

## Flood Shut-In Plan

Petro Operating Company, LLC

LG Everist Pad – 40.11362, -104.82615  
NWNW Sec. 30 – T1N – R66W  
Fort Lupton, CO

Petro Operating Company, LLC (Petro) plan for the appropriate handling of equipment shut-in during a flood event for the LG Everist location is described below:

### Location Inventory

- Existing oil and gas wells
  - Counter 1-AD, API# 05-123-10282. Will be plugged and abandoned by Petro prior to commencing operations.
- Proposed oil and gas wells
  - 12 horizontal wells to be drilled from the LG Everist Pad
- There are no facilities on location related to existing wells
- Planned Storage Tanks and Separation Equipment
  - 2 Water Tanks – Approximately 1000 barrels
  - 4 Oil Tanks – Approximately 2000 barrels
  - 1 Oil Surge Vessel
  - 1 LACT Unit
  - 4 Vapor Recovery Units (VRU)
  - 2 ECDs
  - 4 Heater Treaters
  - 8 Separators
  - 2 Emission Control Combustors

In accordance with COGCC Rule 421.b.(2)-(4), all tanks and separation equipment on location will be anchored to the ground. Anchors will be engineered to support the tank and separation equipment, and to resist flotation, collapse, lateral movement, or subsidence. Containment berms around tanks will be constructed of steel rings or another engineered technology that provides equivalent protection from floodwaters and debris. No pits will be used at this location.

### Shut-In Plan

In the event of a flood, imminent threat of a flood, or flood occurrence; the following plan will be followed.

1. Notify affected personnel that may be on site
2. If the site is inaccessible, use the remote shut down feature available from the ZdScada system to shut the wells in and verify with the system that flow has stopped. (This shut down closes valves at both well head and separator)

3. Notify pipeline operators of shut down.
4. If the site is accessible or becomes accessible after a remote shut down these additional steps will take place.
  - a. Well head master valves to be shut and locked out.
  - b. Well head and separator control valves to be shut.
  - c. Pilot lights/Burners turn to off position.
  - d. Main disconnect on power distribution panel switched to off position.
  - e. Shut main isolation valves on gas sales, oil, and water lines.
5. Monitor site conditions during event via scada and in person if well site remains safely accessible.
6. Once the event is over, site is safely accessible, and the threat of flooding is no longer in the forecast, return to site for the following safety and environmental assessments. (use third party where applicable)
  - a. Lease road integrity
  - b. Site stormwater BMPs
  - c. This site is next to gravel pits with slurry wall berms. If these are visibly damaged, be sure to notify the LG Everist Mining Company, to whom these gravel pits belong.
  - d. Inspect well site, tank battery and separation facility for any settling.
  - e. Inspect tank battery and separation facility for any signs that the equipment was unsettled/moved by floodwaters.
  - f. Have an electrician inspect and test the electrical components on site to ensure safe operation when brought back on line.
  - g. Inspect all above ground piping for damage or leaks.
  - h. Test automation functions
  - i. Submit report(s) as necessary to facilitate any repairs needed.

### **Triggers for Flood Shut-In Plan**

Petro will monitor the National Weather Service and local weather alert systems for this location, with the following warnings applicable as a trigger to this plan:

1. Flash Flood Warning
2. Flood Warning
3. Flash Flood Watch
4. Flood Advisory

### **Reporting**

In the event of wells being shut-in due to a flood, notice of the event and the well(s) status change to “shut-in” will be filed with the COGCC via Form 4 Sundry. A notice of return to service will be filed with the COGCC via Form 42 at least 48 hours prior to the anticipated date of the well’s return to production. Additionally, the City of Fort Lupton will be properly notified of the flood event, well status changes, and plans to bring wells back to production in a timely manner.

## Relevant Contact Information

### Operator:

Alex Corey  
713-408-7174  
alex.corey@iptenergyservices.com

Petro Operating Company, LLC  
9033 E. Easter Place, Suite 112  
Centennial, Colorado 80122

### Local Government Floodplain Administrator:

Todd Hodges  
720-466-6106  
thodges@fortluptonco.gov

City of Fort Lupton, Planning & Building Division  
130 S. McKinley Avenue  
Fort Lupton, CO 80621

## City of Fort Lupton Floodplain Permit

Petro has obtained an approved floodplain permit from the City of Fort Lupton prior to the LG Everist OGD application. This floodplain permit is attached in the following pages of this document.



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Date: March 30, 2020	Applicant: Petro Operating Company, Inc. – Andy Peterson
Address / Location of Project: 1/4NW Section 30, T2N and R66W, Southwest Corner of S. Platte River and WCR 18, Approximately 12546 County Rd 18, Fort Lupton, 80621.	
Telephone: (970) 669-7411	

Description of work (Complete for All Work):

Proposed Development Description:

- |  |   |
|--|---|
| <input type="checkbox"/> New Building<br><input type="checkbox"/> Manufactured Home<br><input checked="" type="checkbox"/> Other <u>O&amp;G Facilities</u> | <input type="checkbox"/> Improvement to Existing Building<br><input type="checkbox"/> Filling |
|--|---|

1. Size and location of proposed development (attach site plan):

The proposed facilities will be located on an ~3 acres located on existing ground that is predominately elevated above the existing 100-year floodplain. The site is located in the SW Corner of the S. Platte River and Weld County Road 18. See Attachment A for Site Plan

2. Is the proposed development in a Special Flood Hazard Area (SFHA Zones A, AE, A1-A30, AH or AO)?

- Yes       No

3. Per the Floodplain Map, what is the zone and panel number of the area of the proposed development?

Zone AE      Panel Number 08123C2102E      (See Attachment B)

4. Are other Federal, State or Local permits obtained?

- Yes       No

Type: \_\_\_\_\_

5. Is the proposed development in an identified floodway?

- Yes       No



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Planning & Building
130 S. McKinley Avenue
Fort Lupton, CO 80621
Fax: 303.857.0351
Phone: 303.857.6694
www.fortluptonco.gov

6. If Yes to No.6, is a "No Rise Certification" with supporting data attached?

X Yes [ ] No See Attachment C

B. Complete for New Structures and Building Sites:

- 1. Base Flood Elevation at the site: ~4874.0 feet NAVD88
2. Required lowest floor elevation (including basement): N/A feet NAVD88
3. Elevation to which all attendant utilities, including all heating and electrical equipment will be protected from flood damage: N/A feet NAVD88

C. Complete for Alterations, Additions, or Improvements to Existing Structure?

- 1. What is the estimated market value of the existing structure? \$ N/A
2. What is the cost of the proposed construction? \$ N/A

3. If the cost of the proposed construction equals or exceeds 50 percent of the market value of the structure, then the substantial improvement provisions shall apply.

D. Complete for Non-Residential Flood proofed Construction:

- 1. Type of flood proofing method: N/A
2. The required flood proofing elevation is: N/A feet NGVD
3. Flood proofing certification by a registered engineer is attached: [ ] Yes [ ] No N/A

E. Complete for Subdivisions and Planned Unit Developments (PUD):

- 1. Will the subdivision or other development contain 50 lots or 5 acres? [ ] Yes X No
2. If yes, does the plat or proposal clearly identify base flood elevations? [ ] Yes [ ] No N/A
3. Are the 100-Year Floodplain and Floodway delineated on the Site Plan? X Yes [ ] No (See Attachment D)



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\*\*\*For Office Use Only\*\*\*

- 1. Permit approved [ ] Permit denied [ ] (Statement attached)
2. Floodplain Review Fee: \$ 1750.00 (1,000 escrow +750 application fee) (Due at time of application)
3. Elevation Certificate attached: [ ] Yes [ ] No
4. As-Built lowest floor elevation: \_\_\_\_\_ feet NGVD
5. Work inspected by: \_\_\_\_\_
6. City Engineer Signature: \_\_\_\_\_ Date \_\_\_\_\_

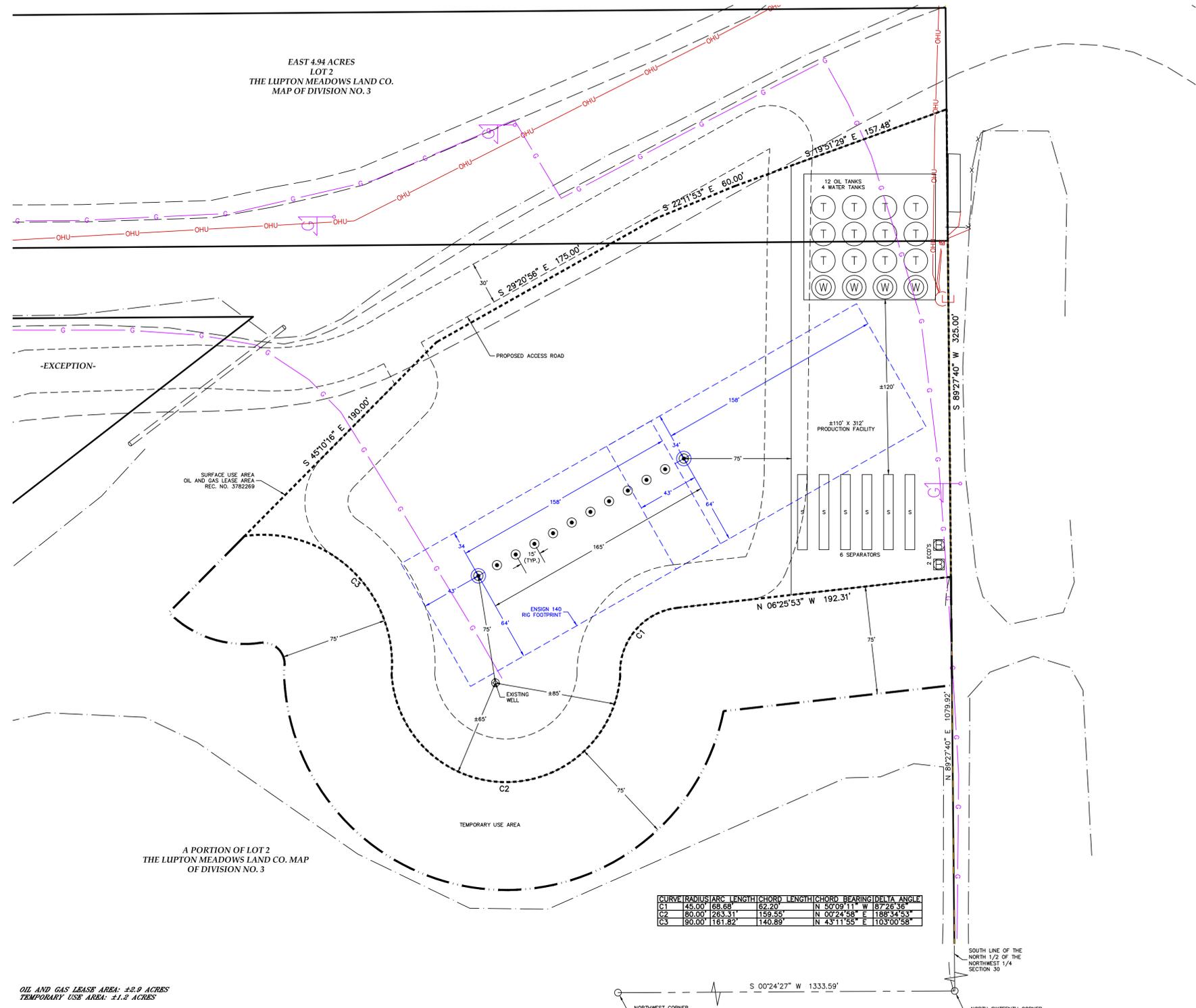
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# FACILITY LAYOUT

LG EVERIST 2N66W30

A PORTION OF LOT 2 OF THE LUPTON MEADOWS  
LAND CO. MAP OF DIVISION NO. 3  
SITUATE IN THE NORTHWEST QUARTER OF SECTION 30,  
TOWNSHIP 2 NORTH, RANGE 66 WEST, 6TH P.M.  
CITY OF FOR LUPTON, COUNTY OF WELD,  
STATE OF COLORADO



CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE
C1	45.00'	155.58'	62.20'	N 50°00'11" W	57°26'36"
C2	80.00'	263.31'	159.55'	N 00°24'58" E	186°34'53"
C3	90.00'	161.82'	140.89'	N 43°11'55" E	103°00'58"

- LEGEND
- PROPOSED WELL HEAD
  - ⊕ TANK BATTERY
  - ⊙ WATER TANK
  - ⊚ WATER VAULT
  - [S] SEPARATOR
  - ECD
  - ⊞ METER
  - VRU- VAPOR RECOVERY UNIT



OIL AND GAS LEASE AREA: ±2.9 ACRES  
TEMPORARY USE AREA: ±1.2 ACRES



Lat40, Inc.  
Professional Land Surveyors  
6250 W. 10th Street, Unit 2  
Greeley, CO 80634  
O: 970-515-5294

DATE: 6/18/2019	FILE NAME: 2018223SITE.dwg	DRAWN BY: SLR	CHECKED BY: BTB	SCALE: 1" = 40'	PROJECT #: 2018223
REVISIONS:	DATE:	FACILITY LAYOUT FOR PETRO OPERATING COMPANY, LLC 9033 EAST EASTER PLACE, STE 112 CENTENNIAL, CO 80112		<div style="font-size: 2em; font-weight: bold; margin: 0;">2</div> <p>SHEET 2 OF 2</p>	

SHEET SIZE: 24X36



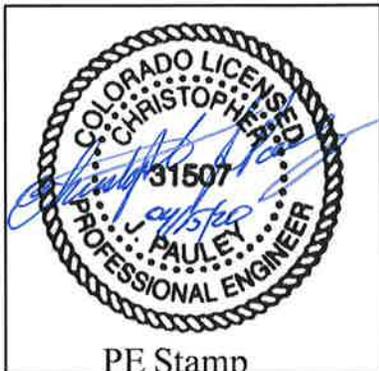
# Galloway & Company, Inc. "NO-RISE" CERTIFICATION

This is to certify that I am a duly qualified registered professional engineer licensed to practice in the State of Colorado.

It is further to certify that the attached technical data supports the fact that the proposed/~~constructed~~ LG EVERIST SITE (Name of Development) will not impact the 100-year flood elevations on SOUTH PLATTE RIVER (Name of Stream) at published or unpublished cross-sections in the FEMA Flood Insurance Study for WELD COUNTY dated JANUARY 20, 2016 (Study Date) and/or other "Best Available Data" in the vicinity of the proposed development beyond that allowed by FEMA regulations for flooding sources with established Base Flood Elevations and no regulatory floodway cited in 44 CFR 60.3(c)(10) or with a regulatory floodway cited in 44 CFR 60.3(d)(3).

Attached are the following documents that support my findings:

1. Attachment D.2 CHAMP Model HEC-RAS Cross Section 1590972 showing site located on ground elevated above the BFE
2. Attachments E.1 & E.2 Recreated CHAMP Study Workmaps based on 2013 LiDAR Topography. Presents CHAMP Floodplain/Floodway delineations and BFEs with a 100-Year Flood Depth Grid showing subject site predominantly dry with a small amount of ineffective backwater on the site.
3. LG Everist Site Floodplain Permitting Summary Letter, Galloway, April 15, 2020.



PE Stamp

Signature: Chris J. Pauley

Name (printed): Chris J. Pauley

Company Name: Galloway & Company, Inc.

Date: 04/15/20

18

1582472

1583721

1584044

1584700

1584267

1585481

1586467

1587473

1588472

1589124

1589830

1589711

**LG EVERIST SITE  
2N66W30**

1590348

1590972

1591472

1591972

1592415

1592972

1593607

1594472

**SOUTH PLATTE RIVER**

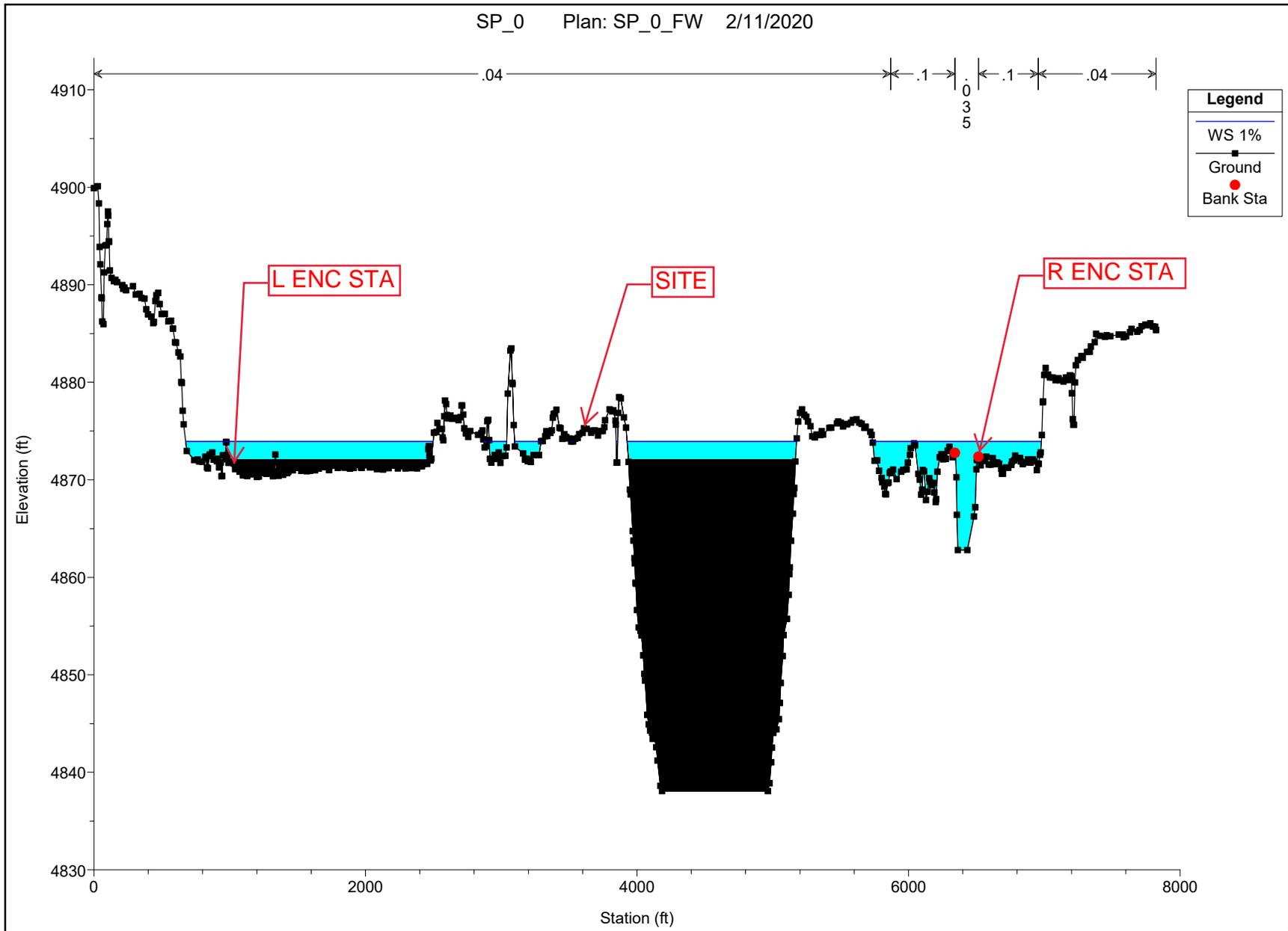
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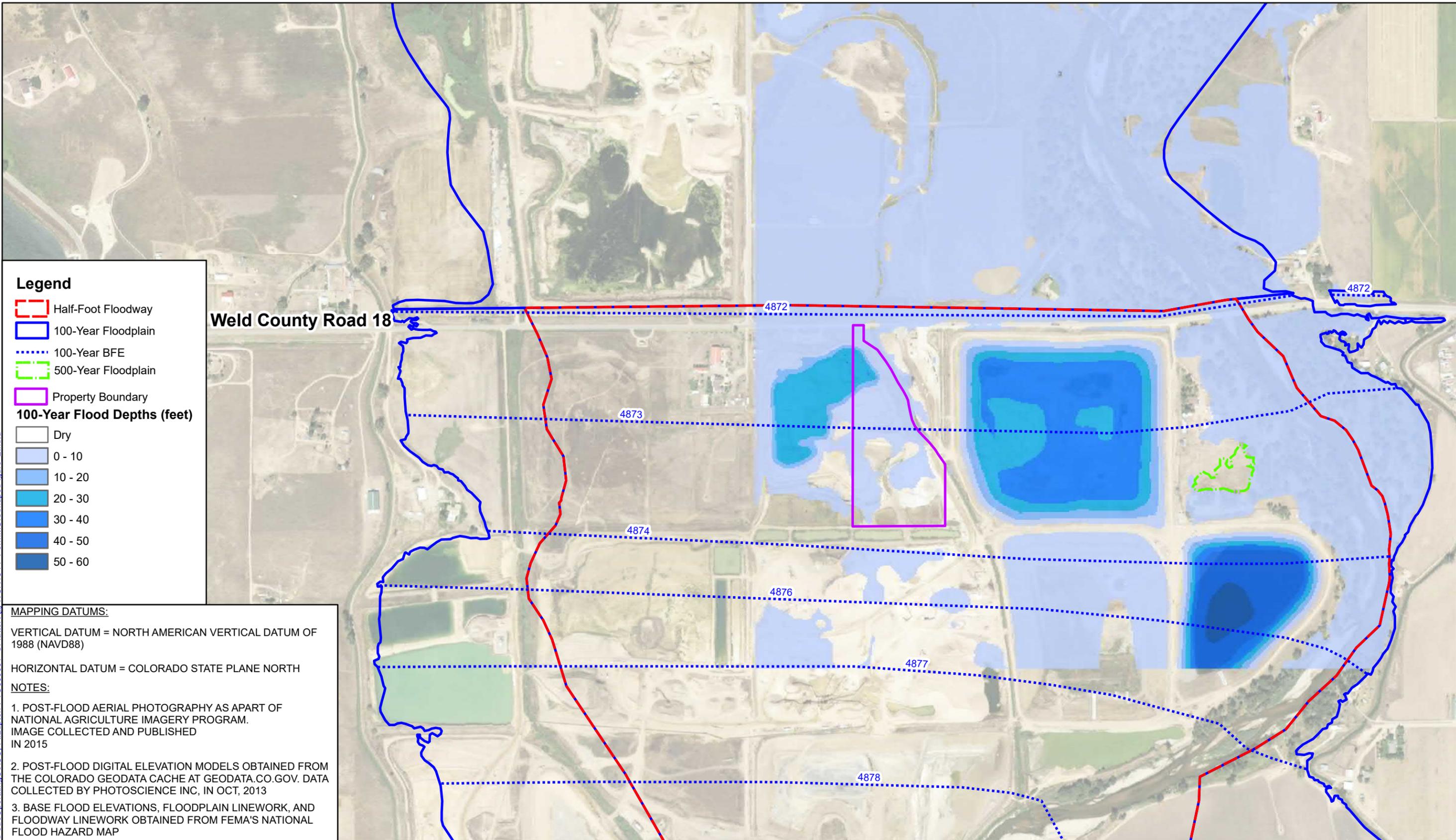
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**ATTACHMENT D.2**



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**Legend**

- Half-Foot Floodway
  - 100-Year Floodplain
  - 100-Year BFE
  - 500-Year Floodplain
  - Property Boundary
- 100-Year Flood Depths (feet)**
- Dry
  - 0 - 10
  - 10 - 20
  - 20 - 30
  - 30 - 40
  - 40 - 50
  - 50 - 60

**Weld County Road 18**

**MAPPING DATUMS:**

VERTICAL DATUM = NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)

HORIZONTAL DATUM = COLORADO STATE PLANE NORTH

**NOTES:**

1. POST-FLOOD AERIAL PHOTOGRAPHY AS PART OF NATIONAL AGRICULTURE IMAGERY PROGRAM. IMAGE COLLECTED AND PUBLISHED IN 2015
2. POST-FLOOD DIGITAL ELEVATION MODELS OBTAINED FROM THE COLORADO GEODATA CACHE AT GEODATA.CO.GOV. DATA COLLECTED BY PHOTOSCIENCE INC, IN OCT, 2013
3. BASE FLOOD ELEVATIONS, FLOODPLAIN LINEWORK, AND FLOODWAY LINEWORK OBTAINED FROM FEMA'S NATIONAL FLOOD HAZARD MAP

**Galloway**  
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 5265 Ronald Reagan Blvd., Suite 210  
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 970.800.3300 GallowayUS.com



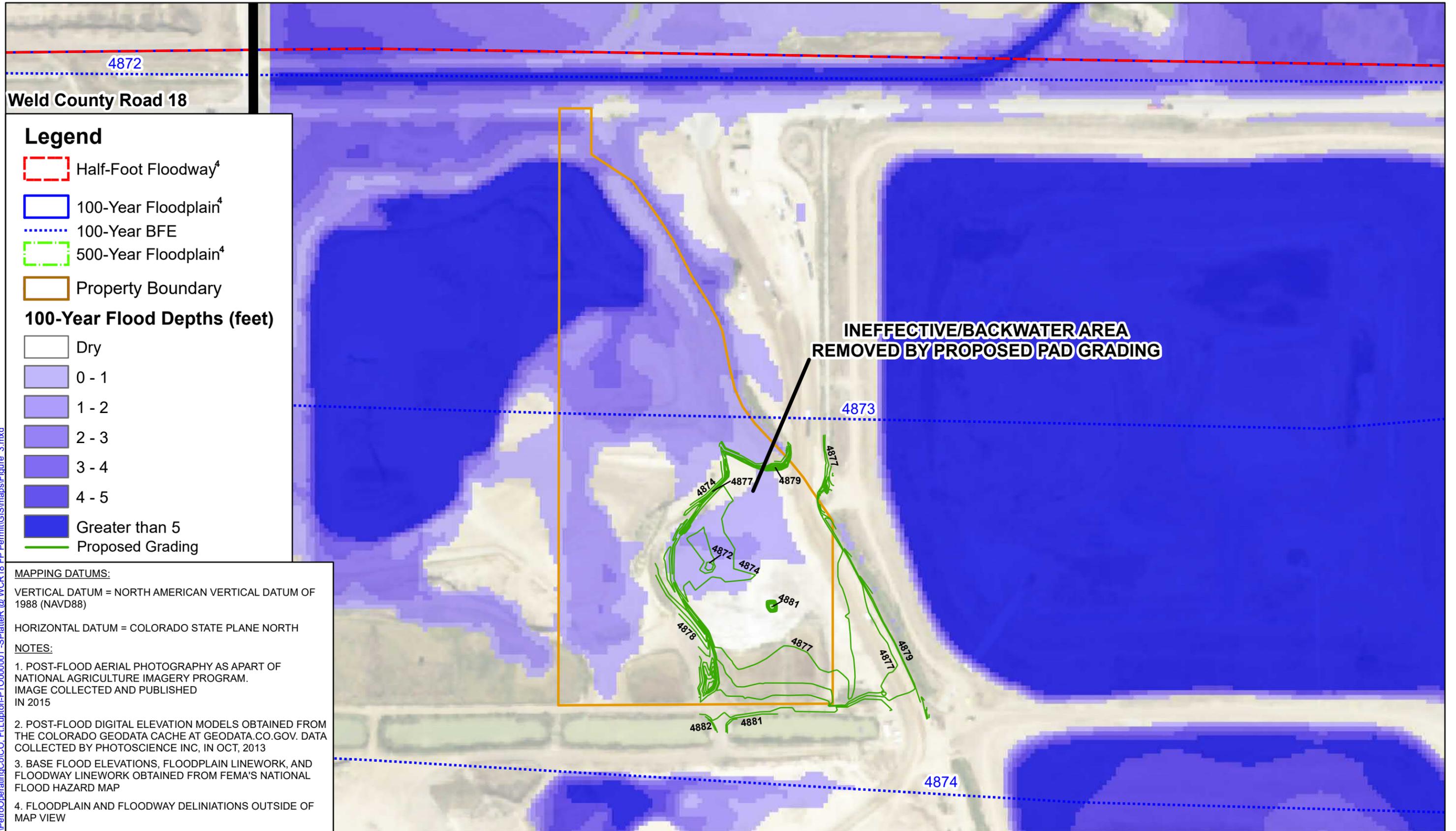
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DESIGNED BY: PMO	PROJECT FILE: Figure_2
CHECKED BY: CJP	DATE: 04/15/2020

**PETRO OPERATING CO.  
 LG EVERIST SITE  
 SOUTH PLATTE RIVER  
 FLOODPLAIN PERMITTING**

**EFFECTIVE  
 FLOODPLAIN WORKMAP  
 RIVER WIDE VIEW**

**ATTACHMENT  
 E.1**

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### Legend

- Half-Foot Floodway<sup>4</sup>
- 100-Year Floodplain<sup>4</sup>
- 100-Year BFE
- 500-Year Floodplain<sup>4</sup>
- Property Boundary

### 100-Year Flood Depths (feet)

- Dry
- 0 - 1
- 1 - 2
- 2 - 3
- 3 - 4
- 4 - 5
- Greater than 5
- Proposed Grading

#### MAPPING DATUMS:

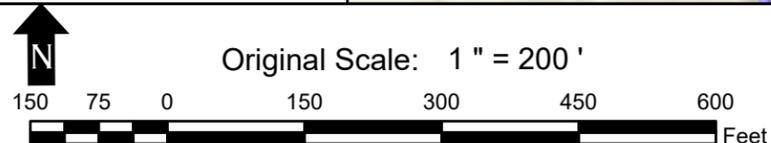
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3. BASE FLOOD ELEVATIONS, FLOODPLAIN LINEWORK, AND FLOODWAY LINEWORK OBTAINED FROM FEMA'S NATIONAL FLOOD HAZARD MAP
4. FLOODPLAIN AND FLOODWAY DELINIATIONS OUTSIDE OF MAP VIEW

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CHECKED BY: CJP	DATE: 04/15/2020

**PETRO OPERATING CO.  
 LG EVERIST SITE  
 SOUTH PLATTE RIVER  
 FLOODPLAIN PERMITTING**

**EFFECTIVE  
 FLOODPLAIN WORKMAP  
 SITE VIEW**

**ATTACHMENT  
 E.2**