_\_  
Title: Responsible Project Representative  
Date: \_\_\_\_\_

CONTRACTOR is hereby directed to execute promptly this Field Order which orders **Minor Changes** in the Work. A minor change is a change which in the opinion of the Engineer is consistent with the Contract Documents, **within 5% of the Contract Value** for a particular item and **does not involve an extension of Contract Time**.

Signature of the Contractor indicates agreement that changes ordered are minor as defined above.

If Contractor contends that a change in Contract Price or Contract Time is involved, notify Engineer in writing within seven (7) days of Field Order date. Changes in the work are not authorized if a change in Contract Price or Contract Time is involved.

**SECTION 00930  
CHANGE ORDER**

Change Order No. \_\_\_\_\_

Date \_\_\_\_\_

Agreement Date \_\_\_\_\_

Wilkinson Lake Deep-Water Wetland Restoration

Owner: Vadnais Lake Area Water Management Organization

Contractor: \_\_\_\_\_

The following changes are hereby made to the Contract Documents:

Justification:

Original Contract Price: \$ \_\_\_\_\_

Current Contract Price adjusted to previous Change Order(s): \$ \_\_\_\_\_

The Contract Price due to this Change Order will be (increased) (decreased) by  
\$ \_\_\_\_\_

The new Contract Price including this Change Order will be \$ \_\_\_\_\_

Change to Contract Time. \_\_\_\_\_

The Contract Time will be (increased) (decreased) by \_\_\_\_\_ calendar days.

The date for completion of all work will be \_\_\_\_\_ (Date).

Approvals Required:

To be effective, this Change Order must be approved by the Owner and the Contractor as required by the Contract Documents.

Requested by: \_\_\_\_\_  
(Engineer) (date)

Ordered by: \_\_\_\_\_  
(Owner) (date)

Accepted by: \_\_\_\_\_  
(Contractor) (date)

**\*\*END OF SECTION\*\***



DRAFT

DIVISION

1

**SECTION 01120  
SPECIAL PROVISION**

**PART 1 - GENERAL**

**1.01 RELATED DOCUMENT**

- A. Drawings and general provisions of the contract, including General and Supplementary Conditions and other Division 1 and 2 Specification Sections, apply to this Section.
- B. The Mn/DOT Standard Specifications for Construction, 2020 Edition.
- C. The City Engineers Association of Minnesota, (CEAM), *STANDARD UTILITIES SPECIFICATIONS*, 1999 Edition.

**1.02 EXISTING UTILITIES**

- A. It shall be the Contractor's responsibility to verify the location of all existing utilities prior to the commencement of any excavation operations, including by use of Gopher State One Call locate services. Any utilities damaged or disturbed by the Contractor's operation shall be repaired by the Contractor, at its expense, to the satisfaction of the Utility Owner and the Engineer.

**1.03 INSPECTION AND TESTING**

- A. The Owner may employ, and pay for, services of an independent testing laboratory to perform testing. The Contractor shall furnish at his own expense such labor, materials, and facilities as may be required by the Engineer for compaction and other inspection. This shall not include the expense of the project observer or representative of the Engineer.
- B. Decision as to the quality of materials and workmanship shall rest with the Owner on the basis of the Engineer's evaluation and any portion of the work rejected shall be replaced by the Contractor with approved work at no additional cost to the Owner in accordance with the General Conditions.
- C. Any inspections, tests, or approvals, or waiver of tests will in no way relieve the Contractor of full responsibility for meeting the guaranteed performance and requirements of the Contract.

**1.04 BENCHMARKS AND CONSTRUCTION STAKING**

- A. ENGINEER will provide benchmark, staking, and site coordinate information necessary for construction of the Work. Once provided, it is CONTRACTOR's responsibility to protect the information. CONTRACTOR shall request such information from ENGINEER a minimum of two days prior to the time when such information is needed.
- B. The Engineer will set construction stakes, as applicable, as follows:
  - 1. Wetland Excavation: The Engineer will provide Contractor either: 1) a series of perimeter control points around the site sufficient for use with machine control; OR 2) a set offset stakes from pond bottom contour, at approximately 100-foot spacing. Engineer will provide Contractor CAD files of pond grades (.dwg format) upon request.
  - 2. Work limit stakes: The Engineer will furnish one line of stakes along the work limits.
- C. The contractor shall give the Engineer 48-hour notice of its need for establishment of line or grade so that the Engineer may have time to provide stakes.
- D. CONTRACTOR shall conduct operations so as to preserve benchmarks, survey reference points, and stakes existing or established by ENGINEER for the construction and so as to conform the Work to horizontal and vertical specifications in the Contract Drawings and Technical Specifications. CONTRACTOR will be charged the expense of repairing or replacing survey markers and shall be responsible for mistakes or lost time that result due to damage or destruction of survey markers due to CONTRACTOR'S operations.
- E. It shall be the Contractor's responsibility to periodically check the stakes for accuracy of alignment and grade as construction proceeds, and to construct the Work in conformance with alignment and grade stipulated in Contract Drawings and Technical Specifications.
- F. Before clearing activities begin, the Contractor shall contact the Engineer to determine the limits of clearing for the project.

## **1.05 CONTRACTOR USE OF PREMISES**

- A. Definition of Site: The Site is defined as the area within the work limits shown on the Project Drawings. CONTRACTOR shall limit operations, including material and equipment storage, to within those work limits shown on the Project Drawings.
- B. Hours of Operation: CONTRACTOR'S operations shall be limited to 7:00 a.m. to 7:00 p.m., Monday through Saturday, or the hours allowed by the County, the City, and other applicable requirements (whichever is more restrictive).

- C. Protection and Repair of Existing Utilities: CONTRACTOR shall perform operations carefully and in such a manner as to protect existing structures, underground facilities, and utilities. Obstructions not shown on the Project Drawings may exist and shall be exposed by CONTRACTOR without damage. CONTRACTOR shall be solely responsible for damage to existing structures, underground Facilities, and utilities resulting from CONTRACTOR'S operations (unless otherwise noted within the project plans and specifications) and shall repair or replace damaged items to OWNER'S satisfaction. Special care should be taken to protect existing bituminous trails and roadways. The CONTRACTOR is also responsible for calling Gopher One for project utility locations before starting construction.
- D. Unfavorable Construction Conditions: When unfavorable weather, soil, drainage, or other unsuitable construction conditions exist, CONTRACTOR shall immediately notify ENGINEER and confine operations to work which will not be adversely affected by such conditions. No portion of the Work shall be constructed under conditions, which would adversely affect the quality of the Work, unless special means or precautions are taken to perform the Work in a proper and satisfactory manner. All CONTRACTOR vehicles leaving and entering the site will comply with all local regulation concerning tracking mud and other construction debris onto public or private properties. Nothing in this paragraph alters CONTRACTOR's responsibility to timely and properly complete the work as provided for by the Contract Documents.
- E. The CONTRACTOR is fully responsible for control and protection of the site until Final Completion of the Work.
- F. A Bald eagle nesting tree is present on the project site and indicated with a 100-foot buffer in the project design. **The buffer needs to be maintained at all times for all aspects of the project. On foot approaches to the nest must be avoided.** The Owner will provide a biologist who will conduct monitoring during project site preparation and construction, as requested by United States Fish and Wildlife Service (USFWS). The Contractor is responsible for notifying all on-site personnel (including those of any subcontractors) of the distress signs indicated below, along with contract information for the Engineer. If signs of eagle distress are observed by the Contractor, the Contractor must notify the Engineer immediately. The Engineer will in turn contact the Owner's biologist. Once notified of these distress signs, it is solely the responsibility of the monitoring biologist to accurately judge whether a bird is exhibiting normal behavior or is reacting to a distraction or an annoyance that could be interpreted as "disturbance."
1. **Possible signs of distress:** Eagles often assume an alert posture in response to an unusual event. This behavior also may be accompanied by distress calls and ultimately result in flushing behavior, which would be observed as an eagle suddenly flying away from the nest following distress calls. Incubating adults may react to a distraction or an annoyance by rising from their incubation posture and standing over their eggs. They also may step

off the eggs and stand on the side of the nest. They may or may not vocalize in conjunction with this behavior. Such standing behavior may be seen prior to flying and as an indication that the bird may flush from the nest in response to a distraction. The bird also may settle back down into incubation posture without flying, once the distraction has passed or the bird has decided the distraction is not a sufficient threat to warrant flushing from the nest. This behavior (whether the adult flushes or not) indicates that the disturbance is great enough to interfere with normal behavior and is of concern. This posture could be confused with stretching or egg turning which are normal parts of incubation behavior.

- G. Areas of the project site are located within an agricultural conservation easement that is held by the Minnesota Land Trust. Goals of the easement are, generally, to protect and enhance natural habitat. The easement document is included as an attachment in the Specifications, and the Minnesota Land Trust has approved the Plans and Specifications for the Project (NOT YET APPROVED). If the Contractor has questions or encounters an unlikely unanticipated environmental impact that they feel may be contrary to the environmental protection goals of the easement, the Engineer should be contacted immediately. The Engineer will contact the Minnesota Land Trust.

## 1.06 HEALTH AND SAFETY REQUIREMENTS

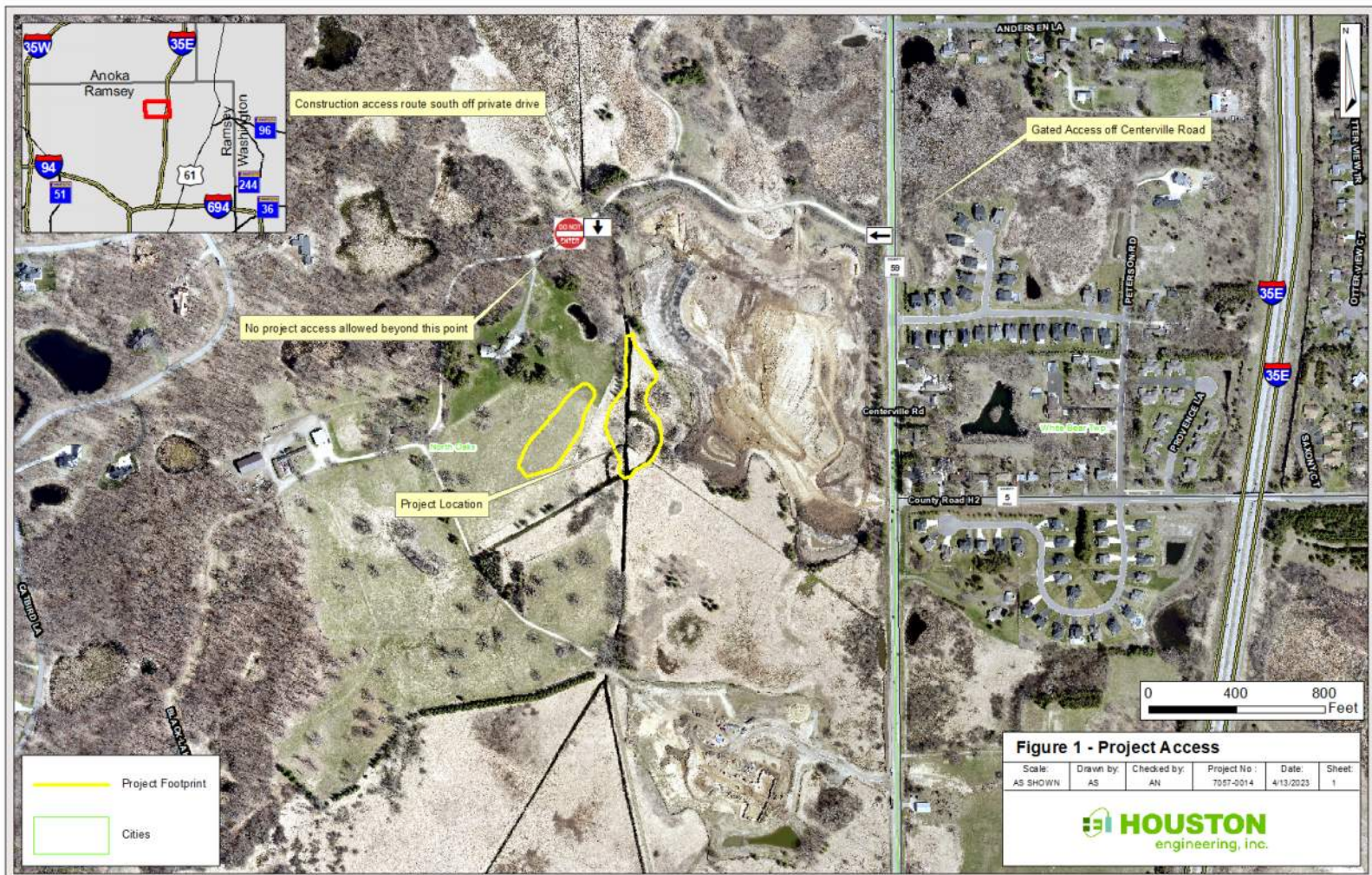
- A. In accordance with generally accepted construction practices, the Contractor shall be solely and completely responsible for job site conditions and safety procedures and programs, including safety and health of all persons and property, on those portions of the site affected by or used by Contractor, Contractor's employees, subcontractors, agents, and others during performance of the Work. This requirement will apply continuously and not be limited to normal working hours. Observation of the Work and Contractor's performance by Owner and Engineer is not intended to include review of the adequacy of the Contractor's safety and health procedures and programs on or near the construction site. The Contractor is solely responsible for the protection of property and the safety and health of its employees, Subcontractors, Suppliers, agents and others on or near the site.

## 1.07 PROJECT ACCESS POINTS

- A. The Project requires the CONTRACTOR to access the work the access route as indicated in **Figure 1** below, west via the gated access off Centerville and then south off the private drive. At this access point the CONTRACTOR is solely responsible for damage to adjacent road surfaces including the existing gravel access road, trails, vegetation and landscaping beyond the project identified "work limits."
- B. The CONTRACTOR shall implement protective measures, at its own expense, to avoid damage(s) to adjacent road surfaces, curb & gutter, sidewalks, trails, vegetation and landscaping beyond the project identified "work limits." The ENGINEER will observe

project access points before, during and after construction to determine if damage has occurred. Historically these damages include pavement cracking and cosmetic surface markings (“cat-tracks”) as well as soil rutting. Acceptable protective measures include, but are not limited to, the following:

- Temporary placement of rubber and/or wood access mats
  - Temporary placement of earthen berm(s)
- C. Implementation of measures to protect the access points shall be considered incidental and no direct payment shall be made thereof.
- D. Contractor is responsible for restoration within temporary access route area. This work is considered incidental.



## 1.08 DEMOLITION AND REMOVAL

- A. The Project Drawings show a number of items that must be relocated temporarily (“Temporarily Relocate”) or removed (“Remove”) or protected (“Protect”) within the work limits. Items designated for “temporary relocation” shall be reinstalled at the same location after completion of excavation operations. If the Contractor can complete excavation operations without relocating the items designated as “temporary relocate”, the Contractor may leave these items in place in lieu of relocating them. Removal of items marked “Remove” is mandatory. Contractor shall take ownership of those items and are responsible for their lawful disposal.

Examples of the items to be relocated or protected, shown in Appendix A and listed below, include but are not limited to:

Temporary Relocation

- Fencing (including barb wire)

Remove

- Existing Debris
- Concrete and Steel Flume

Protection

- Existing culvert
- Guy wires
- Bituminous drives, gravel drives, trail crossings and features adjacent to project access points

**1.09 TRAFFIC CONTROL**

- A. Access must be maintained to all roadways. This allows for the temporary closure of a road provided access is maintained through an alternate route. The Contractor shall be responsible for all traffic control within areas subject to construction operations.
- B. The Contractor may temporarily close a lane of traffic in a public roadway only for off-loading of construction equipment, replacement of culverts, and patching of the roadway surface. Once equipment is off-loaded, the Contractor shall immediately remove all vehicles from the roadway travel lanes. No equipment shall be left in the public road right-of-way (including road shoulders and ditches) overnight.

**1.10 CLEARING AND CHIPPING**

- A. Clearing operations shall be conducted in accordance with the provisions of Mn/DOT 2101. Before clearing activities begin, the Contractor shall contact the Engineer to verify the maximum limits of clearing for the project. The City forester will be consulted about tree removal. No oaks will be pruned without consultation of the City forester. Oaks can only be pruned November-March, due to oak wilt presence in the area.
- B. The Contractor shall clear only enough trees and brush to enable access and facilitate other project operations. Contractor shall obtain the Engineer's concurrence in trees to be removed as otherwise provided in the Contract Documents. Contractor shall complete due diligence in avoiding damage to trees marked for preservation. No material resulting from clearing work shall be deposited in wetland areas.
- C. Trees and brush shall be cut within two inches of the ground surface. Stumps and roots shall be left in place. **The CONTRACTOR may grub existing vegetation at its own expense to allow for (rubber tire) vehicle access.**
- D. All cut trees, particularly invasive species, shall have an appropriate dyed herbicide applied to their trunk. Acceptable herbicides include Ortho Brush-be-gone, Garlon 3A, or an approved equivalent.
- E. Tree and brush material from clearing and grubbing operations is property of Contractor and subject to lawful disposition by the Contractor offsite.

#### **1.11 COMMON EXCAVATION AND SPOIL MANAGEMENT**

- A. Common Excavation and Spoil Management items shall be treated as a plan, (P), quantities in accordance to the provisions of Mn/DOT 1901
- B. Common Excavation consists of the following work activities
  - 1. Excavation of deepwater wetland
  - 2. Hauling material to spoil placement location
- C. Spoil Management consists of the following work activities
  - 3. Placement of spoils
  - 4. Dewatering spoil pile as necessary to achieve final grading
  - 5. Final grading of spoil pile.
- D. All excavation and spoil management activities shall be completed within the work limits shown on the plans. Contractor is responsible for all costs associated with restoration activities outside of the defined work limits.



- E. For purposes of estimating earthwork quantities, the following summary represents volumetric values derived by the design staff for determining the earthwork plan (P) quantity:

Total Common Excavation: 10,100 Cubic Yards

Spoil Management (assumes 40% fluff factor): 14,150 Cubic Yards

## 1.12 TEMPORARY EROSION CONTROL

- A. Silt fencing and erosion control blanketing shall be installed in locations as directed by the Engineer. Silt fence and erosion control blanket shall meet requirements of Mn/DOT 3886 and Mn/DOT 3885, respectively. Silt fence must be removed after project completion.

## 1.13 PREVAILING WAGE (See also Section 00800)

- A. Pursuant to Minnesota Statutes sections 177.41 to 177.44 and corresponding Minnesota Rule. 5200.1000 to 5200.1120, this Contract is subject to the prevailing wages as established by the Minnesota Department of Labor and Industry (provided in **Attachment 2** herein and made part of this agreement). Specifically, Contractor and all subcontractors must pay all laborers and mechanics the established prevailing wages for work performed under the contract. Failure to comply with the aforementioned may result in civil or criminal penalties. Owner shall demand and the Contractor and all subcontractors shall furnish to the contracting agency, copies of any or all payrolls not more than 14 days after the end of each pay period.

## PART 2 – PRODUCTS

### 2.02 GENERAL

- A. Unless otherwise stated, all materials related to grading, erosion control, and turf establishment shall meet the requirements of DIVISION III, MATERIALS of the Mn/DOT *Standard Specifications for Construction*, 2018 Edition.

### 2.03 APPROVED EQUAL

- A. Whenever, in any Contract Documents, an item of material or equipment is defined by describing a proprietary product or by using the name of a manufacturer or vendor, the

term "or approved equal," if not inserted, shall be implied. The specified items of materials or equipment mentioned shall be understood as establishing a standard of type, function, efficiency, minimum basis of design and quality desired. Other manufacturer's products of comparable quality, design and efficiency and suitable for the service intended will be considered. No substitute materials or equipment shall be bid or ordered without the written approval of the Engineer who shall be the judge of equality.

- B. A prospective Bidder may request "or equal" status for materials and equipment up to seven calendar days before the day set for the Bid Opening. The Bidder shall submit the request for "or equal" status to the Engineer with complete information that will demonstrate the item to be considered will fit within the provided space limitations. Detailed drawings and specifications will be required.
- C. At least four calendar days before the day set for the Bid Opening, the Engineer may issue an Addendum to all plan holders wherein acceptable "or equal" materials will be listed. This Addendum will include only acceptable "or equal" materials and equipment and will not address unsatisfactory or non-approved items. The Bidder shall prepare and submit his/her bid using only originally specified materials and equipment or Engineer approved equals as stated in the Addendum.
- D. By executing the Contract, the Contractor represents that he/she has understood the requirements of the Contract Documents.

**PART 3 – EXECUTION (See Division 2)**

**\*\*END OF SECTION\*\***

**SECTION 01127  
APPLICATIONS FOR PAYMENT**

**PART 1 – GENERAL**

**1.14 REQUIREMENTS INCLUDED:**

- A. Procedures for preparation and submittal of Applications for Payment.

**1.15 RELATED REQUIREMENTS:**

- A. Conditions of Contract govern work of this section.
- B. Section 01300 - Submittals: Contract Unit Price Schedule.
- C. Section 01700 - Contract Closeout: Final Payment.

**1.16 FORMAT:**

- A. For each item, provide a column for listing: Item Number; Description of Work; Contract Unit Price; Previous Applications; Work in Place and Stored Materials under this Application; Authorized Change Orders; Total Completed and Stored to Date of Application; Percentage of Completion; Balance to Finish; and Retainage.
- B. Attach invoices for all Materials stored on site.

**1.17 PREPARATION OF APPLICATIONS:**

- A. Type required information or use media-driven printout.
- B. Execute certification by signature of authorized officer.
- C. Use data from Contract Unit Price Schedule. Provide dollar value in each column for each line item for portion of Work performed and for stored products.
- D. List each authorized Change Order as an extension on continuation sheet, listing Change Order number and dollar amount as for an original item of Work.
- E. Prepare Application for Final Payment as specified in Section 01700.

**1.18 SUBMITTAL PROCEDURES:**

- A. Submit each Application for Payment at times stipulated in Agreement.
- B. Submit under transmittal letter specified in Section 01300.

- C. Provide bill of sale, invoice, or other documentation warranting that the owner has received the materials and equipment free and clear of all liens, charges, security interests and encumbrances.

**1.19 SUBSTANTIATING DATA:**

- A. When Engineer requires substantiating information, submit data justifying line item amounts in question.
- B. Provide one copy of data with cover letter for each copy of submittal. Show Application number and date and line item by number and description.

**PART 2 - PRODUCTS (Not Used)**

**PART 3 - EXECUTION (Not Used)**

**\*\*END OF SECTION\*\***

**SECTION 01150  
MEASUREMENT AND PAYMENT**

**PART 1 -- GENERAL REQUIREMENTS**

**1.01 GENERAL**

- A. This Section of the Specifications describes the measurement and payment for the Work to be done under the items listed on the Bid Form.
- B. Each unit or lump sum price stated on the Bid Form shall constitute full compensation as herein specified for each item of work completed in accordance with the requirements of the Contract Documents including Drawings and Specifications, including all clean up and restoration.
- C. All costs in connection with the Work, including furnishing all materials, machinery, supplies and appurtenances; providing all construction equipment and tools; and performing all necessary labor, coordination, supervision, and management to fully complete the Work shall be included in the unit prices quoted on the Bid Form. All Work not specifically set forth as a separate bid item herein shall be considered a subsidiary obligation of the CONTRACTOR and all costs in connection therewith shall be included in the amounts and prices submitted on the Bid Form. The price on the Bid Form shall include all Work necessary to complete the Work.
- D. The Contract Price identified in the Agreement includes all Work associated with the project, whether such Work is identified in this section or not. This section identifies each item upon which progress payments will be based.
- E. Measurement:
  - 1. When measurement is based on plan quantity (P), CONTRACTOR must submit any claim of inaccuracy in Contract Drawings relevant to determining plan quantity to ENGINEER before any disturbance is commenced. Plan quantity will not be adjusted for expansion due to water infiltration, freezing, or snow cover.
  - 2. When as-built quantities are designated as the basis for payment, quantities will be based upon final documentation and survey and field measurements made by ENGINEER or observed by ENGINEER.

**1.02 ESTIMATED QUANTITIES**

- A. All quantities for Unit Price items in the Bid Form are to be used only as a basis for determining the bid Contract Price. The actual amount of Work completed or materials to be furnished under the Unit Price items may differ from the estimated quantities. The

basis of payment for work or materials furnished or placed will be the actual amount of Work completed unless designated as a Plan Quantity.

- B. CONTRACTOR's sole remedy for a change in unit price due to variation between Bid Form and actual quantities is a request for a contract price adjustment as provided for by the General Conditions. If quantities vary by no more than plus/minus 25%, there shall be no adjustment in unit price, but outside of this range an adjustment may be considered in accordance with the procedures and criteria of the General Conditions.

### **1.03 INTENT OF BID FORM ORGANIZATION**

- A. Payment for all Work shall be in accordance with the terms and conditions set forth in the Contract Documents and the CONTRACTOR's Bid prices set forth in CONTRACTOR's conformed Bid Form. The Bid items set forth in the Bid Form subdivide the Project for purposes of measurement and payment only, and are intended to represent the entire and complete Project as set forth in the Contract Documents. The Bid prices set forth in the Bid Form shall constitute full compensation to CONTRACTOR for providing all material, equipment, labor, and supplies to complete the Work in complete accordance with the Contract Documents.
- B. Some of the Bid items are based on lump sum unit prices. In accordance with paragraphs of this Section 01150, following partial progress payment for those items may be made in accordance with monthly estimates of percent completed for each item included in the breakdown in CONTRACTOR's approved Schedule of Values as stated in Subpart 1.3 of Section 01300 of these Specifications. For all other Bid items progress payments shall be based on the actual quantities of each item of Work completed in accordance with the Contract Documents. The procedures for submitting and processing progress payments are set forth elsewhere in the Contract Documents.
- C. Notwithstanding any term of the General conditions to the contrary, in the event the Work is not completed but CONTRACTOR is entitled to partial payment for a Bid Item for which payment is Lump Sum, payment will be a proportion of the bid Price for the Bid Item based on the Engineer's determination of percentage completion of elements constituting the Bid Item.
- D. Measurement for Bid Items for which Units are based on acres is plan projection.

### **1.04 PAYMENT FOR MATERIALS ON HAND**

- A. No payment amounts on account of materials and equipment delivered to the site prior to installation will be made.

## **PART 2 -- DESCRIPTION OF BID ITEMS**

### **2.01 MOBILIZATION (BID LINE ITEM 1)**

- A. Measurement: Work specified in this section will be lump sum (LUMP SUM).
- B. Payment: Payment for this item includes, but is not limited to:
- Movement of equipment onto the site which would include multiple access locations as identified in the Project Drawings.
  - Locate and protect existing utilities and other site features.
  - General site preparation.
  - Communications with OWNER and ENGINEER
  - Preconstruction Conference
  - Weekly Progress Meetings
  - Submittals
  - Health & Safety costs
  - Insurance costs
  - Bonding costs
  - Costs associated with protection of items and features identified on the plans as “protect.”
  - Demobilization
  - Site cleanup and restoration of project area throughout duration of project and upon project completion.
  - Traffic Control
- C. Payment shall not exceed one-half (1/2) of the total cost for the first pay request and shall not exceed ninety percent (90%) prior to final payment.
- D.

### **2.02 DEMOLITION, REMOVALS, AND SALVAGE (BID LINE ITEM 2)**

- A. Measurement: Work specified in this section will be lump sum (LUMP SUM).
- B. Payment: Payment for this includes, but is not limited to:
- Temporary relocation of objects in project work limits as specified in the Project Plans.

- Protection of items designated for temporary relocation as specified in the Project Plans, if left in place.
- Permanent relocation or removal of the following items as noted on the plans:
- Concrete and Steel Flume
- Barbed wire and other fencing
- Offsite disposal of all items including hauling and disposal fees

**2.03 TREE CLEARING AND CHIPPING (P) (BID LINE ITEM 3)**

- A. Measurement: Work specified in this section will be a plan (P) quantity and measured per acre (Acre).
- B. Payment: Payment for this includes, but is not limited to:
- Flush cut clearing of trees and brush
  - Chipping trees and brush and disposal of wood chips as designated in the plans.

**2.04 CONSTRUCTION MATTING (BID LINE ITEM 4)**

- A. Measurement: Work specified in this section will be lump sum (LUMP SUM).
- B. Payment: Payment for this includes, but is not limited to:
- Supplying and utilizing matting to access all portions of the wetland with equipment
  - Removal of matting at the end of the project
  - Protection of wetland areas traversed by equipment

**2.05 COMMON EXCAVATION (P) (BID LINE ITEM 5)**

- A. Measurement: Work specified in this section will be a plan (P) quantity, in Cubic Yards (CY).
- B. Payment: Payment will be made per cubic yard of excavation as indicated in the plans. Payment for this includes, but is not limited to, the following Work:
- Excavating pond to grades indicated in the Contract Documents.
  - Hauling material to spoil disposal site.

**2.06 SPOIL MANAGEMENT (BID LINE ITEM 6)**

- A. Measurement: Work specified in this section will be a plan (P) quantity, in Cubic Yards (CY).



B. Payment: Payment will be made per cubic yard of spoil managed. Quantity is based on 1.4 times excavation quantity. Payment for this includes, but is not limited to, the following Work:

- Placement of spoil material, free of large debris, on the spoil pile as indicated in the Contract Documents.
- Dewatering of spoil material as necessary to facilitate smoothing and seeding operations
- Smoothing of spoils as indicated in the Contract Documents.
- Final spreading and smoothing of spoils at least once during non-frozen conditions

#### **2.07 ACCESS ROAD GRADING (BID LINE ITEM 7)**

A. Measurement: Work specified in this section will be lump sum (LUMP SUM).

B. Payment: Payment for this includes, but is not limited to:

- Restoration to the access road, including grading of the road and furnishing any class 5 aggregate as necessary to restore the road.

#### **2.08 WATER CONTROL (BID LINE ITEM 8)**

A. Measurement: Work specified in this section will be a lump sum (LUMP SUM).

B. Payment: Payment for this includes, but is not limited to:

- Preparing a water control plan
- Providing and operating pumping, and other controls as necessary to manage water on site for all construction operations
- Managing water levels during wetland seeding operations and through germination period

#### **2.09 RANDOM RIPRAP CLASS III (BID LINE ITEM 9)**

A. Measurement: Work specified in this section will be measured based upon ENGINEER's documented area in cubic yards (CY) of the limits of riprap placement as indicated in the Contract Drawings.

B. Payment: Payment for this item includes, but is not limited to the following:

- Furnishing and installing riprap per manufacturer's recommendations
- Furnishing and installing geotextile fabric below the riprap as indicated in the Contract Drawings is considered incidental to riprap installation.

## **2.10 SILT FENCE (BID LINE ITEM 10)**

- A. Measurement: Work specified in this section will be measured by the linear foot (LF), based upon ENGINEER's documented length of silt fence placement.
- B. Payment: Payment for this includes, but is not limited to the following Work:
- Furnishing and installing silt fence at all areas disturbed by construction as directed by the ENGINEER.
  - Placement of silt fence for disturbances outside of the Work Limits shall be considered incidental and no payment will be made.
  - Removal of silt fence after establishment of vegetation, as prescribed by NPDES permit requirements and directed by the ENGINEER. Fifty percent (50%) of payment will be withheld until silt fence removal completed.

## **2.11 TEMPORARY DITCH CHECK (BID LINE ITEM 11)**

- A. Measurement: Work specified in this section will be measured per Each.
- B. Payment: Payment for this item includes, but is not limited to the following:
- Furnishing and installing a rock ditch check as shown in the Contract Drawings.
  - Furnishing and installing geotextile fabric below the rock ditch check as indicated in the Contract Drawings is considered incidental.
  - Removing ditch check upon completion of project

## **2.12 FLOATING SILT CURTAIN (BID LINE ITEM 12)**

- A. Measurement: Work specified in this section will be measured by the linear foot (LF), based upon ENGINEER's documented length of silt curtain placement.
- B. Payment: Payment for this includes, but is not limited to the following Work:
- Furnishing and installing flotation silt curtain as indicated in the Contract Drawings or as directed by the ENGINEER.
  - Maintenance of the silt curtain, including removal of silt or sediment according to MPCA guidelines.
  - Removal of flotation silt curtain after project operations and directed by the ENGINEER.
- C. Fifty percent (50%) of payment will be withheld until silt fence removal completed.

## **2.13 EROSION CONTROL BLANKET (BID LINE ITEM 13)**

A. Measurement: Work specified in this section will be measured based upon ENGINEER's documented area in square yards (SY) of the limits of erosion control blanket placement, taken as a 2-dimensional projected area.

B. Payment: Payment for this item includes, but is not limited to the following:

- Furnishing and installing erosion control blanket
- Anchoring and securing blanket per manufacturer's recommendations

#### **2.14 UPLAND SEEDING & MULCH (BID LINE ITEM 14)**

A. Measurement: Work specified in this section will be in acres (AC).

B. Payment: Payment for this includes, but is not limited to the following Work:

- Soil Preparation
- Furnishing and installing Type I mulch placed via disk-anchoring or Type Bonded Fiber Matrix;
- Furnish and install seed and mulch as directed by the ENGINEER.
- One (1) re-application (spot treatment) of seed and mulch in areas with poor vegetation establishment and/or excessive erosion as directed by the ENGINEER post final stabilization.
- Temporary seeding and mulch as necessary to accommodate the Contractor's work schedule and meet NPDES permit requirements

#### **2.15 WETLAND SEEDING (P) (BID LINE ITEM 15)**

A. Measurement: Work specified in this section will be a plan (P) quantity, in acres (AC).

B. Payment: Payment for this includes, but is not limited to the following Work:

- Install seed furnished by the OWNER.
- Monitoring of site conditions through germination period

#### **2.16 HERBICIDE TREATMENT (BID LINE ITEM 16)**

A. Measurement: Work specified in this section will be per acre (AC).

B. Payment: Payment for this includes, but is not limited to the following Work:

- Spraying in fringe areas as designated by ENGINEER immediately following vegetation establishment

- Herbicide shall be Glyphosate or approved equal and shall be applied at the recommended rates per manufacturer's instructions.
- Herbicide shall be applied by a commercial pesticide applicator with experience in wetland management.

**2.17 ROCK CONSTRUCTION ENTRANCE (BID LINE ITEM 17)**

- A. Measurement: Work specified in this section will be lump sum (Lump Sum).
- B. Payment: Payment for this includes, but is not limited to the following Work:
- Furnishing and installing a rock construction entrance.
  - Maintenance of rock construction entrance throughout project and removal of rock construction entrance at end of project.

**2.18 SWPPP DOCUMENTATION & MANAGEMENT (BID LINE ITEM 18)**

- A. Measurement: Work specified in this section will be lump sum (LUMP SUM).
- B. Payment: Payment for this includes, but is not limited to the following Work:
- Obtaining NPDES Construction Permit, including all associated fees
  - Submittal of weekly inspection logs to the ENGINEER throughout the length of the active construction period during non-frozen conditions per NPDES permit requirements.
  - Termination of NPDES Construction Permit as directed by the ENGINEER.

**\*\*END OF SECTION\*\***

**SECTION 01200  
PROJECT MEETINGS**

**PART 1 – GENERAL**

**1.01 SUMMARY**

- A. ENGINEER will schedule and conduct preconstruction conference in accordance with the General Conditions, Supplementary Conditions, and this section.
- B. ENGINEER will schedule and administer progress meetings and additional meetings throughout progression of work
- C. CONTRACTOR will attend all meetings

**1.02 MEASUREMENT AND PAYMENT**

See **SECTION 01150**: Measurement and Payment.

**1.03 PRECONSTRUCTION CONFERENCE**

Location: At a location to be selected by OWNER.

Attendance:

- CONTRACTOR’S Project Manager.
- CONTRACTOR’S Resident Superintendent.
- CONTRACTOR’S suppliers who intend to submit Shop Drawings to ENGINEER.
- Subcontractors or supplier’s representatives, whom CONTRACTOR invites or ENGINEER requests.
- ENGINEER’S representatives.
- OWNER’S representatives.
- North Oaks Company representatives.
- Local utility representatives, as appropriate.

Suggested agenda includes, but not be limited to following:

- Project safety and CONTRACTOR’S Health and Safety Plan.
- Equal opportunity requirements.
- Presentation of preliminary progress schedule and preliminary schedule of Shop Drawing and sample submissions in accordance with SECTION 01300 of Contract Documents.

- Check of required bonds and insurance documentation prior to Notice to Proceed.
- Liquidated damages.
- Procedures for handling submittals such as substitutions and Shop Drawings.
- O&M submittal procedures.
- Direction of correspondence, and coordination responsibility.
- Weekly and monthly progress meetings.
- Laboratory and field testing requirements.
- Provisions for inventory of material stored on-site or off-site if off-site storage is authorized.
- Schedule of values, application for progress payment, and progress payment procedures.
- Change Order procedures.
- Posting of signage.

#### **1.04 WEEKLY PROGRESS MEETINGS**

Schedule weekly meetings

Location: CONTRACTOR's field office.

Attendance:

- CONTRACTOR'S Project Manager.
- CONTRACTOR'S Resident Superintendent.
- Electrical, mechanical, earthwork, drilling, geosynthetic, landscaping and other Subcontractors, as needed.
- OWNER
- North Oaks Company representative
- ENGINEER'S Site Representative and Project Manager.

ENGINEER shall:

- Prepare agenda for meetings.
- Distribute written notice of specially called meetings minimum of one working day(s) in advance of meeting date.
- Preside at meetings.

- Record minutes; include significant proceedings and decisions.
- Prepare formal minutes and distribute within four (4) working days after each meeting.

CONTRACTOR shall:

- Make physical arrangements for all meetings.
- Present updated schedule at each meeting.
- Submit CONTRACTOR'S agenda items to ENGINEER for each progress meeting two days prior to meeting date.

Representatives of CONTRACTOR, Subcontractors, and Suppliers attending meetings shall be qualified and authorized to act on behalf of entity each represents.

Suggested Agenda:

- Review minutes of previous meeting.
- Review Work progress since previous meeting.
- Project safety concerns.
- Field observations, problems, conflicts.
- Problems which impede Construction Schedule.
- Review of off-site fabrication, delivery schedules.
- Corrective measures and procedures to regain conformance with projected construction Progress Schedule.
- Revisions to Construction Progress Schedule.
- Issues raised by OWNER and ENGINEER.
- Progress and schedule for succeeding Work period.
- Coordination of schedules.
- Review and update submittal schedules.
- Maintenance of quality standards.
- Pending changes and substitutions.
- Review proposed change for:
  - (ii) Effect on Construction Progress Schedule and completion date.
  - (iii) Effect on other contracts of the Project.
- Other business.

## **1.05 CONTRACTOR'S MEETINGS**

CONTRACTOR will hold internal scheduled meetings as needed with subcontractors, suppliers and employees.

CONTRACTOR will notify ENGINEER and OWNER of all formal meetings and submit copies of all agenda and minutes to ENGINEER.

**PART 2 - PRODUCTS (Not Used)**

**PART 3 - EXECUTION (Not Used)**

**\*\*END OF SECTION\*\***



## **SECTION 01300 SUBMITTALS**

### **PART 1 - GENERAL**

#### **1.01 RELATED DOCUMENTS:**

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section.

#### **1.02 SUMMARY:**

- A. This Section specifies administrative and procedural requirements for submittals required for performance of the Work, including;
  - 1. Contractor's construction schedule.
  - 2. List of Materials.
  - 3. List of Subcontractors.
  - 4. Shop Drawings and product data.
  - 5. Traffic Control Plan.

#### **1.03 SUBMITTAL PROCEDURES:**

- A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.
  - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals and related activities that require sequential activity.
  - 2. Coordinate transmittal of different types of submittals for related elements of the Work so processing will not be delayed by the need to review submittals concurrently for coordination.
    - a. The Engineer reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- B. Processing: Allow sufficient review time so that installation will not be delayed as a result of the time required to process submittals, including time for resubmittals.
  - 1. Allow two days for initial review. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. The Engineer will promptly advise the Contractor when a submittal being processed must be delayed for coordination.

2. If an intermediate submittal is necessary, process the same as the initial submittal.
  3. Allow two weeks for reprocessing each submittal.
  4. No extension of Contract Time will be authorized because of failure to transmit submittals to the Engineer sufficiently in advance of the Work to permit processing.
- C. Submittal Preparation: Place a permanent label or title block on each submittal for identification. Indicate the name of the entity that prepared each submittal on the label or title block.
1. Provide a space approximately 4" x 5" on the label or beside the title block on Shop Drawings to record the Contractor's review and approval markings and the action taken.
  2. Include the following information on the label for processing and recording action taken.
    - a. Project name.
    - b. Date.
    - c. Name and address of Engineer.
    - d. Name and address of Contractor.
    - e. Name and address of subcontractor.
    - f. Name and address of supplier.
    - g. Name of manufacturer.
    - h. Number and title of appropriate Specification Section.
    - i. Drawing number and detail references, as appropriate.
- D. Submittal Transmittal: Package each submittal appropriately for transmittal and handling. Transmit each submittal from Contractor to Engineer using a transmittal form. Submittals received from sources other than the Contractor will be returned without action.
1. On the transmittal record relevant information and requests for data. On the form, or separate sheet, record deviations from Contract Document requirements, including minor variations and limitations. Include Contractor's certification that information complies with Contract Document requirements.

#### **1.04 CONTRACTOR'S CONSTRUCTION SCHEDULE:**

- A. Submit initial progress schedule in duplicate at the Preconstruction Meeting for review by Owner and Engineer. Revise and resubmit as required.

- B. Bar-Chart Schedule: Prepare a fully developed, horizontal bar-chart type Contractor's construction schedule. Schedule to relate to the entire Project. (Recommended forms are included in Division 0.)
- C. ENGINEER will review schedule. CONTRACTOR will submit additional information as requested until ENGINEER is satisfied all items are adequately addressed. Approved schedule will be required within 7 days of issuance of Notice To Proceed (NTP) or OWNER shall stop work until adequate documentation is submitted and approved.
- D. No work shall be done outside of the working hours identified in SECTION 01010, Project Summary.
- E. Show expected dates for the start and completion of each major element of construction and installation dates for major items. Elements shall include, but not be limited to, the following:
  - 1. Shop drawings, submittal list, and schedule.
  - 2. All testing and documentation activities.
  - 3. Allowance for inclement weather
- F. Schedule Updating: Revise the schedule after each meeting or activity, where revisions have been recognized or made. Issue the updated schedule concurrently with report of each meeting.

#### **1.05 CONSTRUCTION PROGRESS SCHEDULES**

- A. Prepare and submit Construction Progress Schedule in accordance with General Conditions.
- B. Other Items included in the Lump Sum Contract Price Breakdown. Schedule Revisions:
  - 1. Weekly to reflect changes in progress of Work.
  - 2. Show changes occurring since previous submittal of schedule.

#### **1.06 LIST OF SUBCONTRACTORS:**

- A. Submit three copies of complete list of Subcontractors, including equipment and material supplies, proposed to be engaged in performance of Contract to Engineer and Owner for approval.

- B. Include Specification Division or Section, full legal name, address, telephone number and name of contact for this Project.
- C. Include evidence of Subcontractor's qualifications to perform Work as required in various Sections of the Specifications.

**1.07 LIST OF MATERIALS:**

- A. Within fourteen (14) days after Notice to Proceed, submit three copies of complete list of materials, products and equipment proposed to be used in construction to Engineer for review and approval.
- B. Arrange list in order of Specification Sections.
- C. List only items conforming to project requirements and brand names and model numbers of products, materials and equipment specified or approved by Addendum.
- D. List manufacturer of each product and name, address and telephone number of local supplier.

**1.08 SHOP DRAWING AND PRODUCT DATA:**

- A. Shop drawings and product data shall be clearly identified as to project, contract, contractor, manufacturer, specification section and item submitted. Substitutions and deviations from the requirements of the Contract Documents shall be noted in writing.
- B. Submit shop drawings in the form of one reproducible transparency with one print of submitter's original drawing, not copied or adapted from Contract Drawings. Transmit transparencies in mailing tubes without folding.
- C. The Engineer will review shop drawings, product data and samples with reasonable promptness in accordance with the schedule for submission of shop drawings and samples as agreed upon, and will return them to the Contractor with the Action of the Engineer's review noted thereon. Contractor to distribute approved shop drawings for record, fabrication, and field distribution. Where major corrections are required, the transparency will be returned to the Contractor who shall make a new drawing incorporating the required corrections and submit a transparency of the revised drawings for approval. Use only shop drawings bearing Engineer's approval stamp for construction.
- D. Clearly mark each copy of product data to identify information being submitted, and delete information which does not apply to the Project. Supplement standard information as necessary. Show dimensions and other selected characteristics.

**1.09 TRAFFIC CONTROL PLAN:**

- A. Within fourteen (14) days after Notice to Proceed, submit three copies of the traffic plan to Engineer for review and approval.

**1.10 ENGINEER'S ACTION:**

- A. Except for submittals for record, information or similar purposes, where action and return is required or requested, the Engineer will review each submittal, mark to indicate action taken, and return promptly.
  - 1. Compliance with specified characteristics is the Contractor's responsibility
- B. The Engineer will review shop drawings and samples with reasonable promptness in accordance with the schedule for submission of shop drawings and samples as agreed upon, and will return them to the Contractor with the Action of the Engineer's review noted thereon.
- C. The Engineer's review shall not relieve CONTRACTOR of the responsibility to ensure that submittal is correct and suitable nor that Work represented by submittal complies with the Contract Documents, except as to matters of finish, color and other aesthetic matters left to the Engineer's decision by the Contract Documents.

**1.11 GUARANTEES, WARRANTIES, MAINTENANCE AGREEMENTS, AND WORKMANSHIP BONDS**

- A. Refer to Specification sections for requirements.

**PART 2 - PRODUCTS (Not Applicable).**

**PART 3 - EXECUTION (Not Applicable).**

***Vadnais Lake Area Water Management Organization: Wilkinson Lake Deep-Water Wetland Restoration  
Construction Submittal List***

<i>Spec Section</i>	<i>Description</i>	<i>Required Date</i>
00610	Construction Performance Bond	Within 10 days of Notice of Award
00620	Construction Payment Bond	Within 10 days of Notice of Award
00800	Contractors Liability Insurance	Within 10 days of Notice of Award
01300	Approved Contractors Construction schedule	Within 7 days of NTP
01300	List of Subcontractors	Submit with Bid
01300	List of materials, products and equipment	Within 14 days of NTP
01300	Traffic Control Plan	Within 14 days of NTP
01300	Approved Shop Drawings	Prior to commencement of construction operations
2100	Itemized list of salvaged materials	Within 10 days of re-installation
2503	Manufacturers material certifications for pipe culverts / aprons	Within 10 days of placement
2575	Manufacturers material certifications for seed mix	Within 10 days of placement

**\*\*END OF SECTION\*\***

**SECTION 01700  
PROJECT CLOSEOUT**

**PART 1 -- GENERAL REQUIREMENTS**

**1.01 GENERAL CLEAN-UP**

- A. CONTRACTOR shall promptly remove from the vicinity of the completed work, all rubbish, unused materials, construction equipment, silt fence, and temporary structures and facilities used during construction. Final acceptance of the work by the OWNER will be withheld until the CONTRACTOR has satisfactorily performed the final cleanup of the project site.

**1.02 FINAL SUBMITTALS**

- A. The CONTRACTOR, prior to requesting final payment, shall obtain and submit the following items to the ENGINEER For transmittal to the OWNER:
  - 1. IC-134 form.
  - 2. Certificates of inspection and acceptance by local governing agencies having jurisdiction.
  - 3. Releases (liens) from all parties who are entitled to claims against the subject project, property, or improvement pursuant to the provision of law.
  - 4. Manufacturer/supplier warranties and instructions.
  - 5. All other documentation required under these Contract Documents.

**1.03 MAINTENANCE AND GUARANTEE**

- A. The CONTRACTOR shall comply with the maintenance and guarantee requirements contained in the General Conditions.
- B. Replacement of earth fill or backfill, where it has settled below the required finish elevations, shall be considered as a part of such required repair work, and any repair of resurfacing constructed by the CONTRACTOR which becomes necessary by reason of such settlement shall likewise be considered as a part of such required repair work unless the CONTRACTOR shall have obtained a statement in writing from the affected private owner or public agency releasing the OWNER from further responsibility in connection with such repair or resurfacing.

- C. The CONTRACTOR shall make all repairs and replacements promptly upon receipt of written order from the OWNER. If the CONTRACTOR fails to make such repairs or replacements promptly, the OWNER reserves the right to do the work and the CONTRACTOR and its surety shall be liable to the OWNER for the cost thereof.

**\*\*END OF SECTION\*\***



DRAFT

DIVISION

2

**SECTION 02100**  
**SITE PREPARATION AND DEMOLITION**

**PART 1 - GENERAL**

**1.01 WORK INCLUDED**

- A. Site preparation and demolition work as specified and shown on drawings, including, but not necessarily limited to, the following:
- Examination
  - Mobilization
  - Clearing & Chipping
  - Removals
  - Demolitions
  - Traffic Control
  - Erosion & Sediment Control
  - Locate & identify all utilities above and below ground located within the construction limits.

**1.02 RELATED SECTIONS**

- A. Section 02105 - Earthwork.

**1.03 SUBMITTALS**

- A. Demolition procedures and operational sequence for review and acceptance by the Engineer.
- B. Record Drawings: Indicate points of disconnection and capping, or abandonment, or removal of existing utility services; include utility names, sizes and locations, relationship to permanent structures located on site and on adjacent property and certificates of severance of utility services from respective utility companies or owners.

**1.04 QUALITY ASSURANCE**

- A. Regulatory Requirements: Comply with applicable requirements of federal, state, and local laws, regulations and codes having jurisdiction at project site or applicable requirements of these standards and specifications.

**1.05 PROJECT CONDITIONS**

- A. Coordination: Coordinate this work with the work of other Sections to avoid any delay or interference with other work.
- B. Nuisances: Keep dirt, dust, noise and other objectionable nuisances to a minimum. Use temporary enclosures, calcium chloride, coverings and sprinkling, or combinations thereof, as necessary to limit dust to lowest practicable level, except do not use water to the extent that it causes flooding, contaminated runoff, or icing.
- C. Traffic: Conduct work to ensure minimum interference with vehicular or pedestrian traffic and to permit unencumbered access to site and adjacent properties.
  - 1. Do not close or obstruct streets, sidewalks, alleys or other public passageways without permission from authorities having jurisdiction.
  - 2. If required by governing authorities, provide alternate routes around closed or obstructed traffic ways.
- D. Protections:
  - 1. Prevent movement and settlement of adjacent structures. Install temporary barriers, fences, guard rails, enclosures, shoring, bracing, planking, barricades, lights, warning signs and other protections required to protect structures, utilities, landscaping, and other items that are to remain in place.
  - 2. Protect bench marks movements and reference points from displacement or damage and, if displaced or damaged, replace at no cost to the owner.
  - 3. Install and maintain required bracing, shoring and supports when removing structural elements and be responsible for safety and support of structure. If safety of structure appears to be endangered, cease operations and immediately notify the Engineer and the Owner; do not resume operations until safety is restored.

## **PART 2 – PRODUCTS (Not Used)**

## **PART 3 – EXECUTION**

### **3.01 EXAMINATION**

- A. Examine areas in which work is to be performed. Report in writing to the Owner and Engineer all prevailing conditions that will adversely affect satisfactory execution of work. Do not proceed with work until unsatisfactory conditions have been corrected.
- B. Starting work constitutes acceptance of the existing conditions and this Contractor shall then, at their own expense, be responsible for correcting all unsatisfactory and defective work encountered.

### **3.02 MOBILIZATION**

- A. Equipment and supplies must be stored and stockpiled in designated locations as indicated and approved by Engineer.
- B. During the process of mobilization if any damage to areas outside the construction limits the Contractor will be at fault and will be required to restore the damage to existing conditions.

### **3.03 EROSION AND SEDIMENT CONTROL**

- A. Seed all disturbed areas in accordance with NPDES requirements.
- B. Place silt fence and floating silt curtain where described in the plans.
- C. Take proper precautions to avoid sediment from contaminating areas outside the project limits.

### **3.04 CLEARING**

- A. Remove trees, shrubs, stumps, bushes, vines, rubbish, undergrowth, and deadwood at locations as designated in the Project Plans and treat with herbicide as listed in Section 1120 Special Provisions.

### **3.05 UTILITIES**

- A. Contact local utility companies, (Gopher State One Call, 1-800-252-1166 or 651-454-0002), 48 hours minimum prior to start of demolition work. Confirm verbal notices and written notices. Verify locations of all utilities entering site and their locations on site.
- B. Cooperate with utility companies, adjacent property owners, and other building trades in maintaining, protecting, rerouting or extending of utilities passing through work areas which serve structures located on project site and on adjacent properties.
- C. Verify that utilities that are to be removed, capped or abandoned are turned off, or are disconnected, or are rerouted to new locations before starting demolition.

### **3.06 DEMOLITION**

- A. General:
  - 1. Remove and demolish materials in orderly and careful manner.

2. If departures from drawing requirements are deemed necessary by Contractor, submit details and reasons therefore to the Engineer for action. Make no departures without prior written approval.
3. Repair or replace all demolition work performed in excess to that required, at no cost to the Owner. Repair or replacement shall match and equal construction, condition, and finish existing at time of award of contract.

B. Remove following from locations to extent shown on drawings:

1. Designated utility services occurring within demolition areas, including disconnection, capping and complete removal or abandonment as shown and noted on drawings.
2. Infrastructure components as designated on the plans for removal including concrete and/or steel shall be legally disposed of. This work may include such items as weirs, culverts, or other hydraulic structures designed to direct the flow of water.
3. Trees and their roots where they will interfere with the new construction of the building and paved areas shall be removed, except where designated on the drawings to remain. Removal shall be complete within five feet of building foundations, on-site structures and paved areas. Roots may be left under other fills exceeding 5' depth.

C. Rough grade site, within demolition areas, to meet adjacent contours and to provide positive drainage. Leave site in clean condition acceptable for performance of subsequent construction operations.

### **3.07 CLEAN-UP AND DISPOSAL**

A. Transport trash, rubbish and debris daily from site and legally dispose of.

1. Remove and promptly dispose of contaminated, vermin infested, or dangerous materials encountered.
2. Do not burn or bury materials on site, unless otherwise approved by local authorities having jurisdiction and the owner.

B. Remove tools, equipment and protections when work is complete and when authorized to do so by local authorities having jurisdiction and the owner or the Owner's representative.

**\*\*END OF SECTION\*\***

## SECTION 02240 CONTROL OF WATER

### PART 1 – GENERAL

#### 1.01 SUMMARY

- A. This section includes dewatering and control of site surface water to facilitate construction activities.

#### 1.02 MEASUREMENT AND PAYMENT

- A. See **SECTION 01150: Measurement and Payment.**

#### 1.03 SUBMITTALS

- A. Submit in accordance with **SECTION 01300: Submittals**
- B. Site Plan detailing dewatering operations including a comprehensive written summary of anticipated draw-down and or diversion activities.
  - 1. The CONTRACTOR shall develop a Site Specific Plan detailing dewatering operations including a comprehensive written summary of anticipated draw-down and or diversion activities.
  - 2. Plan shall denote locations up pumps, outlets for pumping operations, pumping rates, and control structures. Plan shall also include timing of operations.

#### 1.04 PERFORMANCE REQUIREMENTS

- A. Dewatering Performance: Design, furnish, install, test, operate, monitor, and maintain dewatering system(s) of sufficient scope, size, and capacity to control, remove, and dispose of surface water and permit excavation and construction to proceed on dry, stable subgrades.
  - 1. Continuously monitor and maintain dewatering operations to ensure erosion control, stability of excavations and constructed slopes, that excavation does not flood, and that damage to subgrades and permanent structures is prevented. **The CONTRACTORS site specific plan must account for all weather conditions effectively managing the base flow as well as runoff throughout the duration of the project. Of critical importance is water conditions during establishment of seeding, maintaining saturated but not flooded conditions for wetland seed mix as detailed in Section 02575.**

2. Prior to discharge off-site dewatering flows shall have appropriate erosion and sediment controls consistent with the erosion control plan and the project's NPDES permit.
3. Accomplish dewatering activities without damaging existing buildings, structures, and site improvements adjacent to excavation.
4. Remove Dewatering system when no longer required for construction.

## **1.05 PROJECT RECORD DOCUMENTS AND SUBMITTALS**

- A. Submit documents under provisions of **SECTION 01300**.
- B. Shop Drawings: Show arrangement, locations, and details of pumping locations; inlet and discharge piping, pumps, filters and power units; and means of discharge, control of sediment, and disposal of water.
  1. Include a sketch plan and a comprehensive written summary for dewatering and or diversion operations including control procedures to be adopted if dewatering problems arise

### **PART 2 – PRODUCTS (Not Used)**

### **PART 3 – EXECUTION**

**\*\*END OF SECTION\*\***

**SECTION 02575  
EROSION CONTROL AND  
TURF ESTABLISHMENT**

**PART 1 – GENERAL**

**1.01 GENERAL**

- A. Related requirements specified elsewhere:
1. Preparation, protection and cleaning of site: Section 02105.
  2. Mn/DOT Standard Specification for Construction, 2020 Edition and all current Supplemental Specifications thereto.

**PART 2 - PRODUCTS**

**2.01 MATERIALS**

- A. Silt Fence
1. Silt fence must be of a type specified in the project plans and details and must conform to MN/DOT 3886.0.
  2. Geotextile shall be uniform in texture and appearance and shall have no defects, flaws, or tears that would affect its physical properties. It shall contain sufficient ultraviolet rays (U.V.) inhibitor and stabilizers to provide a minimum 2 -year service life from outdoor exposure.
  3. Silt fence must be trenched and secured on the upward slope with a trench depth of 8 to 12 inches in depth. A 6 inch geotextile flap shall be used as a liner within the trench.
  4. Fastening and sewing methods shall be consistent with MN/DOT specification 3886.0 for standard machine sliced and preassembled type silt fence.
  5. Posts will be made of materials indicated in the Construction Documents. Posts may not be placed further than 6 feet apart.
  6. Silt fence anchors will be placed on the downward slope and driven a minimum of 2 feet into the ground.
  7. Silt fence must be placed on level ground.
  8. If the silt fence ever becomes damaged in any way it must be repaired within 24 hours.



9. At any time during construction extra silt fence may be requested by the ENGINEER and placed as directed. Extra silt fence added will be considered incidental.

## B. Erosion Control Blanket

1. The contractor must supply an erosion control blanket of the type specified in the project plans and details. Erosion control blankets shall conform to Table 3885-1 of the MN/DOT of the standard specification manual and the following requirements:
  - a. Each erosion control blanket shall consist of a uniform web of interlocking fibers with net backing. The blanket shall be of uniform thickness with the material fibers being evenly distributed over the entire area of the blanket. All blankets shall be smolder resistant and consist of natural fibers.
  - b. The net backing on each blanket shall consist of polypropylene mesh. For Category 1 blankets, the net backing shall start to break down after 1 month with 80 percent breakdown occurring within 3 months. For Category 2 and 3 blankets, the netting shall contain sufficient UV stabilization for breakdown to occur within a normal growing season. For Category 4 and 5 blankets, the netting shall be UV stabilized to provide a service life of 2 to 3 years. For blankets designated as 2S, the fiber material shall be sandwiched between an attached top and a bottom layer of net backing.
  - c. Erosion control blanket must be secured to the ground by staples. Staples will be placed in a grid pattern with each staple being no more than 1 foot from the previous staple.

## C. Upland Seeding and Mulch

1. Seed shall be labeled in accordance with the U.S. Department of Agriculture Rules and Regulations and shall be furnished in sealed standard containers.
  - a. Grass seed shall consist of the species listed below; the aggregate percentage of material other than grass seed not exceeding one (1) percent of the total weight of the mixture.
    - (i) Mn/DOT Mix, 35-241 Seed Mixture.

Application Rates: 36.5 Pounds per acre.

### 2. Mulch

- a. Straw –
  - (i) Mn/DOT 3882.2 (Type 1)
  - (ii) Application Rates: Pounds per acre.

Application Rates: 4,000 Pounds per acre..

### b. Hydro-mulch

- (i) Mn/DOT 3884.2 H (Type 8) Bonded Fiber Matrix (BFM)

(ii) Application Rates: Pounds per acre.

BFM Hydro-mulch: 4,200.

#### D. Wetland Seeding

##### 1. Wetland Seed Mix

a. Prairie Moon Nursery custom wetland seed mix

(i) Application rate: 91 seeds per square foot

b. Provided by OWNER

### **PART 3 - EXECUTION**

#### **3.02 PROCEDURE**

##### A. Silt Fence

1. The geotextile of the heavy duty silt fence shall be attached to the upstream side of the net backing. The bottom edge of the geotextile shall be buried at least 6 inch deep in a vertical trench with the soil pressed firmly against the embedded geotextile. The geotextile of the machine sliced silt fence shall be inserted by machine in a slit in the soil 8-12 inch deep. The slit shall be created such that a horizontal chisel point at the base of a soil slicing blade slightly disrupts soil upward as the blade slices through the soil. The geotextile shall be mechanically inserted directly behind the soil slicing blade in a simultaneous operation, achieving consistent placement and depth. No turning over (plowing) of soil is allowed for the slicing method. Compact the soil immediately next to the silt fence fabric by operating the wheels of a tractor or skid steer on each side of the silt fence a minimum of 2 times. The bottom edge of the geotextile on the preassembled silt fence shall be buried at least 6 inches deep in a vertical trench and the soil pressed firmly against the embedded geotextile.
2. Each post shall be securely fastened to the geotextile by zip ties, clips or staples suitable for each purpose. Standard T metal posts with a welded plate shall be used on the machine sliced and heavy duty installations. Wooden posts used on the preassembled silt fence shall have a sharpened end and shall protrude below the bottom of the geotextile to allow for a minimum of 18 inch embedment. Maximum post spacing shall be 8 foot for heavy duty; 6 foot for machine sliced and 6 foot for preassembled. When machine sliced is used for ditch check installations the maximum post spacing shall be 4 foot.

##### B. Erosion Control Blanket

1. The material fiber in each blanket shall be securely attached to the net backing to prevent movement of the fiber in relation to the netting. For blankets consisting of 3-inch material fibers, the blanket shall be fastened together at a spacing not to exceed 2 inches. For

blankets consisting of 6-inch material fibers, the blanket shall be fastened together at a spacing not to exceed 4 inches.

2. The staples used to anchor Category 1 and 2 blankets shall be U shaped, 11 gauge or heavier steel wire having a span width of 1 inch and a length of 6 inches or more from top to bottom after bending. Staples used to anchor Category 3, 4 and 5 blankets shall have a minimum length of 8 inches.

### C. Upland Seeding

1. All existing vegetated areas above the normal water level disturbed by construction activities shall be seeded with proper treatment of invasive species.
2. Seed which has become wet or otherwise damaged in transit or in storage will not be acceptable.
3. Upon completion of spreading topsoil to the depth specified, the surface shall be hand raked or other means used that will provide a comparable job of fine grading prior to seeding. If the topsoil has become packed after spreading, it shall be disked and harrowed until the surface has been thoroughly loosened to a depth of 3 to 4 inches, after which it shall be fertilized and raked as specified above.
4. The seed shall be uniformly distributed over all disturbed areas inside the construction limits by sowing half the seed in one direction; the balance at right angles to the first. The seed shall then be covered to an average depth of 1/4 inch to 1/2 inch by means of disc anchoring. Hydroseeding methods may be used in lieu of broadcast seeding and disc anchoring. Seeding shall not be done during windy weather.
5. All seeding work shall be done between April 15 and June 1, or between July 20 and September 20, except as otherwise approved in writing by the Engineer.
6. When conditions are such by reason of drought, high winds, excessive moisture or other factors, that satisfactory results are not likely to be obtained, the work shall be stopped and it shall be resumed only when conditions are favorable again, or when approved alternate or corrective measures and procedures have been adopted.
7. In the event that for any reason, whether it be caused by wind, rain, heat, cold, drought, or lack thereof, the seeding in the Engineer's opinion is not successful in producing a uniform and normal grass covering with the normal germination period, the Contractor shall at his own expense re-prepare the seed bed, re-fertilize and reseed until such time as a normal stand of growing grasses has been achieved.

### D. Wetland Seeding

1. Wetland Seeding shall be performed at locations indicated in the plan and in accordance with the BWSR wetland seeding guidance as detailed in Attachment 4 and includes treatment of invasives such as reed canary grass with herbicide as further detailed within the special provisions. **Seed will be provided by the Owner.** Contractor is responsible for

control of water levels sufficient to enable seeding and germination to occur. **Failure to sufficiently manage water will result in non-payment of Wetland Seeding and Water Control bid items and the Contractor will be responsible for purchase cost of additional seed.**

**\*\*END OF SECTION\*\***

DRAFT

# WILKINSON DEEP WATER WETLAND RESTORATION

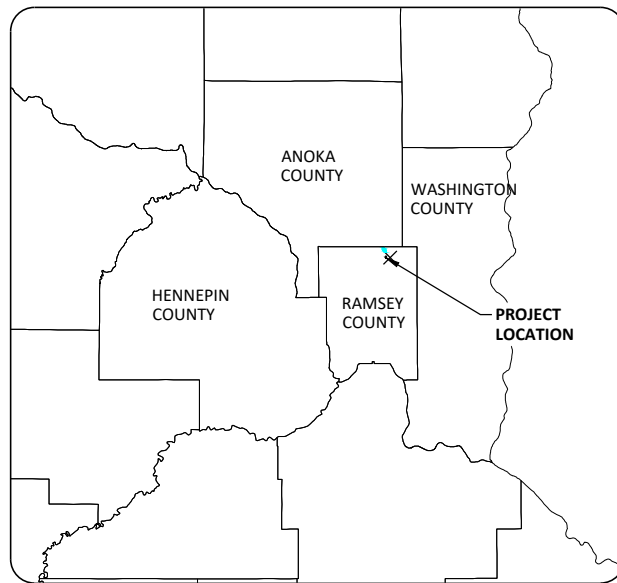
## VADNAIS LAKE AREA WATER MANAGEMENT ORGANIZATION

### NORTH OAKS, MINNESOTA

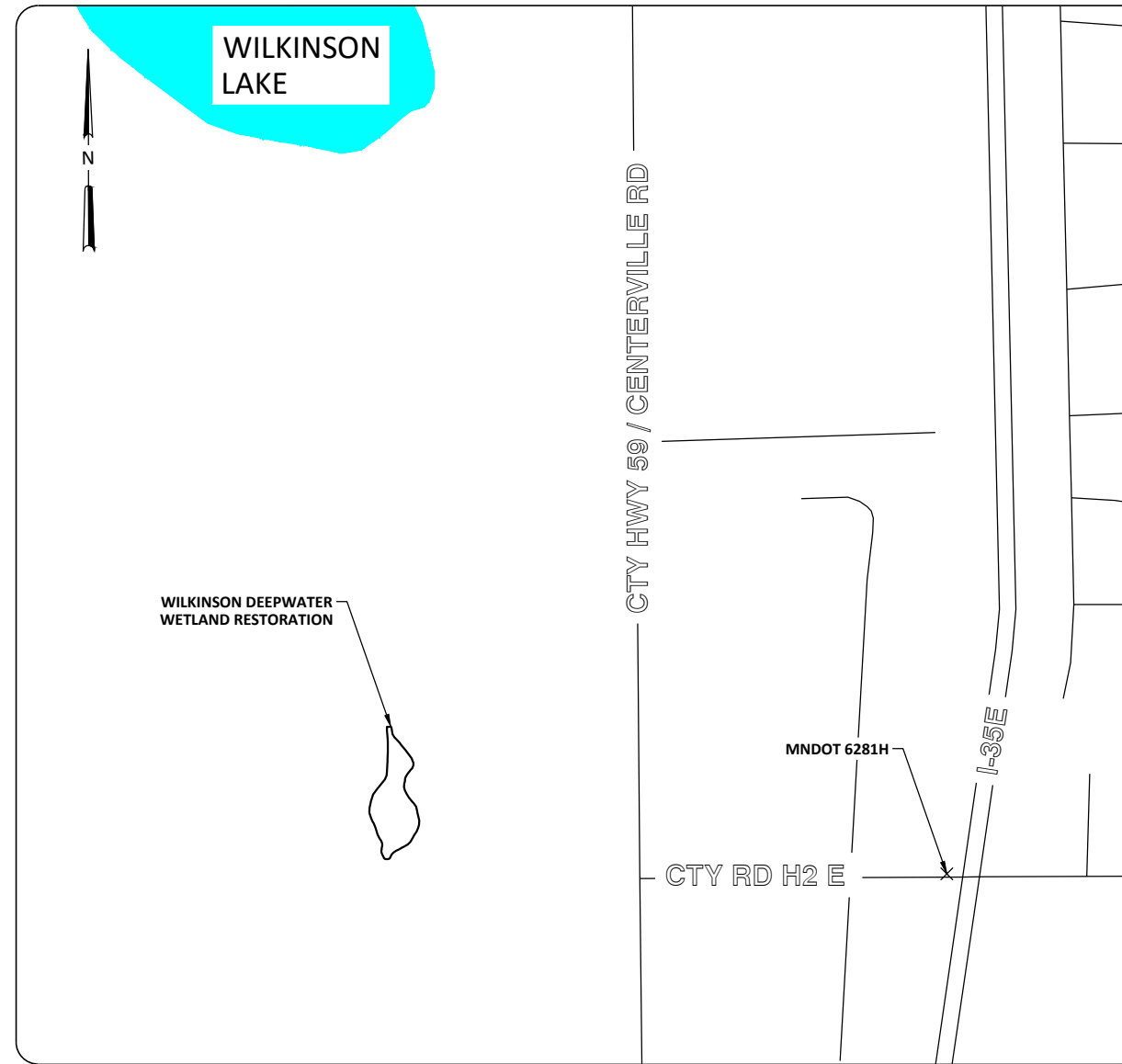
### APRIL 2023



TABLE OF CONTENTS	
SHEET #	SHEET TITLE
1	TITLE SHEET
2	EXISTING CONDITIONS
3	GRADING PLAN
4	CROSS SECTIONS
5	EROSION CONTROL PLAN
6	DETAILS 1
7	DETAILS 2
8	SWPPP NARRATIVE 1
9	SWPPP NARRATIVE 2



**VICINITY MAP**



**LOCATION MAP**

**SURVEY INFORMATION:**

HORIZONTAL DATUM: NAD 83  
VERTICAL DATUM: NAVD 88  
COORDINATE SYSTEM: MNDOT RAMSEY COUNTY  
UNIT OF MEASURE: US SURVEY FOOT  
PROJECT BENCHMARK: MNDOT 6281 H

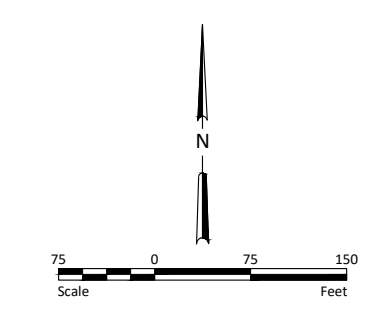
**UTILITY NOTE:**

PRIOR TO ANY EXCAVATION WORK, THE CONTRACTOR RESPONSIBLE UNDER MINNESOTA STATE STATUTE 216D AND MINNESOTA RULES CHAPTER 7560 TO CONTACT GOPHER STATE ONE CALL FOR THE LOCATION OF UNDERGROUND UTILITY FACILITIES IN PROXIMITY TO THE EXCAVATION SITE.

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS UTILITY QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02, ENTITLED "STANDARD GUIDELINE FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA".

**PRELIMINARY**  
NOT FOR CONSTRUCTION

H:\JBA\7000\7057\7057\_001\_4\_WilkinsonLakeBMP\CAD\Plans\7057-001.4\_Wilkinson Lake BMP.dwg-2 EXISTING CONDITIONS-4/18/2023 1:49 PM-(kfund)



- LEGEND:**
- MLT EASEMENT
  - - - WETLAND BOUNDARY
  - - - EXISTING FENCE
  - X X X X EAGLE'S NEST BUFFER - NO ENTRY
  - 900 - - - EXISTING GROUND - CONTOURS
  - EXISTING MAINTENANCE TRAIL
  - - - TEMPORARY CONSTRUCTION EASEMENT

No.	Revision	Date	By

**PRELIMINARY**  
NOT FOR CONSTRUCTION



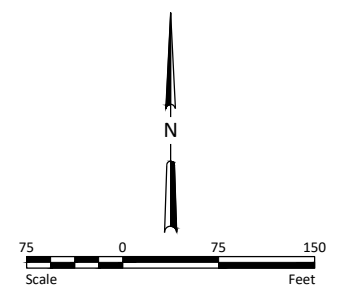
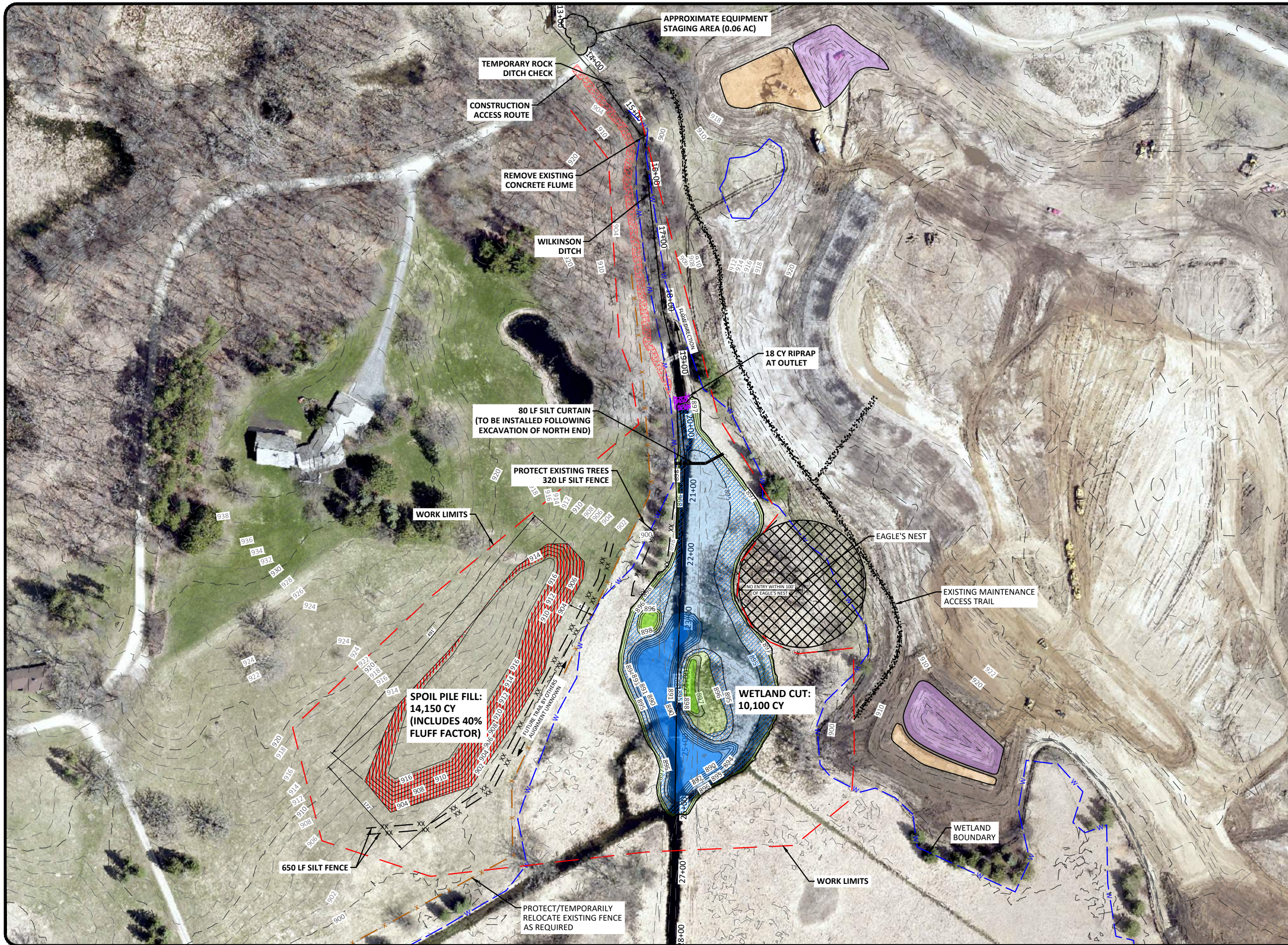
Drawn by KJL	Date 04-14-2023
Checked by ANN	Scale AS SHOWN

**WILKINSON DEEP WATER WETLAND RESTORATION**  
VADNAIS LAKE AREA WATER MANAGEMENT ORGANIZATION  
NORTH OAKS, MINNESOTA

EXISTING CONDITIONS  
PROJECT NO. 7057-0014

SHEET  
2

H:\JBA\7000\7057\7057\_0014\_WilkinsonLakeBMP\CAD\Plans\7057-0014\_Wilkinson Lake BMP.dwg-3 GRADING PLAN-4/17/2023 1:03 AM-(klund)



- LEGEND:**
- - - CONSTRUCTION FENCE
  - - - WETLAND BOUNDARY
  - XXXXX EAGLE'S NEST BUFFER - NO ENTRY
  - XXXXX CLASS III RIPRAP
  - - - WORK LIMITS
  - XXXXX CONSTRUCTION ACCESS PATH
  - - - SILT FENCE
  - - - EXISTING FENCE
  - 900 - - - EXISTING GROUND - CONTOURS
  - 900 - - - PROPOSED GRADING - CONTOURS

- PROPOSED GRADES:**
- EL. 898
  - EL. 896 - EL. 898
  - EL. 895 - EL. 896
  - EL. 894 - EL. 895
  - EL. 890 - EL. 894
  - EL. 890

No.	Revision	Date	By

**PRELIMINARY**  
NOT FOR CONSTRUCTION



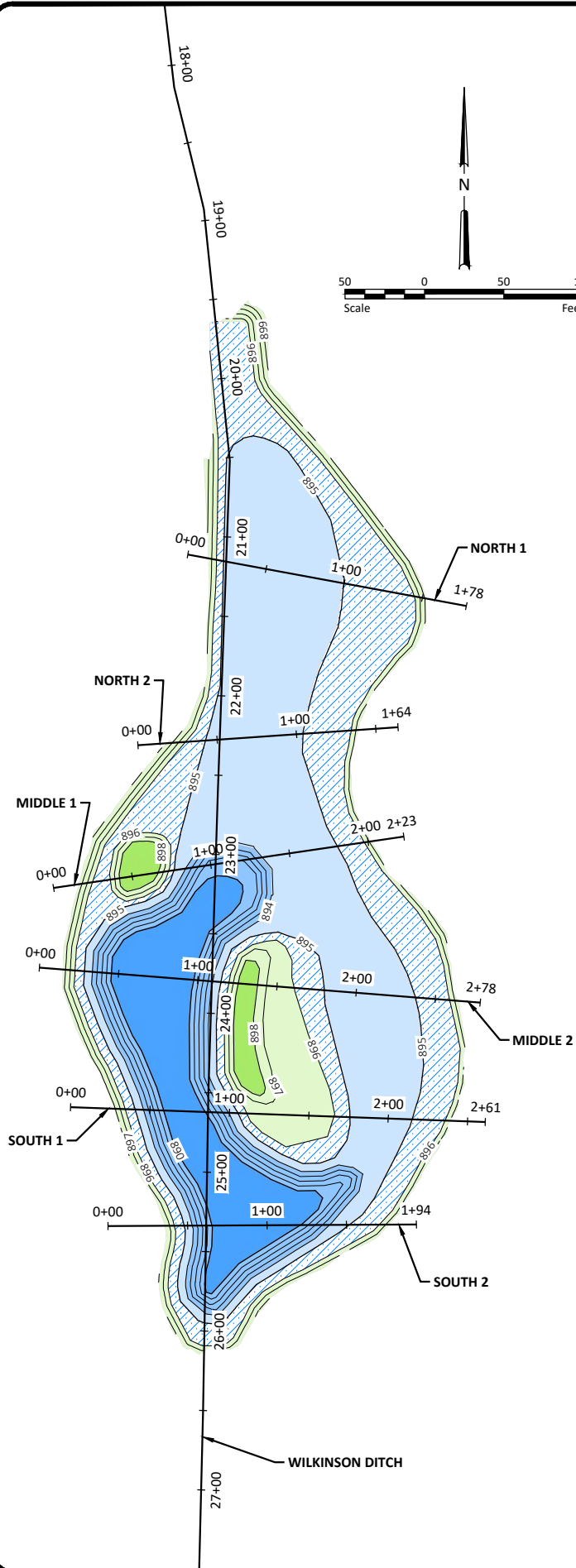
Drawn by  
KJL  
Date  
04-14-2023  
Checked by  
ANN  
Scale  
AS SHOWN

WILKINSON DEEP WATER WETLAND RESTORATION  
VADNAIS LAKE AREA WATER MANAGEMENT ORGANIZATION  
NORTH OAKS, MINNESOTA

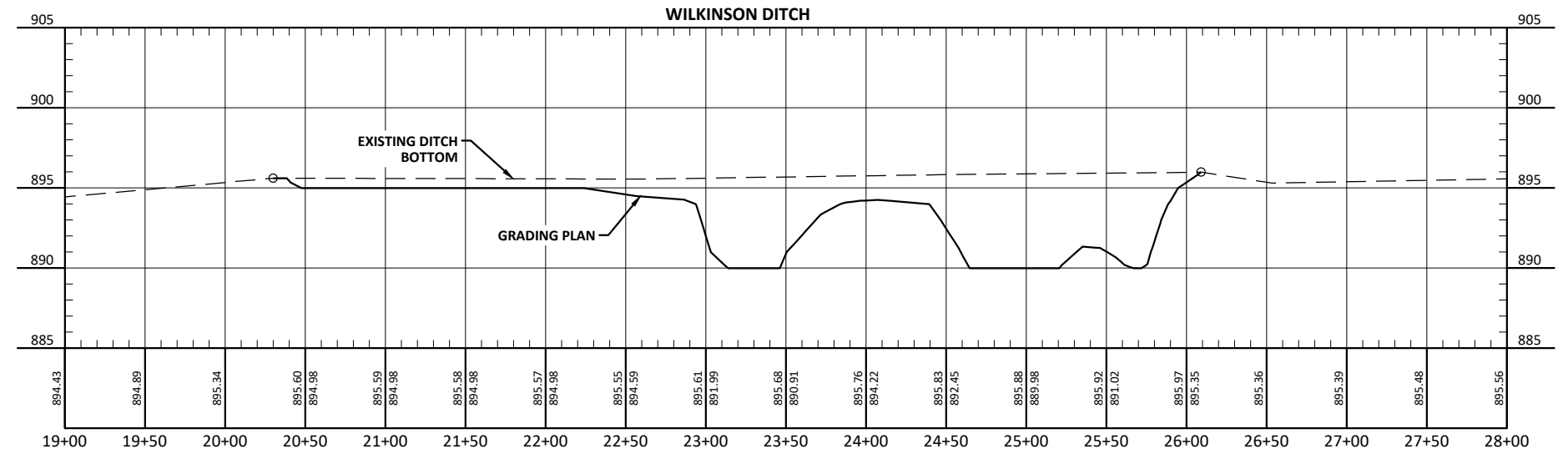
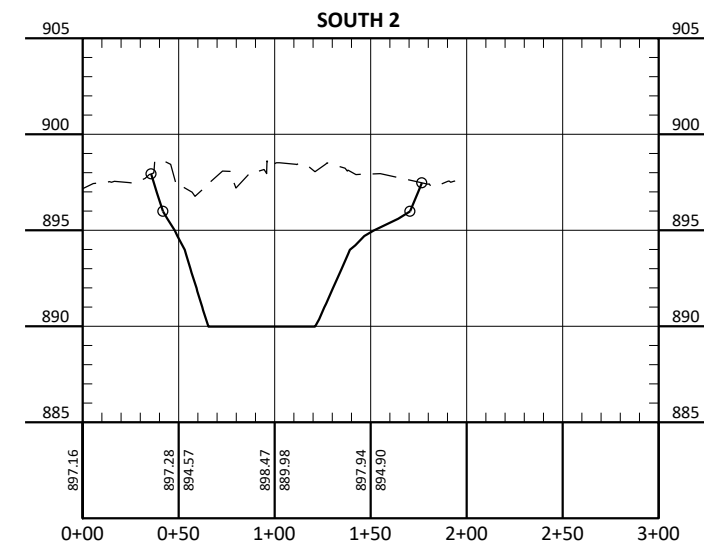
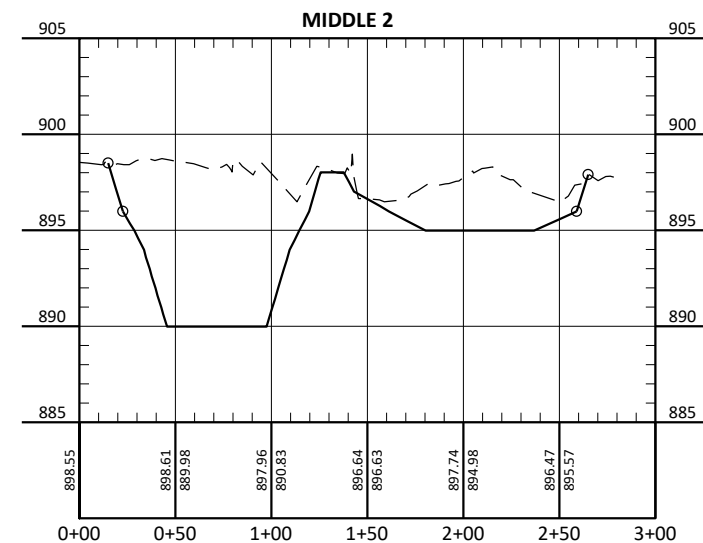
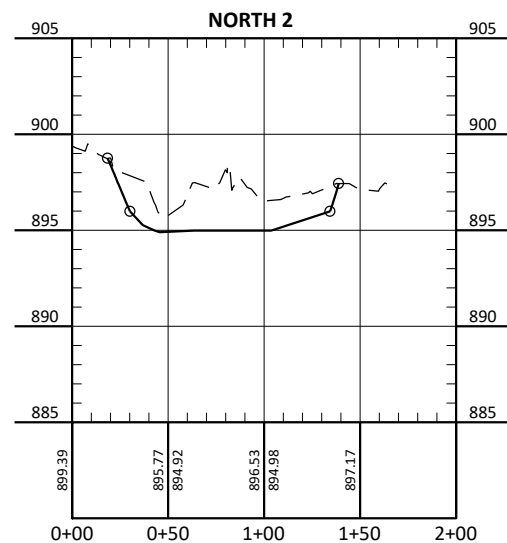
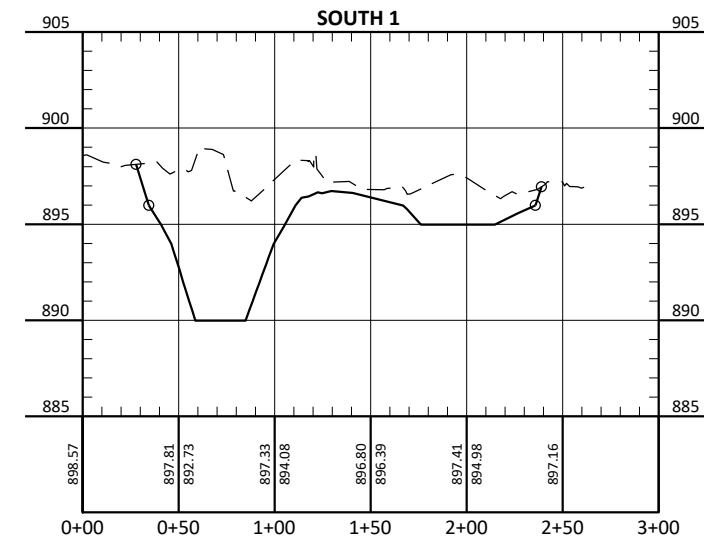
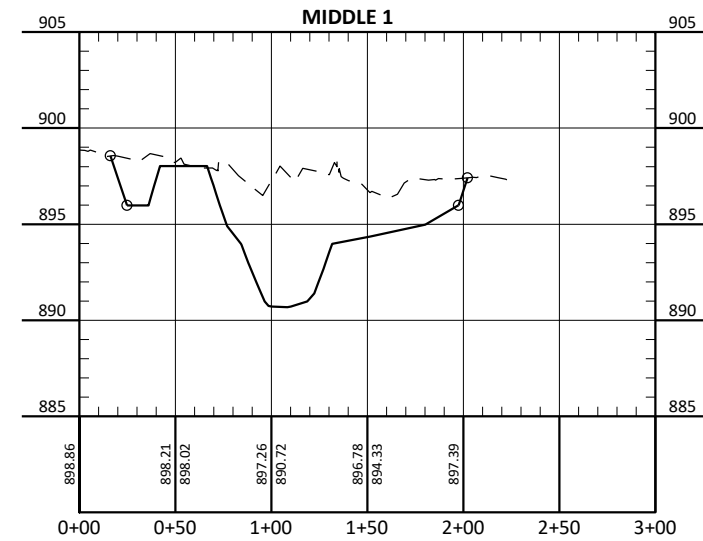
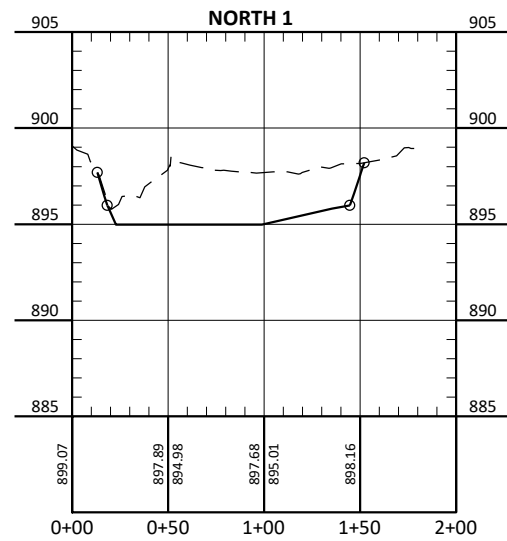
GRADING PLAN  
PROJECT NO. 7057-0014

SHEET  
3

H:\JBA\7057\7057\_0014\_WilkinsonLakeBMP\CAD\Plans\7057-0014\_Cross Section.dwg-4 CROSS SECTIONS-4/17/2023 1:04 AM-(klund)



- PROPOSED GRADES:**
- EL. 898
  - EL. 896 - EL. 898
  - EL. 895 - EL. 896
  - EL. 894 - EL. 895
  - EL. 890 - EL. 894
  - EL. 890



No.	Revision	Date	By

**PRELIMINARY**  
NOT FOR CONSTRUCTION



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KJL  
Date  
04-14-2023  
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ANN  
Scale  
AS SHOWN

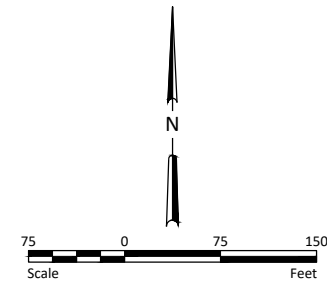
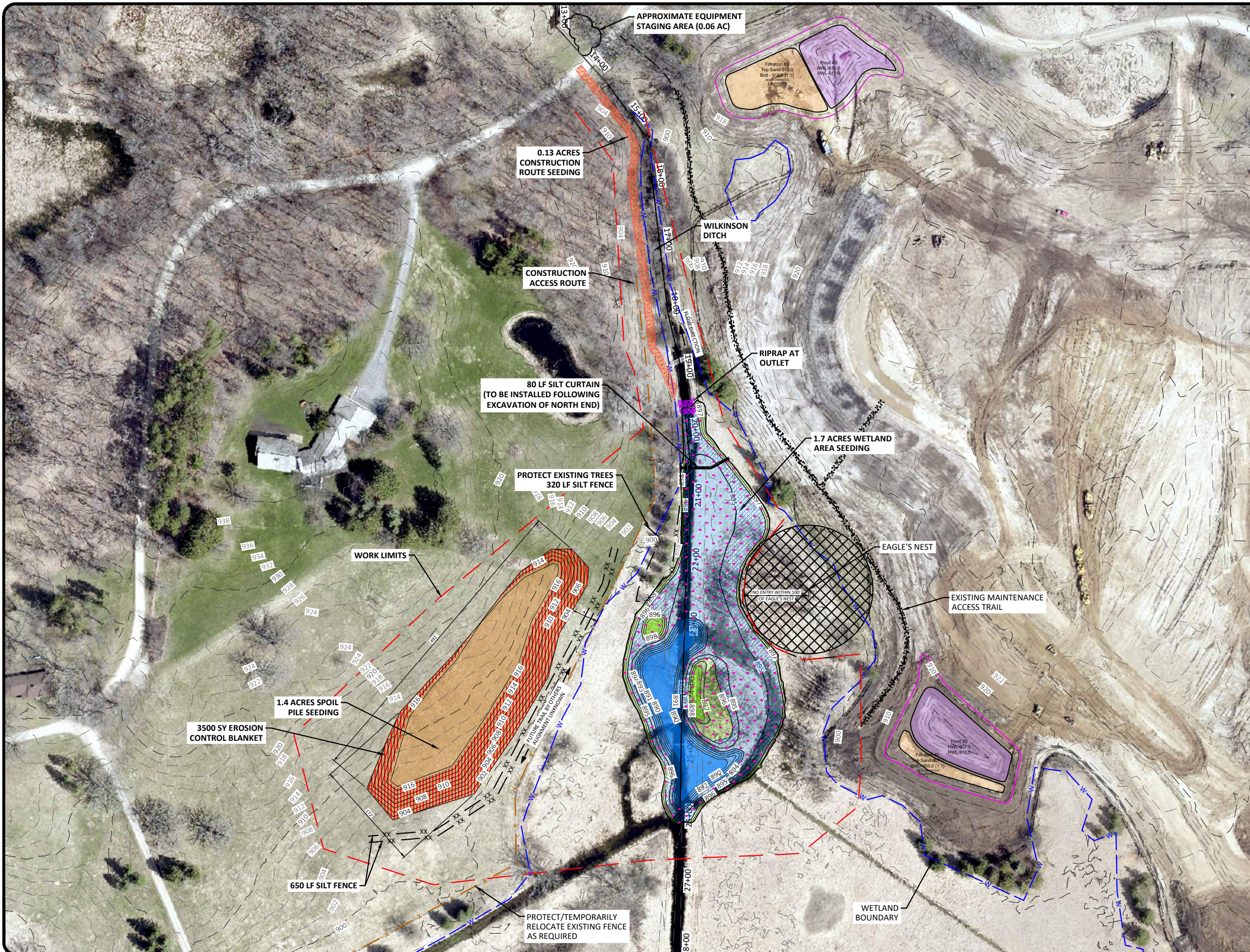
WILKINSON DEEP WATER WETLAND RESTORATION  
VADNAIS LAKE AREA WATER MANAGEMENT ORGANIZATION  
NORTH OAKS, MINNESOTA

CROSS-SECTIONS  
PROJECT NO. 7057-0014

SHEET  
4



H:\JBA\7057\7057\_0014\_WilkinsonLakeBMP\CAD\Plans\7057-0014\_Wilkinson Lake BMP.dwg-5 EROSION CONTROL PLAN-4/17/2023 1:04 AM-(klund)



**LEGEND:**

- EROSION CONTROL BLANKET
- WETLAND SEEDING PLAN:  
PRAIRIE MOON NURSERY CUSTOM SEED MIX  
AS SPECIFIED IN ORDER #23862
- SPOIL PILE & ACCESS PATH SEEDING PLAN:  
MNDOT 35-221 DRY PRAIRIE GENERAL, OR  
SIMILAR
- SILT FENCE - DOUBLE CONTAINMENT
- WETLAND BOUNDARY
- EAGLE'S NEST BUFFER - NO ENTRY
- EXISTING FENCE
- CLASS III RIPRAP
- WORK LIMITS
- CONSTRUCTION ACCESS PATH
- 900 -- EXISTING GROUND - CONTOURS
- 900 — PROPOSED GRADING - CONTOURS

1. SEE SHEET 5 FOR EROSION CONTROL DETAILS.
2. SEE SHEETS 6 & 7 FOR SWPPP REQUIREMENTS.
3. CONSTRUCTION MATTING TO BE USED IN ALL WETLAND AREAS.

**PROPOSED GRADES:**

- EL. 898
- EL. 896 - EL. 898
- EL. 895 - EL. 896
- EL. 894 - EL. 895
- EL. 890 - EL. 894
- EL. 890

No.	Revision	Date	By

**PRELIMINARY**  
NOT FOR CONSTRUCTION



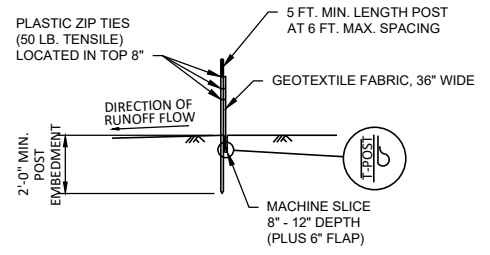
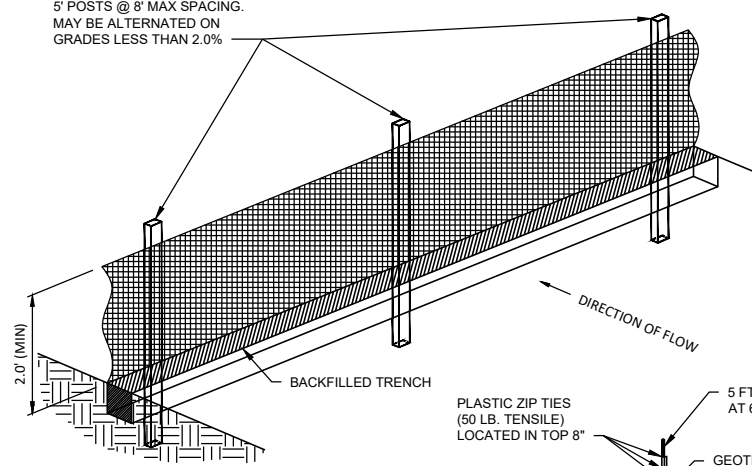
Drawn by KJL	Date 04-14-2023
Checked by ANN	Scale AS SHOWN

WILKINSON DEEP WATER WETLAND RESTORATION  
VADNAIS LAKE AREA WATER MANAGEMENT ORGANIZATION  
NORTH OAKS, MINNESOTA

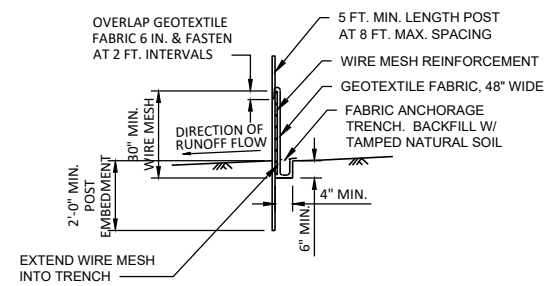
EROSION CONTROL  
PLAN  
PROJECT NO. 7057-0014

SHEET  
5

5' POSTS @ 8' MAX SPACING.  
MAY BE ALTERNATED ON  
GRADES LESS THAN 2.0%



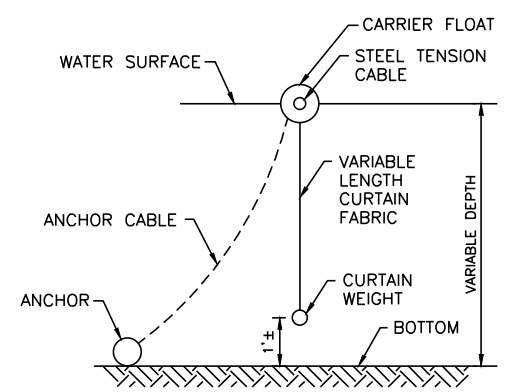
**STANDARD MACHINE SLICED**



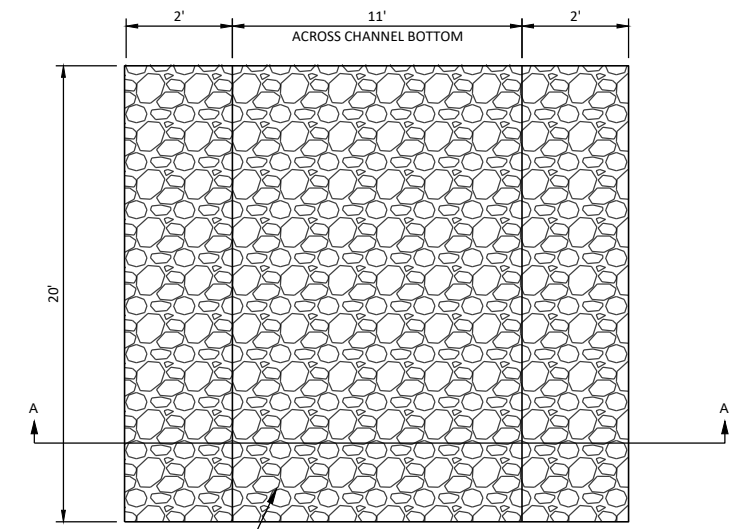
**HEAVY DUTY**

NOTE:  
SILT FENCE TO BE STANDARD UNLESS ACTUAL SITE  
CONDITIONS REQUIRE HEAVY DUTY FENCE PER  
BMP'S OR INDICATED ON PLANS.

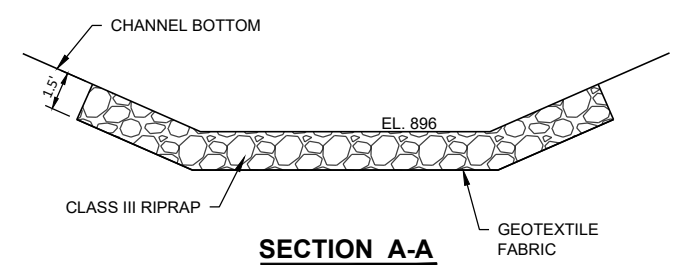
**SILT FENCE**  
NOT TO SCALE



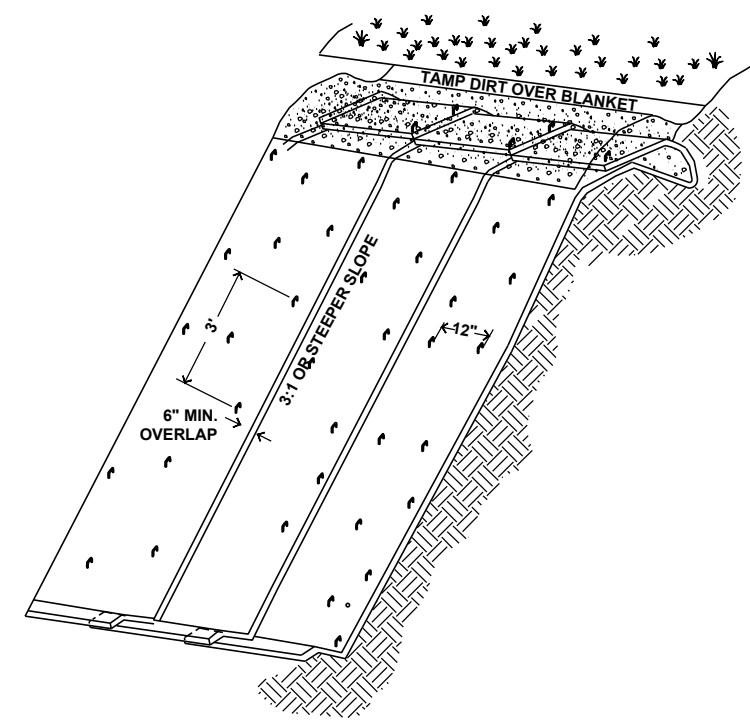
**FLOTATION SILT CURTAIN DETAIL**  
NOT TO SCALE



**PLAN VIEW**  
CLASS III RIPRAP NOT MORE THAN 1 CY PER RUNNING FT.

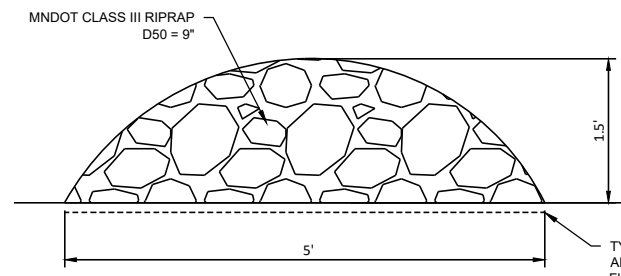


**SECTION A-A**  
**STORM OUTLET RIPRAP DETAIL**  
NOT TO SCALE

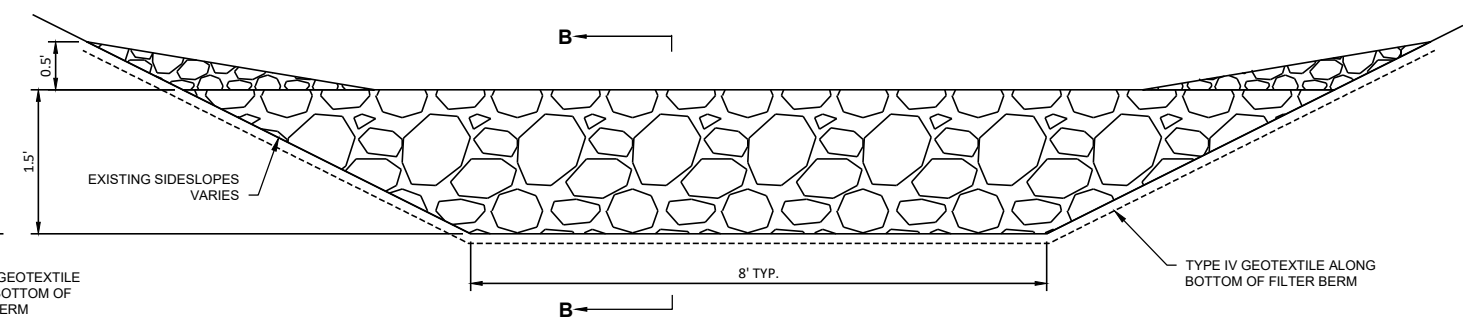


NOTE: BLANKET INSTALLED AT LOCATIONS AS INDICATED BY THE ENGINEER.

**EROSION CONTROL FOR EXCAVATED SLOPE STABILITY**  
NOT TO SCALE



**SECTION B-B**



**TEMPORARY ROCK DITCH CHECK**  
NOT TO SCALE

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No.	Revision	Date	By

**PRELIMINARY**  
NOT FOR CONSTRUCTION

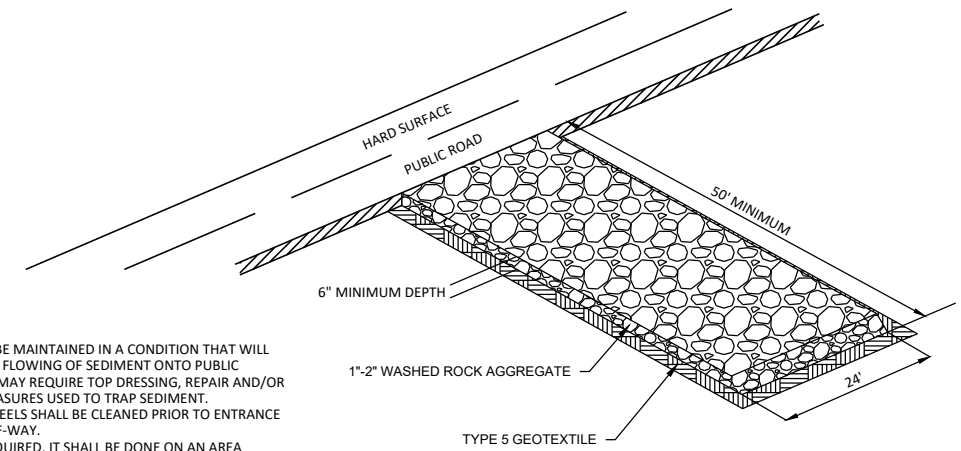


Drawn by  
KJL  
Date  
04-14-2023  
Checked by  
ANN  
Scale  
AS SHOWN

WILKINSON DEEP WATER WETLAND RESTORATION  
VADNAIS LAKE AREA WATER MANAGEMENT ORGANIZATION  
NORTH OAKS, MINNESOTA

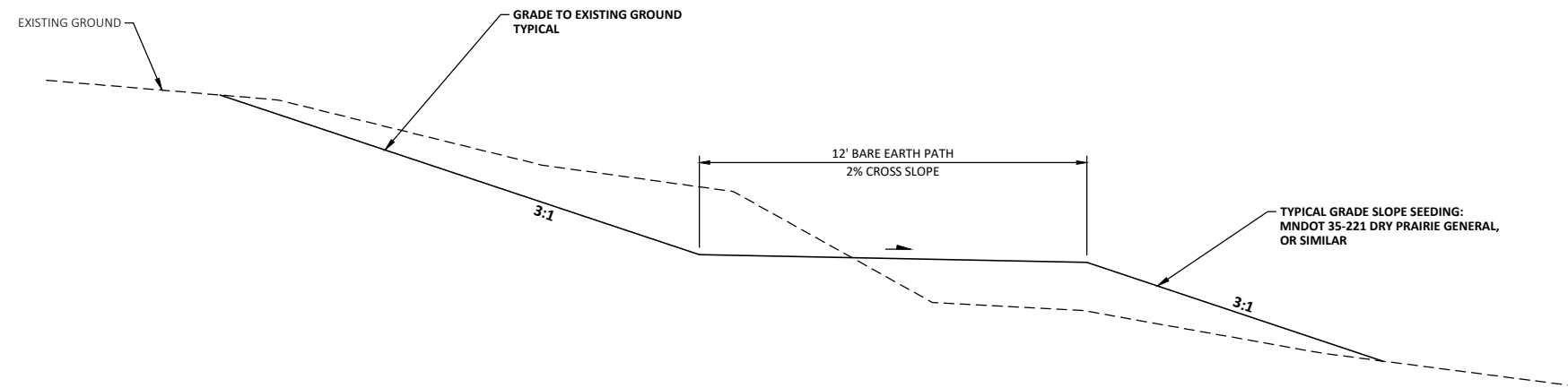
DETAILS 1  
PROJECT NO. 7057-0014

SHEET  
6



- NOTES:
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
  2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
  3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.

TEMPORARY ROCK OR WOOD CHIP  
**CONSTRUCTION ENTRANCE**  
 NOT TO SCALE



**ACCESS PATH GRADING**  
 NOT TO SCALE

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No.	Revision	Date	By

**PRELIMINARY**  
 NOT FOR CONSTRUCTION



Drawn by KJL	Date 04-14-2023
Checked by ANN	Scale AS SHOWN

WILKINSON DEEP WATER WETLAND RESTORATION  
 VADNAIS LAKE AREA WATER MANAGEMENT ORGANIZATION  
 NORTH OAKS, MINNESOTA

DETAILS 2  
 PROJECT NO. 7057-0014

SHEET  
 7

**STORM WATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE**

GENERAL CONSTRUCTION ACTIVITY INFORMATION

PROJECT NAME: WILKINSON LAKE BEST MANAGEMENT PRACTICES

1. DESCRIBE PROJECT LOCATION:

ADDRESS OR DESCRIBE AREA: QUARTER-QUARTER NENW, SECTION 9 (T30 R22) IN NORTH OAKS

CITY OR TOWNSHIP: NORTH OAKS

STATE: MN ZIP CODE: 55127 COUNTY: RAMSEY

LATITUDE/LONGITUDE OF APPROXIMATE CENTROID OF PROJECT: 45.1052°/-93.0610°

2. DESCRIBE THE CONSTRUCTION ACTIVITY:

THE WILKINSON LAKE BEST MANAGMENT PRACTICES PROJECT WILL CONSIST OF WETLAND EXCAVATION AND TREE REMOVAL AS SPECIFIED IN THE PLANS. REMOVED SEDIMENT AND EXCESS BANK MATERIAL WILL BE SPOIL BANKED ON THE WEST SIDE OF THE WETLAND AND DISTURBED AREAS RE-VEGETATED.

PROJECT AREAS

1. TOTAL AREA TO BE DISTURBED (ACRES): 10.4

2. PRE-CONSTRUCTION IMPERVIOUS SURFACE (ACRES): 0.0

3. POST-CONSTRUCTION IMPERVIOUS SURFACE (ACRES): 0.0

4. TOTAL NEW IMPERVIOUS SURFACE (ACRES): 0.0

RECEIVING WATERS

SURFACE WATERS WITHIN ONE MILE OF PROJECT BOUNDARY (AERIAL RADIUS MEASUREMENT) THAT WILL RECEIVE STORMWATER FROM THE SITE OR DISCHARGE FROM PERMANENT STORMWATER MANAGEMENT SYSTEM:

WATER BODY ID	NAME OF WATER BODY	TYPE	SPECIAL WATER	IMPAIRED WATER
62-0043-00	WILKINSON LAKE	LAKE	NO	YES

CONTACT INFORMATION

PROJECT OWNER: VADNAIS LAKE AREA WATER MANAGEMENT ORGANIZATION  
DAWN TANNER  
800 CO. RD. E EAST  
ST. PAUL, MN 55127

CONTRACTOR: TO BE DETERMINED

DESIGN OF CONSTRUCTION SWPPP

DESIGN OF CONSTRUCTION SWPPP COMPLETED BY:

AARON ZIGAN  
HOUSTON ENGINEERING  
7550 MERIDIAN CIRCLE NORTH - SUITE 120  
MAPLE GROVE, MN 55369  
PHONE: (763) 493-4522

PROJECT INFORMATION

1. CHAIN OF RESPONSIBILTYY: OWNER AND CONTRACTOR ARE COPERMITTEES FOR THE MINNESOTA GENERAL PERMIT AUTHORIZATION TO DISCHARGE STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITY. THE CONTRACTOR IS RESPONSIBLE TO COMPLY WITH ALL ASPECTS OF THE MINNESOTA GENERAL PERMIT AT ALL TIMES UNTIL THE NOTICE OF TERMINATION (NOT) HAS BEEN FILED WITH THE MPCA. THE CONTRACTOR WILL DEVELOP A CHAIN OF COMMAND WITH ALL OPERATORS ON THE SITE TO ENSURE THAT THE SWPPP WILL BE IMPLEMENTED AND STAY IN EFFECT UNTIL THE CONSTRUCTION PROJECT IS COMPLETE, THE ENTIRE SITE HAS UNDERGONE FINAL STABILIZATION, AND A NOTICE OF TERMINATION (NOT) HAS BEEN SUBMITTED TO THE MPCA.

2. TRAINING DOCUMENTATION: CONTRACTOR SHALL LIST PEOPLE REQUIRING TRAINING PER PART III.F.1, DATES OF TRAINING AND NAME OF INSTRUCTOR(S) AND ENTITY PROVIDING TRAINING, CONTENT OF TRAINING COURSE OR WORKSHOP INCLUDING THE NUMBER OF HOURS OF TRAINING. THE OWNER SHALL BE PROVIDED WITH A COPY OF THE TRAINING DOCUMENTATION BEFORE THE START OF CONSTRUCTION ON THE PROJECT.

PROJECT INFORMATION

1. ENVIRONMENTALLY SENSITIVE AREAS:

A. IMPAIRED WATERS: THE DITCH SYSTEM DISCHARGE IS WITHIN ONE MILE OF IMPAIRED WATERS (WILKINSON LAKE). WILKINSON LAKE IS IMPAIRED FOR NUTRIENT EUTROPHICATION BIOLOGICAL INDICATORS AND HAS A USEPA-APPROVED TMDL. THIS IMPAIRMENT IS CONSIDERED NON-CONSTRUCTION RELATED.

B. SPECIAL WATERS: THERE ARE NO SPECIAL WATERS WITHIN ONE MILE OF THE DISCHARGE FOR WILKINSON LAKE.

C. WETLANDS: SEGMENTS OF THE WORK LIMITS CROSS WETLANDS. WORK SHALL CONFORM TO STATE AND FEDERAL WETLAND LAWS.

D. KARST AREAS: THERE ARE NO KNOWN KARST AREAS WITHIN THE PROJECT BOUNDARY.

E. CALCAREOUS FENS: THERE ARE NO KNOWN CALCAREOUS FENS WITHIN THE PROJECT BOUNDARY.

F. ENDANGERED OR THREATENED SPECIES: THERE ARE NO KNOWN STATE LISTED ENDANGERED OR THREATENED SPECIES WITHIN THE PROJECT BOUNDARY. A BALD EAGLE'S NEST EXISTS ON SITE (SEE PLANS).

G. HISTORIC PLACES OR ARCHEOLOGICAL SITES: THERE ARE NO KNOWN HISTORIC PLACES OR ARCHEOLOGICAL SITES WITHIN THE PROJECT BOUNDARY.

H. STEEP SLOPES: SLOPES 1:3 (V:H) OR STEEPER IN GRADE ARE CONFINED TO THE SLOPES OF THE PUBLIC DRAINAGE SYSTEM.

2. SOIL TYPES.

THE SOIL REMOVAL WILL GENERALLY CONSIST OF LOAM, CLAY LOAM, SILTY CLAY LOAM, SANDY LOAM, AND MUCK. ESTIMATED PARTICLE SIZE RANGING FROM 0.0001 MM TO 0.5MM.

3. ORDER OF CONSTRUCTION ACTIVITIES:

- A. INSTALL EROSION AND SEDIMENT CONTROL MEASURES.
- B. PROCEED WITH REMOVAL OF TREES FROM WETLAND, DITCH, RESLOPED BANKS, AND SPOIL BANK AREAS. WORK FROM DOWNSTREAM TO UPSTREAM TO REMOVE SEDIMENT AND SOIL FROM WETLAND AND PLACE IN SPOIL BANK AREAS.
- C. STABILIZE AREAS DISTURBED WITH TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES.
- D. COMPLETE PERMANENT RESTORATION WITH EROSION AND SEDIMENT CONTROL MEASURES.

EROSION PREVENTION PRACTICES

1. STABILIZATION MUST BE INITIATED IMMEDIATELY AND NO LATER THAN 14 DAYS CALENDAR DAYS WHENEVER ANY CONSTRUCTION ACTIVITY HAS TEMPORARILY OR PERMANENTLY CEASED ON ANY PORTION OF THE SITE. STABILIZATION MEANS THE EXPOSED GROUND SURFACE HAS BEEN COVERED BY APPROPRIATE MATERIALS SUCH AS MULCH, STAKED SOD, RIPRAP, EROSION CONTROL BLANKET, MATS OR OTHER MATERIAL THAT PREVENTS EROSION FROM OCCURRING. GRASS, AGRICULTURAL CROP OR OTHER SEEDING ALONE IS NOT STABILIZATION. MULCH MATERIALS MUST ACHIEVE APPROXIMATELY 90 PERCENT GROUND COVERAGE (TYPICALLY 2 TON/ACRE).

2. STABILIZATION OF THE NORMAL WETTED PERIMETER OF THE LAST 200 LINEAR FEET OF TEMPORARY OR PERMANENT DRAINAGE DITCHES OR SWALES THAT DRAIN WATER FROM THE SITE MUST OCCUR WITHIN 24 HOURS AFTER CONNECTING TO A SURFACE WATER OR PROPERTY EDGE.

3. STORMWATER CONVEYANCE CHANNELS MUST BE ROUTED AROUND UNSTABILIZED AREAS. EROSION CONTROLS AND VELOCITY DISSIPATION DEVICES MUST BE USED ALONG THE LENGTH OF THE CONVEYANCE CHANNEL AND AT ANY OUTLET.

SEDIMENT CONTROL PRACTICES

1. SEDIMENT CONTROL PRACTICES MUST BE ESTABLISHED ON ALL DOWN GRADIENT PERIMETERS AND BE LOCATED UP GRADIENT OF ANY BUFFER ZONES. THE PERIMETER SEDIMENT CONTROL PRACTICE MUST BE IN PLACE BEFORE ANY UP GRADIENT LAND-DISTURBING ACTIVITIES BEGIN. THESE PRACTICES SHALL REMAIN IN PLACE UNTIL FINAL STABILIZATION.

2. RE-INSTALL ALL SEDIMENT CONTROL PRACTICES THAT HAVE BEEN ADJUSTED OR REMOVED TO ACCOMMODATE SHORT-TERM ACTIVITIES SUCH AS CLEARING OR GRUBBING, OR PASSAGE OF VEHICLES, IMMEDIATELY AFTER THE SHORT-TERM ACTIVITY HAS BEEN COMPLETED. COMPLETE ANY SHORT-TERM ACTIVITY THAT REQUIRES REMOVAL OF SEDIMENT CONTROL PRACTICES AS QUICKLY AS POSSIBLE. RE-INSTALL SEDIMENT CONTROL PRACTICES BEFORE THE NEXT PRECIPITATION EVENT EVEN IF THE SHORT-TERM ACTIVITY IS NOT COMPLETE.

3. ALL STORM DRAIN INLETS MUST BE PROTECTED BY APPROPRIATE BMPS DURING CONSTRUCTION UNTIL ALL SOURCES WITH POTENTIAL FOR DISCHARGING TO THE INLET HAVE BEEN STABILIZED. INLET PROTECTION MAY BE REMOVED FOR A PARTICULAR INLET IF A SPECIFIC SAFETY CONCERN (STREET FLOODING/FREEZING) HAS BEEN IDENTIFIED BY THE PERMITTEE OR THE JURISDICTIONAL AUTHORITY. THE PERMITTEE MUST DOCUMENT THE NEED FOR REMOVAL AND RETAIN THE RECORD WITH THE SWPPP.

4. TEMPORARY SOIL STOCKPILES MUST HAVE SILT FENCE OR OTHER EFFECTIVE SEDIMENT CONTROLS, AND CANNOT BE PLACED IN ANY NATURAL BUFFERS OR SURFACE WATERS, INCLUDING STORMWATER CONVEYANCES SUCH AS CURB AND GUTTER SYSTEMS, OR CONDUITS AND DITCHES UNLESS THERE IS A BYPASS IN PLACE FOR THE STORMWATER.

5. WHERE VEHICLE TRAFFIC LEAVES ANY PART OF THE SITE (OR ONTO PAVED ROADS WITHIN THE SITE) A VEHICLE TRACKING BMP, APPROVED BY THE ENGINEER, MUST BE INSTALLED TO MINIMIZE THE TRACK OUT OF SEDIMENT FROM THE CONSTRUCTION SITE. STREET SWEEPING MUST BE USED IF SUCH VEHICLE TRACKING BMPS ARE NOT ADEQUATE TO PREVENT SEDIMENT FROM BEING TRACKED ONTO THE STREET.

6. SOIL COMPACTION MUST BE MINIMIZED AND, UNLESS INFEASIBLE, PRESERVE TOPSOIL. MINIMIZING SOIL COMPACTION IS NOT REQUIRED WHERE THE FUNCTION OF A SPECIFIC AREA OF THE SITE DICTATES THAT IT BE COMPACTED.

CONTROL OF WATER

1. PUMPING, IF NECESSARY, SHALL BE PROVIDED AND CONDUCTED AT DISCHARGE RATES THAT DO NOT ERODE SOIL MATERIAL. DISSIPATION BMP'S SHALL BE IMPLEMENTED TO MITIGATE SOIL EROSION.

INSPECTIONS AND MAINTENANCE

1. THE CONTRACTOR SHALL IDENTIFY THE INDIVIDUAL(S) CERTIFIED AS A SITE MANAGER FOR OVERSEEING IMPLEMENTATION OF, REVISING, AND AMENDING THE SWPPP AND PERFORMING INSPECTIONS.

2. THE CONTRACTOR SHALL IDENTIFY THE INDIVIDUAL(S) CERTIFIED AS A BMP INSTALLER FOR PERFORMING OR SUPERVISING THE INSTALLATION, MAINTENANCE AND REPAIR OF BMPS.

3. INSPECTIONS WILL BE CONDUCTED AT LEAST ONE TIME PER WEEK AND WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN 0.50 INCH IN 24 HOURS.

4. WHERE PARTS OF THE CONSTRUCTION SITE HAVE UNDERGONE FINAL STABILIZATION, BUT WORK REMAINS ON OTHER PARTS OF THE SITE, INSPECTIONS OF THE STABILIZED AREAS MAY BE REDUCED TO ONCE PER MONTH.

5. WHERE WORK HAS BEEN SUSPENDED DUE TO FROZEN GROUND CONDITIONS, THE REQUIRED INSPECTIONS AND MAINTENANCE SCHEDULE MUST BEGIN WITHIN 24 HOURS AFTER RUNOFF OCCURS AT THE SITE OR 24 HOURS PRIOR TO RESUMING CONSTRUCTION, WHICHEVER COMES FIRST.

6. ALL PERIMETER CONTROL DEVICES MUST BE REPAIRED, REPLACED, OR SUPPLEMENTED WHEN THEY BECOME NONFUNCTIONAL OR THE SEDIMENT REACHES ONE-HALF (1/2) OF THE HEIGHT OF THE DEVICE. THESE REPAIRS MUST BE MADE BY THE END OF THE NEXT BUSINESS DAY AFTER DISCOVERY, OR THEREAFTER AS SOON AS FIELD CONDITIONS ALLOW ACCESS.

7. SURFACE WATERS, INCLUDING DRAINAGE DITCHES AND CONVEYANCE SYSTEMS, MUST BE INSPECTED FOR EVIDENCE OF EROSION AND SEDIMENT DEPOSITION.

8. CONSTRUCTION SITE VEHICLE EXIT LOCATIONS MUST BE INSPECTED FOR EVIDENCE OF OFF-SITE SEDIMENT TRACKING ONTO PAVED SURFACES. TRACKED SEDIMENT MUST BE REMOVED FROM ALL PAVED SURFACES BOTH ON AND OFF SITE WITHIN 24 HOURS OF DISCOVERY.

9. ALL INFILTRATION AREAS MUST BE INSPECTED TO ENSURE THAT NO SEDIMENT FROM ONGOING CONSTRUCTION ACTIVITY IS REACHING THE INFILTRATION AREA. ALL INFILTRATION AREAS MUST BE INSPECTED TO ENSURE THAT EQUIPMENT IS NOT BEING DRIVEN ACROSS THE INFILTRATION AREA.

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No.	Revision	Date	By

**PRELIMINARY**  
NOT FOR CONSTRUCTION



Drawn by KJL	Date 04-14-2023
Checked by ANN	Scale AS SHOWN

WILKINSON DEEP WATER WETLAND RESTORATION  
VADNAIS LAKE AREA WATER MANAGEMENT ORGANIZATION  
NORTH OAKS, MINNESOTA

SWPPP NARRATIVE 1  
PROJECT NO. 7057-0014

SHEET  
8

**STORM WATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE (CONTINUED)**

POLLUTION PREVENTION MANAGEMENT MEASURES

THE FOLLOWING POLLUTION PREVENTION MANAGEMENT MEASURES SHALL BE IMPLEMENTED ON THE SITE AND SHALL BE A LUMP SUM PAYMENT:

1. BUILDING PRODUCTS THAT HAVE THE POTENTIAL TO LEACH POLLUTANTS, PESTICIDES, HERBICIDES, INSECTICIDES, FERTILIZERS, TREATMENT CHEMICALS, AND LANDSCAPE MATERIALS MUST BE UNDER COVER (E.G., PLASTIC SHEETING OR TEMPORARY ROOFS) TO PREVENT THE DISCHARGE OF POLLUTANTS OR PROTECTED BY A SIMILARLY EFFECTIVE MEANS DESIGNED TO MINIMIZE CONTACT WITH STORMWATER.
2. HAZARDOUS MATERIALS, TOXIC WASTE, (INCLUDING OIL, DIESEL FUEL, GASOLINE, HYDRAULIC FLUIDS, PAINT SOLVENTS, PETROLEUM-BASED PRODUCTS, WOOD PRESERVATIVES, ADDITIVES, CURING COMPOUNDS, AND ACIDS) MUST BE PROPERLY STORED IN SEALED CONTAINERS TO PREVENT SPILLS, LEAKS OR OTHER DISCHARGE. RESTRICTED ACCESS STORAGE AREAS MUST BE PROVIDED TO PREVENT VANDALISM. STORAGE AND DISPOSAL OF HAZARDOUS WASTE OR HAZARDOUS MATERIALS MUST BE IN COMPLIANCE WITH MINN. R. CH.7045 INCLUDING SECONDARY CONTAINMENT AS APPLICABLE.
3. SOLID WASTE MUST BE STORED, COLLECTED AND DISPOSED OF PROPERLY IN COMPLIANCE WITH MINN. R. CH.7035.
4. PORTABLE TOILETS MUST BE POSITIONED SO THAT THEY ARE SECURE AND WILL NOT BE TIPPED OR KNOCKED OVER. SANITARY WASTE MUST BE DISPOSED OF PROPERLY IN ACCORDANCE WITH MINN. R. CH.7041.
5. REASONABLE STEPS SHALL BE TAKEN TO PREVENT THE DISCHARGE OF SPILLED OR LEAKED CHEMICALS, INCLUDING FUEL, FROM ANY AREA WHERE CHEMICALS OR FUEL WILL BE LOADED OR UNLOADED INCLUDING THE USE OF DRIP PANS OR ABSORBENTS UNLESS INFEASIBLE. FUELING MUST BE CONDUCTED IN A CONTAINED AREA UNLESS INFEASIBLE. ADEQUATE SUPPLIES MUST BE AVAILABLE AT ALL TIMES TO CLEAN UP DISCHARGED MATERIALS AND AN APPROPRIATE DISPOSAL METHOD MUST BE AVAILABLE FOR RECOVERED SPILLED MATERIALS. REPORT AND CLEAN UP SPILLS IMMEDIATELY AS REQUIRED BY MINN. STAT. § 115.061, USING DRY CLEAN UP MEASURES WHERE POSSIBLE.
6. WASHING THE EXTERIOR OF VEHICLES OR EQUIPMENT ON THE PROJECT SITE MUST BE LIMITED TO A DEFINED AREA OF THE SITE. RUNOFF FROM THE WASHING AREA MUST BE CONTAINED IN A SEDIMENT BASIN OR OTHER SIMILARLY EFFECTIVE CONTROLS AND WASTE FROM THE WASHING ACTIVITY MUST BE PROPERLY DISPOSED OF. STORE AND PROPERLY USE THE SOAPS, DETERGENTS, OR SOLVENTS. NO ENGINE DEGREASING IS ALLOWED ON SITE.
7. EFFECTIVE CONTAINMENT SHALL BE PROVIDED FOR ALL LIQUID AND SOLID WASTES GENERATED BY WASHOUT OPERATIONS (CONCRETE, STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS AND OTHER CONSTRUCTION MATERIALS) RELATED TO THE CONSTRUCTION ACTIVITY. THE LIQUID AND SOLID WASHOUT WASTES MUST NOT CONTACT THE GROUND, AND THE CONTAINMENT MUST BE DESIGNED SO THAT IT DOES NOT RESULT IN RUNOFF FROM THE WASHOUT OPERATIONS OR AREAS. LIQUID AND SOLID WASTES MUST BE DISPOSED OF PROPERLY AND IN COMPLIANCE WITH MPCA RULES. A SIGN MUST BE INSTALLED ADJACENT TO EACH WASHOUT FACILITY THAT REQUIRES SITE PERSONNEL TO UTILIZE THE PROPER FACILITIES FOR DISPOSAL OF CONCRETE AND OTHER WASHOUT WASTES.
8. IN THE EVENT OF A SPILL, THE CONTRACTOR WILL MAKE THE APPROPRIATE NOTIFICATION(S) TO THE MPCA, CONSISTENT WITH THE FOLLOWING PROCEDURES:  
  
 SPILLS OF PETROLEUM IN A QUANTITY GREATER THAN 5 GALLONS MUST BE REPORTED IMMEDIATELY TO THE MINNESOTA DUTY OFFICER.  
  
 SPILLS OF ANY QUANTITY OF ALL OTHER CHEMICALS OR MATERIALS WHICH MAY CAUSE POLLUTION OF WATERS OF THE STATE MUST BE REPORTED IMMEDIATELY TO THE MINNESOTA DUTY OFFICER.  
  
 REPORTABLE SPILLS SHOULD BE DIRECTED TO THE MINNESOTA DUTY OFFICER BY IMMEDIATELY CALLING THE FOLLOWING NUMBERS: (651) 649-5451 OR (800) 422-0798.

FINAL STABILIZATION

- FINAL STABILIZATION IS NOT COMPLETE UNTIL ALL OF THE FOLLOWING REQUIREMENTS ARE COMPLETE:
1. ALL SOIL DISTURBING ACTIVITIES AT THE SITE HAVE BEEN COMPLETED AND ALL SOILS ARE STABILIZED BY A UNIFORM PERENNIAL VEGETATIVE COVER WITH A DENSITY OF 70 PERCENT OF ITS EXPECTED FINAL GROWTH DENSITY OVER THE ENTIRE PVIOUS SURFACE AREA, OR OTHER EQUIVALENT MEANS NECESSARY TO PREVENT SOIL FAILURE UNDER EROSION CONDITIONS.
  2. ALL TEMPORARY SYNTHETIC AND STRUCTURAL EROSION PREVENTION AND SEDIMENT CONTROL BMPs (SUCH AS SILT FENCE) HAVE BEEN REMOVED. BMPs DESIGNED TO DECOMPOSE ON SITE (SUCH AS SOME COMPOST LOGS) MAY BE LEFT IN PLACE.
  3. FOR CONSTRUCTION PROJECTS ON AGRICULTURAL LAND (E.G., PIPELINES ACROSS CROP, FIELD PASTURE OR RANGE LAND) THE DISTURBED LAND HAS BEEN RETURNED TO ITS PRECONSTRUCTION AGRICULTURAL USE.

EROSION AND SEDIMENT CONTROL QUANTITY SUMMARY AND BMP SCHEDULE		
DESCRIPTION	UNITS	QUANTITY
SILT FENCE	L F	1650
SEEDING & MULCH (P)	ACRE	3.8
EROSION CONTROL BLANKETS	S Y	3,500

AMENDMENTS

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No.	Revision	Date	By

**PRELIMINARY**  
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Drawn by KJL	Date 04-14-2023
Checked by ANN	Scale AS SHOWN

WILKINSON DEEP WATER WETLAND RESTORATION  
VADNAIS LAKE AREA WATER MANAGEMENT ORGANIZATION  
NORTH OAKS, MINNESOTA

SWPPP NARRATIVE 2  
PROJECT NO. 7057-0014

SHEET  
9

## STATE FUNDED ONLY CONSTRUCTION CONTRACTS SPECIAL PROVISIONS DIVISION A - LABOR

### I. INTRODUCTION

- A. **Policy Statement.** It is in the public interest that public buildings and other public works projects be constructed and maintained by the best means and the highest quality of labor reasonably available and that persons working on public works projects be compensated according to the real value of the services they perform.<sup>1</sup>
- B. **State Regulations Govern.** This Contract is subject to the Minnesota Prevailing Wage Act<sup>2</sup>, Minnesota Fair Labor Standards Act<sup>3</sup>, Minnesota Rules<sup>4</sup>, Minnesota Department of Labor and Industry (MnDLI) Wage Decision(s), and the MnDLI Truck Rental Rate Schedule.
- C. **Purpose.** These provisions: (1) outline your obligations under state and federal laws, rules and regulations; (2) explain the requirements necessary to demonstrate compliance; and (3) explain the processes that the Department will undertake to ensure compliance.
- D. **Questions or Resources.** Please visit the Minnesota Department of Transportation (MnDOT) Labor Compliance Unit (LCU) website at: [www.dot.state.mn.us/const/labor](http://www.dot.state.mn.us/const/labor).

### II. DEFINITIONS

Many of the terms used in these provisions are defined in MnDOT's Standard Specifications for Construction,<sup>5</sup> unless defined below.

- A. **Apprentice.** A Worker at least 16 years of age who is employed to learn an apprenticeable trade or occupation in a registered apprenticeship program.<sup>6</sup>
- B. **Bona Fide.** Made or carried out in good faith; authentic.<sup>7</sup>
- C. **Certified Payroll Report (CPR).** A report comprised of two components; (1) a payroll report, and (2) a statement of compliance report.<sup>8</sup>
- D. **Contractor.** An individual or business entity that is engaged in construction or construction service-related activities including trucking activities either directly or indirectly through a Contract, or by Subcontract with the Prime Contractor, or by a further Subcontract with any other person or business entity performing Work.<sup>9</sup>
- E. **Employer.** An individual, partnership, association, corporation, business trust, or other business entity that hires a Worker.<sup>10</sup>
- F. **Fringe Benefit.** An employment benefit given in addition to a Worker's wages or salary.<sup>11</sup>
- G. **Independent Truck Owner/Operator (ITO).** An individual, partnership, or principal stockholder of a corporation who owns or holds a vehicle under lease and who contracts that vehicle and the owner's services to an entity which provides construction services to a public works project.<sup>12</sup>

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<sup>1</sup> Minn. Stat. 177.41

<sup>2</sup> Minn. Stat. 177.41 to 177.44

<sup>3</sup> Minn. Stat. 177.21 to 177.35

<sup>4</sup> Minn. R. 5200.1000 to 5200.1120

<sup>5</sup> MnDOT Standard Specifications for Construction, Section 1103

<sup>6</sup> Minn. Stat. 178.011, Subdivision 2

<sup>7</sup> The American Heritage College Dictionary, Third Edition, 2000

<sup>8</sup> Minn. R. 5200.1106, Subpart 10

<sup>9</sup> Minn. R. 5200.1106, Subpart 2(D)

<sup>10</sup> Minn. Stat. 177.42, Subdivision 7

<sup>11</sup> The American Heritage College Dictionary, Third Edition, 2000

<sup>12</sup> Minn. R. 5200.1106, Subpart 7(A)

- H. **Journeyworker.** A person who has attained a level of skill, abilities, and competencies recognized within and industry as having mastered the skills and competencies required for the trade or occupation.<sup>13</sup>
- I. **Prime Contractor.** An individual or business entity that enters into a Contract with the Department.<sup>14</sup>
- J. **Subcontract.** A Contract that assigns some obligations of a prior Contract to another party.<sup>15</sup>
- K. **Substantially In Place.** Mineral aggregate is deposited on the project site directly or through spreaders where it can be spread from or compacted at the location where it was deposited.<sup>16</sup>
- L. **Total Prevailing Wage Rate.** The sum of the prevailing hourly “basic” and “fringe” rate that is established in a Wage Decision.
- M. **Trucking Broker (Broker).** An individual or business entity, the activities of which include, but are not limited to: contracting to provide trucking services in the construction industry to users of such services, contracting to obtain such services from providers of trucking services, dispatching the providers of the services to do Work as required by the users of the services, receiving payment from the users in consideration of the trucking services provided, and making payment to the providers for the services.<sup>17</sup>
- N. **Trucking Firm/Multiple Truck Owner (MTO).** Any legal business entity that owns more than one vehicle and hires the vehicles out for services to Trucking Brokers or Contractors on public works projects.<sup>18</sup>
- O. **Truck Rental Rate Schedule.** A document prepared by the MnDLI through a Contractor survey process that identifies the required hourly Total Prevailing Wage Rate and operating cost for various types of trucks that perform hauling activities (Work) under a Contract that is funded in whole or in part with state funds.<sup>19</sup>
- P. **Wage Decision.** A document prepared by the MnDLI through a Contractor survey process that identifies the required hourly basic rate of pay and hourly Fringe Benefits for various labor classifications that perform Work under a Contract that is funded in whole or in part with state funds.<sup>20</sup>
- Q. **Work (Work).** All construction activities associated with a public works project, including any required hauling activities on-the-site-of or to-or-from a public works project and conducted pursuant to a Contract, regardless of whether the construction activity or Work is performed by the Prime Contractor, subcontractor, Trucking Broker, Trucking Firm (MTO), ITO, independent contractor, or employee or agent of any of the foregoing entities.<sup>21</sup>
- R. **Worker (Laborer or Mechanic).** A Worker in a construction industry labor class identified in or pursuant to Minnesota Rules 5200.1100, Master Job Classifications.<sup>22</sup>

### III. APPLICATION & UNDERSTANDING

- A. **Provisions & Prevailing Wage Rates Apply.** These provisions, along with the prevailing Wage Decision(s) that are incorporated into the Contract, apply to all Contractors contracting to do all or part of the Work.<sup>23</sup>

<sup>13</sup> Minn. Stat. 178.011, Subdivision 9

<sup>14</sup> Minn. R. 5200.1106, Subpart 2(C)

<sup>15</sup> The American Heritage College Dictionary, Third Edition, 2000

<sup>16</sup> Minn. R. 5200.1106, Subpart 5(C)

<sup>17</sup> Minn. R. 5200.1106, Subpart 7(C)

<sup>18</sup> Minn. R. 5200.1106, Subpart 7(B)

<sup>19</sup> Minn. R. 5200.1105

<sup>20</sup> Minn. R. 5200.1020 to 5200.1060

<sup>21</sup> Minn. R. 5200.1106, Subpart 2(A)

<sup>22</sup> Minn. R. 5200.1106, Subpart 5(A)

<sup>23</sup> Minn. Stat. 177.44, Subdivision 1

- B. **Truck Rental Rates Apply.** The Truck Rental Rate Schedule incorporated into the Contract applies to all hired trucking entities that perform covered hauling activities related to the project.<sup>24</sup>
- C. **Prevailing Wage Terms Must Be Included in All Contracts.** The Prime Contractor is required to ensure that all subcontractors performing Work receive the Contract Wage Decision(s), Truck Rental Rate Schedule, and a copy of these provisions with their written Subcontracts, agreements and/or purchase orders.<sup>25</sup>
- D. **Responsible for Understanding All Requirements.** Each Contractor is responsible for understanding all laws, rules, regulations, plans, and specifications that are incorporated physically, or by reference, into the Contract.<sup>26</sup>
- E. **E-Verify.** For services valued in excess of \$50,000, the Contractor certifies that as of the date of services performed on behalf of State, the Contractor will have implemented or be in the process of implementing the federal E-Verify program for all newly hired employees in the United States who will perform work under the contract. The Prime Contractor is responsible to collect all subcontractor certifications and may do so utilizing the E-Verify Subcontractor Certification Form available at <http://www.mmd.admin.state.mn.us/doc/EVerifySubCertForm.doc>. All subcontractor certifications must be kept on file with the Prime Contractor and made available to the State upon request.

#### IV. VENDOR REGISTRATION

**Vendor Registration Required.** A Contractor that performs Work, supplies material, or product must be registered with MnDOT. The Contractor must complete and submit a vendor form<sup>27</sup> to the MnDOT LCU<sup>28</sup>, along with all applicable documentation that is required. This registration process is separate and distinct from other state agency requirements.

#### V. LABOR CLASSIFICATIONS

- A. **Labor Classification Assignment.** A Worker must be paid at least the Total Prevailing Wage Rate in the same or most similar trade or occupation.<sup>29</sup> To determine the appropriate labor classification for a Worker, a Contractor must refer to the Wage Decision(s) incorporated into the Contract, the labor classification descriptions for laborers and special crafts established in Minnesota Rules or the United States Department of Labor's Dictionary of Occupational Titles.<sup>30</sup>
- B. **Labor Classification Clarification & Disputes.** A Contractor needing assistance in determining a labor classification must submit a Classification Clarification Request<sup>31</sup> to the MnDOT LCU for a written decision. If the Contractor chooses to contest the classification assignment, it must provide written notice to the MnDOT LCU. The MnDOT LCU will forward the matter to the MnDLI for a final ruling.
- C. **Performing Work in Multiple Labor Classifications.** For Workers performing Work in multiple labor classifications, the Contractor must compensate at a minimum the Total Prevailing Wage Rate, and report the hours worked, in each applicable labor classification.<sup>32</sup>

#### VI. WAGE DECISION(S) & WAGE RATE(S)

- A. **Applicability of a Highway and Heavy Wage Decision.** A highway and heavy Wage Decision applies to a Worker that is engaged in a construction activity or performing Work to construct or maintain a highway or other public works project, such as a road, street, airport runway, bridge,

<sup>24</sup> Minn. Stat. 177.44, Subdivision 3

<sup>25</sup> MnDOT Standard Specifications for Construction, Section 1801

<sup>26</sup> MnDOT Standard Specifications for Construction, Section 1701

<sup>27</sup> [www.dot.state.mn.us/const/labor/documents/forms/contractorform2016.pdf](http://www.dot.state.mn.us/const/labor/documents/forms/contractorform2016.pdf) or [www.dot.state.mn.us/const/labor/documents/forms/truckvendorform2016.pdf](http://www.dot.state.mn.us/const/labor/documents/forms/truckvendorform2016.pdf)

<sup>28</sup> [leusupport.dot@state.mn.us](mailto:leusupport.dot@state.mn.us)

<sup>29</sup> Minn. Stat. 177.44, Subdivision 1

<sup>30</sup> Minn. R. 5200.1101 and 1102 and USDOL Dictionary of Occupational Titles

<sup>31</sup> <http://www.dot.state.mn.us/const/labor/documents/forms/classification-clarification-request.pdf>

<sup>32</sup> Minn. Stat. 177.44, Subdivision 1



power plant, dam or utility<sup>33</sup> that is external to a sheltered enclosure (structure). This includes, but is not limited to, the following Work: site clearing; grading; excavating backfilling; paving; curbs; gutters; sidewalks; culverts; bridges; lighting systems; traffic management systems; installing of utilities out from an exterior meter; fuel islands; communication towers; or other activities similar to highway and/or heavy Work.

- B. **Applicability of a Commercial Wage Decision.** A commercial Wage Decision applies to a Worker that is engaged in a construction activity or performing Work to construct a sheltered enclosure (structure) with walk-in access for the purpose of housing persons, machinery, equipment or supplies.<sup>34</sup> This includes, but is not limited to, the following Work: constructing foundations, aprons, stoops; framing walls; installing windows, doors, tiling, plumbing, electrical, HVAC systems; roofing; installing utilities into the building from an exterior meter.
- C. **Pay According to Wage Decision(s).**
1. **Contract with One Wage Decision.** If the Contract contains one Wage Decision, the Contractor must examine the Wage Decision and compensate the Worker at a minimum the Total Prevailing Wage Rate for the appropriate labor classification(s).
  2. **Contract with Multiple Highway/Heavy Wage Decisions.** If the Contract contains multiple Highway/Heavy Wage Decisions, the Contractor must examine each Wage Decision and compensate the Worker, at a minimum, the Total Prevailing Wage Rate that is the greatest<sup>35</sup> for the appropriate labor classification(s).
  3. **Contract with Highway/Heavy and Commercial Wage Decision(s).** If the Contract contains a Highway/Heavy and Commercial Wage Decision(s), the Contractor must first determine which Wage Decision is applicable to the Worker. The Contractor must then compensate the Worker, at a minimum, the Total Prevailing Wage Rate for the appropriate labor classification(s).
- D. **Must Pay Total Prevailing Wage Rate.** A Contractor must compensate each Worker, at a minimum, the Total Prevailing Wage Rate(s) for all hours worked on the project for the appropriate labor classification(s).<sup>36</sup>
- E. **Missing Wage Rate.** If a Wage Decision fails to include a wage rate for a labor classification(s) that will be utilized on a project, the Contractor must obtain a wage rate prior to furnishing an estimate, quote or bid.<sup>37</sup>
1. **Wage Rate Request.** A Contractor must complete a Request for Rate Assignment form<sup>38</sup> and submit it to the MnDOT LCU<sup>39</sup> for processing.
  2. **No Contract Price Adjustment for Missing Wage Rate.** If MnDLI determines that a higher wage rate applies, the Department will not reimburse the Contractor.
- F. **Salaried Worker.** A salaried Worker is not exempt from these Provisions. A Contractor must convert the Worker's salary to an average hourly rate of pay by dividing the Worker's salary by the total number of hours Worked (government and non-government) during the pay period.<sup>40</sup> A salaried Worker must be included on a CPR.
- G. **Reduction in Standard (Private) Contractual Regular Rate of Pay Prohibited.** A Contractor must not reduce a Worker's standard, contractual regular rate of pay when the prevailing wage rate(s) certified by the MnDLI is less.<sup>41</sup>

<sup>33</sup> Minn. R. 5200.1010, Subdivision 3

<sup>34</sup> United States Department of Labor All Agency Memorandum #130

<sup>35</sup> Minn. Stat. 177.44, Subdivision 4

<sup>36</sup> Minn. Stat. 177.44, Subdivision 1

<sup>37</sup> Minn. R. 5200.1030, Subpart 2a(C)

<sup>38</sup> <http://www.dot.state.mn.us/const/labor/documents/forms/request-for-rate-assignment.doc>

<sup>39</sup> leusupport.dot@state.mn.us

<sup>40</sup> Refer to Appendix A

<sup>41</sup> Minn. Stat. 181.03, Subdivision 1(2)

- H. **Prohibited Payment Practices.** A Contractor is prohibited from taking (accepting) a rebate for the purpose of reducing or otherwise decreasing the value of the compensation paid.
- I. **Prohibited Deductions.** No deductions, direct or indirect, may be made for the items listed below which when subtracted from wages would reduce the wages below Minnesota's minimum wage rate as established in section 177.24<sup>42</sup>
1. **Uniforms.** Purchased or rented uniforms or specifically designed clothing that is required by the Employer, by the nature of employment, or by statute, or as a condition of employment, which is not generally appropriate for use except in that employment.
  2. **Equipment.** Purchased or rented equipment used in employment, except tools of a trade, a motor vehicle, or any other equipment which may be used outside the employment. The cost of the Worker's use of equipment used outside of employment, such as tools, a motor vehicle, cell phone, may be deducted only if an agreement between the Employer and employee existed prior to the deduction.
  3. **Supplies.** Consumable supplies required in the course of employment.
  4. **Travel Expenses.** Travel expenses in the course of employment except those incurred in traveling to and from the employee's residence and place of employment.

## VII. HOURS OF WORK

- A. **Work Performed Under the Contract.** A Worker performing Work is subject to prevailing wage for all hours associated with the Contract<sup>43</sup>, unless the Worker is exempt under state law.<sup>44</sup>
- B. **Wait Time Subject to Prevailing Wage.** A Worker who is required to remain on the project and is waiting to Work because of the fault of the Contractor is considered "engaged to wait" and subject to prevailing wage for the time spent, unless the Worker is completely relieved of duty and free to leave the project for a defined period of time.

## VIII. FRINGE BENEFITS

- A. **Funded Fringe Benefit Plan Criteria.** In order for a funded Fringe Benefit (e.g., health/medical insurance, disability insurance, life insurance, pension, etc.) to be considered and creditable towards the Total Prevailing Wage Rate it must be:<sup>45</sup>
1. a contribution irrevocably made by a Contractor on behalf of an Worker to a financially responsible trustee, third person, fund, plan, or program;
  2. carried out under a financially responsible plan or program;
  3. legally enforceable;
  4. communicated in writing to the Worker; and
  5. made available to the Worker once he/she has met all eligibility requirements.
- B. **Unfunded Fringe Benefit Plan Criteria.** In order for a unfunded Fringe Benefit (e.g., vacation, holiday, sick leave, etc.) to be considered and creditable towards the Total Prevailing Wage Rate it must be:<sup>46</sup>
1. reasonably anticipated to provide a benefit;
  2. a commitment that can be legally enforced;

<sup>42</sup> Minn. Stat. 177.24, Subdivision 4(1-4)

<sup>43</sup> Minn. Stat. 177.44, Subdivision 1

<sup>44</sup> Minn. Stat. 177.44, Subdivision 2 or Minn. R. 5200.1106, Subpart 4

<sup>45</sup> Minn. Stat. 177.42, Subdivision 6

<sup>46</sup> Minn. Stat. 177.42, Subdivision 6

3. carried out under a financially responsible plan or program;
  4. communicated in writing to the Worker; and
  5. made available to the Worker once he/she has met all eligibility requirements.
- C. **Fringe Benefit Contributions for Hours Worked.** A Contractor that provides Fringe Benefits to a Worker must make contributions, not less than quarterly<sup>47</sup>, for all hours worked,<sup>48</sup> including overtime hours, unless it's a defined benefit or contribution plan that provides for immediate participation and immediate or essentially immediate vesting (see subpart D2 of this section).
- D. **Hourly Fringe Benefit Credit.** An hourly Fringe Benefit credit toward the Total Prevailing Wage Rate must be determined separately for each Worker based on one or more of the following methods:
1. **Monthly, Quarterly or Annual Computation Methods.** A Contractor must compute its monthly, quarterly or annual cost of a particular Fringe Benefit and divide that amount by the estimated total number of hours worked (government and non-government) during the time frame used.<sup>49</sup> Typical plans that require monthly, quarterly or annual computations include but are not limited to: health/medical insurance, disability insurance, life insurance, vacation, holiday, sick leave and defined benefit or contribution pension plans that do not provide for immediate participation and immediate or essentially immediate vesting.
  2. **Fringe Benefit Credit not Requiring Monthly, Quarterly or Annual Computation Methods.** A defined benefit or contribution pension plan that allows for a higher hourly rate of contribution for government work (prevailing wage) than non-government (non-prevailing wage) will be fully credited only if the plan provides for immediate participation and immediate or essentially immediate vesting.
- E. **Wages In Lieu of Fringe Benefits.** A Contractor that does not provide full Fringe Benefits must compensate a Worker the difference between the Total Prevailing Wage Rate and the rate actually paid for the appropriate labor classification(s). The compensation paid is considered wages and subject to tax liabilities.
1. **Overtime.** The cash equivalent (wages paid) made in lieu of Fringe Benefits is excluded from the overtime calculation requirement, unless the cash equivalent (wages paid) is part of the Worker's standard straight time wage.
- F. **Administrative Costs Not Creditable.** Administrative expenses incurred by a Contractor in connection with the administration of a Bona Fide Fringe Benefit plan are not creditable towards the Total Prevailing Wage Rate.
- G. **Federal, State & Local Fringe Benefit Credit Prohibited.** No credit is allowed for benefits required by federal, state or local law, such as: worker's compensation, unemployment compensation, and social security contributions.<sup>50</sup>

## IX. OVERTIME

- A. **Overtime after 8 Hours per Day or 40 Hours per Week.** A Contractor must not permit or require a Worker to work longer than the prevailing hours of labor unless the Worker is paid for all hours in excess of the prevailing hours at a rate of at least 1.5 times the hourly basic rate of pay.<sup>51</sup> The prevailing hours of labor is defined as not more than 8 hours per day and more than 40 hours per week.<sup>52</sup>

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<sup>47</sup> 29 CRF, Part 5.5(a)(1)(i)

<sup>48</sup> Government and non-government Work

<sup>49</sup> Refer to Appendix B

<sup>50</sup> Minn. Stat. 177.42, Subdivision 6

<sup>51</sup> Minn. Stat. 177.44, Subdivision 1 and Refer to Appendix D

<sup>52</sup> Minn. Stat. 177.42, Subdivision 4

- B. **Wages in Lieu of Fringe Benefits Overtime.** Wages paid in Lieu of Fringe Benefits must be paid for all hours worked under the contract.
- C. **Multiple Labor Classifications and Overtime.** A Worker employed in multiple labor classifications throughout a workweek must be compensated at the applicable labor classification overtime rate in effect during the hours worked in excess of 8 hours per day or 40 hours per week.
- D. **Federal Fair Labor Standards Act (FLSA) and Overtime.** A Contractor subject to the FLSA may be subject to additional overtime compensation requirements.

## X. PAYROLLS AND STATEMENTS

- A. **Reporting.** Each Contractor that is performing Work must submit a CPR(s) to the Department.
  - 1. **Payroll Report (Paper).** Each Contractor performing Work must submit a paper (written) payroll report to the Department. The payroll report is available on the MnDOT LCU website.<sup>53</sup>
  - 2. **Statement of Compliance (Paper).** Each Contractor's paper (written) payroll report must include a paper (written) "Statement of Compliance Form". The "Statement of Compliance Form" must: (1) state whether or not Fringe Benefits are provided to a Worker; (2) provide a description of each benefit, the hourly contribution made on behalf of each Worker, along with fund/plan information; and (3) a signature attesting that the payroll and Fringe Benefit information provided is truthful and accurate.<sup>54</sup>
  - 3. **Electronic Reporting.** If the Contract is subject to electronic reporting, each Contractor performing Work must submit a CPR(s) using the AASHTOWare, Civil Rights Labor (CRL) system. Refer to the **Special Provisions Division S – "Electronic Submission of Payrolls and Statements"** which is incorporated into and found elsewhere in the Contract for detailed requirements.
- B. **Biweekly Payroll Reporting and Payment of Wages.** A CPR(s) must be submitted no later than 14 calendar days after the end of each Contractor's pay period<sup>55</sup> to the Department. A Contractor must pay its employees at least once every 14 calendar days.<sup>56</sup>
- C. **Payroll Report Data.** Each payroll report must include all Workers that performed Work and provide at a minimum the following information:<sup>57</sup>
  - 1. Contractor's name, address, and telephone number.
  - 2. State project number.
  - 3. Contract number (if applicable).
  - 4. Project number.
  - 5. Payroll report number.
  - 6. Project location.
  - 7. Workweek end date.
  - 8. Each Worker's name, home address, and social security number.<sup>58</sup>
  - 9. Labor classification(s) title(s) and optional three-digit code for each Worker.

<sup>53</sup> [www.dot.state.mn.us/const/labor/certifiedpayroll.html](http://www.dot.state.mn.us/const/labor/certifiedpayroll.html)

<sup>54</sup> Minn. R. 5200.1106, Subpart 10

<sup>55</sup> Minn. Stat. 177.43, Subdivision 3

<sup>56</sup> Minn. Stat. 177.30 (a)(4)

<sup>57</sup> Minn. Stat. 177.30 (a)(1-4) and Minn. R. 5200.1106, Subpart 10

<sup>58</sup> Minn. R. 5200.1106, Subpart 10A & Minn. Stat. 13.355, Subdivision 1

10. Hours worked daily and weekly in each labor classification, including overtime hours, for each Worker.
11. Wage rate paid to each Worker for straight time and overtime.
12. Authorized legal deductions for each Worker.
13. Project gross amount, weekly gross amount, and net wages paid to each Worker.

- D. **Prime Contractor to Ensure Compliance.** The Prime Contractor must review the CPR(s) submitted by each lower tier Contractor and sign the “Statement of Compliance Form”.<sup>59</sup> The Prime Contractor must ensure that each lower tier Contractor’s CPR(s) include all Workers that performed Work and accurately reflect labor classifications, hours worked, regular and overtime rates of pay, gross earnings for the project and Fringe Benefits.<sup>60</sup>
- E. **Retention of CPR(s).** The Prime Contractor must keep its written CPR(s), including those of all lower tier Contractors, for three (3) years after the final payment is issued.<sup>61</sup>
- F. **Retention of Employment-Related Records.** Each Contractor must keep employee records, including, but not limited to: Fringe Benefit statements, time cards, payroll ledgers, check registers and canceled checks<sup>62</sup> for at least three (3) years after the final payment is issued.<sup>63</sup> Other laws may have longer retention requirements.
- G. **Detailed Earning Statement.** At the end of each pay period, each Contractor must provide every Worker, in writing or by electronic means, an accurate, detailed earnings statement.<sup>64</sup>
- H. **Reports and Records Request.** Upon a request from the Department, the Prime Contractor must promptly furnish copies of CPR(s) for its Workers and those of all lower tier Contractors, along with employment-related records, documents, and agreements that the Department considers necessary to determine compliance.<sup>65</sup>

## XI. APPRENTICES, TRAINEES AND HELPERS

- A. **Apprentice.** An Apprentice will be permitted to Work at less than the prevailing basic hourly rate only if the Apprentice is:
1. Registered with the U.S. Department of Labor (DOL), Bureau of Apprenticeship and Training or MnDLI Division of Voluntary Apprenticeship.<sup>66</sup>
  2. Performing Work of the trade, as described in the apprenticeship agreement.
  3. Compensated according to the rate specified in the program for the level of progress.<sup>67</sup>
  4. Supervised by a Journeyworker from the same company, in accordance with the program ratio requirements.<sup>68</sup>
- B. **Ratio Requirement.** If an approved apprenticeship program fails to define a ratio allowance, the first Apprentice must be supervised by a Journeyworker within the same trade or occupation. Any subsequent Apprentice must be supervised by an additional three Journeyworkers.<sup>69</sup>

<sup>59</sup> MnDOT Standard Specifications for Construction, Section 1701

<sup>60</sup> MnDOT Standard Specifications for Construction, Section 1801

<sup>61</sup> Minn. Stat. 177.30 (a)(5)

<sup>62</sup> Minn. R. 5200.1106, Subpart 10

<sup>63</sup> Minn. Stat. 177.30 (a)(5)

<sup>64</sup> Minn. Stat. 181.032

<sup>65</sup> Minn. Stat. 177.44, Subdivision 7; Minn. Stat. 177.33(a)(5)

<sup>66</sup> Minn. R. 5200.1070, Subpart 1

<sup>67</sup> Minn. R. 5200.1070, Subpart 1 and Refer to Appendix C

<sup>68</sup> Minn. Stat. 178.036, Subdivision 5

<sup>69</sup> Minn. Stat. 178.036, Subdivision 5

- C. **Failure to Comply with Apprenticeship Requirements.** If a Contractor fails to demonstrate compliance with the terms established in this section, the Contractor must compensate the Apprentice not less than the applicable Total Prevailing Wage Rate for the actual classification of labor performed.<sup>70</sup>
- D. **Trainee and Helper.** A trainee or helper is not exempt from prevailing wage under state law. The Contractor must assign the trainee or helper a labor classification that is the "same or most similar"<sup>71</sup> and compensate the trainee or helper for the actual Work performed regardless of the trainee's or helper's skill level.

## XII. INDEPENDENT CONTRACTORS, OWNERS, SUPERVISORS, AND FOREMAN

- A. **Independent Contractor.** An independent contractor (IC) that is not an Independent Truck Owner/Operator (ITO), who is performing Work must be properly classified and compensated.<sup>72</sup> The IC must submit a CPR(s) to the Department. If the IC does not receive an hourly wage, but instead a weekly, biweekly, monthly or quarterly distribution for performance, the IC must calculate its hourly rate of pay by dividing the weekly, biweekly, monthly, or quarterly company distribution by all hours worked during that time frame and report the information on a CPR. If necessary, the Department may request documentation from the IC to determine how the hourly wage rate was calculated.<sup>73</sup>
- B. **Owners, Supervisors and Foreman.** An owner, supervisor, or foreman performing Work is subject to prevailing wage and must be properly classified, compensated and reported.<sup>74</sup>

## XIII. TRUCKING

- A. **Covered Hauling Activities.** A Contractor must ensure that all Workers, including hired Trucking Brokers, MTOs and ITOs are paid the applicable Total Prevailing Wage Rate or truck rental rate for the following Work:
1. The hauling of any or all stockpiled or excavated materials on the project work site to other locations on the same project even if the truck leaves the work site at some point.<sup>75</sup>
  2. The delivery of materials from a non-commercial establishment to the project and the return haul to the starting location either empty or loaded.<sup>76</sup>
  3. The delivery of materials from another construction project site to the public works project and the return haul, either empty or loaded. Construction projects are not considered commercial establishments.<sup>77</sup>
  4. The hauling required to remove any materials from the project to a location off the project site and the return haul, either empty or loaded from other than a commercial establishment.<sup>78</sup>
  5. The delivery of materials or products by trucks hired by a Contractor, subcontractor, or agent thereof, from a commercial establishment.<sup>79</sup>
  6. The delivery of sand, gravel, or rock, by or for a commercial establishment, which is deposited "substantially in place," either directly or through spreaders from the transporting vehicles is work under the contract. In addition, the return haul to the off-site facility empty or loaded is also considered work under the contract.<sup>80</sup>

<sup>70</sup> Minn. R. 5200.1070, Subpart 3

<sup>71</sup> Minn. Stat. 177.44, Subdivision 1

<sup>72</sup> Minn. Stat. 177.44, Subdivision 1

<sup>73</sup> Minn. Stat. 177.30(a)(5); Minn. Stat. 181.723

<sup>74</sup> Minn. Stat. 177.44, Subdivision 1

<sup>75</sup> Minn. R. 5200.1106, Subpart 3B(1)

<sup>76</sup> Minn. R. 5200.1106, Subpart 3B(2)

<sup>77</sup> Minn. R. 5200.1106, Subpart 3B(3)

<sup>78</sup> Minn. R. 5200.1106, Subpart 3B(4)

<sup>79</sup> Minn. R. 5200.1106, Subpart 3B(5)

<sup>80</sup> Minn. R. 5200.1106, Subpart 3B(6)

- B. **Hauling Activities Not Subject to Prevailing Wage or Truck Rental Rates.** A Contractor may exclude a Worker, including hired Trucking Brokers, MTOs and ITOs from prevailing wage or truck rental rates for the Work described in (1-2) of this section. However, this Work may be considered hours worked and subject to standard compensation pursuant to the Minnesota Fair Labor Standards Act.
1. The delivery of processed or manufactured goods to a public works project by the employees of a commercial establishment including truck owner-operators hired by and paid by the commercial establishment, unless it is the delivery of mineral aggregate that is incorporated into the work under the contract by depositing the material substantially in place.<sup>81</sup>
  2. The delivery of oil offsite, as an example, to a Prime Contractor's permanent (commercial) asphalt mixing facility that is not to, from, or on the project Work site.<sup>82</sup>
- C. **Repair, Maintenance & Waiting to Load Time.** An ITO and MTO must be paid the truck rental rate for time spent repairing or maintaining the truck owner-operator's equipment, and for waiting to load or unload if the repair, maintenance, or wait time is the fault of the Trucking Broker, Contractor, its agent or employees.<sup>83</sup>
- D. **Month End Trucking Report.** A Contractor that acquires the services of an ITO or MTO must submit a "MnDOT – MTO and/or ITO Month-End Trucking Report", and a "MnDOT – Month-End Trucking Statement of Compliance Form" to the Department for each month hauling activities are performed under the Contract.<sup>84</sup> The forms are available on the MnDOT LCU website.<sup>85</sup>
- E. **Broker Fee.** A truck broker contracting to provide trucking services directly to a prime contractor or subcontractor is allowed to assess a broker fee.

#### XIV. OFF-SITE FACILITIES

- A. **Off-Site Facility Activities Subject to Prevailing Wage.** A Contractor must ensure that all Workers performing Work at a covered off-site facility are paid the applicable Total Prevailing Wage Rate for the following Work:
1. The processing or manufacturing of material at a Prime Contractor's off-site facility that is not a separately held commercial establishment.<sup>86</sup>
  2. The processing or manufacturing of material at an off-site facility that is not considered a commercial establishment.<sup>87</sup>
- B. **Off-Site Facility Activities Not Subject to Prevailing Wage.** A Contractor may exclude a Worker from prevailing wage for the following work:
1. The processing or manufacturing of material or products by or for a commercial establishment.<sup>88</sup>
  2. The work performed by Workers employed by the owner or lessee of a gravel or borrow pit that is a commercial establishment, even if the screening, washing or crushing machines are portable.<sup>89</sup>

#### XV. SUBCONTRACTING PART OF THE CONTRACT

<sup>81</sup> Minn. R. 5200.1106, Subpart 4(C)

<sup>82</sup> J.D. Donovan, Inc. vs. Minnesota Department of Transportation, 878 N.W.2d 1 (2016)

<sup>83</sup> Minn. R. 5200.1106, Subpart 8(A)(1)

<sup>84</sup> Minn. R. 5200.1106, Subpart 10

<sup>85</sup> <http://www.dot.state.mn.us/const/labor/forms.html>

<sup>86</sup> ALJ Findings of Fact, Conclusions of Law, and Recommendation, Conclusions (7), Case #12-3000-11993-2

<sup>87</sup> Minn. R. 5200.1106, Subpart 3(A)

<sup>88</sup> Minn. R. 5200.1106, Subpart 4(A)

<sup>89</sup> Minn. R. 5200.1106, Subpart 4(B)

The Prime Contractor must include the Contract Special Provisions, Wage Decision(s) and Truck Rental Rate Schedule in all Subcontracts, agreements and purchase orders with lower tier Contractors.<sup>90</sup> This requirement also applies to all lower tier subcontractors.

## XVI. SITE OF WORK REQUIREMENTS

- A. **Poster Board.** The Prime Contractor must construct and display a poster board containing all required posters. The poster board must be accurate, legible, and accessible to all project Workers from the first day of Work until the project is one hundred percent (100%) complete.<sup>91</sup> A poster board at an off-site location, or inside a construction trailer, does not meet this requirement.
- B. **How to Obtain a Poster Board.** The Prime Contractor may obtain the required posters and the necessary contact information that is required to be inserted on each poster by visiting the MnDOT LCU website.<sup>92</sup>
- C. **Employee Interviews.** The Contractor must permit representatives from the Department or other governmental entities<sup>93</sup> to interview Workers at any time during working hours on the project.<sup>94</sup>

## XVII. CHILD LABOR

- A. **No Worker under the Age of 18.** No Worker under the age of 18 is allowed to perform Work on a Project Site, except pursuant to Section XVII B below.<sup>95</sup>
- B. **Parental Supervision.** A Worker under the age of 18 may perform Work on a Project Site if all of the following criteria are met:
  1. The Contractor (Employer) is not subject to FLSA.
  2. The Worker is employed in a corporation owned solely by one or both parents.
  3. The Worker is supervised by the parent(s).
  4. The Worker is not working in a hazardous occupation.<sup>96</sup>
- C. **Removal of Minor from Project.** The Engineer or inspector may remove a Worker that appears to be under the age of 18 from the Project Site until the Contractor or Worker can demonstrate proof of age and compliance with all applicable federal and state regulations.<sup>97</sup>

## XVIII. NON-COMPLIANCE AND ENFORCEMENT

- A. **Case-by-Case Enforcement.** The Department has the authority to enforce the prevailing wage law on a case-by-case.<sup>98</sup>
- B. **Prime Contractor Responsible for Unpaid Wages.** The Prime Contractor will be held liable for any unpaid wages to its Workers or those of any lower tier Contractor.<sup>99</sup>
- C. **Enforcement Options.** If evidence shows that a Contractor has violated prevailing wage requirements, or these Special Provisions, the Department may, after written notice, implement one or more of the following:

<sup>90</sup> MnDOT Standard Specifications for Construction, Section 1801

<sup>91</sup> Minn. Stat. 177.44, Subdivision 5

<sup>92</sup> [www.dot.state.mn.us/const/labor/posterboards](http://www.dot.state.mn.us/const/labor/posterboards)

<sup>93</sup> MnDLI, U.S. DOL., U.S. Department of Transportation, Federal Highways Administration

<sup>94</sup> MnDOT Standard Specifications for Construction, Section 1511

<sup>95</sup> Minn. R. 5200.0910, Subpart F; 29 CFR Part 570.2(a)(ii)

<sup>96</sup> Minn. R. 5200.0930, Subpart 4

<sup>97</sup> Minn. Stat. 181A.06, Subdivision 4; MnDOT Standard Specifications for Construction, Section 1701

<sup>98</sup> See International Union of Operating Engineers, Local 49 v. MnDOT, No. C6-97-1582, 1998 WL 74281, at \*2 (Minn. App. Feb. 24, 1998)

<sup>99</sup> MnDOT Standard Specifications for Construction, Section 1801



1. **Withholding Payment.** The Department may withhold from the Prime Contractor payments relating to prevailing wage underpayments.<sup>100</sup>
2. **Non-Responsible Contractor.** The Department may reject a bid from a Prime Contractor that has received two (2) or more Determination Letters within a three (3) year period from the Department finding an underpayment by the Contractor to its own employees.<sup>101</sup>
3. **Default.** The Department may take the prosecution of the Work out of the hands of the Prime Contractor, place the Contractor in default, and terminate the Contract for failure to comply.<sup>102</sup>
4. **Suspension or Debarment.** The Department may refer violations and matters of non-compliance by a Contractor to the Minnesota Department of Administration for suspension or debarment proceedings.<sup>103</sup>
5. **County Attorney.** The Department may refer suspected criminal violations by Contractor to the appropriate local county attorney for prosecution.<sup>104</sup>
6. **Financial Penalties.** Any Contractor who violates the state prevailing wage law is guilty of a misdemeanor and may be fined not more than \$300 or imprisoned not more than 90 days or both. Each day that the violation continues is a separate offense.<sup>105</sup> A Contractor may be fined up to \$1,000 for each failure to maintain records.<sup>106</sup>
7. **False Claims Act Violation.** All required payroll and certification reports are legal documents; knowing falsification of the documents by a Contractor may result in civil action and/or criminal prosecution<sup>107</sup> and may be grounds for debarment proceedings.<sup>108</sup>
8. **Compliance Order.** The Department may request that MnDLI issue a compliance order to a Contractor for violations of the state prevailing wage law. If the Contractor is found to have committed a violation, liquidated damages and other costs may be assessed against the Employer.<sup>109</sup>
9. **Private Right of Action.** The Department may direct an employee to pursue a civil action in district court against its Employer for failure to comply with the proper payment of wages.<sup>110</sup> If the Employer is found to have committed a violation, liquidated damages and other costs may be assessed against the Employer.<sup>111</sup>
10. **Fringe Benefits; Misdemeanor.** A Contractor that is obligated to deposit Fringe Benefit contributions on behalf of a Worker into a financially responsible trustee, third person, fund, plan, or program and fails to make timely contributions is guilty of a gross misdemeanor or other violations under federal law.<sup>112</sup>

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<sup>100</sup> MnDOT Standard Specifications for Construction, Section 1906

<sup>101</sup> Minn. Stat. 16C.285

<sup>102</sup> MnDOT Standard Specifications for Construction, Section 1808

<sup>103</sup> Minn. R. 1230.1150, Subpart 2(A)(4)

<sup>104</sup> Minn. Stat. 177.44, Subdivision 7

<sup>105</sup> Minn. Stat. 177.44, Subdivision 6

<sup>106</sup> Minn. Stat. 177.30(b)

<sup>107</sup> Minn. Stat. 15C.02; , Minn. Stat. 161.315; Minn. Stat. 177.32; Minn. Stat. 177.43, Subdivision 5, Minn. Stat. 609.63

<sup>108</sup> Minn. Stat. 161.315 and Minn. Stat. 609.63

<sup>109</sup> Minn. Stat. 177.43, Subdivision 6a

<sup>110</sup> Minn. Stat. 177.27, Subdivision 8

<sup>111</sup> Minn. Stat. 177.27, Subdivision 10

<sup>112</sup> Minn. Stat. 181.74, Subdivision 1

**THE FOLLOWING APPENDICES ARE FOR  
EXPLANATORY PURPOSES ONLY.  
FOR SPECIFIC QUESTIONS, PLEASE CONTACT LCU.<sup>113</sup>**

**APPENDIX A****SALARIED WORKER WAGE COMPUTATION**

**Salaried Workers.** In order to convert the Worker's salary into an hourly rate of pay, divide the employee's weekly, bi-weekly or monthly earnings by the total number of hours Worked (government and non-government), including overtime hours for the time period used.<sup>114</sup>

$$\mathbf{\$800.00 \text{ (weekly salary)} / 40 \text{ (total weekly hours)} = \$20.00}$$

$$\mathbf{\$1,600.00 \text{ (bi-weekly salary)} / 80 \text{ (total bi-weekly hours)} = \$20.00}$$

$$\mathbf{\$3,200.00 \text{ (monthly salary)} / 160 \text{ (total monthly hours)} = \$20.00}$$

**APPENDIX B****FRINGE BENEFIT CREDIT**

**Fringe Benefit Credit Calculation.** The Employer contributes monthly (\$600.00) for medical insurance on behalf of a Worker. In order to calculate the projected hourly credit that the Employer can take, the Employer should: (1) add the monthly contributions for each Worker, (2) multiply by twelve (12) months, and (3) divide the total cost of the benefit by the total hours worked (government and non-government)<sup>115</sup> (see annual example below). Quarterly and monthly examples are also provided.

**Annual:**       $(\$600.00) \times (12 \text{ months}) = \$7,200.00$   
                   $(\$7,200.00) / (2080 \text{ hours}) = \underline{\$3.46 \text{ per hour credit}}$

**Quarterly:**  $(\$600.00) \times (3 \text{ months}) = \$1,800.00$   
                   $(\$1,800.00) / (520 \text{ hours}) = \underline{\$3.46 \text{ per hour credit}}$

**Monthly:**     $(\$600.00) \times (1 \text{ month}) = \$600.00$   
                   $(\$600.00) / (173 \text{ hours}) = \underline{\$3.47 \text{ per hour credit}}$

**End of Year Self-Audit.** At the end of the calendar year, the Contractor must conduct an audit to determine if the hourly fringe benefit credit taken for each Worker was accurate. The Contractor must calculate the total annual fringe benefits paid on behalf of each Worker and divide that amount by the total number of hours worked (government and non-government) by that Worker. If the hourly fringe benefit credit was less than what was reported on a CPR, the contractor must compensate the Worker the hourly difference, multiplied by the total hours worked under the Contract.

**APPENDIX C****APPRENTICE RATE OF PAY**

**State Requirements.** The Apprentice must be compensated according his/her level of progress, which is expressed as a percentage of the Journeyworker wage that is established in the program.

$$\mathbf{\text{Journeyworker Wage Established in Program} = \$25.00}$$

$$\mathbf{\underline{\text{Apprentice Level of Progress} = 60\%}}$$

$$\mathbf{(\$25.00) * (.60) = \$15.00}$$

<sup>113</sup> lcu-support.dot@state.mn.us or (651)366-4238

<sup>114</sup> United States Department of Labor Field Operation Handbook, Section 15f08

<sup>115</sup> United States Department of Labor Field Operation Handbook, Section 15f12

**APPENDIX D****PREVAILING WAGE OVERTIME CALCULATION**

**Overtime Hourly Rate of Pay.** Here is the formula to calculate the required minimum overtime.<sup>116</sup>

$$OT = (PW * .5) + (HW) + (RF) + (F)$$

**Definition of OT Acronyms**

**OT:** overtime.

**PW:** the basic hourly prevailing wage rate established in a federal and/or state prevailing Wage Decision.

**HW:** hourly wage rate paid to a Worker.

**RF:** remaining fringe, which means the difference between the Contract hourly Fringe Benefit rate and the actual hourly Fringe Benefit rate paid by the Contractor to a third party on behalf of a Worker.

**F:** Fringe Benefit contributions that are bona-fide and contributed by an Employer to a third party on behalf of a Worker.

The Total Prevailing Wage Rate for a Worker is \$30.00, which is comprised of an hourly basic rate of \$20.00 and an hourly fringe rate of \$10.00. The table below includes various hourly basic and Fringe Benefit payments that a Contractor could potentially make to a Worker.

<b>OT CALCULATION FORMULA AND EXAMPLES</b>				
<b><math>OT = (PW * .5) + (HW) + (RF) + (F)</math></b>				
<b>Hourly Wage Paid</b>	<b>Fringe Benefits Paid</b>	<b><u>Payment To Employee</u></b> <b><math>(PW * .5) + (HW) + (RF)</math></b>	<b><u>Fringe Payment</u></b> <b>+ (F)</b>	<b><u>Total Payment</u></b> <b>= OT</b>
\$ 20.00	\$ 10.00	$(\$ 20.00 * .5) + (\$ 20.00) + (\$ 0.00) = \$ 30.00$	+ \$ 10.00	= \$ 40.00
\$ 18.00	\$ 12.00	$(\$ 20.00 * .5) + (\$ 18.00) + (\$ 0.00) = \$ 28.00$	+ \$ 12.00	= \$ 40.00
\$ 22.00	\$ 8.00	$(\$ 20.00 * .5) + (\$ 22.00) + (\$ 0.00) = \$ 32.00$	+ \$ 8.00	= \$ 40.00
\$ 30.00	\$ 0.00	$(\$ 20.00 * .5) + (\$ 30.00) + (\$ 0.00) = \$ 40.00$	+ \$ 0.00	= \$ 40.00
\$ 24.00	\$ 4.00	$(\$ 20.00 * .5) + (\$ 24.00) + (\$ 2.00) = \$ 36.00$	+ \$ 4.00	= \$ 40.00

Regarding the last example the Contractor would be required to pay an additional \$2.00 to the Worker, which is wages in lieu of fringe for a straight time hourly rate of \$26.00 not \$24.00.

A Contractor subject to the Fair Labor Standards Act (FLSA) may be subject to additional overtime compensation requirements.

<sup>116</sup> United States Department of Labor Field Operation Handbook, Section 15k

MINNESOTA DEPARTMENT OF LABOR AND INDUSTRY PREVAILING WAGES FOR STATE FUNDED CONSTRUCTION PROJECTS



THIS NOTICE MUST BE POSTED ON THE JOBSITE IN A CONSPICUOUS PLACE

**Construction Type: Highway and Heavy**

**Region Number: 09**

Counties within region:

- ANOKA-02
- CARVER-10
- CHISAGO-13
- DAKOTA-19
- HENNEPIN-27
- RAMSEY-62
- SCOTT-70
- WASHINGTON-82

Effective: 2022-11-14

This project is covered by Minnesota prevailing wage statutes. Wage rates listed below are the minimum hourly rates to be paid on this project.

All hours worked in excess of eight (8) hours per day or forty (40) hours per week shall be paid at a rate of one and one half (1 1/2) times the basic hourly rate. *Note: Overtime pay after eight (8) hours on the project must be paid even if the worker does not exceed forty (40) hours in the work week.*

Violations on MnDOT highways and road projects should be reported to:

Department of Transportation  
Office of Construction  
Transportation Building MS650  
John Ireland Blvd  
St. Paul, MN 55155  
(651) 366-4209

All other prevailing wage violations and questions should be sent to:

Department of Labor and Industry  
Prevailing Wage Section  
443 Lafayette Road N  
St Paul, MN 55155  
(651) 284-5091  
[DLI.PrevWage@state.mn.us](mailto:DLI.PrevWage@state.mn.us)

LABOR CODE AND CLASS	EFFECT DATE	BASIC RATE	FRINGE RATE	TOTAL RATE
<b>LABORERS (101 - 112) (SPECIAL CRAFTS 701 - 730)</b>				
101                      LABORER, COMMON (GENERAL LABOR WORK)	2022-11-14	37.00	22.39	59.39
102                      LABORER, SKILLED (ASSISTING SKILLED CRAFT JOURNEYMAN)	2022-11-14	37.00	22.39	59.39
103	2022-11-14	26.89	19.31	46.20

LABOR CODE AND CLASS	EFFECT DATE	BASIC RATE	FRINGE RATE	TOTAL RATE
LABORER, LANDSCAPING (GARDENER, SOD LAYER AND NURSERY OPERATOR)				
104 FLAG PERSON	2022-11-14	37.00	22.39	59.39
105 WATCH PERSON	2022-11-14	33.60	21.84	55.44
106 BLASTER	2022-11-14	22.08	6.87	28.95
107 PIPELAYER (WATER, SEWER AND GAS)	2022-11-14	40.50	22.39	62.89
108 TUNNEL MINER	2022-11-14	38.50	22.39	60.89
109 UNDERGROUND AND OPEN DITCH LABORER (EIGHT FEET BELOW STARTING GRADE LEVEL)	2022-11-14	38.50	22.39	60.89
110 SURVEY FIELD TECHNICIAN (OPERATE TOTAL STATION, GPS RECEIVER, LEVEL, ROD OR RANGE POLES, STEEL TAPE MEASUREMENT; MARK AND DRIVE STAKES; HAND OR POWER DIGGING FOR AND IDENTIFICATION OF MARKERS OR MONUMENTS; PERFORM AND CHECK CALCULATIONS; REVIEW AND UNDERSTAND CONSTRUCTION PLANS AND LAND SURVEY MATERIALS). THIS CLASSIFICATION DOES NOT APPLY TO THE WORK PERFORMED ON A PREVAILING WAGE PROJECT BY A LAND SURVEYOR WHO IS LICENSED PURSUANT TO MINNESOTA STATUTES, SECTIONS 326.02 TO 326.15.	2022-11-14	37.00	22.39	59.39
111 TRAFFIC CONTROL PERSON (TEMPORARY SIGNAGE)	2022-11-14	37.00	22.39	59.39
112 QUALITY CONTROL TESTER (FIELD AND COVERED OFF-SITE FACILITIES; TESTING OF AGGREGATE, ASPHALT, AND CONCRETE MATERIALS); LIMITED TO MN DOT HIGHWAY AND HEAVY CONSTRUCTION PROJECTS WHERE THE MN DOT HAS RETAINED QUALITY ASSURANCE PROFESSIONALS TO REVIEW AND INTERPRET THE RESULTS OF QUALITY CONTROL TESTERS.	2022-11-14	16.28	4.07	20.35

LABOR CODE AND CLASS		EFFECT DATE	BASIC RATE	FRINGE RATE	TOTAL RATE
	SERVICES PROVIDED BY THE CONTRACTOR.				
<b>SPECIAL EQUIPMENT (201 - 204)</b>					
201	ARTICULATED HAULER	2022-11-14	41.29	23.45	64.74
		2023-05-01	42.49	25.00	67.49
202	BOOM TRUCK	2022-11-14	43.64	23.45	67.09
		2023-05-01	44.94	25.00	69.94
203	LANDSCAPING EQUIPMENT, INCLUDES HYDRO SEEDER OR MULCHER, SOD ROLLER, FARM TRACTOR WITH ATTACHMENT SPECIFICALLY SEEDING, SODDING, OR PLANT, AND TWO-FRAMED FORKLIFT (EXCLUDING FRONT, POSIT-TRACK, AND SKID STEER LOADERS), NO EARTHWORK OR GRADING FOR ELEVATIONS	2022-11-14	26.89	19.31	46.20
204	OFF-ROAD TRUCK	2022-11-14	40.04	22.55	62.59
205	PAVEMENT MARKING OR MARKING REMOVAL EQUIPMENT (ONE OR TWO PERSON OPERATORS); SELF-PROPELLED TRUCK OR TRAILER MOUNTED UNITS.	2022-11-14	32.04	21.96	54.00
<b>HIGHWAY/HEAVY POWER EQUIPMENT OPERATOR</b>					
<b>GROUP 2</b>		2022-11-14	42.14	23.45	65.59
		2023-05-01	43.38	25.00	68.38
302	HELICOPTER PILOT (HIGHWAY AND HEAVY ONLY)				
303	CONCRETE PUMP (HIGHWAY AND HEAVY ONLY)				
304	ALL CRANES WITH OVER 135-FOOT BOOM, EXCLUDING JIB (HIGHWAY AND HEAVY ONLY)				
305	DRAGLINE, CRAWLER, HYDRAULIC BACKHOE (TRACK OR WHEEL MOUNTED) AND/OR OTHER SIMILAR EQUIPMENT WITH SHOVEL-TYPE CONTROLS THREE CUBIC YARDS AND OVER MANUFACTURER'S RATED CAPACITY INCLUDING ALL ATTACHMENTS. (HIGHWAY AND HEAVY ONLY)				
306	GRADER OR MOTOR PATROL				
307	PILE DRIVING (HIGHWAY AND HEAVY ONLY)				
308	TUGBOAT 100 H.P. AND OVER WHEN LICENSE REQUIRED (HIGHWAY AND HEAVY ONLY)				

LABOR CODE AND CLASS	EFFECT DATE	BASIC RATE	FRINGE RATE	TOTAL RATE
<b>GROUP 3</b>	2022-11-14	41.59	23.45	65.04
	2023-05-01	42.81	25.00	67.81
309				ASPHALT BITUMINOUS STABILIZER PLANT
310				CABLEWAY
311				CONCRETE MIXER, STATIONARY PLANT (HIGHWAY AND HEAVY ONLY)
312				DERRICK (GUY OR STIFFLEG)(POWER)(SKIDS OR STATIONARY) (HIGHWAY AND HEAVY ONLY)
313				DRAGLINE, CRAWLER, HYDRAULIC BACKHOE (TRACK OR WHEEL MOUNTED) AND/OR SIMILAR EQUIPMENT WITH SHOVEL-TYPE CONTROLS, UP TO THREE CUBIC YARDS MANUFACTURER.S RATED CAPACITY INCLUDING ALL ATTACHMENTS (HIGHWAY AND HEAVY ONLY)
314				DREDGE OR ENGINEERS, DREDGE (POWER) AND ENGINEER
315				FRONT END LOADER, FIVE CUBIC YARDS AND OVER INCLUDING ATTACHMENTS. (HIGHWAY AND HEAVY ONLY)
316				LOCOMOTIVE CRANE OPERATOR
317				MIXER (PAVING) CONCRETE PAVING, ROAD MOLE, INCLUDING MUCKING OPERATIONS, CONWAY OR SIMILAR TYPE
318				MECHANIC . WELDER ON POWER EQUIPMENT (HIGHWAY AND HEAVY ONLY)
319				TRACTOR . BOOM TYPE (HIGHWAY AND HEAVY ONLY)
320				TANDEM SCRAPER
321				TRUCK CRANE . CRAWLER CRANE (HIGHWAY AND HEAVY ONLY)
322				TUGBOAT 100 H.P AND OVER (HIGHWAY AND HEAVY ONLY)
<b>GROUP 4</b>	2022-11-14	41.29	23.45	64.74
	2023-05-01	42.49	25.00	67.49
323				AIR TRACK ROCK DRILL
324				AUTOMATIC ROAD MACHINE (CMI OR SIMILAR) (HIGHWAY AND HEAVY ONLY)
325				BACKFILLER OPERATOR
326				CONCRETE BATCH PLANT OPERATOR (HIGHWAY AND HEAVY ONLY)
327				BITUMINOUS ROLLERS, RUBBER TIERED OR STEEL DRUMMED (EIGHT TONS AND OVER)
328				BITUMINOUS SPREADER AND FINISHING MACHINES (POWER), INCLUDING PAVERS, MACRO SURFACING AND MICRO SURFACING, OR SIMILAR TYPES (OPERATOR AND SCREED PERSON)
329				BROKK OR R.T.C. REMOTE CONTROL OR SIMILAR TYPE WITH ALL ATTACHMENTS
330				CAT CHALLENGER TRACTORS OR SIMILAR TYPES PULLING ROCK WAGONS, BULLDOZERS AND SCRAPERS
331				CHIP HARVESTER AND TREE CUTTER
332				CONCRETE DISTRIBUTOR AND SPREADER FINISHING MACHINE, LONGITUDINAL FLOAT, JOINT MACHINE, AND SPRAY MACHINE
333				CONCRETE MIXER ON JOBSITE (HIGHWAY AND HEAVY ONLY)
334				CONCRETE MOBIL (HIGHWAY AND HEAVY ONLY)
335				CRUSHING PLANT (GRAVEL AND STONE) OR GRAVEL WASHING, CRUSHING AND SCREENING PLANT
336				CURB MACHINE
337				DIRECTIONAL BORING MACHINE
338				DOPE MACHINE (PIPELINE)
339				DRILL RIGS, HEAVY ROTARY OR CHURN OR CABLE DRILL (HIGHWAY AND HEAVY ONLY)

LABOR CODE AND CLASS	EFFECT DATE	BASIC RATE	FRINGE RATE	TOTAL RATE
340				
341				
342				
343				
344				
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346				
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366				
367				
368				
<b>GROUP 5</b>	2022-11-14	38.25	23.45	61.70
	2023-05-01	39.33	25.00	64.33
369				
370				
371				
372				
373				



LABOR CODE AND CLASS	EFFECT DATE	BASIC RATE	FRINGE RATE	TOTAL RATE
374				
375				
376				
377				
378				
379				
380				
381				
382				
383				
384				
385				
<b>GROUP 6</b>	2022-11-14	37.04	23.45	60.49
	2023-05-01	38.06	25.00	63.06
387				
388				
389				
390				
391				
392				
393				
394				
395				
396				
397				
<b>TRUCK DRIVERS</b>				
<b>GROUP 1</b>	2022-11-14	31.25	17.50	48.75
601				
602				
603				
<b>GROUP 2</b>	2022-11-14	34.70	21.75	56.45
604				
<b>GROUP 3</b>	2022-11-14	34.60	21.75	56.35



LABOR CODE AND CLASS	EFFECT DATE	BASIC RATE	FRINGE RATE	TOTAL RATE
715 PAINTERS (INCLUDING HAND BRUSHED, HAND SPRAYED, AND THE TAPING OF PAVEMENT MARKINGS)	2022-11-14	41.98	26.11	68.09
	2023-05-01	44.28	26.11	70.39
716 PILEDRIIVER (INCLUDING VIBRATORY DRIVER OR EXTRACTOR FOR PILING AND SHEETING OPERATIONS)	2022-11-14	41.14	27.05	68.19
717 PIPEFITTERS . STEAMFITTERS	2022-11-14	50.51	33.43	83.94
	2023-05-01	53.81	33.43	87.24
719 PLUMBERS	2022-11-14	52.48	28.72	81.20
	2023-05-01	54.98	28.72	83.70
721 SHEET METAL WORKERS	2022-11-14	44.46	29.17	73.63
723 TERRAZZO WORKERS	FOR RATE CALL 651-284-5091 OR EMAIL <a href="mailto:DLI.PREVVAGE@STATE.MN.US">DLI.PREVVAGE@STATE.MN.US</a>			
724 TILE SETTERS	2022-11-14	34.76	23.29	58.05
725 TILE FINISHERS	FOR RATE CALL 651-284-5091 OR EMAIL <a href="mailto:DLI.PREVVAGE@STATE.MN.US">DLI.PREVVAGE@STATE.MN.US</a>			
727 WIRING SYSTEM TECHNICIAN	2022-11-14	43.52	20.49	64.01
	2023-07-01	44.61	21.69	66.30
728 WIRING SYSTEMS INSTALLER	2022-11-14	29.02	15.34	44.36
729 ASBESTOS ABATEMENT WORKER	2022-11-14	36.23	22.26	58.49
730 SIGN ERECTOR	FOR RATE CALL 651-284-5091 OR EMAIL <a href="mailto:DLI.PREVVAGE@STATE.MN.US">DLI.PREVVAGE@STATE.MN.US</a>			

# **Sediment (Dredge) Sampling**

Wilkinson Lake Wetlands  
North Oaks, Minnesota

*Prepared for*

**Houston Engineering, Inc.**



December 9, 2022

Project B2210417

Mr. Adam Nies, PE  
Houston Engineering, Inc.  
7550 Meridian Circle North, Suite 120  
Maple Grove, MN 55369

Re: Sediment (Dredge) Sampling  
Wilkinson Lake Wetlands  
North Oaks, Minnesota

Dear Mr. Nies:

As authorized, Braun Intertec completed sediment sampling activities at the above-mentioned wetland areas in North Oaks, Minnesota. The objective of the work was to characterize the in-place sediment (future dredge material) for potential disposal purposes.

## **Sediment Sampling Procedures**

Given the wetland designation and irrigation/drainage channels in this area, the wetland areas are considered waters of the State that are not part of the Municipal Separate Storm Sewer System (MS4) for the City of North Oaks. As such, our scope was based on the Minnesota Pollution Control Agency's (MPCA) current best management practice for "Managing Dredge Materials," dated April 2014 (MPCA, 2014).

Based on information provided by Houston Engineering in email correspondence dated September 15, 2022, approximately 15,000 cubic yards (cy) of sediment are planned for removal. The material would be re-used to construct an earthen berm adjacent to the wetland. Sediment depths for excavation are estimated at 4 feet. Per MPCA guidelines, three core sample locations are required for the dredge material. At each location, samples were collected from the planned dredge material in 2-foot intervals (two samples per location), with an additional sample required to characterize the parent material (or residual sediment material) located below the dredged materials.

We collected nine analytical samples from the proposed dredge area. The samples were collected by driving a bucket auger into the underlying sediment using hand-driven sampling equipment.

During sampling activities, soil sample textures were evaluated by visual methods as the samples were collected and noted in the field notes. Drilling tools were cleaned prior to and between sampling runs by washing the equipment with a brush and potable water containing trisodium phosphate and rinsing the equipment with deionized water.

The samples were transferred to clean laboratory-supplied containers, preserved in accordance with Braun Intertec Standard Operating Procedures (SOPs) and transported to Pace Analytical Services laboratory for analysis. Chain of Custody was initiated at the time of sampling and maintained throughout the process.

Sample locations are depicted on Figure 1.

## **Sample Analytical Parameters**

Each future dredge sediment sample, as well as the underlying native sample were analyzed for the baseline sediment parameters pursuant to MPCA guidelines. The parameters were as follows:

- Metals – arsenic, cadmium, chromium III, chromium VI, copper, lead, mercury, nickel, selenium, and zinc by SW-846 EPA 6010/7471B.
- Total phosphorus using method EPA 365.1.
- Nitrate & nitrite using EPA 353.2.
- Ammonia nitrogen using EPA 350.1.
- Total Kjeldahl nitrogen using EPA 351.2.
- Polychlorinated biphenyls (PCBs) using method SW-846 8082.
- Total organic carbon using SW-846-9060.
- Extended List, Polycyclic Aromatic Hydrocarbons (PAHs) using EPA 8270E SIM.

## Results

### Sediment Profile

Sediments observed during the completion of the borings consisted primarily of a dark brown/black sandy clay throughout each of the borings. No distinct odors or staining were noted in the sediments collected from the borings.

### Sediment Chemistry

#### *Metals*

- Cadmium, hexavalent chromium, and mercury were not detected at or above the laboratory method reporting limit (MRL) in the samples analyzed.
- Trivalent chromium, copper, lead, nickel and zinc were detected at concentrations above the laboratory MRL in one or more of the samples analyzed. However, in each case, the concentration was below the MPCA Level 1 management category, which is equivalent to the Soil Reference Value (SRV) established for each compound.
- Arsenic was detected at concentrations greater than the MRL in each of the samples analyzed. In five cases within the WILK-1 and WILK-2 samples, the concentrations were reported greater than the MPCA SRV (i.e., greater than 9 mg/kg). According to MPCA guidance document c-r1-05, *Soil Reference Value Technical Support Document*, dated April 2021, the value of 9 mg/kg for arsenic is considered a Background Threshold Value (BTV), which is not a calculated health based SRV since the MPCA calculated SRV for arsenic was determined to be less than background levels. Concentrations of arsenic ranged from 5.3 to 15.3 mg/kg. Higher arsenic concentrations appeared to correlate with higher total organic carbon concentrations within the samples, rather than depth, sediment lithology, or specific source areas. As the variations in arsenic concentrations are most readily correlated with total organic carbon (reported at a maximum of 318,000 mg/kg [equivalent to 31.8%], significantly higher than standard soils), it appears unlikely that the observed concentrations are the result of a release to the environment. Given the proposed use of the dredge material for construction of a vegetated berm on vacant land, the arsenic concentrations do not appear to pose a significant risk if relocated on-site and arsenic is not considered a contaminant of concern. Thus, it is our opinion that the detected arsenic concentrations alone do not warrant elevation of the material beyond the MPCA Level 1 management category.

### **PAHs**

- Non-carcinogenic PAHs were detected in seven of nine samples analyzed. In each case, the concentrations were well below the Level 1 Management level.
- Carcinogenic PAHs were not detected in each sample analyzed. BaP equivalent values were calculated pursuant to MPCA Dredged Material guidelines. In instances where carcinogenic compounds were not detected at or above the laboratory MRL, a value of half the applicable MRL was used in the BaP calculation, per MPCA guidance. The BaP equivalents for each analyzed sample were below the Dredge Management Level 1 criteria of 2 mg/kg, with the exception of WILK-1 (4'-6') and WILK-2 (4'-6'), which were calculated at slightly greater than 2 mg/kg. As these non-detect "exceedances" are reported within sediment proposed to remain in-place following dredge activities and are based on elevated MRLs, they are not appropriate for guiding management of the planned dredged materials.

### **Other**

Ammonia, total Kjeldahl nitrogen, nitrate + nitrite, total phosphorous, and total organic carbon were detected at various concentrations in each sample. Management criteria have not been established for these compounds. The MPCA requirement to include these compounds is geared toward end-use of the dredged sediments and the results should be provided to disposal facilities or receiving parties for their use. Additional consultation with the MPCA regarding land application criteria and approvals may be required.

Please refer to Table 1 for a detailed summary of the analytical results.

## **Recommendations**

Based on the analytical results from our sampling and testing, the materials planned for dredging meet Dredge Management Level 1 criteria. However, it should be noted that the planned re-use of the material as an earthen berm equates to long term storage and thereby, disposal, according to dredge management guidelines. As such, dredge management guidelines state that MPCA approvals are required. Additionally, the estimated amount of dredged material is greater than 3,000 cy, which may require the issuance of an individual permit from the MPCA.



## General

Our scope of our work was determined by our understanding of the rules and guidance of the MPCA as they apply to needs of Houston Engineering. Therefore, the scope of work is not represented to conform explicitly to current MPCA written guidance.

We appreciate the opportunity to provide our professional services on this project, and look forward to working with Houston Engineering in the future. Please call Edward Pencak at 612.500.3752 or Mark Ciampone at 651.487.7015 if you have questions about the report or require additional information.

Sincerely,

BRAUN INTERTEC CORPORATION



Edward S. Pencak  
Project Scientist



Mark A. Ciampone, PG  
Business Unit Leader, Senior Scientist

### Attachments:

Table 1: Summary of Sediment Testing Results

Figure 1: Sample Location Sketch

Laboratory Analytical Report

## Summary Table of Sediment Testing Results

Table 1  
Summary of Pond Sediment Testing Results  
Wilkinson Pond  
Project B2210417

Project Name: Wilkinson Pond  
Sample Dates: 10/31/2022

Parameters	Dredge Mgmt.		Sample Locations and Depths																	
	Level 1	Mgmt. Level 2	WILK-1 (0'-2')*	WILK-1 (2'-4')*	WILK-1 (4'-6')*	WILK-2 (0'-2')*	WILK-2 (2'-4')	WILK-2 (4'-6')*	WILK-3 (0'-2')	WILK-3 (2'-4')	WILK-3 (4'-6')									
	mg/kg	mg/kg	10/31/2022 12:05	10/31/2022 12:10	10/31/2022 12:15	10/31/2022 10:45	10/31/2022 10:50	10/31/2022 10:55	10/31/2022 11:20	10/31/2022 11:25	10/31/2022 11:30									
<b>Other (mg/kg)</b>																				
Ammonia	NE	NE	62.4	65.9	91.6	37.4	55.4	85.7	29.3	12.9	12.3									
Total Kjeldahl Nitrogen	NE	NE	5,450	13,200	14,800	14,900	14,100	10,500	6,620	3,120	2,290									
Nitrate+Nitrite	NE	NE	23.7	4.7	1.2	13.6	13.1	1.8	<0.50	<0.34	<0.31									
Total Phosphorous	NE	NE	557	508	234	2,410	347	301	501	383	425									
Total Organic Carbon	NE	NE	273,000	182,000	269,000	318,000	133,000	277,000	250,000	97,600	53,600									
Total PCBs	0.82	10	<0.153	<0.183	<0.249	<0.168	<0.224	<0.322	<0.121	<0.0822	<0.0786									
<b>Metals (mg/kg)</b>																				
Optional Methods SW-846; 6010 or 6020																				
Arsenic	9	9	9.6	9.2	11.4	15.3	8.0	10.8	7.8	5.9	5.3									
Cadmium	1.6	23	0.47	<0.54	<0.73	0.63	<0.67	<0.95	<0.37	<0.26	0.34									
Chromium, Trivalent	23,000	100,000	13	<4.7	<4.7	7.9	30	4.3	8.7	7.6	11									
Chromium, Hexavalent	2.3	62	<30	<38	<49	<36	<42	<63	<27	<27	<1.6									
Copper	2200	33,000	12.5	11.6	8.6	12.5	7.5	6.9	8.6	11.5	13.4									
Lead	200	460	7.9	4.9	3.9	12.9	4.2	3.6	6.1	4.2	6.2									
Mercury	2.7	3.1	<0.056	<0.067	<0.086	<0.070	<0.090	<0.11	<0.048	<0.032	<0.030									
Nickel	170	2,600	11.5	9.2	11.0	15.3	9.1	8.5	11.4	12.4	17.3									
Selenium	78	1,200	3.4	3.6	<4.9	4.2	<4.5	<6.3	2.5	<1.7	<1.6									
Zinc	4,700	70,000	25.9	12.7	14.4	32.4	11.8	19.2	16.0	23.0	34.1									
<b>Noncarcinogenic Polycyclic Aromatic Hydrocarbons (PAHs) (mg/kg)</b>																				
Acenaphthene	460	6,800	<0.031	<0.036	<0.0498	<0.0350	<0.045	<0.064	<0.0250	<0.0171	<0.016									
Acenaphthylene	na	na	<0.0309	<0.0367	<0.050	<0.0350	<0.0449	<0.0643	<0.0250	<0.016	<0.0158									
Anthracene	2,800	42,000	<0.031	0.056	<0.0498	0.064	0.056	<0.0643	<0.0250	<0.0171	<0.016									
Benzo[g,h,i]perylene	na	na	<0.0309	<0.036	<0.0498	<0.035	<0.0449	<0.064	<0.025	<0.0171	<0.0158									
Fluoranthene	210	2,700	<0.0309	<0.0367	<0.0498	<0.0350	<0.0449	<0.064	0.064	<0.0171	<0.0158									
Fluorene	390	5,800	0.027	<0.0367	<0.050	0.057	0.1	<0.064	<0.0250	<0.0171	<0.016									
2-Methylnaphthalene	39	580	<0.0309	<0.0367	<0.0498	<0.0350	<0.0449	<0.0643	<0.0250	<0.0171	<0.0158									
Naphthalene	81	280	<0.0309	<0.0367	<0.0498	<0.0350	0.057	<0.0643	<0.0250	<0.0171	<0.016									
Phenanthrene	na	na	<0.0309	0.37	0.11	<0.0350	0.35	0.076	0.072	<0.016	<0.016									
Pyrene	220	3,200	<0.0309	<0.0367	<0.0498	<0.0350	0.13	<0.0643	<0.0250	<0.0171	<0.0158									
<b>Carcinogenic PAHs &amp; BaP Equiv. (mg/kg)</b>																				
	Potency Equiv. Factor (PEF)		Site Conc.	BaP Equiv.	Site Conc.	BaP Equiv.	Site Conc.	BaP Equiv.	Site Conc.	BaP Equiv.	Site Conc.	BaP Equiv.	Site Conc.	BaP Equiv.	Site Conc.	BaP Equiv.	Site Conc.	BaP Equiv.	Site Conc.	BaP Equiv.
Benzo[a]anthracene	0.10		0.015	0.002	0.018	0.002	0.025	0.003	0.018	0.002	0.022	0.002	0.032	0.003	0.013	0.001	0.009	0.001	0.008	0.001
Benzo[b, j & k]fluoranthenes	0.10		0.046	0.005	0.055	0.006	0.075	0.008	0.053	0.005	0.068	0.007	0.097	0.010	0.037	0.004	0.026	0.003	0.024	0.002
Benzo[a]pyrene	1.00		0.015	0.015	0.018	0.018	0.025	0.025	0.018	0.018	0.022	0.022	0.032	0.032	0.013	0.013	0.009	0.009	0.008	0.008
Chrysene	0.01		0.015	0.000	0.018	0.000	0.025	0.000	0.018	0.000	0.022	0.000	0.032	0.000	0.013	0.000	0.009	0.000	0.008	0.000
Dibenz[a,h]acridine	0.10		0.015	0.002	0.018	0.002	0.025	0.003	0.018	0.002	0.022	0.002	0.032	0.003	0.013	0.001	0.009	0.001	0.008	0.001
Dibenz[a,h]anthracene	0.56		0.015	0.008	0.018	0.010	0.025	0.014	0.018	0.010	0.022	0.012	0.032	0.018	0.013	0.007	0.009	0.005	0.008	0.004
7H-Dibenzo[c,g]carbazole	1.00		0.015	0.015	0.018	0.018	0.025	0.025	0.018	0.018	0.022	0.022	0.032	0.032	0.013	0.013	0.009	0.009	0.008	0.008
Dibenzo[a,e]pyrene	1.00		0.015	0.015	0.018	0.018	0.025	0.025	0.018	0.018	0.022	0.022	0.032	0.032	0.013	0.013	0.009	0.009	0.008	0.008
Dibenzo[a,h]pyrene	10.00		0.015	0.150	0.018	0.180	0.025	0.250	0.018	0.180	0.022	0.220	0.032	0.320	0.013	0.125	0.009	0.085	0.008	0.080
Dibenzo[a,i]pyrene	10.00		0.015	0.150	0.018	0.180	0.025	0.250	0.018	0.180	0.022	0.220	0.032	0.320	0.013	0.125	0.009	0.085	0.008	0.080
Dibenzo[a,j]pyrene	10.00		0.015	0.150	0.018	0.180	0.025	0.250	0.018	0.180	0.022	0.220	0.032	0.320	0.013	0.125	0.009	0.085	0.008	0.080
7,12 Dimethylbenz-anthracene	34.00		0.015	0.510	0.018	0.612	0.025	0.850	0.018	0.612	0.022	0.748	0.032	1.088	0.013	0.425	0.009	0.289	0.008	0.272
Indeno[1,2,3-c,d]pyrene	0.10		0.015	0.002	0.018	0.002	0.025	0.003	0.018	0.002	0.022	0.002	0.032	0.003	0.013	0.001	0.009	0.001	0.008	0.001
3-Methylcholanthrene	3.00		0.015	0.045	0.018	0.054	0.025	0.075	0.018	0.054	0.022	0.066	0.032	0.096	0.013	0.038	0.009	0.026	0.008	0.024
5-Methylchrysene	1.00		0.015	0.015	0.018	0.018	0.025	0.025	0.018	0.018	0.022	0.022	0.032	0.032	0.013	0.013	0.009	0.009	0.008	0.008
5-Nitroacenaphthene	0.02		0.015	0.00	0.018	0.00	0.025	0.001	0.018	0.000	0.022	0.00	0.032	0.00	0.013	0.000	0.009	0.000	0.008	0.00
1-Nitropyrene	0.10		0.015	0.00	0.018	0.00	0.025	0.003	0.018	0.002	0.022	0.00	0.032	0.00	0.013	0.001	0.009	0.001	0.008	0.00
4-Nitropyrene	0.10		0.015	0.00	0.018	0.00	0.025	0.003	0.018	0.002	0.022	0.00	0.032	0.00	0.013	0.001	0.009	0.001	0.008	0.00
6-Nitrochrysene	10.00		0.015	0.15	0.018	0.18	0.025	0.250	0.018	0.180	0.022	0.22	0.032	0.32	0.013	0.125	0.009	0.085	0.008	0.08
2-Nitrofluorene	0.01		0.015	0.00	0.018	0.00	0.025	0.000	0.018	0.000	0.022	0.00	0.032	0.00	0.013	0.000	0.009	0.000	0.008	0.00
(BaP) Equivalent***	2 mg/kg	23 mg/kg		1.24		1.48		2.060		1.483		1.81		2.64		1.030		0.700		0.66

Dredge Management Level 1= results less than SRV 1 (suitable for residential landuse)  
Dredge Management Level 2= results less than SRV 2 (suitable for industrial landuse)  
Dredge Management Level 3- exceeds SRV2 (must be treated or disposed in a landfill with MPCA approved industrial waste management plan)

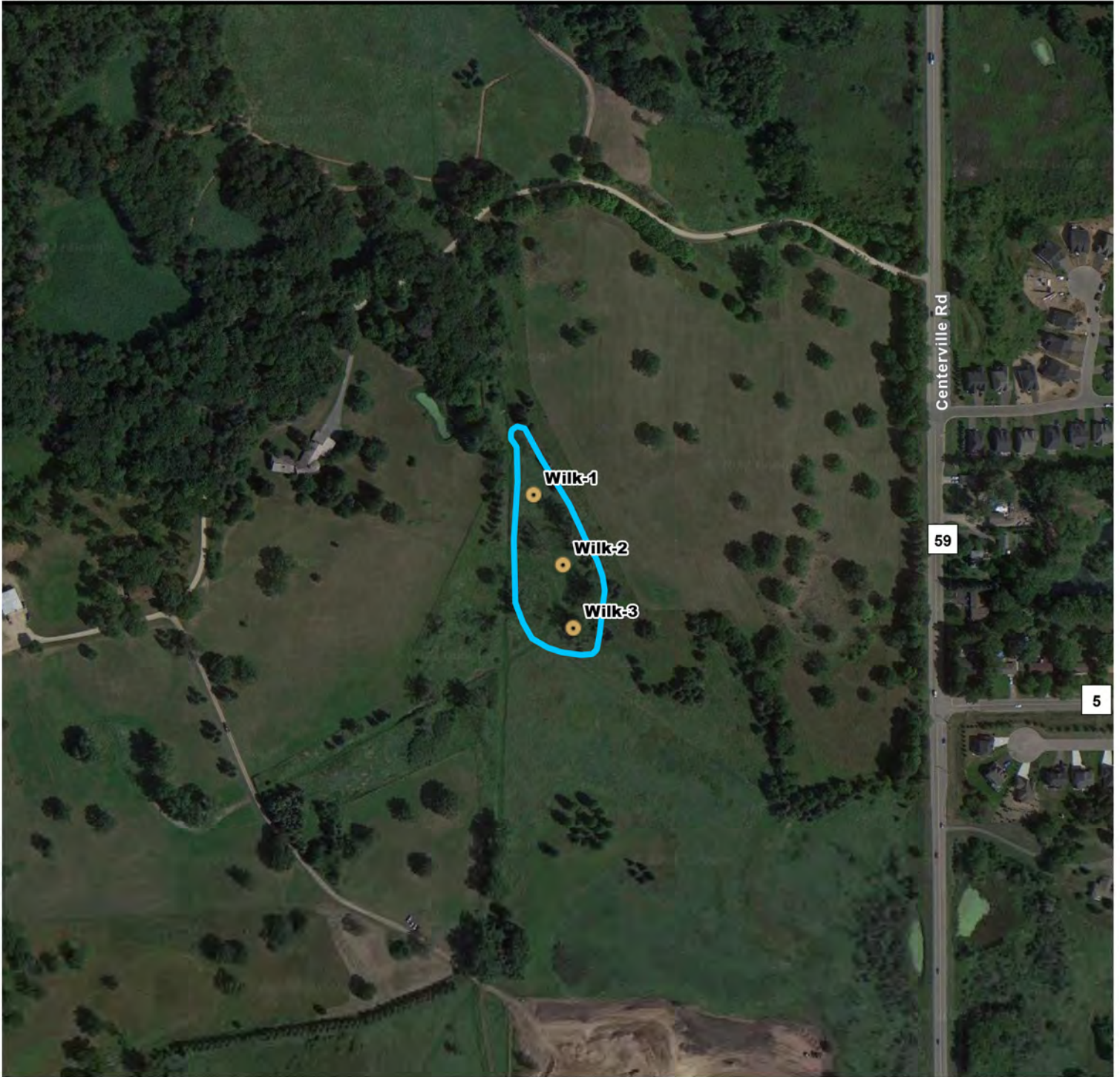
\*\*\*BaP Equivalent - this sheet is set up to multiply the sample concentration for each parameter by the Potency Equivalency Factor (PEF) and sum them to determine the BaP Equivalent for each sample allowing comparison to the Mgmt. Level (see formula in cells E41:V61)

Calculating the BaP equivalents when conc. below the RL; use 1/2 the reporting limit multiplied by the PEF ( change default formula for "J" flagged results).



§ Benzo-b, Benzo -j and Benzo-k fluoranthene are reported together

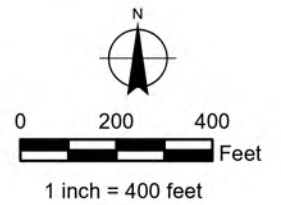
\* = While over the BTV, the arsenic is considered to be consistent with naturally occurring levels in high organic soil in this scenario. Please refer to report for full discussion of the arsenic levels over BTV values.

## Sample Location Sketch



Source: Google Earth Imagery

-  Sediment Sample
-  Proposed Pond Area



11001 Hampshire Avenue S  
 Minneapolis, MN 55438  
 952.995.2000  
 braunintertec.com

Project No:  
 B2210417

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Drawing No:  
 B2210417\_Sample Location Sketch

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Drawn By: ZS  
 Date Drawn: 11/23/2022  
 Checked By: EP  
 Last Modified: 11/23/2022

Wilkinson Pond

---

Centerville Road

---

North Oaks, Minnesota

**Sample  
 Location Sketch**

**Figure #**

# Laboratory Analytical Report

November 22, 2022

Mark Ciampone  
Braun Intertec  
11001 Hampshire Ave S.  
Bloomington, MN 55438

RE: Project: B2210417-Revised Report  
Pace Project No.: 10631764

Dear Mark Ciampone:

Enclosed are the analytical results for sample(s) received by the laboratory on October 31, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses were subcontracted outside of the Pace Network. The test report from the external subcontractor is attached to this report in its entirety.

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

- Pace Analytical Services - Duluth, MN
- Pace Analytical Services - Minneapolis

This report was revised on November 22, 2022, to report the extended cPAH list on all Pace Samples

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

Sincerely,



Brenna Bloome  
brenna.bloome@pacelabs.com  
(612)607-1700  
Project Manager

Enclosures



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: B2210417-Revised Report  
Pace Project No.: 10631764

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### **Pace Analytical Services, LLC - Minneapolis MN**

1700 Elm Street SE, Minneapolis, MN 55414  
A2LA Certification #: 2926.01\*  
1800 Elm Street SE, Minneapolis, MN 55414--Satellite Air Lab  
Alabama Certification #: 40770  
Alaska Contaminated Sites Certification #: 17-009\*  
Alaska DW Certification #: MN00064  
Arizona Certification #: AZ0014\*  
Arkansas DW Certification #: MN00064  
Arkansas WW Certification #: 88-0680  
California Certification #: 2929  
Colorado Certification #: MN00064  
Connecticut Certification #: PH-0256  
EPA Region 8 Tribal Water Systems+Wyoming DW Certification #: via MN 027-053-137  
Florida Certification #: E87605\*  
Georgia Certification #: 959  
Hawaii Certification #: MN00064  
Idaho Certification #: MN00064  
Illinois Certification #: 200011  
Indiana Certification #: C-MN-01  
Iowa Certification #: 368  
Kansas Certification #: E-10167  
Kentucky DW Certification #: 90062  
Kentucky WW Certification #: 90062  
Louisiana DEQ Certification #: AI-03086\*  
Louisiana DW Certification #: MN00064  
Maine Certification #: MN00064\*  
Maryland Certification #: 322  
Michigan Certification #: 9909  
Minnesota Certification #: 027-053-137\*  
Minnesota Dept of Ag Approval: via MN 027-053-137  
Minnesota Petrofund Registration #: 1240\*  
Mississippi Certification #: MN00064

Missouri Certification #: 10100  
Montana Certification #: CERT0092  
Nebraska Certification #: NE-OS-18-06  
Nevada Certification #: MN00064  
New Hampshire Certification #: 2081\*  
New Jersey Certification #: MN002  
New York Certification #: 11647\*  
North Carolina DW Certification #: 27700  
North Carolina WW Certification #: 530  
North Dakota Certification (A2LA) #: R-036  
North Dakota Certification (MN) #: R-036  
Ohio DW Certification #: 41244  
Ohio VAP Certification (1700) #: CL101  
Ohio VAP Certification (1800) #: CL110\*  
Oklahoma Certification #: 9507\*  
Oregon Primary Certification #: MN300001  
Oregon Secondary Certification #: MN200001\*  
Pennsylvania Certification #: 68-00563\*  
Puerto Rico Certification #: MN00064  
South Carolina Certification #:74003001  
Tennessee Certification #: TN02818  
Texas Certification #: T104704192\*  
Utah Certification #: MN00064\*  
Vermont Certification #: VT-027053137  
Virginia Certification #: 460163\*  
Washington Certification #: C486\*  
West Virginia DEP Certification #: 382  
West Virginia DW Certification #: 9952 C  
Wisconsin Certification #: 999407970  
Wyoming UST Certification #: via A2LA 2926.01  
USDA Permit #: P330-19-00208  
\*Please Note: Applicable air certifications are denoted with an asterisk (\*).

### **Pace Analytical Services, LLC - Duluth MN**

4730 Oneota Street, Duluth, MN 55807  
Minnesota Certification #: 027-137-152  
Minnesota Dept of Ag Approval: via Minnesota 027-137-152  
Minnesota Petrofund Registration #: 1240  
Montana Certification #: CERT0102

Nevada Certification #: MN00037  
North Dakota Certification #: R-105  
Wisconsin Certification #: 999446800  
Wisconsin Dept of Ag Certification: 480341

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: B2210417-Revised Report

Pace Project No.: 10631764

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10631764001	WILK-1 (0'-2')	Solid	10/31/22 12:05	10/31/22 16:15
10631764002	WILK-1 (2'-4')	Solid	10/31/22 12:10	10/31/22 16:15
10631764003	WILK-1 (4'-6')	Solid	10/31/22 12:15	10/31/22 16:15
10631764004	WILK-2 (0'-2')	Solid	10/31/22 10:45	10/31/22 16:15
10631764005	WILK-2 (2'-4')	Solid	10/31/22 10:50	10/31/22 16:15
10631764006	WILK-2 (4'-6')	Solid	10/31/22 10:55	10/31/22 16:15
10631764007	WILK-3 (0'-2')	Solid	10/31/22 11:20	10/31/22 16:15
10631764008	WILK-3 (2'-4')	Solid	10/31/22 11:25	10/31/22 16:15
10631764009	WILK-3 (4'-6')	Solid	10/31/22 11:30	10/31/22 16:15

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: B2210417-Revised Report

Pace Project No.: 10631764

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10631764001	WILK-1 (0'-2')	EPA 350.1	JH3	1	PASI-DU
		EPA 351.2	JH3	1	PASI-DU
		EPA 353.2	DS3	1	PASI-DU
		EPA 365.1	DS3	1	PASI-DU
		EPA 9060A	DW3	4	PASI-DU
		EPA 8082A	RAG	9	PASI-M
		EPA 6010D	IP	7	PASI-M
		EPA 7471B	LMW	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270E by SIM	SP2	19	PASI-M
		EPA 8270E by SIM	JLR	40	PASI-M
10631764002	WILK-1 (2'-4')	EPA 350.1	JH3	1	PASI-DU
		EPA 351.2	JH3	1	PASI-DU
		EPA 353.2	DS3	1	PASI-DU
		EPA 365.1	DS3	1	PASI-DU
		EPA 9060A	DW3	4	PASI-DU
		EPA 8082A	RAG	9	PASI-M
		EPA 6010D	IP	7	PASI-M
		EPA 7471B	LMW	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270E by SIM	SP2	19	PASI-M
		EPA 8270E by SIM	JLR	40	PASI-M
10631764003	WILK-1 (4'-6')	EPA 350.1	JH3	1	PASI-DU
		EPA 351.2	JH3	1	PASI-DU
		EPA 353.2	DS3	1	PASI-DU
		EPA 365.1	DS3	1	PASI-DU
		EPA 9060A	DW3	4	PASI-DU
		EPA 8082A	RAG	9	PASI-M
		EPA 6010D	IP	7	PASI-M
		EPA 7471B	LMW	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270E by SIM	SP2	19	PASI-M
		EPA 8270E by SIM	JLR	40	PASI-M
10631764004	WILK-2 (0'-2')	EPA 350.1	JH3	1	PASI-DU
		EPA 351.2	JH3	1	PASI-DU
		EPA 353.2	DS3	1	PASI-DU
		EPA 365.1	DS3	1	PASI-DU

### REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: B2210417-Revised Report

Pace Project No.: 10631764

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 9060A	DW3	4	PASI-DU
		EPA 8082A	RAG	9	PASI-M
		EPA 6010D	IP	7	PASI-M
		EPA 7471B	LMW	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270E by SIM	SP2	19	PASI-M
		EPA 8270E by SIM	JLR	40	PASI-M
10631764005	WILK-2 (2'-4')	EPA 350.1	JH3	1	PASI-DU
		EPA 351.2	JH3	1	PASI-DU
		EPA 353.2	DS3	1	PASI-DU
		EPA 365.1	DS3	1	PASI-DU
		EPA 9060A	DW3	4	PASI-DU
		EPA 8082A	RAG	9	PASI-M
		EPA 6010D	IP	7	PASI-M
		EPA 7471B	LMW	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270E by SIM	SP2	19	PASI-M
		EPA 8270E by SIM	JLR	40	PASI-M
10631764006	WILK-2 (4'-6')	EPA 350.1	JH3	1	PASI-DU
		EPA 351.2	JH3	1	PASI-DU
		EPA 353.2	DS3	1	PASI-DU
		EPA 365.1	DS3	1	PASI-DU
		EPA 9060A	DW3	4	PASI-DU
		EPA 8082A	RAG	9	PASI-M
		EPA 6010D	IP	7	PASI-M
		EPA 7471B	LMW	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270E by SIM	SP2	19	PASI-M
		EPA 8270E by SIM	JLR	40	PASI-M
10631764007	WILK-3 (0'-2')	EPA 350.1	JH3	1	PASI-DU
		EPA 351.2	JH3	1	PASI-DU
		EPA 353.2	DS3	1	PASI-DU
		EPA 365.1	DS3	1	PASI-DU
		EPA 9060A	DW3	4	PASI-DU
		EPA 8082A	RAG	9	PASI-M
		EPA 6010D	IP	7	PASI-M
		EPA 7471B	LMW	1	PASI-M

### REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: B2210417-Revised Report

Pace Project No.: 10631764

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10631764008	WILK-3 (2'-4')	ASTM D2974	JDL	1	PASI-M
		EPA 8270E by SIM	SP2	19	PASI-M
		EPA 8270E by SIM	JLR	40	PASI-M
		EPA 350.1	JH3	1	PASI-DU
		EPA 351.2	JH3	1	PASI-DU
		EPA 353.2	DS3	1	PASI-DU
		EPA 365.1	DS3	1	PASI-DU
		EPA 9060A	DW3	4	PASI-DU
		EPA 8082A	RAG	9	PASI-M
		EPA 6010D	IP	7	PASI-M
		EPA 7471B	LMW	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270E by SIM	SP2	19	PASI-M
10631764009	WILK-3 (4'-6')	EPA 8270E by SIM	KJ3	40	PASI-M
		EPA 350.1	JH3	1	PASI-DU
		EPA 351.2	JH3	1	PASI-DU
		EPA 353.2	DS3	1	PASI-DU
		EPA 365.1	DS3	1	PASI-DU
		EPA 9060A	DW3	4	PASI-DU
		EPA 8082A	RAG	9	PASI-M
		EPA 6010D	IP	7	PASI-M
		EPA 7471B	LMW	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270E by SIM	SP2	19	PASI-M
		EPA 8270E by SIM	KJ3	40	PASI-M

PASI-DU = Pace Analytical Services - Duluth, MN

PASI-M = Pace Analytical Services - Minneapolis

### REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: B2210417-Revised Report

Pace Project No.: 10631764

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**Method:** EPA 350.1

**Description:** 350.1 Ammonia Solids DU

**Client:** Braun Intertec Corporation

**Date:** November 22, 2022

**General Information:**

9 samples were analyzed for EPA 350.1 by Pace Analytical Services Duluth, MN. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

**Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

**Sample Preparation:**

The samples were prepared in accordance with EPA 350.1 with any exceptions noted below.

**Initial Calibrations (including MS Tune as applicable):**

All criteria were within method requirements with any exceptions noted below.

**Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

**Internal Standards:**

All internal standards were within QC limits with any exceptions noted below.

**Surrogates:**

All surrogates were within QC limits with any exceptions noted below.

**Method Blank:**

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 852321

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10631764001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 4506668)
  - Nitrogen, Ammonia
- MSD (Lab ID: 4506669)
  - Nitrogen, Ammonia

**Additional Comments:**

## REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: B2210417-Revised Report

Pace Project No.: 10631764

---

**Method:** EPA 351.2

**Description:** 351.2 TKN Solids DU

**Client:** Braun Intertec Corporation

**Date:** November 22, 2022

**General Information:**

9 samples were analyzed for EPA 351.2 by Pace Analytical Services Duluth, MN. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

**Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

**Sample Preparation:**

The samples were prepared in accordance with EPA 351.2 with any exceptions noted below.

**Initial Calibrations (including MS Tune as applicable):**

All criteria were within method requirements with any exceptions noted below.

**Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

**Internal Standards:**

All internal standards were within QC limits with any exceptions noted below.

**Surrogates:**

All surrogates were within QC limits with any exceptions noted below.

**Method Blank:**

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 850897

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10631300001,10631308006

P6: Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.

- MS (Lab ID: 4499919)
  - Nitrogen, Kjeldahl, Total
- MSD (Lab ID: 4499920)
  - Nitrogen, Kjeldahl, Total

**Additional Comments:**

## REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: B2210417-Revised Report

Pace Project No.: 10631764

---

**Method:** EPA 351.2

**Description:** 351.2 TKN Solids DU

**Client:** Braun Intertec Corporation

**Date:** November 22, 2022

Analyte Comments:

QC Batch: 850897

1M: The samples were kept frozen; thawed and extracted within the 6 month holding time as indicated by Minnesota Department of Agriculture Guidance Document 11 for extractions and analysis.

- MS (Lab ID: 4499917)
  - Nitrogen, Kjeldahl, Total
- MSD (Lab ID: 4499918)
  - Nitrogen, Kjeldahl, Total

## REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: B2210417-Revised Report

Pace Project No.: 10631764

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**Method:** EPA 353.2

**Description:** 353.2 Nitrogen, N+N Solids DU

**Client:** Braun Intertec Corporation

**Date:** November 22, 2022

**General Information:**

9 samples were analyzed for EPA 353.2 by Pace Analytical Services Duluth, MN. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

**Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

**Sample Preparation:**

The samples were prepared in accordance with EPA 353.2 with any exceptions noted below.

**Initial Calibrations (including MS Tune as applicable):**

All criteria were within method requirements with any exceptions noted below.

**Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

**Internal Standards:**

All internal standards were within QC limits with any exceptions noted below.

**Surrogates:**

All surrogates were within QC limits with any exceptions noted below.

**Method Blank:**

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 851210

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10631027003,10631764001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 4501289)
  - Nitrogen, NO2 plus NO3
- MSD (Lab ID: 4501290)
  - Nitrogen, NO2 plus NO3

R1: RPD value was outside control limits.

- MSD (Lab ID: 4501290)
  - Nitrogen, NO2 plus NO3

## REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: B2210417-Revised Report

Pace Project No.: 10631764

---

**Method:** EPA 353.2

**Description:** 353.2 Nitrogen, N+N Solids DU

**Client:** Braun Intertec Corporation

**Date:** November 22, 2022

### Additional Comments:

Analyte Comments:

QC Batch: 851210

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

- BLANK (Lab ID: 4501285)
  - Nitrogen, NO2 plus NO3
- LCS (Lab ID: 4501286)
  - Nitrogen, NO2 plus NO3
- MS (Lab ID: 4501287)
  - Nitrogen, NO2 plus NO3
- MS (Lab ID: 4501289)
  - Nitrogen, NO2 plus NO3
- MSD (Lab ID: 4501288)
  - Nitrogen, NO2 plus NO3
- MSD (Lab ID: 4501290)
  - Nitrogen, NO2 plus NO3
- WILK-1 (0'-2') (Lab ID: 10631764001)
  - Nitrogen, NO2 plus NO3
- WILK-1 (2'-4') (Lab ID: 10631764002)
  - Nitrogen, NO2 plus NO3
- WILK-1 (4'-6') (Lab ID: 10631764003)
  - Nitrogen, NO2 plus NO3
- WILK-2 (0'-2') (Lab ID: 10631764004)
  - Nitrogen, NO2 plus NO3
- WILK-2 (2'-4') (Lab ID: 10631764005)
  - Nitrogen, NO2 plus NO3
- WILK-2 (4'-6') (Lab ID: 10631764006)
  - Nitrogen, NO2 plus NO3
- WILK-3 (0'-2') (Lab ID: 10631764007)
  - Nitrogen, NO2 plus NO3
- WILK-3 (2'-4') (Lab ID: 10631764008)
  - Nitrogen, NO2 plus NO3
- WILK-3 (4'-6') (Lab ID: 10631764009)
  - Nitrogen, NO2 plus NO3

## REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: B2210417-Revised Report

Pace Project No.: 10631764

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**Method:** EPA 365.1

**Description:** 365.1 Phos, Total Solids DU

**Client:** Braun Intertec Corporation

**Date:** November 22, 2022

**General Information:**

9 samples were analyzed for EPA 365.1 by Pace Analytical Services Duluth, MN. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

**Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

**Sample Preparation:**

The samples were prepared in accordance with SM 4500-P B with any exceptions noted below.

**Initial Calibrations (including MS Tune as applicable):**

All criteria were within method requirements with any exceptions noted below.

**Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

**Internal Standards:**

All internal standards were within QC limits with any exceptions noted below.

**Surrogates:**

All surrogates were within QC limits with any exceptions noted below.

**Method Blank:**

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 850971

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10631027003,10631212001

P6: Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.

- MS (Lab ID: 4500186)
  - Phosphorus
- MSD (Lab ID: 4500187)
  - Phosphorus

**Additional Comments:**

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## PROJECT NARRATIVE

Project: B2210417-Revised Report

Pace Project No.: 10631764

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**Method:** EPA 9060A

**Description:** 9060 TOC, 2 Rep Solids DU

**Client:** Braun Intertec Corporation

**Date:** November 22, 2022

**General Information:**

9 samples were analyzed for EPA 9060A by Pace Analytical Services Duluth, MN. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

**Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

**Initial Calibrations (including MS Tune as applicable):**

All criteria were within method requirements with any exceptions noted below.

**Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

**Internal Standards:**

All internal standards were within QC limits with any exceptions noted below.

**Surrogates:**

All surrogates were within QC limits with any exceptions noted below.

**Method Blank:**

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

**Additional Comments:**

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## PROJECT NARRATIVE

Project: B2210417-Revised Report

Pace Project No.: 10631764

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**Method:** EPA 8082A

**Description:** 8082A GCS PCB

**Client:** Braun Intertec Corporation

**Date:** November 22, 2022

**General Information:**

9 samples were analyzed for EPA 8082A by Pace Analytical Services Minneapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

**Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

**Sample Preparation:**

The samples were prepared in accordance with EPA 3546 with any exceptions noted below.

**Initial Calibrations (including MS Tune as applicable):**

All criteria were within method requirements with any exceptions noted below.

**Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

**Surrogates:**

All surrogates were within QC limits with any exceptions noted below.

**Method Blank:**

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

**Additional Comments:**

## REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: B2210417-Revised Report

Pace Project No.: 10631764

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**Method:** EPA 6010D

**Description:** 6010D MET ICP

**Client:** Braun Intertec Corporation

**Date:** November 22, 2022

**General Information:**

9 samples were analyzed for EPA 6010D by Pace Analytical Services Minneapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

**Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

**Sample Preparation:**

The samples were prepared in accordance with EPA 3050B with any exceptions noted below.

**Initial Calibrations (including MS Tune as applicable):**

All criteria were within method requirements with any exceptions noted below.

**Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

**Method Blank:**

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 851291

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10631430001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MSD (Lab ID: 4501605)
- Selenium

**Additional Comments:**

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## PROJECT NARRATIVE

Project: B2210417-Revised Report

Pace Project No.: 10631764

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**Method:** EPA 7471B

**Description:** 7471B Mercury

**Client:** Braun Intertec Corporation

**Date:** November 22, 2022

**General Information:**

9 samples were analyzed for EPA 7471B by Pace Analytical Services Minneapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

**Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

**Sample Preparation:**

The samples were prepared in accordance with EPA 7471B with any exceptions noted below.

**Initial Calibrations (including MS Tune as applicable):**

All criteria were within method requirements with any exceptions noted below.

**Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

**Method Blank:**

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

**Additional Comments:**

## REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: B2210417-Revised Report

Pace Project No.: 10631764

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**Method:** EPA 8270E by SIM

**Description:** 8270E MSSV PAH by SIM

**Client:** Braun Intertec Corporation

**Date:** November 22, 2022

### General Information:

9 samples were analyzed for EPA 8270E by SIM by Pace Analytical Services Minneapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

### Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

### Sample Preparation:

The samples were prepared in accordance with EPA 3546 with any exceptions noted below.

### Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

### Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

### Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

### Surrogates:

All surrogates were within QC limits with any exceptions noted below.

QC Batch: 850560

S5: Surrogate recovery outside control limits due to matrix interferences (not confirmed by re-analysis).

- MS (Lab ID: 4498249)
  - p-Terphenyl-d14 (S)
- MSD (Lab ID: 4498250)
  - 2-Fluorobiphenyl (S)
  - p-Terphenyl-d14 (S)
- WILK-1 (0'-2') (Lab ID: 10631764001)
  - 2-Fluorobiphenyl (S)
  - p-Terphenyl-d14 (S)

QC Batch: 851472

S0: Surrogate recovery outside laboratory control limits.

- MS (Lab ID: 4502567)
  - 2-Fluorobiphenyl (S)
  - p-Terphenyl-d14 (S)
- MSD (Lab ID: 4502568)
  - 2-Fluorobiphenyl (S)
  - p-Terphenyl-d14 (S)

S2: Surrogate recovery outside laboratory control limits due to matrix interferences (confirmed by similar results from sample re-analysis).

- WILK-2 (2'-4') (Lab ID: 10631764005)

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## PROJECT NARRATIVE

Project: B2210417-Revised Report

Pace Project No.: 10631764

---

**Method:** EPA 8270E by SIM

**Description:** 8270E MSSV PAH by SIM

**Client:** Braun Intertec Corporation

**Date:** November 22, 2022

QC Batch: 851472

S2: Surrogate recovery outside laboratory control limits due to matrix interferences (confirmed by similar results from sample re-analysis).

- 2-Fluorobiphenyl (S)
- p-Terphenyl-d14 (S)

S5: Surrogate recovery outside control limits due to matrix interferences (not confirmed by re-analysis).

- WILK-1 (2'-4') (Lab ID: 10631764002)
- 2-Fluorobiphenyl (S)
- p-Terphenyl-d14 (S)

### Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

### Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 850560

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10631764001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 4498249)
  - Acenaphthene
  - Benzo(g,h,i)perylene
  - Chrysene
  - Phenanthrene
- MSD (Lab ID: 4498250)
  - Acenaphthene
  - Anthracene
  - Benzo(a)anthracene
  - Benzo(g,h,i)perylene
  - Chrysene
  - Dibenz(a,h)anthracene
  - Fluoranthene
  - Phenanthrene
  - Pyrene

R1: RPD value was outside control limits.

- MSD (Lab ID: 4498250)
  - Benzo(b)fluoranthene

QC Batch: 851472

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10631764002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 4502567)

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## PROJECT NARRATIVE

Project: B2210417-Revised Report

Pace Project No.: 10631764

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**Method:** EPA 8270E by SIM

**Description:** 8270E MSSV PAH by SIM

**Client:** Braun Intertec Corporation

**Date:** November 22, 2022

QC Batch: 851472

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10631764002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- Acenaphthene
- Anthracene
- Benzo(a)anthracene
- Benzo(g,h,i)perylene
- Chrysene
- Dibenz(a,h)anthracene
- MSD (Lab ID: 4502568)
  - Acenaphthene
  - Anthracene
  - Benzo(a)anthracene
  - Benzo(g,h,i)perylene
  - Chrysene
  - Dibenz(a,h)anthracene
  - Fluoranthene
  - Fluorene
  - Naphthalene
  - Phenanthrene
  - Pyrene

**Additional Comments:**

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## PROJECT NARRATIVE

Project: B2210417-Revised Report

Pace Project No.: 10631764

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**Method:** EPA 8270E by SIM

**Description:** 8270E MSSV CPAH by SIM

**Client:** Braun Intertec Corporation

**Date:** November 22, 2022

### General Information:

9 samples were analyzed for EPA 8270E by SIM by Pace Analytical Services Minneapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

L2: Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.

- WILK-1 (0'-2') (Lab ID: 10631764001)
- WILK-1 (2'-4') (Lab ID: 10631764002)
- WILK-1 (4'-6') (Lab ID: 10631764003)
- WILK-2 (0'-2') (Lab ID: 10631764004)
- WILK-2 (2'-4') (Lab ID: 10631764005)
- WILK-2 (4'-6') (Lab ID: 10631764006)
- WILK-3 (0'-2') (Lab ID: 10631764007)

### Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

H2: Extraction or preparation was conducted outside of the recognized method holding time.

- WILK-1 (0'-2') (Lab ID: 10631764001)
- WILK-1 (2'-4') (Lab ID: 10631764002)
- WILK-1 (4'-6') (Lab ID: 10631764003)
- WILK-2 (0'-2') (Lab ID: 10631764004)
- WILK-2 (2'-4') (Lab ID: 10631764005)
- WILK-2 (4'-6') (Lab ID: 10631764006)
- WILK-3 (0'-2') (Lab ID: 10631764007)
- WILK-3 (2'-4') (Lab ID: 10631764008)
- WILK-3 (4'-6') (Lab ID: 10631764009)

### Sample Preparation:

The samples were prepared in accordance with EPA 3550C with any exceptions noted below.

### Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

### Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

### Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

### Surrogates:

All surrogates were within QC limits with any exceptions noted below.

## REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: B2210417-Revised Report

Pace Project No.: 10631764

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**Method:** EPA 8270E by SIM

**Description:** 8270E MSSV CPAH by SIM

**Client:** Braun Intertec Corporation

**Date:** November 22, 2022

QC Batch: 854193

S2: Surrogate recovery outside laboratory control limits due to matrix interferences (confirmed by similar results from sample re-analysis).

- WILK-1 (0'-2') (Lab ID: 10631764001)
  - p-Terphenyl-d14 (S)
- WILK-1 (2'-4') (Lab ID: 10631764002)
  - 2-Fluorobiphenyl (S)
  - p-Terphenyl-d14 (S)
- WILK-1 (4'-6') (Lab ID: 10631764003)
  - 2-Fluorobiphenyl (S)
  - p-Terphenyl-d14 (S)
- WILK-2 (0'-2') (Lab ID: 10631764004)
  - 2-Fluorobiphenyl (S)
  - p-Terphenyl-d14 (S)
- WILK-2 (2'-4') (Lab ID: 10631764005)
  - 2-Fluorobiphenyl (S)
  - p-Terphenyl-d14 (S)
- WILK-2 (4'-6') (Lab ID: 10631764006)
  - 2-Fluorobiphenyl (S)
  - p-Terphenyl-d14 (S)
- WILK-3 (0'-2') (Lab ID: 10631764007)
  - p-Terphenyl-d14 (S)

**Method Blank:**

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 854193

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10631764006

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 4516162)
  - 2-Chloronaphthalene
  - 7,12-Dimethylbenz(a)anthracene
- MSD (Lab ID: 4516163)
  - 7,12-Dimethylbenz(a)anthracene

R1: RPD value was outside control limits.

- MSD (Lab ID: 4516163)
  - 7,12-Dimethylbenz(a)anthracene

**Additional Comments:**

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## PROJECT NARRATIVE

Project: B2210417-Revised Report

Pace Project No.: 10631764

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**Method:** EPA 8270E by SIM

**Description:** 8270E MSSV CPAH by SIM

**Client:** Braun Intertec Corporation

**Date:** November 22, 2022

Analyte Comments:

QC Batch: 853608

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

- BLANK (Lab ID: 4513549)
  - 1-Nitropyrene
  - 2-Nitrofluorene
  - 4-Nitropyrene
  - Benzofluoranthenes (Total)
- LCS (Lab ID: 4513550)
  - 1-Nitropyrene
  - 2-Nitrofluorene
  - 4-Nitropyrene
  - Benzofluoranthenes (Total)
- MS (Lab ID: 4513551)
  - 1-Nitropyrene
  - 2-Nitrofluorene
  - 4-Nitropyrene
  - Benzofluoranthenes (Total)
- MSD (Lab ID: 4513552)
  - 1-Nitropyrene
  - 2-Nitrofluorene
  - 4-Nitropyrene
  - Benzofluoranthenes (Total)
- WILK-3 (2'-4') (Lab ID: 10631764008)
  - 1-Nitropyrene
  - 2-Nitrofluorene
  - 4-Nitropyrene
  - Total BaP Eq. MN 2006 ND=0
  - Benzofluoranthenes (Total)
- WILK-3 (4'-6') (Lab ID: 10631764009)
  - 1-Nitropyrene
  - 2-Nitrofluorene
  - 4-Nitropyrene
  - Total BaP Eq. MN 2006 ND=0
  - Benzofluoranthenes (Total)

QC Batch: 854193

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

- BLANK (Lab ID: 4516117)
  - 1-Nitropyrene
  - 2-Nitrofluorene
  - 4-Nitropyrene
  - Benzofluoranthenes (Total)

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## PROJECT NARRATIVE

Project: B2210417-Revised Report

Pace Project No.: 10631764

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**Method:** EPA 8270E by SIM

**Description:** 8270E MSSV CPAH by SIM

**Client:** Braun Intertec Corporation

**Date:** November 22, 2022

Analyte Comments:

QC Batch: 854193

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

- LCS (Lab ID: 4516118)
  - 1-Nitropyrene
  - 2-Nitrofluorene
  - 4-Nitropyrene
  - Benzo(a)fluoranthenes (Total)
- MS (Lab ID: 4516162)
  - 1-Nitropyrene
  - 2-Nitrofluorene
  - 4-Nitropyrene
  - Benzo(a)fluoranthenes (Total)
- MSD (Lab ID: 4516163)
  - 1-Nitropyrene
  - 2-Nitrofluorene
  - 4-Nitropyrene
  - Benzo(a)fluoranthenes (Total)
- WILK-1 (0'-2') (Lab ID: 10631764001)
  - 1-Nitropyrene
  - 2-Nitrofluorene
  - 4-Nitropyrene
  - Total BaP Eq. MN 2006 ND=0
  - Benzo(a)fluoranthenes (Total)
- WILK-1 (2'-4') (Lab ID: 10631764002)
  - 1-Nitropyrene
  - 2-Nitrofluorene
  - 4-Nitropyrene
  - Total BaP Eq. MN 2006 ND=0
  - Benzo(a)fluoranthenes (Total)
- WILK-1 (4'-6') (Lab ID: 10631764003)
  - 1-Nitropyrene
  - 2-Nitrofluorene
  - 4-Nitropyrene
  - Total BaP Eq. MN 2006 ND=0
  - Benzo(a)fluoranthenes (Total)
- WILK-2 (0'-2') (Lab ID: 10631764004)
  - 1-Nitropyrene
  - 2-Nitrofluorene
  - 4-Nitropyrene
  - Total BaP Eq. MN 2006 ND=0
  - Benzo(a)fluoranthenes (Total)
- WILK-2 (2'-4') (Lab ID: 10631764005)
  - 1-Nitropyrene
  - 2-Nitrofluorene

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## PROJECT NARRATIVE

Project: B2210417-Revised Report

Pace Project No.: 10631764

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**Method:** EPA 8270E by SIM

**Description:** 8270E MSSV CPAH by SIM

**Client:** Braun Intertec Corporation

**Date:** November 22, 2022

Analyte Comments:

QC Batch: 854193

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

- WILK-2 (2'-4') (Lab ID: 10631764005)
  - 4-Nitropyrene
  - Total BaP Eq. MN 2006 ND=0
  - Benzofluoranthenes (Total)
- WILK-2 (4'-6') (Lab ID: 10631764006)
  - 1-Nitropyrene
  - 2-Nitrofluorene
  - 4-Nitropyrene
  - Total BaP Eq. MN 2006 ND=0
  - Benzofluoranthenes (Total)
- WILK-3 (0'-2') (Lab ID: 10631764007)
  - 1-Nitropyrene
  - 2-Nitrofluorene
  - 4-Nitropyrene
  - Total BaP Eq. MN 2006 ND=0
  - Benzofluoranthenes (Total)

This data package has been reviewed for quality and completeness and is approved for release.

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: B2210417-Revised Report

Pace Project No.: 10631764

**Sample: WILK-1 (0'-2')**      **Lab ID: 10631764001**      Collected: 10/31/22 12:05      Received: 10/31/22 16:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>350.1 Ammonia Solids DU</b>								
Analytical Method: EPA 350.1      Preparation Method: EPA 350.1 Pace Analytical Services - Duluth, MN								
Nitrogen, Ammonia	<b>62.4</b>	mg/kg	8.8	1	11/09/22 09:00	11/09/22 11:04	7664-41-7	M1
<b>351.2 TKN Solids DU</b>								
Analytical Method: EPA 351.2      Preparation Method: EPA 351.2 Pace Analytical Services - Duluth, MN								
Nitrogen, Kjeldahl, Total	<b>5450</b>	mg/kg	147	1	11/02/22 14:46	11/03/22 11:06	7727-37-9	
<b>353.2 Nitrogen, N+N Solids DU</b>								
Analytical Method: EPA 353.2      Preparation Method: EPA 353.2 Pace Analytical Services - Duluth, MN								
Nitrogen, NO2 plus NO3	<b>23.7</b>	mg/kg	1.2	2	11/03/22 09:22	11/03/22 13:58		M1, N2, R1
<b>365.1 Phos, Total Solids DU</b>								
Analytical Method: EPA 365.1      Preparation Method: SM 4500-P B Pace Analytical Services - Duluth, MN								
Phosphorus	<b>557</b>	mg/kg	7.6	1	11/02/22 15:10	11/03/22 15:27	7723-14-0	
<b>9060 TOC, 2 Rep Solids DU</b>								
Analytical Method: EPA 9060A Pace Analytical Services - Duluth, MN								
RPD%	<b>4.8</b>	%		1		11/03/22 16:18		
Total Organic Carbon	<b>266000</b>	mg/kg	14900	1		11/03/22 16:10	7440-44-0	
Total Organic Carbon	<b>279000</b>	mg/kg	14900	1		11/03/22 16:18	7440-44-0	
Mean Total Organic Carbon	<b>273000</b>	mg/kg	14900	1		11/03/22 16:18	7440-44-0	
<b>8082A GCS PCB</b>								
Analytical Method: EPA 8082A      Preparation Method: EPA 3546 Pace Analytical Services - Minneapolis								
PCB-1016 (Aroclor 1016)	ND	ug/kg	153	1	11/01/22 10:30	11/02/22 19:56	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	153	1	11/01/22 10:30	11/02/22 19:56	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	153	1	11/01/22 10:30	11/02/22 19:56	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	153	1	11/01/22 10:30	11/02/22 19:56	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/kg	153	1	11/01/22 10:30	11/02/22 19:56	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	153	1	11/01/22 10:30	11/02/22 19:56	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	153	1	11/01/22 10:30	11/02/22 19:56	11096-82-5	
<b>Surrogates</b>								
Tetrachloro-m-xylene (S)	87	%	53-125	1	11/01/22 10:30	11/02/22 19:56	877-09-8	
Decachlorobiphenyl (S)	65	%	41-125	1	11/01/22 10:30	11/02/22 19:56	2051-24-3	
<b>6010D MET ICP</b>								
Analytical Method: EPA 6010D      Preparation Method: EPA 3050B Pace Analytical Services - Minneapolis								
Arsenic	<b>9.6</b>	mg/kg	3.1	1	11/03/22 16:17	11/07/22 12:05	7440-38-2	
Cadmium	<b>0.47</b>	mg/kg	0.46	1	11/03/22 16:17	11/07/22 12:05	7440-43-9	
Copper	<b>12.5</b>	mg/kg	1.5	1	11/03/22 16:17	11/07/22 12:05	7440-50-8	
Lead	<b>7.9</b>	mg/kg	1.5	1	11/03/22 16:17	11/07/22 12:05	7439-92-1	
Nickel	<b>11.5</b>	mg/kg	3.1	1	11/03/22 16:17	11/07/22 12:05	7440-02-0	
Selenium	<b>3.4</b>	mg/kg	3.1	1	11/03/22 16:17	11/07/22 12:05	7782-49-2	
Zinc	<b>25.9</b>	mg/kg	6.1	1	11/03/22 16:17	11/07/22 12:05	7440-66-6	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: B2210417-Revised Report

Pace Project No.: 10631764

**Sample: WILK-1 (0'-2')**      **Lab ID: 10631764001**      Collected: 10/31/22 12:05      Received: 10/31/22 16:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>7471B Mercury</b>								
Analytical Method: EPA 7471B    Preparation Method: EPA 7471B								
Pace Analytical Services - Minneapolis								
Mercury	ND	mg/kg	0.056	1	11/03/22 12:01	11/08/22 11:58	7439-97-6	
<b>Dry Weight / %M by ASTM D2974</b>								
Analytical Method: ASTM D2974								
Pace Analytical Services - Minneapolis								
Percent Moisture	67.7	%	0.10	1		11/02/22 12:15		N2
<b>8270E MSSV PAH by SIM</b>								
Analytical Method: EPA 8270E by SIM    Preparation Method: EPA 3546								
Pace Analytical Services - Minneapolis								
Acenaphthene	ND	mg/kg	0.031	1	11/01/22 13:34	11/03/22 00:34	83-32-9	M1
Acenaphthylene	ND	mg/kg	0.031	1	11/01/22 13:34	11/03/22 00:34	208-96-8	
Anthracene	ND	mg/kg	0.031	1	11/01/22 13:34	11/03/22 00:34	120-12-7	M1
Benzo(a)anthracene	ND	mg/kg	0.031	1	11/01/22 13:34	11/03/22 00:34	56-55-3	M1
Benzo(a)pyrene	ND	mg/kg	0.031	1	11/01/22 13:34	11/03/22 00:34	50-32-8	
Benzo(b)fluoranthene	0.047	mg/kg	0.031	1	11/01/22 13:34	11/03/22 00:34	205-99-2	R1
Benzo(g,h,i)perylene	ND	mg/kg	0.031	1	11/01/22 13:34	11/03/22 00:34	191-24-2	M1
Benzo(k)fluoranthene	ND	mg/kg	0.031	1	11/01/22 13:34	11/03/22 00:34	207-08-9	
Chrysene	0.040	mg/kg	0.031	1	11/01/22 13:34	11/03/22 00:34	218-01-9	M1
Dibenz(a,h)anthracene	ND	mg/kg	0.031	1	11/01/22 13:34	11/03/22 00:34	53-70-3	M1
Fluoranthene	0.12	mg/kg	0.031	1	11/01/22 13:34	11/03/22 00:34	206-44-0	M1
Fluorene	ND	mg/kg	0.031	1	11/01/22 13:34	11/03/22 00:34	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.031	1	11/01/22 13:34	11/03/22 00:34	193-39-5	
Naphthalene	ND	mg/kg	0.031	1	11/01/22 13:34	11/03/22 00:34	91-20-3	
Phenanthrene	0.11	mg/kg	0.031	1	11/01/22 13:34	11/03/22 00:34	85-01-8	M1
Pyrene	0.057	mg/kg	0.031	1	11/01/22 13:34	11/03/22 00:34	129-00-0	M1
Total BaP Eq. MN 2006sh. ND=0	ND	mg/kg	0.031	1	11/01/22 13:34	11/03/22 00:34		
<b>Surrogates</b>								
2-Fluorobiphenyl (S)	56	%	59-125	1	11/01/22 13:34	11/03/22 00:34	321-60-8	S5
p-Terphenyl-d14 (S)	62	%	65-125	1	11/01/22 13:34	11/03/22 00:34	1718-51-0	S5
<b>8270E MSSV CPAH by SIM</b>								
Analytical Method: EPA 8270E by SIM    Preparation Method: EPA 3550C								
Pace Analytical Services - Minneapolis								
Acenaphthene	ND	ug/kg	30.9	1	11/17/22 16:49	11/21/22 19:35	83-32-9	H2
Acenaphthylene	ND	ug/kg	30.9	1	11/17/22 16:49	11/21/22 19:35	208-96-8	H2
Anthracene	ND	ug/kg	30.9	1	11/17/22 16:49	11/21/22 19:35	120-12-7	H2
Benzo(a)anthracene	ND	ug/kg	30.9	1	11/17/22 16:49	11/21/22 19:35	56-55-3	H2
Benzo(a)pyrene	ND	ug/kg	30.9	1	11/17/22 16:49	11/21/22 19:35	50-32-8	H2
Benzo(e)pyrene	ND	ug/kg	30.9	1	11/17/22 16:49	11/21/22 19:35	192-97-2	H2
Benzo(g,h,i)perylene	ND	ug/kg	30.9	1	11/17/22 16:49	11/21/22 19:35	191-24-2	H2
Benzofluoranthenes (Total)	ND	ug/kg	92.7	1	11/17/22 16:49	11/21/22 19:35		H2,N2
Carbazole	ND	ug/kg	30.9	1	11/17/22 16:49	11/21/22 19:35	86-74-8	H2
2-Chloronaphthalene	ND	ug/kg	30.9	1	11/17/22 16:49	11/21/22 19:35	91-58-7	H2
Chrysene	ND	ug/kg	30.9	1	11/17/22 16:49	11/21/22 19:35	218-01-9	H2
Dibenz(a,h)acridine	ND	ug/kg	30.9	1	11/17/22 16:49	11/21/22 19:35	226-36-8	H2
Dibenz(a,h)anthracene	ND	ug/kg	30.9	1	11/17/22 16:49	11/21/22 19:35	53-70-3	H2
Dibenz(a,j)acridine	ND	ug/kg	30.9	1	11/17/22 16:49	11/21/22 19:35	224-42-0	H2,L2

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: B2210417-Revised Report

Pace Project No.: 10631764

**Sample: WILK-1 (0'-2')**      **Lab ID: 10631764001**      Collected: 10/31/22 12:05      Received: 10/31/22 16:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270E MSSV CPAH by SIM</b>		Analytical Method: EPA 8270E by SIM      Preparation Method: EPA 3550C Pace Analytical Services - Minneapolis						
Dibenzo(a,e)pyrene	ND	ug/kg	30.9	1	11/17/22 16:49	11/21/22 19:35	192-65-4	H2
Dibenzo(a,h)pyrene	ND	ug/kg	30.9	1	11/17/22 16:49	11/21/22 19:35	189-64-0	H2
Dibenzo(a,i)pyrene	ND	ug/kg	30.9	1	11/17/22 16:49	11/21/22 19:35	189-55-9	H2
Dibenzo(a,l)pyrene	ND	ug/kg	30.9	1	11/17/22 16:49	11/21/22 19:35	191-30-0	H2
7H-Dibenzo(c,g)carbazole	ND	ug/kg	30.9	1	11/17/22 16:49	11/21/22 19:35	194-59-2	H2
Dibenzofuran	ND	ug/kg	30.9	1	11/17/22 16:49	11/21/22 19:35	132-64-9	H2
7,12-Dimethylbenz(a)anthracene	ND	ug/kg	30.9	1	11/17/22 16:49	11/21/22 19:35	57-97-6	H2
Fluoranthene	ND	ug/kg	30.9	1	11/17/22 16:49	11/21/22 19:35	206-44-0	H2
Fluorene	ND	ug/kg	30.9	1	11/17/22 16:49	11/21/22 19:35	86-73-7	H2
Indeno(1,2,3-cd)pyrene	ND	ug/kg	30.9	1	11/17/22 16:49	11/21/22 19:35	193-39-5	H2
3-Methylcholanthrene	ND	ug/kg	30.9	1	11/17/22 16:49	11/21/22 19:35	56-49-5	H2
5-Methylchrysene	ND	ug/kg	30.9	1	11/17/22 16:49	11/21/22 19:35	3697-24-3	H2
1-Methylnaphthalene	ND	ug/kg	30.9	1	11/17/22 16:49	11/21/22 19:35	90-12-0	H2
2-Methylnaphthalene	ND	ug/kg	30.9	1	11/17/22 16:49	11/21/22 19:35	91-57-6	H2
Naphthalene	ND	ug/kg	30.9	1	11/17/22 16:49	11/21/22 19:35	91-20-3	H2
5-Nitroacenaphthene	ND	ug/kg	30.9	1	11/17/22 16:49	11/21/22 19:35	602-87-9	H2
6-Nitrochrysene	ND	ug/kg	30.9	1	11/17/22 16:49	11/21/22 19:35	7496-02-8	H2
2-Nitrofluorene	ND	ug/kg	30.9	1	11/17/22 16:49	11/21/22 19:35	607-57-8	H2,N2
1-Nitropyrene	ND	ug/kg	30.9	1	11/17/22 16:49	11/21/22 19:35	5522-43-0	H2,N2
4-Nitropyrene	ND	ug/kg	30.9	1	11/17/22 16:49	11/21/22 19:35	57835-92-4	H2,N2
Perylene	ND	ug/kg	30.9	1	11/17/22 16:49	11/21/22 19:35	198-55-0	H2
Phenanthrene	ND	ug/kg	30.9	1	11/17/22 16:49	11/21/22 19:35	85-01-8	H2
Pyrene	ND	ug/kg	30.9	1	11/17/22 16:49	11/21/22 19:35	129-00-0	H2
Total BaP Eq. MN 2006 ND=0	ND	ug/kg	30.9	1	11/17/22 16:49	11/21/22 19:35		N2
<b>Surrogates</b>								
2-Fluorobiphenyl (S)	46	%.	43-125	1	11/17/22 16:49	11/21/22 19:35	321-60-8	
p-Terphenyl-d14 (S)	30	%.	40-125	1	11/17/22 16:49	11/21/22 19:35	1718-51-0	S2

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: B2210417-Revised Report

Pace Project No.: 10631764

**Sample: WILK-1 (2'-4')**      **Lab ID: 10631764002**      Collected: 10/31/22 12:10      Received: 10/31/22 16:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>350.1 Ammonia Solids DU</b>								
Analytical Method: EPA 350.1    Preparation Method: EPA 350.1 Pace Analytical Services - Duluth, MN								
Nitrogen, Ammonia	<b>65.9</b>	mg/kg	11.0	1	11/09/22 09:00	11/09/22 11:07	7664-41-7	
<b>351.2 TKN Solids DU</b>								
Analytical Method: EPA 351.2    Preparation Method: EPA 351.2 Pace Analytical Services - Duluth, MN								
Nitrogen, Kjeldahl, Total	<b>13200</b>	mg/kg	1670	10	11/02/22 14:46	11/03/22 11:37	7727-37-9	
<b>353.2 Nitrogen, N+N Solids DU</b>								
Analytical Method: EPA 353.2    Preparation Method: EPA 353.2 Pace Analytical Services - Duluth, MN								
Nitrogen, NO <sub>2</sub> plus NO <sub>3</sub>	<b>4.7</b>	mg/kg	0.73	1	11/03/22 09:22	11/03/22 13:34		N2
<b>365.1 Phos, Total Solids DU</b>								
Analytical Method: EPA 365.1    Preparation Method: SM 4500-P B Pace Analytical Services - Duluth, MN								
Phosphorus	<b>508</b>	mg/kg	9.4	1	11/02/22 15:10	11/03/22 15:29	7723-14-0	
<b>9060 TOC, 2 Rep Solids DU</b>								
Analytical Method: EPA 9060A Pace Analytical Services - Duluth, MN								
RPD%	<b>7.3</b>	%		1		11/04/22 11:14		
Total Organic Carbon	<b>176000</b>	mg/kg	19700	1		11/04/22 11:07	7440-44-0	
Total Organic Carbon	<b>189000</b>	mg/kg	19700	1		11/04/22 11:14	7440-44-0	
Mean Total Organic Carbon	<b>182000</b>	mg/kg	19700	1		11/04/22 11:14	7440-44-0	
<b>8082A GCS PCB</b>								
Analytical Method: EPA 8082A    Preparation Method: EPA 3546 Pace Analytical Services - Minneapolis								
PCB-1016 (Aroclor 1016)	ND	ug/kg	183	1	11/01/22 10:30	11/02/22 20:43	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	183	1	11/01/22 10:30	11/02/22 20:43	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	183	1	11/01/22 10:30	11/02/22 20:43	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	183	1	11/01/22 10:30	11/02/22 20:43	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/kg	183	1	11/01/22 10:30	11/02/22 20:43	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	183	1	11/01/22 10:30	11/02/22 20:43	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	183	1	11/01/22 10:30	11/02/22 20:43	11096-82-5	
<b>Surrogates</b>								
Tetrachloro-m-xylene (S)	85	%	53-125	1	11/01/22 10:30	11/02/22 20:43	877-09-8	
Decachlorobiphenyl (S)	78	%	41-125	1	11/01/22 10:30	11/02/22 20:43	2051-24-3	
<b>6010D MET ICP</b>								
Analytical Method: EPA 6010D    Preparation Method: EPA 3050B Pace Analytical Services - Minneapolis								
Arsenic	<b>9.2</b>	mg/kg	3.6	1	11/03/22 16:17	11/07/22 12:07	7440-38-2	
Cadmium	ND	mg/kg	0.54	1	11/03/22 16:17	11/07/22 12:07	7440-43-9	
Copper	<b>11.6</b>	mg/kg	1.8	1	11/03/22 16:17	11/07/22 12:07	7440-50-8	
Lead	<b>4.9</b>	mg/kg	1.8	1	11/03/22 16:17	11/07/22 12:07	7439-92-1	
Nickel	<b>9.2</b>	mg/kg	3.6	1	11/03/22 16:17	11/07/22 12:07	7440-02-0	
Selenium	<b>3.6</b>	mg/kg	3.6	1	11/03/22 16:17	11/07/22 12:07	7782-49-2	
Zinc	<b>12.7</b>	mg/kg	7.2	1	11/03/22 16:17	11/07/22 12:07	7440-66-6	

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## ANALYTICAL RESULTS

Project: B2210417-Revised Report

Pace Project No.: 10631764

**Sample: WILK-1 (2'-4')**      **Lab ID: 10631764002**      Collected: 10/31/22 12:10      Received: 10/31/22 16:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
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**7471B Mercury**

Analytical Method: EPA 7471B      Preparation Method: EPA 7471B  
Pace Analytical Services - Minneapolis

Mercury	ND	mg/kg	0.067	1	11/03/22 12:01	11/08/22 12:03	7439-97-6	
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**Dry Weight / %M by ASTM D2974**

Analytical Method: ASTM D2974  
Pace Analytical Services - Minneapolis

Percent Moisture	72.8	%	0.10	1		11/02/22 12:16		N2
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**8270E MSSV PAH by SIM**

Analytical Method: EPA 8270E by SIM      Preparation Method: EPA 3546  
Pace Analytical Services - Minneapolis

Acenaphthene	ND	mg/kg	0.036	1	11/04/22 11:13	11/07/22 14:08	83-32-9	M1
Acenaphthylene	ND	mg/kg	0.036	1	11/04/22 11:13	11/07/22 14:08	208-96-8	
Anthracene	0.056	mg/kg	0.036	1	11/04/22 11:13	11/07/22 14:08	120-12-7	M1
Benzo(a)anthracene	ND	mg/kg	0.036	1	11/04/22 11:13	11/07/22 14:08	56-55-3	M1
Benzo(a)pyrene	ND	mg/kg	0.036	1	11/04/22 11:13	11/07/22 14:08	50-32-8	
Benzo(b)fluoranthene	0.047	mg/kg	0.036	1	11/04/22 11:13	11/07/22 14:08	205-99-2	
Benzo(g,h,i)perylene	ND	mg/kg	0.036	1	11/04/22 11:13	11/07/22 14:08	191-24-2	M1
Benzo(k)fluoranthene	ND	mg/kg	0.036	1	11/04/22 11:13	11/07/22 14:08	207-08-9	
Chrysene	0.050	mg/kg	0.036	1	11/04/22 11:13	11/07/22 14:08	218-01-9	M1
Dibenz(a,h)anthracene	ND	mg/kg	0.036	1	11/04/22 11:13	11/07/22 14:08	53-70-3	M1
Fluoranthene	0.26	mg/kg	0.036	1	11/04/22 11:13	11/07/22 14:08	206-44-0	M1
Fluorene	0.10	mg/kg	0.036	1	11/04/22 11:13	11/07/22 14:08	86-73-7	M1
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.036	1	11/04/22 11:13	11/07/22 14:08	193-39-5	
Naphthalene	0.044	mg/kg	0.036	1	11/04/22 11:13	11/07/22 14:08	91-20-3	M1
Phenanthrene	0.37	mg/kg	0.036	1	11/04/22 11:13	11/07/22 14:08	85-01-8	M1
Pyrene	0.11	mg/kg	0.036	1	11/04/22 11:13	11/07/22 14:08	129-00-0	M1
Total BaP Eq. MN 2006sh. ND=0	ND	mg/kg	0.036	1	11/04/22 11:13	11/07/22 14:08		

**Surrogates**

2-Fluorobiphenyl (S)	40	%	59-125	1	11/04/22 11:13	11/07/22 14:08	321-60-8	S5
p-Terphenyl-d14 (S)	39	%	65-125	1	11/04/22 11:13	11/07/22 14:08	1718-51-0	S5

**8270E MSSV CPAH by SIM**

Analytical Method: EPA 8270E by SIM      Preparation Method: EPA 3550C  
Pace Analytical Services - Minneapolis

Acenaphthene	ND	ug/kg	36.7	1	11/17/22 16:49	11/21/22 20:07	83-32-9	H2
Acenaphthylene	ND	ug/kg	36.7	1	11/17/22 16:49	11/21/22 20:07	208-96-8	H2
Anthracene	ND	ug/kg	36.7	1	11/17/22 16:49	11/21/22 20:07	120-12-7	H2
Benzo(a)anthracene	ND	ug/kg	36.7	1	11/17/22 16:49	11/21/22 20:07	56-55-3	H2
Benzo(a)pyrene	ND	ug/kg	36.7	1	11/17/22 16:49	11/21/22 20:07	50-32-8	H2
Benzo(e)pyrene	ND	ug/kg	36.7	1	11/17/22 16:49	11/21/22 20:07	192-97-2	H2
Benzo(g,h,i)perylene	ND	ug/kg	36.7	1	11/17/22 16:49	11/21/22 20:07	191-24-2	H2
Benzofluoranthenes (Total)	ND	ug/kg	110	1	11/17/22 16:49	11/21/22 20:07		H2,N2
Carbazole	ND	ug/kg	36.7	1	11/17/22 16:49	11/21/22 20:07	86-74-8	H2
2-Chloronaphthalene	ND	ug/kg	36.7	1	11/17/22 16:49	11/21/22 20:07	91-58-7	H2
Chrysene	ND	ug/kg	36.7	1	11/17/22 16:49	11/21/22 20:07	218-01-9	H2
Dibenz(a,h)acridine	ND	ug/kg	36.7	1	11/17/22 16:49	11/21/22 20:07	226-36-8	H2
Dibenz(a,h)anthracene	ND	ug/kg	36.7	1	11/17/22 16:49	11/21/22 20:07	53-70-3	H2
Dibenz(a,j)acridine	ND	ug/kg	36.7	1	11/17/22 16:49	11/21/22 20:07	224-42-0	H2,L2

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: B2210417-Revised Report

Pace Project No.: 10631764

**Sample: WILK-1 (2'-4')**      **Lab ID: 10631764002**      Collected: 10/31/22 12:10      Received: 10/31/22 16:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270E MSSV CPAH by SIM</b>		Analytical Method: EPA 8270E by SIM      Preparation Method: EPA 3550C Pace Analytical Services - Minneapolis						
Dibenzo(a,e)pyrene	ND	ug/kg	36.7	1	11/17/22 16:49	11/21/22 20:07	192-65-4	H2
Dibenzo(a,h)pyrene	ND	ug/kg	36.7	1	11/17/22 16:49	11/21/22 20:07	189-64-0	H2
Dibenzo(a,i)pyrene	ND	ug/kg	36.7	1	11/17/22 16:49	11/21/22 20:07	189-55-9	H2
Dibenzo(a,l)pyrene	ND	ug/kg	36.7	1	11/17/22 16:49	11/21/22 20:07	191-30-0	H2
7H-Dibenzo(c,g)carbazole	ND	ug/kg	36.7	1	11/17/22 16:49	11/21/22 20:07	194-59-2	H2
Dibenzofuran	ND	ug/kg	36.7	1	11/17/22 16:49	11/21/22 20:07	132-64-9	H2
7,12-Dimethylbenz(a)anthracene	ND	ug/kg	36.7	1	11/17/22 16:49	11/21/22 20:07	57-97-6	H2
Fluoranthene	ND	ug/kg	36.7	1	11/17/22 16:49	11/21/22 20:07	206-44-0	H2
Fluorene	ND	ug/kg	36.7	1	11/17/22 16:49	11/21/22 20:07	86-73-7	H2
Indeno(1,2,3-cd)pyrene	ND	ug/kg	36.7	1	11/17/22 16:49	11/21/22 20:07	193-39-5	H2
3-Methylcholanthrene	ND	ug/kg	36.7	1	11/17/22 16:49	11/21/22 20:07	56-49-5	H2
5-Methylchrysene	ND	ug/kg	36.7	1	11/17/22 16:49	11/21/22 20:07	3697-24-3	H2
1-Methylnaphthalene	ND	ug/kg	36.7	1	11/17/22 16:49	11/21/22 20:07	90-12-0	H2
2-Methylnaphthalene	ND	ug/kg	36.7	1	11/17/22 16:49	11/21/22 20:07	91-57-6	H2
Naphthalene	ND	ug/kg	36.7	1	11/17/22 16:49	11/21/22 20:07	91-20-3	H2
5-Nitroacenaphthene	ND	ug/kg	36.7	1	11/17/22 16:49	11/21/22 20:07	602-87-9	H2
6-Nitrochrysene	ND	ug/kg	36.7	1	11/17/22 16:49	11/21/22 20:07	7496-02-8	H2
2-Nitrofluorene	ND	ug/kg	36.7	1	11/17/22 16:49	11/21/22 20:07	607-57-8	H2,N2
1-Nitropyrene	ND	ug/kg	36.7	1	11/17/22 16:49	11/21/22 20:07	5522-43-0	H2,N2
4-Nitropyrene	ND	ug/kg	36.7	1	11/17/22 16:49	11/21/22 20:07	57835-92-4	H2,N2
Perylene	ND	ug/kg	36.7	1	11/17/22 16:49	11/21/22 20:07	198-55-0	H2
Phenanthrene	ND	ug/kg	36.7	1	11/17/22 16:49	11/21/22 20:07	85-01-8	H2
Pyrene	ND	ug/kg	36.7	1	11/17/22 16:49	11/21/22 20:07	129-00-0	H2
Total BaP Eq. MN 2006 ND=0	ND	ug/kg	36.7	1	11/17/22 16:49	11/21/22 20:07		N2
<b>Surrogates</b>								
2-Fluorobiphenyl (S)	26	%.	43-125	1	11/17/22 16:49	11/21/22 20:07	321-60-8	S2
p-Terphenyl-d14 (S)	21	%.	40-125	1	11/17/22 16:49	11/21/22 20:07	1718-51-0	S2

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: B2210417-Revised Report

Pace Project No.: 10631764

**Sample: WILK-1 (4'-6')**      **Lab ID: 10631764003**      Collected: 10/31/22 12:15      Received: 10/31/22 16:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>350.1 Ammonia Solids DU</b>								
Analytical Method: EPA 350.1      Preparation Method: EPA 350.1 Pace Analytical Services - Duluth, MN								
Nitrogen, Ammonia	<b>91.6</b>	mg/kg	15.0	1	11/09/22 09:00	11/09/22 11:08	7664-41-7	
<b>351.2 TKN Solids DU</b>								
Analytical Method: EPA 351.2      Preparation Method: EPA 351.2 Pace Analytical Services - Duluth, MN								
Nitrogen, Kjeldahl, Total	<b>14800</b>	mg/kg	2630	10	11/02/22 14:46	11/03/22 11:38	7727-37-9	
<b>353.2 Nitrogen, N+N Solids DU</b>								
Analytical Method: EPA 353.2      Preparation Method: EPA 353.2 Pace Analytical Services - Duluth, MN								
Nitrogen, NO <sub>2</sub> plus NO <sub>3</sub>	<b>1.2</b>	mg/kg	0.99	1	11/03/22 09:22	11/03/22 13:36		N2
<b>365.1 Phos, Total Solids DU</b>								
Analytical Method: EPA 365.1      Preparation Method: SM 4500-P B Pace Analytical Services - Duluth, MN								
Phosphorus	<b>234</b>	mg/kg	12.6	1	11/02/22 15:10	11/03/22 15:30	7723-14-0	
<b>9060 TOC, 2 Rep Solids DU</b>								
Analytical Method: EPA 9060A Pace Analytical Services - Duluth, MN								
RPD%	<b>2.4</b>	%		1		11/03/22 13:19		
Total Organic Carbon	<b>272000</b>	mg/kg	28600	1		11/03/22 13:02	7440-44-0	
Total Organic Carbon	<b>266000</b>	mg/kg	28800	1		11/03/22 13:19	7440-44-0	
Mean Total Organic Carbon	<b>269000</b>	mg/kg	28700	1		11/03/22 13:19	7440-44-0	
<b>8082A GCS PCB</b>								
Analytical Method: EPA 8082A      Preparation Method: EPA 3546 Pace Analytical Services - Minneapolis								
PCB-1016 (Aroclor 1016)	ND	ug/kg	249	1	11/01/22 10:30	11/02/22 20:59	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	249	1	11/01/22 10:30	11/02/22 20:59	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	249	1	11/01/22 10:30	11/02/22 20:59	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	249	1	11/01/22 10:30	11/02/22 20:59	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/kg	249	1	11/01/22 10:30	11/02/22 20:59	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	249	1	11/01/22 10:30	11/02/22 20:59	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	249	1	11/01/22 10:30	11/02/22 20:59	11096-82-5	
<b>Surrogates</b>								
Tetrachloro-m-xylene (S)	79	%	53-125	1	11/01/22 10:30	11/02/22 20:59	877-09-8	
Decachlorobiphenyl (S)	71	%	41-125	1	11/01/22 10:30	11/02/22 20:59	2051-24-3	
<b>6010D MET ICP</b>								
Analytical Method: EPA 6010D      Preparation Method: EPA 3050B Pace Analytical Services - Minneapolis								
Arsenic	<b>11.4</b>	mg/kg	4.9	1	11/03/22 16:17	11/07/22 12:09	7440-38-2	
Cadmium	ND	mg/kg	0.73	1	11/03/22 16:17	11/07/22 12:09	7440-43-9	
Copper	<b>8.6</b>	mg/kg	2.4	1	11/03/22 16:17	11/07/22 12:09	7440-50-8	
Lead	<b>3.9</b>	mg/kg	2.4	1	11/03/22 16:17	11/07/22 12:09	7439-92-1	
Nickel	<b>11.0</b>	mg/kg	4.9	1	11/03/22 16:17	11/07/22 12:09	7440-02-0	
Selenium	ND	mg/kg	4.9	1	11/03/22 16:17	11/07/22 12:09	7782-49-2	
Zinc	<b>14.4</b>	mg/kg	9.7	1	11/03/22 16:17	11/07/22 12:09	7440-66-6	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: B2210417-Revised Report

Pace Project No.: 10631764

**Sample: WILK-1 (4'-6')**      **Lab ID: 10631764003**      Collected: 10/31/22 12:15      Received: 10/31/22 16:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>7471B Mercury</b>								
Analytical Method: EPA 7471B    Preparation Method: EPA 7471B								
Pace Analytical Services - Minneapolis								
Mercury	ND	mg/kg	0.086	1	11/03/22 12:01	11/08/22 12:05	7439-97-6	
<b>Dry Weight / %M by ASTM D2974</b>								
Analytical Method: ASTM D2974								
Pace Analytical Services - Minneapolis								
Percent Moisture	<b>80.0</b>	%	0.10	1		11/02/22 12:16		N2
<b>8270E MSSV PAH by SIM</b>								
Analytical Method: EPA 8270E by SIM    Preparation Method: EPA 3546								
Pace Analytical Services - Minneapolis								
Acenaphthene	ND	mg/kg	0.050	1	11/01/22 13:34	11/03/22 01:53	83-32-9	
Acenaphthylene	ND	mg/kg	0.050	1	11/01/22 13:34	11/03/22 01:53	208-96-8	
Anthracene	ND	mg/kg	0.050	1	11/01/22 13:34	11/03/22 01:53	120-12-7	
Benzo(a)anthracene	ND	mg/kg	0.050	1	11/01/22 13:34	11/03/22 01:53	56-55-3	
Benzo(a)pyrene	ND	mg/kg	0.050	1	11/01/22 13:34	11/03/22 01:53	50-32-8	
Benzo(b)fluoranthene	ND	mg/kg	0.050	1	11/01/22 13:34	11/03/22 01:53	205-99-2	
Benzo(g,h,i)perylene	ND	mg/kg	0.050	1	11/01/22 13:34	11/03/22 01:53	191-24-2	
Benzo(k)fluoranthene	ND	mg/kg	0.050	1	11/01/22 13:34	11/03/22 01:53	207-08-9	
Chrysene	ND	mg/kg	0.050	1	11/01/22 13:34	11/03/22 01:53	218-01-9	
Dibenz(a,h)anthracene	ND	mg/kg	0.050	1	11/01/22 13:34	11/03/22 01:53	53-70-3	
Fluoranthene	<b>0.066</b>	mg/kg	0.050	1	11/01/22 13:34	11/03/22 01:53	206-44-0	
Fluorene	ND	mg/kg	0.050	1	11/01/22 13:34	11/03/22 01:53	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.050	1	11/01/22 13:34	11/03/22 01:53	193-39-5	
Naphthalene	ND	mg/kg	0.050	1	11/01/22 13:34	11/03/22 01:53	91-20-3	
Phenanthrene	<b>0.11</b>	mg/kg	0.050	1	11/01/22 13:34	11/03/22 01:53	85-01-8	
Pyrene	ND	mg/kg	0.050	1	11/01/22 13:34	11/03/22 01:53	129-00-0	
Total BaP Eq. MN 2006sh. ND=0	ND	mg/kg	0.050	1	11/01/22 13:34	11/03/22 01:53		
<b>Surrogates</b>								
2-Fluorobiphenyl (S)	62	%	59-125	1	11/01/22 13:34	11/03/22 01:53	321-60-8	
p-Terphenyl-d14 (S)	66	%	65-125	1	11/01/22 13:34	11/03/22 01:53	1718-51-0	
<b>8270E MSSV CPAH by SIM</b>								
Analytical Method: EPA 8270E by SIM    Preparation Method: EPA 3550C								
Pace Analytical Services - Minneapolis								
Acenaphthene	ND	ug/kg	49.8	1	11/17/22 16:49	11/21/22 20:39	83-32-9	H2
Acenaphthylene	ND	ug/kg	49.8	1	11/17/22 16:49	11/21/22 20:39	208-96-8	H2
Anthracene	ND	ug/kg	49.8	1	11/17/22 16:49	11/21/22 20:39	120-12-7	H2
Benzo(a)anthracene	ND	ug/kg	49.8	1	11/17/22 16:49	11/21/22 20:39	56-55-3	H2
Benzo(a)pyrene	ND	ug/kg	49.8	1	11/17/22 16:49	11/21/22 20:39	50-32-8	H2
Benzo(e)pyrene	ND	ug/kg	49.8	1	11/17/22 16:49	11/21/22 20:39	192-97-2	H2
Benzo(g,h,i)perylene	ND	ug/kg	49.8	1	11/17/22 16:49	11/21/22 20:39	191-24-2	H2
Benzofluoranthenes (Total)	ND	ug/kg	149	1	11/17/22 16:49	11/21/22 20:39		H2,N2
Carbazole	ND	ug/kg	49.8	1	11/17/22 16:49	11/21/22 20:39	86-74-8	H2
2-Chloronaphthalene	ND	ug/kg	49.8	1	11/17/22 16:49	11/21/22 20:39	91-58-7	H2
Chrysene	ND	ug/kg	49.8	1	11/17/22 16:49	11/21/22 20:39	218-01-9	H2
Dibenz(a,h)acridine	ND	ug/kg	49.8	1	11/17/22 16:49	11/21/22 20:39	226-36-8	H2
Dibenz(a,h)anthracene	ND	ug/kg	49.8	1	11/17/22 16:49	11/21/22 20:39	53-70-3	H2
Dibenz(a,j)acridine	ND	ug/kg	49.8	1	11/17/22 16:49	11/21/22 20:39	224-42-0	H2,L2

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## ANALYTICAL RESULTS

Project: B2210417-Revised Report

Pace Project No.: 10631764

**Sample: WILK-1 (4'-6')**      **Lab ID: 10631764003**      Collected: 10/31/22 12:15      Received: 10/31/22 16:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270E MSSV CPAH by SIM</b>		Analytical Method: EPA 8270E by SIM      Preparation Method: EPA 3550C Pace Analytical Services - Minneapolis						
Dibenzo(a,e)pyrene	ND	ug/kg	49.8	1	11/17/22 16:49	11/21/22 20:39	192-65-4	H2
Dibenzo(a,h)pyrene	ND	ug/kg	49.8	1	11/17/22 16:49	11/21/22 20:39	189-64-0	H2
Dibenzo(a,i)pyrene	ND	ug/kg	49.8	1	11/17/22 16:49	11/21/22 20:39	189-55-9	H2
Dibenzo(a,l)pyrene	ND	ug/kg	49.8	1	11/17/22 16:49	11/21/22 20:39	191-30-0	H2
7H-Dibenzo(c,g)carbazole	ND	ug/kg	49.8	1	11/17/22 16:49	11/21/22 20:39	194-59-2	H2
Dibenzofuran	ND	ug/kg	49.8	1	11/17/22 16:49	11/21/22 20:39	132-64-9	H2
7,12-Dimethylbenz(a)anthracene	ND	ug/kg	49.8	1	11/17/22 16:49	11/21/22 20:39	57-97-6	H2
Fluoranthene	ND	ug/kg	49.8	1	11/17/22 16:49	11/21/22 20:39	206-44-0	H2
Fluorene	ND	ug/kg	49.8	1	11/17/22 16:49	11/21/22 20:39	86-73-7	H2
Indeno(1,2,3-cd)pyrene	ND	ug/kg	49.8	1	11/17/22 16:49	11/21/22 20:39	193-39-5	H2
3-Methylcholanthrene	ND	ug/kg	49.8	1	11/17/22 16:49	11/21/22 20:39	56-49-5	H2
5-Methylchrysene	ND	ug/kg	49.8	1	11/17/22 16:49	11/21/22 20:39	3697-24-3	H2
1-Methylnaphthalene	ND	ug/kg	49.8	1	11/17/22 16:49	11/21/22 20:39	90-12-0	H2
2-Methylnaphthalene	ND	ug/kg	49.8	1	11/17/22 16:49	11/21/22 20:39	91-57-6	H2
Naphthalene	ND	ug/kg	49.8	1	11/17/22 16:49	11/21/22 20:39	91-20-3	H2
5-Nitroacenaphthene	ND	ug/kg	49.8	1	11/17/22 16:49	11/21/22 20:39	602-87-9	H2
6-Nitrochrysene	ND	ug/kg	49.8	1	11/17/22 16:49	11/21/22 20:39	7496-02-8	H2
2-Nitrofluorene	ND	ug/kg	49.8	1	11/17/22 16:49	11/21/22 20:39	607-57-8	H2,N2
1-Nitropyrene	ND	ug/kg	49.8	1	11/17/22 16:49	11/21/22 20:39	5522-43-0	H2,N2
4-Nitropyrene	ND	ug/kg	49.8	1	11/17/22 16:49	11/21/22 20:39	57835-92-4	H2,N2
Perylene	ND	ug/kg	49.8	1	11/17/22 16:49	11/21/22 20:39	198-55-0	H2
Phenanthrene	ND	ug/kg	49.8	1	11/17/22 16:49	11/21/22 20:39	85-01-8	H2
Pyrene	ND	ug/kg	49.8	1	11/17/22 16:49	11/21/22 20:39	129-00-0	H2
Total BaP Eq. MN 2006 ND=0	ND	ug/kg	49.8	1	11/17/22 16:49	11/21/22 20:39		N2
<b>Surrogates</b>								
2-Fluorobiphenyl (S)	26	%.	43-125	1	11/17/22 16:49	11/21/22 20:39	321-60-8	S2
p-Terphenyl-d14 (S)	16	%.	40-125	1	11/17/22 16:49	11/21/22 20:39	1718-51-0	S2

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## ANALYTICAL RESULTS

Project: B2210417-Revised Report

Pace Project No.: 10631764

**Sample: WILK-2 (0'-2')**      **Lab ID: 10631764004**      Collected: 10/31/22 10:45      Received: 10/31/22 16:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>350.1 Ammonia Solids DU</b>								
Analytical Method: EPA 350.1    Preparation Method: EPA 350.1 Pace Analytical Services - Duluth, MN								
Nitrogen, Ammonia	<b>37.4</b>	mg/kg	9.6	1	11/09/22 09:00	11/09/22 11:10	7664-41-7	
<b>351.2 TKN Solids DU</b>								
Analytical Method: EPA 351.2    Preparation Method: EPA 351.2 Pace Analytical Services - Duluth, MN								
Nitrogen, Kjeldahl, Total	<b>14900</b>	mg/kg	1750	10	11/02/22 14:46	11/03/22 11:38	7727-37-9	
<b>353.2 Nitrogen, N+N Solids DU</b>								
Analytical Method: EPA 353.2    Preparation Method: EPA 353.2 Pace Analytical Services - Duluth, MN								
Nitrogen, NO <sub>2</sub> plus NO <sub>3</sub>	<b>13.6</b>	mg/kg	0.69	1	11/03/22 09:22	11/03/22 13:37		N2
<b>365.1 Phos, Total Solids DU</b>								
Analytical Method: EPA 365.1    Preparation Method: SM 4500-P B Pace Analytical Services - Duluth, MN								
Phosphorus	<b>2410</b>	mg/kg	43.8	5	11/02/22 15:10	11/03/22 16:30	7723-14-0	
<b>9060 TOC, 2 Rep Solids DU</b>								
Analytical Method: EPA 9060A Pace Analytical Services - Duluth, MN								
RPD%	<b>6.1</b>	%		1		11/03/22 16:47		
Total Organic Carbon	<b>309000</b>	mg/kg	19900	1		11/03/22 16:40	7440-44-0	
Total Organic Carbon	<b>328000</b>	mg/kg	19900	1		11/03/22 16:47	7440-44-0	
Mean Total Organic Carbon	<b>318000</b>	mg/kg	19900	1		11/03/22 16:47	7440-44-0	
<b>8082A GCS PCB</b>								
Analytical Method: EPA 8082A    Preparation Method: EPA 3546 Pace Analytical Services - Minneapolis								
PCB-1016 (Aroclor 1016)	ND	ug/kg	168	1	11/01/22 10:30	11/02/22 21:15	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	168	1	11/01/22 10:30	11/02/22 21:15	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	168	1	11/01/22 10:30	11/02/22 21:15	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	168	1	11/01/22 10:30	11/02/22 21:15	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/kg	168	1	11/01/22 10:30	11/02/22 21:15	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	168	1	11/01/22 10:30	11/02/22 21:15	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	168	1	11/01/22 10:30	11/02/22 21:15	11096-82-5	
<b>Surrogates</b>								
Tetrachloro-m-xylene (S)	86	%	53-125	1	11/01/22 10:30	11/02/22 21:15	877-09-8	
Decachlorobiphenyl (S)	81	%	41-125	1	11/01/22 10:30	11/02/22 21:15	2051-24-3	
<b>6010D MET ICP</b>								
Analytical Method: EPA 6010D    Preparation Method: EPA 3050B Pace Analytical Services - Minneapolis								
Arsenic	<b>15.3</b>	mg/kg	3.5	1	11/03/22 16:17	11/07/22 12:10	7440-38-2	
Cadmium	<b>0.63</b>	mg/kg	0.52	1	11/03/22 16:17	11/07/22 12:10	7440-43-9	
Copper	<b>12.5</b>	mg/kg	1.7	1	11/03/22 16:17	11/07/22 12:10	7440-50-8	
Lead	<b>12.9</b>	mg/kg	1.7	1	11/03/22 16:17	11/07/22 12:10	7439-92-1	
Nickel	<b>15.3</b>	mg/kg	3.5	1	11/03/22 16:17	11/07/22 12:10	7440-02-0	
Selenium	<b>4.2</b>	mg/kg	3.5	1	11/03/22 16:17	11/07/22 12:10	7782-49-2	
Zinc	<b>32.4</b>	mg/kg	6.9	1	11/03/22 16:17	11/07/22 12:10	7440-66-6	

## REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: B2210417-Revised Report

Pace Project No.: 10631764

**Sample: WILK-2 (0'-2')** Lab ID: **10631764004** Collected: 10/31/22 10:45 Received: 10/31/22 16:15 Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
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**7471B Mercury**

Analytical Method: EPA 7471B Preparation Method: EPA 7471B  
Pace Analytical Services - Minneapolis

Mercury	ND	mg/kg	0.070	1	11/03/22 12:01	11/08/22 12:06	7439-97-6	
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**Dry Weight / %M by ASTM D2974**

Analytical Method: ASTM D2974  
Pace Analytical Services - Minneapolis

Percent Moisture	71.5	%	0.10	1		11/02/22 12:16		N2
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**8270E MSSV PAH by SIM**

Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546  
Pace Analytical Services - Minneapolis

Acenaphthene	ND	mg/kg	0.035	1	11/04/22 11:13	11/07/22 15:15	83-32-9	
Acenaphthylene	ND	mg/kg	0.035	1	11/04/22 11:13	11/07/22 15:15	208-96-8	
Anthracene	0.064	mg/kg	0.035	1	11/04/22 11:13	11/07/22 15:15	120-12-7	
Benzo(a)anthracene	ND	mg/kg	0.035	1	11/04/22 11:13	11/07/22 15:15	56-55-3	
Benzo(a)pyrene	ND	mg/kg	0.035	1	11/04/22 11:13	11/07/22 15:15	50-32-8	
Benzo(b)fluoranthene	0.082	mg/kg	0.035	1	11/04/22 11:13	11/07/22 15:15	205-99-2	
Benzo(g,h,i)perylene	ND	mg/kg	0.035	1	11/04/22 11:13	11/07/22 15:15	191-24-2	
Benzo(k)fluoranthene	ND	mg/kg	0.035	1	11/04/22 11:13	11/07/22 15:15	207-08-9	
Chrysene	0.095	mg/kg	0.035	1	11/04/22 11:13	11/07/22 15:15	218-01-9	
Dibenz(a,h)anthracene	ND	mg/kg	0.035	1	11/04/22 11:13	11/07/22 15:15	53-70-3	
Fluoranthene	0.48	mg/kg	0.035	1	11/04/22 11:13	11/07/22 15:15	206-44-0	
Fluorene	0.057	mg/kg	0.035	1	11/04/22 11:13	11/07/22 15:15	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.035	1	11/04/22 11:13	11/07/22 15:15	193-39-5	
Naphthalene	0.049	mg/kg	0.035	1	11/04/22 11:13	11/07/22 15:15	91-20-3	
Phenanthrene	0.45	mg/kg	0.035	1	11/04/22 11:13	11/07/22 15:15	85-01-8	
Pyrene	0.18	mg/kg	0.035	1	11/04/22 11:13	11/07/22 15:15	129-00-0	
Total BaP Eq. MN 2006sh. ND=0	ND	mg/kg	0.035	1	11/04/22 11:13	11/07/22 15:15		

**Surrogates**

2-Fluorobiphenyl (S)	70	%	59-125	1	11/04/22 11:13	11/07/22 15:15	321-60-8	
p-Terphenyl-d14 (S)	73	%	65-125	1	11/04/22 11:13	11/07/22 15:15	1718-51-0	

**8270E MSSV CPAH by SIM**

Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3550C  
Pace Analytical Services - Minneapolis

Acenaphthene	ND	ug/kg	35.0	1	11/17/22 16:49	11/21/22 21:11	83-32-9	H2
Acenaphthylene	ND	ug/kg	35.0	1	11/17/22 16:49	11/21/22 21:11	208-96-8	H2
Anthracene	ND	ug/kg	35.0	1	11/17/22 16:49	11/21/22 21:11	120-12-7	H2
Benzo(a)anthracene	ND	ug/kg	35.0	1	11/17/22 16:49	11/21/22 21:11	56-55-3	H2
Benzo(a)pyrene	ND	ug/kg	35.0	1	11/17/22 16:49	11/21/22 21:11	50-32-8	H2
Benzo(e)pyrene	ND	ug/kg	35.0	1	11/17/22 16:49	11/21/22 21:11	192-97-2	H2
Benzo(g,h,i)perylene	ND	ug/kg	35.0	1	11/17/22 16:49	11/21/22 21:11	191-24-2	H2
Benzo(a)fluoranthene (Total)	ND	ug/kg	105	1	11/17/22 16:49	11/21/22 21:11		H2,N2
Carbazole	ND	ug/kg	35.0	1	11/17/22 16:49	11/21/22 21:11	86-74-8	H2
2-Chloronaphthalene	ND	ug/kg	35.0	1	11/17/22 16:49	11/21/22 21:11	91-58-7	H2
Chrysene	ND	ug/kg	35.0	1	11/17/22 16:49	11/21/22 21:11	218-01-9	H2
Dibenz(a,h)acridine	ND	ug/kg	35.0	1	11/17/22 16:49	11/21/22 21:11	226-36-8	H2
Dibenz(a,h)anthracene	ND	ug/kg	35.0	1	11/17/22 16:49	11/21/22 21:11	53-70-3	H2
Dibenz(a,j)acridine	ND	ug/kg	35.0	1	11/17/22 16:49	11/21/22 21:11	224-42-0	H2,L2

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## ANALYTICAL RESULTS

Project: B2210417-Revised Report

Pace Project No.: 10631764

**Sample: WILK-2 (0'-2')**      **Lab ID: 10631764004**      Collected: 10/31/22 10:45      Received: 10/31/22 16:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270E MSSV CPAH by SIM</b>		Analytical Method: EPA 8270E by SIM      Preparation Method: EPA 3550C Pace Analytical Services - Minneapolis						
Dibenzo(a,e)pyrene	ND	ug/kg	35.0	1	11/17/22 16:49	11/21/22 21:11	192-65-4	H2
Dibenzo(a,h)pyrene	ND	ug/kg	35.0	1	11/17/22 16:49	11/21/22 21:11	189-64-0	H2
Dibenzo(a,i)pyrene	ND	ug/kg	35.0	1	11/17/22 16:49	11/21/22 21:11	189-55-9	H2
Dibenzo(a,l)pyrene	ND	ug/kg	35.0	1	11/17/22 16:49	11/21/22 21:11	191-30-0	H2
7H-Dibenzo(c,g)carbazole	ND	ug/kg	35.0	1	11/17/22 16:49	11/21/22 21:11	194-59-2	H2
Dibenzofuran	ND	ug/kg	35.0	1	11/17/22 16:49	11/21/22 21:11	132-64-9	H2
7,12-Dimethylbenz(a)anthracene	ND	ug/kg	35.0	1	11/17/22 16:49	11/21/22 21:11	57-97-6	H2
Fluoranthene	ND	ug/kg	35.0	1	11/17/22 16:49	11/21/22 21:11	206-44-0	H2
Fluorene	ND	ug/kg	35.0	1	11/17/22 16:49	11/21/22 21:11	86-73-7	H2
Indeno(1,2,3-cd)pyrene	ND	ug/kg	35.0	1	11/17/22 16:49	11/21/22 21:11	193-39-5	H2
3-Methylcholanthrene	ND	ug/kg	35.0	1	11/17/22 16:49	11/21/22 21:11	56-49-5	H2
5-Methylchrysene	ND	ug/kg	35.0	1	11/17/22 16:49	11/21/22 21:11	3697-24-3	H2
1-Methylnaphthalene	ND	ug/kg	35.0	1	11/17/22 16:49	11/21/22 21:11	90-12-0	H2
2-Methylnaphthalene	ND	ug/kg	35.0	1	11/17/22 16:49	11/21/22 21:11	91-57-6	H2
Naphthalene	ND	ug/kg	35.0	1	11/17/22 16:49	11/21/22 21:11	91-20-3	H2
5-Nitroacenaphthene	ND	ug/kg	35.0	1	11/17/22 16:49	11/21/22 21:11	602-87-9	H2
6-Nitrochrysene	ND	ug/kg	35.0	1	11/17/22 16:49	11/21/22 21:11	7496-02-8	H2
2-Nitrofluorene	ND	ug/kg	35.0	1	11/17/22 16:49	11/21/22 21:11	607-57-8	H2,N2
1-Nitropyrene	ND	ug/kg	35.0	1	11/17/22 16:49	11/21/22 21:11	5522-43-0	H2,N2
4-Nitropyrene	ND	ug/kg	35.0	1	11/17/22 16:49	11/21/22 21:11	57835-92-4	H2,N2
Perylene	ND	ug/kg	35.0	1	11/17/22 16:49	11/21/22 21:11	198-55-0	H2
Phenanthrene	ND	ug/kg	35.0	1	11/17/22 16:49	11/21/22 21:11	85-01-8	H2
Pyrene	ND	ug/kg	35.0	1	11/17/22 16:49	11/21/22 21:11	129-00-0	H2
Total BaP Eq. MN 2006 ND=0	ND	ug/kg	35.0	1	11/17/22 16:49	11/21/22 21:11		N2
<b>Surrogates</b>								
2-Fluorobiphenyl (S)	29	%.	43-125	1	11/17/22 16:49	11/21/22 21:11	321-60-8	S2
p-Terphenyl-d14 (S)	17	%.	40-125	1	11/17/22 16:49	11/21/22 21:11	1718-51-0	S2

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## ANALYTICAL RESULTS

Project: B2210417-Revised Report  
Pace Project No.: 10631764

**Sample: WILK-2 (2'-4')**      **Lab ID: 10631764005**      Collected: 10/31/22 10:50      Received: 10/31/22 16:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>350.1 Ammonia Solids DU</b>								
Analytical Method: EPA 350.1    Preparation Method: EPA 350.1 Pace Analytical Services - Duluth, MN								
Nitrogen, Ammonia	<b>55.4</b>	mg/kg	13.5	1	11/09/22 09:00	11/09/22 11:11	7664-41-7	
<b>351.2 TKN Solids DU</b>								
Analytical Method: EPA 351.2    Preparation Method: EPA 351.2 Pace Analytical Services - Duluth, MN								
Nitrogen, Kjeldahl, Total	<b>14100</b>	mg/kg	2050	10	11/02/22 14:46	11/03/22 11:39	7727-37-9	
<b>353.2 Nitrogen, N+N Solids DU</b>								
Analytical Method: EPA 353.2    Preparation Method: EPA 353.2 Pace Analytical Services - Duluth, MN								
Nitrogen, NO <sub>2</sub> plus NO <sub>3</sub>	<b>13.1</b>	mg/kg	0.89	1	11/03/22 09:22	11/03/22 13:38		N2
<b>365.1 Phos, Total Solids DU</b>								
Analytical Method: EPA 365.1    Preparation Method: SM 4500-P B Pace Analytical Services - Duluth, MN								
Phosphorus	<b>347</b>	mg/kg	11.0	1	11/02/22 15:10	11/03/22 15:32	7723-14-0	
<b>9060 TOC, 2 Rep Solids DU</b>								
Analytical Method: EPA 9060A Pace Analytical Services - Duluth, MN								
RPD%	<b>2.4</b>	%		1		11/03/22 14:03		
Total Organic Carbon	<b>135000</b>	mg/kg	29400	1		11/03/22 13:56	7440-44-0	
Total Organic Carbon	<b>132000</b>	mg/kg	28800	1		11/03/22 14:03	7440-44-0	
Mean Total Organic Carbon	<b>133000</b>	mg/kg	29100	1		11/03/22 14:03	7440-44-0	
<b>8082A GCS PCB</b>								
Analytical Method: EPA 8082A    Preparation Method: EPA 3546 Pace Analytical Services - Minneapolis								
PCB-1016 (Aroclor 1016)	ND	ug/kg	224	1	11/01/22 10:30	11/02/22 21:31	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	224	1	11/01/22 10:30	11/02/22 21:31	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	224	1	11/01/22 10:30	11/02/22 21:31	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	224	1	11/01/22 10:30	11/02/22 21:31	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/kg	224	1	11/01/22 10:30	11/02/22 21:31	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	224	1	11/01/22 10:30	11/02/22 21:31	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	224	1	11/01/22 10:30	11/02/22 21:31	11096-82-5	
<b>Surrogates</b>								
Tetrachloro-m-xylene (S)	85	%	53-125	1	11/01/22 10:30	11/02/22 21:31	877-09-8	
Decachlorobiphenyl (S)	68	%	41-125	1	11/01/22 10:30	11/02/22 21:31	2051-24-3	
<b>6010D MET ICP</b>								
Analytical Method: EPA 6010D    Preparation Method: EPA 3050B Pace Analytical Services - Minneapolis								
Arsenic	<b>8.0</b>	mg/kg	4.5	1	11/03/22 16:17	11/07/22 12:15	7440-38-2	
Cadmium	ND	mg/kg	0.67	1	11/03/22 16:17	11/07/22 12:15	7440-43-9	
Copper	<b>7.5</b>	mg/kg	2.2	1	11/03/22 16:17	11/07/22 12:15	7440-50-8	
Lead	<b>4.2</b>	mg/kg	2.2	1	11/03/22 16:17	11/07/22 12:15	7439-92-1	
Nickel	<b>9.1</b>	mg/kg	4.5	1	11/03/22 16:17	11/07/22 12:15	7440-02-0	
Selenium	ND	mg/kg	4.5	1	11/03/22 16:17	11/07/22 12:15	7782-49-2	
Zinc	<b>11.8</b>	mg/kg	9.0	1	11/03/22 16:17	11/07/22 12:15	7440-66-6	

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### ANALYTICAL RESULTS

Project: B2210417-Revised Report

Pace Project No.: 10631764

**Sample: WILK-2 (2'-4')** Lab ID: **10631764005** Collected: 10/31/22 10:50 Received: 10/31/22 16:15 Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
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**7471B Mercury**

Analytical Method: EPA 7471B Preparation Method: EPA 7471B  
Pace Analytical Services - Minneapolis

Mercury	ND	mg/kg	0.090	1	11/03/22 12:01	11/08/22 12:11	7439-97-6	
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**Dry Weight / %M by ASTM D2974**

Analytical Method: ASTM D2974  
Pace Analytical Services - Minneapolis

Percent Moisture	77.8	%	0.10	1		11/02/22 12:16		N2
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**8270E MSSV PAH by SIM**

Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546  
Pace Analytical Services - Minneapolis

Acenaphthene	ND	mg/kg	0.045	1	11/04/22 11:13	11/07/22 15:37	83-32-9	
Acenaphthylene	ND	mg/kg	0.045	1	11/04/22 11:13	11/07/22 15:37	208-96-8	
Anthracene	0.056	mg/kg	0.045	1	11/04/22 11:13	11/07/22 15:37	120-12-7	
Benzo(a)anthracene	ND	mg/kg	0.045	1	11/04/22 11:13	11/07/22 15:37	56-55-3	
Benzo(a)pyrene	ND	mg/kg	0.045	1	11/04/22 11:13	11/07/22 15:37	50-32-8	
Benzo(b)fluoranthene	0.060	mg/kg	0.045	1	11/04/22 11:13	11/07/22 15:37	205-99-2	
Benzo(g,h,i)perylene	ND	mg/kg	0.045	1	11/04/22 11:13	11/07/22 15:37	191-24-2	
Benzo(k)fluoranthene	ND	mg/kg	0.045	1	11/04/22 11:13	11/07/22 15:37	207-08-9	
Chrysene	0.065	mg/kg	0.045	1	11/04/22 11:13	11/07/22 15:37	218-01-9	
Dibenz(a,h)anthracene	ND	mg/kg	0.045	1	11/04/22 11:13	11/07/22 15:37	53-70-3	
Fluoranthene	0.31	mg/kg	0.045	1	11/04/22 11:13	11/07/22 15:37	206-44-0	
Fluorene	0.10	mg/kg	0.045	1	11/04/22 11:13	11/07/22 15:37	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.045	1	11/04/22 11:13	11/07/22 15:37	193-39-5	
Naphthalene	0.057	mg/kg	0.045	1	11/04/22 11:13	11/07/22 15:37	91-20-3	
Phenanthrene	0.35	mg/kg	0.045	1	11/04/22 11:13	11/07/22 15:37	85-01-8	
Pyrene	0.13	mg/kg	0.045	1	11/04/22 11:13	11/07/22 15:37	129-00-0	
Total BaP Eq. MN 2006sh. ND=0	ND	mg/kg	0.045	1	11/04/22 11:13	11/07/22 15:37		

**Surrogates**

2-Fluorobiphenyl (S)	51	%	59-125	1	11/04/22 11:13	11/07/22 15:37	321-60-8	S2
p-Terphenyl-d14 (S)	47	%	65-125	1	11/04/22 11:13	11/07/22 15:37	1718-51-0	S2

**8270E MSSV CPAH by SIM**

Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3550C  
Pace Analytical Services - Minneapolis

Acenaphthene	ND	ug/kg	44.9	1	11/17/22 16:49	11/21/22 21:42	83-32-9	H2
Acenaphthylene	ND	ug/kg	44.9	1	11/17/22 16:49	11/21/22 21:42	208-96-8	H2
Anthracene	ND	ug/kg	44.9	1	11/17/22 16:49	11/21/22 21:42	120-12-7	H2
Benzo(a)anthracene	ND	ug/kg	44.9	1	11/17/22 16:49	11/21/22 21:42	56-55-3	H2
Benzo(a)pyrene	ND	ug/kg	44.9	1	11/17/22 16:49	11/21/22 21:42	50-32-8	H2
Benzo(e)pyrene	ND	ug/kg	44.9	1	11/17/22 16:49	11/21/22 21:42	192-97-2	H2
Benzo(g,h,i)perylene	ND	ug/kg	44.9	1	11/17/22 16:49	11/21/22 21:42	191-24-2	H2
Benzofluoranthenes (Total)	ND	ug/kg	135	1	11/17/22 16:49	11/21/22 21:42		H2,N2
Carbazole	ND	ug/kg	44.9	1	11/17/22 16:49	11/21/22 21:42	86-74-8	H2
2-Chloronaphthalene	ND	ug/kg	44.9	1	11/17/22 16:49	11/21/22 21:42	91-58-7	H2
Chrysene	ND	ug/kg	44.9	1	11/17/22 16:49	11/21/22 21:42	218-01-9	H2
Dibenz(a,h)acridine	ND	ug/kg	44.9	1	11/17/22 16:49	11/21/22 21:42	226-36-8	H2
Dibenz(a,h)anthracene	ND	ug/kg	44.9	1	11/17/22 16:49	11/21/22 21:42	53-70-3	H2
Dibenz(a,j)acridine	ND	ug/kg	44.9	1	11/17/22 16:49	11/21/22 21:42	224-42-0	H2,L2

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: B2210417-Revised Report

Pace Project No.: 10631764

**Sample: WILK-2 (2'-4')**      **Lab ID: 10631764005**      Collected: 10/31/22 10:50      Received: 10/31/22 16:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270E MSSV CPAH by SIM</b>		Analytical Method: EPA 8270E by SIM      Preparation Method: EPA 3550C Pace Analytical Services - Minneapolis						
Dibenzo(a,e)pyrene	ND	ug/kg	44.9	1	11/17/22 16:49	11/21/22 21:42	192-65-4	H2
Dibenzo(a,h)pyrene	ND	ug/kg	44.9	1	11/17/22 16:49	11/21/22 21:42	189-64-0	H2
Dibenzo(a,i)pyrene	ND	ug/kg	44.9	1	11/17/22 16:49	11/21/22 21:42	189-55-9	H2
Dibenzo(a,l)pyrene	ND	ug/kg	44.9	1	11/17/22 16:49	11/21/22 21:42	191-30-0	H2
7H-Dibenzo(c,g)carbazole	ND	ug/kg	44.9	1	11/17/22 16:49	11/21/22 21:42	194-59-2	H2
Dibenzofuran	ND	ug/kg	44.9	1	11/17/22 16:49	11/21/22 21:42	132-64-9	H2
7,12-Dimethylbenz(a)anthracene	ND	ug/kg	44.9	1	11/17/22 16:49	11/21/22 21:42	57-97-6	H2
Fluoranthene	ND	ug/kg	44.9	1	11/17/22 16:49	11/21/22 21:42	206-44-0	H2
Fluorene	ND	ug/kg	44.9	1	11/17/22 16:49	11/21/22 21:42	86-73-7	H2
Indeno(1,2,3-cd)pyrene	ND	ug/kg	44.9	1	11/17/22 16:49	11/21/22 21:42	193-39-5	H2
3-Methylcholanthrene	ND	ug/kg	44.9	1	11/17/22 16:49	11/21/22 21:42	56-49-5	H2
5-Methylchrysene	ND	ug/kg	44.9	1	11/17/22 16:49	11/21/22 21:42	3697-24-3	H2
1-Methylnaphthalene	ND	ug/kg	44.9	1	11/17/22 16:49	11/21/22 21:42	90-12-0	H2
2-Methylnaphthalene	ND	ug/kg	44.9	1	11/17/22 16:49	11/21/22 21:42	91-57-6	H2
Naphthalene	ND	ug/kg	44.9	1	11/17/22 16:49	11/21/22 21:42	91-20-3	H2
5-Nitroacenaphthene	ND	ug/kg	44.9	1	11/17/22 16:49	11/21/22 21:42	602-87-9	H2
6-Nitrochrysene	ND	ug/kg	44.9	1	11/17/22 16:49	11/21/22 21:42	7496-02-8	H2
2-Nitrofluorene	ND	ug/kg	44.9	1	11/17/22 16:49	11/21/22 21:42	607-57-8	H2,N2
1-Nitropyrene	ND	ug/kg	44.9	1	11/17/22 16:49	11/21/22 21:42	5522-43-0	H2,N2
4-Nitropyrene	ND	ug/kg	44.9	1	11/17/22 16:49	11/21/22 21:42	57835-92-4	H2,N2
Perylene	ND	ug/kg	44.9	1	11/17/22 16:49	11/21/22 21:42	198-55-0	H2
Phenanthrene	ND	ug/kg	44.9	1	11/17/22 16:49	11/21/22 21:42	85-01-8	H2
Pyrene	ND	ug/kg	44.9	1	11/17/22 16:49	11/21/22 21:42	129-00-0	H2
Total BaP Eq. MN 2006 ND=0	ND	ug/kg	44.9	1	11/17/22 16:49	11/21/22 21:42		N2
<b>Surrogates</b>								
2-Fluorobiphenyl (S)	38	%.	43-125	1	11/17/22 16:49	11/21/22 21:42	321-60-8	S2
p-Terphenyl-d14 (S)	26	%.	40-125	1	11/17/22 16:49	11/21/22 21:42	1718-51-0	S2

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## ANALYTICAL RESULTS

Project: B2210417-Revised Report

Pace Project No.: 10631764

**Sample: WILK-2 (4'-6')**      **Lab ID: 10631764006**      Collected: 10/31/22 10:55      Received: 10/31/22 16:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>350.1 Ammonia Solids DU</b>								
Analytical Method: EPA 350.1    Preparation Method: EPA 350.1 Pace Analytical Services - Duluth, MN								
Nitrogen, Ammonia	<b>85.7</b>	mg/kg	19.3	1	11/09/22 09:00	11/09/22 11:12	7664-41-7	
<b>351.2 TKN Solids DU</b>								
Analytical Method: EPA 351.2    Preparation Method: EPA 351.2 Pace Analytical Services - Duluth, MN								
Nitrogen, Kjeldahl, Total	<b>10500</b>	mg/kg	322	1	11/02/22 14:46	11/03/22 11:14	7727-37-9	
<b>353.2 Nitrogen, N+N Solids DU</b>								
Analytical Method: EPA 353.2    Preparation Method: EPA 353.2 Pace Analytical Services - Duluth, MN								
Nitrogen, NO <sub>2</sub> plus NO <sub>3</sub>	<b>1.8</b>	mg/kg	1.3	1	11/03/22 09:22	11/03/22 13:39		N2
<b>365.1 Phos, Total Solids DU</b>								
Analytical Method: EPA 365.1    Preparation Method: SM 4500-P B Pace Analytical Services - Duluth, MN								
Phosphorus	<b>301</b>	mg/kg	15.3	1	11/02/22 15:10	11/03/22 15:33	7723-14-0	
<b>9060 TOC, 2 Rep Solids DU</b>								
Analytical Method: EPA 9060A Pace Analytical Services - Duluth, MN								
RPD%	<b>5.6</b>	%		1		11/04/22 11:29		
Total Organic Carbon	<b>269000</b>	mg/kg	19200	1		11/04/22 11:22	7440-44-0	
Total Organic Carbon	<b>285000</b>	mg/kg	19300	1		11/04/22 11:29	7440-44-0	
Mean Total Organic Carbon	<b>277000</b>	mg/kg	19300	1		11/04/22 11:29	7440-44-0	
<b>8082A GCS PCB</b>								
Analytical Method: EPA 8082A    Preparation Method: EPA 3546 Pace Analytical Services - Minneapolis								
PCB-1016 (Aroclor 1016)	ND	ug/kg	322	1	11/01/22 10:30	11/02/22 21:47	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	322	1	11/01/22 10:30	11/02/22 21:47	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	322	1	11/01/22 10:30	11/02/22 21:47	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	322	1	11/01/22 10:30	11/02/22 21:47	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/kg	322	1	11/01/22 10:30	11/02/22 21:47	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	322	1	11/01/22 10:30	11/02/22 21:47	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	322	1	11/01/22 10:30	11/02/22 21:47	11096-82-5	
<b>Surrogates</b>								
Tetrachloro-m-xylene (S)	74	%	53-125	1	11/01/22 10:30	11/02/22 21:47	877-09-8	
Decachlorobiphenyl (S)	62	%	41-125	1	11/01/22 10:30	11/02/22 21:47	2051-24-3	
<b>6010D MET ICP</b>								
Analytical Method: EPA 6010D    Preparation Method: EPA 3050B Pace Analytical Services - Minneapolis								
Arsenic	<b>10.8</b>	mg/kg	6.3	1	11/03/22 16:17	11/07/22 12:17	7440-38-2	
Cadmium	ND	mg/kg	0.95	1	11/03/22 16:17	11/07/22 12:17	7440-43-9	
Copper	<b>6.9</b>	mg/kg	3.2	1	11/03/22 16:17	11/07/22 12:17	7440-50-8	
Lead	<b>3.6</b>	mg/kg	3.2	1	11/03/22 16:17	11/07/22 12:17	7439-92-1	
Nickel	<b>8.5</b>	mg/kg	6.3	1	11/03/22 16:17	11/07/22 12:17	7440-02-0	
Selenium	ND	mg/kg	6.3	1	11/03/22 16:17	11/07/22 12:17	7782-49-2	
Zinc	<b>19.2</b>	mg/kg	12.7	1	11/03/22 16:17	11/07/22 12:17	7440-66-6	

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### ANALYTICAL RESULTS

Project: B2210417-Revised Report

Pace Project No.: 10631764

Sample: **WILK-2 (4'-6')** Lab ID: **10631764006** Collected: 10/31/22 10:55 Received: 10/31/22 16:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
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**7471B Mercury**

Analytical Method: EPA 7471B Preparation Method: EPA 7471B

Pace Analytical Services - Minneapolis

Mercury	ND	mg/kg	0.11	1	11/03/22 12:01	11/08/22 12:13	7439-97-6	
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**Dry Weight / %M by ASTM D2974**

Analytical Method: ASTM D2974

Pace Analytical Services - Minneapolis

Percent Moisture	<b>84.5</b>	%	0.10	1		11/02/22 12:16		N2
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**8270E MSSV PAH by SIM**

Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546

Pace Analytical Services - Minneapolis

Acenaphthene	ND	mg/kg	0.064	1	11/01/22 13:34	11/03/22 02:52	83-32-9	
Acenaphthylene	ND	mg/kg	0.064	1	11/01/22 13:34	11/03/22 02:52	208-96-8	
Anthracene	ND	mg/kg	0.064	1	11/01/22 13:34	11/03/22 02:52	120-12-7	
Benzo(a)anthracene	ND	mg/kg	0.064	1	11/01/22 13:34	11/03/22 02:52	56-55-3	
Benzo(a)pyrene	ND	mg/kg	0.064	1	11/01/22 13:34	11/03/22 02:52	50-32-8	
Benzo(b)fluoranthene	ND	mg/kg	0.064	1	11/01/22 13:34	11/03/22 02:52	205-99-2	
Benzo(g,h,i)perylene	ND	mg/kg	0.064	1	11/01/22 13:34	11/03/22 02:52	191-24-2	
Benzo(k)fluoranthene	ND	mg/kg	0.064	1	11/01/22 13:34	11/03/22 02:52	207-08-9	
Chrysene	ND	mg/kg	0.064	1	11/01/22 13:34	11/03/22 02:52	218-01-9	
Dibenz(a,h)anthracene	ND	mg/kg	0.064	1	11/01/22 13:34	11/03/22 02:52	53-70-3	
Fluoranthene	ND	mg/kg	0.064	1	11/01/22 13:34	11/03/22 02:52	206-44-0	
Fluorene	ND	mg/kg	0.064	1	11/01/22 13:34	11/03/22 02:52	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.064	1	11/01/22 13:34	11/03/22 02:52	193-39-5	
Naphthalene	ND	mg/kg	0.064	1	11/01/22 13:34	11/03/22 02:52	91-20-3	
Phenanthrene	<b>0.076</b>	mg/kg	0.064	1	11/01/22 13:34	11/03/22 02:52	85-01-8	
Pyrene	ND	mg/kg	0.064	1	11/01/22 13:34	11/03/22 02:52	129-00-0	
Total BaP Eq. MN 2006sh. ND=0	ND	mg/kg	0.064	1	11/01/22 13:34	11/03/22 02:52		

**Surrogates**

2-Fluorobiphenyl (S)	61	%	59-125	1	11/01/22 13:34	11/03/22 02:52	321-60-8	
p-Terphenyl-d14 (S)	66	%	65-125	1	11/01/22 13:34	11/03/22 02:52	1718-51-0	

**8270E MSSV CPAH by SIM**

Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3550C

Pace Analytical Services - Minneapolis

Acenaphthene	ND	ug/kg	64.3	1	11/17/22 16:49	11/21/22 22:13	83-32-9	H2
Acenaphthylene	ND	ug/kg	64.3	1	11/17/22 16:49	11/21/22 22:13	208-96-8	H2
Anthracene	ND	ug/kg	64.3	1	11/17/22 16:49	11/21/22 22:13	120-12-7	H2
Benzo(a)anthracene	ND	ug/kg	64.3	1	11/17/22 16:49	11/21/22 22:13	56-55-3	H2
Benzo(a)pyrene	ND	ug/kg	64.3	1	11/17/22 16:49	11/21/22 22:13	50-32-8	H2
Benzo(e)pyrene	ND	ug/kg	64.3	1	11/17/22 16:49	11/21/22 22:13	192-97-2	H2
Benzo(g,h,i)perylene	ND	ug/kg	64.3	1	11/17/22 16:49	11/21/22 22:13	191-24-2	H2
Benzofluoranthenes (Total)	ND	ug/kg	193	1	11/17/22 16:49	11/21/22 22:13		H2,N2
Carbazole	ND	ug/kg	64.3	1	11/17/22 16:49	11/21/22 22:13	86-74-8	H2
2-Chloronaphthalene	ND	ug/kg	64.3	1	11/17/22 16:49	11/21/22 22:13	91-58-7	H2,M1
Chrysene	ND	ug/kg	64.3	1	11/17/22 16:49	11/21/22 22:13	218-01-9	H2
Dibenz(a,h)acridine	ND	ug/kg	64.3	1	11/17/22 16:49	11/21/22 22:13	226-36-8	H2
Dibenz(a,h)anthracene	ND	ug/kg	64.3	1	11/17/22 16:49	11/21/22 22:13	53-70-3	H2
Dibenz(a,j)acridine	ND	ug/kg	64.3	1	11/17/22 16:49	11/21/22 22:13	224-42-0	H2,L2

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## ANALYTICAL RESULTS

Project: B2210417-Revised Report

Pace Project No.: 10631764

**Sample: WILK-2 (4'-6')**      **Lab ID: 10631764006**      Collected: 10/31/22 10:55      Received: 10/31/22 16:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270E MSSV CPAH by SIM</b>		Analytical Method: EPA 8270E by SIM      Preparation Method: EPA 3550C Pace Analytical Services - Minneapolis						
Dibenzo(a,e)pyrene	ND	ug/kg	64.3	1	11/17/22 16:49	11/21/22 22:13	192-65-4	H2
Dibenzo(a,h)pyrene	ND	ug/kg	64.3	1	11/17/22 16:49	11/21/22 22:13	189-64-0	H2
Dibenzo(a,i)pyrene	ND	ug/kg	64.3	1	11/17/22 16:49	11/21/22 22:13	189-55-9	H2
Dibenzo(a,l)pyrene	ND	ug/kg	64.3	1	11/17/22 16:49	11/21/22 22:13	191-30-0	H2
7H-Dibenzo(c,g)carbazole	ND	ug/kg	64.3	1	11/17/22 16:49	11/21/22 22:13	194-59-2	H2
Dibenzofuran	ND	ug/kg	64.3	1	11/17/22 16:49	11/21/22 22:13	132-64-9	H2
7,12-Dimethylbenz(a)anthracene	ND	ug/kg	64.3	1	11/17/22 16:49	11/21/22 22:13	57-97-6	H2,M1, R1
Fluoranthene	ND	ug/kg	64.3	1	11/17/22 16:49	11/21/22 22:13	206-44-0	H2
Fluorene	ND	ug/kg	64.3	1	11/17/22 16:49	11/21/22 22:13	86-73-7	H2
Indeno(1,2,3-cd)pyrene	ND	ug/kg	64.3	1	11/17/22 16:49	11/21/22 22:13	193-39-5	H2
3-Methylcholanthrene	ND	ug/kg	64.3	1	11/17/22 16:49	11/21/22 22:13	56-49-5	H2
5-Methylchrysene	ND	ug/kg	64.3	1	11/17/22 16:49	11/21/22 22:13	3697-24-3	H2
1-Methylnaphthalene	ND	ug/kg	64.3	1	11/17/22 16:49	11/21/22 22:13	90-12-0	H2
2-Methylnaphthalene	ND	ug/kg	64.3	1	11/17/22 16:49	11/21/22 22:13	91-57-6	H2
Naphthalene	ND	ug/kg	64.3	1	11/17/22 16:49	11/21/22 22:13	91-20-3	H2
5-Nitroacenaphthene	ND	ug/kg	64.3	1	11/17/22 16:49	11/21/22 22:13	602-87-9	H2
6-Nitrochrysene	ND	ug/kg	64.3	1	11/17/22 16:49	11/21/22 22:13	7496-02-8	H2
2-Nitrofluorene	ND	ug/kg	64.3	1	11/17/22 16:49	11/21/22 22:13	607-57-8	H2,N2
1-Nitropyrene	ND	ug/kg	64.3	1	11/17/22 16:49	11/21/22 22:13	5522-43-0	H2,N2
4-Nitropyrene	ND	ug/kg	64.3	1	11/17/22 16:49	11/21/22 22:13	57835-92-4	H2,N2
Perylene	ND	ug/kg	64.3	1	11/17/22 16:49	11/21/22 22:13	198-55-0	H2
Phenanthrene	ND	ug/kg	64.3	1	11/17/22 16:49	11/21/22 22:13	85-01-8	H2
Pyrene	ND	ug/kg	64.3	1	11/17/22 16:49	11/21/22 22:13	129-00-0	H2
Total BaP Eq. MN 2006 ND=0	ND	ug/kg	64.3	1	11/17/22 16:49	11/21/22 22:13		N2
<b>Surrogates</b>								
2-Fluorobiphenyl (S)	18	%	43-125	1	11/17/22 16:49	11/21/22 22:13	321-60-8	S2
p-Terphenyl-d14 (S)	25	%	40-125	1	11/17/22 16:49	11/21/22 22:13	1718-51-0	S2

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## ANALYTICAL RESULTS

Project: B2210417-Revised Report

Pace Project No.: 10631764

**Sample: WILK-3 (0'-2')**      **Lab ID: 10631764007**      Collected: 10/31/22 11:20      Received: 10/31/22 16:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>350.1 Ammonia Solids DU</b>								
Analytical Method: EPA 350.1    Preparation Method: EPA 350.1 Pace Analytical Services - Duluth, MN								
Nitrogen, Ammonia	<b>29.3</b>	mg/kg	7.5	1	11/09/22 09:00	11/09/22 11:16	7664-41-7	
<b>351.2 TKN Solids DU</b>								
Analytical Method: EPA 351.2    Preparation Method: EPA 351.2 Pace Analytical Services - Duluth, MN								
Nitrogen, Kjeldahl, Total	<b>6620</b>	mg/kg	1140	10	11/02/22 14:46	11/03/22 11:40	7727-37-9	
<b>353.2 Nitrogen, N+N Solids DU</b>								
Analytical Method: EPA 353.2    Preparation Method: EPA 353.2 Pace Analytical Services - Duluth, MN								
Nitrogen, NO <sub>2</sub> plus NO <sub>3</sub>	ND	mg/kg	0.50	1	11/03/22 09:22	11/03/22 13:40		N2
<b>365.1 Phos, Total Solids DU</b>								
Analytical Method: EPA 365.1    Preparation Method: SM 4500-P B Pace Analytical Services - Duluth, MN								
Phosphorus	<b>501</b>	mg/kg	5.7	1	11/02/22 15:10	11/03/22 15:37	7723-14-0	
<b>9060 TOC, 2 Rep Solids DU</b>								
Analytical Method: EPA 9060A Pace Analytical Services - Duluth, MN								
RPD%	<b>1.4</b>	%		1		11/04/22 11:44		
Total Organic Carbon	<b>248000</b>	mg/kg	15100	1		11/04/22 11:37	7440-44-0	
Total Organic Carbon	<b>252000</b>	mg/kg	14900	1		11/04/22 11:44	7440-44-0	
Mean Total Organic Carbon	<b>250000</b>	mg/kg	15000	1		11/04/22 11:44	7440-44-0	
<b>8082A GCS PCB</b>								
Analytical Method: EPA 8082A    Preparation Method: EPA 3546 Pace Analytical Services - Minneapolis								
PCB-1016 (Aroclor 1016)	ND	ug/kg	121	1	11/01/22 10:30	11/02/22 22:02	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	121	1	11/01/22 10:30	11/02/22 22:02	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	121	1	11/01/22 10:30	11/02/22 22:02	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	121	1	11/01/22 10:30	11/02/22 22:02	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/kg	121	1	11/01/22 10:30	11/02/22 22:02	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	121	1	11/01/22 10:30	11/02/22 22:02	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	121	1	11/01/22 10:30	11/02/22 22:02	11096-82-5	
<b>Surrogates</b>								
Tetrachloro-m-xylene (S)	88	%	53-125	1	11/01/22 10:30	11/02/22 22:02	877-09-8	
Decachlorobiphenyl (S)	77	%	41-125	1	11/01/22 10:30	11/02/22 22:02	2051-24-3	
<b>6010D MET ICP</b>								
Analytical Method: EPA 6010D    Preparation Method: EPA 3050B Pace Analytical Services - Minneapolis								
Arsenic	<b>7.8</b>	mg/kg	2.5	1	11/03/22 16:17	11/07/22 12:19	7440-38-2	
Cadmium	ND	mg/kg	0.37	1	11/03/22 16:17	11/07/22 12:19	7440-43-9	
Copper	<b>8.6</b>	mg/kg	1.2	1	11/03/22 16:17	11/07/22 12:19	7440-50-8	
Lead	<b>6.1</b>	mg/kg	1.2	1	11/03/22 16:17	11/07/22 12:19	7439-92-1	
Nickel	<b>11.4</b>	mg/kg	2.5	1	11/03/22 16:17	11/07/22 12:19	7440-02-0	
Selenium	<b>2.5</b>	mg/kg	2.5	1	11/03/22 16:17	11/07/22 12:19	7782-49-2	
Zinc	<b>16.0</b>	mg/kg	4.9	1	11/03/22 16:17	11/07/22 12:19	7440-66-6	

## REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: B2210417-Revised Report

Pace Project No.: 10631764

**Sample: WILK-3 (0'-2')** Lab ID: **10631764007** Collected: 10/31/22 11:20 Received: 10/31/22 16:15 Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
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**7471B Mercury**

Analytical Method: EPA 7471B Preparation Method: EPA 7471B  
Pace Analytical Services - Minneapolis

Mercury	ND	mg/kg	0.048	1	11/03/22 12:01	11/08/22 12:14	7439-97-6	
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**Dry Weight / %M by ASTM D2974**

Analytical Method: ASTM D2974  
Pace Analytical Services - Minneapolis

Percent Moisture	<b>60.0</b>	%	0.10	1		11/02/22 12:17		N2
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**8270E MSSV PAH by SIM**

Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546  
Pace Analytical Services - Minneapolis

Acenaphthene	ND	mg/kg	0.025	1	11/01/22 13:34	11/03/22 03:11	83-32-9	
Acenaphthylene	ND	mg/kg	0.025	1	11/01/22 13:34	11/03/22 03:11	208-96-8	
Anthracene	ND	mg/kg	0.025	1	11/01/22 13:34	11/03/22 03:11	120-12-7	
Benzo(a)anthracene	ND	mg/kg	0.025	1	11/01/22 13:34	11/03/22 03:11	56-55-3	
Benzo(a)pyrene	ND	mg/kg	0.025	1	11/01/22 13:34	11/03/22 03:11	50-32-8	
Benzo(b)fluoranthene	ND	mg/kg	0.025	1	11/01/22 13:34	11/03/22 03:11	205-99-2	
Benzo(g,h,i)perylene	ND	mg/kg	0.025	1	11/01/22 13:34	11/03/22 03:11	191-24-2	
Benzo(k)fluoranthene	ND	mg/kg	0.025	1	11/01/22 13:34	11/03/22 03:11	207-08-9	
Chrysene	ND	mg/kg	0.025	1	11/01/22 13:34	11/03/22 03:11	218-01-9	
Dibenz(a,h)anthracene	ND	mg/kg	0.025	1	11/01/22 13:34	11/03/22 03:11	53-70-3	
Fluoranthene	<b>0.064</b>	mg/kg	0.025	1	11/01/22 13:34	11/03/22 03:11	206-44-0	
Fluorene	ND	mg/kg	0.025	1	11/01/22 13:34	11/03/22 03:11	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.025	1	11/01/22 13:34	11/03/22 03:11	193-39-5	
Naphthalene	<b>0.030</b>	mg/kg	0.025	1	11/01/22 13:34	11/03/22 03:11	91-20-3	
Phenanthrene	<b>0.072</b>	mg/kg	0.025	1	11/01/22 13:34	11/03/22 03:11	85-01-8	
Pyrene	<b>0.036</b>	mg/kg	0.025	1	11/01/22 13:34	11/03/22 03:11	129-00-0	
Total BaP Eq. MN 2006sh. ND=0	ND	mg/kg	0.025	1	11/01/22 13:34	11/03/22 03:11		

**Surrogates**

2-Fluorobiphenyl (S)	65	%	59-125	1	11/01/22 13:34	11/03/22 03:11	321-60-8	
p-Terphenyl-d14 (S)	66	%	65-125	1	11/01/22 13:34	11/03/22 03:11	1718-51-0	

**8270E MSSV CPAH by SIM**

Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3550C  
Pace Analytical Services - Minneapolis

Acenaphthene	ND	ug/kg	25.0	1	11/17/22 16:49	11/21/22 23:44	83-32-9	H2
Acenaphthylene	ND	ug/kg	25.0	1	11/17/22 16:49	11/21/22 23:44	208-96-8	H2
Anthracene	ND	ug/kg	25.0	1	11/17/22 16:49	11/21/22 23:44	120-12-7	H2
Benzo(a)anthracene	ND	ug/kg	25.0	1	11/17/22 16:49	11/21/22 23:44	56-55-3	H2
Benzo(a)pyrene	ND	ug/kg	25.0	1	11/17/22 16:49	11/21/22 23:44	50-32-8	H2
Benzo(e)pyrene	ND	ug/kg	25.0	1	11/17/22 16:49	11/21/22 23:44	192-97-2	H2
Benzo(g,h,i)perylene	ND	ug/kg	25.0	1	11/17/22 16:49	11/21/22 23:44	191-24-2	H2
Benzofluoranthenes (Total)	ND	ug/kg	74.9	1	11/17/22 16:49	11/21/22 23:44		H2,N2
Carbazole	ND	ug/kg	25.0	1	11/17/22 16:49	11/21/22 23:44	86-74-8	H2
2-Chloronaphthalene	ND	ug/kg	25.0	1	11/17/22 16:49	11/21/22 23:44	91-58-7	H2
Chrysene	ND	ug/kg	25.0	1	11/17/22 16:49	11/21/22 23:44	218-01-9	H2
Dibenz(a,h)acridine	ND	ug/kg	25.0	1	11/17/22 16:49	11/21/22 23:44	226-36-8	H2
Dibenz(a,h)anthracene	ND	ug/kg	25.0	1	11/17/22 16:49	11/21/22 23:44	53-70-3	H2
Dibenz(a,j)acridine	ND	ug/kg	25.0	1	11/17/22 16:49	11/21/22 23:44	224-42-0	H2,L2

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: B2210417-Revised Report

Pace Project No.: 10631764

**Sample: WILK-3 (0'-2')**      **Lab ID: 10631764007**      Collected: 10/31/22 11:20      Received: 10/31/22 16:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270E MSSV CPAH by SIM</b>		Analytical Method: EPA 8270E by SIM    Preparation Method: EPA 3550C Pace Analytical Services - Minneapolis						
Dibenzo(a,e)pyrene	ND	ug/kg	25.0	1	11/17/22 16:49	11/21/22 23:44	192-65-4	H2
Dibenzo(a,h)pyrene	ND	ug/kg	25.0	1	11/17/22 16:49	11/21/22 23:44	189-64-0	H2
Dibenzo(a,i)pyrene	ND	ug/kg	25.0	1	11/17/22 16:49	11/21/22 23:44	189-55-9	H2
Dibenzo(a,l)pyrene	ND	ug/kg	25.0	1	11/17/22 16:49	11/21/22 23:44	191-30-0	H2
7H-Dibenzo(c,g)carbazole	ND	ug/kg	25.0	1	11/17/22 16:49	11/21/22 23:44	194-59-2	H2
Dibenzofuran	ND	ug/kg	25.0	1	11/17/22 16:49	11/21/22 23:44	132-64-9	H2
7,12-Dimethylbenz(a)anthracene	ND	ug/kg	25.0	1	11/17/22 16:49	11/21/22 23:44	57-97-6	H2
Fluoranthene	ND	ug/kg	25.0	1	11/17/22 16:49	11/21/22 23:44	206-44-0	H2
Fluorene	ND	ug/kg	25.0	1	11/17/22 16:49	11/21/22 23:44	86-73-7	H2
Indeno(1,2,3-cd)pyrene	ND	ug/kg	25.0	1	11/17/22 16:49	11/21/22 23:44	193-39-5	H2
3-Methylcholanthrene	ND	ug/kg	25.0	1	11/17/22 16:49	11/21/22 23:44	56-49-5	H2
5-Methylchrysene	ND	ug/kg	25.0	1	11/17/22 16:49	11/21/22 23:44	3697-24-3	H2
1-Methylnaphthalene	ND	ug/kg	25.0	1	11/17/22 16:49	11/21/22 23:44	90-12-0	H2
2-Methylnaphthalene	ND	ug/kg	25.0	1	11/17/22 16:49	11/21/22 23:44	91-57-6	H2
Naphthalene	ND	ug/kg	25.0	1	11/17/22 16:49	11/21/22 23:44	91-20-3	H2
5-Nitroacenaphthene	ND	ug/kg	25.0	1	11/17/22 16:49	11/21/22 23:44	602-87-9	H2
6-Nitrochrysene	ND	ug/kg	25.0	1	11/17/22 16:49	11/21/22 23:44	7496-02-8	H2
2-Nitrofluorene	ND	ug/kg	25.0	1	11/17/22 16:49	11/21/22 23:44	607-57-8	H2,N2
1-Nitropyrene	ND	ug/kg	25.0	1	11/17/22 16:49	11/21/22 23:44	5522-43-0	H2,N2
4-Nitropyrene	ND	ug/kg	25.0	1	11/17/22 16:49	11/21/22 23:44	57835-92-4	H2,N2
Perylene	ND	ug/kg	25.0	1	11/17/22 16:49	11/21/22 23:44	198-55-0	H2
Phenanthrene	ND	ug/kg	25.0	1	11/17/22 16:49	11/21/22 23:44	85-01-8	H2
Pyrene	ND	ug/kg	25.0	1	11/17/22 16:49	11/21/22 23:44	129-00-0	H2
Total BaP Eq. MN 2006 ND=0	ND	ug/kg	25.0	1	11/17/22 16:49	11/21/22 23:44		N2
<b>Surrogates</b>								
2-Fluorobiphenyl (S)	52	%.	43-125	1	11/17/22 16:49	11/21/22 23:44	321-60-8	
p-Terphenyl-d14 (S)	37	%.	40-125	1	11/17/22 16:49	11/21/22 23:44	1718-51-0	S2

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: B2210417-Revised Report

Pace Project No.: 10631764

**Sample: WILK-3 (2'-4')**      **Lab ID: 10631764008**      Collected: 10/31/22 11:25      Received: 10/31/22 16:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>350.1 Ammonia Solids DU</b>								
Analytical Method: EPA 350.1    Preparation Method: EPA 350.1 Pace Analytical Services - Duluth, MN								
Nitrogen, Ammonia	<b>12.9</b>	mg/kg	5.2	1	11/09/22 09:00	11/09/22 11:17	7664-41-7	
<b>351.2 TKN Solids DU</b>								
Analytical Method: EPA 351.2    Preparation Method: EPA 351.2 Pace Analytical Services - Duluth, MN								
Nitrogen, Kjeldahl, Total	<b>3120</b>	mg/kg	86.3	1	11/02/22 14:46	11/03/22 11:16	7727-37-9	
<b>353.2 Nitrogen, N+N Solids DU</b>								
Analytical Method: EPA 353.2    Preparation Method: EPA 353.2 Pace Analytical Services - Duluth, MN								
Nitrogen, NO <sub>2</sub> plus NO <sub>3</sub>	ND	mg/kg	0.34	1	11/03/22 09:22	11/03/22 13:42		N2
<b>365.1 Phos, Total Solids DU</b>								
Analytical Method: EPA 365.1    Preparation Method: SM 4500-P B Pace Analytical Services - Duluth, MN								
Phosphorus	<b>383</b>	mg/kg	4.2	1	11/02/22 15:10	11/03/22 15:38	7723-14-0	
<b>9060 TOC, 2 Rep Solids DU</b>								
Analytical Method: EPA 9060A Pace Analytical Services - Duluth, MN								
RPD%	<b>19.5</b>	%		1		11/03/22 15:02		
Total Organic Carbon	<b>88100</b>	mg/kg	16000	1		11/03/22 14:55	7440-44-0	
Total Organic Carbon	<b>107000</b>	mg/kg	16000	1		11/03/22 15:02	7440-44-0	
Mean Total Organic Carbon	<b>97600</b>	mg/kg	16000	1		11/03/22 15:02	7440-44-0	
<b>8082A GCS PCB</b>								
Analytical Method: EPA 8082A    Preparation Method: EPA 3546 Pace Analytical Services - Minneapolis								
PCB-1016 (Aroclor 1016)	ND	ug/kg	82.2	1	11/01/22 10:30	11/02/22 22:18	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	82.2	1	11/01/22 10:30	11/02/22 22:18	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	82.2	1	11/01/22 10:30	11/02/22 22:18	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	82.2	1	11/01/22 10:30	11/02/22 22:18	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/kg	82.2	1	11/01/22 10:30	11/02/22 22:18	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	82.2	1	11/01/22 10:30	11/02/22 22:18	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	82.2	1	11/01/22 10:30	11/02/22 22:18	11096-82-5	
<b>Surrogates</b>								
Tetrachloro-m-xylene (S)	88	%	53-125	1	11/01/22 10:30	11/02/22 22:18	877-09-8	
Decachlorobiphenyl (S)	91	%	41-125	1	11/01/22 10:30	11/02/22 22:18	2051-24-3	
<b>6010D MET ICP</b>								
Analytical Method: EPA 6010D    Preparation Method: EPA 3050B Pace Analytical Services - Minneapolis								
Arsenic	<b>5.9</b>	mg/kg	1.7	1	11/03/22 16:17	11/07/22 12:20	7440-38-2	
Cadmium	ND	mg/kg	0.26	1	11/03/22 16:17	11/07/22 12:20	7440-43-9	
Copper	<b>11.5</b>	mg/kg	0.86	1	11/03/22 16:17	11/07/22 12:20	7440-50-8	
Lead	<b>4.2</b>	mg/kg	0.86	1	11/03/22 16:17	11/07/22 12:20	7439-92-1	
Nickel	<b>12.4</b>	mg/kg	1.7	1	11/03/22 16:17	11/07/22 12:20	7440-02-0	
Selenium	ND	mg/kg	1.7	1	11/03/22 16:17	11/07/22 12:20	7782-49-2	
Zinc	<b>23.0</b>	mg/kg	3.4	1	11/03/22 16:17	11/07/22 12:20	7440-66-6	

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### ANALYTICAL RESULTS

Project: B2210417-Revised Report

Pace Project No.: 10631764

**Sample: WILK-3 (2'-4')**      **Lab ID: 10631764008**      Collected: 10/31/22 11:25      Received: 10/31/22 16:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
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**7471B Mercury**

Analytical Method: EPA 7471B      Preparation Method: EPA 7471B  
Pace Analytical Services - Minneapolis

Mercury	ND	mg/kg	0.032	1	11/03/22 12:01	11/08/22 12:16	7439-97-6	
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**Dry Weight / %M by ASTM D2974**

Analytical Method: ASTM D2974  
Pace Analytical Services - Minneapolis

Percent Moisture	<b>42.1</b>	%	0.10	1		11/02/22 12:17		N2
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**8270E MSSV PAH by SIM**

Analytical Method: EPA 8270E by SIM      Preparation Method: EPA 3546  
Pace Analytical Services - Minneapolis

Acenaphthene	ND	mg/kg	0.016	1	11/01/22 13:34	11/03/22 03:31	83-32-9	
Acenaphthylene	ND	mg/kg	0.016	1	11/01/22 13:34	11/03/22 03:31	208-96-8	
Anthracene	ND	mg/kg	0.016	1	11/01/22 13:34	11/03/22 03:31	120-12-7	
Benzo(a)anthracene	ND	mg/kg	0.016	1	11/01/22 13:34	11/03/22 03:31	56-55-3	
Benzo(a)pyrene	ND	mg/kg	0.016	1	11/01/22 13:34	11/03/22 03:31	50-32-8	
Benzo(b)fluoranthene	ND	mg/kg	0.016	1	11/01/22 13:34	11/03/22 03:31	205-99-2	
Benzo(g,h,i)perylene	ND	mg/kg	0.016	1	11/01/22 13:34	11/03/22 03:31	191-24-2	
Benzo(k)fluoranthene	ND	mg/kg	0.016	1	11/01/22 13:34	11/03/22 03:31	207-08-9	
Chrysene	ND	mg/kg	0.016	1	11/01/22 13:34	11/03/22 03:31	218-01-9	
Dibenz(a,h)anthracene	ND	mg/kg	0.016	1	11/01/22 13:34	11/03/22 03:31	53-70-3	
Fluoranthene	ND	mg/kg	0.016	1	11/01/22 13:34	11/03/22 03:31	206-44-0	
Fluorene	ND	mg/kg	0.016	1	11/01/22 13:34	11/03/22 03:31	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.016	1	11/01/22 13:34	11/03/22 03:31	193-39-5	
Naphthalene	ND	mg/kg	0.016	1	11/01/22 13:34	11/03/22 03:31	91-20-3	
Phenanthrene	ND	mg/kg	0.016	1	11/01/22 13:34	11/03/22 03:31	85-01-8	
Pyrene	ND	mg/kg	0.016	1	11/01/22 13:34	11/03/22 03:31	129-00-0	
Total BaP Eq. MN 2006sh. ND=0	ND	mg/kg	0.016	1	11/01/22 13:34	11/03/22 03:31		

**Surrogates**

2-Fluorobiphenyl (S)	67	%	59-125	1	11/01/22 13:34	11/03/22 03:31	321-60-8	
p-Terphenyl-d14 (S)	75	%	65-125	1	11/01/22 13:34	11/03/22 03:31	1718-51-0	

**8270E MSSV CPAH by SIM**

Analytical Method: EPA 8270E by SIM      Preparation Method: EPA 3550C  
Pace Analytical Services - Minneapolis

Acenaphthene	ND	ug/kg	17.1	1	11/15/22 15:07	11/17/22 16:23	83-32-9	H2
Acenaphthylene	ND	ug/kg	17.1	1	11/15/22 15:07	11/17/22 16:23	208-96-8	H2
Anthracene	ND	ug/kg	17.1	1	11/15/22 15:07	11/17/22 16:23	120-12-7	H2
Benzo(a)anthracene	ND	ug/kg	17.1	1	11/15/22 15:07	11/17/22 16:23	56-55-3	H2
Benzo(a)pyrene	ND	ug/kg	17.1	1	11/15/22 15:07	11/17/22 16:23	50-32-8	H2
Benzo(e)pyrene	ND	ug/kg	17.1	1	11/15/22 15:07	11/17/22 16:23	192-97-2	H2
Benzo(g,h,i)perylene	ND	ug/kg	17.1	1	11/15/22 15:07	11/17/22 16:23	191-24-2	H2
Benzofluoranthenes (Total)	ND	ug/kg	51.4	1	11/15/22 15:07	11/17/22 16:23		H2,N2
Carbazole	ND	ug/kg	17.1	1	11/15/22 15:07	11/17/22 16:23	86-74-8	H2
2-Chloronaphthalene	ND	ug/kg	17.1	1	11/15/22 15:07	11/17/22 16:23	91-58-7	H2
Chrysene	ND	ug/kg	17.1	1	11/15/22 15:07	11/17/22 16:23	218-01-9	H2
Dibenz(a,h)acridine	ND	ug/kg	17.1	1	11/15/22 15:07	11/17/22 16:23	226-36-8	H2
Dibenz(a,h)anthracene	ND	ug/kg	17.1	1	11/15/22 15:07	11/17/22 16:23	53-70-3	H2
Dibenz(a,j)acridine	ND	ug/kg	17.1	1	11/15/22 15:07	11/17/22 16:23	224-42-0	H2

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: B2210417-Revised Report

Pace Project No.: 10631764

**Sample: WILK-3 (2'-4')**      **Lab ID: 10631764008**      Collected: 10/31/22 11:25      Received: 10/31/22 16:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270E MSSV CPAH by SIM</b>		Analytical Method: EPA 8270E by SIM      Preparation Method: EPA 3550C Pace Analytical Services - Minneapolis						
Dibenzo(a,e)pyrene	ND	ug/kg	17.1	1	11/15/22 15:07	11/17/22 16:23	192-65-4	H2
Dibenzo(a,h)pyrene	ND	ug/kg	17.1	1	11/15/22 15:07	11/17/22 16:23	189-64-0	H2
Dibenzo(a,i)pyrene	ND	ug/kg	17.1	1	11/15/22 15:07	11/17/22 16:23	189-55-9	H2
Dibenzo(a,l)pyrene	ND	ug/kg	17.1	1	11/15/22 15:07	11/17/22 16:23	191-30-0	H2
7H-Dibenzo(c,g)carbazole	ND	ug/kg	17.1	1	11/15/22 15:07	11/17/22 16:23	194-59-2	H2
Dibenzofuran	ND	ug/kg	17.1	1	11/15/22 15:07	11/17/22 16:23	132-64-9	H2
7,12-Dimethylbenz(a)anthracene	ND	ug/kg	17.1	1	11/15/22 15:07	11/17/22 16:23	57-97-6	H2
Fluoranthene	ND	ug/kg	17.1	1	11/15/22 15:07	11/17/22 16:23	206-44-0	H2
Fluorene	ND	ug/kg	17.1	1	11/15/22 15:07	11/17/22 16:23	86-73-7	H2
Indeno(1,2,3-cd)pyrene	ND	ug/kg	17.1	1	11/15/22 15:07	11/17/22 16:23	193-39-5	H2
3-Methylcholanthrene	ND	ug/kg	17.1	1	11/15/22 15:07	11/17/22 16:23	56-49-5	H2
5-Methylchrysene	ND	ug/kg	17.1	1	11/15/22 15:07	11/17/22 16:23	3697-24-3	H2
1-Methylnaphthalene	ND	ug/kg	17.1	1	11/15/22 15:07	11/17/22 16:23	90-12-0	H2
2-Methylnaphthalene	ND	ug/kg	17.1	1	11/15/22 15:07	11/17/22 16:23	91-57-6	H2
Naphthalene	ND	ug/kg	17.1	1	11/15/22 15:07	11/17/22 16:23	91-20-3	H2
5-Nitroacenaphthene	ND	ug/kg	17.1	1	11/15/22 15:07	11/17/22 16:23	602-87-9	H2
6-Nitrochrysene	ND	ug/kg	17.1	1	11/15/22 15:07	11/17/22 16:23	7496-02-8	H2
2-Nitrofluorene	ND	ug/kg	17.1	1	11/15/22 15:07	11/17/22 16:23	607-57-8	H2,N2
1-Nitropyrene	ND	ug/kg	17.1	1	11/15/22 15:07	11/17/22 16:23	5522-43-0	H2,N2
4-Nitropyrene	ND	ug/kg	17.1	1	11/15/22 15:07	11/17/22 16:23	57835-92-4	H2,N2
Perylene	ND	ug/kg	17.1	1	11/15/22 15:07	11/17/22 16:23	198-55-0	H2
Phenanthrene	ND	ug/kg	17.1	1	11/15/22 15:07	11/17/22 16:23	85-01-8	H2
Pyrene	ND	ug/kg	17.1	1	11/15/22 15:07	11/17/22 16:23	129-00-0	H2
Total BaP Eq. MN 2006 ND=0	ND	ug/kg	17.1	1	11/15/22 15:07	11/17/22 16:23		N2
<b>Surrogates</b>								
2-Fluorobiphenyl (S)	68	%.	43-125	1	11/15/22 15:07	11/17/22 16:23	321-60-8	
p-Terphenyl-d14 (S)	59	%.	40-125	1	11/15/22 15:07	11/17/22 16:23	1718-51-0	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: B2210417-Revised Report

Pace Project No.: 10631764

**Sample: WILK-3 (4'-6')**      **Lab ID: 10631764009**      Collected: 10/31/22 11:30      Received: 10/31/22 16:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>350.1 Ammonia Solids DU</b>								
Analytical Method: EPA 350.1    Preparation Method: EPA 350.1 Pace Analytical Services - Duluth, MN								
Nitrogen, Ammonia	<b>12.3</b>	mg/kg	5.3	1	11/09/22 09:00	11/09/22 11:18	7664-41-7	
<b>351.2 TKN Solids DU</b>								
Analytical Method: EPA 351.2    Preparation Method: EPA 351.2 Pace Analytical Services - Duluth, MN								
Nitrogen, Kjeldahl, Total	<b>2290</b>	mg/kg	836	10	11/02/22 14:46	11/03/22 11:17	7727-37-9	
<b>353.2 Nitrogen, N+N Solids DU</b>								
Analytical Method: EPA 353.2    Preparation Method: EPA 353.2 Pace Analytical Services - Duluth, MN								
Nitrogen, NO <sub>2</sub> plus NO <sub>3</sub>	ND	mg/kg	0.31	1	11/03/22 09:22	11/03/22 13:43		N2
<b>365.1 Phos, Total Solids DU</b>								
Analytical Method: EPA 365.1    Preparation Method: SM 4500-P B Pace Analytical Services - Duluth, MN								
Phosphorus	<b>425</b>	mg/kg	19.9	5	11/02/22 15:10	11/03/22 16:31	7723-14-0	
<b>9060 TOC, 2 Rep Solids DU</b>								
Analytical Method: EPA 9060A Pace Analytical Services - Duluth, MN								
RPD%	<b>8.3</b>	%		1		11/03/22 15:19		
Total Organic Carbon	<b>55800</b>	mg/kg	15800	1		11/03/22 15:12	7440-44-0	
Total Organic Carbon	<b>51300</b>	mg/kg	15800	1		11/03/22 15:19	7440-44-0	
Mean Total Organic Carbon	<b>53600</b>	mg/kg	15800	1		11/03/22 15:19	7440-44-0	
<b>8082A GCS PCB</b>								
Analytical Method: EPA 8082A    Preparation Method: EPA 3546 Pace Analytical Services - Minneapolis								
PCB-1016 (Aroclor 1016)	ND	ug/kg	78.6	1	11/01/22 10:30	11/02/22 22:34	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	78.6	1	11/01/22 10:30	11/02/22 22:34	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	78.6	1	11/01/22 10:30	11/02/22 22:34	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	78.6	1	11/01/22 10:30	11/02/22 22:34	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/kg	78.6	1	11/01/22 10:30	11/02/22 22:34	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	78.6	1	11/01/22 10:30	11/02/22 22:34	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	78.6	1	11/01/22 10:30	11/02/22 22:34	11096-82-5	
<b>Surrogates</b>								
Tetrachloro-m-xylene (S)	86	%	53-125	1	11/01/22 10:30	11/02/22 22:34	877-09-8	
Decachlorobiphenyl (S)	86	%	41-125	1	11/01/22 10:30	11/02/22 22:34	2051-24-3	
<b>6010D MET ICP</b>								
Analytical Method: EPA 6010D    Preparation Method: EPA 3050B Pace Analytical Services - Minneapolis								
Arsenic	<b>5.3</b>	mg/kg	1.6	1	11/03/22 16:17	11/07/22 12:22	7440-38-2	
Cadmium	<b>0.34</b>	mg/kg	0.24	1	11/03/22 16:17	11/07/22 12:22	7440-43-9	
Copper	<b>13.4</b>	mg/kg	0.79	1	11/03/22 16:17	11/07/22 12:22	7440-50-8	
Lead	<b>6.2</b>	mg/kg	0.79	1	11/03/22 16:17	11/07/22 12:22	7439-92-1	
Nickel	<b>17.3</b>	mg/kg	1.6	1	11/03/22 16:17	11/07/22 12:22	7440-02-0	
Selenium	ND	mg/kg	1.6	1	11/03/22 16:17	11/07/22 12:22	7782-49-2	
Zinc	<b>34.1</b>	mg/kg	3.1	1	11/03/22 16:17	11/07/22 12:22	7440-66-6	

## REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: B2210417-Revised Report  
Pace Project No.: 10631764

**Sample: WILK-3 (4'-6')** Lab ID: **10631764009** Collected: 10/31/22 11:30 Received: 10/31/22 16:15 Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
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**7471B Mercury**

Analytical Method: EPA 7471B Preparation Method: EPA 7471B  
Pace Analytical Services - Minneapolis

Mercury	ND	mg/kg	0.030	1	11/03/22 12:01	11/08/22 12:18	7439-97-6	
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**Dry Weight / %M by ASTM D2974**

Analytical Method: ASTM D2974  
Pace Analytical Services - Minneapolis

Percent Moisture	37.1	%	0.10	1		11/02/22 12:17		N2
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**8270E MSSV PAH by SIM**

Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546  
Pace Analytical Services - Minneapolis

Acenaphthene	ND	mg/kg	0.016	1	11/01/22 13:34	11/03/22 03:51	83-32-9	
Acenaphthylene	ND	mg/kg	0.016	1	11/01/22 13:34	11/03/22 03:51	208-96-8	
Anthracene	ND	mg/kg	0.016	1	11/01/22 13:34	11/03/22 03:51	120-12-7	
Benzo(a)anthracene	ND	mg/kg	0.016	1	11/01/22 13:34	11/03/22 03:51	56-55-3	
Benzo(a)pyrene	ND	mg/kg	0.016	1	11/01/22 13:34	11/03/22 03:51	50-32-8	
Benzo(b)fluoranthene	ND	mg/kg	0.016	1	11/01/22 13:34	11/03/22 03:51	205-99-2	
Benzo(g,h,i)perylene	ND	mg/kg	0.016	1	11/01/22 13:34	11/03/22 03:51	191-24-2	
Benzo(k)fluoranthene	ND	mg/kg	0.016	1	11/01/22 13:34	11/03/22 03:51	207-08-9	
Chrysene	ND	mg/kg	0.016	1	11/01/22 13:34	11/03/22 03:51	218-01-9	
Dibenz(a,h)anthracene	ND	mg/kg	0.016	1	11/01/22 13:34	11/03/22 03:51	53-70-3	
Fluoranthene	ND	mg/kg	0.016	1	11/01/22 13:34	11/03/22 03:51	206-44-0	
Fluorene	ND	mg/kg	0.016	1	11/01/22 13:34	11/03/22 03:51	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.016	1	11/01/22 13:34	11/03/22 03:51	193-39-5	
Naphthalene	ND	mg/kg	0.016	1	11/01/22 13:34	11/03/22 03:51	91-20-3	
Phenanthrene	ND	mg/kg	0.016	1	11/01/22 13:34	11/03/22 03:51	85-01-8	
Pyrene	ND	mg/kg	0.016	1	11/01/22 13:34	11/03/22 03:51	129-00-0	
Total BaP Eq. MN 2006sh. ND=0	ND	mg/kg	0.016	1	11/01/22 13:34	11/03/22 03:51		

**Surrogates**

2-Fluorobiphenyl (S)	71	%	59-125	1	11/01/22 13:34	11/03/22 03:51	321-60-8	
p-Terphenyl-d14 (S)	83	%	65-125	1	11/01/22 13:34	11/03/22 03:51	1718-51-0	

**8270E MSSV CPAH by SIM**

Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3550C  
Pace Analytical Services - Minneapolis

Acenaphthene	ND	ug/kg	15.8	1	11/15/22 15:07	11/17/22 17:59	83-32-9	H2
Acenaphthylene	ND	ug/kg	15.8	1	11/15/22 15:07	11/17/22 17:59	208-96-8	H2
Anthracene	ND	ug/kg	15.8	1	11/15/22 15:07	11/17/22 17:59	120-12-7	H2
Benzo(a)anthracene	ND	ug/kg	15.8	1	11/15/22 15:07	11/17/22 17:59	56-55-3	H2
Benzo(a)pyrene	ND	ug/kg	15.8	1	11/15/22 15:07	11/17/22 17:59	50-32-8	H2
Benzo(e)pyrene	ND	ug/kg	15.8	1	11/15/22 15:07	11/17/22 17:59	192-97-2	H2
Benzo(g,h,i)perylene	ND	ug/kg	15.8	1	11/15/22 15:07	11/17/22 17:59	191-24-2	H2
Benzofluoranthenes (Total)	ND	ug/kg	47.3	1	11/15/22 15:07	11/17/22 17:59		H2,N2
Carbazole	ND	ug/kg	15.8	1	11/15/22 15:07	11/17/22 17:59	86-74-8	H2
2-Chloronaphthalene	ND	ug/kg	15.8	1	11/15/22 15:07	11/17/22 17:59	91-58-7	H2
Chrysene	ND	ug/kg	15.8	1	11/15/22 15:07	11/17/22 17:59	218-01-9	H2
Dibenz(a,h)acridine	ND	ug/kg	15.8	1	11/15/22 15:07	11/17/22 17:59	226-36-8	H2
Dibenz(a,h)anthracene	ND	ug/kg	15.8	1	11/15/22 15:07	11/17/22 17:59	53-70-3	H2
Dibenz(a,j)acridine	ND	ug/kg	15.8	1	11/15/22 15:07	11/17/22 17:59	224-42-0	H2

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## ANALYTICAL RESULTS

Project: B2210417-Revised Report

Pace Project No.: 10631764

**Sample: WILK-3 (4'-6')**      **Lab ID: 10631764009**      Collected: 10/31/22 11:30      Received: 10/31/22 16:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270E MSSV CPAH by SIM</b>		Analytical Method: EPA 8270E by SIM      Preparation Method: EPA 3550C Pace Analytical Services - Minneapolis						
Dibenzo(a,e)pyrene	ND	ug/kg	15.8	1	11/15/22 15:07	11/17/22 17:59	192-65-4	H2
Dibenzo(a,h)pyrene	ND	ug/kg	15.8	1	11/15/22 15:07	11/17/22 17:59	189-64-0	H2
Dibenzo(a,i)pyrene	ND	ug/kg	15.8	1	11/15/22 15:07	11/17/22 17:59	189-55-9	H2
Dibenzo(a,l)pyrene	ND	ug/kg	15.8	1	11/15/22 15:07	11/17/22 17:59	191-30-0	H2
7H-Dibenzo(c,g)carbazole	ND	ug/kg	15.8	1	11/15/22 15:07	11/17/22 17:59	194-59-2	H2
Dibenzofuran	ND	ug/kg	15.8	1	11/15/22 15:07	11/17/22 17:59	132-64-9	H2
7,12-Dimethylbenz(a)anthracene	ND	ug/kg	15.8	1	11/15/22 15:07	11/17/22 17:59	57-97-6	H2
Fluoranthene	ND	ug/kg	15.8	1	11/15/22 15:07	11/17/22 17:59	206-44-0	H2
Fluorene	ND	ug/kg	15.8	1	11/15/22 15:07	11/17/22 17:59	86-73-7	H2
Indeno(1,2,3-cd)pyrene	ND	ug/kg	15.8	1	11/15/22 15:07	11/17/22 17:59	193-39-5	H2
3-Methylcholanthrene	ND	ug/kg	15.8	1	11/15/22 15:07	11/17/22 17:59	56-49-5	H2
5-Methylchrysene	ND	ug/kg	15.8	1	11/15/22 15:07	11/17/22 17:59	3697-24-3	H2
1-Methylnaphthalene	ND	ug/kg	15.8	1	11/15/22 15:07	11/17/22 17:59	90-12-0	H2
2-Methylnaphthalene	ND	ug/kg	15.8	1	11/15/22 15:07	11/17/22 17:59	91-57-6	H2
Naphthalene	ND	ug/kg	15.8	1	11/15/22 15:07	11/17/22 17:59	91-20-3	H2
5-Nitroacenaphthene	ND	ug/kg	15.8	1	11/15/22 15:07	11/17/22 17:59	602-87-9	H2
6-Nitrochrysene	ND	ug/kg	15.8	1	11/15/22 15:07	11/17/22 17:59	7496-02-8	H2
2-Nitrofluorene	ND	ug/kg	15.8	1	11/15/22 15:07	11/17/22 17:59	607-57-8	H2,N2
1-Nitropyrene	ND	ug/kg	15.8	1	11/15/22 15:07	11/17/22 17:59	5522-43-0	H2,N2
4-Nitropyrene	ND	ug/kg	15.8	1	11/15/22 15:07	11/17/22 17:59	57835-92-4	H2,N2
Perylene	ND	ug/kg	15.8	1	11/15/22 15:07	11/17/22 17:59	198-55-0	H2
Phenanthrene	ND	ug/kg	15.8	1	11/15/22 15:07	11/17/22 17:59	85-01-8	H2
Pyrene	ND	ug/kg	15.8	1	11/15/22 15:07	11/17/22 17:59	129-00-0	H2
Total BaP Eq. MN 2006 ND=0	ND	ug/kg	15.8	1	11/15/22 15:07	11/17/22 17:59		N2
<b>Surrogates</b>								
2-Fluorobiphenyl (S)	66	%.	43-125	1	11/15/22 15:07	11/17/22 17:59	321-60-8	
p-Terphenyl-d14 (S)	75	%.	40-125	1	11/15/22 15:07	11/17/22 17:59	1718-51-0	

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### QUALITY CONTROL DATA

Project: B2210417-Revised Report  
Pace Project No.: 10631764

QC Batch:	852321	Analysis Method:	EPA 350.1
QC Batch Method:	EPA 350.1	Analysis Description:	350.1 Ammonia DU
		Laboratory:	Pace Analytical Services - Duluth, MN

Associated Lab Samples: 10631764001, 10631764002, 10631764003, 10631764004, 10631764005, 10631764006, 10631764007, 10631764008, 10631764009

METHOD BLANK: 4506666 Matrix: Solid  
Associated Lab Samples: 10631764001, 10631764002, 10631764003, 10631764004, 10631764005, 10631764006, 10631764007, 10631764008, 10631764009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/kg	ND	3.0	11/09/22 11:01	

LABORATORY CONTROL SAMPLE: 4506667

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/kg	30	32.5	108	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4506668 4506669

Parameter	Units	10631764001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/kg	62.4	97.7	92.8	143	135	83	78	90-110	6	10	M1

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

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: B2210417-Revised Report  
Pace Project No.: 10631764

QC Batch: 850897 Analysis Method: EPA 351.2  
QC Batch Method: EPA 351.2 Analysis Description: 351.2 TKN Soil DU  
Laboratory: Pace Analytical Services - Duluth, MN  
Associated Lab Samples: 10631764001, 10631764002, 10631764003, 10631764004, 10631764005, 10631764006, 10631764007, 10631764008, 10631764009

METHOD BLANK: 4499915 Matrix: Solid  
Associated Lab Samples: 10631764001, 10631764002, 10631764003, 10631764004, 10631764005, 10631764006, 10631764007, 10631764008, 10631764009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Kjeldahl, Total	mg/kg	ND	50.0	11/03/22 11:58	

LABORATORY CONTROL SAMPLE: 4499916

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/kg	1000	1000	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4499917 4499918

Parameter	Units	10631300001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Kjeldahl, Total	mg/kg	340	1020	1070	1290	1350	93	95	90-110	5	10	1M

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4499919 4499920

Parameter	Units	10631308006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Kjeldahl, Total	mg/kg	28500	1060	1060	32600	31800	385	307	90-110	3	10	P6

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### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: B2210417-Revised Report  
Pace Project No.: 10631764

QC Batch: 851210 Analysis Method: EPA 353.2  
QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite Soil DU  
Laboratory: Pace Analytical Services - Duluth, MN  
Associated Lab Samples: 10631764001, 10631764002, 10631764003, 10631764004, 10631764005, 10631764006, 10631764007, 10631764008, 10631764009

METHOD BLANK: 4501285 Matrix: Solid  
Associated Lab Samples: 10631764001, 10631764002, 10631764003, 10631764004, 10631764005, 10631764006, 10631764007, 10631764008, 10631764009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/kg	ND	0.20	11/03/22 13:11	N2

LABORATORY CONTROL SAMPLE: 4501286

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/kg	5	4.9	97	90-110	N2

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4501287 4501288

Parameter	Units	10631027003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/kg	<1.3	66.4	65	60.9	61.9	92	94	90-110	2	10	N2

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4501289 4501290

Parameter	Units	10631764001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/kg	23.7	15.2	15.2	34.8	31.0	73	48	90-110	11	10	M1,N2, R1

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**QUALITY CONTROL DATA**

Project: B2210417-Revised Report  
Pace Project No.: 10631764

QC Batch: 850971 Analysis Method: EPA 365.1  
QC Batch Method: SM 4500-P B Analysis Description: 3651 Phos, Total Solids DU  
Laboratory: Pace Analytical Services - Duluth, MN  
Associated Lab Samples: 10631764001, 10631764002, 10631764003, 10631764004, 10631764005, 10631764006, 10631764007, 10631764008, 10631764009

METHOD BLANK: 4500182 Matrix: Solid  
Associated Lab Samples: 10631764001, 10631764002, 10631764003, 10631764004, 10631764005, 10631764006, 10631764007, 10631764008, 10631764009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Phosphorus	mg/kg	ND	2.5	11/03/22 15:13	

LABORATORY CONTROL SAMPLE: 4500183

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phosphorus	mg/kg	25	26.9	108	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4500184 4500185

Parameter	Units	10631027003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Phosphorus	mg/kg	221	1370	1340	1770	1700	113	110	80-120	4	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4500186 4500187

Parameter	Units	10631212001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Phosphorus	mg/kg	2630	289	301	3050	3030	144	134	80-120	0	10	P6

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### QUALITY CONTROL DATA

Project: B2210417-Revised Report

Pace Project No.: 10631764

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QC Batch:	850924	Analysis Method:	EPA 9060A
QC Batch Method:	EPA 9060A	Analysis Description:	9060 TOC Average DU
		Laboratory:	Pace Analytical Services - Duluth, MN

Associated Lab Samples: 10631764001, 10631764002, 10631764003, 10631764004, 10631764005, 10631764006, 10631764007, 10631764008, 10631764009

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METHOD BLANK: 4500012 Matrix: Solid

Associated Lab Samples: 10631764001, 10631764002, 10631764003, 10631764004, 10631764005, 10631764006, 10631764007, 10631764008, 10631764009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mean Total Organic Carbon	mg/kg	ND	600	11/03/22 11:56	

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LABORATORY CONTROL SAMPLE & LCSD: 4500013 4501459

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Mean Total Organic Carbon	mg/kg	5000	5020	5040	100	101	80-120	0	20	

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### QUALITY CONTROL DATA

Project: B2210417-Revised Report

Pace Project No.: 10631764

QC Batch: 850545

Analysis Method: EPA 7471B

QC Batch Method: EPA 7471B

Analysis Description: 7471B Mercury Solids

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10631764001, 10631764002, 10631764003, 10631764004, 10631764005, 10631764006, 10631764007, 10631764008, 10631764009

METHOD BLANK: 4498213

Matrix: Solid

Associated Lab Samples: 10631764001, 10631764002, 10631764003, 10631764004, 10631764005, 10631764006, 10631764007, 10631764008, 10631764009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/kg	ND	0.020	11/08/22 11:55	

LABORATORY CONTROL SAMPLE: 4498214

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	0.5	0.48	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4498215 4498216

Parameter	Units	10631764001 Result	MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	MSD Result	% Rec	MSD % Rec							
Mercury	mg/kg	ND	1.5	1.3	1.4	87	88	80-120	8	20				

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### QUALITY CONTROL DATA

Project: B2210417-Revised Report

Pace Project No.: 10631764

QC Batch:	851291	Analysis Method:	EPA 6010D
QC Batch Method:	EPA 3050B	Analysis Description:	6010D Solids
		Laboratory:	Pace Analytical Services - Minneapolis

Associated Lab Samples: 10631764001, 10631764002, 10631764003, 10631764004, 10631764005, 10631764006, 10631764007, 10631764008, 10631764009

METHOD BLANK: 4501602 Matrix: Solid  
Associated Lab Samples: 10631764001, 10631764002, 10631764003, 10631764004, 10631764005, 10631764006, 10631764007, 10631764008, 10631764009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/kg	ND	1.0	11/07/22 11:39	
Cadmium	mg/kg	ND	0.15	11/07/22 11:39	
Copper	mg/kg	ND	0.50	11/07/22 11:39	
Lead	mg/kg	ND	0.50	11/07/22 11:39	
Nickel	mg/kg	ND	1.0	11/07/22 11:39	
Selenium	mg/kg	ND	1.0	11/07/22 11:39	
Zinc	mg/kg	ND	2.0	11/07/22 11:39	

LABORATORY CONTROL SAMPLE: 4501603

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	48.8	45.2	93	80-120	
Cadmium	mg/kg	48.8	49.2	101	80-120	
Copper	mg/kg	48.8	48.3	99	80-120	
Lead	mg/kg	48.8	48.3	99	80-120	
Nickel	mg/kg	48.8	48.4	99	80-120	
Selenium	mg/kg	48.8	44.1	90	80-120	
Zinc	mg/kg	48.8	48.1	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4501604 4501605

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10631430001 Result	Spike Conc.	Spike Conc.	Conc.								
Arsenic	mg/kg	ND	55.2	55.5	55.5	45.3	44.7	79	78	75-125	1	20	
Cadmium	mg/kg	ND	55.2	55.5	55.5	47.8	47.4	86	85	75-125	1	20	
Copper	mg/kg	41.5	55.2	55.5	55.5	89.8	97.9	88	102	75-125	9	20	
Lead	mg/kg	3.4	55.2	55.5	55.5	51.1	51.1	86	86	75-125	0	20	
Nickel	mg/kg	20.8	55.2	55.5	55.5	68.1	69.8	86	88	75-125	2	20	
Selenium	mg/kg	ND	55.2	55.5	55.5	41.8	41.7	75	74	75-125	0	20	M1
Zinc	mg/kg	32.3	55.2	55.5	55.5	80.8	84.0	88	93	75-125	4	20	

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### QUALITY CONTROL DATA

Project: B2210417-Revised Report

Pace Project No.: 10631764

QC Batch: 850813

Analysis Method: ASTM D2974

QC Batch Method: ASTM D2974

Analysis Description: Dry Weight / %M by ASTM D2974

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10631764001, 10631764002, 10631764003, 10631764004, 10631764005, 10631764006, 10631764007, 10631764008, 10631764009

SAMPLE DUPLICATE: 4499686

Parameter	Units	10631764001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	67.7	65.6	3	30	N2

SAMPLE DUPLICATE: 4499954

Parameter	Units	10631596003 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	19.1	19.8	4	30	N2

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### QUALITY CONTROL DATA

Project: B2210417-Revised Report

Pace Project No.: 10631764

QC Batch:	850559	Analysis Method:	EPA 8082A
QC Batch Method:	EPA 3546	Analysis Description:	8082A GCS PCB
		Laboratory:	Pace Analytical Services - Minneapolis

Associated Lab Samples: 10631764001, 10631764002, 10631764003, 10631764004, 10631764005, 10631764006, 10631764007, 10631764008, 10631764009

METHOD BLANK: 4498243 Matrix: Solid

Associated Lab Samples: 10631764001, 10631764002, 10631764003, 10631764004, 10631764005, 10631764006, 10631764007, 10631764008, 10631764009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	ND	50.0	11/02/22 18:37	
PCB-1221 (Aroclor 1221)	ug/kg	ND	50.0	11/02/22 18:37	
PCB-1232 (Aroclor 1232)	ug/kg	ND	50.0	11/02/22 18:37	
PCB-1242 (Aroclor 1242)	ug/kg	ND	50.0	11/02/22 18:37	
PCB-1248 (Aroclor 1248)	ug/kg	ND	50.0	11/02/22 18:37	
PCB-1254 (Aroclor 1254)	ug/kg	ND	50.0	11/02/22 18:37	
PCB-1260 (Aroclor 1260)	ug/kg	ND	50.0	11/02/22 18:37	
Decachlorobiphenyl (S)	%	97	41-125	11/02/22 18:37	
Tetrachloro-m-xylene (S)	%	85	53-125	11/02/22 18:37	

LABORATORY CONTROL SAMPLE: 4498244

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	1000	895	90	68-125	
PCB-1260 (Aroclor 1260)	ug/kg	1000	922	92	70-125	
Decachlorobiphenyl (S)	%			97	41-125	
Tetrachloro-m-xylene (S)	%			86	53-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4498245 4498246

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		10631764001 Result	Spike Conc.	Spike Conc.	Result							Result
PCB-1016 (Aroclor 1016)	ug/kg	ND	3080	3010	2770	2770	90	92	53-125	0	30	
PCB-1260 (Aroclor 1260)	ug/kg	ND	3080	3010	2480	2640	81	88	30-143	6	30	
Decachlorobiphenyl (S)	%						69	83	41-125			
Tetrachloro-m-xylene (S)	%						84	88	53-125			

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### QUALITY CONTROL DATA

Project: B2210417-Revised Report  
Pace Project No.: 10631764

QC Batch: 850560 Analysis Method: EPA 8270E by SIM  
QC Batch Method: EPA 3546 Analysis Description: 8270E Solid PAH by SIM MSSV  
Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10631764001, 10631764003, 10631764006, 10631764007, 10631764008, 10631764009

METHOD BLANK: 4498247 Matrix: Solid  
Associated Lab Samples: 10631764001, 10631764003, 10631764006, 10631764007, 10631764008, 10631764009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acenaphthene	mg/kg	ND	0.010	11/03/22 16:37	
Acenaphthylene	mg/kg	ND	0.010	11/03/22 16:37	
Anthracene	mg/kg	ND	0.010	11/03/22 16:37	
Benzo(a)anthracene	mg/kg	ND	0.010	11/03/22 16:37	
Benzo(a)pyrene	mg/kg	ND	0.010	11/03/22 16:37	
Benzo(b)fluoranthene	mg/kg	ND	0.010	11/03/22 16:37	
Benzo(g,h,i)perylene	mg/kg	ND	0.010	11/03/22 16:37	
Benzo(k)fluoranthene	mg/kg	ND	0.010	11/03/22 16:37	
Chrysene	mg/kg	ND	0.010	11/03/22 16:37	
Dibenz(a,h)anthracene	mg/kg	ND	0.010	11/03/22 16:37	
Fluoranthene	mg/kg	ND	0.010	11/03/22 16:37	
Fluorene	mg/kg	ND	0.010	11/03/22 16:37	
Indeno(1,2,3-cd)pyrene	mg/kg	ND	0.010	11/03/22 16:37	
Naphthalene	mg/kg	ND	0.010	11/03/22 16:37	
Phenanthrene	mg/kg	ND	0.010	11/03/22 16:37	
Pyrene	mg/kg	ND	0.010	11/03/22 16:37	
2-Fluorobiphenyl (S)	%	74	59-125	11/03/22 16:37	
p-Terphenyl-d14 (S)	%	87	65-125	11/03/22 16:37	

LABORATORY CONTROL SAMPLE: 4498248

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acenaphthene	mg/kg	0.1	0.096	96	60-125	
Acenaphthylene	mg/kg	0.1	0.094	94	59-125	
Anthracene	mg/kg	0.1	0.085	85	62-125	
Benzo(a)anthracene	mg/kg	0.1	0.093	93	64-125	
Benzo(a)pyrene	mg/kg	0.1	0.11	109	64-125	
Benzo(b)fluoranthene	mg/kg	0.1	0.099	99	65-125	
Benzo(g,h,i)perylene	mg/kg	0.1	0.10	105	66-125	
Benzo(k)fluoranthene	mg/kg	0.1	0.11	108	66-125	
Chrysene	mg/kg	0.1	0.096	96	66-125	
Dibenz(a,h)anthracene	mg/kg	0.1	0.10	104	67-125	
Fluoranthene	mg/kg	0.1	0.094	94	65-125	
Fluorene	mg/kg	0.1	0.10	100	60-125	
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	0.097	97	64-125	
Naphthalene	mg/kg	0.1	0.087	87	48-125	
Phenanthrene	mg/kg	0.1	0.094	94	62-125	
Pyrene	mg/kg	0.1	0.097	97	68-125	
2-Fluorobiphenyl (S)	%			91	59-125	

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### QUALITY CONTROL DATA

Project: B2210417-Revised Report

Pace Project No.: 10631764

LABORATORY CONTROL SAMPLE: 4498248

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
p-Terphenyl-d14 (S)	%.			94	65-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4498249 4498250

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		10631764001 Result	Spike Conc.	Spike Conc.	MS Result							MSD Result
Acenaphthene	mg/kg	ND	0.31	0.31	0.21	0.18	67	60	70-125	11	30	M1
Acenaphthylene	mg/kg	ND	0.31	0.31	0.20	0.19	65	62	30-150	5	30	
Anthracene	mg/kg	ND	0.31	0.31	0.20	0.18	67	60	67-125	12	30	M1
Benzo(a)anthracene	mg/kg	ND	0.31	0.31	0.20	0.18	66	58	64-125	14	30	M1
Benzo(a)pyrene	mg/kg	ND	0.31	0.31	0.20	0.16	65	54	40-137	19	30	
Benzo(b)fluoranthene	mg/kg	0.047	0.31	0.31	0.27	0.18	73	44	30-150	40	30	R1
Benzo(g,h,i)perylene	mg/kg	ND	0.31	0.31	0.17	0.15	56	50	69-125	13	30	M1
Benzo(k)fluoranthene	mg/kg	ND	0.31	0.31	0.19	0.20	61	67	48-133	9	30	
Chrysene	mg/kg	0.040	0.31	0.31	0.22	0.19	58	48	62-125	15	30	M1
Dibenz(a,h)anthracene	mg/kg	ND	0.31	0.31	0.18	0.17	59	54	57-125	9	30	M1
Fluoranthene	mg/kg	0.12	0.31	0.31	0.32	0.27	63	49	60-125	16	30	M1
Fluorene	mg/kg	ND	0.31	0.31	0.23	0.20	74	65	53-125	14	30	
Indeno(1,2,3-cd)pyrene	mg/kg	ND	0.31	0.31	0.20	0.17	64	55	49-130	16	30	
Naphthalene	mg/kg	ND	0.31	0.31	0.15	0.15	50	51	46-125	1	30	
Phenanthrene	mg/kg	0.11	0.31	0.31	0.30	0.27	60	52	61-125	9	30	M1
Pyrene	mg/kg	0.057	0.31	0.31	0.24	0.21	61	50	58-125	16	30	M1
2-Fluorobiphenyl (S)	%.						60	58	59-125			S5
p-Terphenyl-d14 (S)	%.						64	58	65-125			S5

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### QUALITY CONTROL DATA

Project: B2210417-Revised Report  
Pace Project No.: 10631764

QC Batch: 851472 Analysis Method: EPA 8270E by SIM  
QC Batch Method: EPA 3546 Analysis Description: 8270E Solid PAH by SIM MSSV  
Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10631764002, 10631764004, 10631764005

METHOD BLANK: 4502565 Matrix: Solid

Associated Lab Samples: 10631764002, 10631764004, 10631764005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acenaphthene	mg/kg	ND	0.010	11/07/22 12:39	
Acenaphthylene	mg/kg	ND	0.010	11/07/22 12:39	
Anthracene	mg/kg	ND	0.010	11/07/22 12:39	
Benzo(a)anthracene	mg/kg	ND	0.010	11/07/22 12:39	
Benzo(a)pyrene	mg/kg	ND	0.010	11/07/22 12:39	
Benzo(b)fluoranthene	mg/kg	ND	0.010	11/07/22 12:39	
Benzo(g,h,i)perylene	mg/kg	ND	0.010	11/07/22 12:39	
Benzo(k)fluoranthene	mg/kg	ND	0.010	11/07/22 12:39	
Chrysene	mg/kg	ND	0.010	11/07/22 12:39	
Dibenz(a,h)anthracene	mg/kg	ND	0.010	11/07/22 12:39	
Fluoranthene	mg/kg	ND	0.010	11/07/22 12:39	
Fluorene	mg/kg	ND	0.010	11/07/22 12:39	
Indeno(1,2,3-cd)pyrene	mg/kg	ND	0.010	11/07/22 12:39	
Naphthalene	mg/kg	ND	0.010	11/07/22 12:39	
Phenanthrene	mg/kg	ND	0.010	11/07/22 12:39	
Pyrene	mg/kg	ND	0.010	11/07/22 12:39	
2-Fluorobiphenyl (S)	%	85	59-125	11/07/22 12:39	
p-Terphenyl-d14 (S)	%	90	65-125	11/07/22 12:39	

LABORATORY CONTROL SAMPLE: 4502566

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acenaphthene	mg/kg	0.1	0.090	90	60-125	
Acenaphthylene	mg/kg	0.1	0.087	87	59-125	
Anthracene	mg/kg	0.1	0.081	81	62-125	
Benzo(a)anthracene	mg/kg	0.1	0.090	90	64-125	
Benzo(a)pyrene	mg/kg	0.1	0.10	101	64-125	
Benzo(b)fluoranthene	mg/kg	0.1	0.096	96	65-125	
Benzo(g,h,i)perylene	mg/kg	0.1	0.096	96	66-125	
Benzo(k)fluoranthene	mg/kg	0.1	0.11	113	66-125	
Chrysene	mg/kg	0.1	0.096	96	66-125	
Dibenz(a,h)anthracene	mg/kg	0.1	0.099	99	67-125	
Fluoranthene	mg/kg	0.1	0.090	90	65-125	
Fluorene	mg/kg	0.1	0.095	95	60-125	
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	0.093	93	64-125	
Naphthalene	mg/kg	0.1	0.077	77	48-125	
Phenanthrene	mg/kg	0.1	0.089	89	62-125	
Pyrene	mg/kg	0.1	0.092	92	68-125	
2-Fluorobiphenyl (S)	%			83	59-125	

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### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: B2210417-Revised Report

Pace Project No.: 10631764

LABORATORY CONTROL SAMPLE: 4502566

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
p-Terphenyl-d14 (S)	%.			90	65-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4502567 4502568

Parameter	Units	10631764002		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Acenaphthene	mg/kg	ND	0.36	0.36	0.21	0.22	60	59	70-125	1	30	M1	
Acenaphthylene	mg/kg	ND	0.36	0.36	0.18	0.19	51	51	30-150	2	30		
Anthracene	mg/kg	0.056	0.36	0.36	0.23	0.21	48	43	67-125	7	30	M1	
Benzo(a)anthracene	mg/kg	ND	0.36	0.36	0.21	0.19	58	52	64-125	9	30	M1	
Benzo(a)pyrene	mg/kg	ND	0.36	0.36	0.18	0.17	50	45	40-137	8	30		
Benzo(b)fluoranthene	mg/kg	0.047	0.36	0.36	0.25	0.22	56	48	30-150	12	30		
Benzo(g,h,i)perylene	mg/kg	ND	0.36	0.36	0.19	0.18	52	49	69-125	4	30	M1	
Benzo(k)fluoranthene	mg/kg	ND	0.36	0.36	0.24	0.21	67	57	48-133	14	30		
Chrysene	mg/kg	0.050	0.36	0.36	0.25	0.21	55	44	62-125	16	30	M1	
Dibenz(a,h)anthracene	mg/kg	ND	0.36	0.36	0.19	0.19	54	53	57-125	1	30	M1	
Fluoranthene	mg/kg	0.26	0.36	0.36	0.52	0.39	73	37	60-125	28	30	M1	
Fluorene	mg/kg	0.10	0.36	0.36	0.32	0.28	61	48	53-125	14	30	M1	
Indeno(1,2,3-cd)pyrene	mg/kg	ND	0.36	0.36	0.19	0.18	53	49	49-130	5	30		
Naphthalene	mg/kg	0.044	0.36	0.36	0.21	0.20	46	42	46-125	5	30	M1	
Phenanthrene	mg/kg	0.37	0.36	0.36	0.66	0.51	82	38	61-125	27	30	M1	
Pyrene	mg/kg	0.11	0.36	0.36	0.32	0.26	59	42	58-125	20	30	M1	
2-Fluorobiphenyl (S)	%.						47	50	59-125				S0
p-Terphenyl-d14 (S)	%.						47	49	65-125				S0

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### QUALITY CONTROL DATA

Project: B2210417-Revised Report  
Pace Project No.: 10631764

QC Batch: 853608      Analysis Method: EPA 8270E by SIM  
QC Batch Method: EPA 3550C      Analysis Description: 8270E CPAH by SIM MSSV  
Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10631764008, 10631764009

METHOD BLANK: 4513549      Matrix: Solid

Associated Lab Samples: 10631764008, 10631764009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1-Methylnaphthalene	ug/kg	ND	10.0	11/17/22 11:33	
1-Nitropyrene	ug/kg	ND	10.0	11/17/22 11:33	N2
2-Chloronaphthalene	ug/kg	ND	10.0	11/17/22 11:33	
2-Methylnaphthalene	ug/kg	ND	10.0	11/17/22 11:33	
2-Nitrofluorene	ug/kg	ND	10.0	11/17/22 11:33	N2
3-Methylcholanthrene	ug/kg	ND	10.0	11/17/22 11:33	
4-Nitropyrene	ug/kg	ND	10.0	11/17/22 11:33	N2
5-Methylchrysene	ug/kg	ND	10.0	11/17/22 11:33	
5-Nitroacenaphthene	ug/kg	ND	10.0	11/17/22 11:33	
6-Nitrochrysene	ug/kg	ND	10.0	11/17/22 11:33	
7,12-Dimethylbenz(a)anthracene	ug/kg	ND	10.0	11/17/22 11:33	
7H-Dibenzo(c,g)carbazole	ug/kg	ND	10.0	11/17/22 11:33	
Acenaphthene	ug/kg	ND	10.0	11/17/22 11:33	
Acenaphthylene	ug/kg	ND	10.0	11/17/22 11:33	
Anthracene	ug/kg	ND	10.0	11/17/22 11:33	
Benzo(a)anthracene	ug/kg	ND	10.0	11/17/22 11:33	
Benzo(a)pyrene	ug/kg	ND	10.0	11/17/22 11:33	
Benzo(e)pyrene	ug/kg	ND	10.0	11/17/22 11:33	
Benzo(g,h,i)perylene	ug/kg	ND	10.0	11/17/22 11:33	
Benzofluoranthenes (Total)	ug/kg	ND	30.0	11/17/22 11:33	N2
Carbazole	ug/kg	ND	10.0	11/17/22 11:33	
Chrysene	ug/kg	ND	10.0	11/17/22 11:33	
Dibenz(a,h)acridine	ug/kg	ND	10.0	11/17/22 11:33	
Dibenz(a,h)anthracene	ug/kg	ND	10.0	11/17/22 11:33	
Dibenz(a,i)acridine	ug/kg	ND	10.0	11/17/22 11:33	
Dibenzo(a,e)pyrene	ug/kg	ND	10.0	11/17/22 11:33	
Dibenzo(a,h)pyrene	ug/kg	ND	10.0	11/17/22 11:33	
Dibenzo(a,i)pyrene	ug/kg	ND	10.0	11/17/22 11:33	
Dibenzo(a,l)pyrene	ug/kg	ND	10.0	11/17/22 11:33	
Dibenzofuran	ug/kg	ND	10.0	11/17/22 11:33	
Fluoranthene	ug/kg	ND	10.0	11/17/22 11:33	
Fluorene	ug/kg	ND	10.0	11/17/22 11:33	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	10.0	11/17/22 11:33	
Naphthalene	ug/kg	ND	10.0	11/17/22 11:33	
Perylene	ug/kg	ND	10.0	11/17/22 11:33	
Phenanthrene	ug/kg	ND	10.0	11/17/22 11:33	
Pyrene	ug/kg	ND	10.0	11/17/22 11:33	
2-Fluorobiphenyl (S)	%	83	43-125	11/17/22 11:33	
p-Terphenyl-d14 (S)	%	86	40-125	11/17/22 11:33	

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### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: B2210417-Revised Report

Pace Project No.: 10631764

LABORATORY CONTROL SAMPLE: 4513550

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	ug/kg	100	71.8	72	52-125	
1-Nitropyrene	ug/kg	100	84.6	85	30-131	N2
2-Chloronaphthalene	ug/kg	100	82.4	82	54-125	
2-Methylnaphthalene	ug/kg	100	73.6	74	52-125	
2-Nitrofluorene	ug/kg	100	91.0	91	60-132	N2
3-Methylcholanthrene	ug/kg	100	86.5	87	30-131	
4-Nitropyrene	ug/kg	100	86.1	86	42-135	N2
5-Methylchrysene	ug/kg	100	85.0	85	63-125	
5-Nitroacenaphthene	ug/kg	100	76.5	77	60-128	
6-Nitrochrysene	ug/kg	100	81.7	82	30-143	
7,12-Dimethylbenz(a)anthracene	ug/kg	100	97.3	97	30-125	
7H-Dibenzo(c,g)carbazole	ug/kg	100	82.0	82	69-125	
Acenaphthene	ug/kg	100	79.4	79	59-125	
Acenaphthylene	ug/kg	100	80.3	80	56-125	
Anthracene	ug/kg	100	82.8	83	62-125	
Benzo(a)anthracene	ug/kg	100	82.4	82	60-125	
Benzo(a)pyrene	ug/kg	100	87.9	88	67-125	
Benzo(e)pyrene	ug/kg	100	91.9	92	64-125	
Benzo(g,h,i)perylene	ug/kg	100	85.6	86	39-129	
Benzo(a)fluoranthene (Total)	ug/kg	300	277	92	67-125	N2
Carbazole	ug/kg	100	83.0	83	66-125	
Chrysene	ug/kg	100	83.6	84	60-125	
Dibenz(a,h)acridine	ug/kg	100	84.1	84	66-125	
Dibenz(a,h)anthracene	ug/kg	100	84.4	84	66-125	
Dibenz(a,i)acridine	ug/kg	100	81.0	81	30-133	
Dibenzo(a,e)pyrene	ug/kg	100	76.2	76	57-125	
Dibenzo(a,h)pyrene	ug/kg	100	86.1	86	59-126	
Dibenzo(a,i)pyrene	ug/kg	100	73.9	74	45-125	
Dibenzo(a,l)pyrene	ug/kg	100	64.2	64	30-125	
Dibenzofuran	ug/kg	100	79.0	79	61-125	
Fluoranthene	ug/kg	100	79.1	79	66-125	
Fluorene	ug/kg	100	79.4	79	63-125	
Indeno(1,2,3-cd)pyrene	ug/kg	100	87.1	87	67-125	
Naphthalene	ug/kg	100	76.8	77	50-125	
Perylene	ug/kg	100	87.4	87	69-125	
Phenanthrene	ug/kg	100	83.4	83	67-125	
Pyrene	ug/kg	100	93.4	93	62-125	
2-Fluorobiphenyl (S)	%			85	43-125	
p-Terphenyl-d14 (S)	%			92	40-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4513551 4513552

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		10631764008	Spike Conc.	Spike Conc.	Result							
1-Methylnaphthalene	ug/kg	ND	172	172	93.9	80.5	55	47	37-125	15	30	

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### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: B2210417-Revised Report

Pace Project No.: 10631764

Parameter	Units	4513551			4513552			% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		10631764008	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec							
1-Nitropyrene	ug/kg	ND	172	172	99.6	111	58	65	30-131	11	30	N2		
2-Chloronaphthalene	ug/kg	ND	172	172	107	100	62	58	48-125	6	30			
2-Methylnaphthalene	ug/kg	ND	172	172	96.3	80.5	56	47	40-125	18	30			
2-Nitrofluorene	ug/kg	ND	172	172	125	133	72	78	30-150	7	30	N2		
3-Methylcholanthrene	ug/kg	ND	172	172	107	119	62	69	30-131	11	30			
4-Nitropyrene	ug/kg	ND	172	172	105	116	61	67	30-135	10	30	N2		
5-Methylchrysene	ug/kg	ND	172	172	102	113	59	65	30-150	10	30			
5-Nitroacenaphthene	ug/kg	ND	172	172	102	113	59	66	30-150	10	30			
6-Nitrochrysene	ug/kg	ND	172	172	98.0	110	57	64	30-143	11	30			
7,12-Dimethylbenz(a)anthracene	ug/kg	ND	172	172	88.0	76.3	51	44	30-145	14	30			
7H-Dibenzo(c,g)carbazole	ug/kg	ND	172	172	114	128	66	75	30-125	12	30			
Acenaphthene	ug/kg	ND	172	172	105	106	61	62	30-139	1	30			
Acenaphthylene	ug/kg	ND	172	172	106	107	62	62	30-125	1	30			
Anthracene	ug/kg	ND	172	172	105	116	61	67	30-150	10	30			
Benzo(a)anthracene	ug/kg	ND	172	172	99.7	109	58	63	30-150	8	30			
Benzo(a)pyrene	ug/kg	ND	172	172	102	113	59	66	30-150	11	30			
Benzo(e)pyrene	ug/kg	ND	172	172	104	115	60	67	30-150	11	30			
Benzo(g,h,i)perylene	ug/kg	ND	172	172	98.6	111	57	65	30-150	12	30			
Benzofluoranthenes (Total)	ug/kg	ND	516	516	313	349	61	68	30-150	11	30	N2		
Carbazole	ug/kg	ND	172	172	108	118	63	69	30-150	9	30			
Chrysene	ug/kg	ND	172	172	101	111	59	64	30-150	9	30			
Dibenz(a,h)acridine	ug/kg	ND	172	172	102	115	59	67	30-125	12	30			
Dibenz(a,h)anthracene	ug/kg	ND	172	172	104	114	60	66	30-146	10	30			
Dibenz(a,j)acridine	ug/kg	ND	172	172	90.8	104	53	61	30-133	14	30			
Dibenzo(a,e)pyrene	ug/kg	ND	172	172	105	115	61	67	30-125	9	30			
Dibenzo(a,h)pyrene	ug/kg	ND	172	172	107	119	62	69	30-126	11	30			
Dibenzo(a,i)pyrene	ug/kg	ND	172	172	91.8	100	53	58	30-125	9	30			
Dibenzo(a,l)pyrene	ug/kg	ND	172	172	85.1	90.8	49	53	30-125	7	30			
Dibenzofuran	ug/kg	ND	172	172	105	110	61	64	43-125	4	30			
Fluoranthene	ug/kg	ND	172	172	93.8	106	54	62	30-150	13	30			
Fluorene	ug/kg	ND	172	172	103	110	60	64	30-147	7	30			
Indeno(1,2,3-cd)pyrene	ug/kg	ND	172	172	103	116	60	67	30-150	12	30			
Naphthalene	ug/kg	ND	172	172	103	80.5	60	47	37-125	25	30			
Perylene	ug/kg	ND	172	172	102	113	59	66	30-150	10	30			
Phenanthrene	ug/kg	ND	172	172	106	117	62	68	30-150	10	30			
Pyrene	ug/kg	ND	172	172	116	126	68	73	30-150	8	30			
2-Fluorobiphenyl (S)	%						67	61	43-125					
p-Terphenyl-d14 (S)	%						66	75	40-125					

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### QUALITY CONTROL DATA

Project: B2210417-Revised Report

Pace Project No.: 10631764

QC Batch: 854193

Analysis Method: EPA 8270E by SIM

QC Batch Method: EPA 3550C

Analysis Description: 8270E CPAH by SIM MSSV

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10631764001, 10631764002, 10631764003, 10631764004, 10631764005, 10631764006, 10631764007

METHOD BLANK: 4516117

Matrix: Solid

Associated Lab Samples: 10631764001, 10631764002, 10631764003, 10631764004, 10631764005, 10631764006, 10631764007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1-Methylnaphthalene	ug/kg	ND	10.0	11/21/22 16:22	
1-Nitropyrene	ug/kg	ND	10.0	11/21/22 16:22	N2
2-Chloronaphthalene	ug/kg	ND	10.0	11/21/22 16:22	
2-Methylnaphthalene	ug/kg	ND	10.0	11/21/22 16:22	
2-Nitrofluorene	ug/kg	ND	10.0	11/21/22 16:22	N2
3-Methylcholanthrene	ug/kg	ND	10.0	11/21/22 16:22	
4-Nitropyrene	ug/kg	ND	10.0	11/21/22 16:22	N2
5-Methylchrysene	ug/kg	ND	10.0	11/21/22 16:22	
5-Nitroacenaphthene	ug/kg	ND	10.0	11/21/22 16:22	
6-Nitrochrysene	ug/kg	ND	10.0	11/21/22 16:22	
7,12-Dimethylbenz(a)anthracene	ug/kg	ND	10.0	11/21/22 16:22	
7H-Dibenzo(c,g)carbazole	ug/kg	ND	10.0	11/21/22 16:22	
Acenaphthene	ug/kg	ND	10.0	11/21/22 16:22	
Acenaphthylene	ug/kg	ND	10.0	11/21/22 16:22	
Anthracene	ug/kg	ND	10.0	11/21/22 16:22	
Benzo(a)anthracene	ug/kg	ND	10.0	11/21/22 16:22	
Benzo(a)pyrene	ug/kg	ND	10.0	11/21/22 16:22	
Benzo(e)pyrene	ug/kg	ND	10.0	11/21/22 16:22	
Benzo(g,h,i)perylene	ug/kg	ND	10.0	11/21/22 16:22	
Benzofluoranthenes (Total)	ug/kg	ND	30.0	11/21/22 16:22	N2
Carbazole	ug/kg	ND	10.0	11/21/22 16:22	
Chrysene	ug/kg	ND	10.0	11/21/22 16:22	
Dibenz(a,h)acridine	ug/kg	ND	10.0	11/21/22 16:22	
Dibenz(a,h)anthracene	ug/kg	ND	10.0	11/21/22 16:22	
Dibenz(a,i)acridine	ug/kg	ND	10.0	11/21/22 16:22	
Dibenzo(a,e)pyrene	ug/kg	ND	10.0	11/21/22 16:22	
Dibenzo(a,h)pyrene	ug/kg	ND	10.0	11/21/22 16:22	
Dibenzo(a,i)pyrene	ug/kg	ND	10.0	11/21/22 16:22	
Dibenzo(a,l)pyrene	ug/kg	ND	10.0	11/21/22 16:22	
Dibenzofuran	ug/kg	ND	10.0	11/21/22 16:22	
Fluoranthene	ug/kg	ND	10.0	11/21/22 16:22	
Fluorene	ug/kg	ND	10.0	11/21/22 16:22	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	10.0	11/21/22 16:22	
Naphthalene	ug/kg	ND	10.0	11/21/22 16:22	
Perylene	ug/kg	ND	10.0	11/21/22 16:22	
Phenanthrene	ug/kg	ND	10.0	11/21/22 16:22	
Pyrene	ug/kg	ND	10.0	11/21/22 16:22	
2-Fluorobiphenyl (S)	%	88	43-125	11/21/22 16:22	
p-Terphenyl-d14 (S)	%	94	40-125	11/21/22 16:22	

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### QUALITY CONTROL DATA

Project: B2210417-Revised Report

Pace Project No.: 10631764

LABORATORY CONTROL SAMPLE: 4516118

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	ug/kg	100	76.1	76	52-125	
1-Nitropyrene	ug/kg	100	75.4	75	30-131	N2
2-Chloronaphthalene	ug/kg	100	77.7	78	54-125	
2-Methylnaphthalene	ug/kg	100	76.4	76	52-125	
2-Nitrofluorene	ug/kg	100	80.9	81	60-132	N2
3-Methylcholanthrene	ug/kg	100	66.5	67	30-131	
4-Nitropyrene	ug/kg	100	81.2	81	42-135	N2
5-Methylchrysene	ug/kg	100	84.5	85	63-125	
5-Nitroacenaphthene	ug/kg	100	80.0	80	60-128	
6-Nitrochrysene	ug/kg	100	83.6	84	30-143	
7,12-Dimethylbenz(a)anthracene	ug/kg	100	92.8	93	30-125	
7H-Dibenzo(c,g)carbazole	ug/kg	100	91.8	92	69-125	
Acenaphthene	ug/kg	100	79.2	79	59-125	
Acenaphthylene	ug/kg	100	79.4	79	56-125	
Anthracene	ug/kg	100	81.3	81	62-125	
Benzo(a)anthracene	ug/kg	100	80.9	81	60-125	
Benzo(a)pyrene	ug/kg	100	91.4	91	67-125	
Benzo(e)pyrene	ug/kg	100	92.7	93	64-125	
Benzo(g,h,i)perylene	ug/kg	100	90.3	90	39-129	
Benzo(a)fluoranthene (Total)	ug/kg	300	281	94	67-125	N2
Carbazole	ug/kg	100	84.2	84	66-125	
Chrysene	ug/kg	100	84.5	84	60-125	
Dibenz(a,h)acridine	ug/kg	100	77.5	77	66-125	
Dibenz(a,h)anthracene	ug/kg	100	90.3	90	66-125	
Dibenz(a,i)acridine	ug/kg	100	4.3J	4	30-133	L2
Dibenzo(a,e)pyrene	ug/kg	100	85.4	85	57-125	
Dibenzo(a,h)pyrene	ug/kg	100	97.0	97	59-126	
Dibenzo(a,i)pyrene	ug/kg	100	81.7	82	45-125	
Dibenzo(a,l)pyrene	ug/kg	100	53.6	54	30-125	
Dibenzofuran	ug/kg	100	81.8	82	61-125	
Fluoranthene	ug/kg	100	86.2	86	66-125	
Fluorene	ug/kg	100	82.4	82	63-125	
Indeno(1,2,3-cd)pyrene	ug/kg	100	92.1	92	67-125	
Naphthalene	ug/kg	100	75.6	76	50-125	
Perylene	ug/kg	100	87.3	87	69-125	
Phenanthrene	ug/kg	100	81.9	82	67-125	
Pyrene	ug/kg	100	84.5	85	62-125	
2-Fluorobiphenyl (S)	%			80	43-125	
p-Terphenyl-d14 (S)	%			89	40-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4516162 4516163

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		10631764006	Spike Conc.	Spike Conc.	Result							
1-Methylnaphthalene	ug/kg	ND	644	641	273	346	42	54	37-125	23	30	

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

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: B2210417-Revised Report

Pace Project No.: 10631764

Parameter	Units	4516162		4516163		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		10631764006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
1-Nitropyrene	ug/kg	ND	644	641	291	341	45	53	30-131	16	30	N2	
2-Chloronaphthalene	ug/kg	ND	644	641	289	364	45	57	48-125	23	30	M1	
2-Methylnaphthalene	ug/kg	ND	644	641	277	349	43	55	40-125	23	30		
2-Nitrofluorene	ug/kg	ND	644	641	351	403	54	63	30-150	14	30	N2	
3-Methylcholanthrene	ug/kg	ND	644	641	374	441	58	69	30-131	16	30		
4-Nitropyrene	ug/kg	ND	644	641	330	387	51	60	30-135	16	30	N2	
5-Methylchrysene	ug/kg	ND	644	641	345	405	54	63	30-150	16	30		
5-Nitroacenaphthene	ug/kg	ND	644	641	350	391	54	61	30-150	11	30		
6-Nitrochrysene	ug/kg	ND	644	641	346	408	54	64	30-143	16	30		
7,12-Dimethylbenz(a)anthracene	ug/kg	ND	644	641	82.4	150	13	23	30-145	58	30	M1,R1	
7H-Dibenzo(c,g)carbazole	ug/kg	ND	644	641	415	478	64	75	30-125	14	30		
Acenaphthene	ug/kg	ND	644	641	298	369	46	58	30-139	21	30		
Acenaphthylene	ug/kg	ND	644	641	291	357	45	56	30-125	20	30		
Anthracene	ug/kg	ND	644	641	304	361	47	56	30-150	17	30		
Benzo(a)anthracene	ug/kg	ND	644	641	320	373	50	58	30-150	15	30		
Benzo(a)pyrene	ug/kg	ND	644	641	340	394	53	62	30-150	15	30		
Benzo(e)pyrene	ug/kg	ND	644	641	339	403	53	63	30-150	17	30		
Benzo(g,h,i)perylene	ug/kg	ND	644	641	330	384	51	60	30-150	15	30		
Benzofluoranthenes (Total)	ug/kg	ND	1930	1920	1040	1240	54	64	30-150	17	30	N2	
Carbazole	ug/kg	ND	644	641	348	395	54	62	30-150	13	30		
Chrysene	ug/kg	ND	644	641	324	391	50	61	30-150	19	30		
Dibenz(a,h)acridine	ug/kg	ND	644	641	343	405	53	63	30-125	17	30		
Dibenz(a,h)anthracene	ug/kg	ND	644	641	372	430	58	67	30-146	15	30		
Dibenz(a,i)acridine	ug/kg	ND	644	641	286	332	44	52	30-133	15	30		
Dibenzo(a,e)pyrene	ug/kg	ND	644	641	363	437	56	68	30-125	18	30		
Dibenzo(a,h)pyrene	ug/kg	ND	644	641	393	460	61	72	30-126	16	30		
Dibenzo(a,i)pyrene	ug/kg	ND	644	641	319	371	50	58	30-125	15	30		
Dibenzo(a,l)pyrene	ug/kg	ND	644	641	292	338	45	53	30-125	14	30		
Dibenzofuran	ug/kg	ND	644	641	303	367	47	57	43-125	19	30		
Fluoranthene	ug/kg	ND	644	641	326	380	51	59	30-150	15	30		
Fluorene	ug/kg	ND	644	641	313	375	49	59	30-147	18	30		
Indeno(1,2,3-cd)pyrene	ug/kg	ND	644	641	352	416	55	65	30-150	17	30		
Naphthalene	ug/kg	ND	644	641	287	354	45	55	37-125	21	30		
Perylene	ug/kg	ND	644	641	323	377	50	59	30-150	15	30		
Phenanthrene	ug/kg	ND	644	641	315	370	49	58	30-150	16	30		
Pyrene	ug/kg	ND	644	641	324	376	50	59	30-150	15	30		
2-Fluorobiphenyl (S)	%						45	58	43-125				
p-Terphenyl-d14 (S)	%						50	56	40-125				

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### REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: B2210417-Revised Report

Pace Project No.: 10631764

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### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

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

TNI - The NELAC Institute.

### ANALYTE QUALIFIERS

1M	The samples were kept frozen; thawed and extracted within the 6 month holding time as indicated by Minnesota Department of Agriculture Guidance Document 11 for extractions and analysis.
H2	Extraction or preparation was conducted outside of the recognized method holding time.
L2	Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
N2	The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.
P6	Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.
R1	RPD value was outside control limits.
S0	Surrogate recovery outside laboratory control limits.
S2	Surrogate recovery outside laboratory control limits due to matrix interferences (confirmed by similar results from sample re-analysis).
S5	Surrogate recovery outside control limits due to matrix interferences (not confirmed by re-analysis).

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: B2210417-Revised Report

Pace Project No.: 10631764

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10631764001	WILK-1 (0'-2')	EPA 350.1	852321	EPA 350.1	852427
10631764002	WILK-1 (2'-4')	EPA 350.1	852321	EPA 350.1	852427
10631764003	WILK-1 (4'-6')	EPA 350.1	852321	EPA 350.1	852427
10631764004	WILK-2 (0'-2')	EPA 350.1	852321	EPA 350.1	852427
10631764005	WILK-2 (2'-4')	EPA 350.1	852321	EPA 350.1	852427
10631764006	WILK-2 (4'-6')	EPA 350.1	852321	EPA 350.1	852427
10631764007	WILK-3 (0'-2')	EPA 350.1	852321	EPA 350.1	852427
10631764008	WILK-3 (2'-4')	EPA 350.1	852321	EPA 350.1	852427
10631764009	WILK-3 (4'-6')	EPA 350.1	852321	EPA 350.1	852427
10631764001	WILK-1 (0'-2')	EPA 351.2	850897	EPA 351.2	851341
10631764002	WILK-1 (2'-4')	EPA 351.2	850897	EPA 351.2	851341
10631764003	WILK-1 (4'-6')	EPA 351.2	850897	EPA 351.2	851341
10631764004	WILK-2 (0'-2')	EPA 351.2	850897	EPA 351.2	851341
10631764005	WILK-2 (2'-4')	EPA 351.2	850897	EPA 351.2	851341
10631764006	WILK-2 (4'-6')	EPA 351.2	850897	EPA 351.2	851341
10631764007	WILK-3 (0'-2')	EPA 351.2	850897	EPA 351.2	851341
10631764008	WILK-3 (2'-4')	EPA 351.2	850897	EPA 351.2	851341
10631764009	WILK-3 (4'-6')	EPA 351.2	850897	EPA 351.2	851341
10631764001	WILK-1 (0'-2')	EPA 353.2	851210	EPA 353.2	851292
10631764002	WILK-1 (2'-4')	EPA 353.2	851210	EPA 353.2	851292
10631764003	WILK-1 (4'-6')	EPA 353.2	851210	EPA 353.2	851292
10631764004	WILK-2 (0'-2')	EPA 353.2	851210	EPA 353.2	851292
10631764005	WILK-2 (2'-4')	EPA 353.2	851210	EPA 353.2	851292
10631764006	WILK-2 (4'-6')	EPA 353.2	851210	EPA 353.2	851292
10631764007	WILK-3 (0'-2')	EPA 353.2	851210	EPA 353.2	851292
10631764008	WILK-3 (2'-4')	EPA 353.2	851210	EPA 353.2	851292
10631764009	WILK-3 (4'-6')	EPA 353.2	851210	EPA 353.2	851292
10631764001	WILK-1 (0'-2')	SM 4500-P B	850971	EPA 365.1	851064
10631764002	WILK-1 (2'-4')	SM 4500-P B	850971	EPA 365.1	851064
10631764003	WILK-1 (4'-6')	SM 4500-P B	850971	EPA 365.1	851064
10631764004	WILK-2 (0'-2')	SM 4500-P B	850971	EPA 365.1	851064
10631764005	WILK-2 (2'-4')	SM 4500-P B	850971	EPA 365.1	851064
10631764006	WILK-2 (4'-6')	SM 4500-P B	850971	EPA 365.1	851064
10631764007	WILK-3 (0'-2')	SM 4500-P B	850971	EPA 365.1	851064
10631764008	WILK-3 (2'-4')	SM 4500-P B	850971	EPA 365.1	851064
10631764009	WILK-3 (4'-6')	SM 4500-P B	850971	EPA 365.1	851064
10631764001	WILK-1 (0'-2')	EPA 9060A	850924		
10631764001	WILK-1 (0'-2')	EPA 9060A	851258		
10631764002	WILK-1 (2'-4')	EPA 9060A	850924		
10631764002	WILK-1 (2'-4')	EPA 9060A	851258		
10631764003	WILK-1 (4'-6')	EPA 9060A	850924		
10631764003	WILK-1 (4'-6')	EPA 9060A	851258		
10631764004	WILK-2 (0'-2')	EPA 9060A	850924		

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: B2210417-Revised Report

Pace Project No.: 10631764

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10631764004	WILK-2 (0'-2')	EPA 9060A	851258		
10631764005	WILK-2 (2'-4')	EPA 9060A	850924		
10631764005	WILK-2 (2'-4')	EPA 9060A	851258		
10631764006	WILK-2 (4'-6')	EPA 9060A	850924		
10631764006	WILK-2 (4'-6')	EPA 9060A	851258		
10631764007	WILK-3 (0'-2')	EPA 9060A	850924		
10631764007	WILK-3 (0'-2')	EPA 9060A	851258		
10631764008	WILK-3 (2'-4')	EPA 9060A	850924		
10631764008	WILK-3 (2'-4')	EPA 9060A	851258		
10631764009	WILK-3 (4'-6')	EPA 9060A	850924		
10631764009	WILK-3 (4'-6')	EPA 9060A	851258		
10631764001	WILK-1 (0'-2')	EPA 3546	850559	EPA 8082A	850956
10631764002	WILK-1 (2'-4')	EPA 3546	850559	EPA 8082A	850956
10631764003	WILK-1 (4'-6')	EPA 3546	850559	EPA 8082A	850956
10631764004	WILK-2 (0'-2')	EPA 3546	850559	EPA 8082A	850956
10631764005	WILK-2 (2'-4')	EPA 3546	850559	EPA 8082A	850956
10631764006	WILK-2 (4'-6')	EPA 3546	850559	EPA 8082A	850956
10631764007	WILK-3 (0'-2')	EPA 3546	850559	EPA 8082A	850956
10631764008	WILK-3 (2'-4')	EPA 3546	850559	EPA 8082A	850956
10631764009	WILK-3 (4'-6')	EPA 3546	850559	EPA 8082A	850956
10631764001	WILK-1 (0'-2')	EPA 3050B	851291	EPA 6010D	851677
10631764002	WILK-1 (2'-4')	EPA 3050B	851291	EPA 6010D	851677
10631764003	WILK-1 (4'-6')	EPA 3050B	851291	EPA 6010D	851677
10631764004	WILK-2 (0'-2')	EPA 3050B	851291	EPA 6010D	851677
10631764005	WILK-2 (2'-4')	EPA 3050B	851291	EPA 6010D	851677
10631764006	WILK-2 (4'-6')	EPA 3050B	851291	EPA 6010D	851677
10631764007	WILK-3 (0'-2')	EPA 3050B	851291	EPA 6010D	851677
10631764008	WILK-3 (2'-4')	EPA 3050B	851291	EPA 6010D	851677
10631764009	WILK-3 (4'-6')	EPA 3050B	851291	EPA 6010D	851677
10631764001	WILK-1 (0'-2')	EPA 7471B	850545	EPA 7471B	851787
10631764002	WILK-1 (2'-4')	EPA 7471B	850545	EPA 7471B	851787
10631764003	WILK-1 (4'-6')	EPA 7471B	850545	EPA 7471B	851787
10631764004	WILK-2 (0'-2')	EPA 7471B	850545	EPA 7471B	851787
10631764005	WILK-2 (2'-4')	EPA 7471B	850545	EPA 7471B	851787
10631764006	WILK-2 (4'-6')	EPA 7471B	850545	EPA 7471B	851787
10631764007	WILK-3 (0'-2')	EPA 7471B	850545	EPA 7471B	851787
10631764008	WILK-3 (2'-4')	EPA 7471B	850545	EPA 7471B	851787
10631764009	WILK-3 (4'-6')	EPA 7471B	850545	EPA 7471B	851787
10631764001	WILK-1 (0'-2')	ASTM D2974	850813		
10631764002	WILK-1 (2'-4')	ASTM D2974	850813		
10631764003	WILK-1 (4'-6')	ASTM D2974	850813		
10631764004	WILK-2 (0'-2')	ASTM D2974	850813		

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: B2210417-Revised Report

Pace Project No.: 10631764

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10631764005	WILK-2 (2'-4')	ASTM D2974	850813		
10631764006	WILK-2 (4'-6')	ASTM D2974	850813		
10631764007	WILK-3 (0'-2')	ASTM D2974	850813		
10631764008	WILK-3 (2'-4')	ASTM D2974	850813		
10631764009	WILK-3 (4'-6')	ASTM D2974	850813		
10631764001	WILK-1 (0'-2')	EPA 3546	850560	EPA 8270E by SIM	850914
10631764002	WILK-1 (2'-4')	EPA 3546	851472	EPA 8270E by SIM	851838
10631764003	WILK-1 (4'-6')	EPA 3546	850560	EPA 8270E by SIM	850914
10631764004	WILK-2 (0'-2')	EPA 3546	851472	EPA 8270E by SIM	851838
10631764005	WILK-2 (2'-4')	EPA 3546	851472	EPA 8270E by SIM	851838
10631764006	WILK-2 (4'-6')	EPA 3546	850560	EPA 8270E by SIM	850914
10631764007	WILK-3 (0'-2')	EPA 3546	850560	EPA 8270E by SIM	850914
10631764008	WILK-3 (2'-4')	EPA 3546	850560	EPA 8270E by SIM	850914
10631764009	WILK-3 (4'-6')	EPA 3546	850560	EPA 8270E by SIM	850914
10631764001	WILK-1 (0'-2')	EPA 3550C	854193	EPA 8270E by SIM	854359
10631764002	WILK-1 (2'-4')	EPA 3550C	854193	EPA 8270E by SIM	854359
10631764003	WILK-1 (4'-6')	EPA 3550C	854193	EPA 8270E by SIM	854359
10631764004	WILK-2 (0'-2')	EPA 3550C	854193	EPA 8270E by SIM	854359
10631764005	WILK-2 (2'-4')	EPA 3550C	854193	EPA 8270E by SIM	854359
10631764006	WILK-2 (4'-6')	EPA 3550C	854193	EPA 8270E by SIM	854359
10631764007	WILK-3 (0'-2')	EPA 3550C	854193	EPA 8270E by SIM	854359
10631764008	WILK-3 (2'-4')	EPA 3550C	853608	EPA 8270E by SIM	854121
10631764009	WILK-3 (4'-6')	EPA 3550C	853608	EPA 8270E by SIM	854121

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# CHAIN-OF-CUSTODY Analytical Request Document

LAB USE ONLY - Affix WO

# WO#: 10631764

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

Billing Information:  
 mciampone@brownintertel.com  
 ↓

Company: **Brown Intertel**  
 Address: **11001 Hampshire Ave S, Blomington MN**  
 Report To: **Mark Ciampone**  
 Copy To:

Customer Project Name/Number: **B2210417**  
 State: **MN** County/City: **White Bear Lake** Time Zone Collected: **JPT** | **IMT** | **ACT** | **JET**

Site/Facility ID #: \_\_\_\_\_  
 Site Collection Info/Address: **MCIampone@brownintertel.com**

Purchase Order #: \_\_\_\_\_  
 Quote #: \_\_\_\_\_  
 Turnaround Date Required: **SID**

Rush:  Same Day  Next Day  13 Day  14 Day  15 Day (Expedite Charges Apply)

\* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start)		Res Cl	# of Ctns
			Date	Time		
WELK-1 (0-2)	SL	comp	10/31/22	12:05		9
WELK-1 (2-4)				12:10		
WELK-1 (4-6)				12:15		
WELK-2 (0-2)				10:45		
WELK-2 (2-4)				10:50		
WELK-2 (4-6)				10:55		
WELK-3 (0-2)				11:20		
WELK-3 (2-4)				11:25		
WELK-3 (4-6)				11:30		

Customer Remarks / Special Conditions / Possible Hazards: \_\_\_\_\_

Type of Ice Used: Wet Blue Dry None

Packing Material Used: \_\_\_\_\_

Radchem sample(s) screened (<500 cpm): Y N NA

Relinquished by/Company: (Signature) **Ben Boeckers / Brown** Date/Time: **10/31/22 13:25**

Relinquished by/Company: (Signature) **Charles XJ Pace** Date/Time: **10/31/22 13:25**

Relinquished by/Company: (Signature) **Charles XJ Pace** Date/Time: **10/31/22 16:15**

Container Preservative Type: **V V V V V V V V V V**

Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other

Analyses

Analysis	Result
Total Cr, Cr III, Cr VI	X
Phos, N+N, Ammonia, TN, TOC	X
PCBS by 8082	X
PAHs by 8270	X
Moisture	X

Lab Profile/Line: **33913**

Lab Sample Receipt Checklist:

Custody Seals Present/Intact Y N NA  
 Custody Signatures Present Y N NA  
 Collector Signatures Present Y N NA  
 Bottles Intact Y N NA  
 Correct Bottles Y N NA  
 Sufficient Volume Y N NA  
 Samples Received on Ice Y N NA  
 VOA - Headspace Acceptable Y N NA  
 USDA Regulated Soils Y N NA  
 Samples in Holding Time Y N NA  
 Residual Chlorine Present Y N NA  
 Cl Strips: \_\_\_\_\_  
 Sample pH Acceptable Y N NA  
 pH Strips: \_\_\_\_\_  
 Sulfide Present Y N NA  
 Lead Acetate Strips: \_\_\_\_\_

LAB USE ONLY:  
 Lab Sample # / Comments: \_\_\_\_\_

Lab Sample Temperature Info:  
 Temp Blank Received: **Y** N NA  
 Therm ID#: \_\_\_\_\_  
 Cooler 1 Temp Upon Receipt: \_\_\_\_\_ °C  
 Cooler 1 Therm Corr. Factor: \_\_\_\_\_ °C  
 Cooler 1 Corrected Temp: \_\_\_\_\_ °C  
 Comments: **Temp 3.2 / 2.7**

Trip Blank Received: Y N NA  
 HCL MeOH TSP Other

Non Conformance(s): YES / NO  
 Page: \_\_\_\_\_ of: \_\_\_\_\_

Lab Tracking #: **2855398**

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Samples received via: FEDEX UPS Client Courier Pace Courier

Date/Time: **10/31/22 13:40**

Date/Time: **10/31/22 15:35**

Date/Time: **10/31/22 16:05**

Effective Date: 8/26/2022

Sample Condition Upon Receipt Client Name: Braun water

Project #: WO#: 10631764 PM: BGB Due Date: 11/09/22 CLIENT: Braun-BLM

Courier: FedEx UPS USPS Client Pace Speedee Commercial

Tracking Number: See Exceptions ENV-FRM-MIN4-0142

Custody Seal on Cooler/Box Present? Seals Intact? Biological Tissue Frozen? Packing Material: Bubble Wrap Bubble Bags None Other Temp Blank? Thermometer: T1 T2 T3 T4 T5 T6 T7 T8 01339252/1710 Type of Ice: Wet Blue Dry None Melted

Did Samples Originate in West Virginia? Were All Container Temps Taken? Temp should be above freezing to 6 °C Cooler temp Read w/Temp Blank: 27.32 °C Average Corrected Temp (no temp blank only): °C Correction Factor: None Cooler Temp Corrected w/temp blank: 27.32 °C

USDA Regulated Soil: N/A, water sample/other: Date/Initials of Person Examining Contents: 10/2/2022

Did samples originate in a quarantine zone within the United States: AL, AR, AZ CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX, or VA (check maps)? Did samples originate from a foreign source (Internationally, including Hawaii and Puerto Rico)?

If Yes to either question, fill out a Regulated Soil Checklist (ENV-FRM-MIN4-0154) and include with SCUR/COC paperwork.

Regulated Soil Checklist table with columns for Location (Duluth, Minneapolis, Virginia), Chain of Custody, Samples Arrived within Hold Time, Short Hold Time Analysis, Rush Turn Around Time, Sufficient Sample Volume, Correct Containers Used, Containers Intact, Field Filtered Volume, Matrix (Water, Soil, Oil, Other), All containers needing acid/base preservation, Exceptions, Headspace in Methyl Mercury Container, Extra labels present on soil VOA or WIDRO containers, Trip Blanks Present.

CLIENT NOTIFICATION/RESOLUTION Person Contacted: Date/Time: Field Data Required? Project Manager Review: Brenna Bloome Date: 11/01/2022

NOTE: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e., out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled By: Line:

# Pace Container Order #1011840

Addresses	Ship To :	Return To:
<b>Order By :</b>		
Company <u>Braun Intertec Corporation</u>	Company <u>Braun Intertec Corporation</u>	Company <u>Pace Analytical Minnesota</u>
Contact <u>Ciampone, Mark</u>	Contact <u>Ciampone, Mark</u>	Contact <u>Bloome, Brenna</u>
Email <u>mciampone@braunintertec.com</u>	Email <u>mciampone@braunintertec.com</u>	Email <u>brenna.bloome@pacelabs.com</u>
Address <u>11001 Hampshire Ave S.</u>	Address <u>11001 Hampshire Ave S.</u>	Address <u>1700 Elm Street</u>
Address 2 _____	Address 2 _____	Address 2 <u>Suite 200</u>
City <u>Bloomington</u>	City <u>Bloomington</u>	City <u>Minneapolis</u>
State <u>MN</u> Zip <u>55438</u>	State <u>MN</u> Zip <u>55438</u>	State <u>MN</u> Zip <u>55414</u>
Phone <u>612-210-6147</u>	Phone <u>612-210-6147</u>	Phone <u>(612)607-1700</u>

Info			
Project Name <u>Sediment</u>	Due Date <u>10/28/2022</u>	Profile <u>33913</u>	Quote _____
Project Manager <u>Bloome, Brenna</u>	Return Date _____	Carrier <u>Pace Courier</u>	Location <u>MN</u>

<b>Trip Blanks</b> <input checked="" type="checkbox"/> Include Trip Blanks	<b>Bottle Labels</b> <input type="checkbox"/> Blank <input checked="" type="checkbox"/> Pre-Printed No Sample IDs <input type="checkbox"/> Pre-Printed With Sample IDs	<b>Bottles</b> <input type="checkbox"/> Boxed Cases <input type="checkbox"/> Individually Wrapped <input checked="" type="checkbox"/> Grouped By Sample ID/Matrix
<b>Return Shipping Labels</b> <input type="checkbox"/> No Shipper <input type="checkbox"/> With Shipper	<b>Misc</b> <input type="checkbox"/> Sampling Instructions <input type="checkbox"/> Custody Seal <input checked="" type="checkbox"/> Temp. Blanks <input checked="" type="checkbox"/> Coolers _____ <input type="checkbox"/> Syringes _____	
<b>COC Options</b> <input checked="" type="checkbox"/> Number of Blanks <u>2</u> <input type="checkbox"/> Pre-Printed _____	<input type="checkbox"/> Extra Bubble Wrap <input type="checkbox"/> Short Hold/Rush Stickers <input type="checkbox"/> DI Water <u>Liter(s)</u> <input type="checkbox"/> USDA Regulated Soils	

# of Samples	Matrix	Test	Container	Total	# of	Lot #	Notes
9	SL	Moisture	Dry weight containers	9	0	2125-022	
9	SL	Metals by 6010	4oz. Jar unpres	9	0	091222-1KM	As, Cd, Cu, Pb, Hg, Ni, Se, Zn
9	SL	Total Cr, Cr III, Cr VI	4oz. jar unpres	9	0	091222-1KM	Sub to ALS Holland
9	SL	Phos, N+N, Ammonia, TKN, TOC	4oz. jar unpres	9	0	091222-1KM	Sub to Duluth
9	SL	PCBs by 8082	4oz. jar unpres	9	0	091222-1KM	
9	SL	PAHs by 8270	4oz. jar unpres	9	0	091222-1KM	

## RETURN W/ SAMPLES

**Hazard Shipping Placard In Place : NO**

sample receiving hours are Mon-Fri 7:30am-7:00pm and Sat 9:00am-1:00pm unless special arrangements are made with your project manager.

Pace Analytical reserves the right to return hazardous, toxic, or radioactive samples to you.

Pace Analytical reserves the right to charge for unused bottles, as well as cost associated with sample storage/disposal.

Payment term are net 30 days.

Please include the proposal number on the chain of custody to insure proper billing.

**LAB USE:**

Ship Date : 10/28/2022

Prepared By: PC

Verified By: \_\_\_\_\_

**Sample**

The Pace Courier will deliver by end of day Friday (10/28).

**CLIENT USE (Optional):**

Date Rec'd: \_\_\_\_\_

Received By: \_\_\_\_\_

Verified By: \_\_\_\_\_



## Service Center Transfer Checklist

**Service Center:** MPLS  BLM  AZ  MT

**Client:**

**Destination Lab:**

MPLS  Duluth  National  Other

**Received w/ Custody Seal?** Yes  No

**Custody Seal Intact?** Yes  No

<b>Temperature °C:</b>	Temp Read	Corr. Factor	Corr. Temp
	<input type="text" value="2.3"/> 3.5	<input type="text" value="TRUE"/>	<input type="text" value="2.3"/> 3.5

**IR Gun:**

Samples on ice, in cool down

Rush  Short Hold  N/A

**Containers Intact?** Yes  No

**Repacked and Re-iced?** Yes  No

**Notes:**

**No Temp Blank Section**

Read Temp	Corr. Temp	Avg. Temp

10/31/22

AF

# Intra-Regional Chain of Custody



## MO#: 10631764

PM: BGB Due Date: 11/09/22  
 CLIENT: Braun-Blm



Workorder: 10631764      Workorder Name: B2210417

Owner Received Date: 10/31/2022      Due Date: 11/9/2022

Received at:  
 Pace Analytical Minnesota  
 1700 Elm Street  
 Minneapolis, MN 55414  
 Phone (612)607-1700


Send To Lab:  
 Pace Analytical Duluth  
 4730 Oneota St.  
 Duluth, MN 55807  
 Phone (218) 727-6380

Report To:  
 Brenna Bloome

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers		Requested Analysis					LAB USE ONLY		
						Unpreserved	Preserved	EPA 353.2	EPA 351.2	EPA 9060A	EPA 350.1	EPA 365.1			
1	WILK-1 (0-2)	PS	10/31/2022 12:05	10631764001	Solid	1		X	X	X	X				
2	WILK-1 (2-4)	PS	10/31/2022 12:10	10631764002	Solid	1		X	X	X	X				
3	WILK-1 (4-6)	PS	10/31/2022 12:15	10631764003	Solid	1		X	X	X	X				
4	WILK-2 (0-2)	PS	10/31/2022 10:45	10631764004	Solid	1		X	X	X	X				
5	WILK-2 (2-4)	PS	10/31/2022 10:50	10631764005	Solid	1		X	X	X	X				
6	WILK-2 (4-6)	PS	10/31/2022 10:55	10631764006	Solid	1		X	X	X	X				
7	WILK-3 (0-2)	PS	10/31/2022 11:20	10631764007	Solid	1		X	X	X	X				
8	WILK-3 (2-4)	PS	10/31/2022 11:25	10631764008	Solid	1		X	X	X	X				
9	WILK-3 (4-6)	PS	10/31/2022 11:30	10631764009	Solid	1		X	X	X	X				
Comments															
Transfers															
1	Released By		Date/Time	Received By		Date/Time	Location 10-C16-184 and Receiving								
	CSM/Pace		11/08/22 10:50	[Signature]		11/12/22									
2	[Signature]		11/12/22 1515	[Signature]		11/11/22 1515									
3															
4															

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.  
 This chain of custody is considered complete as is since this information is available in the owner laboratory.

Effective Date:

<b>Sample Condition Upon Receipt</b>	<b>Client Name:</b> <u>Pace</u>	<b>Project</b>	<b>WO# : 10631764</b>
Courier: <input type="checkbox"/> FedEx <input type="checkbox"/> UPS <input type="checkbox"/> USPS <input type="checkbox"/> Client <input checked="" type="checkbox"/> Pace <input type="checkbox"/> SpeeDee <input type="checkbox"/> Commercial		 <b>10631764</b>	
Tracking Number: _____		<input type="checkbox"/> See Exception... ENV-FRM-MIN4-0142	

Custody Seal on Cooler/Box Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Seals Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Biological Tissue Frozen? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Packing Material: <input checked="" type="checkbox"/> Bubble Wrap <input checked="" type="checkbox"/> Bubble Bags <input type="checkbox"/> None <input type="checkbox"/> Other	Temp Blank? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Thermometer: <input type="checkbox"/> T1 (0461) <input type="checkbox"/> T2 (1336) <input type="checkbox"/> T3 (0459) <input type="checkbox"/> T4 (0254) <input type="checkbox"/> T5 (0178) <input type="checkbox"/> T6 (0235) <input type="checkbox"/> T7 (0042) <input type="checkbox"/> T8 (0775) <input checked="" type="checkbox"/> 01339252/1710	Type of Ice: <input checked="" type="checkbox"/> Wet <input type="checkbox"/> Blue <input type="checkbox"/> Dry <input type="checkbox"/> None <input type="checkbox"/> Melted	

Did Samples Originate in West Virginia? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Were All Container Temps Taken? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A
Temp should be above freezing to 6 °C Cooler temp Read w/Temp Blank: <u>1.9</u> °C	Average Corrected Temp (no temp blank only): _____ °C
Correction Factor: <u>0.1</u> Cooler Temp Corrected w/temp blank: <u>2.0</u> °C	<input type="checkbox"/> See Exceptions ENV-FRM-MIN4-0142 <input type="checkbox"/> 1 Container

USDA Regulated Soil: ( N/A, ~~water sample~~ other: \_\_\_\_\_)

Date/Initials of Person Examining Contents: AH 11/1/22

Did samples originate in a quarantine zone within the United States: AL, AR, AZ CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX, or VA (check maps)?  Yes  No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)?  Yes  No

If Yes to either question, fill out a Regulated Soil Checklist (ENV-FRM-MIN4-0154) and include with SCUR/COC paperwork.

Location (Check one): <input checked="" type="checkbox"/> Duluth <input type="checkbox"/> Minneapolis <input type="checkbox"/> Virginia	COMMENTS
Chain of Custody Present and Filled Out? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Relinquished? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Sampler Name and/or Signature on COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Samples Arrived within Hold Time? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	4. If fecal: <input type="checkbox"/> <8 hrs <input type="checkbox"/> >8 hr, <24 <input type="checkbox"/> No
Short Hold Time Analysis (<72 hr)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E.coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrom <input type="checkbox"/> Turbidity <input type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other
Rush Turn Around Time Requested? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Sufficient Sample Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
-Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Field Filtered Volume Received for Dissolved Tests? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC? Matrix: <input type="checkbox"/> Water <input checked="" type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other	11. If no, write ID/Date/Time of container below: <input type="checkbox"/> See Exceptions ENV-FRM-MIN4-0142
All containers needing acid/base preservation have been checked? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	12. Sample # <input type="checkbox"/> NaOH <input type="checkbox"/> HNO3 <input type="checkbox"/> H2SO4 <input type="checkbox"/> Zinc Acetate
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO3, H2SO4, <2pH, NaOH >9 Sulfide, NaOH >10 Cyanide)	Positive for Residual Chlorine? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Exceptions ENV-FRM-MIN4-0142 pH Paper Lot # Residual Chlorine    0-6 Roll    0-6 Strip    0-14 Strip
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxins/PFAS (*If adding preservative to a container, it must be added to associated field and equipment blanks--verify with PM first.)	
Headspace in Methyl Mercury Container? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13.
Extra labels present on soil VOA or WIDRO containers? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14. <input type="checkbox"/> See Exceptions ENV-FRM-MIN4-0142
Headspace in VOA Vials (greater than 6mm)? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
3 Trip Blanks Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15. Pace Trip Blank Lot # (if purchased): _____
Trip Blank Custody Seals Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

**CLIENT NOTIFICATION/RESOLUTION**

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/Resolution: \_\_\_\_\_

Project Manager Review: Brenna Bloome Date: 11/01/2022

NOTE: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e., out of hold, incorrect preservative, out of temp, incorrect containers).



right solutions.  
right partner.

# Work Order: 22110326

**Project Name:**

**10631764**

## **Pace Analytical Services, LLC**

Brenna Bloome

1700 Elm Street

Suite 200

Minneapolis, MN 55414

**10-Nov-2022**



Certificate No: FL E871106

ADDRESS 3352 128th Ave Holland, Michigan 49424 | PHONE (616) 399-6070 | FAX (616) 399-6185

ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company



10-Nov-2022

Brenna Bloome  
Pace Analytical Services, LLC  
1700 Elm Street  
Suite 200  
Minneapolis, MN 55414

Re: **10631764**

Work Order: **22110326**

Dear Brenna,

ALS Environmental received 9 samples on 02-Nov-2022 08:30 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental - Holland and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 22.

If you have any questions regarding this report, please feel free to contact me:

ADDRESS: 3352 128th Avenue, Holland, MI, USA  
PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,

Rob Swick  
Laboratory Manager

## Report of Laboratory Analysis

Certificate No: FL E871106

ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company



Client: Pace Analytical Services, LLC  
 Project: 10631764  
 Work Order: 22110326

**Work Order Sample Summary**

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
22110326-01	WILK-1 (0'-2')	Solid		10/31/2022 12:05	11/2/2022 08:30	<input type="checkbox"/>
22110326-02	WILK-1 (2'-4')	Solid		10/31/2022 12:10	11/2/2022 08:30	<input type="checkbox"/>
22110326-03	WILK-1 (4'-6')	Solid		10/31/2022 12:15	11/2/2022 08:30	<input type="checkbox"/>
22110326-04	WILK-2 (0'-2')	Solid		10/31/2022 10:45	11/2/2022 08:30	<input type="checkbox"/>
22110326-05	WILK-2 (2'-4')	Solid		10/31/2022 10:50	11/2/2022 08:30	<input type="checkbox"/>
22110326-06	WILK-2 (4'-6')	Solid		10/31/2022 10:55	11/2/2022 08:30	<input type="checkbox"/>
22110326-07	WILK-3 (0'-2')	Solid		10/31/2022 11:20	11/2/2022 08:30	<input type="checkbox"/>
22110326-08	WILK-3 (2'-4')	Solid		10/31/2022 11:25	11/2/2022 08:30	<input type="checkbox"/>
22110326-09	WILK-3 (4'-6')	Solid		10/31/2022 11:30	11/2/2022 08:30	<input type="checkbox"/>

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**Client:** Pace Analytical Services, LLC  
**Project:** 10631764  
**WorkOrder:** 22110326

**QUALIFIERS,  
ACRONYMS, UNITS**

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<u>Qualifier</u>	<u>Description</u>
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
Hr	BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated.
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Analyte accreditation is not offered
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

<u>Acronym</u>	<u>Description</u>
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<u>Units Reported</u>	<u>Description</u>
% of sample	Percent of Sample
mg/Kg-dry	Milligrams per Kilogram Dry Weight

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**Client:** Pace Analytical Services, LLC  
**Project:** 10631764  
**Work Order:** 22110326

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**Case Narrative**

Samples for the above noted Work Order were received on 11/2/2022. The attached "Sample Receipt Checklist" documents the status of custody seals, container integrity, preservation, and temperature compliance.

Samples were analyzed according to the analytical methodology previously transmitted in the "Work Order Acknowledgement". Methodologies are also documented in the "Analytical Result" section for each sample. Quality control results are listed in the "QC Report" section. Sample association for the reported quality control is located at the end of each batch summary. If applicable, results are appropriately qualified in the Analytical Result and QC Report sections. The "Qualifiers" section documents the various qualifiers, units, and acronyms utilized in reporting. A copy of the laboratory's scope of accreditation is available upon request.

With the following exceptions, all sample analyses achieved analytical criteria.

**Wet Chemistry:**

Batch 206046, Method SW6010D, Sample 22110326-01AMS: The MS recovery was above the upper control limit. The corresponding result in the parent sample may be biased high for this analyte: Cr, Cu, Pb, Ni, V, Zn

Batch 206046, Method SW6010D, Sample 22110326-01AMS: The MS recovery was outside of the control limit; however, the result in the parent sample is greater than 4x the spike amount. No qualification is required for this analyte: Ba, Fe, Mn

Batch 206046, Method SW6010D, Sample 22110326-01AMSD: The MSD recovery was above the upper control limit. The corresponding result in the parent sample may be biased high for this analyte: Cr, Cu, Pb, Ni, V, Zn

Batch 206046, Method SW6010D, Sample 22110326-01AMSD: The MSD recovery was outside of the control limit; however, the result in the parent sample is greater than 4x the spike amount. No qualification is required for this analyte: Ba, Fe, Mn

Batch 206046, Method SW6010D, Sample 22110326-01AMS: The MS recovery was above the upper control limit. The corresponding result in the parent sample may be biased high for this analyte: Li

Batch 206046, Method SW6010D, Sample 22110326-01AMSD: The MSD recovery was above the upper control limit. The corresponding result in the parent sample may be biased

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**Client:** Pace Analytical Services, LLC  
**Project:** 10631764  
**Work Order:** 22110326

**Case Narrative**

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high for this analyte: Li

Batch 206353, Method SW7196A, Sample 22110326-01A MS: The MS recovery was below the lower control limit. The corresponding result in the parent sample may be biased low for this analyte:

Batch 206353, Method SW7196A, Sample 22110326-01A MSD: The MSD recovery was below the lower control limit. The corresponding result in the parent sample may be biased low for this analyte:

Batch 206353, Method SW7196A, Sample 22110326-01A MSI: The MS recovery was below the lower control limit. The corresponding result in the parent sample may be biased low for this analyte:

**ALS Group, USA**

Date: 10-Nov-2022

**Client:** Pace Analytical Services, LLC

**Project:** 10631764

**Work Order:** 22110326

**Sample ID:** WILK-1 (0'-2')

**Lab ID:** 22110326-01

**Collection Date:** 10/31/2022 12:05 PM

**Matrix:** SOLID

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>METALS BY ICP-AES</b>			<b>SW6010D</b>	Prep: SW3050B 11/4/22 11:32		Analyst: <b>ABL</b>
Chromium	13		0.77	mg/Kg-dry	1	11/4/2022 04:34 PM
<b>CHROMIUM, TRIVALENT</b>			<b>CALCULATION</b>			Analyst: <b>RZM</b>
Chromium, Trivalent	13		3.0	mg/Kg-dry	1	11/9/2022 03:22 PM
<b>CHROMIUM, HEXAVALENT</b>			<b>SW7196A</b>	Prep: SW3060A 11/5/22 07:00		Analyst: <b>RZM</b>
Chromium, Hexavalent	ND		30	mg/Kg-dry	10	11/8/2022 07:24 PM
<b>MOISTURE</b>			<b>SW3550C</b>			Analyst: <b>ALG</b>
Moisture	66		0.10	% of sample	1	11/7/2022 02:21 PM

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

**ALS Group, USA**

Date: 10-Nov-2022

**Client:** Pace Analytical Services, LLC

**Project:** 10631764

**Work Order:** 22110326

**Sample ID:** WILK-1 (2'-4')

**Lab ID:** 22110326-02

**Collection Date:** 10/31/2022 12:10 PM

**Matrix:** SOLID

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>METALS BY ICP-AES</b>			<b>SW6010D</b>	Prep: SW3050B 11/4/22 11:32		Analyst: <b>ABL</b>
Chromium	7.2		1.0	mg/Kg-dry	1	11/4/2022 04:49 PM
<b>CHROMIUM, TRIVALENT</b>			<b>CALCULATION</b>			Analyst: <b>RZM</b>
Chromium, Trivalent	7.2		3.8	mg/Kg-dry	1	11/9/2022 03:22 PM
<b>CHROMIUM, HEXAVALENT</b>			<b>SW7196A</b>	Prep: SW3060A 11/5/22 07:00		Analyst: <b>RZM</b>
Chromium, Hexavalent	ND		38	mg/Kg-dry	10	11/8/2022 07:24 PM
<b>MOISTURE</b>			<b>SW3550C</b>			Analyst: <b>ALG</b>
Moisture	74		0.10	% of sample	1	11/7/2022 02:21 PM

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

**Client:** Pace Analytical Services, LLC

**Project:** 10631764

**Work Order:** 22110326

**Sample ID:** WILK-1 (4'-6')

**Lab ID:** 22110326-03

**Collection Date:** 10/31/2022 12:15 PM

**Matrix:** SOLID

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>METALS BY ICP-AES</b>			<b>SW6010D</b>	Prep: SW3050B 11/4/22 11:32		Analyst: <b>ABL</b>
Chromium	4.7		1.4	mg/Kg-dry	1	11/4/2022 04:54 PM
<b>CHROMIUM, TRIVALENT</b>			<b>CALCULATION</b>			Analyst: <b>RZM</b>
Chromium, Trivalent	ND		5.1	mg/Kg-dry	1	11/9/2022 03:22 PM
<b>CHROMIUM, HEXAVALENT</b>			<b>SW7196A</b>	Prep: SW3060A 11/5/22 07:00		Analyst: <b>RZM</b>
Chromium, Hexavalent	ND		49	mg/Kg-dry	10	11/8/2022 07:24 PM
<b>MOISTURE</b>			<b>SW3550C</b>			Analyst: <b>ALG</b>
Moisture	80		0.10	% of sample	1	11/7/2022 02:21 PM

**Note:** See Qualifiers page for a list of qualifiers and their definitions.



**ALS Group, USA**

Date: 10-Nov-2022

**Client:** Pace Analytical Services, LLC

**Project:** 10631764

**Work Order:** 22110326

**Sample ID:** WILK-2 (0'-2')

**Lab ID:** 22110326-04

**Collection Date:** 10/31/2022 10:45 AM

**Matrix:** SOLID

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>METALS BY ICP-AES</b>			<b>SW6010D</b>		Prep: SW3050B 11/4/22 11:32	Analyst: <b>ABL</b>
Chromium	7.9		0.99	mg/Kg-dry	1	11/4/2022 04:59 PM
<b>CHROMIUM, TRIVALENT</b>			<b>CALCULATION</b>			Analyst: <b>RZM</b>
Chromium, Trivalent	7.9		3.7	mg/Kg-dry	1	11/9/2022 03:22 PM
<b>CHROMIUM, HEXAVALENT</b>			<b>SW7196A</b>		Prep: SW3060A 11/5/22 07:00	Analyst: <b>RZM</b>
Chromium, Hexavalent	ND		36	mg/Kg-dry	10	11/8/2022 07:24 PM
<b>MOISTURE</b>			<b>SW3550C</b>			Analyst: <b>ALG</b>
Moisture	73		0.10	% of sample	1	11/7/2022 02:21 PM

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

**ALS Group, USA**

Date: 10-Nov-2022

**Client:** Pace Analytical Services, LLC

**Project:** 10631764

**Work Order:** 22110326

**Sample ID:** WILK-2 (2'-4')

**Lab ID:** 22110326-05

**Collection Date:** 10/31/2022 10:50 AM

**Matrix:** SOLID

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>METALS BY ICP-AES</b>			<b>SW6010D</b>	Prep: SW3050B 11/4/22 11:32		Analyst: <b>ABL</b>
Chromium	30		1.3	mg/Kg-dry	1	11/4/2022 05:04 PM
<b>CHROMIUM, TRIVALENT</b>			<b>CALCULATION</b>			Analyst: <b>RZM</b>
Chromium, Trivalent	30		4.3	mg/Kg-dry	1	11/9/2022 03:22 PM
<b>CHROMIUM, HEXAVALENT</b>			<b>SW7196A</b>	Prep: SW3060A 11/5/22 07:00		Analyst: <b>RZM</b>
Chromium, Hexavalent	ND		42	mg/Kg-dry	10	11/8/2022 07:24 PM
<b>MOISTURE</b>			<b>SW3550C</b>			Analyst: <b>ALG</b>
Moisture	77		0.10	% of sample	1	11/7/2022 02:21 PM

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

**Client:** Pace Analytical Services, LLC

**Project:** 10631764

**Work Order:** 22110326

**Sample ID:** WILK-2 (4'-6')

**Lab ID:** 22110326-06

**Collection Date:** 10/31/2022 10:55 AM

**Matrix:** SOLID

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>METALS BY ICP-AES</b>			<b>SW6010D</b>		Prep: SW3050B 11/4/22 11:32	Analyst: <b>ABL</b>
Chromium	4.3		2.1	mg/Kg-dry	1	11/4/2022 05:09 PM
<b>CHROMIUM, TRIVALENT</b>			<b>CALCULATION</b>			Analyst: <b>RZM</b>
Chromium, Trivalent	ND		6.6	mg/Kg-dry	1	11/9/2022 03:22 PM
<b>CHROMIUM, HEXAVALENT</b>			<b>SW7196A</b>		Prep: SW3060A 11/5/22 07:00	Analyst: <b>RZM</b>
Chromium, Hexavalent	ND		63	mg/Kg-dry	10	11/8/2022 07:24 PM
<b>MOISTURE</b>			<b>SW3550C</b>			Analyst: <b>ALG</b>
Moisture	85		0.10	% of sample	1	11/7/2022 02:21 PM

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

**Client:** Pace Analytical Services, LLC

**Project:** 10631764

**Work Order:** 22110326

**Sample ID:** WILK-3 (0'-2')

**Lab ID:** 22110326-07

**Collection Date:** 10/31/2022 11:20 AM

**Matrix:** SOLID

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>METALS BY ICP-AES</b>			<b>SW6010D</b>		Prep: SW3050B 11/4/22 11:32	Analyst: <b>ABL</b>
Chromium	8.7		0.84	mg/Kg-dry	1	11/4/2022 05:14 PM
<b>CHROMIUM, TRIVALENT</b>			<b>CALCULATION</b>			Analyst: <b>RZM</b>
Chromium, Trivalent	8.7		2.7	mg/Kg-dry	1	11/9/2022 03:22 PM
<b>CHROMIUM, HEXAVALENT</b>			<b>SW7196A</b>		Prep: SW3060A 11/5/22 07:00	Analyst: <b>RZM</b>
Chromium, Hexavalent	ND		27	mg/Kg-dry	10	11/8/2022 07:24 PM
<b>MOISTURE</b>			<b>SW3550C</b>			Analyst: <b>ALG</b>
Moisture	63		0.10	% of sample	1	11/7/2022 02:21 PM

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

**Client:** Pace Analytical Services, LLC

**Project:** 10631764

**Work Order:** 22110326

**Sample ID:** WILK-3 (2'-4')

**Lab ID:** 22110326-08

**Collection Date:** 10/31/2022 11:25 AM

**Matrix:** SOLID

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>METALS BY ICP-AES</b>			<b>SW6010D</b>	Prep: SW3050B 11/4/22 11:32		Analyst: <b>ABL</b>
Chromium	7.5		0.72	mg/Kg-dry	1	11/4/2022 05:29 PM
<b>CHROMIUM, TRIVALENT</b>			<b>CALCULATION</b>			Analyst: <b>RZM</b>
Chromium, Trivalent	7.5		2.7	mg/Kg-dry	1	11/9/2022 03:22 PM
<b>CHROMIUM, HEXAVALENT</b>			<b>SW7196A</b>	Prep: SW3060A 11/5/22 07:00		Analyst: <b>RZM</b>
Chromium, Hexavalent	ND		27	mg/Kg-dry	10	11/8/2022 07:24 PM
<b>MOISTURE</b>			<b>SW3550C</b>			Analyst: <b>ALG</b>
Moisture	63		0.10	% of sample	1	11/7/2022 02:21 PM

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

**Client:** Pace Analytical Services, LLC  
**Project:** 10631764  
**Sample ID:** WILK-3 (4'-6')  
**Collection Date:** 10/31/2022 11:30 AM

**Work Order:** 22110326  
**Lab ID:** 22110326-09  
**Matrix:** SOLID

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>METALS BY ICP-AES</b>			<b>SW6010D</b>	Prep: SW3050B 11/4/22 11:32		Analyst: <b>ABL</b>
Chromium	11		0.41	mg/Kg-dry	1	11/4/2022 05:34 PM
<b>CHROMIUM, TRIVALENT</b>			<b>CALCULATION</b>			Analyst: <b>RZM</b>
Chromium, Trivalent	11		1.6	mg/Kg-dry	1	11/9/2022 03:22 PM
<b>CHROMIUM, HEXAVALENT</b>			<b>SW7196A</b>	Prep: SW3060A 11/5/22 07:00		Analyst: <b>RZM</b>
Chromium, Hexavalent	ND		1.6	mg/Kg-dry	1	11/8/2022 07:24 PM
<b>MOISTURE</b>			<b>SW3550C</b>			Analyst: <b>ALG</b>
Moisture	38		0.10	% of sample	1	11/7/2022 02:21 PM

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

**Client:** Pace Analytical Services, LLC  
**Work Order:** 22110326  
**Project:** 10631764

**QC BATCH REPORT**

Batch ID: **206046** Instrument ID **ICP2** Method: **SW6010D**

MBLK		Sample ID: <b>MBLK-206046-206046</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>11/4/2022 04:03 PM</b>		
Client ID:		Run ID: <b>ICP2_221104A</b>		SeqNo: <b>8977295</b>		Prep Date: <b>11/4/2022</b>		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium	ND	0.25								

LCS		Sample ID: <b>LCS-206046-206046</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>11/4/2022 04:09 PM</b>		
Client ID:		Run ID: <b>ICP2_221104A</b>		SeqNo: <b>8977296</b>		Prep Date: <b>11/4/2022</b>		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium	5.597	0.26	5.107	0	110	80-120	0			

MS		Sample ID: <b>22110326-01AMS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>11/4/2022 04:39 PM</b>		
Client ID: <b>WILK-1 (0'-2')</b>		Run ID: <b>ICP2_221104A</b>		SeqNo: <b>8977302</b>		Prep Date: <b>11/4/2022</b>		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium	11.83	0.26	5.181	4.323	145	75-125	0			S

MSD		Sample ID: <b>22110326-01AMSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>11/4/2022 04:44 PM</b>		
Client ID: <b>WILK-1 (0'-2')</b>		Run ID: <b>ICP2_221104A</b>		SeqNo: <b>8977303</b>		Prep Date: <b>11/4/2022</b>		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium	11.85	0.26	5.198	4.323	145	75-125	11.83	0.109	20	S

The following samples were analyzed in this batch:

22110326-01A	22110326-02A	22110326-03A
22110326-04A	22110326-05A	22110326-06A
22110326-07A	22110326-08A	22110326-09A

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Pace Analytical Services, LLC  
 Work Order: 22110326  
 Project: 10631764

# QC BATCH REPORT

Batch ID: **206353** Instrument ID **SPEC-04** Method: **SW7196A**

MBLK		Sample ID: <b>MBLK-206353-206353</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>11/8/2022 07:24 PM</b>		
Client ID:		Run ID: <b>SPEC-04_221108A</b>				SeqNo: <b>8988642</b>		Prep Date: <b>11/5/2022</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent ND 1.0

MBLK		Sample ID: <b>MBLK-206353-206353</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>11/8/2022 07:24 PM</b>		
Client ID:		Run ID: <b>SPEC-03_221108F</b>				SeqNo: <b>8988714</b>		Prep Date: <b>11/5/2022</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent ND 1.0

LCS		Sample ID: <b>LCS-206353-206353</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>11/8/2022 07:24 PM</b>		
Client ID:		Run ID: <b>SPEC-04_221108A</b>				SeqNo: <b>8988643</b>		Prep Date: <b>11/5/2022</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 4.47 1.0 5 0 89.4 80-120 0

LCS		Sample ID: <b>LCS-206353-206353</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>11/8/2022 07:24 PM</b>		
Client ID:		Run ID: <b>SPEC-03_221108F</b>				SeqNo: <b>8988715</b>		Prep Date: <b>11/5/2022</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 4.6 1.0 5 0 92 80-120 0

MS		Sample ID: <b>22110326-01A MS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>11/8/2022 07:24 PM</b>		
Client ID: <b>WILK-1 (0'-2')</b>		Run ID: <b>SPEC-04_221108A</b>				SeqNo: <b>8988646</b>		Prep Date: <b>11/5/2022</b>		DF: <b>10</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent ND 9.7 4.854 1.5 -30.9 75-125 0 S

MS		Sample ID: <b>22110326-01A MSI</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>11/8/2022 07:24 PM</b>		
Client ID: <b>WILK-1 (0'-2')</b>		Run ID: <b>SPEC-04_221108A</b>				SeqNo: <b>8988648</b>		Prep Date: <b>11/5/2022</b>		DF: <b>100</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent ND 97 2312 1.5 -0.065 75-125 0 S

MSD		Sample ID: <b>22110326-01A MSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>11/8/2022 07:24 PM</b>		
Client ID: <b>WILK-1 (0'-2')</b>		Run ID: <b>SPEC-04_221108A</b>				SeqNo: <b>8988647</b>		Prep Date: <b>11/5/2022</b>		DF: <b>10</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent ND 9.5 4.762 1.5 -31.5 75-125 6.408 0 20 S

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



**Client:** Pace Analytical Services, LLC

**Work Order:** 22110326

**Project:** 10631764

# QC BATCH REPORT

---

Batch ID: **206353**

Instrument ID **SPEC-04**

Method: **SW7196A**

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**The following samples were analyzed in this batch:**

22110326-01A	22110326-02A	22110326-03A
22110326-04A	22110326-05A	22110326-06A
22110326-07A	22110326-08A	22110326-09A

---

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Pace Analytical Services, LLC  
 Work Order: 22110326  
 Project: 10631764

# QC BATCH REPORT

Batch ID: **R357514** Instrument ID **MOIST** Method: **SW3550C**

MBLK		Sample ID: <b>WBLKS-R357514</b>				Units: % of sample		Analysis Date: <b>11/7/2022 02:21 PM</b>		
Client ID:		Run ID: <b>MOIST_221107C</b>		SeqNo: <b>8980399</b>		Prep Date:		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	ND	0.10								

LCS		Sample ID: <b>LCS-R357514</b>				Units: % of sample		Analysis Date: <b>11/7/2022 02:21 PM</b>		
Client ID:		Run ID: <b>MOIST_221107C</b>		SeqNo: <b>8980398</b>		Prep Date:		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	99.99	0.10	100	0	100	98-102	0			

DUP		Sample ID: <b>22110394-01A DUP</b>				Units: % of sample		Analysis Date: <b>11/7/2022 02:21 PM</b>		
Client ID:		Run ID: <b>MOIST_221107C</b>		SeqNo: <b>8980390</b>		Prep Date:		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	17.12	0.10	0	0	0	0-0	20.34	17.2	10	R

DUP		Sample ID: <b>22110542-01A DUP</b>				Units: % of sample		Analysis Date: <b>11/7/2022 02:21 PM</b>		
Client ID:		Run ID: <b>MOIST_221107C</b>		SeqNo: <b>8980397</b>		Prep Date:		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	10.38	0.10	0	0	0	0-0	10.4	0.192	10	

The following samples were analyzed in this batch:

22110326-01A	22110326-02A	22110326-03A
22110326-04A	22110326-05A	22110326-06A
22110326-07A	22110326-08A	22110326-09A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

22110326

PACE\_MN: Pace Analytical  
Project: B2210417



Workorder name: B2210417

Results Requested By: 11/9/2022

Report / Invoice To		Subcontract To		Requested Analysis															
Brenna Bloome Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414 Phone (612)607-1700 Email: brenna.bloome@pacelabs.com		ALS Holland 3352 128th Ave Holland, MI 49424		P.O. 10631764															
State of Sample Origin: MN		Preserved Containers																	
Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Unpreserved							Total Chrom, Cr III, Cr VI	LAB USE ONLY						
1	WILK-1 (0-2')	10/31/2022 12:05	10631764001	Solid	1								X						
2	WILK-1 (2'-4')	10/31/2022 12:10	10631764002	Solid	1								X						
3	WILK-1 (4'-6')	10/31/2022 12:15	10631764003	Solid	1								X						
4	WILK-2 (0-2')	10/31/2022 10:45	10631764004	Solid	1								X						
5	WILK-2 (2'-4')	10/31/2022 10:50	10631764005	Solid	1								X						
6	WILK-2 (4'-6')	10/31/2022 10:55	10631764006	Solid	1								X						
7	WILK-3 (0-2')	10/31/2022 11:20	10631764007	Solid	1								X						
8	WILK-3 (2'-4')	10/31/2022 11:25	10631764008	Solid	1								X						
9	WILK-3 (4'-6')	10/31/2022 11:30	10631764009	Solid	1								X						
10																			
11																			
12																			
13																			

Transfers					Comments				
Released By	Date/Time	Received By	Date/Time						
CSM/Pace	11-1-22 13:20	<i>[Signature]</i>	11-2-22 08:30		MN Certs needed				

Cooler Temperature on Receipt 30 °C      Custody Seal (Y) or N      Received on Ice (Y) or N      Samples Intact (Y) or N

### Sample Receipt Checklist

Client Name: **PACE MN**

Date/Time Received: **02-Nov-22 08:30**

Work Order: **22110326**

Received by: **JD**

Checklist completed by Jason Delinger 03-Nov-22  
eSignature Date

Reviewed by: Chad Whelton 03-Nov-22  
eSignature Date

Matrices: solid

Carrier name: FedEx

Shipping container/cooler in good condition? Yes  No  Not Present

Custody seals intact on shipping container/cooler? Yes  No  Not Present

Custody seals intact on sample bottles? Yes  No  Not Present

Chain of custody present? Yes  No

Chain of custody signed when relinquished and received? Yes  No

Chain of custody agrees with sample labels? Yes  No

Samples in proper container/bottle? Yes  No

Sample containers intact? Yes  No

Sufficient sample volume for indicated test? Yes  No

All samples received within holding time? Yes  No

Container/Temp Blank temperature in compliance? Yes  No

Sample(s) received on ice? Yes  No

Temperature(s)/Thermometer(s): 3.0/4.0 c ir3

Cooler(s)/Kit(s):

Date/Time sample(s) sent to storage: 11/3/2022 1:21:56 PM

Water - VOA vials have zero headspace? Yes  No  No VOA vials submitted

Water - pH acceptable upon receipt? Yes  No  N/A

pH adjusted? Yes  No  N/A

pH adjusted by:

Login Notes:

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:

# WETLAND SEEDING

## TECHNICAL GUIDANCE DOCUMENT

**Document No.: WRG 5A-11**  
**Publication Date: 10/4/2012**

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### INTRODUCTION

Broadcast seeding is the most common method of seeding wetlands as the seed of most wetland species requires light to germinate and should be planted on the soil surface. It is important while broadcast seeding wetlands to have an even distribution of seed to avoid bare areas that could establish with weedy species. Higher seeding rates are typically required with broadcast seeding but wetland seed mixes are usually designed with high seed counts to accommodate this need.



Broadcast seeding equipment

Broadcast seeding is conducted with Cyclone, Vicon or other types of mechanical broadcast seeders and by hand broadcasting. Drill seeders can also be used for wetlands but it is important that they are calibrated correctly to ensure that seed is not buried too deep. Brillion and Trillion type seeders that drop seed on the surface and use a roller for seed to soil contact can also be used for wetlands. Hydroseeding is sometime chosen as a seeding method when the terrain is inaccessible for other equipment.

### APPLICATION

Generally, the smaller the wetland seed, the shallower it must be sown. Wetland plants have adapted to an environment that floods on occasion, so many species will float if flooded. Most wetland seed should be planted with broadcast seeders that spread seed on the soil surface or with Brillion or Trillion type seeders that drop and pack seed on the surface. Wetland grasses and other species with larger seeds may benefit from being harrowed into the soil 1/8-1/4 inches deep before smaller wetland seeds are broadcast. Wetland sedges, rushes, grasses, and forbs should be placed on the soil surface, as they require light to germinate. A firm seedbed is needed to ensure that seed is not buried too deep. When broadcast-seeding, carriers such as cracked corn, annual grains, vermiculite, or sand can be added to seed mixes to dilute the relatively small volume of wetland seed and to make it easier to see where seed has been spread. Carriers and seed can be combined in barrels that are closed and rolled over the ground surface for mixing or stirred in broadcast seeders.

It is beneficial to overlap wetland mixes a few feet with upland mixes as moisture conditions can be variable. The seed should be distributed evenly on the soil surface over the entire site. In windy areas with little thatch the site should be cultipacked after broadcasting seed to ensure good seed-to-soil contact and to prevent seed from being blown or washed away.

Gleason et.al. (2003) found that 0.5 cm (less than 0.25 inches) of sediment reduced wetland seedling emergence by 91.7 percent and total invertebrate emergence 99.7 percent. Unless the seed is of a species that floats, or is of relatively large size, this small amount of sediment has the potential of making a planting fail. It is very important that both the upland and wetland soils be stabilized to protect the seeding of wetland species.



Hand broadcasting emergent wetland seed

Wetland seeding should be planned to coincide with the restoration of hydrology. It is common to conduct wetland seeding in the fall or winter before wetland hydrology will be restored the following spring. Planting the previous fall will allow for the use of larger equipment before soils become too wet. In areas where there will be flowing water or open water after snowmelt, it may be beneficial to conduct seeding in late spring or early summer after hydrology has stabilized. This is particularly true along the edge of open water where seed is easily displaced prior to it being established.

Wetland seeding can be conducted in the spring, fall or winter. The following discussion covers the benefits and limitations of each season:

### **Spring Seeding**

Spring seeding is beneficial when fall or winter seeding may lead to the loss of seed. Spring seeding should be conducted around mid-May after any germinating weeds are controlled and before July when moisture levels may decrease in wetlands. With spring seeding wetland grasses are often the first to establish along with some forbs. Other forbs, along with sedges and rushes require stratification of seed and will germinate after the first winter.

### **Fall Seeding**

Projects that have been seeded in the Fall tend to develop differently than spring plantings because many forbs and sedges require a cold/moist period (over-wintering) before they will germinate. This is more often the case with mid-successional and late successional species than with early successional species. In wetlands, cool-season grasses, sedges, rushes, and bulrushes can germinate in early spring and will establish quickly if conditions are good. Seed of most native species will take three to four weeks to germinate under ideal conditions (moisture, temperature, night length, and dormancy break). They usually will not germinate under drought conditions. A limitation of fall seeding is that some seed can be lost due to rodents, birds, flowing water, and harsh conditions. Annual grain cover crops such as oats and winter wheat do not over-winter well if dormant seeded (late fall planting). Cover crops also do not perform well if it is seeded in late June or early July. Fall seeding should be conducted after November 1st in the southern half of the state and October 15th in the northern half of the state to ensure that seed does not germinate before winter. In some cases, forbs and sedges are seeded in the fall followed in the spring by the seeding of grasses that do not require stratification, to prevent the loss of grass seed over winter. If fall weather has been dry and warm it may be beneficial to delay seeding until shortly before snowfall.

## Winter Seeding

Seeding can be conducted in wetland and uplands during late winter months over snow cover. The natural freezing and thawing action helps set the seed firmly in the soil (eliminating the need for further packing), preparing it for growth in the spring. This technique, often referred to as frost seeding, should be conducted on a previously prepared seedbed. Frost seeding has also been successful on sites where soybeans were recently harvested without additional site preparation. This technique is



Winter seeding equipment

not recommended for areas that will have flowing water during the spring. The following are snow seeding guidelines from the Detroit Lakes Wetland Management District (Prairie Restoration Techniques/Tips, Hanson, L. Kahan, S.):

- Conduct a fall glyphosate herbicide application (1 Qt.) or do this application in early spring prior to native emergence (timing is important)
- Be ready to seed when conditions are right (have seed and equipment ready)
- Seed late in the winter when sun has a higher angle (late Feb./March/early April)
- Pick partly to mostly sunny days with temperatures between 20° to 40° F
- Seed when there is less than one foot of snow over most areas.
- Start work early so that seeding is done by 1:00 pm allowing time for sun to warm seed into the soil.
- Treat establishing weeds in the wetland as needed.

Hydroseeding wetlands can be an alternative to broadcast seeding. Hydroseeding may be a preferred option for situations where hydrology conditions do not allow for the use of broadcast seeding equipment and seed can be directed onto a site with a hydroseeder. There are many considerations when hydroseeding wetland seed to ensure that it is installed appropriately. Hydroseeding can be conducted in spring or fall.



When hydroseeding is conducted, the seedbed must be loosened to allow spaces for seed to make good contact with the soil to prevent washing. A fan-type nozzle should be used with approximately 500 gallons of water for a visual tracer to ensure uniform coverage. Hydroseeding uses a slurry of seed, chopped mulch, and sometimes fertilizer. Seeds are often coated with absorbents to give them a better chance of survival during germination. A high-pressure pump is used to spray the slurry onto the prepared soil surface. One common problem with hydroseeding is ensuring good seed-to-soil contact. It is usually recommended to spray seed and water first followed by the slurry to aid seed to soil contact. In some cases the slurry may not be needed. Better contact can be accomplished by using a chain drag or harrow and roller after seeding to incorporate seed into the soil.

If trees and shrubs are also being planted, they should be installed before hydroseeding to prevent seedbed disturbance. Herbaceous species can be installed after hydroseeding as long as planting doesn't cause significant disturbance.

## OTHER CONSIDERATIONS

In some cases species with larger seeds are broadcast first and then harrowed to ensure good seed-to-soil contact. Broadcast seeding of wetlands should ensure the successful establishment of wetland vegetation, decreasing future maintenance needs.

## COSTS

The installation of wetland seed typically costs between \$30-120 per acre depending on the complexity of the project and type of equipment to be used. Wetland seed mixes can vary from \$200 to \$1000 per acre.

## ADDITIONAL REFERENCES

Effects of sediment load on emergence of aquatic vertebrates and plants from wetland soil egg and seed banks, Gleason R.A., Euliss N.H., Hubbard D.E., Duffy W.G., *Wetlands*, Vol. 23, No. 1, pp. 26–34, March 2003

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Mn/DOT Specification 2575.3 Hydroseeding, [www.dot.state.mn.us/tecsup/spec/](http://www.dot.state.mn.us/tecsup/spec/)