

STATE OF NORTH DAKOTA
PUBLIC SERVICE COMMISSION

Andeavor Field Services LLC
8" & 6" NGL Pipelines – McKenzie, Billings, Stark
Siting Application

Case No. PU-18-072

Amended Late-Filed Exhibit 2
Water Well Information

A hearing was held on May 14, 2018, on the application of Andeavor Field Services LLC (“Andeavor”) for a Certificate of Corridor Compatibility and Route Permit for the Y-Grade Hub Pipeline Project (“Project”). During the hearing, the North Dakota Public Service Commission (“Commission”) requested additional information from Andeavor regarding water wells near the Project route, as depicted in Exhibit 1, Appendix A.

For example, the Commission inquired as to how near the Project various water wells are as depicted on North Segment Siting Criteria Aerial Photography Map 2 of 5 (attached hereto as **Exhibit A**) and South Segment Siting Criteria Aerial Photography Map 4 of 6 (attached hereto as **Exhibit B**). Upon closer review of these areas, the wells depicted on the maps are primarily observation/monitoring wells and do not depict the existence of actual domestic water wells. Accordingly, no impacts to these areas are expected.

However, in response to the Commission’s further inquiry regarding these water wells, Andeavor conducted a supplemental analysis of the wells in question. Additional field visuals were conducted for the wells depicted along the South Segment Siting Criteria Aerial Photography Map 4. *See* Ex. B. The three areas depicted as observation/monitoring wells located just East of or just inside of the study corridor are actually test lead for cathodic protection test stations for the BakkenLink Pipeline. These test leads are depicted in the photographs attached hereto as **Exhibit C** taken during the field visuals. It is unknown why these test leads appear in the ND State Water Commission GIS data used to produce the maps.

Andeavor has also confirmed that the observation/monitoring wells located within the survey area depicted on Ex. A are owned by the landowners, Lemoine D. and Clarice J. Hartel and/or Justin and Angela Hartel, and are associated with the landowners’ domestic water wells in the area. On May 24, 2018, the landowners again confirmed they approve of the route of the Project in relation to their wells.

In addition to the supplemental surveys and communications noted above, Andeavor discussed with all landowners the location of domestic water wells during the selection of the route and while obtaining easements for the Project. The ownership of the domestic water wells depicted on Ex. A is found below in Table 1. No concerns regarding the location of the Project with relation to any wells were raised by the landowners.

Table 1 – Ownership of Domestic Water Wells for North Segment Depicted on Ex. A

Domestic Water Wells				
Landowner	Section	Township	Range	Short legal
Larry Sorenson and Carla Sorenson	13	150	98	E/2 of the NW/4
E. Ward Koeser and Joetta G. Koeser	13	150	98	S/2 of the S/2
Lemoine D. and Clarice J. Hartel	23	150	98	W/2 of the NE/4
Justin and Angela Hartel	24	150	98	SW/4
Lemoine D. and Clarice J. Hartel	24	150	98	SE/4
Mark and Janice Koeser	24	150	98	S/2 of the NW/4 & NW/4 of the NW/4
Jefrey R. Prince	35	150	98	NW/4 of the SW/4
Michael Burian	27	141	99	SE/4
Von & Noreen Johnson	26	141	99	SW/4
Kathleen Safratowich Living Trust	34	141	99	SE/4
Kathleen Safratowich Living Trust	5	140	99	Lots 3, 4, 5, 6 (NW/4)
Wilfred A. Mastel and Virginia C. Mastel	8	140	99	NW/4

To avoid any impacts to existing or future domestic water wells, Andeavor will implement the following integrity program measures to avoid impacts:

Prevention

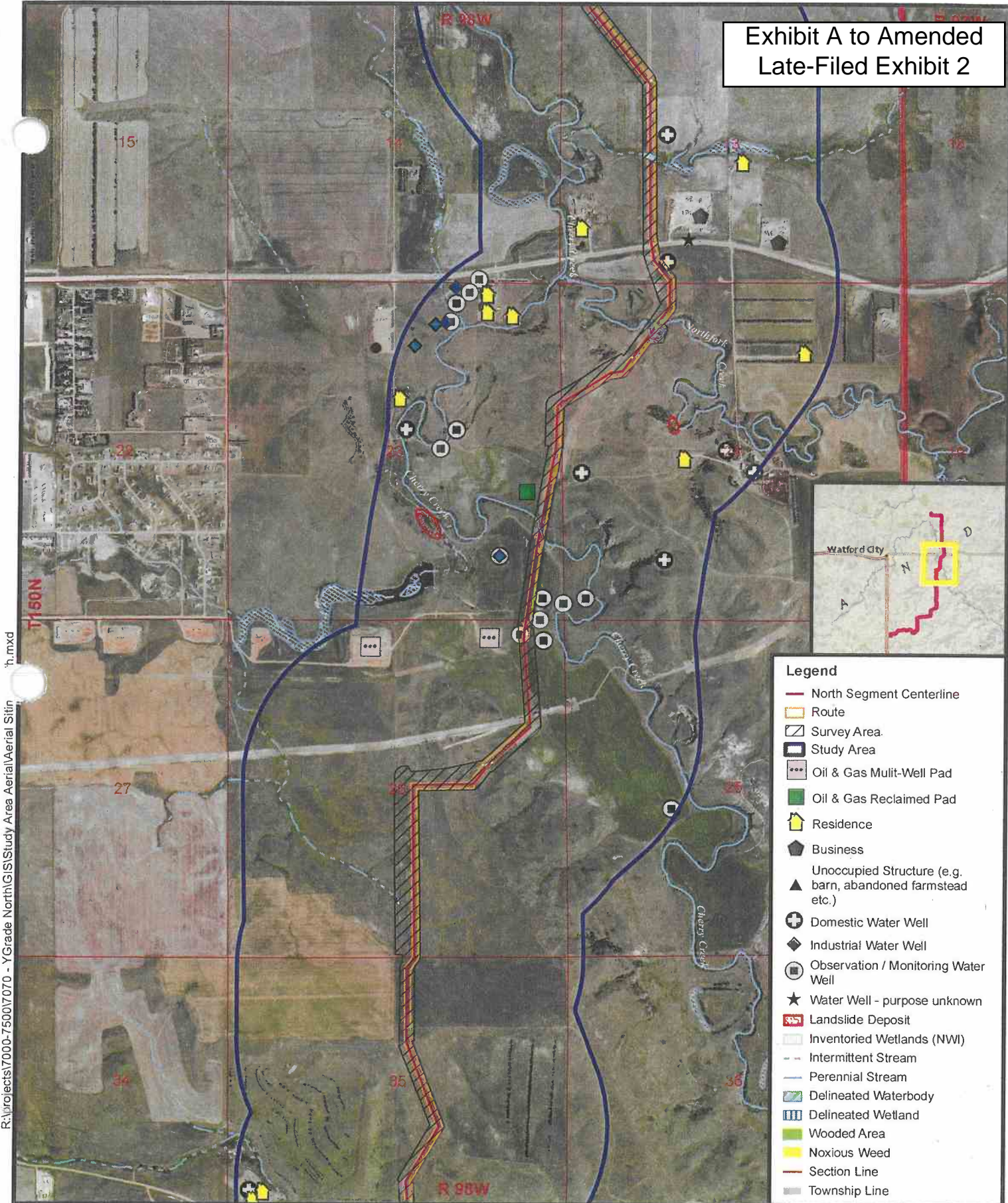
- External Corrosion Control—install cathodic protection on all pipeline segments.
- Internal Corrosion Control—implement various internal corrosion mitigation programs (e.g., maintenance pigging, corrosion inhibitors, etc.) based on corrosivity of the product.
- Damage Prevention Programs—1) ensure all pipeline segments are in the state One Call system, 2) implement public awareness programs for affected public, excavators, public officials, and emergency responders, 3) monitor and maintain adequate cover on pipelines, and 4) monitor and maintain adequate line markers.
- Implement comprehensive preventative maintenance and inspection programs for pipeline equipment and facilities (e.g., valve maintenance, tank inspection, pressure relief valve inspections, etc.).
- Annually review integrity threats to pipeline, and take preventative action as needed.

Monitoring

- Cathodic Protection—implement annual monitoring (i.e., pipe-to-soil potential surveys) and close interval surveys at intervals not to exceed 5 years to ensure effectiveness of cathodic protection.
- Internal Corrosion—conduct periodic sampling of product to monitor corrosivity, and take appropriate action as needed.
- In-line inspection—run “smart” tools at maximum intervals of 5 year to evaluate integrity of pipeline.
- Implement continuous leak detection.

64069369.1

Exhibit A to Amended
Late-Filed Exhibit 2



- Legend**
- North Segment Centerline
 - ▭ Route
 - ▭ Survey Area
 - ▭ Study Area
 - ⋯ Oil & Gas Multit-Well Pad
 - Oil & Gas Reclaimed Pad
 - 🏠 Residence
 - 🏢 Business
 - ▲ Unoccupied Structure (e.g. barn, abandoned farmstead etc.)
 - ⊕ Domestic Water Well
 - ◆ Industrial Water Well
 - ⊙ Observation / Monitoring Water Well
 - ★ Water Well - purpose unknown
 - 📌 Landslide Deposit
 - ▨ Inventoried Wetlands (NWI)
 - - - Intermittent Stream
 - Perennial Stream
 - 🌊 Delineated Waterbody
 - ▨ Delineated Wetland
 - 🌳 Wooded Area
 - 🟡 Noxious Weed
 - Section Line
 - Township Line

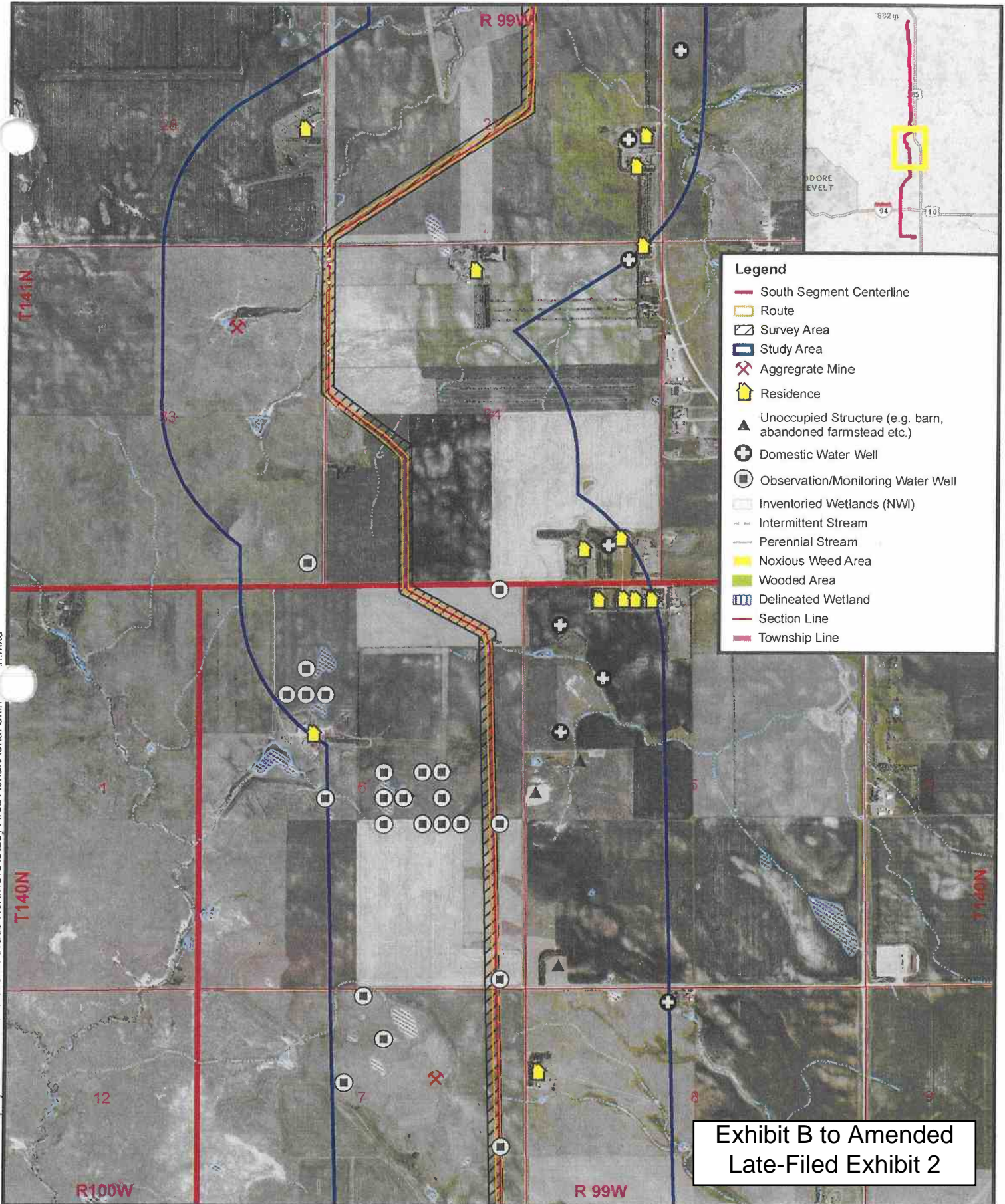
R:\projects\7000-7500\7070 - YGrade North\GIS\Study Area Aerial\Aerial Siting.mxd

January



1:24,000 1 inch = 2,000 feet
 0 2,000 feet
 Basemap: 2016 Aerial Photography

**North Segment Siting Criteria
 Aerial Photography 2 of 5
 Andeavor Y-Grade Hub**



Legend

- South Segment Centerline
- - - Route
- ▨ Survey Area
- ▭ Study Area
- ✕ Aggregate Mine
- 🏠 Residence
- ▲ Unoccupied Structure (e.g. barn, abandoned farmstead etc.)
- ⊕ Domestic Water Well
- ⊞ Observation/Monitoring Water Well
- ◻ Inventoried Wetlands (NWI)
- - - Intermittent Stream
- Perennial Stream
- 🟡 Noxious Weed Area
- 🟢 Wooded Area
- ▨ Delineated Wetland
- Section Line
- Township Line

Exhibit B to Amended Late-Filed Exhibit 2

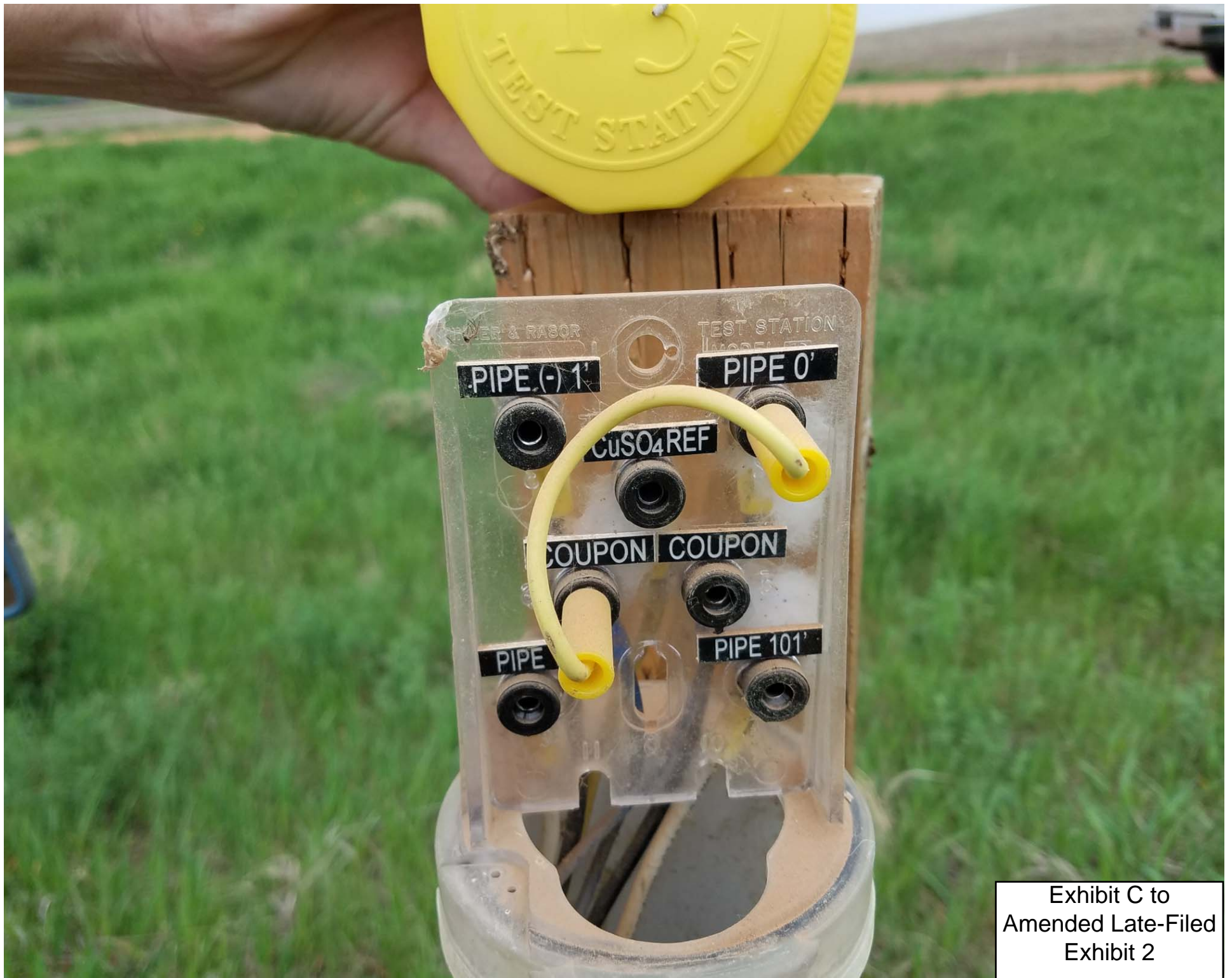
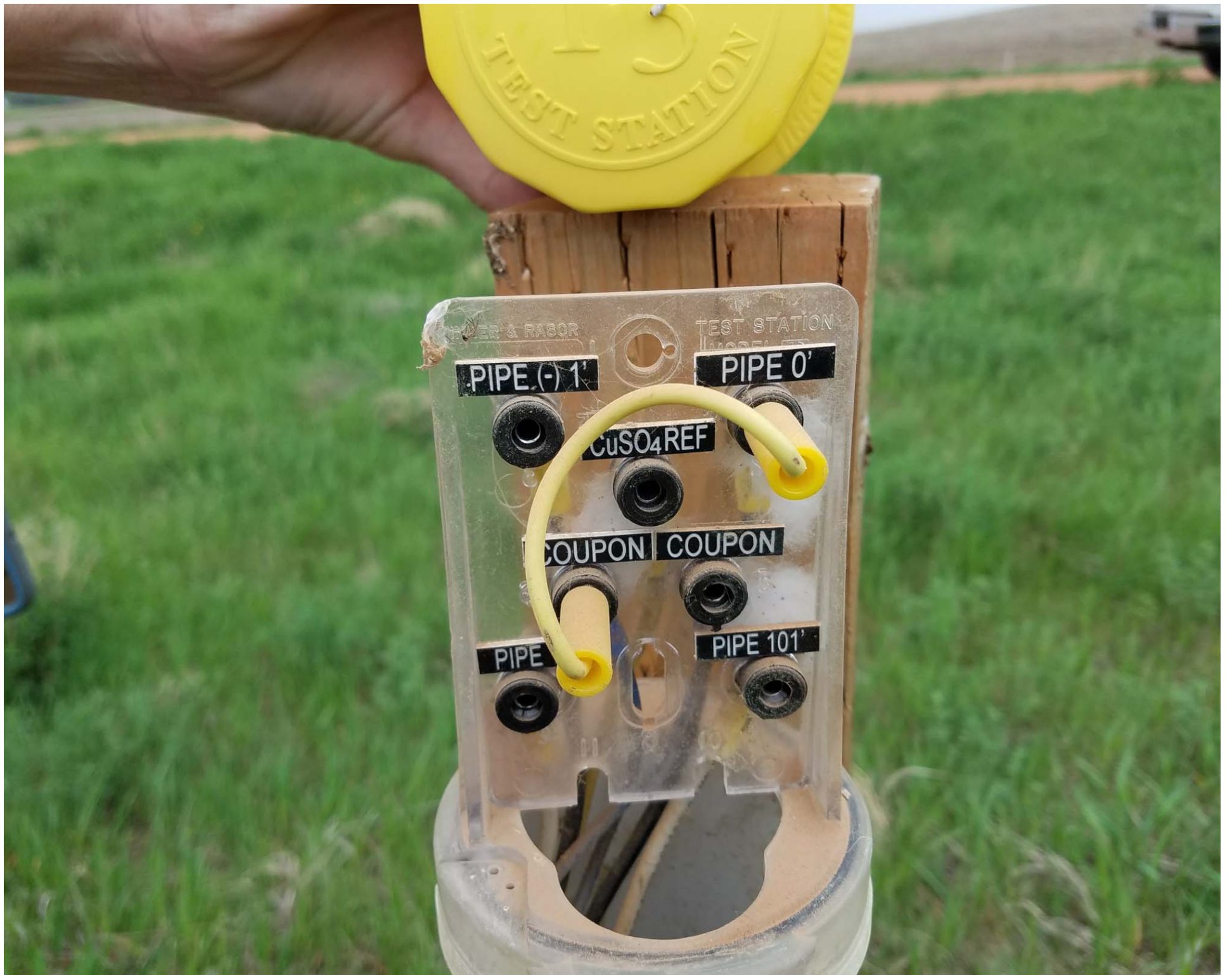


Exhibit C to
Amended Late-Filed
Exhibit 2





PIPE (-) 1'

PIPE 0'

CuSO₄ REF

COUPON | COUPON

PIPE

PIPE 101'

