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*Final Environmental Impact Statement*  
*Thacker Pass Lithium Mine Project*

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*Appendix P, Part 8 of 8*

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Water Information

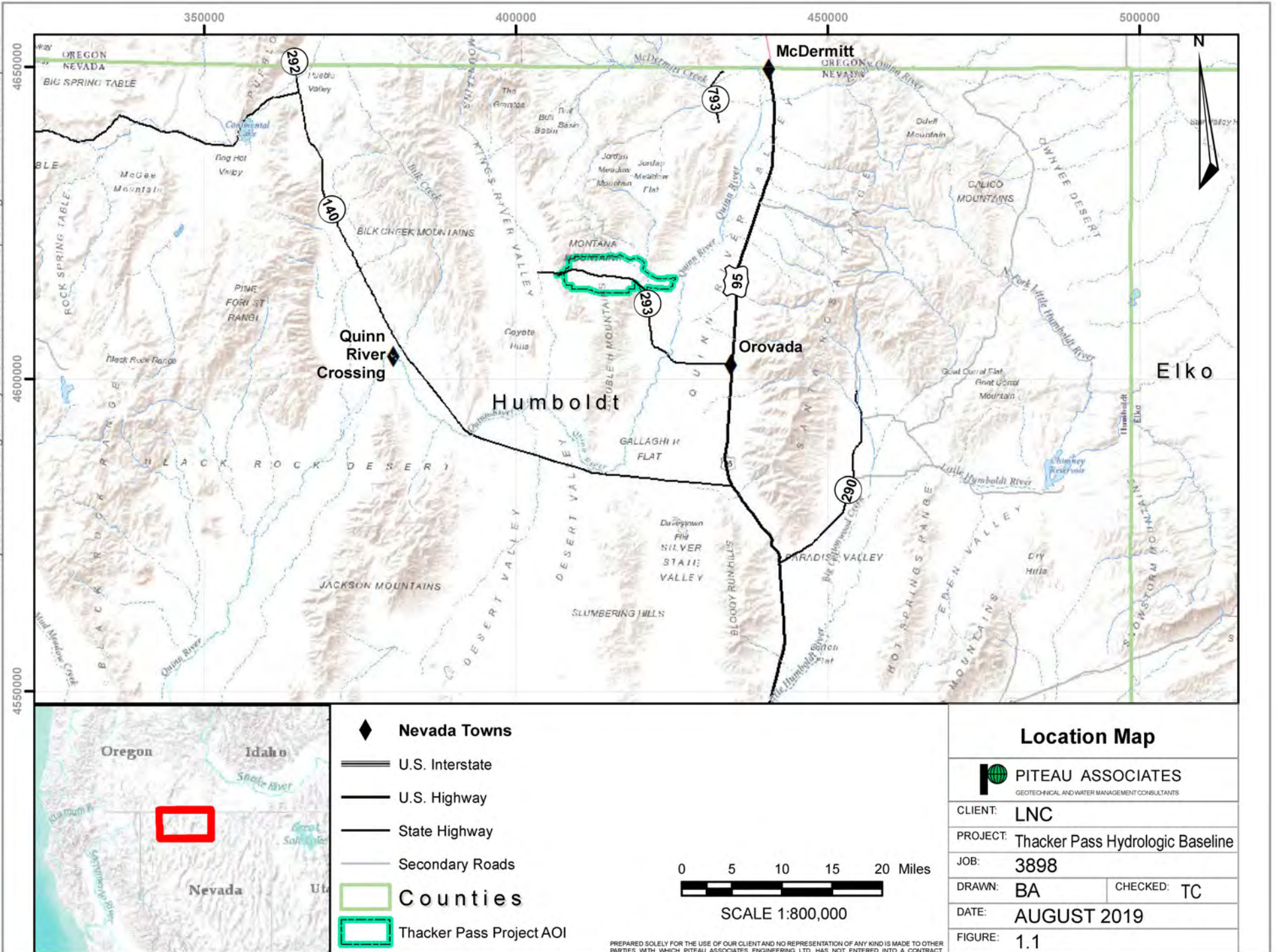
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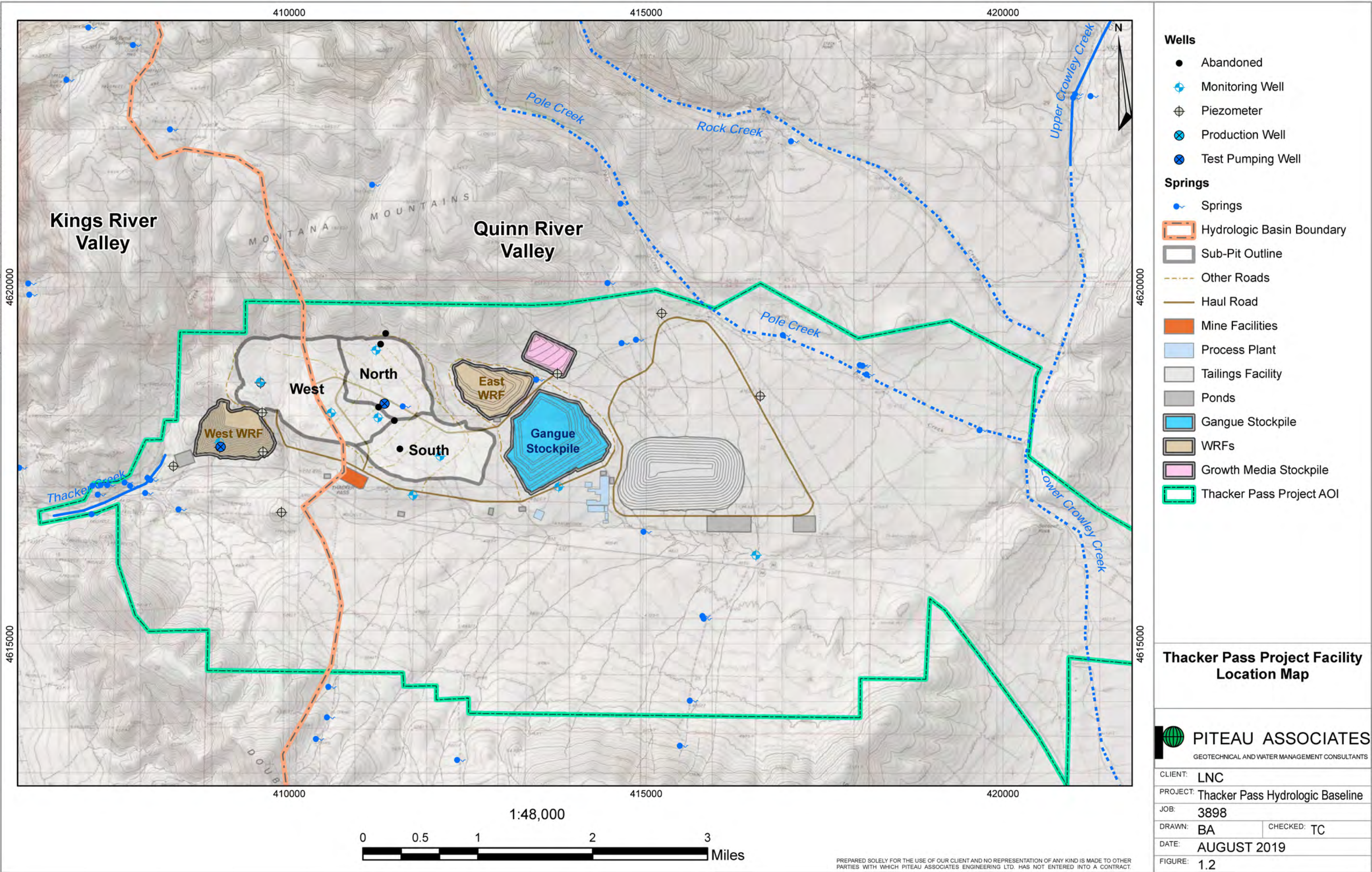
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FIGURES

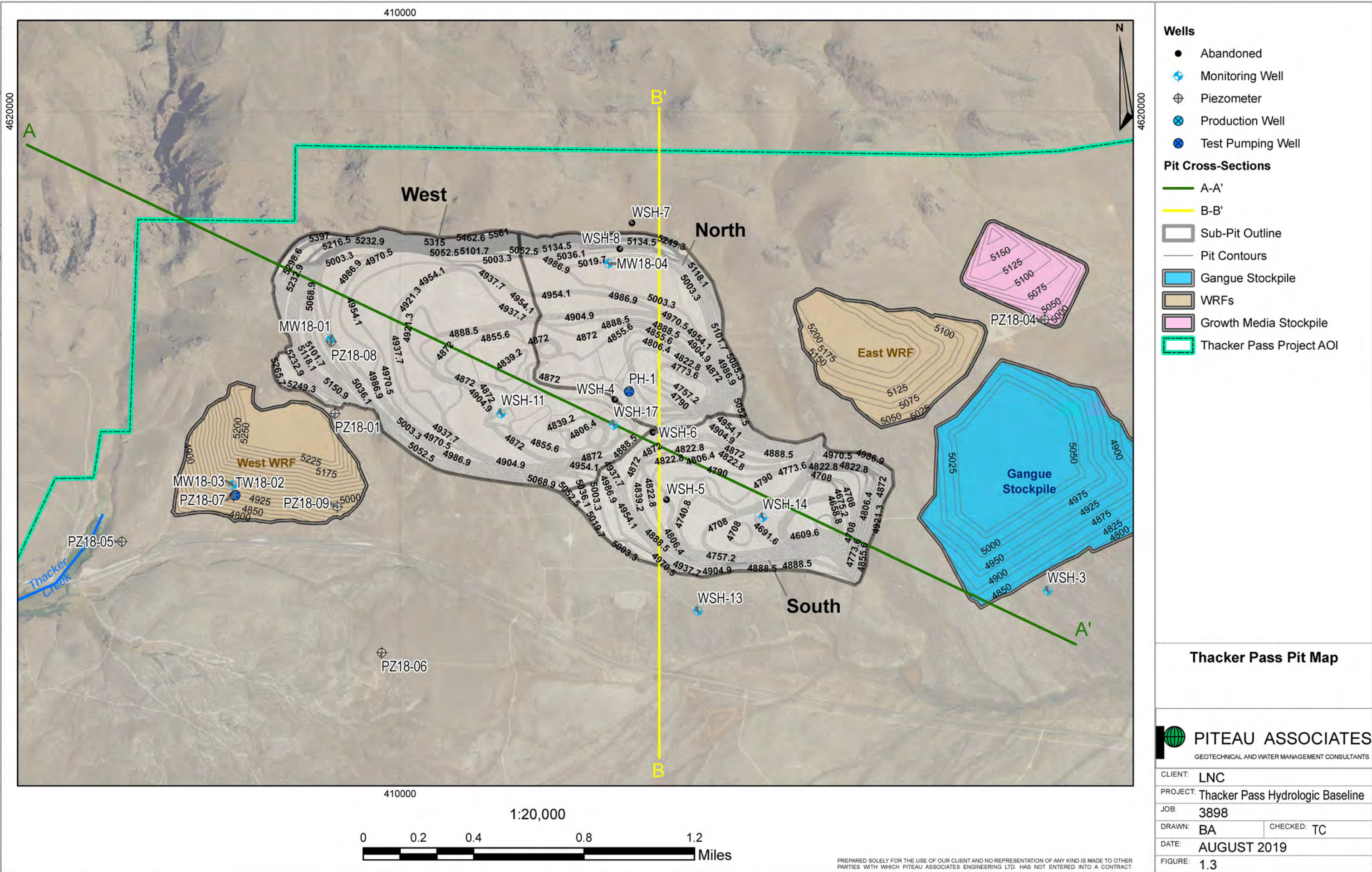


| Location Map                                                                                                                                                                   |                                  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
|  <b>PITEAU ASSOCIATES</b><br><small>GEOTECHNICAL AND WATER MANAGEMENT CONSULTANTS</small> |                                  |
| CLIENT:                                                                                                                                                                        | LNC                              |
| PROJECT:                                                                                                                                                                       | Thacker Pass Hydrologic Baseline |
| JOB:                                                                                                                                                                           | 3898                             |
| DRAWN:                                                                                                                                                                         | BA                               |
| CHECKED:                                                                                                                                                                       | TC                               |
| DATE:                                                                                                                                                                          | AUGUST 2019                      |
| FIGURE:                                                                                                                                                                        | 1.1                              |

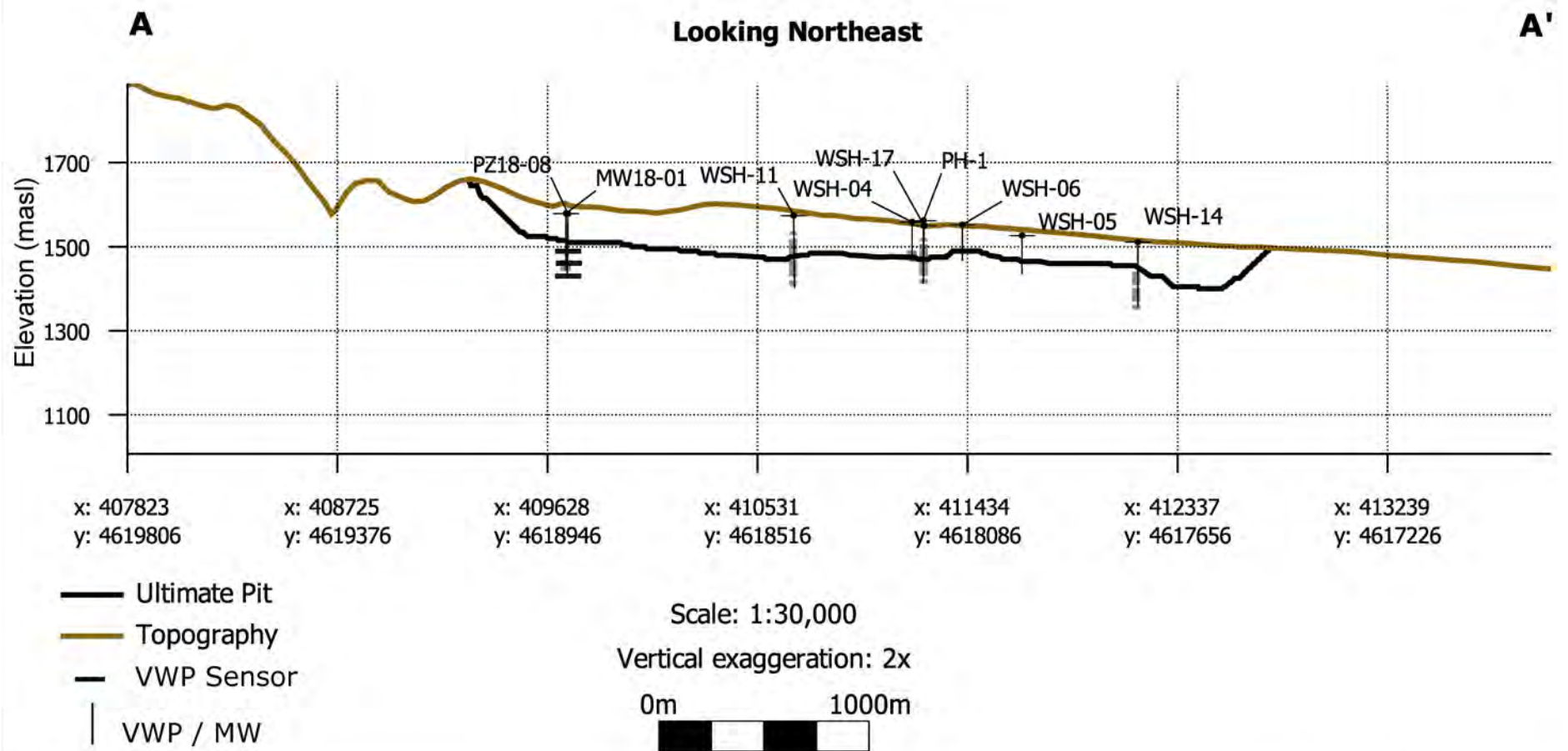












**Cross Section A-A' NE - SW  
Through Proposed Pit**



CLIENT: Lithium Nevada

PROJECT: 3684

JOB: Thacker Pass Hydro Baseline

DRAWN: BA

CHECKED: TC

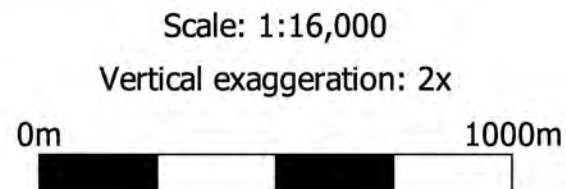
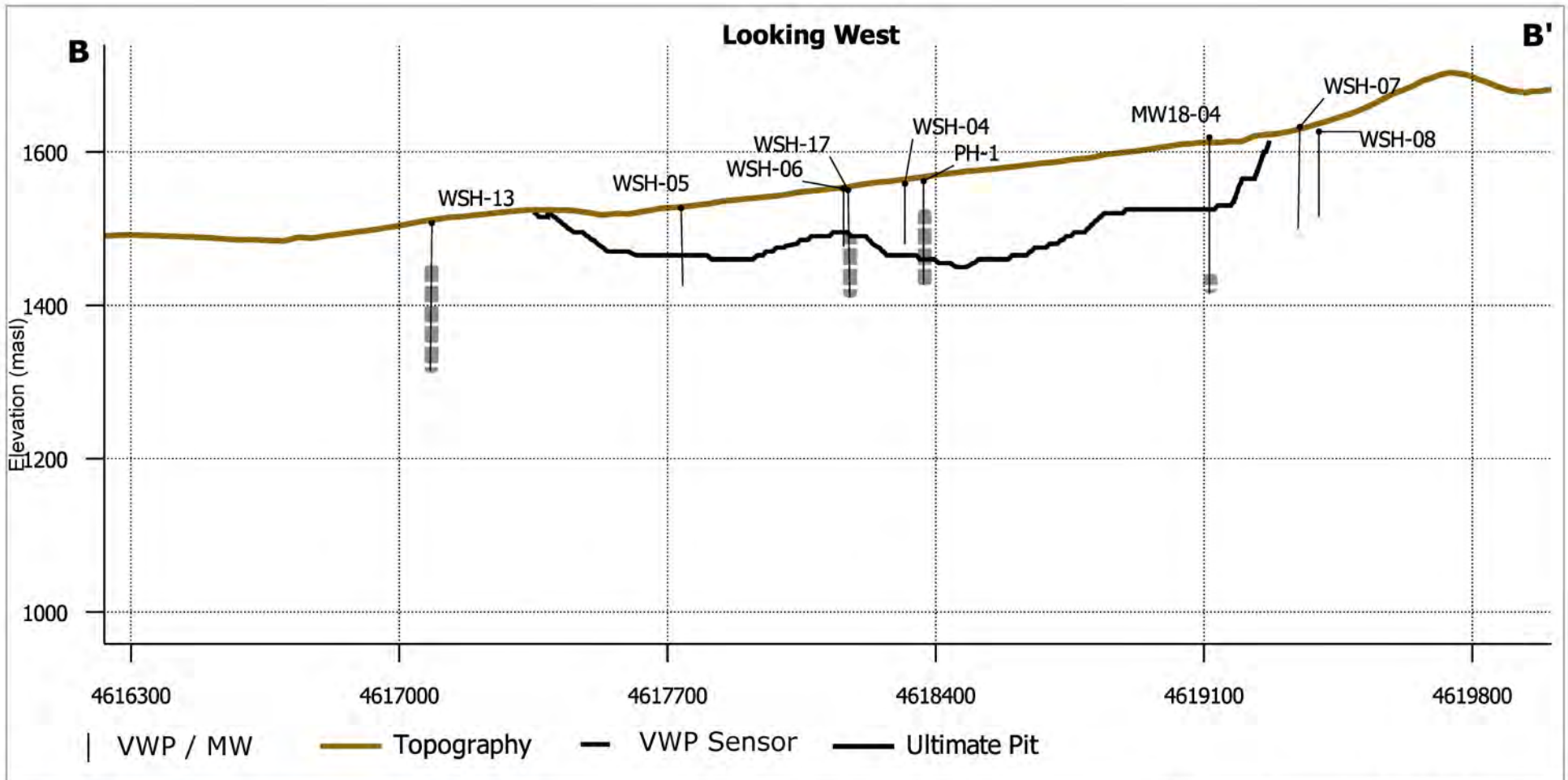
DATE: August 2019

FIGURE: 1.4

Location

A: 407823, 4619806

A': 413941, 4616892



### Location

B: 411512, 4616230  
B': 411512, 4620019

### Cross Section A-A' NE - SW Through Proposed Pit



**PITEAU ASSOCIATES**

GEOTECHNICAL AND WATER MANAGEMENT CONSULTANTS

CLIENT: Lithium Nevada

PROJECT: 3684

JOB: Thacker Pass Hydro Baseline

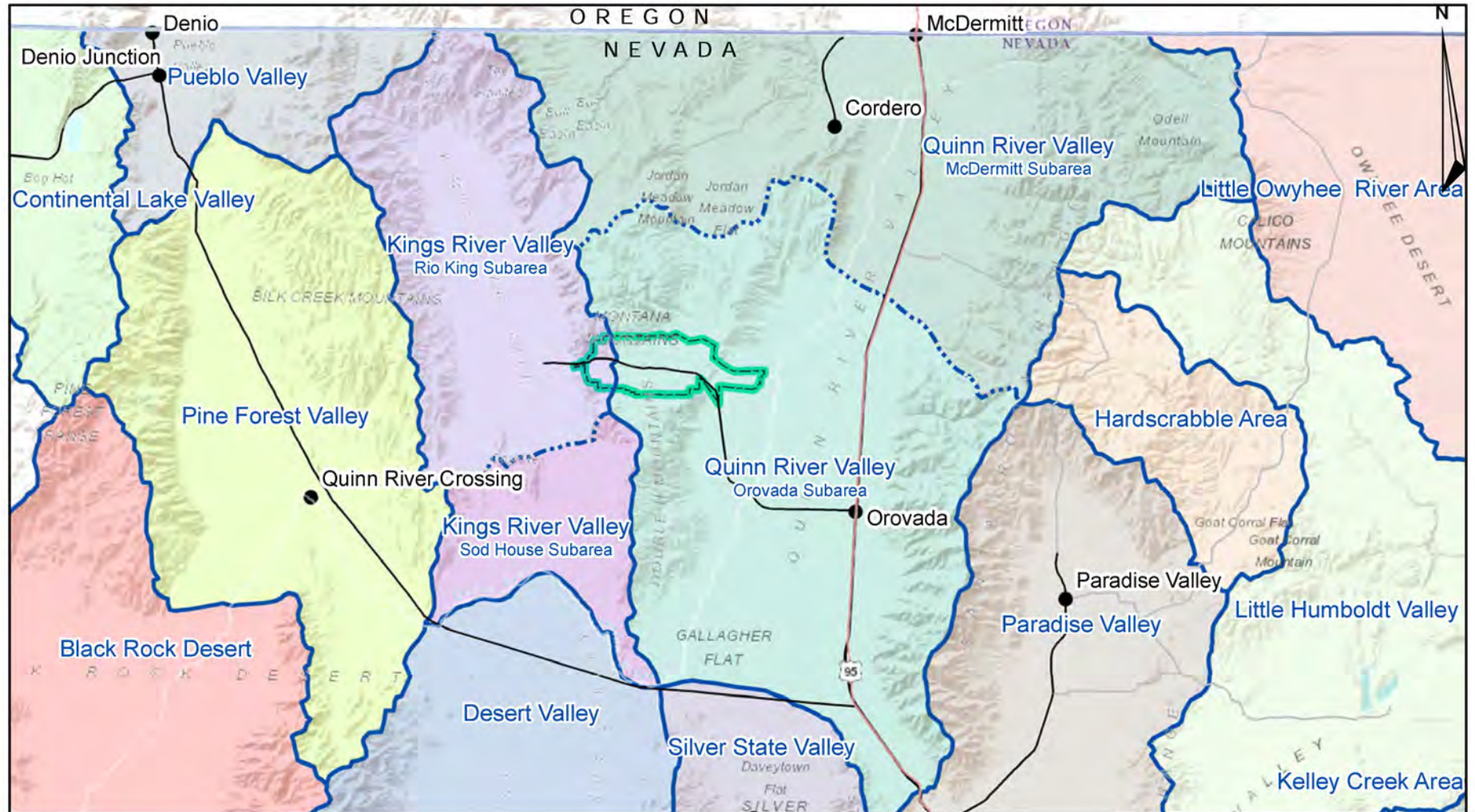
DRAWN: BA

CHECKED: TC

DATE: August 2019

FIGURE: **1.5**





- Nevada Towns
  - U.S. Highway
  - State Highway
  - Secondary Roads
  - Area of Interest
- Hydrographic Basins**
- Basin Boundaries
  - - - Subarea Boundaries

0 2.5 5 7.5 10 Miles

SCALE:1:600,000

## Hydrographic Basin Boundaries



**PITEAU ASSOCIATES**

GEOTECHNICAL AND WATER MANAGEMENT CONSULTANTS

CLIENT: **LNC**

PROJECT: **Thacker Pass Hydrologic Baseline**

JOB: **3898**

DRAWN: **BA**

CHECKED: **TC**

DATE: **AUGUST 2019**

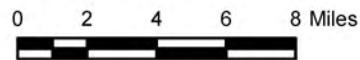
FIGURE: **2.1**

PREPARED SOLELY FOR THE USE OF OUR CLIENT AND NO REPRESENTATION OF ANY KIND IS MADE TO OTHER PARTIES, WITH WHICH PITEAU ASSOCIATES ENGINEERING LTD. HAS NOT ENTERED INTO A CONTRACT.





- ◆ Thacker Pass Station
- ◆ US Coop Weather Stations
- Nevada Towns
- U.S. Highway
- State Highway
- Secondary Roads
- Thacker Pass Project AOI



SCALE:1:350,000

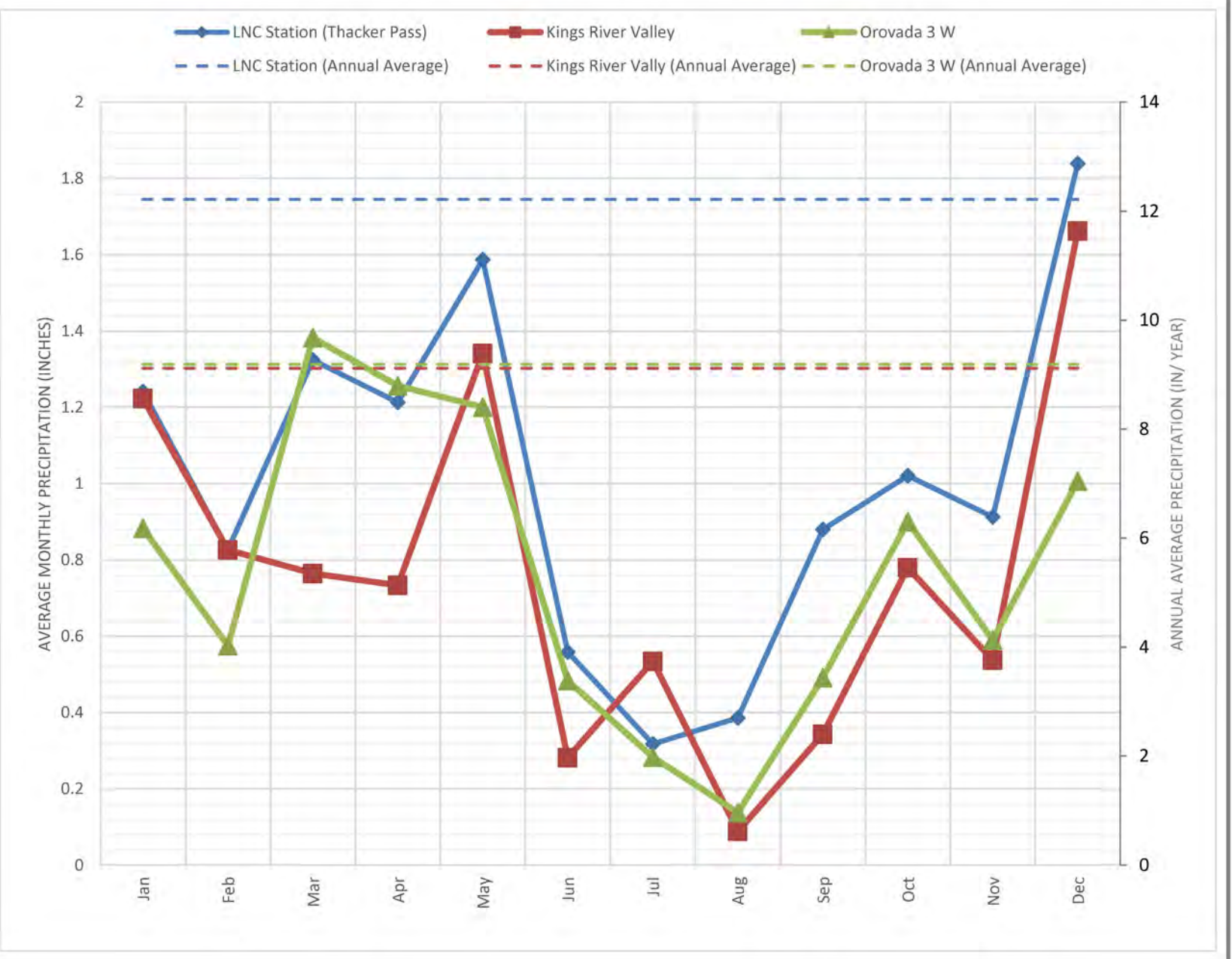
## Meteorological Station Locations



**PITEAU ASSOCIATES**  
GEOTECHNICAL AND WATER MANAGEMENT CONSULTANTS

|          |                                  |             |
|----------|----------------------------------|-------------|
| CLIENT:  | LNC                              |             |
| PROJECT: | Thacker Pass Hydrologic Baseline |             |
| JOB:     | 3898                             |             |
| DRAWN:   | BA                               | CHECKED: TC |
| DATE:    | AUGUST 2019                      |             |
| FIGURE:  | 2.2                              |             |





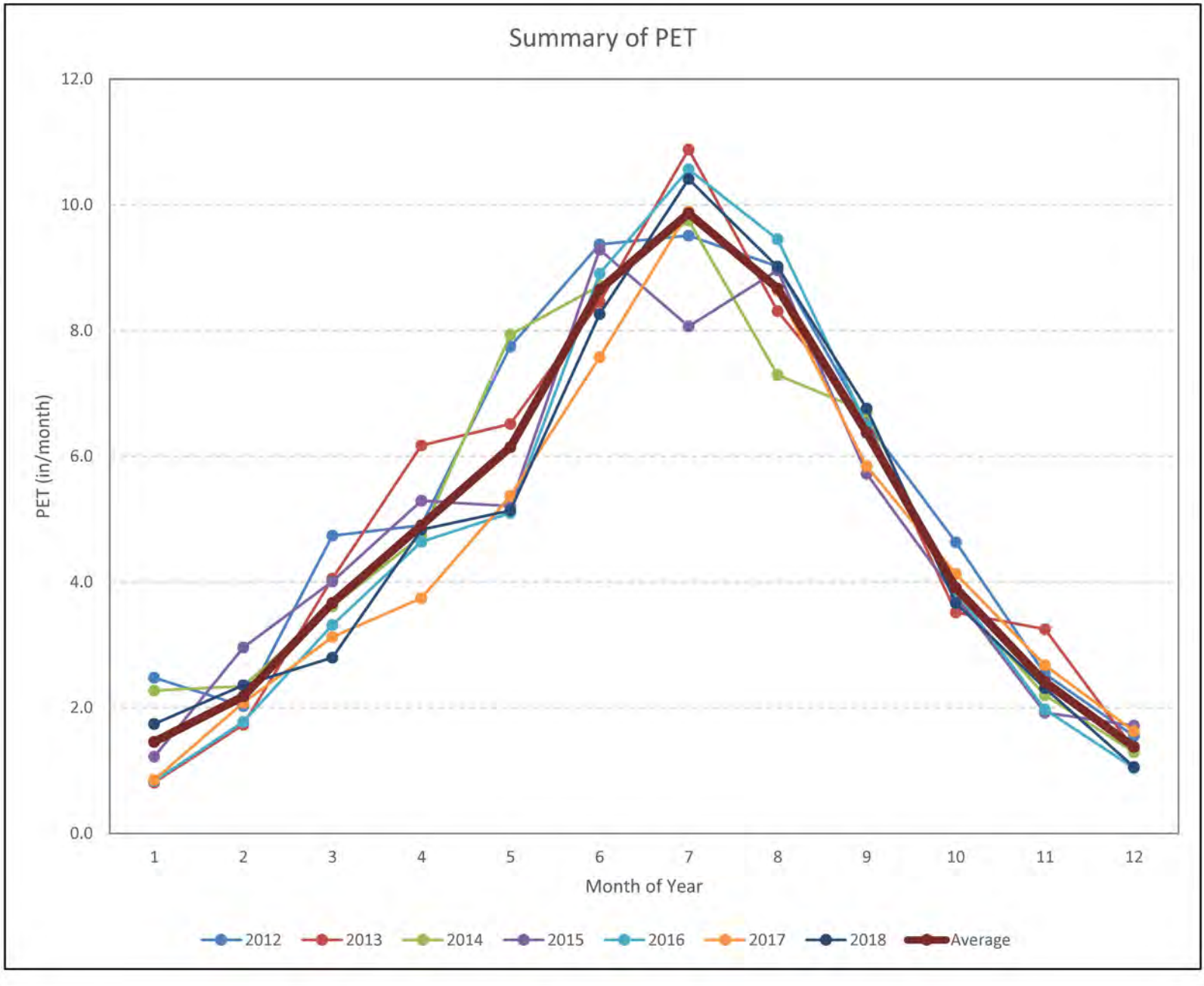
### Historical Precipitation Data

|         |             |  |          |                                  |             |
|---------|-------------|--|----------|----------------------------------|-------------|
| CLIENT: | LNC         |  | PROJECT: | Thacker Pass Hydrologic Baseline |             |
| JOB #:  | 3898        |  | DRAWN:   | BA                               | CHECKED: TC |
| DATE:   | AUGUST 2019 |  | FIGURE:  | 2.3                              |             |

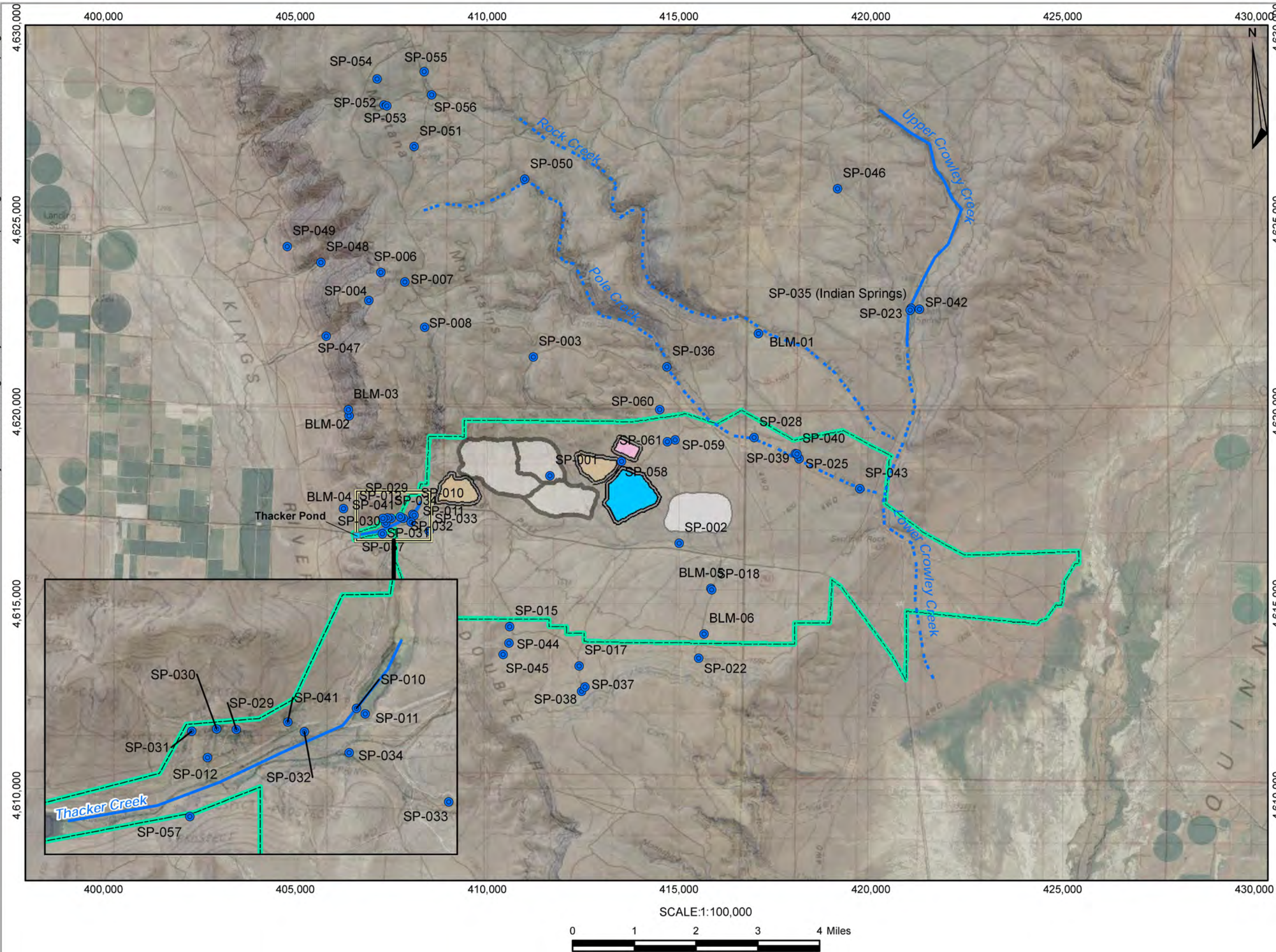


# Annual Evaporation Calculation (Penman-Monteith)

|         |             |          |                                  |
|---------|-------------|----------|----------------------------------|
| CLIENT: | LNC         | PROJECT: | Thacker Pass Hydrologic Baseline |
| JOB #:  | 3898        | DRAWN:   | BA                               |
| DATE:   | AUGUST 2019 | CHECKED: | TC                               |
| FIGURE: | 2.4         |          |                                  |







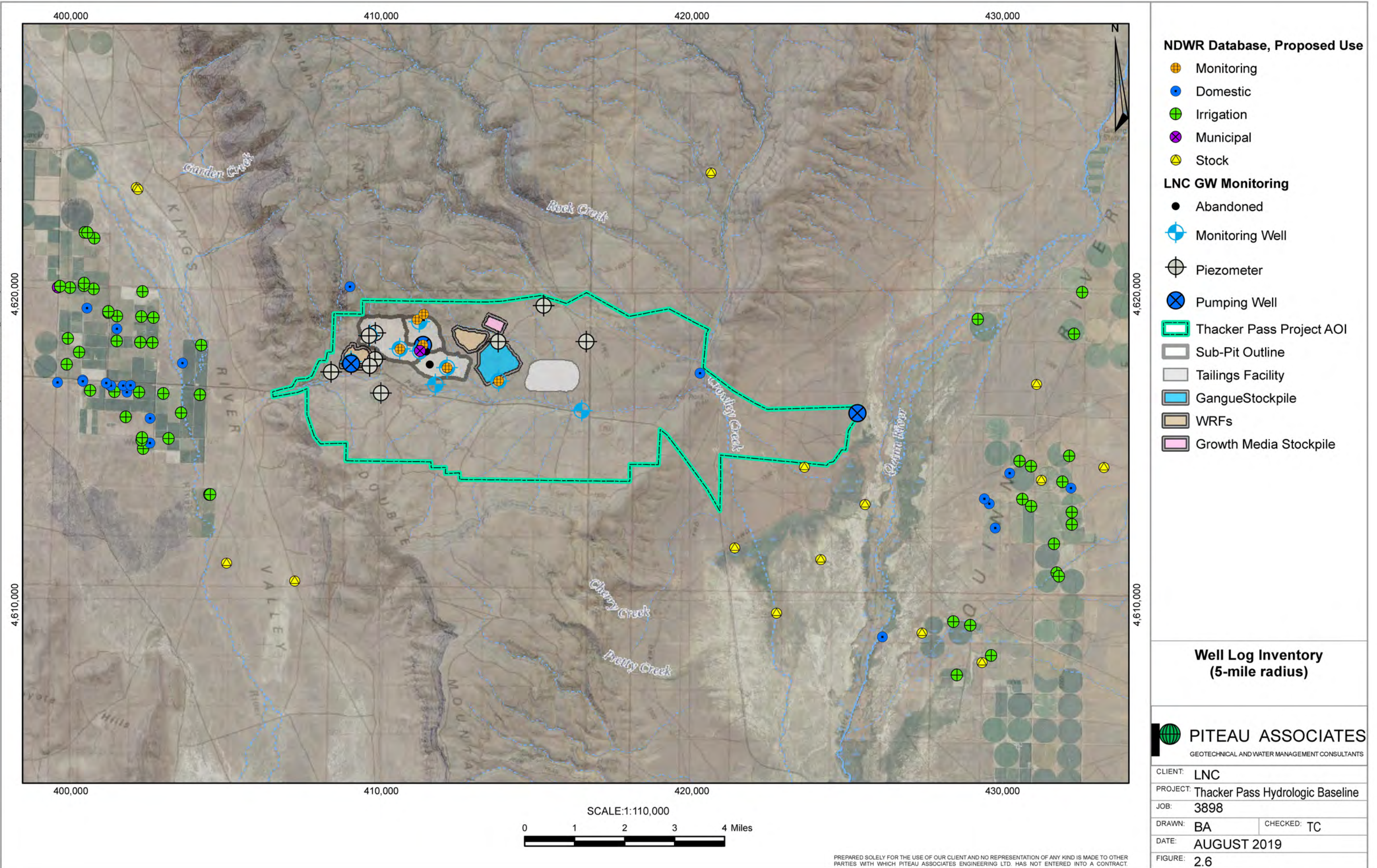
- Springs
- Surface Water**
  - Ephemeral
  - Perennial
- ▭ Sub-Pit Outline
- ▭ Tailings Facility
- ▭ WRFs
- ▭ Growth Media Stockpile
- ▭ Gangue Stockpile
- ▭ Thacker Pass Project AOI

### Surface Water and Spring Location Map

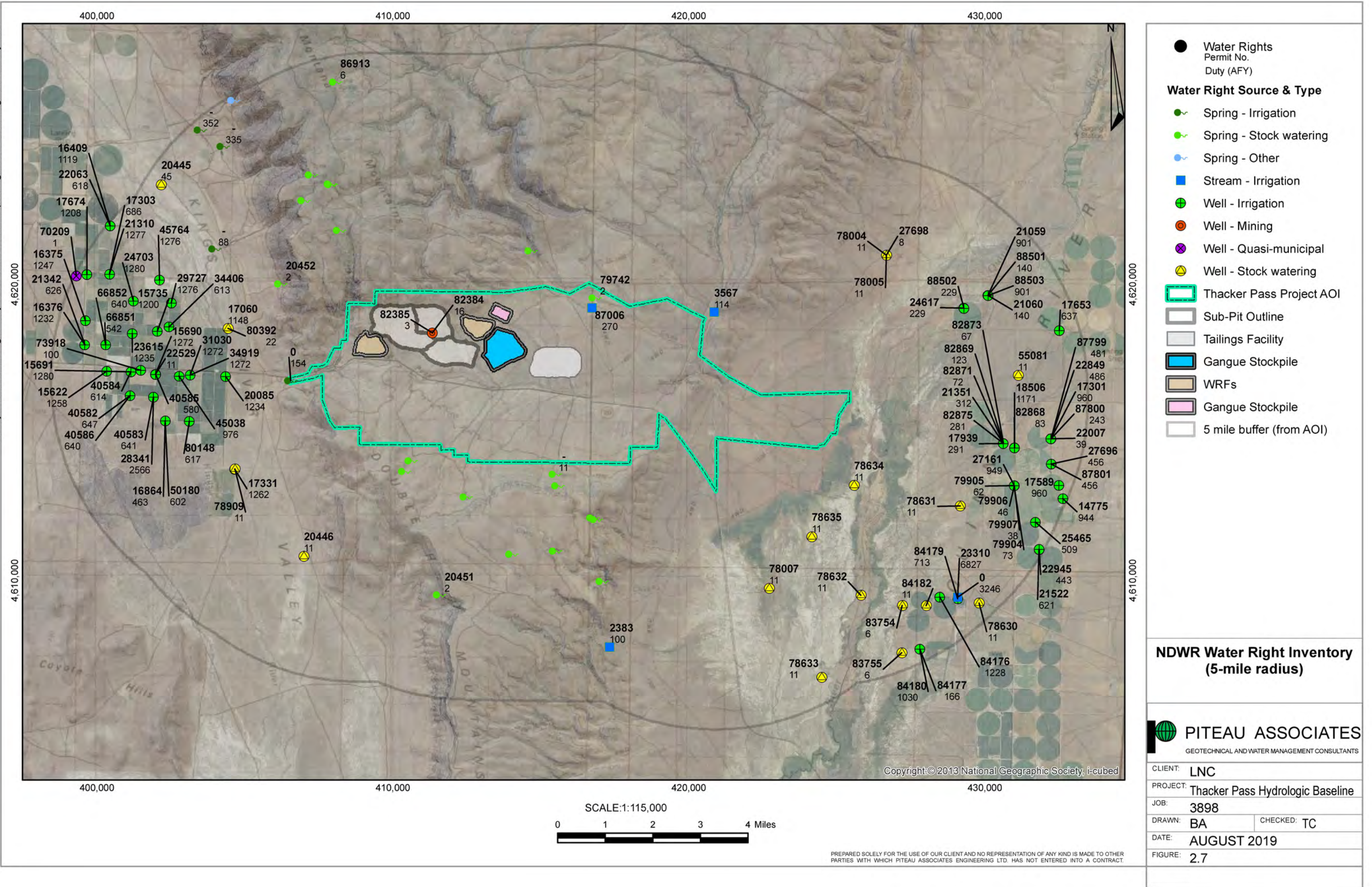


|          |                                  |          |    |
|----------|----------------------------------|----------|----|
| CLIENT:  | LNC                              |          |    |
| PROJECT: | Thacker Pass Hydrologic Baseline |          |    |
| JOB:     | 3898                             |          |    |
| DRAWN:   | BA                               | CHECKED: | TC |
| DATE:    | AUGUST 2019                      |          |    |
| FIGURE:  | 2.5                              |          |    |

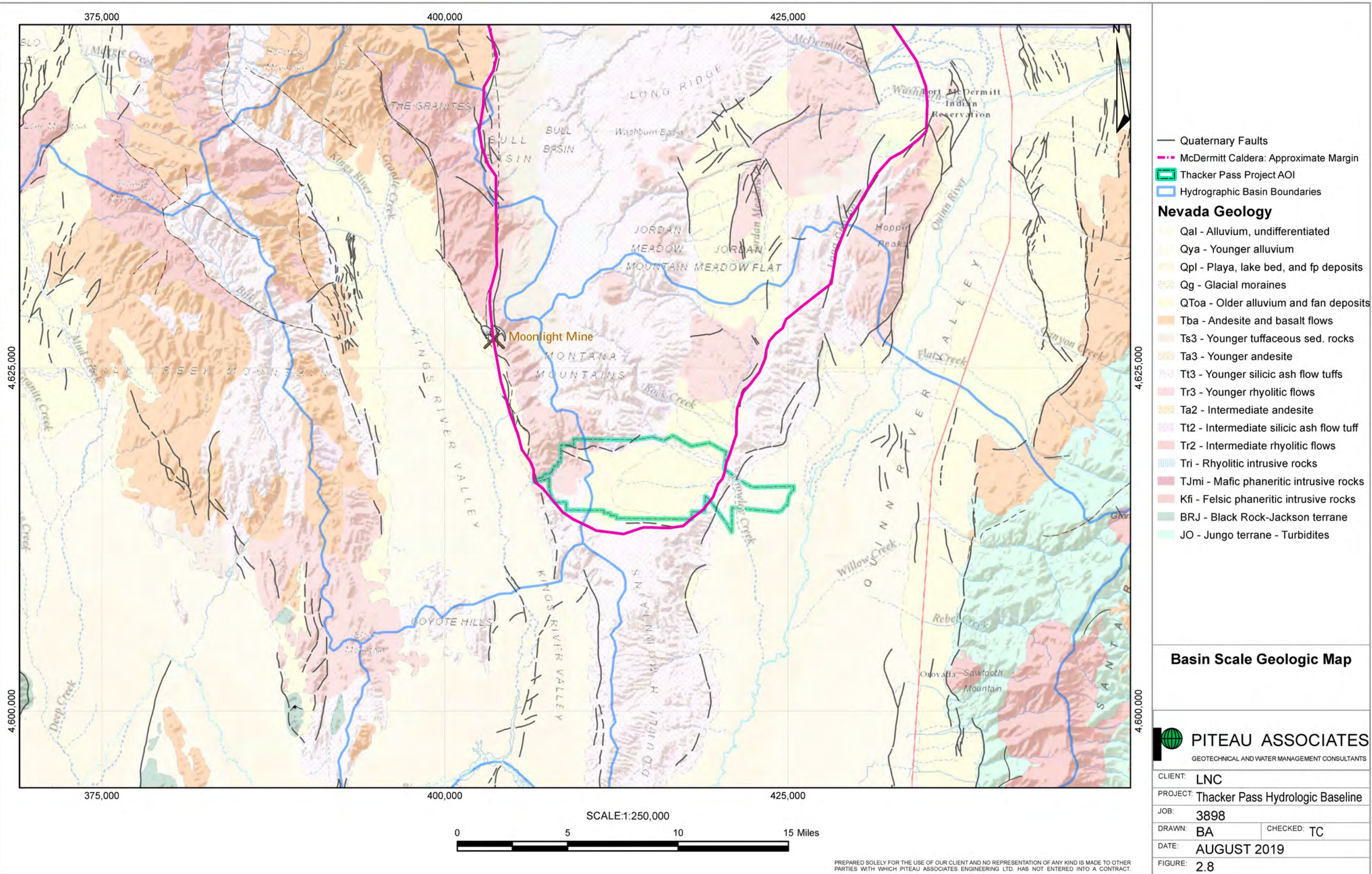




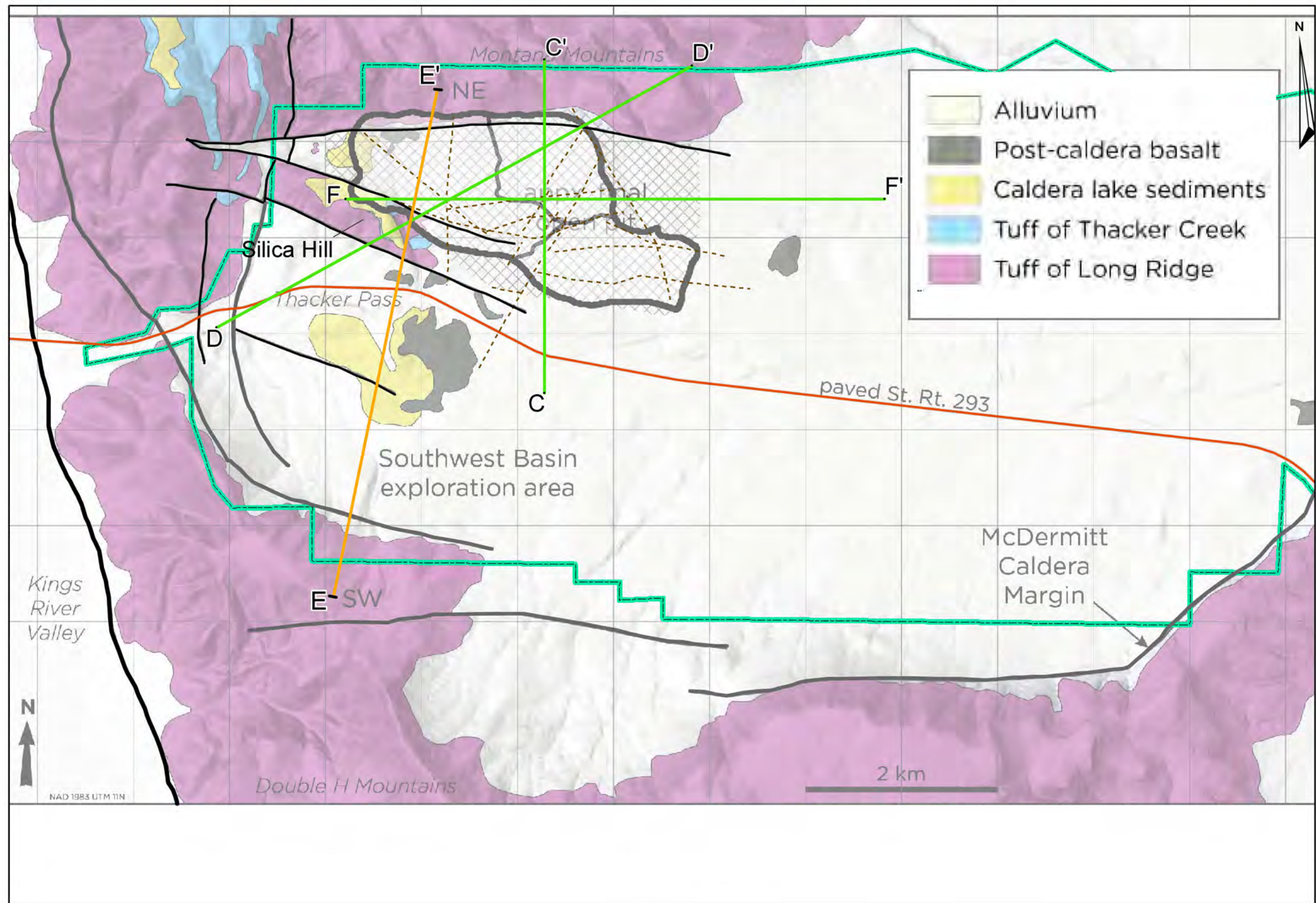












#### Faults

- Range-front
- Caldera Rim
- Vent
- Minor
- Proposed Pit Outline
- Thacker Pass Project AOI
- Geologic Cross Section Line
- Hydrogeologic Cross Section Line

#### Roads

- SR - State Route

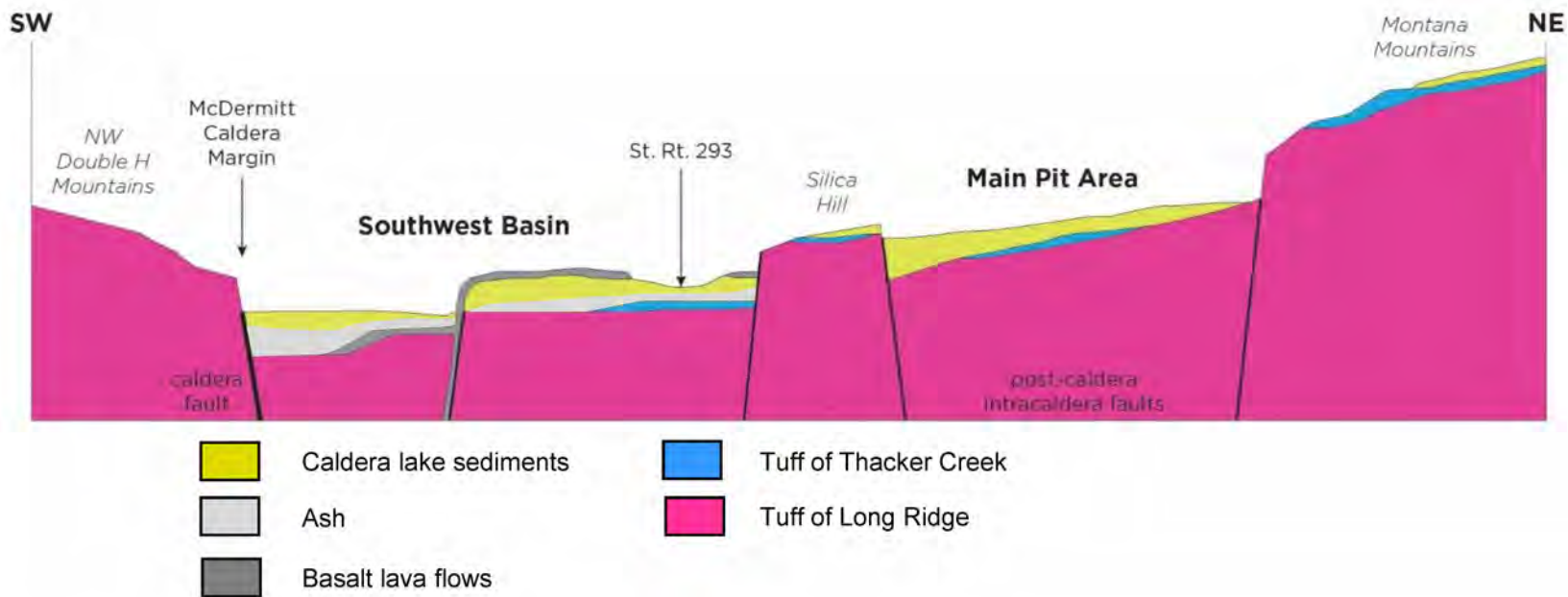
#### Thacker Pass Geologic Map



|          |                                  |
|----------|----------------------------------|
| CLIENT:  | LNC                              |
| PROJECT: | Thacker Pass Hydrologic Baseline |
| JOB:     | 3898                             |
| DRAWN:   | BA                               |
| CHECKED: | TC                               |
| DATE:    | AUGUST 2019                      |
| FIGURE:  | 2.9                              |



|                                                                       |           |                                           |    |
|-----------------------------------------------------------------------|-----------|-------------------------------------------|----|
| Cross Section A-A' (North - South) Through Proposed Pit Configuration |           |                                           |    |
| CLIENT:                                                               | LNC       | PROJECT: Thacker Pass Hydrologic Baseline |    |
| JOB #:                                                                | 3898      | DRAWN:                                    | BA |
| DATE:                                                                 | JUNE 2019 | CHECKED:                                  | TC |
| FIGURE:                                                               |           | 2.10                                      |    |







Core Photos: Claystone / Ash Units

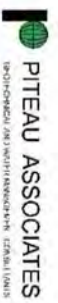


|         |             |                                           |             |
|---------|-------------|-------------------------------------------|-------------|
| CLIENT: | LNC         | PROJECT: Thacker Pass Hydrologic Baseline |             |
| JOB #:  | 3898        | DRAWN: BA                                 | CHECKED: TC |
| DATE:   | AUGUST 2019 | FIGURE:                                   | 2.11        |





Core Photos: Silicified Claystone



PITEAU ASSOCIATES  
1801 HORNBY AVE. SUITE 1000 VANCOUVER, BC V6Z 1R1

|                   |                                           |
|-------------------|-------------------------------------------|
| CLIENT: LNC       | PROJECT: Thacker Pass Hydrologic Baseline |
| JOB #: 3898       | DRAWN: BA                                 |
| DATE: AUGUST 2019 | CHECKED: TC                               |
|                   | FIGURE: 2.12                              |





Core Photos: Tuff of Long Ridge (Volcanic Tuff)



CLIENT: LNC

JOB #: 3898

DATE: AUGUST 2019

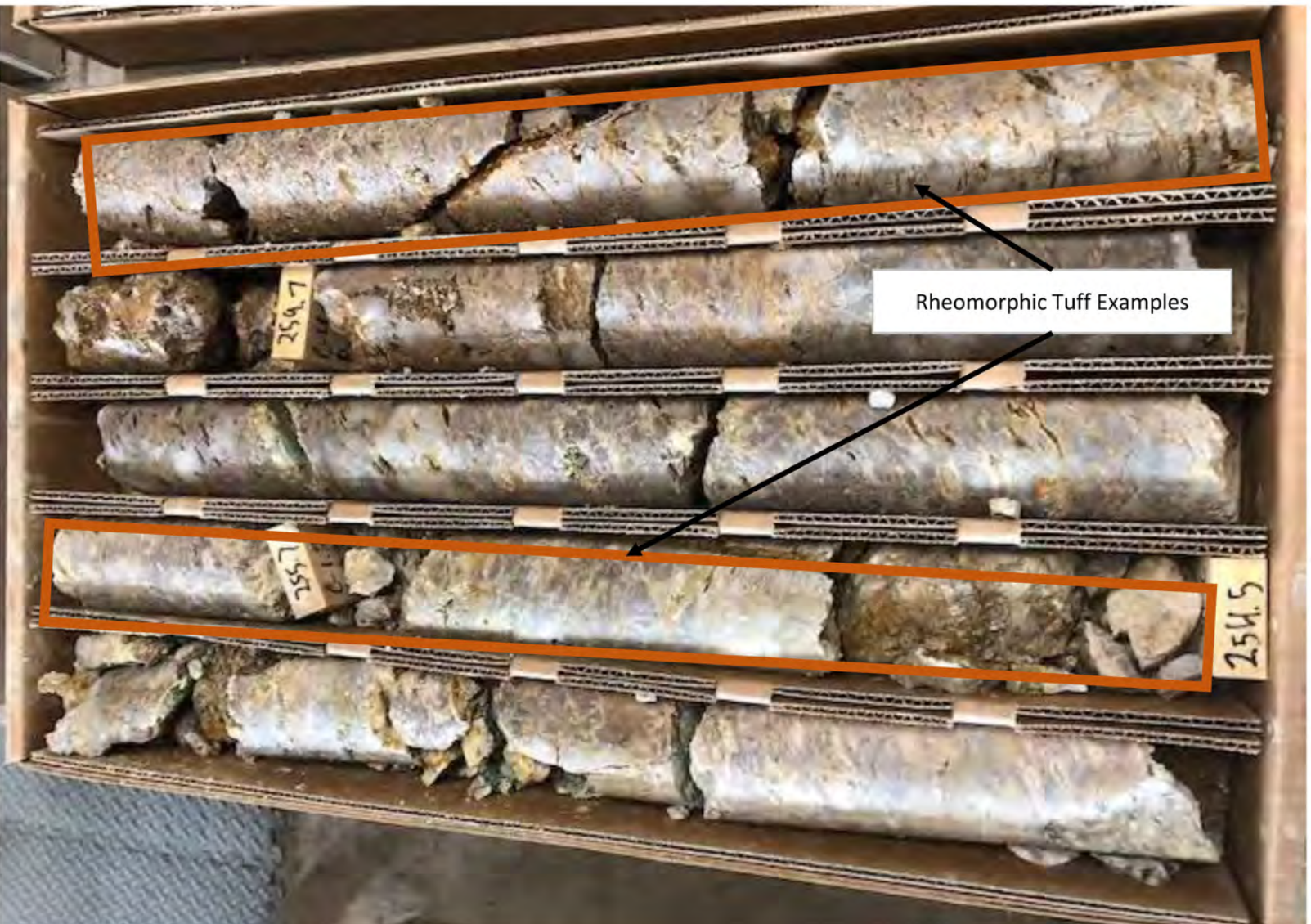
PROJECT: Thacker Pass Hydrologic Baseline

DRAWN: BA

CHECKED: TC

FIGURE: 2.13



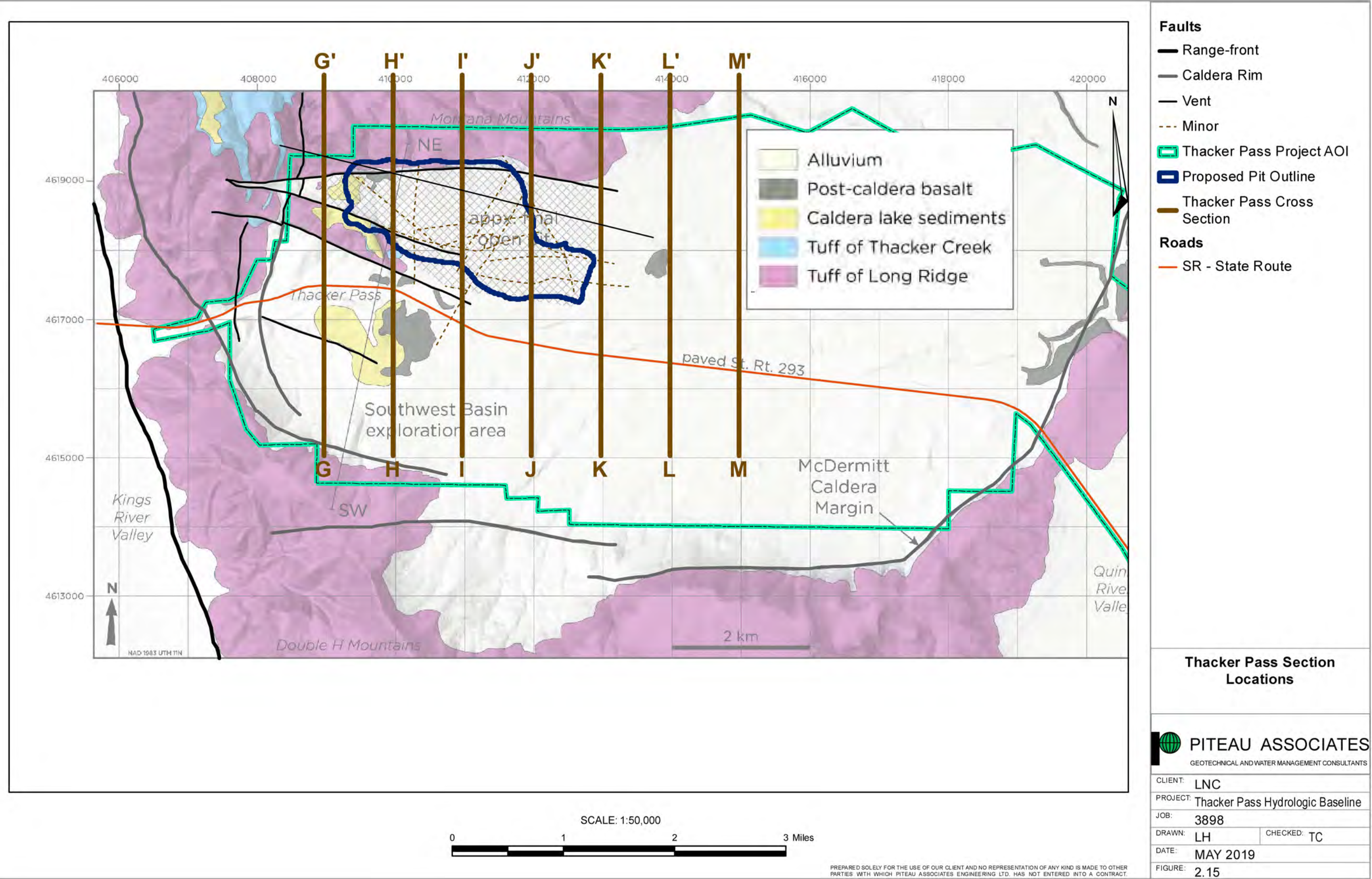


Core Photos: Rheomorphic Tuff



|                   |                                           |             |
|-------------------|-------------------------------------------|-------------|
| CLIENT: LNC       | PROJECT: Thacker Pass Hydrologic Baseline |             |
| JOB #: 3898       | DRAWN: BA                                 | CHECKED: TC |
| DATE: AUGUST 2019 | FIGURE: 2.14                              |             |









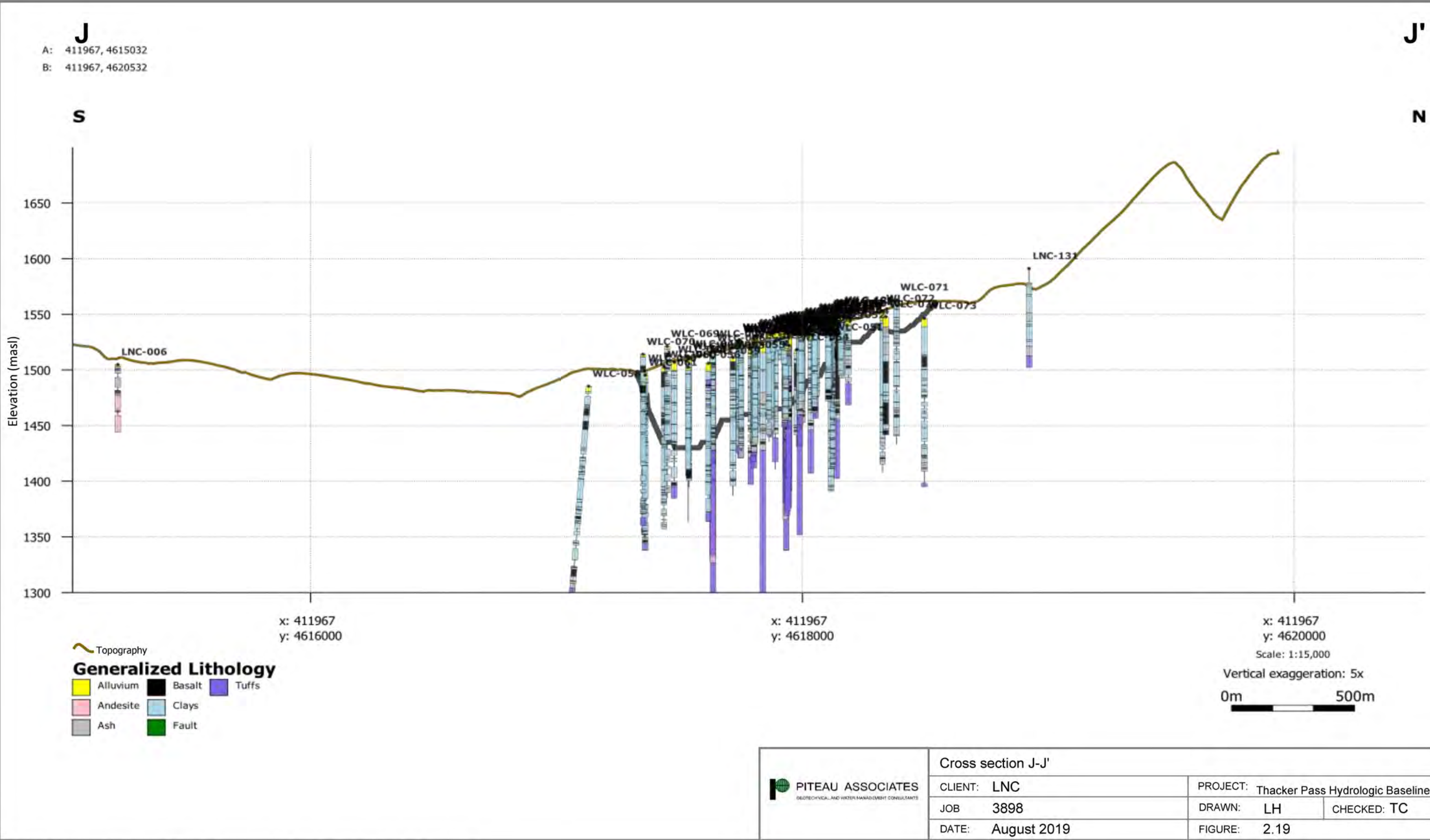




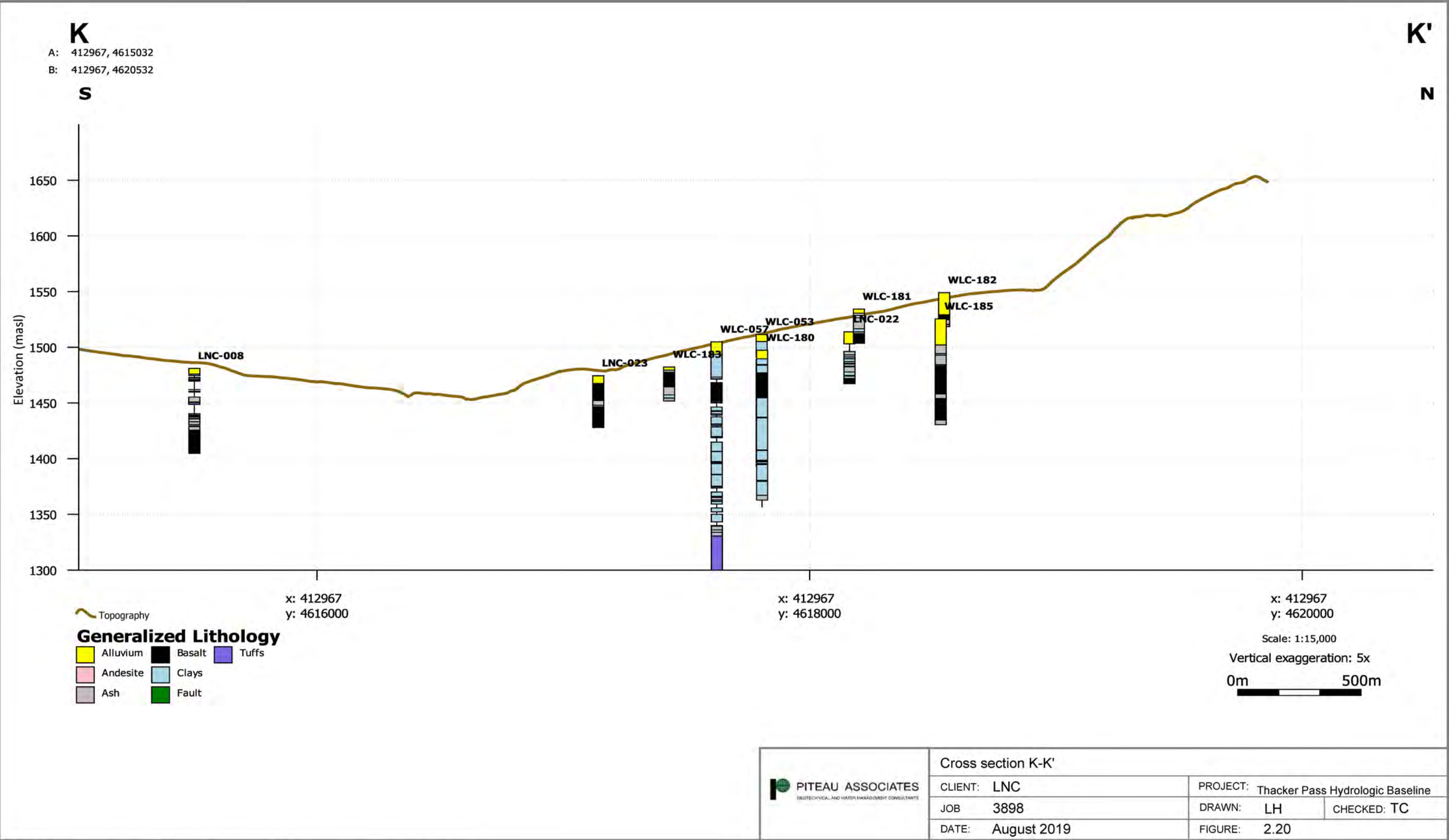




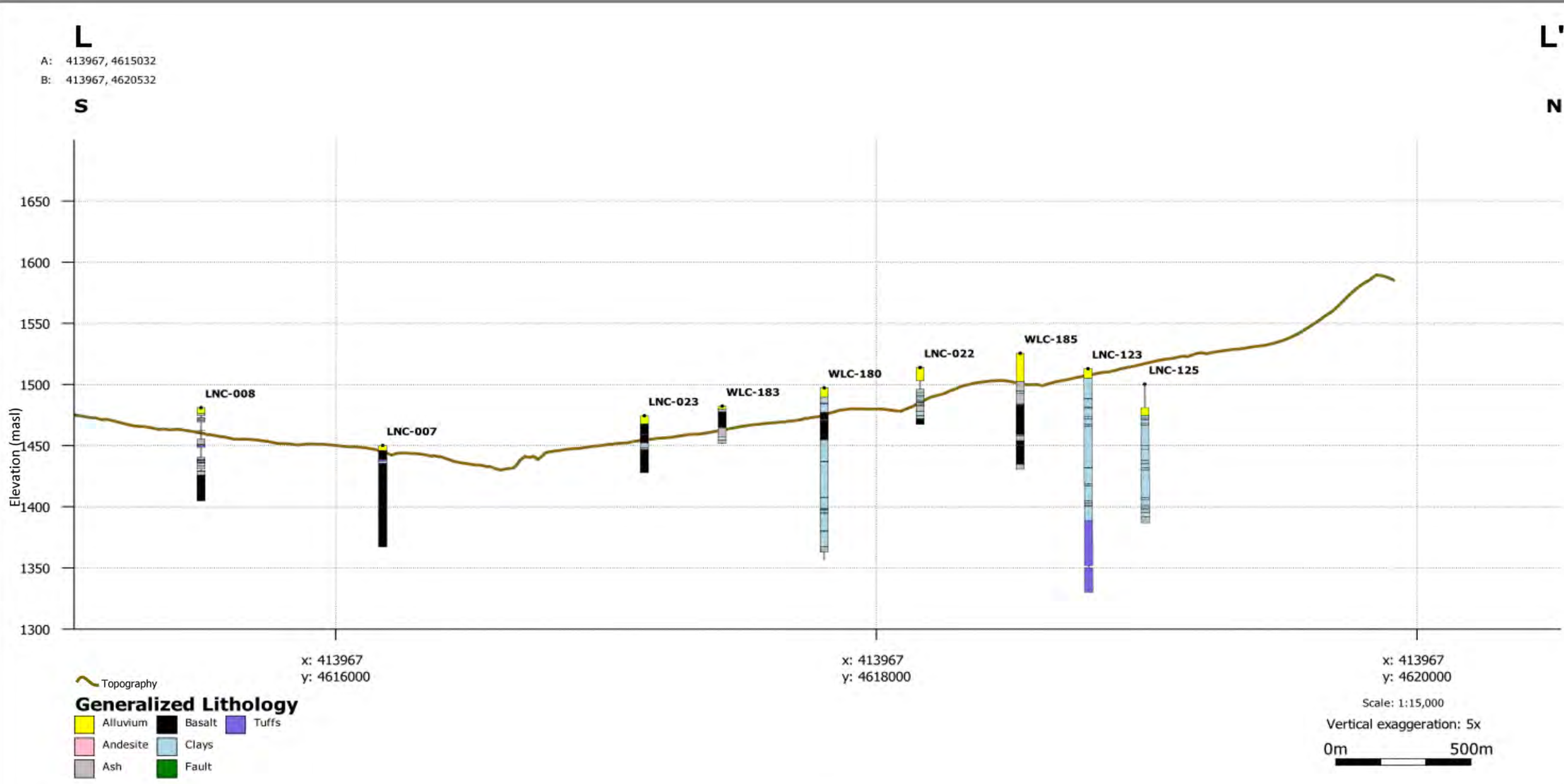






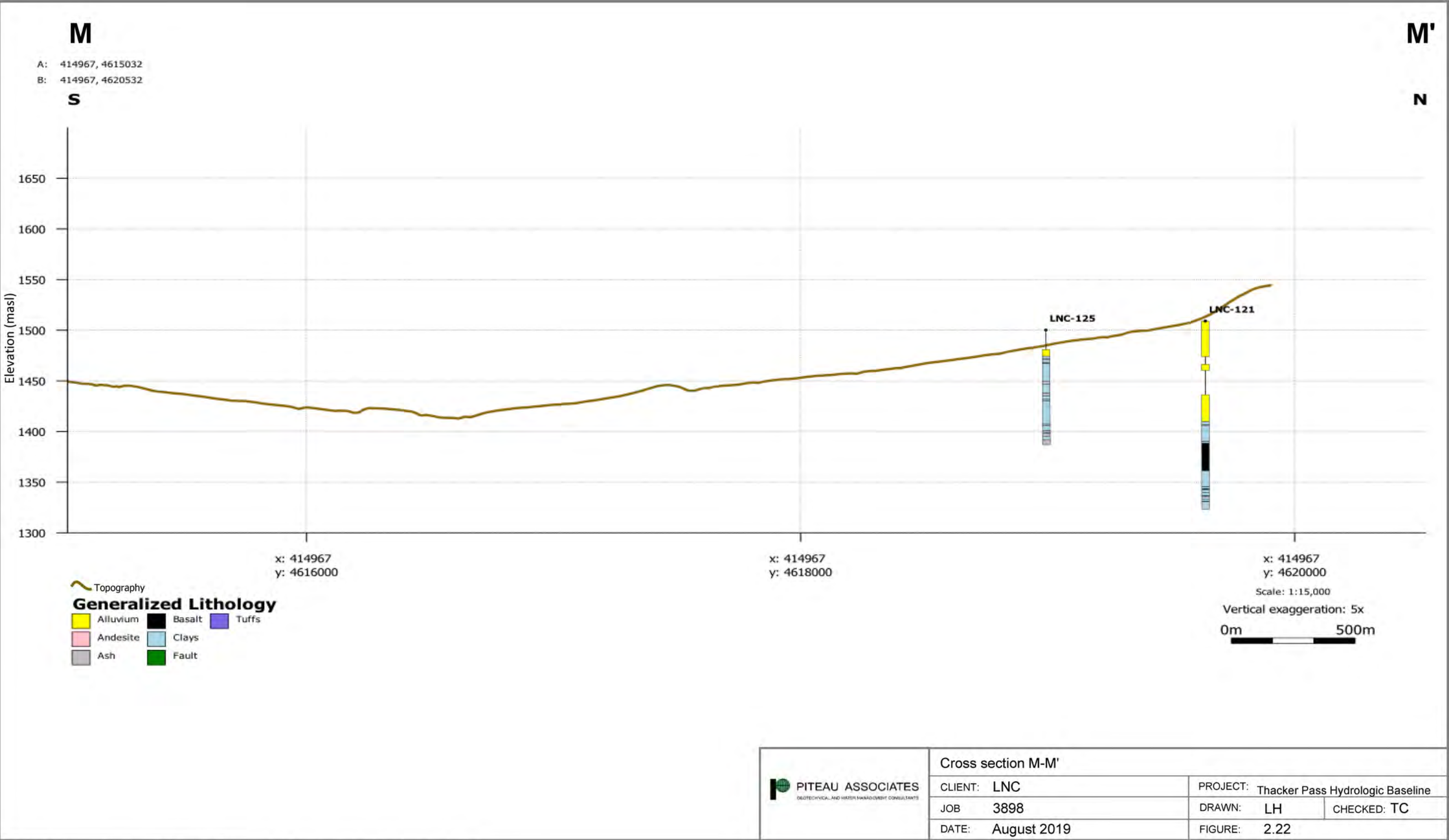




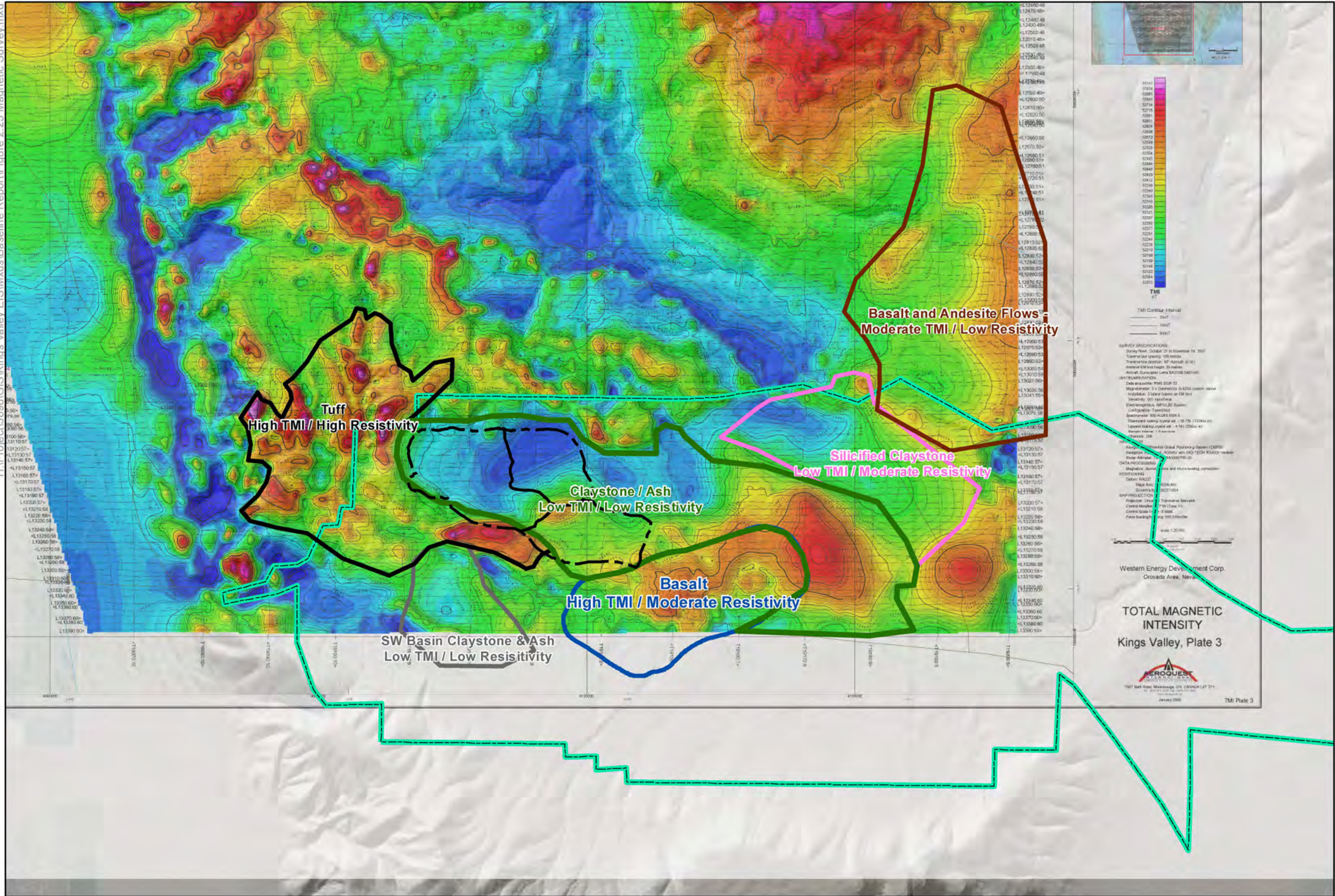


|                                                                                                                                                                                |                    |             |                                           |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-------------|-------------------------------------------|
|  <b>PITEAU ASSOCIATES</b><br><small>GEOTECHNICAL AND WATER MANAGEMENT CONSULTANTS</small> | Cross section L-L' |             |                                           |
|                                                                                                                                                                                | CLIENT:            | LNC         | PROJECT: Thacker Pass Hydrologic Baseline |
|                                                                                                                                                                                | JOB:               | 3898        | DRAWN: LH      CHECKED: TC                |
|                                                                                                                                                                                | DATE:              | August 2019 | FIGURE: 2.21                              |









- Sub-Pit Outline
- Thacker Pass Project AOI
- Hydrologic Basin Boundary
- Rhyolitic Flows
- Silicified Claystone
- SW Basin Claystone / Ash
- Thacker Pass Basalt
- Thacker Pass Tuff

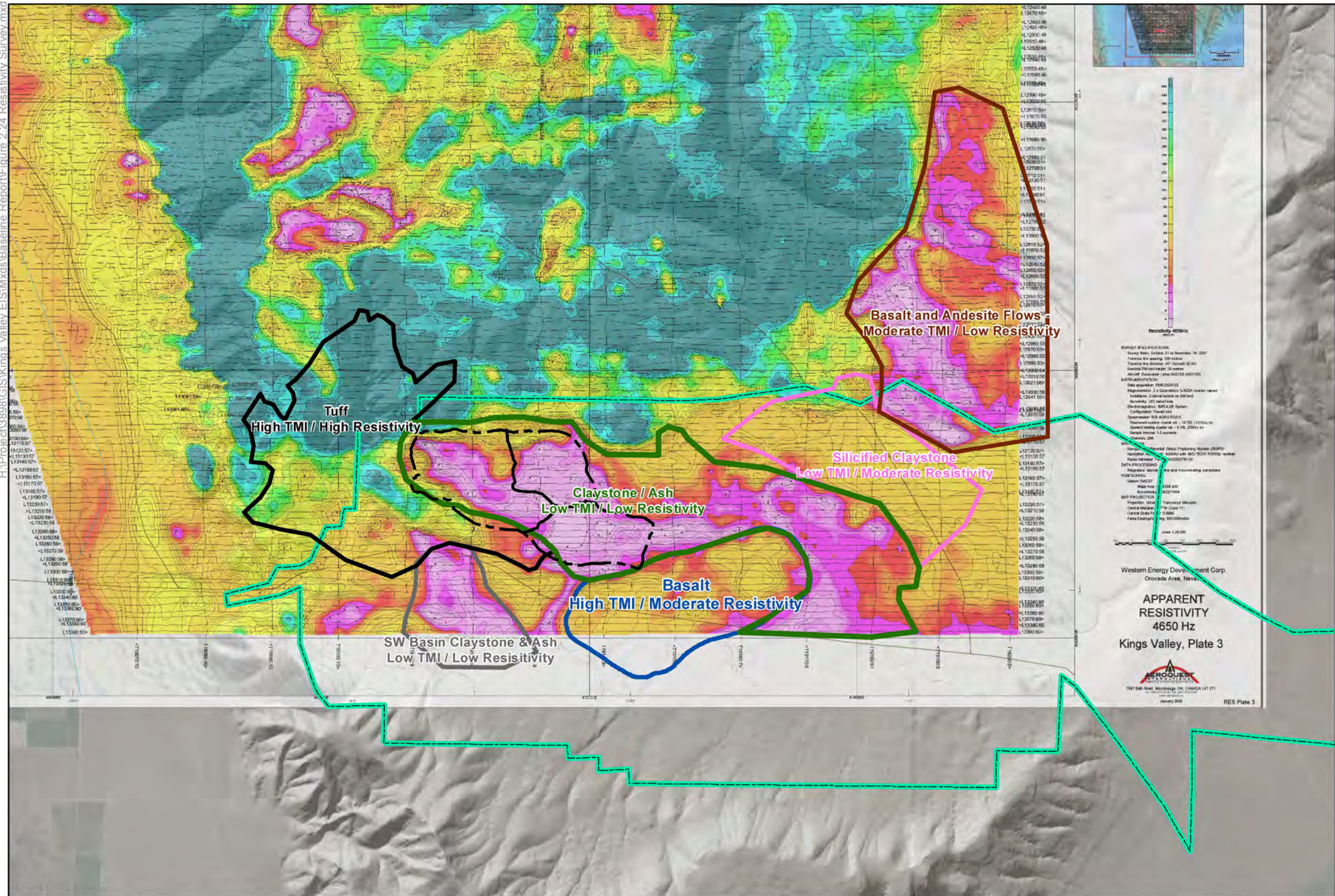


## Magnetic Survey

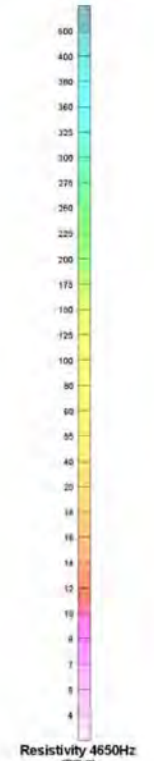


|          |                                  |
|----------|----------------------------------|
| CLIENT:  | LNC                              |
| PROJECT: | Thacker Pass Hydrologic Baseline |
| JOB:     | 3898                             |
| DRAWN:   | LH                               |
| CHECKED: | TC                               |
| DATE:    | AUGUST 2019                      |
| FIGURE:  | 2.23                             |





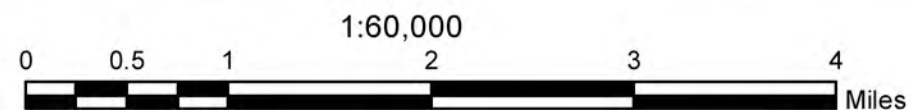
- Sub-Pit Outline
- Thacker Pass Project AOI
- Hydrologic Basin Boundary
- Rhyolitic Flows
- Silicified Claystone
- SW Basin Claystone / Ash
- Thacker Pass Basalt
- Thacker Pass Tuff



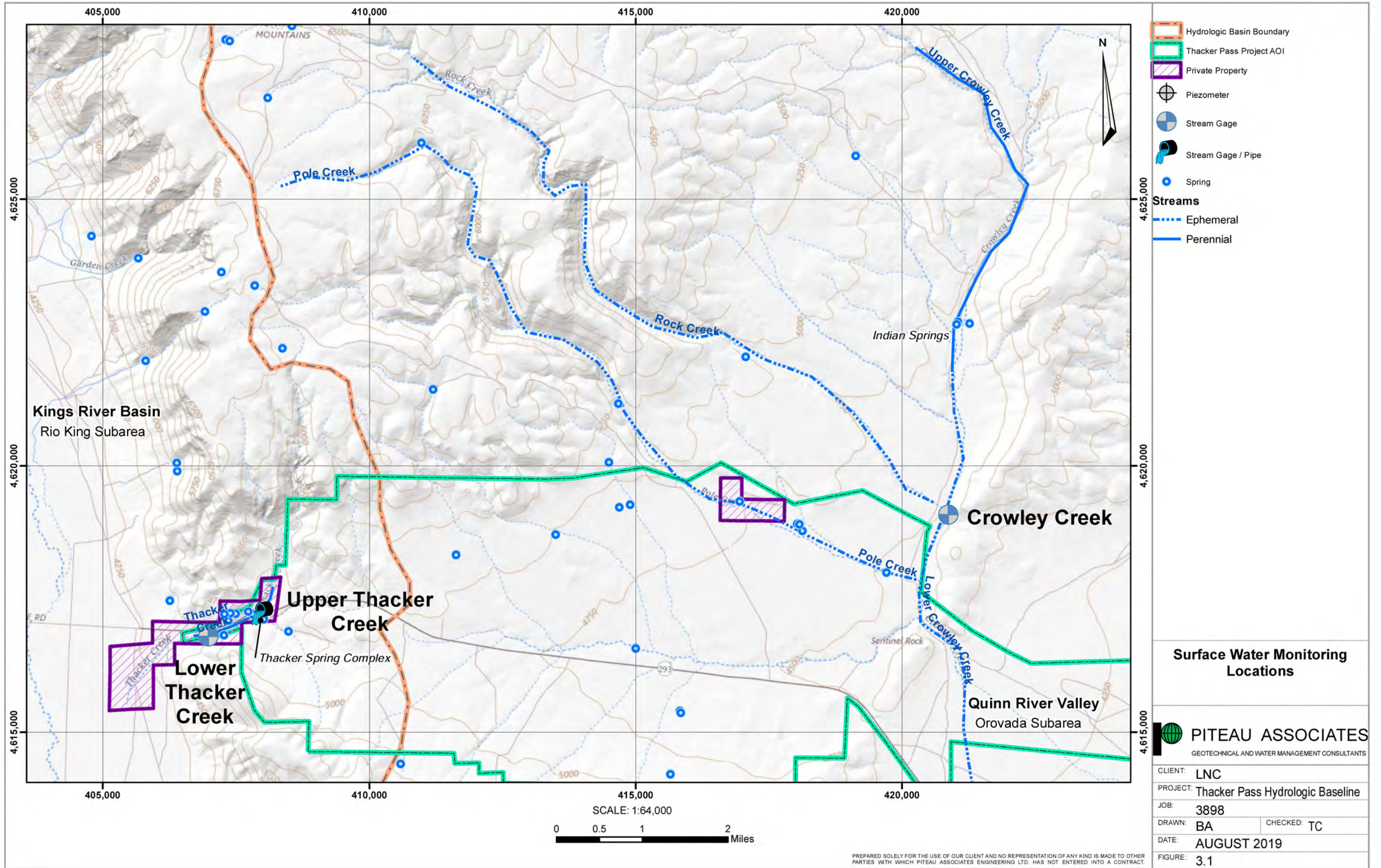
## Resistivity Survey



|          |                                  |
|----------|----------------------------------|
| CLIENT:  | LNC                              |
| PROJECT: | Thacker Pass Hydrologic Baseline |
| JOB:     | 3898                             |
| DRAWN:   | LH                               |
| CHECKED: | TC                               |
| DATE:    | AUGUST 2019                      |
| FIGURE:  | 2.24                             |

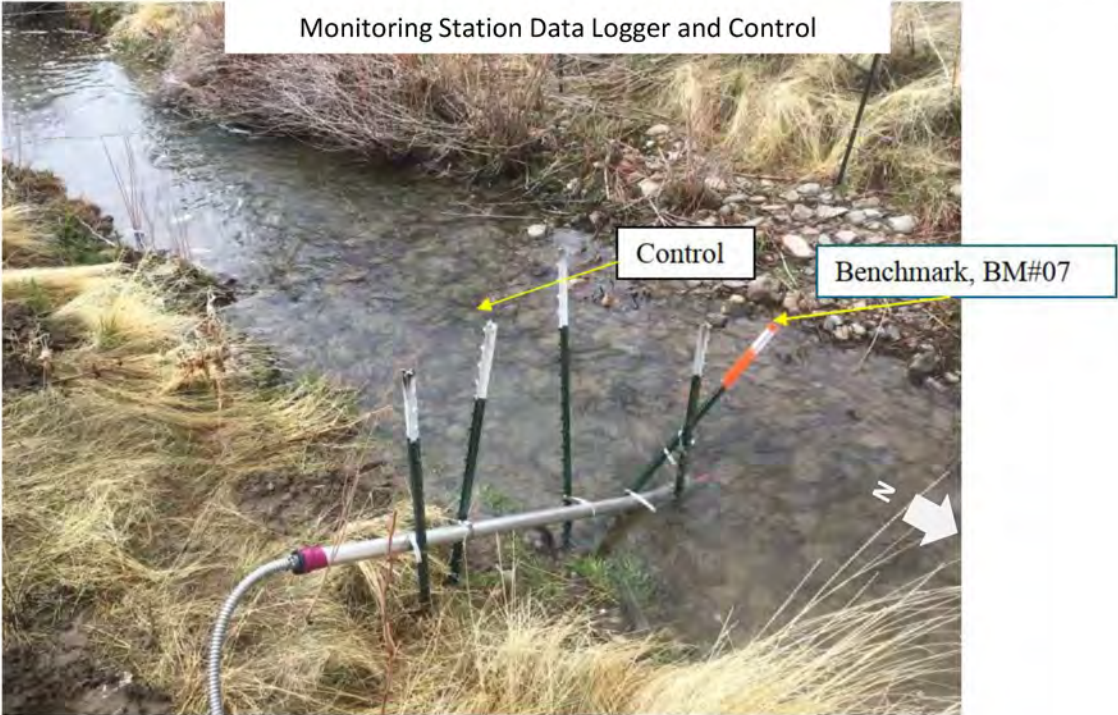






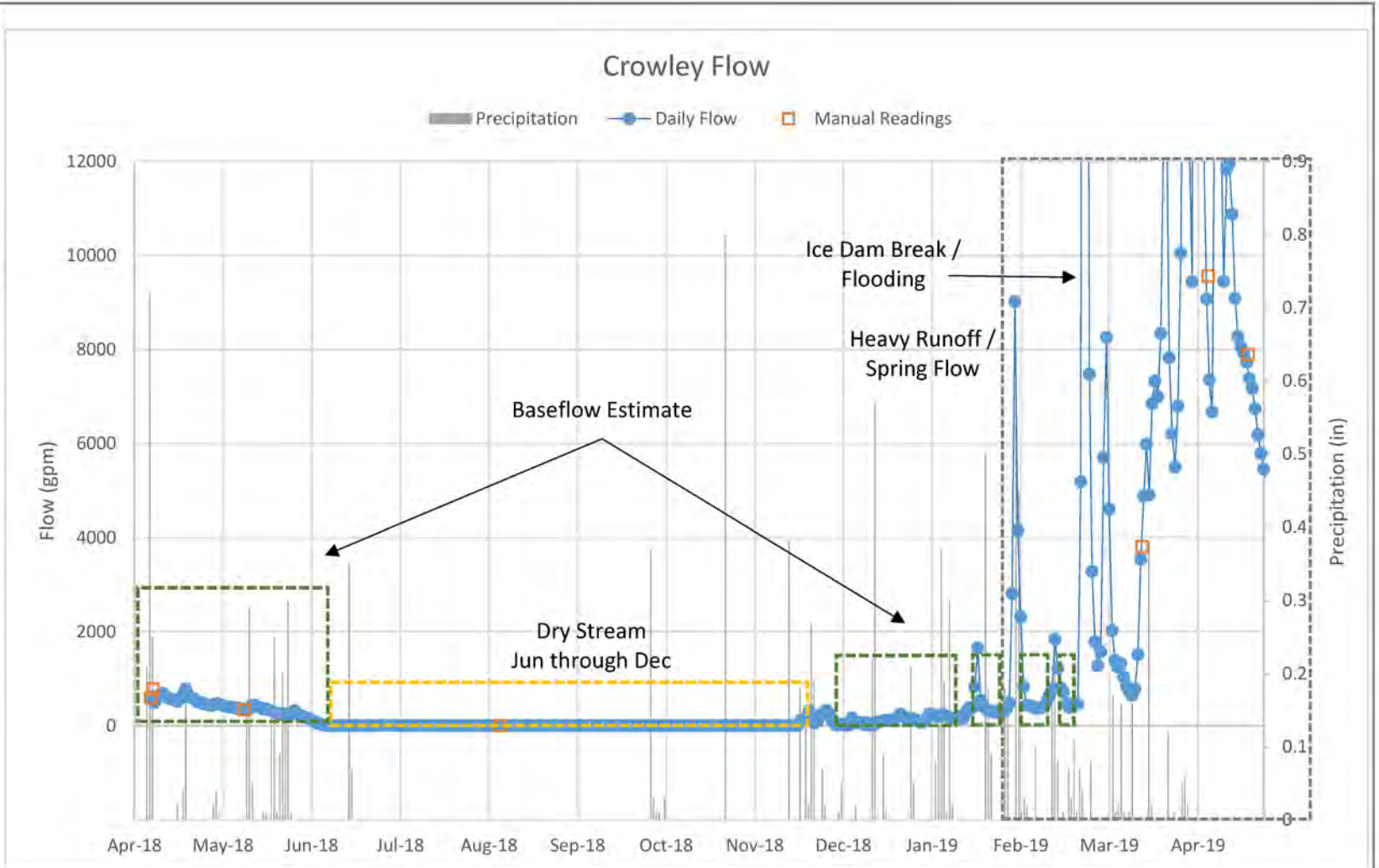


|                  |               |
|------------------|---------------|
| Station Name     | Crowley Creek |
| Date Established | 4/6/2018      |
| X Coord (long)   | 41.720012 N   |
| Y Coord (lat)    | -117.951335 W |
| Elevation (ft)   | 4488.2        |
| Benchmark #7     | 0.831 m       |
| Benchmark #8     | 1.568 m       |
| Benchmark #9     | 1.545 m       |



|                                                                                                                                                                                |                                                   |             |                                           |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|-------------|-------------------------------------------|
|  <b>PITEAU ASSOCIATES</b><br><small>GEOTECHNICAL AND WATER MANAGEMENT CONSULTANTS</small> | Crowley Creek Monitoring Gage Station Description |             |                                           |
|                                                                                                                                                                                | CLIENT:                                           | LNC         | PROJECT: Thacker Pass Hydrologic Baseline |
|                                                                                                                                                                                | JOB                                               | 3898        | DRAWN: TC      CHECKED: LH                |
|                                                                                                                                                                                | DATE:                                             | AUGUST 2019 | FIGURE: 3.2                               |





| Flow Data            | Rate   | Units |
|----------------------|--------|-------|
| Annual Average       | 1289   | gpm   |
| Baseflow (Dec - Mar) | 491.7  | gpm   |
| ET (Jun-Sep)         | -491.7 | gpm   |



### Crowley Station Rating Curve

|                   |                                   |
|-------------------|-----------------------------------|
| CLIENT: LNC       | PROJECT: Thacker Pass Project EIS |
| JOB #: 3898       | DRAWN: DB                         |
| DATE: AUGUST 2019 | CHECKED: TC                       |
| FIGURE: 3.4       |                                   |

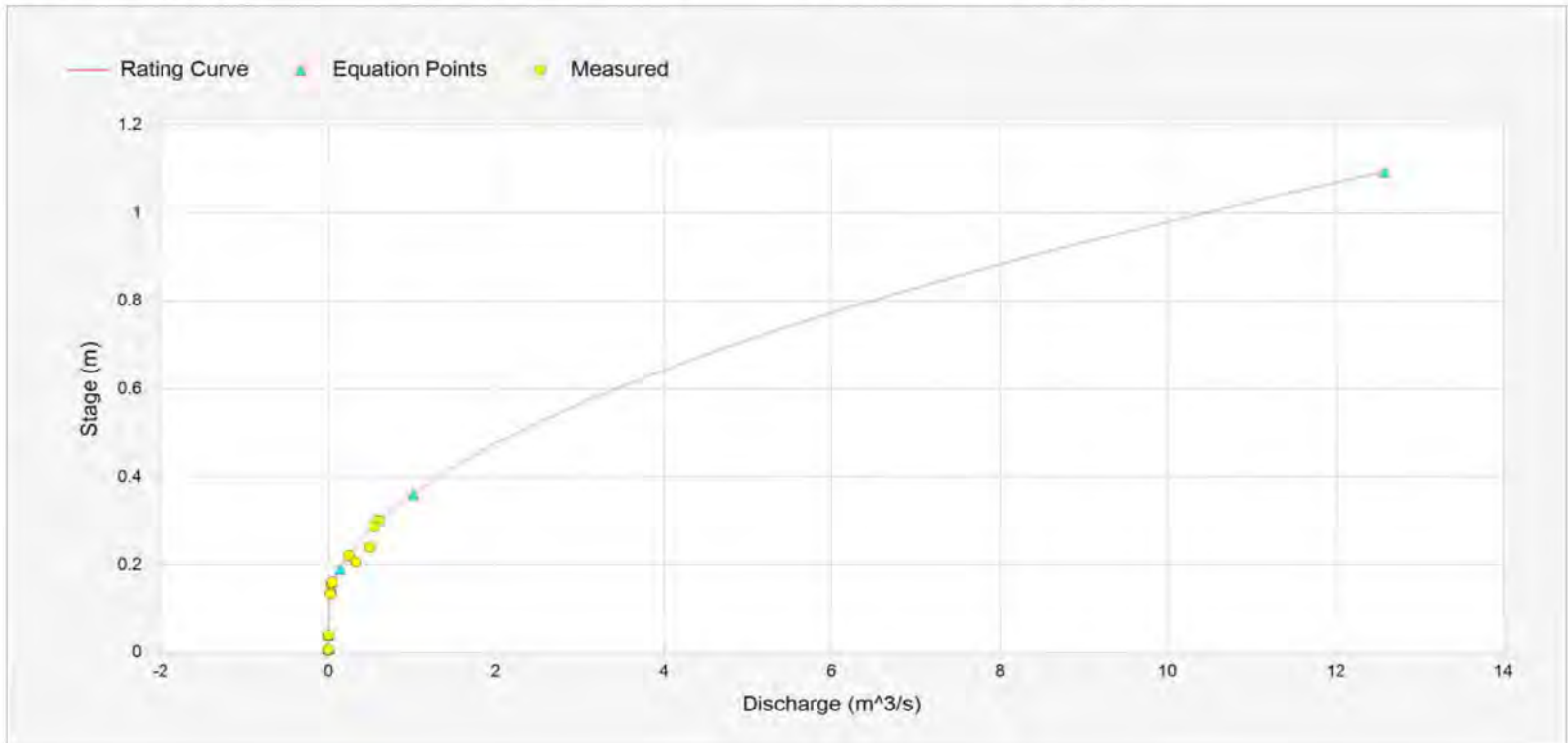
Label:

Description:

Curve on: May 12, 2019

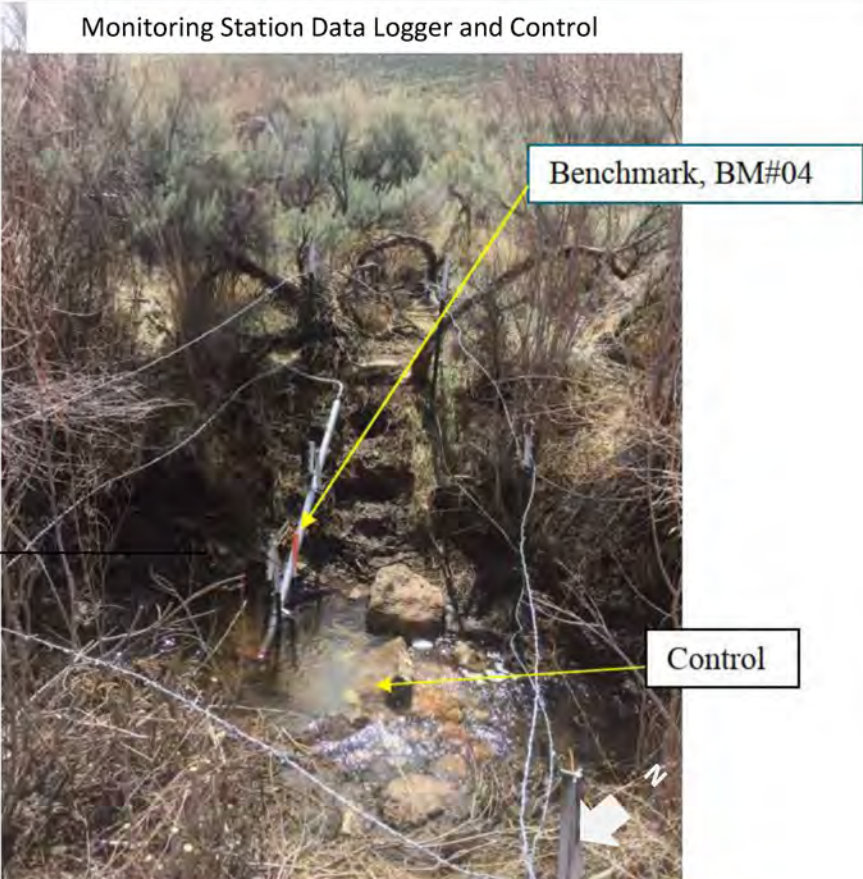
Curve Start Date: April 6, 2018

Location: Crowley Creek



Date Processed: May 12, 2019 10:38





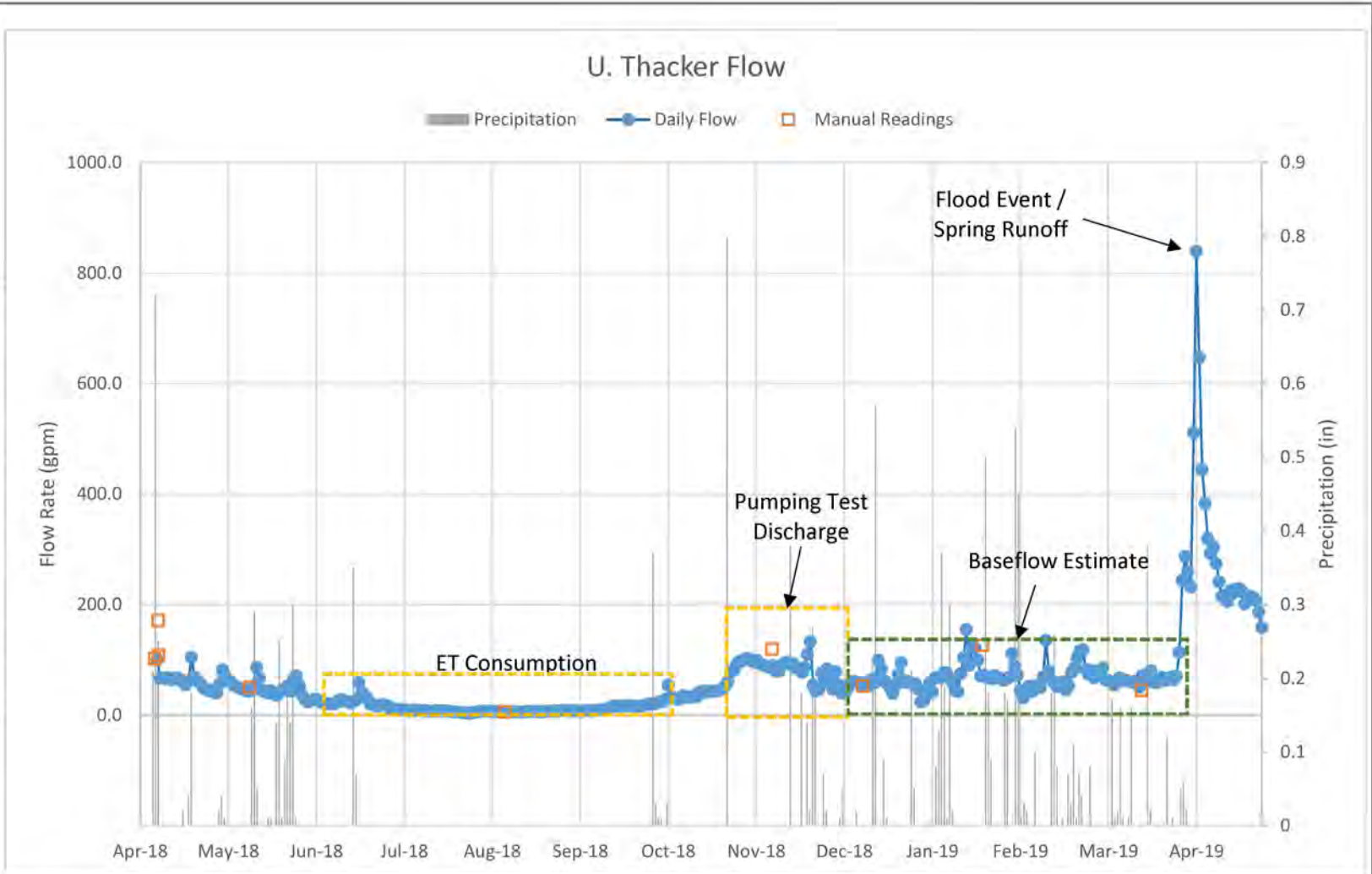
|                  |                     |
|------------------|---------------------|
| Station Name     | Upper Thacker Creek |
| Date Established | 4/6/2018            |
| X Coord (long)   | 41.701552 N         |
| Y Coord (lat)    | -118.106038 W       |
| Elevation (ft)   | 4553.8              |
| Benchmark #4     | 0.576 m             |
| Benchmark #5     | 1.256 m             |
| Benchmark #6     | 2.665 m             |



Upper Thacker Creek Monitoring Gage Station Description

|                   |                                           |             |
|-------------------|-------------------------------------------|-------------|
| CLIENT: LNC       | PROJECT: Thacker Pass Hydrologic Baseline |             |
| JOB 3898          | DRAWN: TC                                 | CHECKED: LH |
| DATE: AUGUST 2019 | FIGURE: 3.5                               |             |





| Flow Data            | Rate  | Units |
|----------------------|-------|-------|
| Annual Average       | 65.2  | gpm   |
| Baseflow (Dec - Mar) | 66.3  | gpm   |
| ET (Jun-Sep)         | -53.7 | gpm   |





### Upper Thacker Station Rating Curve

|                    |                                   |
|--------------------|-----------------------------------|
| CLIENT: LNC        | PROJECT: Thacker Pass Project EIS |
| JOB #: 3898        | DRAWN: DB                         |
| DATE: August, 2019 | CHECKE TC                         |
| FIGURE: 3.7        |                                   |

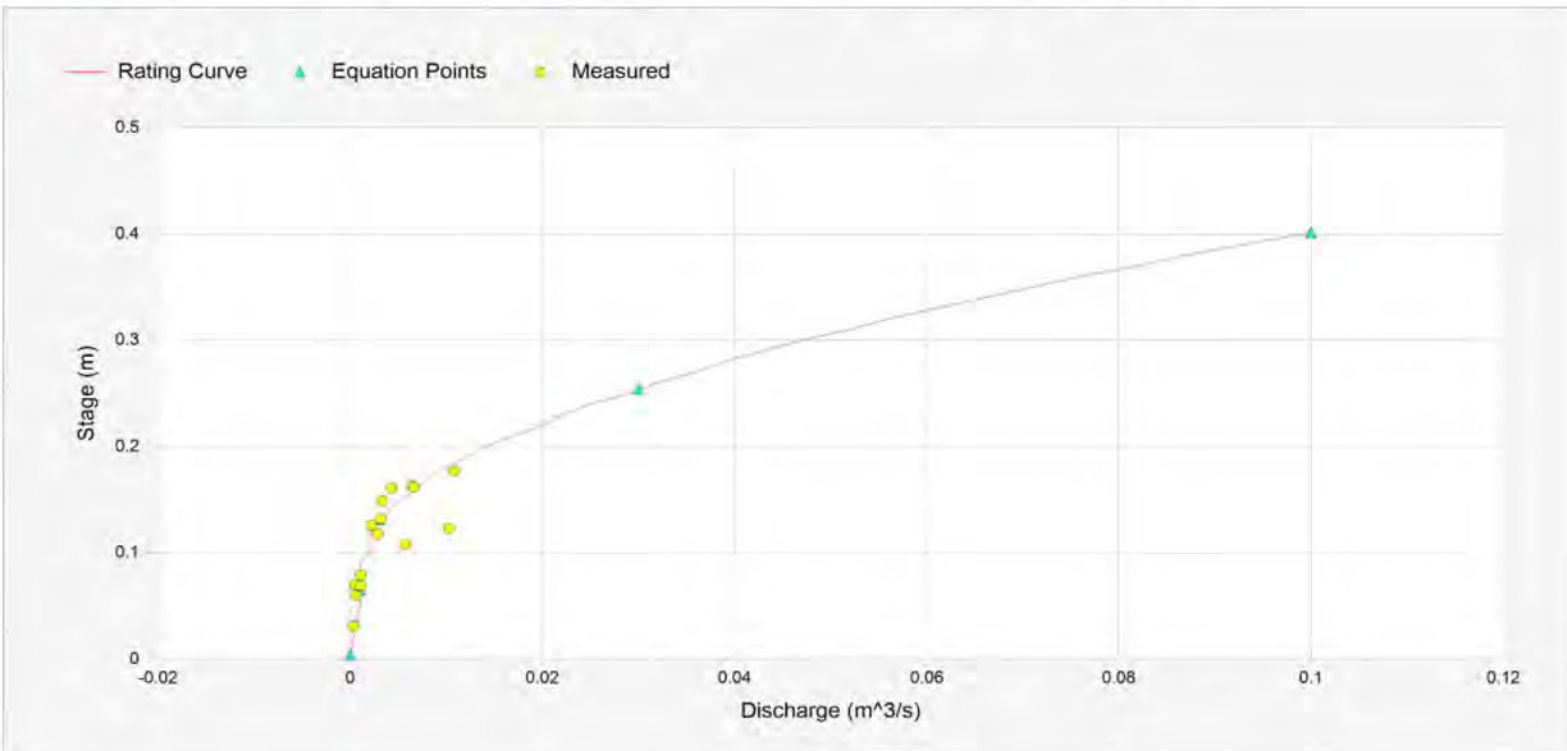
Label:

Description:

Curve on: May 10, 2019

Curve Start Date: April 5, 2018

Location: Upper Thacker Creek



Date Processed: May 10, 2019 10:44







|                  |                     |
|------------------|---------------------|
| Station Name     | Lower Thacker Creek |
| Date Established | 4/4/2018            |
| X Coord (long)   | 41.697747 N         |
| Y Coord (lat)    | -118.1118146 W      |
| Elevation (ft)   | 4386                |
| Benchmark #1     | 0.696 m             |
| Benchmark #2     | 2.512 m             |
| Benchmark #3     | 1.778 m             |



#### Lower Thacker Creek Monitoring Gage Station Description

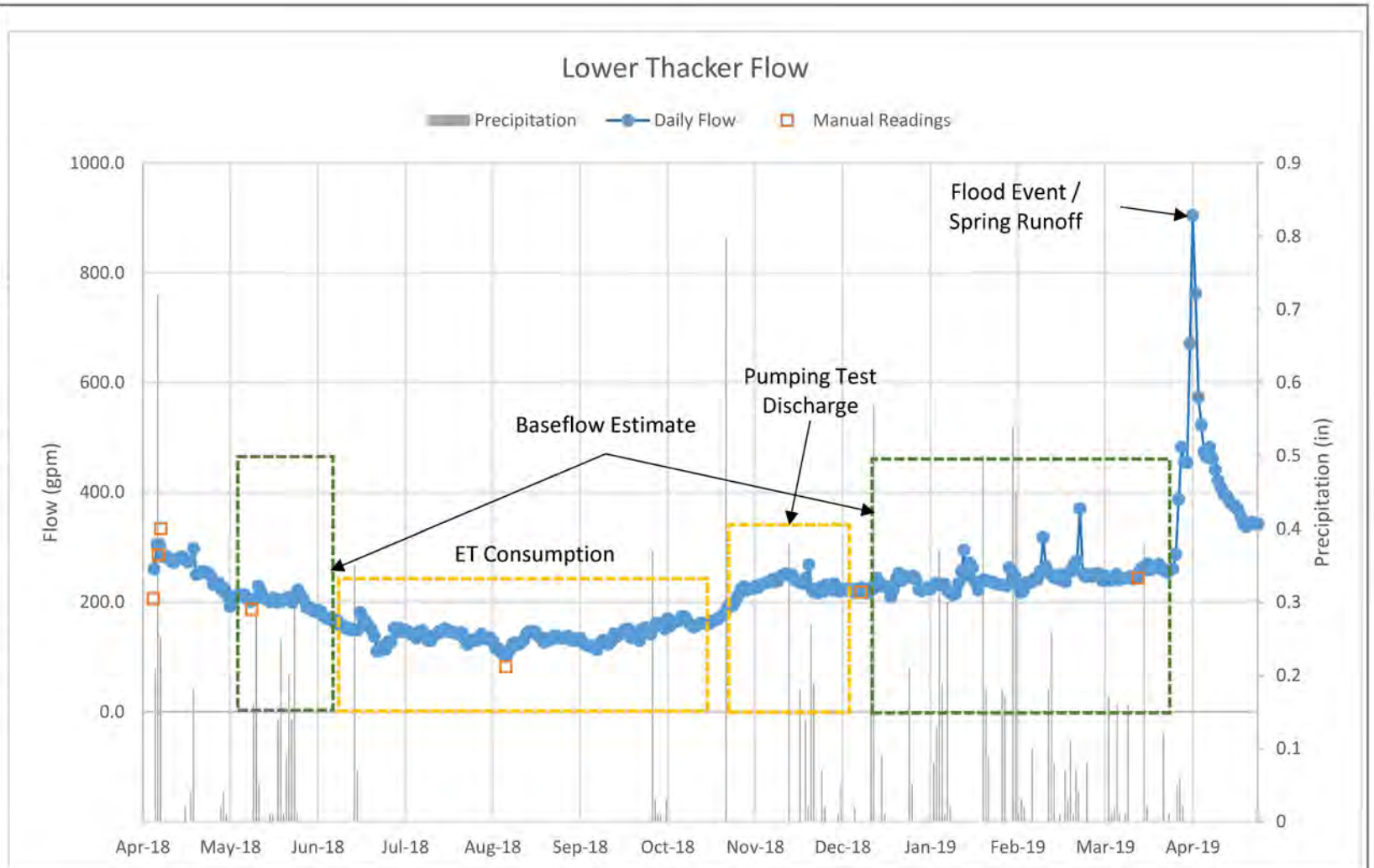
|             |             |                                           |             |
|-------------|-------------|-------------------------------------------|-------------|
| CLIENT: LNC |             | PROJECT: Thacker Pass Hydrologic Baseline |             |
| JOB         | 3898        | DRAWN: TC                                 | CHECKED: LH |
| DATE:       | AUGUST 2019 | FIGURE: 3.8                               |             |



### Lower Thacker Station Flow Hydrograph

CLIENT: LNC  
 JOB #: 3898  
 DATE: AUGUST 2019

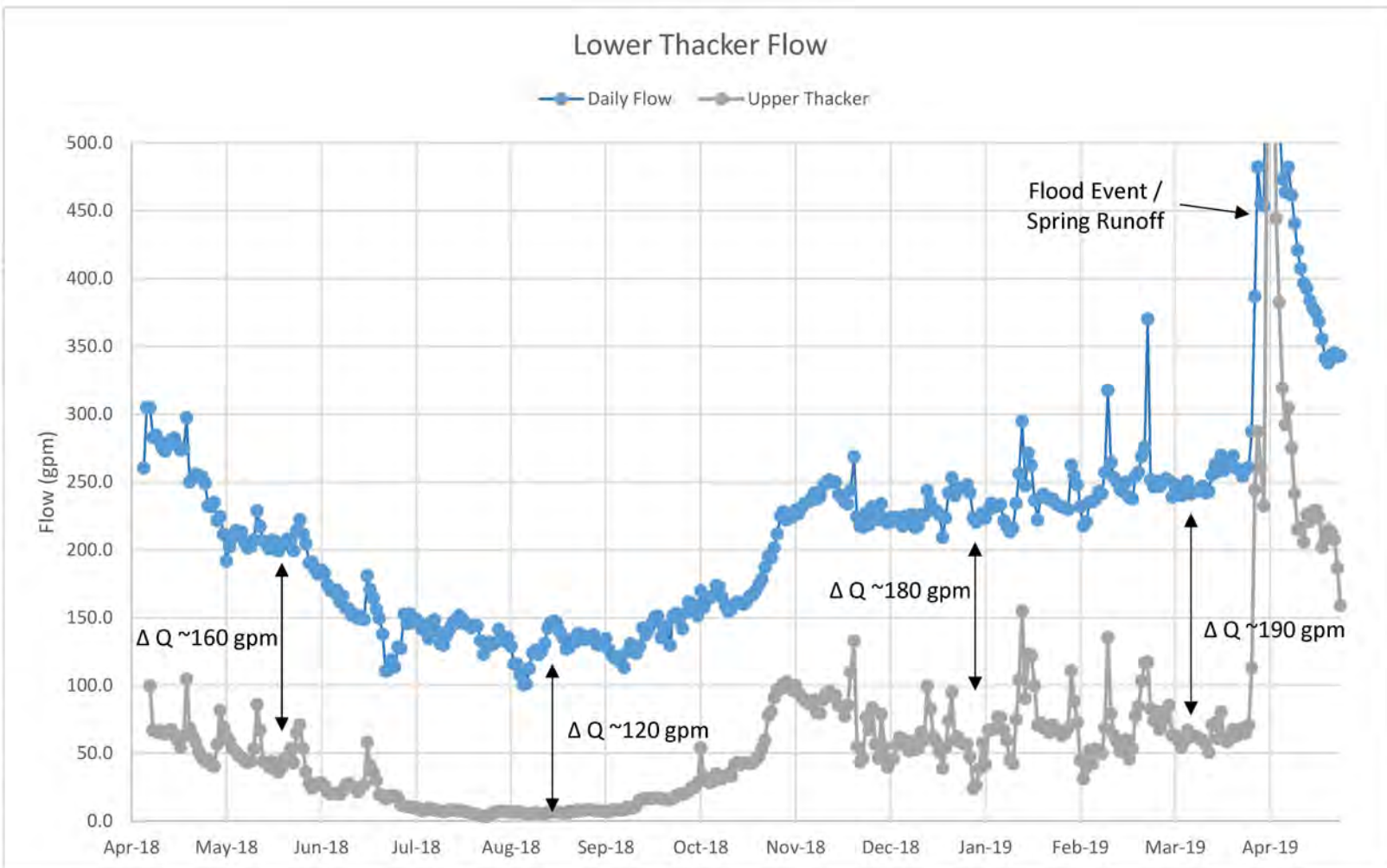
PROJECT: Thacker Pass Project EIS  
 DRAWN: DB  
 CHECKED: TC  
 FIGURE: 3.9



| Flow Data            | Rate  | Units |
|----------------------|-------|-------|
| Annual Average       | 218   | gpm   |
| Baseflow (Dec - Mar) | 234   | gpm   |
| ET (Jun-Sep)         | -93.8 | gpm   |



|                                                        |                                   |             |
|--------------------------------------------------------|-----------------------------------|-------------|
| <b>Lower and Upper Thacker Station Flow Comparison</b> |                                   |             |
| CLIENT: LNC                                            | PROJECT: Thacker Pass Project EIS |             |
| JOB #: 3898                                            | DRAWN: DB                         | CHECKED: TC |
| DATE: AUGUST 2019                                      | FIGURE: 3.10                      |             |

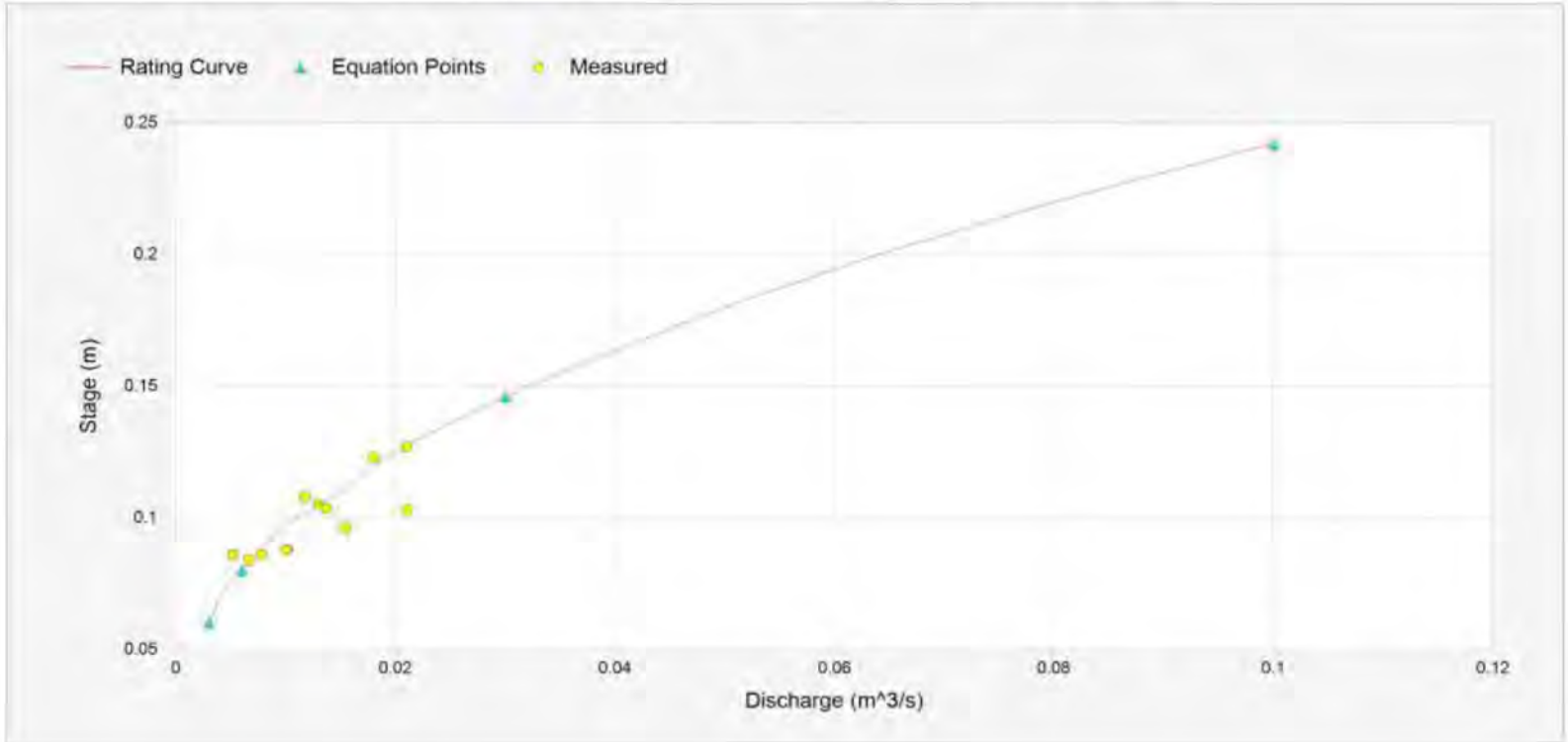




|                                           |                                   |           |
|-------------------------------------------|-----------------------------------|-----------|
| <b>Lower Thacker Station Rating Curve</b> |                                   |           |
| CLIENT: LNC                               | PROJECT: Thacker Pass Project EIS |           |
| JOB #: 3898                               | DRAWN: DB                         | CHECKE TC |
| DATE: AUGUST 2019                         | FIGURE: 3.11                      |           |

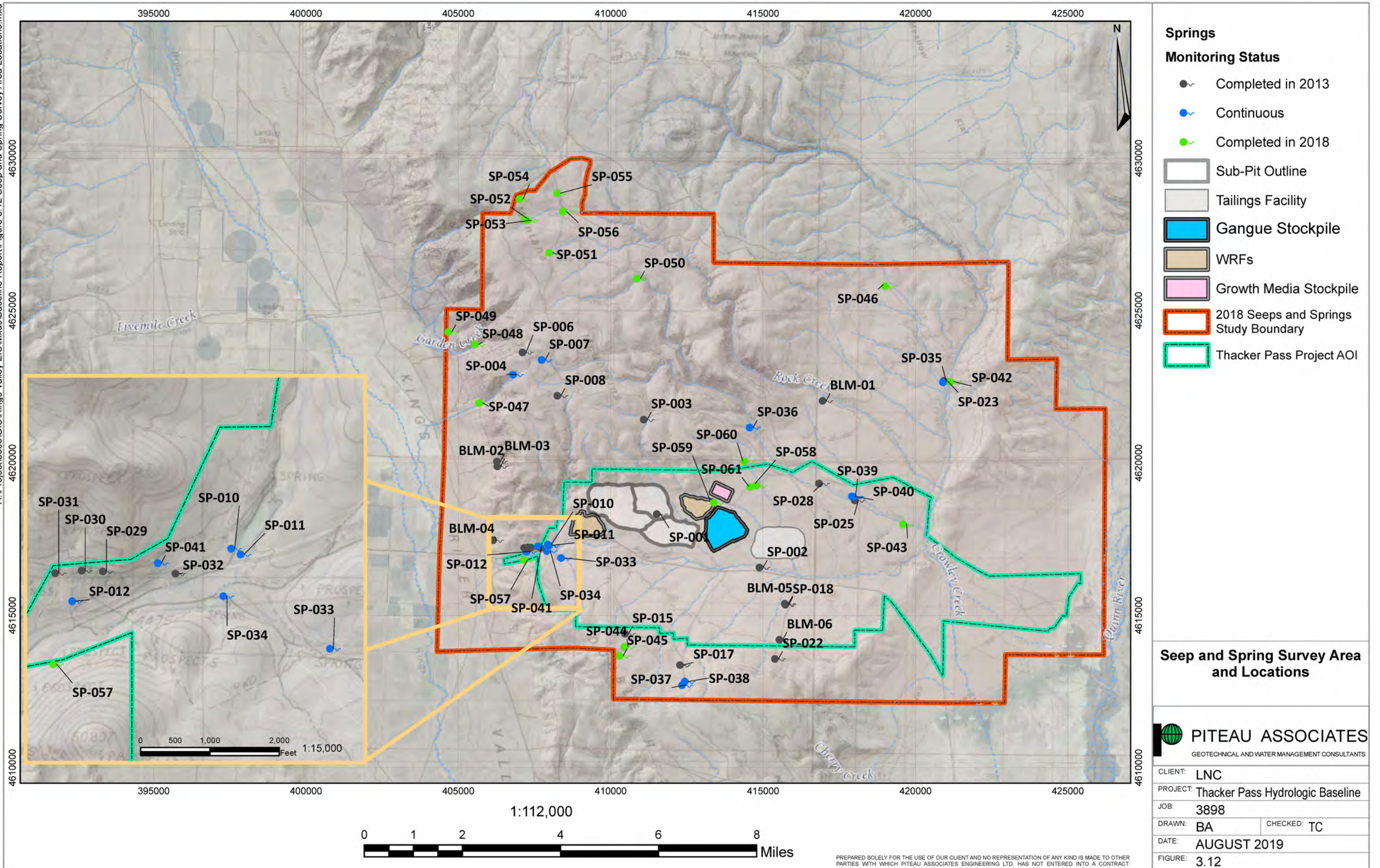
Label:  
Description:

Curve on: May 10, 2019      Curve Start Date: April 4, 2018      Location: Lower Thacker Creek

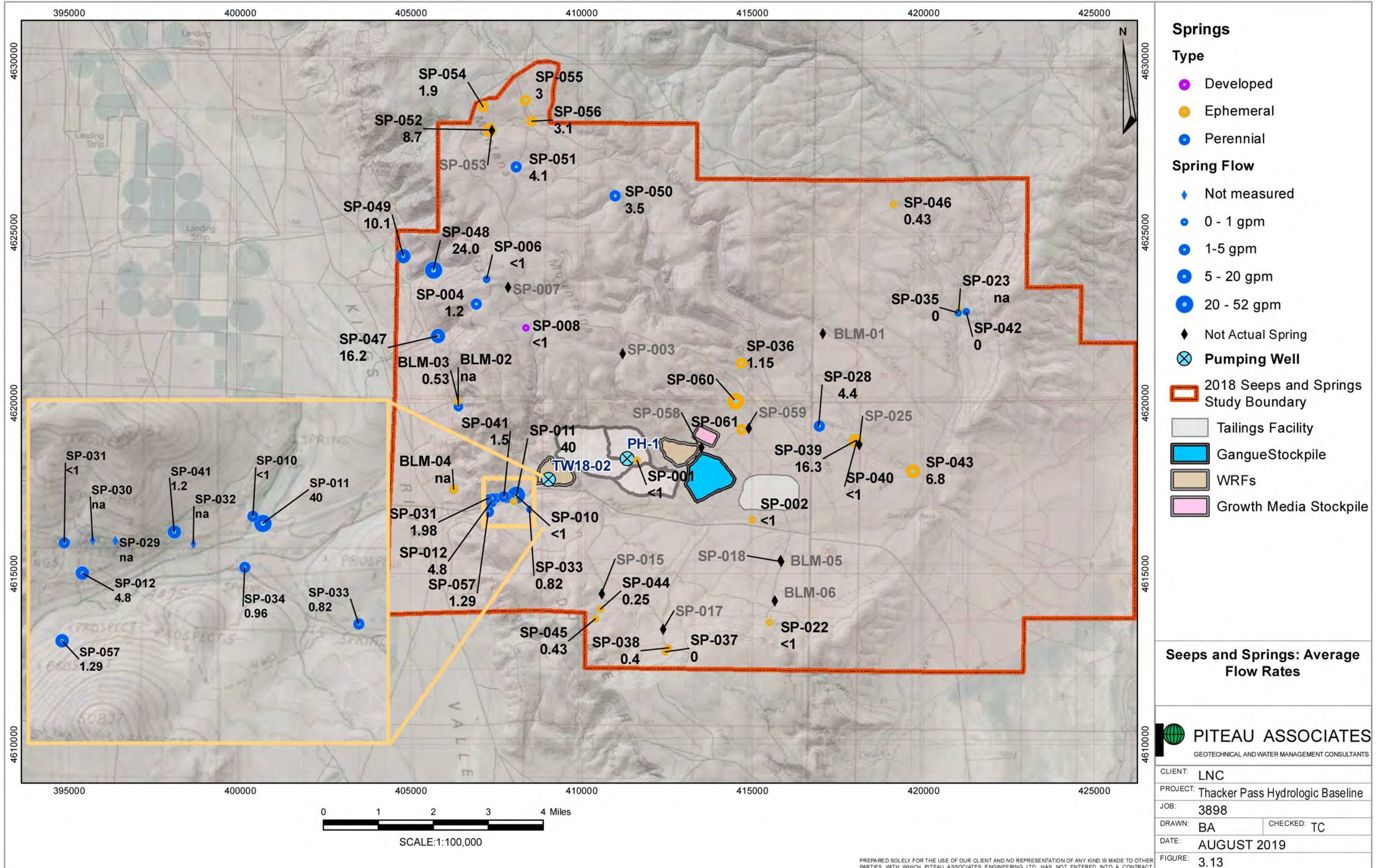


Date Processed: May 10, 2019 08:20

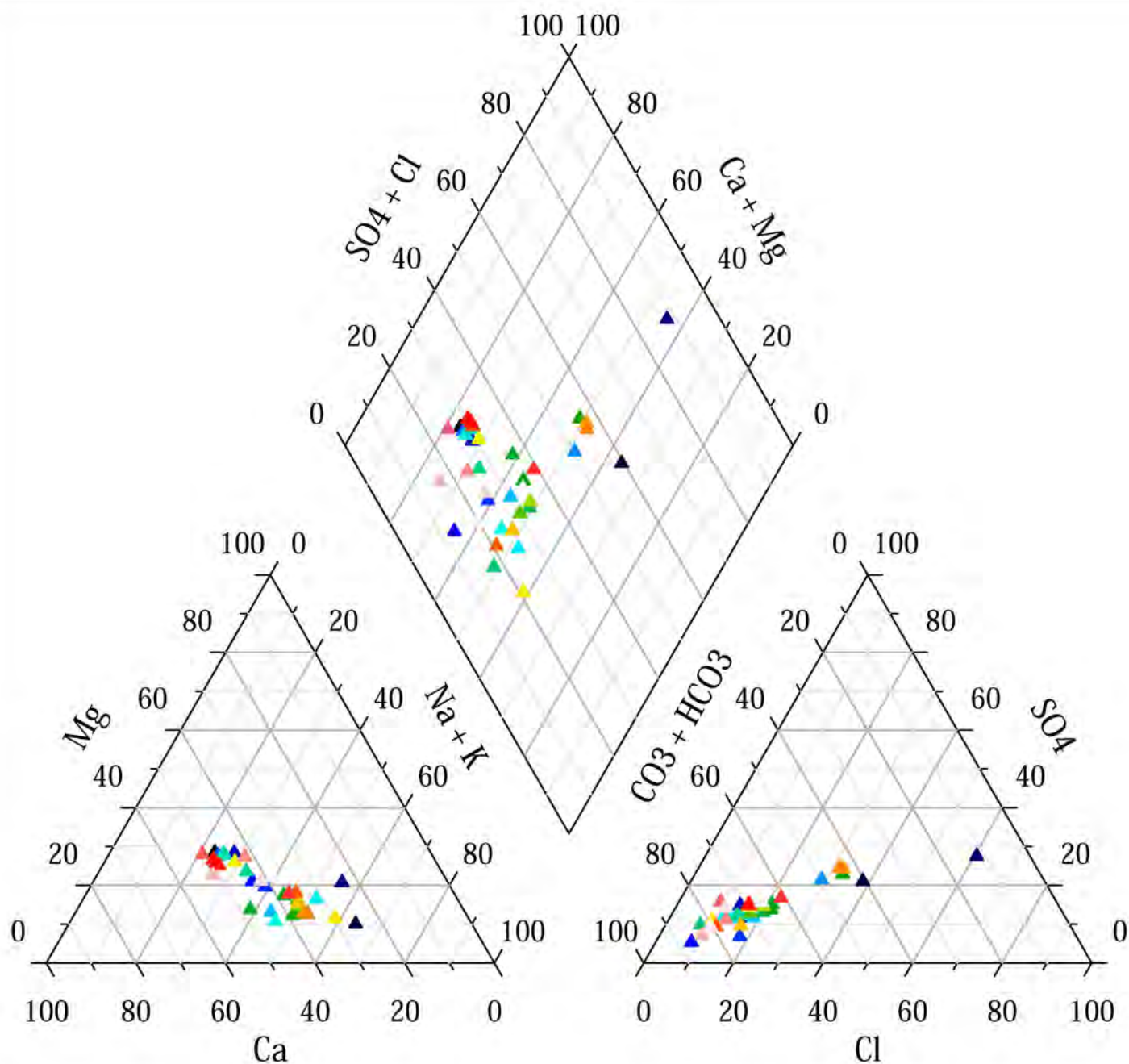












| Legend   |          |          |          |          |          |          |          |          |          |  |  |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--|--|
| ▲ BLM-02 | ▲ SP-010 | ▲ SP-023 | ▲ SP-031 | ▲ SP-035 | ▲ SP-040 | ▲ SP-044 | ▲ SP-048 | ▲ SP-051 | ▲ SP-055 |  |  |
| ▲ SP-001 | ▲ SP-011 | ▲ SP-025 | ▲ SP-032 | ▲ SP-036 | ▲ SP-041 | ▲ SP-045 | ▲ SP-049 | ▲ SP-052 | ▲ SP-056 |  |  |
| ▲ SP-002 | ▲ SP-012 | ▲ SP-028 | ▲ SP-033 | ▲ SP-038 | ▲ SP-042 | ▲ SP-046 | ▲ SP-050 | ▲ SP-054 | ▲ SP-057 |  |  |
| ▲ SP-004 | ▲ SP-017 | ▲ SP-030 | ▲ SP-034 | ▲ SP-039 | ▲ SP-043 | ▲ SP-047 |          |          |          |  |  |

PREPARED SOLELY FOR THE USE OF OUR CLIENT AND NO REPRESENTATION OF ANY KIND IS MADE TO OTHER PARTIES WITH WHICH PITEAU ASSOCIATES ENGINEERING LTD. HAS NOT ENTERED INTO A CONTRACT.

Lithium Nevada Corporation  
Thacker Pass Hydrologic Baseline  
Humboldt County, Nevada



**PITEAU ASSOCIATES**

GEOTECHNICAL AND HYDROGEOLOGICAL CONSULTANTS

## Spring Discharge Piper Diagram

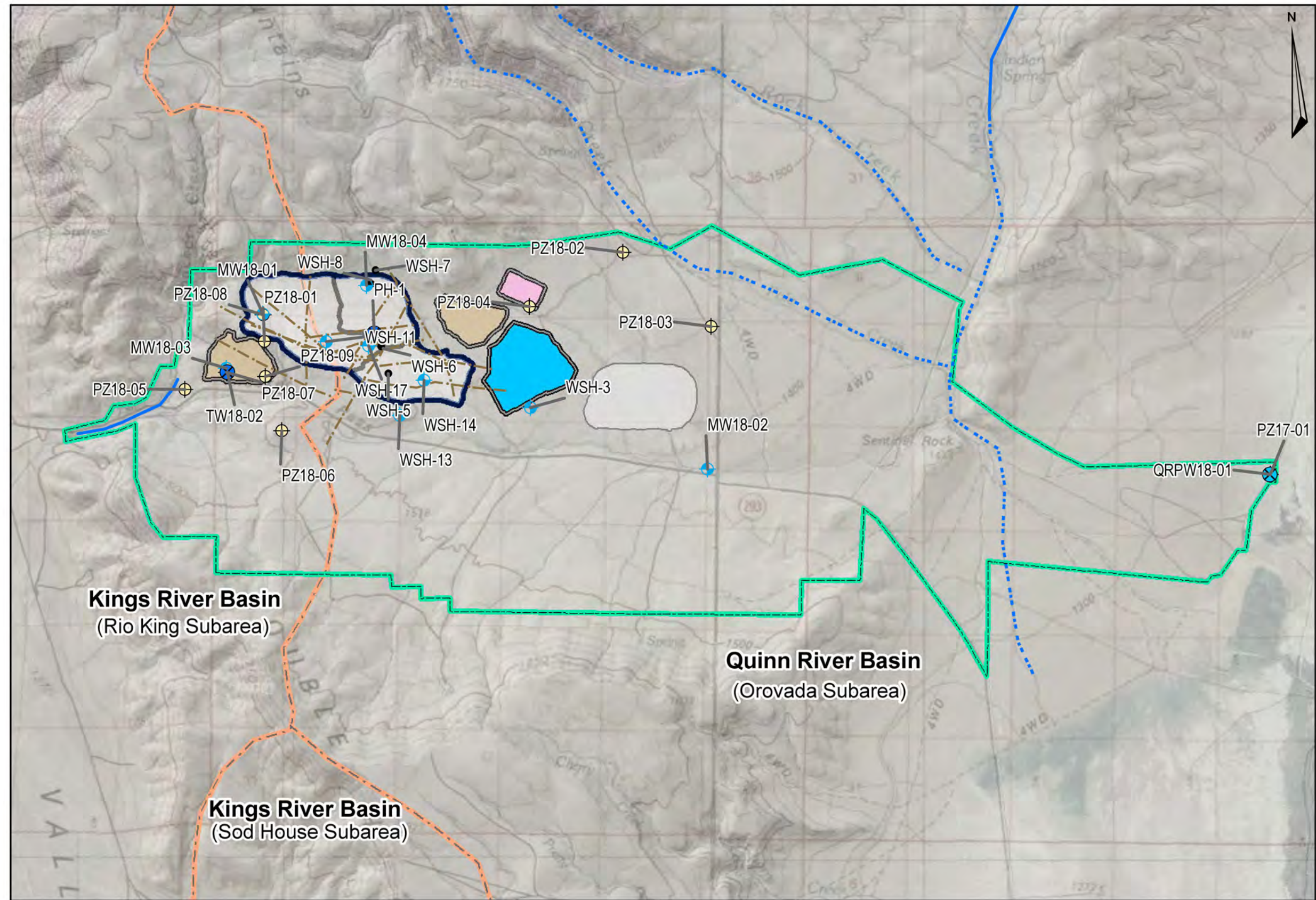
Figure:  
3.14

Date:  
AUG 2019

By:  
BA

Approved:  
TC





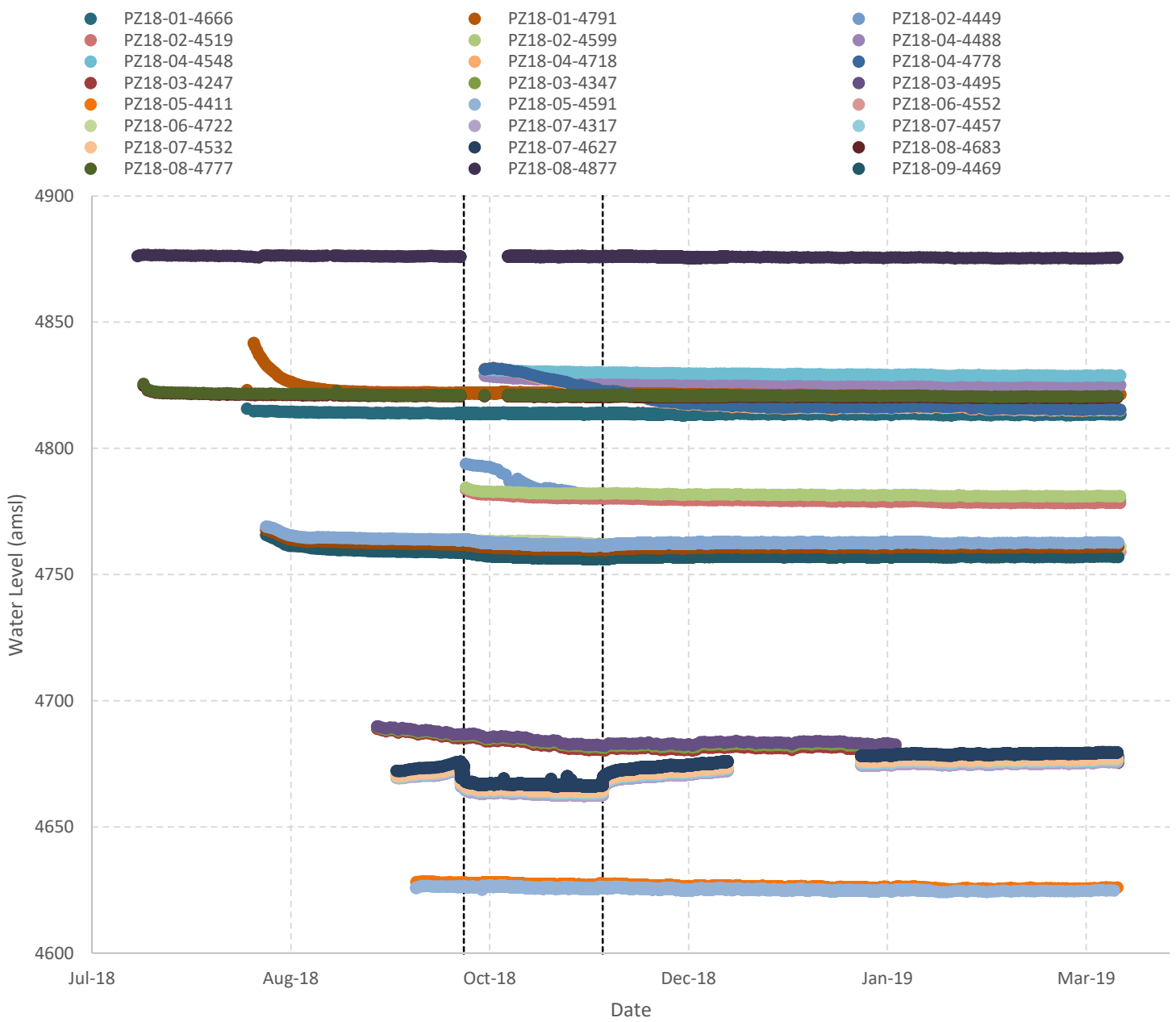
- Surface Water**
- ..... Ephemeral
  - Perennial
- Well**
- ⊕ Monitoring Well
  - ⊙ Piezometer
  - ⊗ Production Well
  - ⊗ Test Pumping Well
  - Abandoned
- Faults
- ▭ Sub-Pit Outline
  - ▭ Tailings Facility
  - ▭ Gangue Stockpile
  - ▭ WRFs
  - ▭ Growth Media Stockpile
  - ▭ Thacker Pass Project AOI
  - ▭ Proposed Pit Outline
  - ▭ Hydrologic Basin Boundary

**Groundwater Investigation Locations**



|          |                                  |          |    |
|----------|----------------------------------|----------|----|
| CLIENT:  | LNC                              |          |    |
| PROJECT: | Thacker Pass Hydrologic Baseline |          |    |
| JOB:     | 3898                             |          |    |
| DRAWN:   | BA                               | CHECKED: | TC |
| DATE:    | AUGUST 2019                      |          |    |
| FIGURE:  | 3.15                             |          |    |



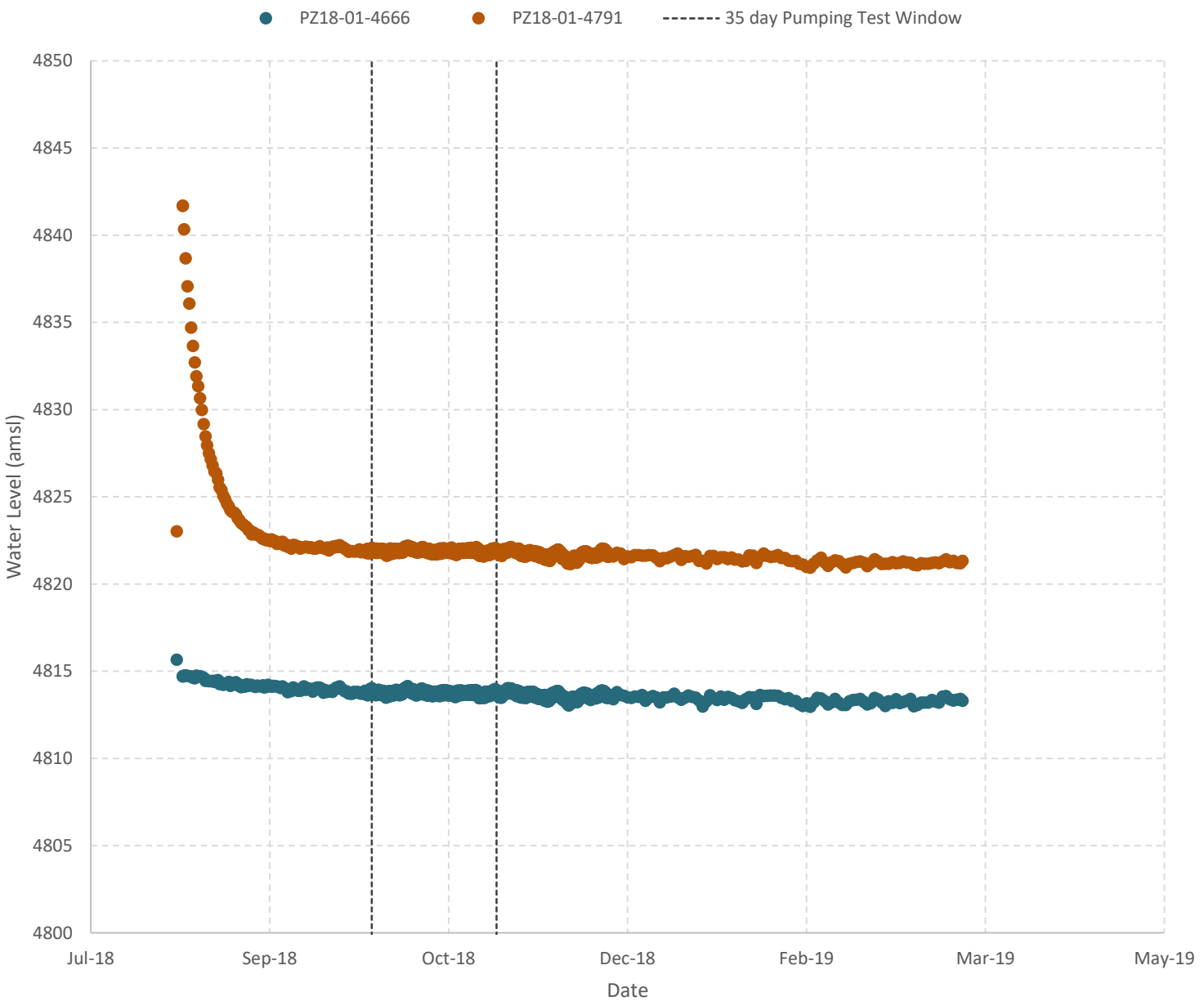


Combined Piezometer Hydrograph



|         |             |          |                                  |
|---------|-------------|----------|----------------------------------|
| CLIENT: | LNC         | PROJECT: | Thacker Pass Hydrologic Baseline |
| JOB #:  | 3898        | DRAWN:   | BA                               |
| DATE:   | AUGUST 2019 | CHECKED: | TC                               |
| FIGURE: | 3.16a       |          |                                  |





### PZ18-01 Hydrograph

CLIENT: LNC

JOB #: 3898

DATE: AUGUST 2019

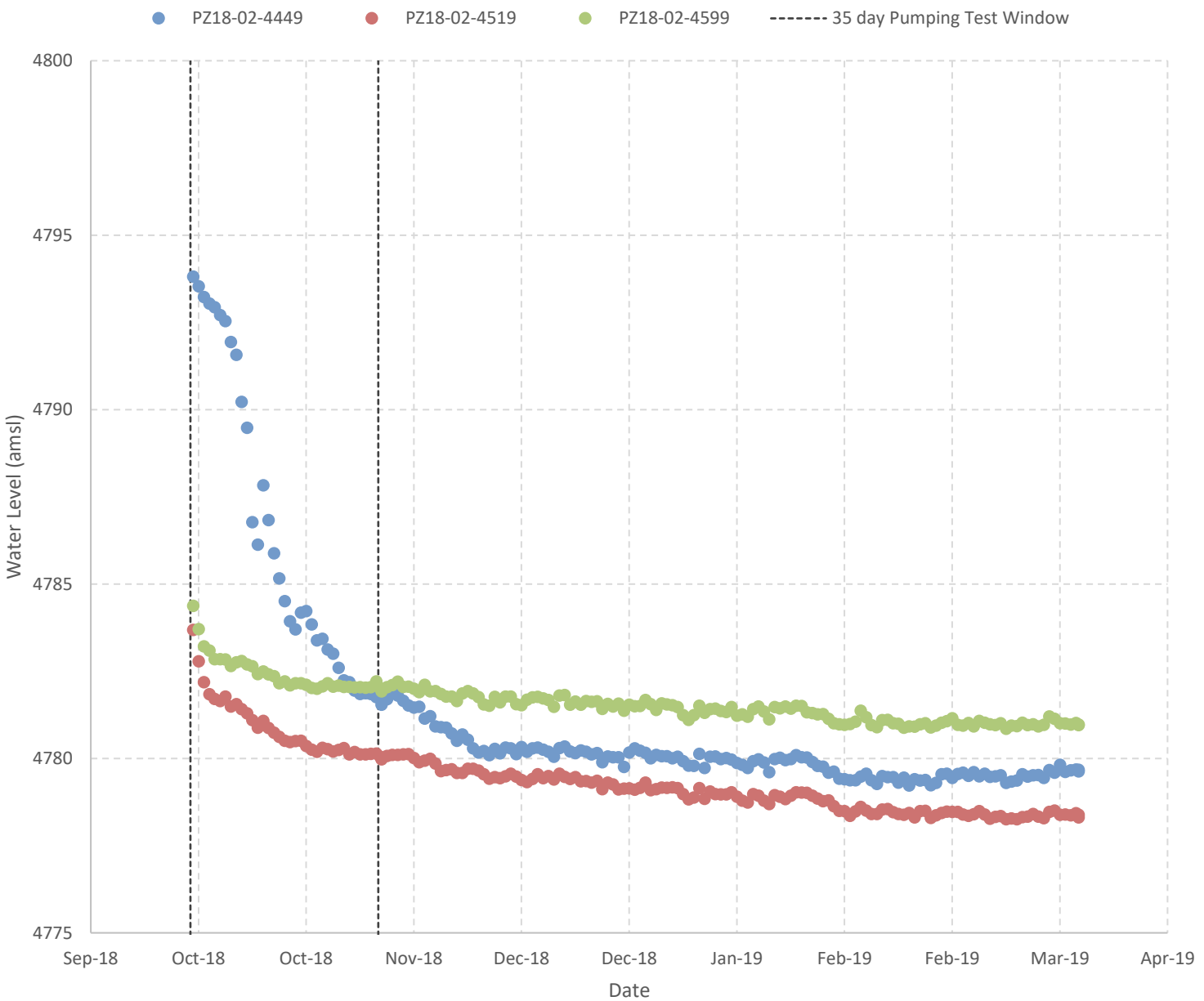
PROJECT: Thacker Pass Hydrologic Baseline

DRAWN: BA

FIGURE: 3.16b

CHECKED: TC

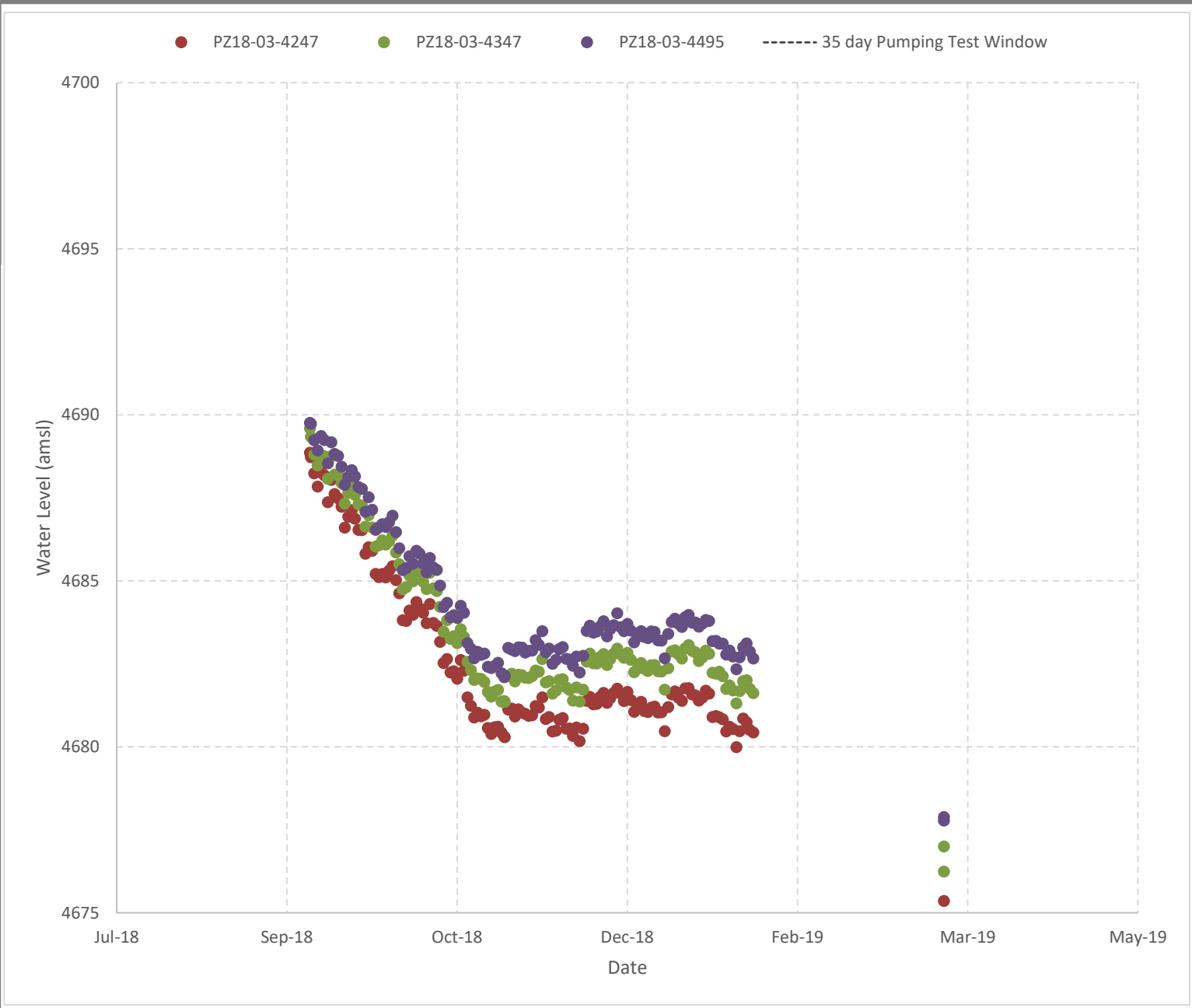




### PZ18-02 Hydrograph

|         |             |          |                                  |
|---------|-------------|----------|----------------------------------|
| CLIENT: | LNC         | PROJECT: | Thacker Pass Hydrologic Baseline |
| JOB #:  | 3898        | DRAWN:   | BA                               |
| DATE:   | AUGUST 2019 | CHECKED: | TC                               |
| FIGURE: | 3.16c       |          |                                  |





REPORT CHECKED AND APPROVED BY: TC/BA/JS

### PZ18-03 Hydrograph

CLIENT: LNC

JOB #: 3898

DATE: AUGUST 2019

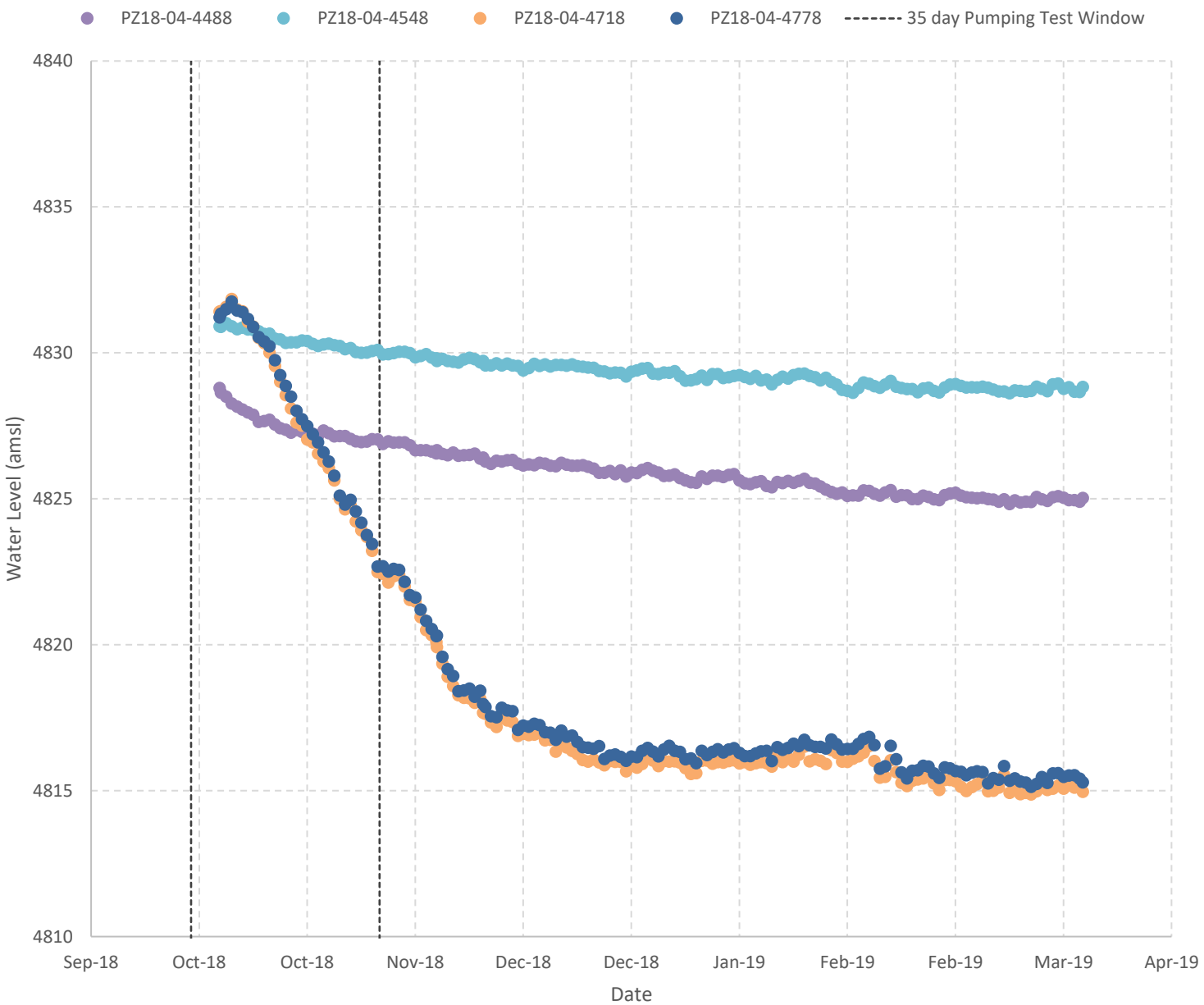
PROJECT: Thacker Pass Hydrologic Baseline

DRAWN: BA

FIGURE: 3.16d

CHECKED: TC





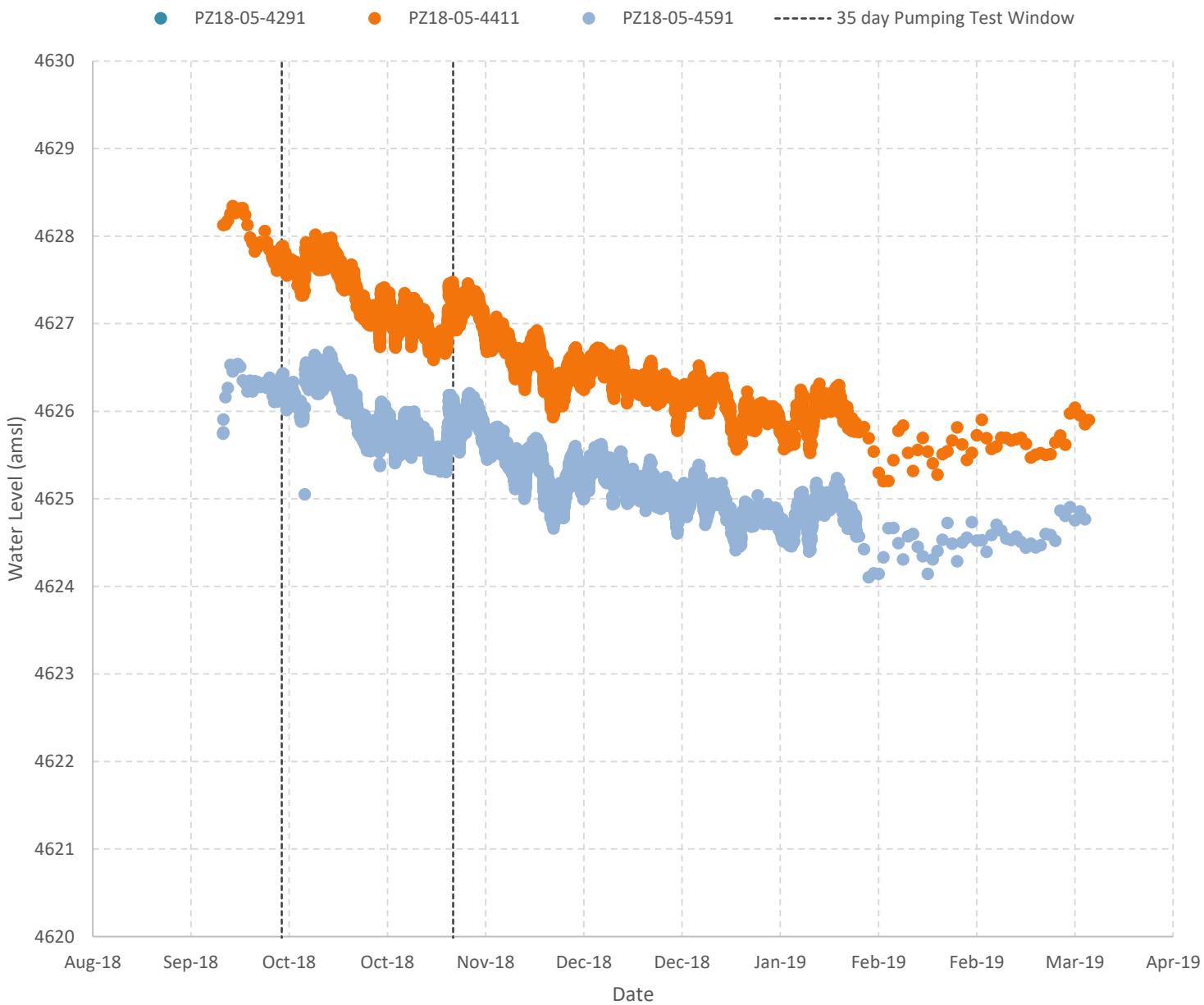
### PZ18-04 Hydrograph



|         |             |          |                                  |
|---------|-------------|----------|----------------------------------|
| CLIENT: | LNC         | PROJECT: | Thacker Pass Hydrologic Baseline |
| JOB #:  | 3898        | DRAWN:   | BA                               |
| DATE:   | AUGUST 2019 | CHECKED: | TC                               |

FIGURE: 3.16e





### PZ18-05 Hydrograph

CLIENT: LNC

JOB #: 3898

DATE: AUGUST 2019

PROJECT: Thacker Pass Hydrologic Baseline

DRAWN: BA

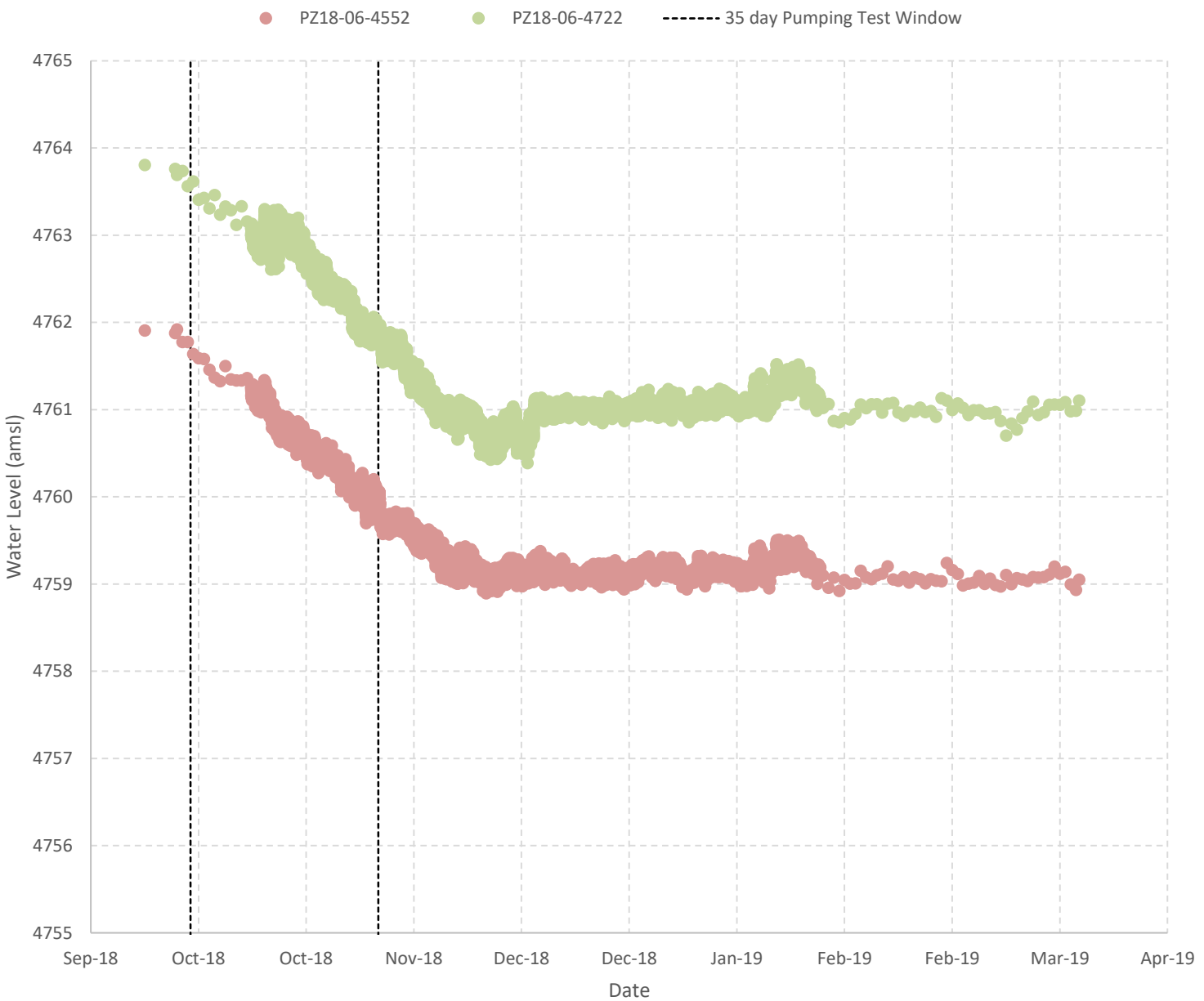
CHECKED: TC

FIGURE: 3.16f



PITEAU ASSOCIATES  
BOOTH-CHESTER AND ASSOCIATES, INC. CONSULTANTS

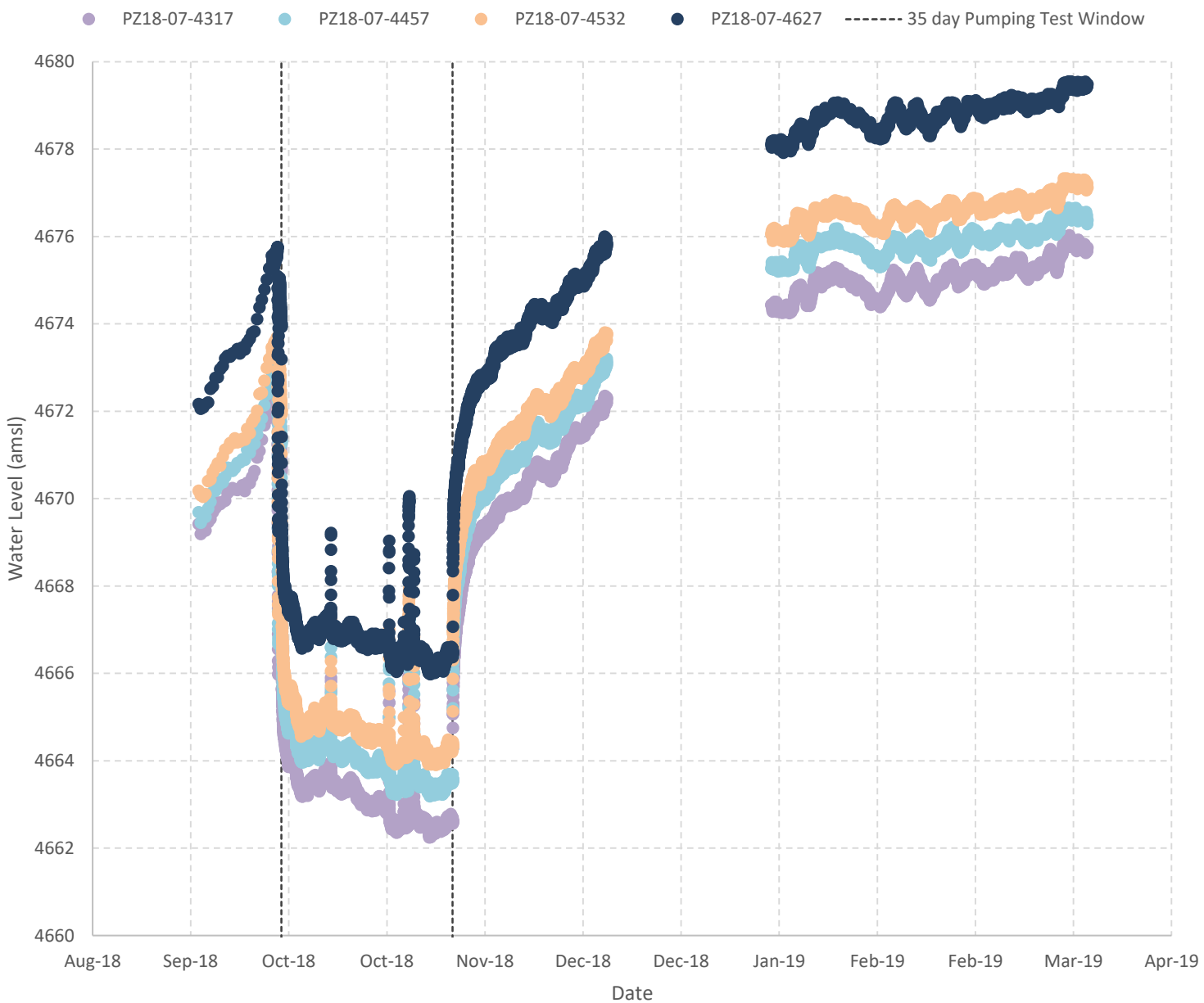




### PZ18-06 Hydrograph

|         |             |          |                                  |
|---------|-------------|----------|----------------------------------|
| CLIENT: | LNC         | PROJECT: | Thacker Pass Hydrologic Baseline |
| JOB #:  | 3898        | DRAWN:   | BA                               |
| DATE:   | AUGUST 2019 | CHECKED: | TC                               |
| FIGURE: | 3.16g       |          |                                  |





### PZ18-07 Hydrograph

CLIENT: LNC

JOB #: 3898

DATE: AUGUST 2019

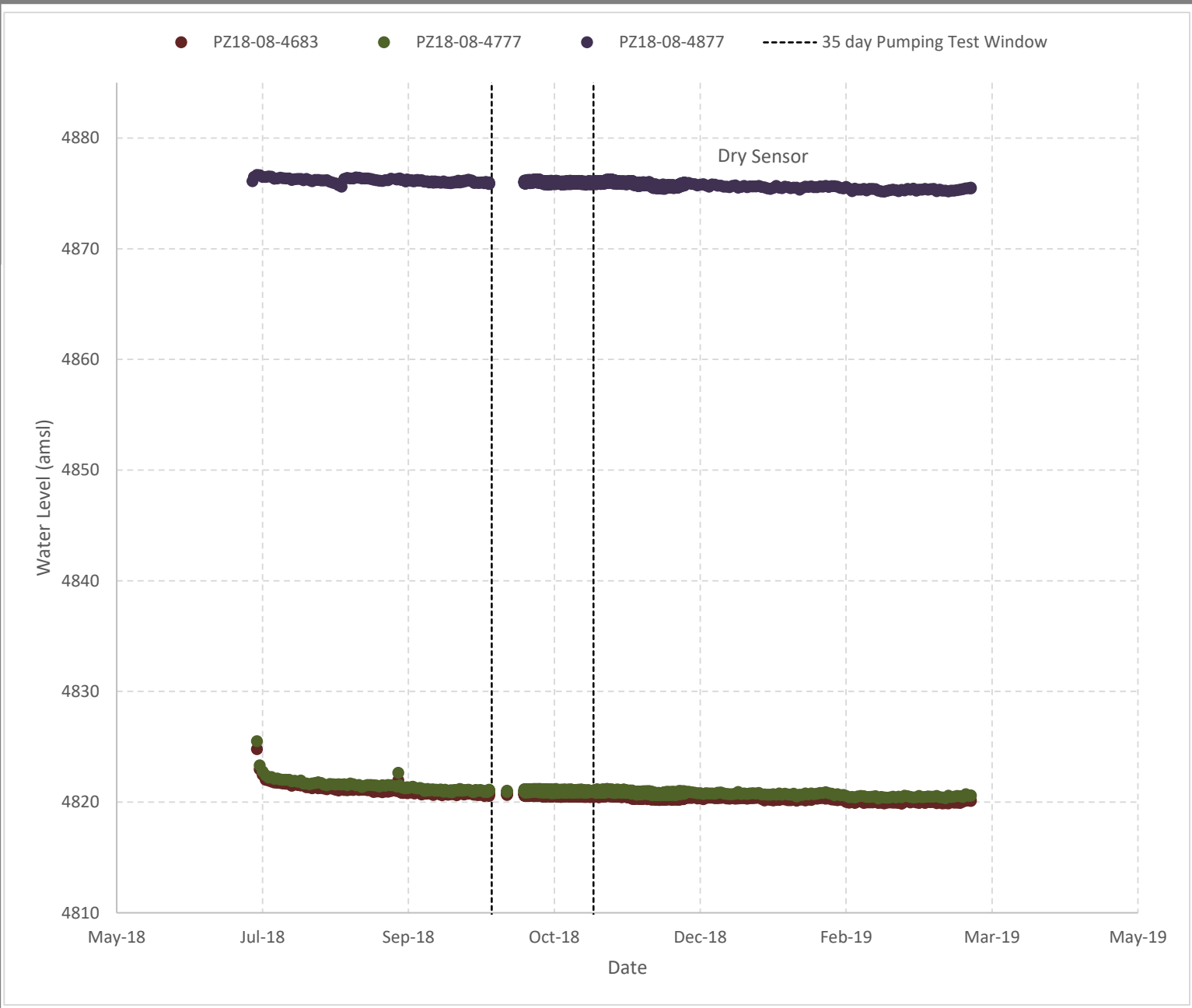
PROJECT: Thacker Pass Hydrologic Baseline

DRAWN: BA

FIGURE: 3.16h

CHECKED: TC

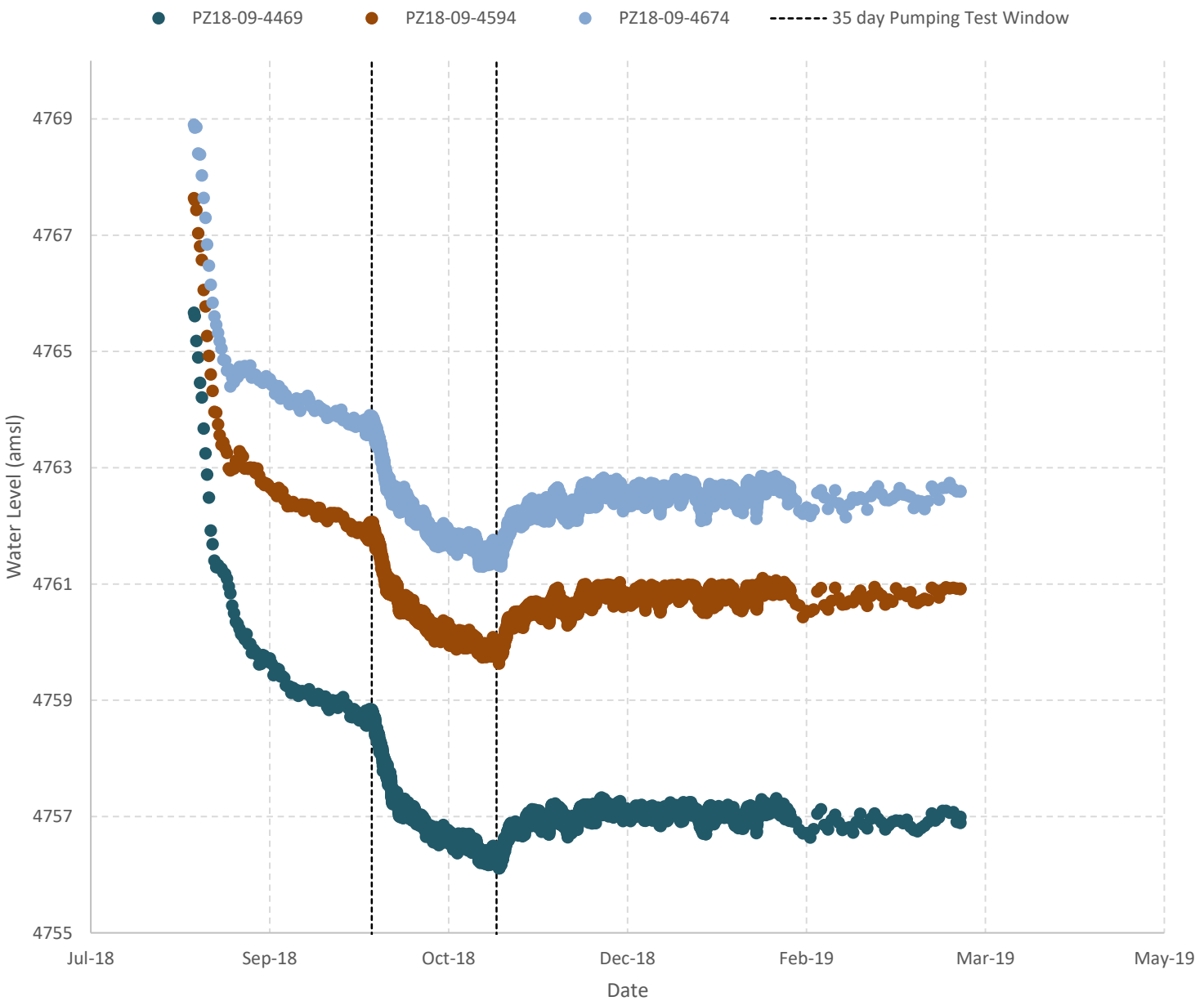




PZ18-08 Hydrograph

|         |             |                                           |             |
|---------|-------------|-------------------------------------------|-------------|
| CLIENT: | LNC         | PROJECT: Thacker Pass Hydrologic Baseline |             |
| JOB #:  | 3898        | DRAWN: BA                                 | CHECKED: TC |
| DATE:   | AUGUST 2019 | FIGURE:                                   | 3.16i       |





REPORT PREPARED BY: PITEAU ASSOCIATES  
DATE: AUGUST 2019

### PZ18-09 Hydrograph

CLIENT: LNC

JOB #: 3898

DATE: AUGUST 2019

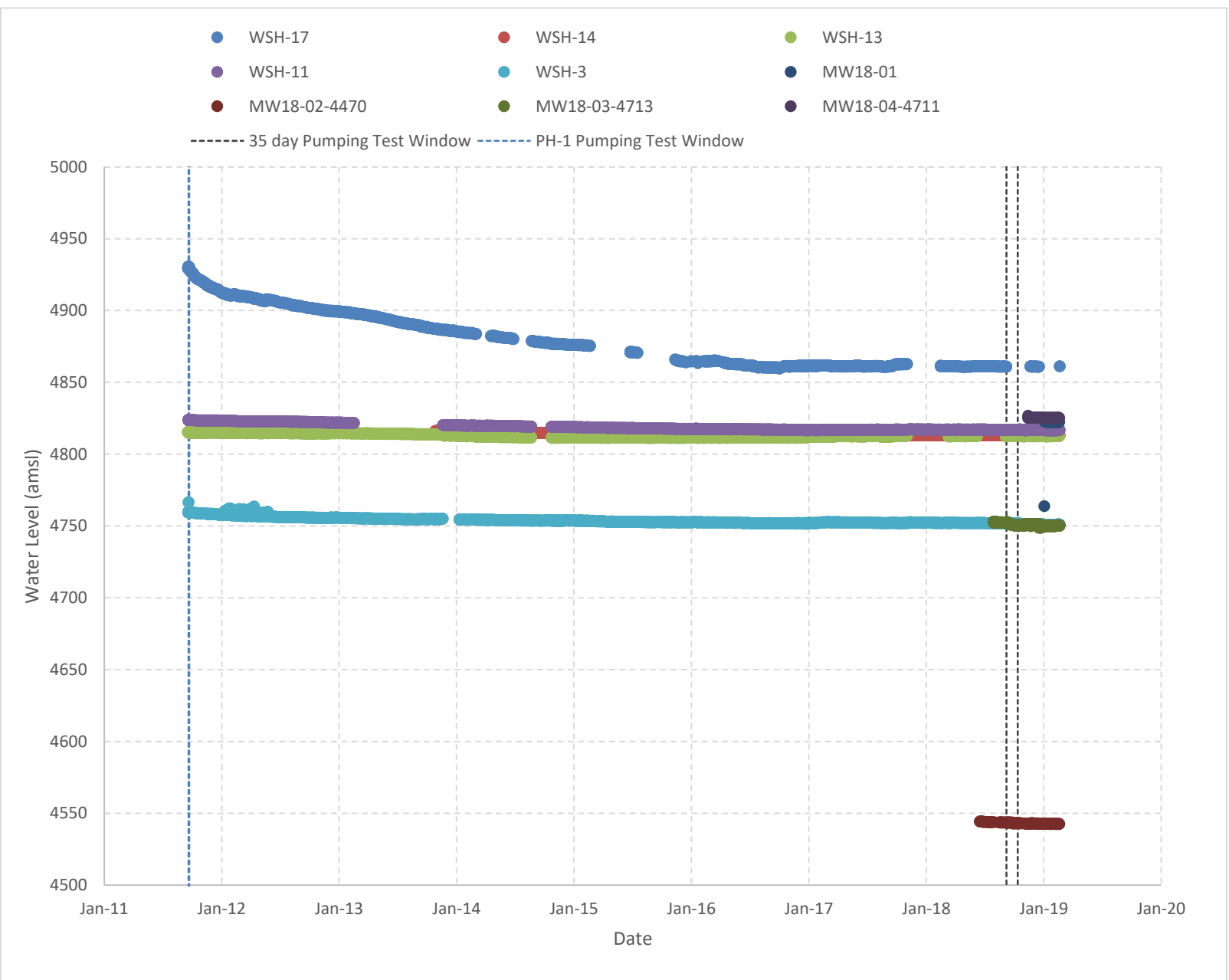
PROJECT: Thacker Pass Hydrologic Baseline

DRAWN: BA

FIGURE: 3.16j

CHECKED: TC





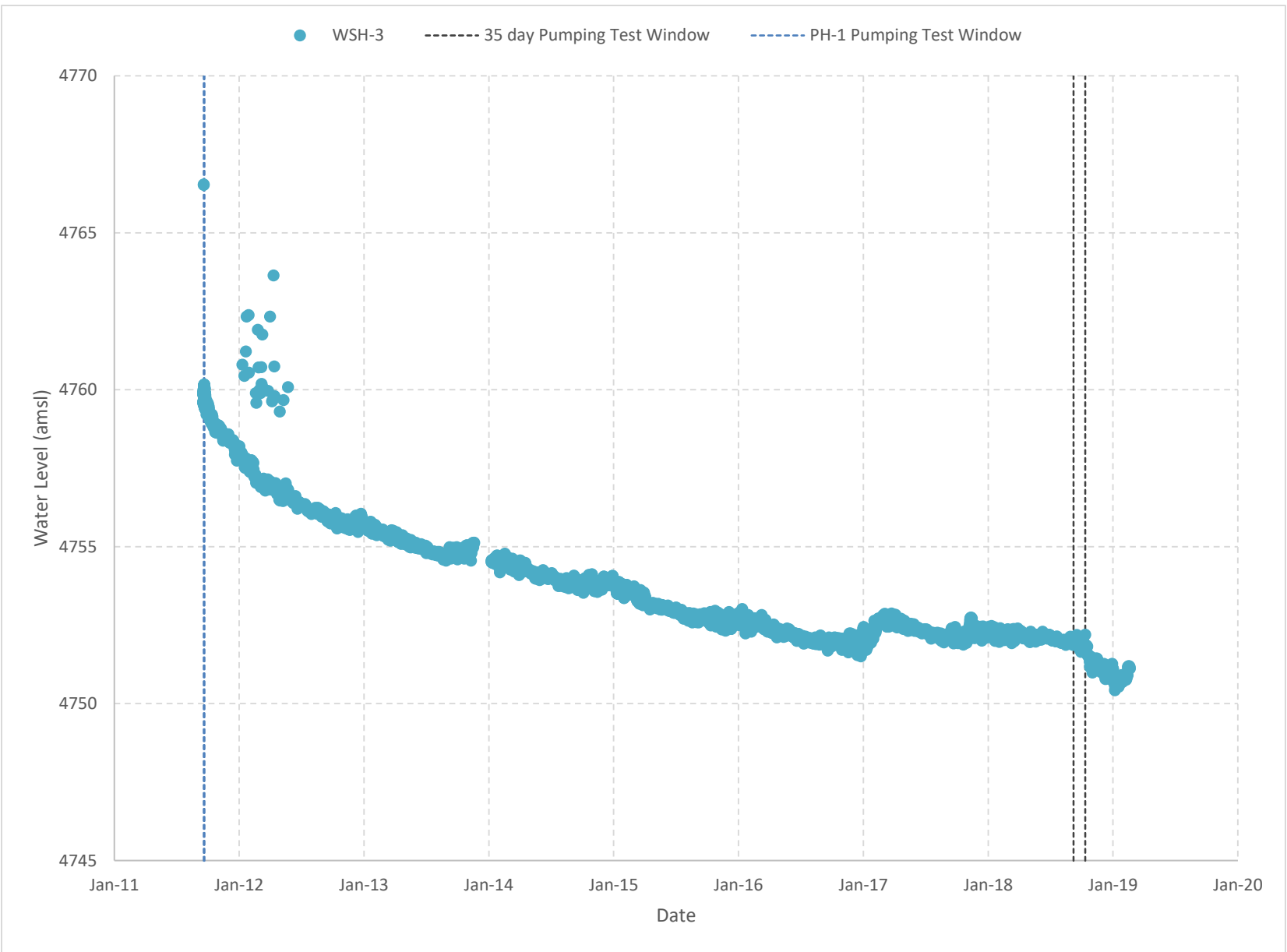
### Combined Monitoring Well Hydrographs



REPORT PREPARED FOR THE PITEAU ASSOCIATES  
PITEAU ASSOCIATES

|         |             |          |                                  |
|---------|-------------|----------|----------------------------------|
| CLIENT: | LNC         | PROJECT: | Thacker Pass Hydrologic Baseline |
| JOB #:  | 3898        | DRAWN:   | BA                               |
| DATE:   | AUGUST 2019 | CHECKED: | TC                               |
| FIGURE: | 3.17a       |          |                                  |



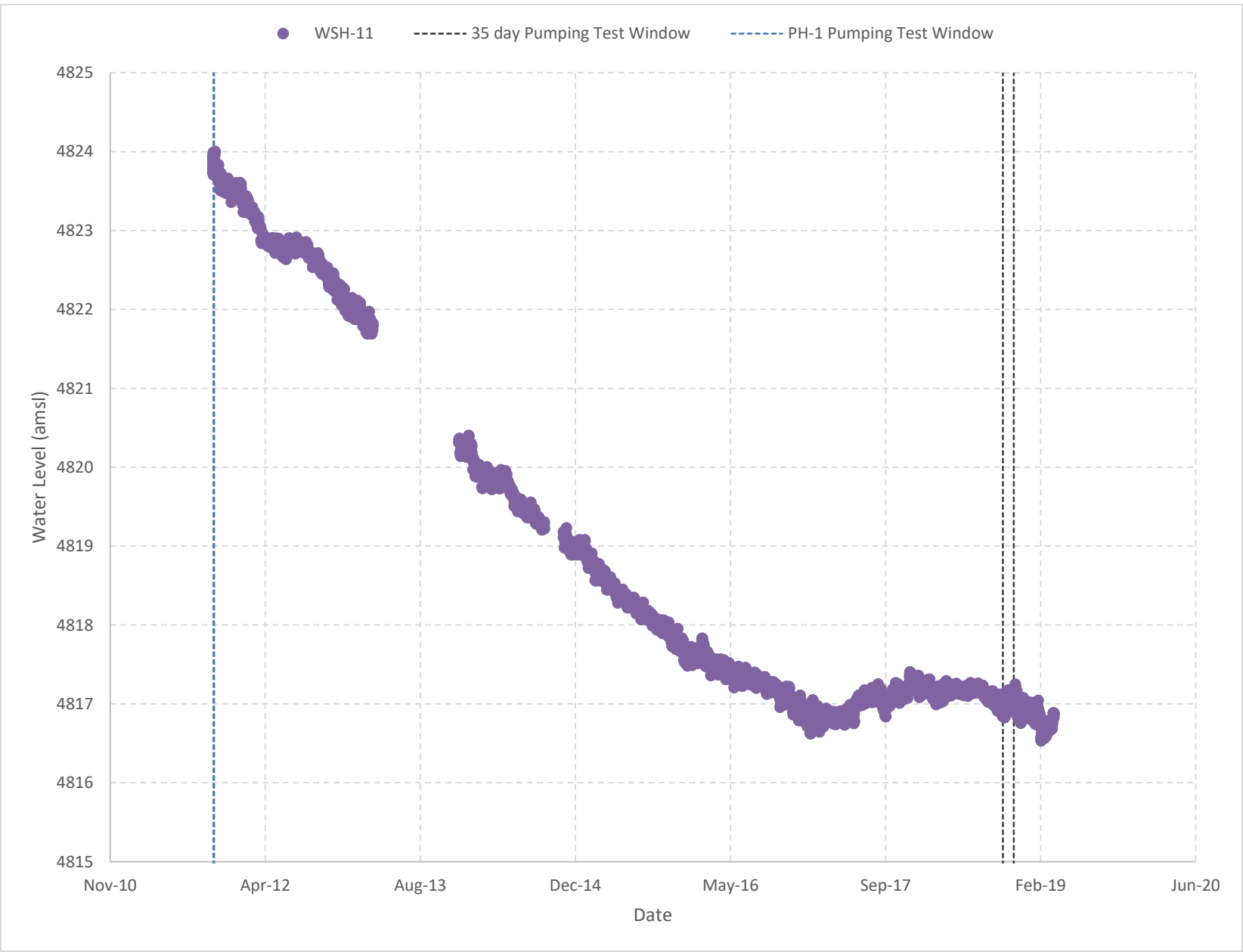


### WSH-3 Hydrograph



|         |             |          |                                  |
|---------|-------------|----------|----------------------------------|
| CLIENT: | LNC         | PROJECT: | Thacker Pass Hydrologic Baseline |
| JOB #:  | 3898        | DRAWN:   | BA                               |
| DATE:   | AUGUST 2019 | CHECKED: | TC                               |
| FIGURE: | 3.17b       |          |                                  |

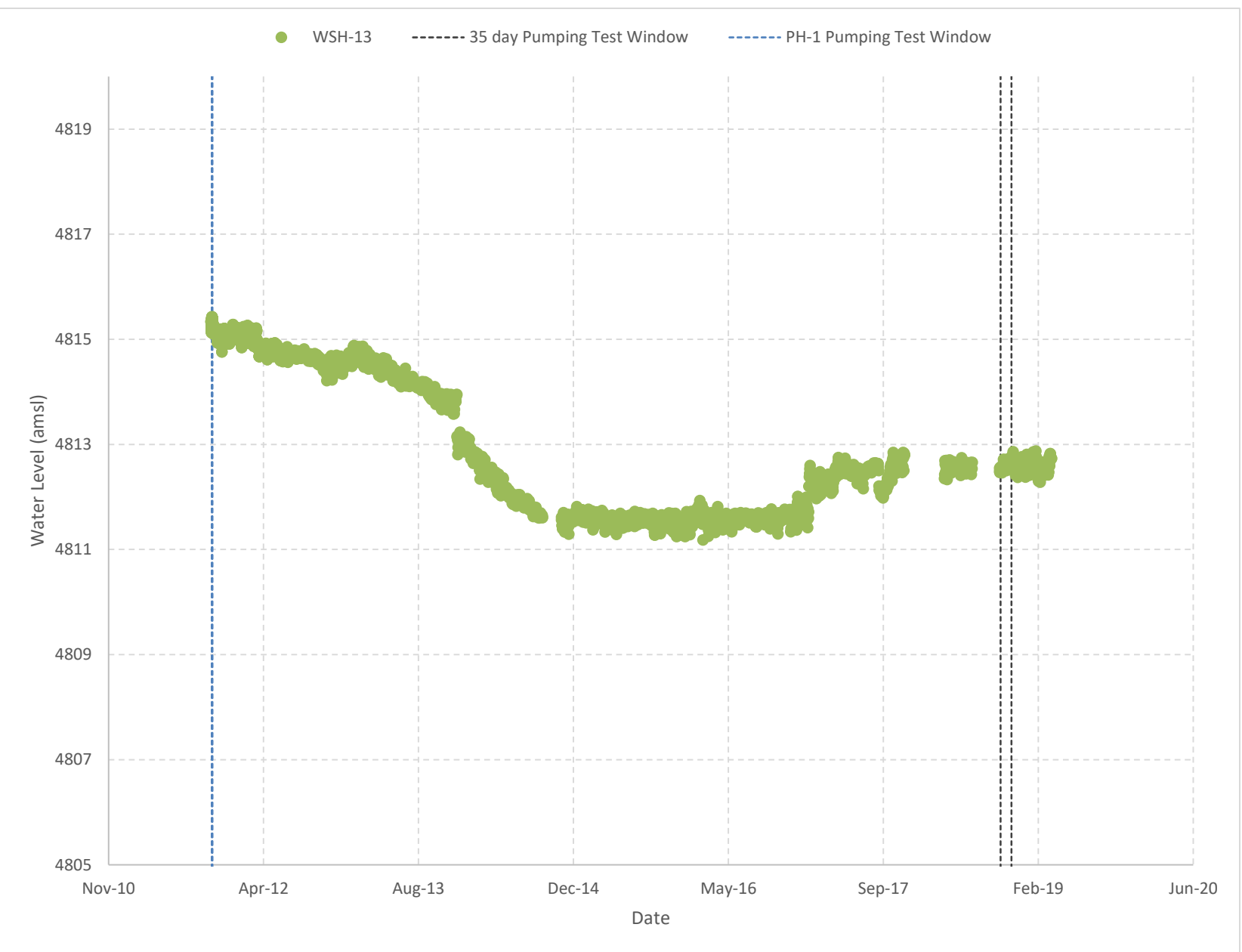




### WSH-11 Hydrograph

|         |             |                                           |             |
|---------|-------------|-------------------------------------------|-------------|
| CLIENT: | LNC         | PROJECT: Thacker Pass Hydrologic Baseline |             |
| JOB #:  | 3898        | DRAWN: BA                                 | CHECKED: TC |
| DATE:   | AUGUST 2019 | FIGURE: 3.17c                             |             |





### WSH-13 Hydrograph



REPORTING AND WATER MANAGEMENT CONSULTANTS

CLIENT: LNC

PROJECT: Thacker Pass Hydrologic Baseline

JOB #: 3898

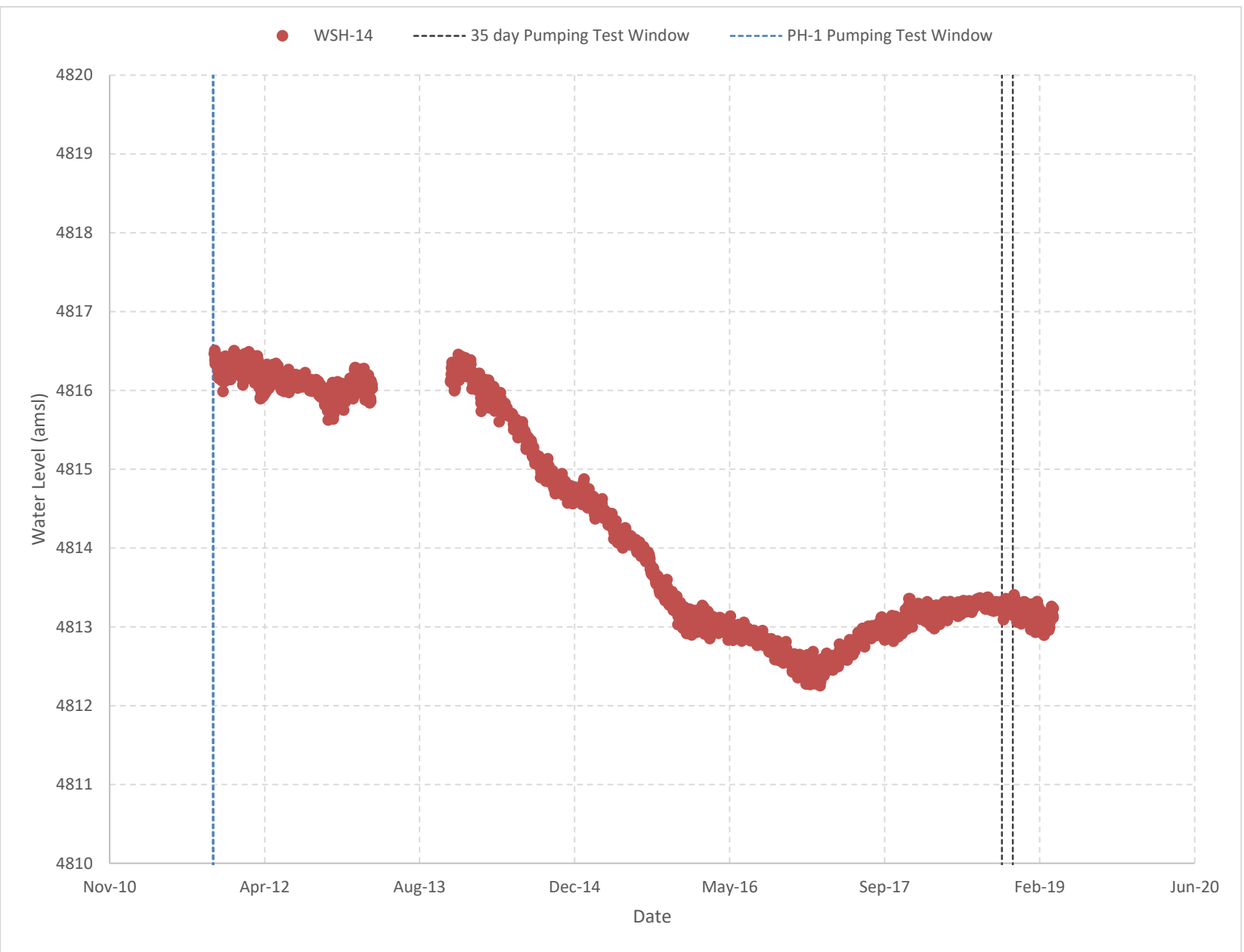
DRAWN: BA

CHECKED: TC

DATE: AUGUST 2019

FIGURE: 3.17d





### WSH-14 Hydrograph

CLIENT: LNC

JOB #: 3898

DATE: AUGUST 2019

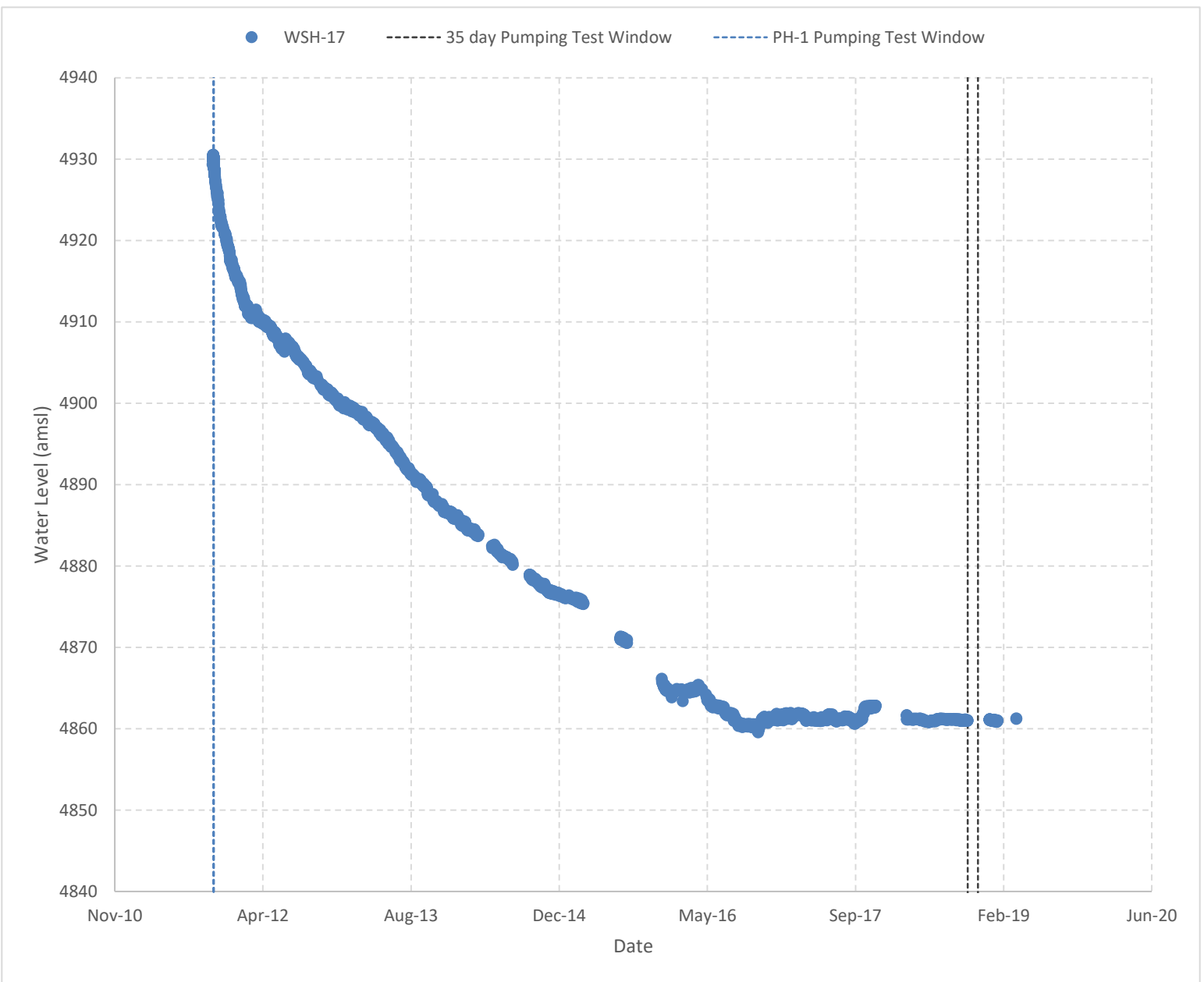
PROJECT: Thacker Pass Hydrologic Baseline

DRAWN: BA

FIGURE: 3.17e

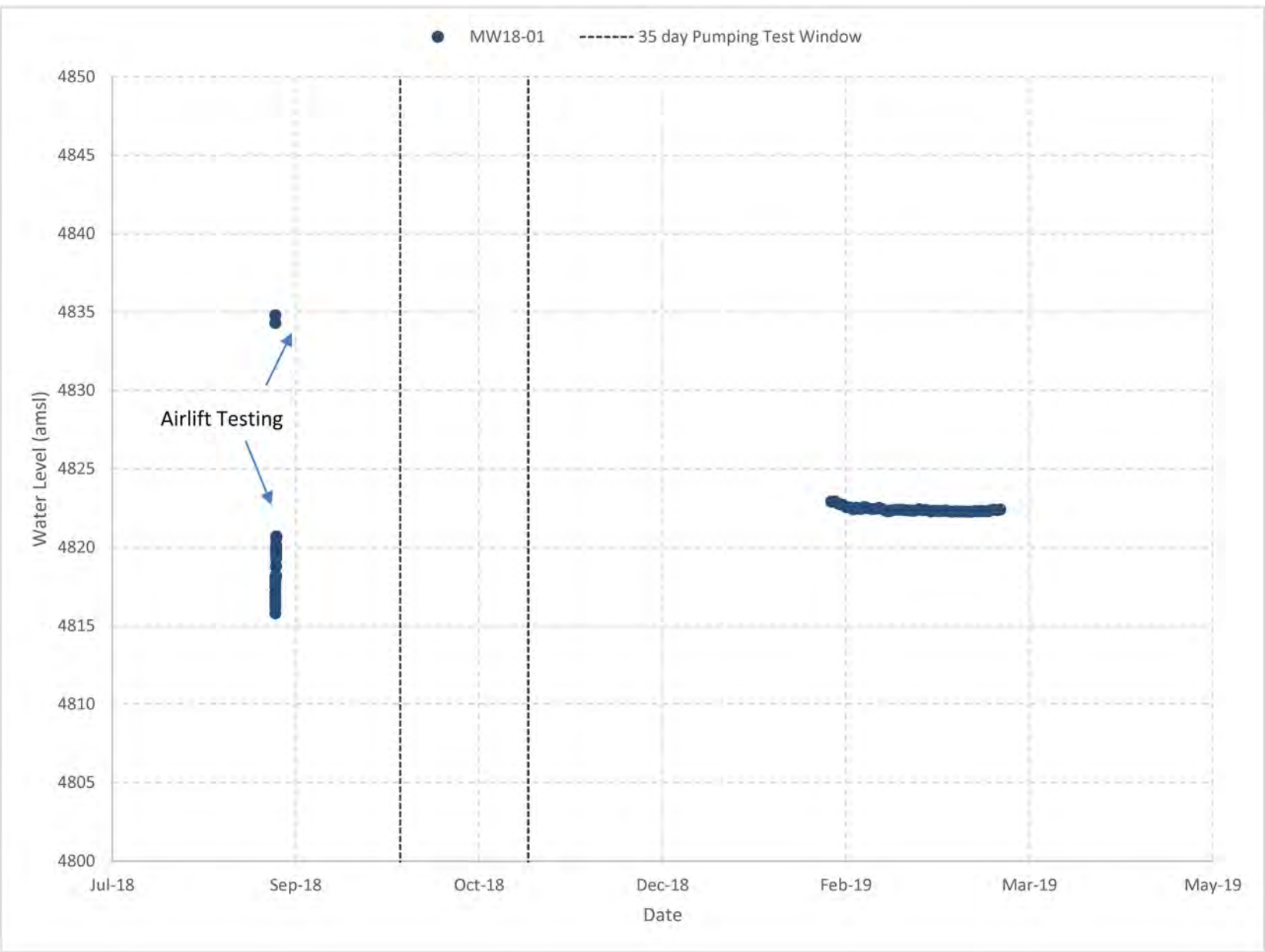
CHECKED: TC





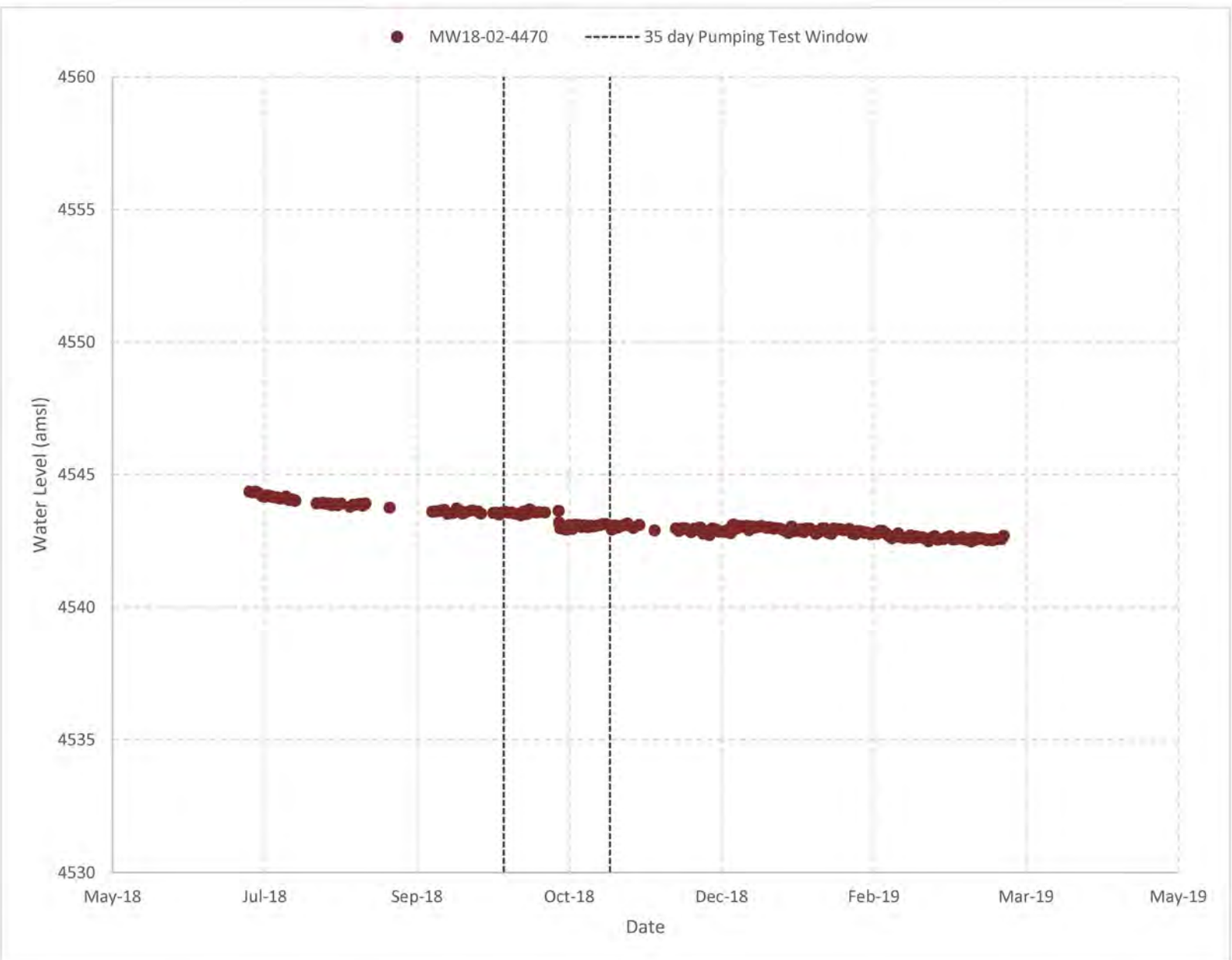
|                   |             |          |                                  |
|-------------------|-------------|----------|----------------------------------|
| WSH-17 Hydrograph |             |          |                                  |
| CLIENT:           | LNC         | PROJECT: | Thacker Pass Hydrologic Baseline |
| JOB #:            | 3898        | DRAWN:   | BA                               |
| DATE:             | AUGUST 2019 | CHECKED: | TC                               |





**MW18-01 Hydrograph**

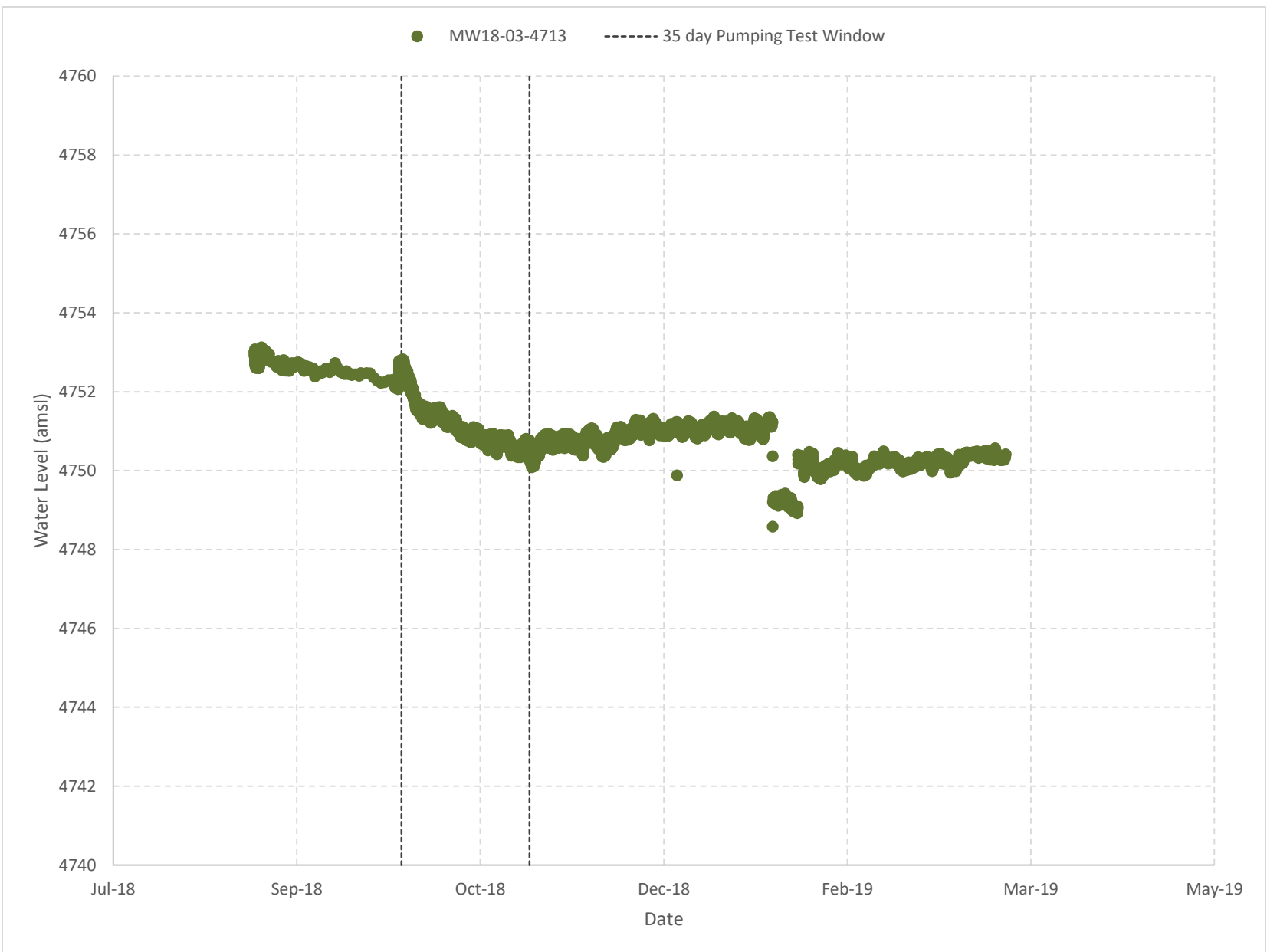
|         |             |          |                                  |
|---------|-------------|----------|----------------------------------|
| CLIENT: | LNC         | PROJECT: | Thacker Pass Hydrologic Baseline |
| JOB #:  | 3898        | DRAWN:   | BA                               |
| DATE:   | AUGUST 2019 | CHECKED: | TC                               |
| FIGURE: | 3.17g       |          |                                  |



### MM18-02 Hydrograph

|         |             |          |                                  |
|---------|-------------|----------|----------------------------------|
| CLIENT: | LNC         | PROJECT: | Thacker Pass Hydrologic Baseline |
| JOB #:  | 3898        | DRAWN:   | BA                               |
| DATE:   | AUGUST 2019 | CHECKED: | TC                               |
| FIGURE: | 3.17h       |          |                                  |

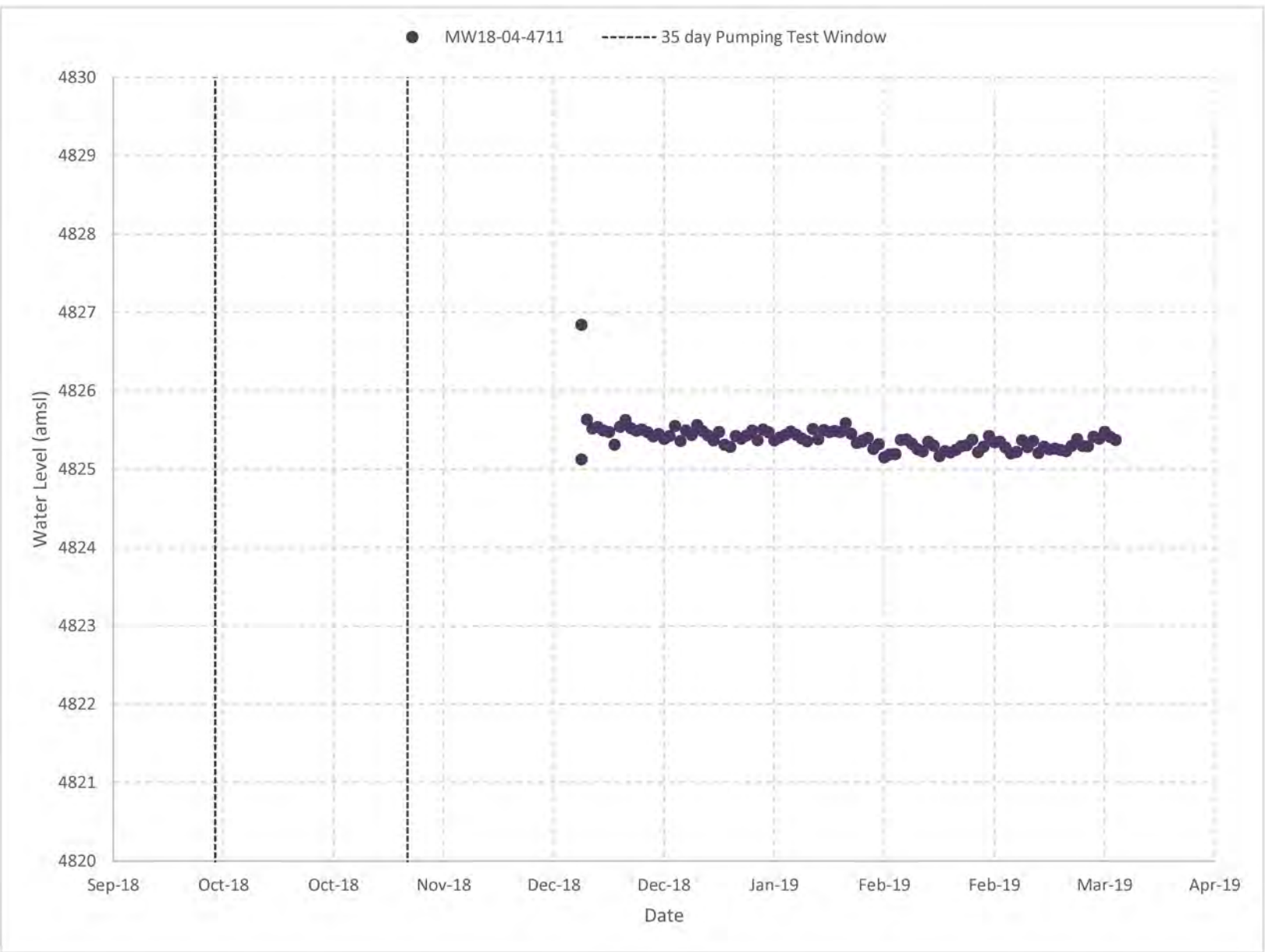




### MM18-03 Hydrograph



|         |             |                                           |             |
|---------|-------------|-------------------------------------------|-------------|
| CLIENT: | LNC         | PROJECT: Thacker Pass Hydrologic Baseline |             |
| JOB #:  | 3898        | DRAWN: BA                                 | CHECKED: TC |
| DATE:   | AUGUST 2019 | FIGURE: 3.17i                             |             |

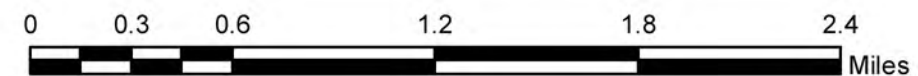
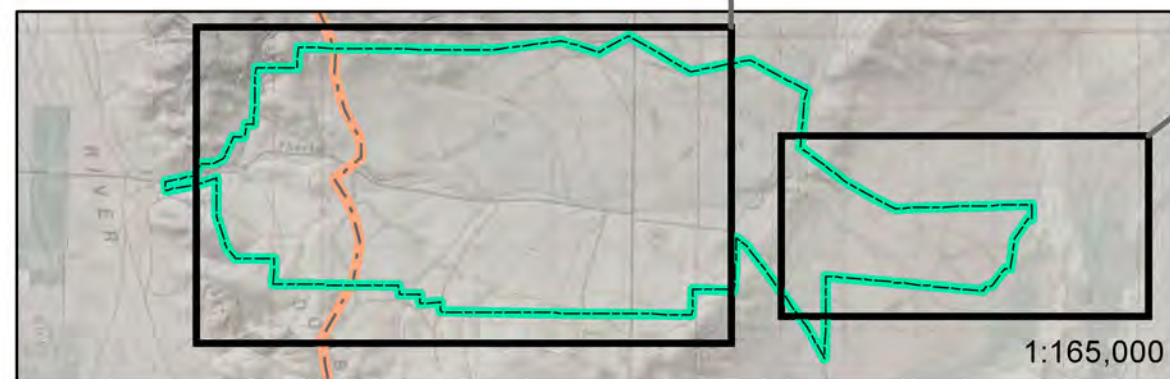
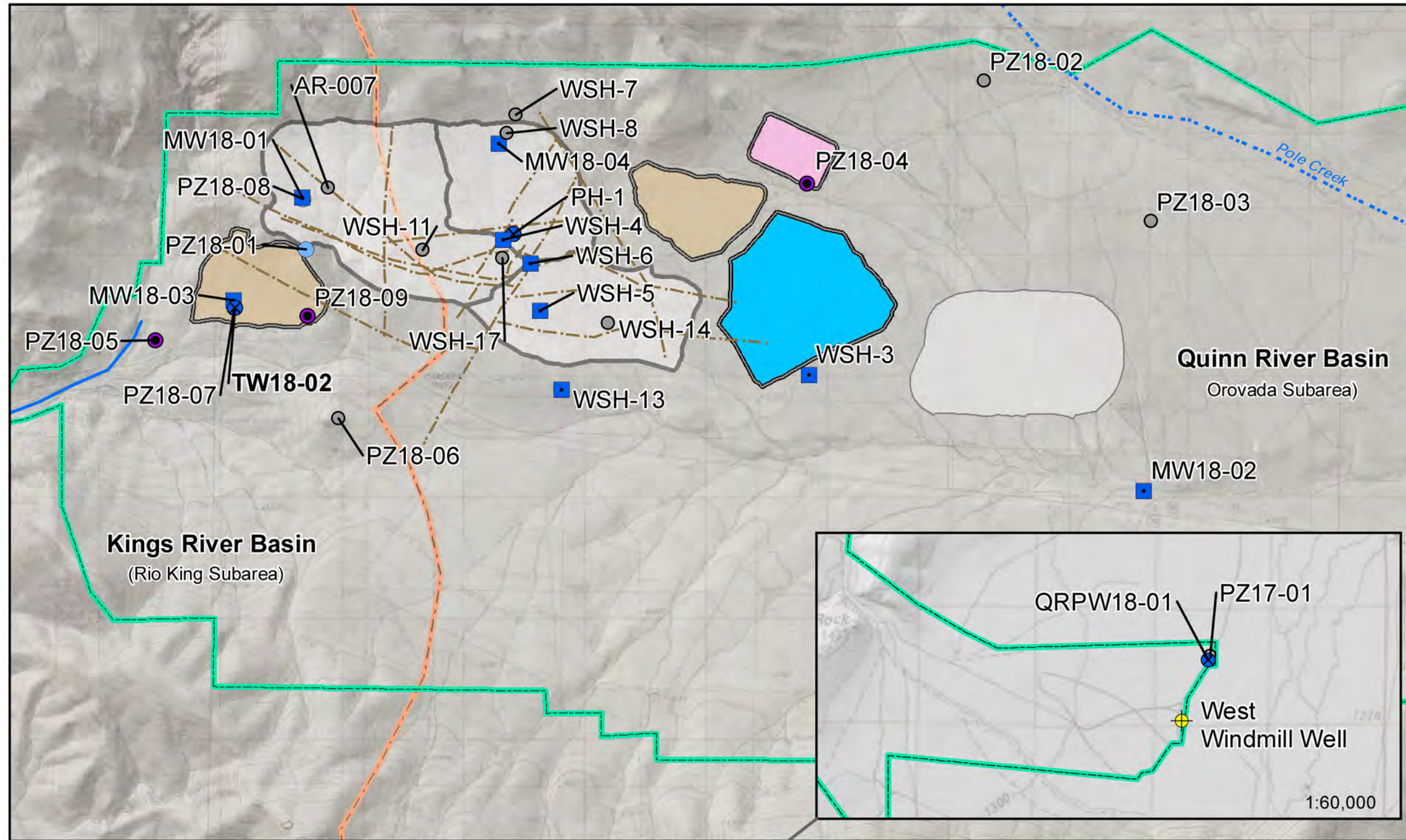


MM18-04 Hydrograph



|         |             |          |                                  |
|---------|-------------|----------|----------------------------------|
| CLIENT: | LNC         | PROJECT: | Thacker Pass Hydrologic Baseline |
| JOB #:  | 3698        | DRAWN:   | BA                               |
| DATE:   | AUGUST 2019 | CHECKED: | TC                               |
| FIGURE: | 3.17j       |          |                                  |





1:36,000

PREPARED SOLELY FOR THE USE OF OUR CLIENT AND NO REPRESENTATION OF ANY KIND IS MADE TO OTHER PARTIES WITH WHICH PITEAU ASSOCIATES ENGINEERING LTD. HAS NOT ENTERED INTO A CONTRACT.

#### Location Testing Type

- Pumping
- Airlift
- Injection
- Packer
- no test / no data
- Observation well

#### Surface Water

- Ephemeral
- Perennial
- Faults
- Sub-Pit Outline
- Tailings Facility
- Gangue Stockpile
- WRFs
- Growth Media Stockpile
- Thacker Pass Project AOI
- Hydrologic Basin Boundary

#### Testing Locations and Types



CLIENT: LNC  
PROJECT: Thacker Pass Hydrologic Baseline  
JOB: 3898  
DRAWN: BA CHECKED: TC  
DATE: AUGUST 2019  
FIGURE: 3.18





# Packer Testing Assembly

CLIENT: LNC

JOB #: 3898

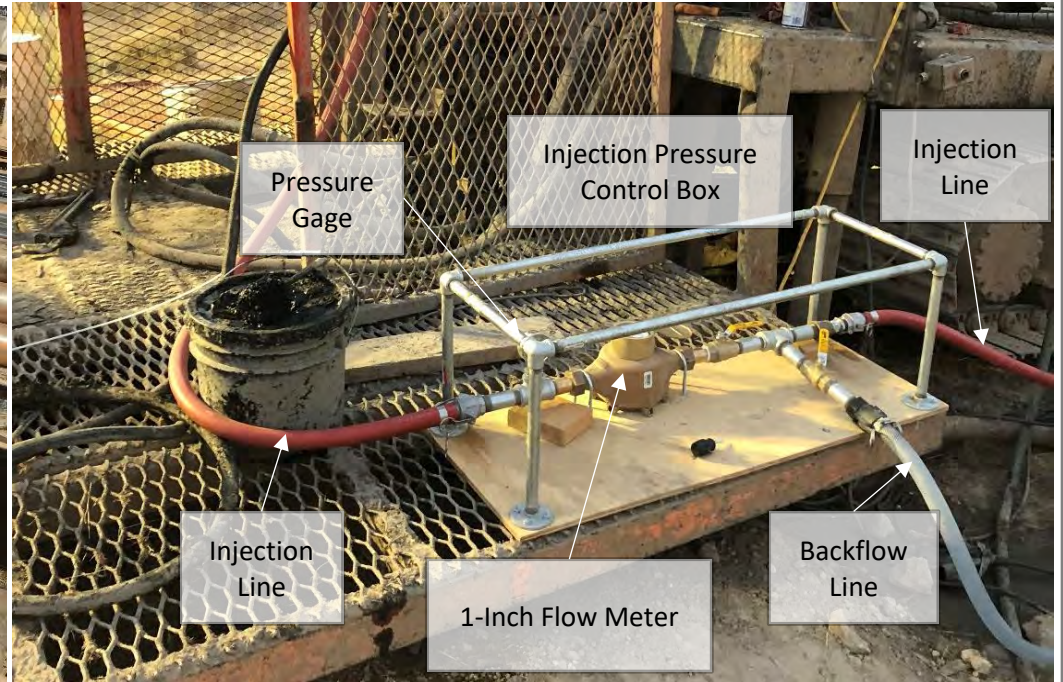
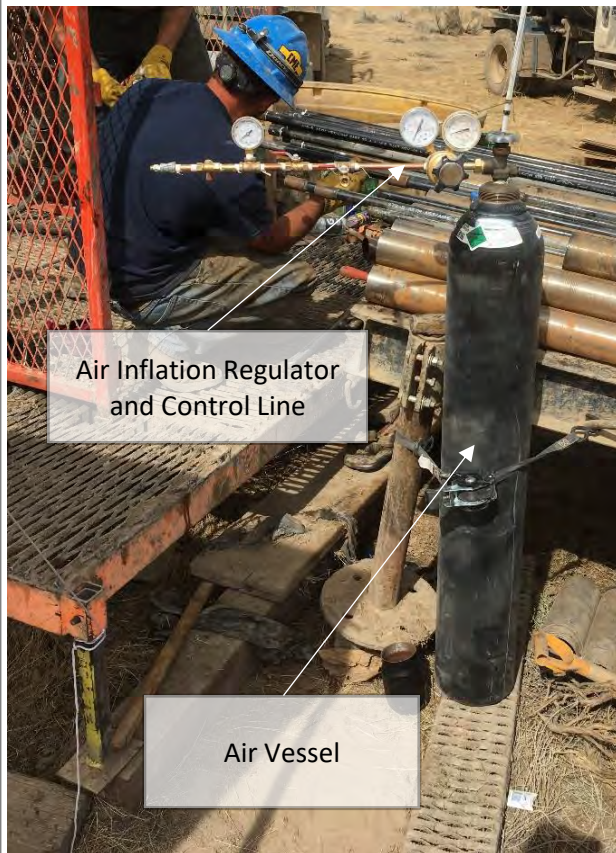
DATE: AUGUST 2019

PROJECT: Thacker Pass Hydrologic Baseline

DRAWN: BA

CHECKED: TC

FIGURE: 3.19





| PACKER TESTING - CONSTANT HEAD TEST (Hvorslev, 1951)                             |          |                    |                         |                                                    |      |                   |                |       |
|----------------------------------------------------------------------------------|----------|--------------------|-------------------------|----------------------------------------------------|------|-------------------|----------------|-------|
| Date of Test:                                                                    |          | 14-Aug-18          |                         | Apparent Current Depth of Drill Hole (m):          |      |                   | 92.35          |       |
| Drill Hole No:                                                                   |          | PZ18-09            |                         | Test Section from (m):                             |      | 90.83             | to:            | 92.35 |
| Test No:                                                                         |          | 1                  |                         | Length of Test Section (m):                        |      |                   | 1.52           |       |
| Packer Type:                                                                     |          | QSP Straddle       |                         | Static Groundwater Level (vertical m below datum): |      |                   | 40.84          |       |
| Inflation Pressure (kPa):                                                        |          | 1379               |                         | Height of Gauge (m above datum):                   |      |                   | 0.00           |       |
| Test Material                                                                    |          | ture zone in clays |                         | Drill Hole Dip (deg from horizontal):              |      |                   | 0              |       |
| Diameter of Drill Hole (mm):                                                     |          | 96.0               |                         | Vertical Depth of Drill Hole (m):                  |      |                   | 0.00           |       |
| ID of Drilling Rods (mm):                                                        |          | n/a                |                         | Vertical Depth of Test Section Center (m):         |      |                   | 0.00           |       |
| If groundwater level is unknown during the test use depth of test section center |          |                    |                         |                                                    |      |                   |                |       |
| Injection                                                                        |          |                    | Cummulative Consumption | Friction Head Loss                                 |      | Total Excess Head | Injection Rate | Note  |
| Stage                                                                            | Duration | Pressure           |                         | Packer                                             | Hose |                   |                |       |
| no.                                                                              | min      | kPa                | liters                  | m                                                  | m    | m                 | L/s            |       |
| zero                                                                             |          | 0                  |                         | 0                                                  | 0    | 0                 | 0.00           |       |
| #1                                                                               | 10       | 20.68              | 89.3                    | 1.56                                               | 0.00 | 41.39             | 0.15           |       |
| #2                                                                               | 10       | 48.26              | 91.6                    | 1.61                                               | 0.00 | 44.16             | 0.15           |       |
| #3                                                                               | 10       | 68.95              | 117.3                   | 2.11                                               | 0.00 | 45.77             | 0.20           |       |
| #4                                                                               | 10       | 48.26              | 80.6                    | 1.40                                               | 0.00 | 44.36             | 0.13           |       |
| #5                                                                               | 10       | 20.68              | 74.6                    | 1.29                                               | 0.00 | 41.66             | 0.12           |       |

Flow vs Excess Head

| Stage | Total Excess Head (m) | Average Flow (L/s) |
|-------|-----------------------|--------------------|
| #1    | 41.39                 | 0.15               |
| #5    | 41.66                 | 0.12               |
| #2    | 44.16                 | 0.15               |
| #4    | 44.36                 | 0.13               |
| #3    | 45.77                 | 0.20               |

|                 |           |         |         |         |         |           |        |
|-----------------|-----------|---------|---------|---------|---------|-----------|--------|
| Bulk K<br>(m/s) | Stage no. |         |         |         |         | Average K | Lugeon |
|                 | #1        | #2      | #3      | #2 back | #1 back |           |        |
|                 | 1.3E-06   | 1.3E-06 | 1.5E-06 | 1.1E-06 | 1.1E-06 |           |        |
|                 |           |         |         |         |         | 1.3E-06   | 13.70  |



PITEAU ASSOCIATES

GEOTECHNICAL AND WATER MANAGEMENT CONSULTANTS

PROJ. NO.:

3898

PROJECT:

LNC EIS

DETAILS:

PZ18-09 Packer Test 1

ENG.

TC

Checked:

TC

DATE

AUG 2019

Figure:

3.20

| PACKER TESTING - CONSTANT HEAD TEST (Hvorslev, 1951)                                    |                 |              |                                                    |                    |        |                   |                |              |
|-----------------------------------------------------------------------------------------|-----------------|--------------|----------------------------------------------------|--------------------|--------|-------------------|----------------|--------------|
| Date of Test:                                                                           | 21-Sep-18       |              | Apparent Current Depth of Drill Hole (m):          |                    | 73.76  |                   |                |              |
| Drill Hole No:                                                                          | <b>PZ18-05</b>  |              | Test Section from (m):                             | 72.24              | to:    | 73.76             |                |              |
| Test No:                                                                                | 1               |              | Length of Test Section (m):                        |                    |        | 1.52              |                |              |
| Packer Type:                                                                            | QSP Straddle    |              | Static Groundwater Level (vertical m below datum): |                    |        | 10.36             |                |              |
| Inflation Pressure (kPa):                                                               | 2137            |              | Height of Gauge (m above datum):                   |                    |        | 0.00              |                |              |
| Test Material                                                                           | Banded Rhyolite |              | Drill Hole Dip (deg from horizontal):              |                    |        | 0                 |                |              |
| Diameter of Drill Hole (mm):                                                            | 96.0            |              | Vertical Depth of Drill Hole (m):                  |                    |        | 0.00              |                |              |
| ID of Drilling Rods (mm):                                                               | n/a             |              | Vertical Depth of Test Section Center (m):         |                    |        | 0.00              |                |              |
| <i>If groundwater level is unknown during the test use depth of test section center</i> |                 |              |                                                    |                    |        |                   |                |              |
| Injection                                                                               |                 |              | Cummulative Consumption                            | Friction Head Loss |        | Total Excess Head | Injection Rate | Note         |
| Stage no.                                                                               | Duration min    | Pressure kPa |                                                    | Packer m           | Hose m |                   |                |              |
| zero                                                                                    |                 | 0            |                                                    | 0                  | 0      | 0                 | 0.00           |              |
| #1                                                                                      | 5               | 344.74       | 1.0                                                | 0.13               | 0.00   | 45.39             | 0.00           |              |
| #2                                                                                      | 5               | 586.05       | 2.3                                                | 0.17               | 0.00   | 69.96             | 0.01           |              |
| #3                                                                                      | 5               | 792.90       | 20.8                                               | 0.73               | 0.00   | 90.48             | 0.07           | Hydrofracked |
| #4                                                                                      | 5               | 551.58       | 3.9                                                | 0.21               | 0.00   | 66.40             | 0.01           | Hydrofracked |
| #5                                                                                      | 5               | 310.26       | 1.7                                                | 0.15               | 0.00   | 41.85             | 0.01           |              |

Flow vs Excess Head

| Stage | Total Excess Head (m) | Average Flow (L/s) |
|-------|-----------------------|--------------------|
| #1    | 45.39                 | 0.00               |
| #2    | 69.96                 | 0.01               |
| #3    | 90.48                 | 0.07               |
| #4    | 66.40                 | 0.01               |
| #5    | 41.85                 | 0.01               |

| Bulk K (m/s) | Stage no. |         |         |         |         | Average K | Lugeon |
|--------------|-----------|---------|---------|---------|---------|-----------|--------|
|              | #1        | #2      | #3      | #2 back | #1 back |           |        |
|              | 2.7E-08   | 3.9E-08 | 2.8E-07 | 7.0E-08 | 4.9E-08 | 3.8E-08   | 1.01   |

**PITEAU ASSOCIATES** lvd  
GEOTECHNICAL AND WATER MANAGEMENT CONSULTANTS

|            |                       |          |      |
|------------|-----------------------|----------|------|
| PROJ. NO.: | 3898                  |          |      |
| PROJECT:   | LNC EIS               |          |      |
| DETAILS:   | PZ18-05 Packer Test 1 |          |      |
| ENG.       | TC                    | Checked: | TC   |
| DATE       | AUG 2019              | Figure:  | 3.21 |



| PACKER TESTING - CONSTANT HEAD TEST (Hvorslev, 1951)                             |          |              |                         |                                                    |      |                   |                |       |
|----------------------------------------------------------------------------------|----------|--------------|-------------------------|----------------------------------------------------|------|-------------------|----------------|-------|
| Date of Test:                                                                    |          | 9-Oct-18     |                         | Apparent Current Depth of Drill Hole (m):          |      |                   | 65.53          |       |
| Drill Hole No:                                                                   |          | PZ18-04      |                         | Test Section from (m):                             |      | 38.10             | to:            | 65.53 |
| Test No:                                                                         |          | 2            |                         | Length of Test Section (m):                        |      |                   | 27.43          |       |
| Packer Type:                                                                     |          | QSP Straddle |                         | Static Groundwater Level (vertical m below datum): |      |                   | 10.36          |       |
| Inflation Pressure (kPa):                                                        |          | 1586         |                         | Height of Gauge (m above datum):                   |      |                   | 0.00           |       |
| Test Material                                                                    |          | Claystone    |                         | Drill Hole Dip (deg from horizontal):              |      |                   | 0              |       |
| Diameter of Drill Hole (mm):                                                     |          | 96.0         |                         | Vertical Depth of Drill Hole (m):                  |      |                   | 0.00           |       |
| ID of Drilling Rods (mm):                                                        |          | n/a          |                         | Vertical Depth of Test Section Center (m):         |      |                   | 0.00           |       |
| If groundwater level is unknown during the test use depth of test section center |          |              |                         |                                                    |      |                   |                |       |
| Injection                                                                        |          |              | Cummulative Consumption | Friction Head Loss                                 |      | Total Excess Head | Injection Rate | Note  |
| Stage                                                                            | Duration | Pressure     |                         | Packer                                             | Hose |                   |                |       |
| no.                                                                              | min      | kPa          | liters                  | m                                                  | m    | m                 | L/s            |       |
| zero                                                                             |          | 0            |                         | 0                                                  | 0    | 0                 | 0.00           |       |
| #1                                                                               | 5        | 206.84       | 43.5                    | 1.52                                               | 0.00 | 29.93             | 0.15           |       |
| #2                                                                               | 10       | 379.21       | 290.3                   | 6.35                                               | 0.00 | 42.68             | 0.48           |       |
| #3                                                                               | 10       | 482.63       | 449.3                   | 11.61                                              | 0.00 | 47.97             | 0.75           |       |
| #4                                                                               | 5        | 344.74       | 124.9                   | 5.22                                               | 0.00 | 40.30             | 0.42           |       |
| #5                                                                               | 5        | 206.84       | 81.4                    | 3.07                                               | 0.00 | 28.38             | 0.27           |       |

Flow vs Excess Head

| Stage | Total Excess Head (m) | Average Flow (L/s) |
|-------|-----------------------|--------------------|
| #1    | 30.1                  | 0.15               |
| #5    | 28.4                  | 0.27               |
| #4    | 40.3                  | 0.42               |
| #2    | 42.7                  | 0.48               |
| #3    | 48.0                  | 0.75               |

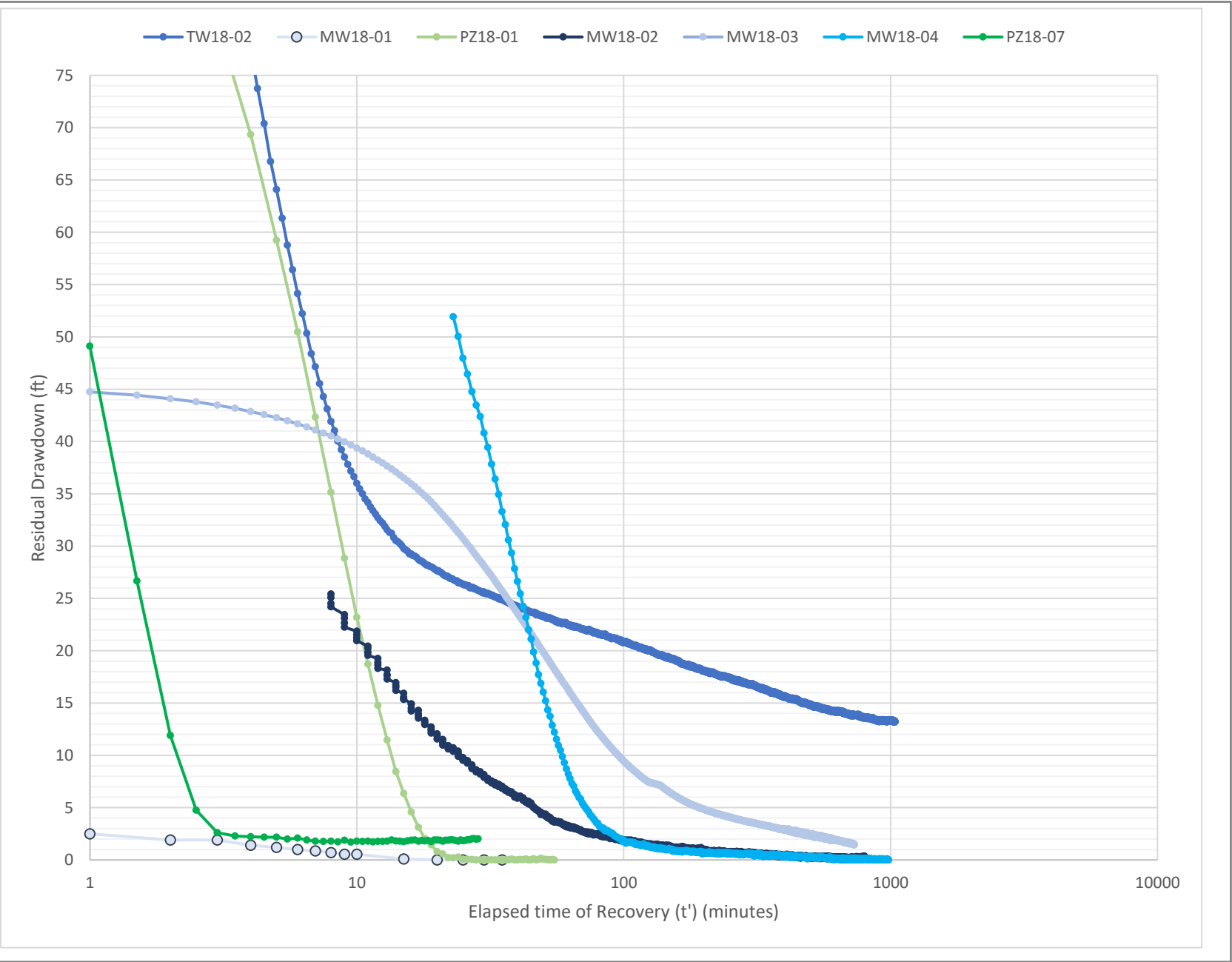
|                 |           |         |         |         |         |           |        |
|-----------------|-----------|---------|---------|---------|---------|-----------|--------|
| Bulk K<br>(m/s) | Stage no. |         |         |         |         | Average K | Lugeon |
|                 | #1        | #2      | #3      | #2 back | #1 back |           |        |
|                 | 1.8E-07   | 4.2E-07 | 5.8E-07 | 3.8E-07 | 3.5E-07 |           |        |
|                 |           |         |         |         |         | 3.2E-07   | 2.26   |



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GEOTECHNICAL AND WATER MANAGEMENT CONSULTANTS

|            |                       |          |      |
|------------|-----------------------|----------|------|
| PROJ. NO.: | 3898                  |          |      |
| PROJECT:   | LNC EIS               |          |      |
| DETAILS:   | PZ18-04 Packer Test 2 |          |      |
| ENG.       | TC                    | Checked: | TC   |
| DATE       | AUG 2019              | Figure:  | 3.22 |



Airlift Recovery / Injection Analysis: Composite Plot

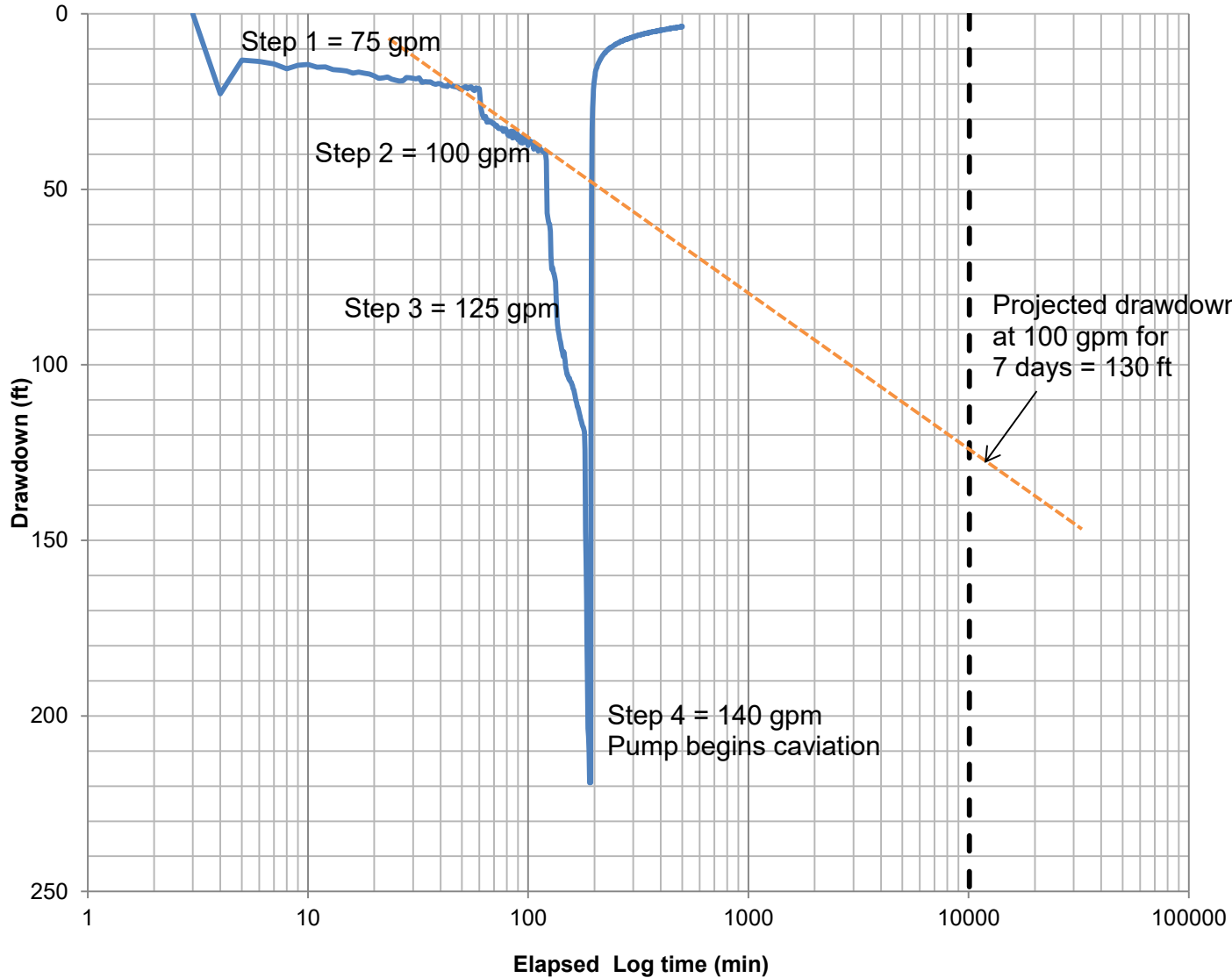


|         |             |          |                                  |
|---------|-------------|----------|----------------------------------|
| CLIENT: | LNC         | PROJECT: | Thacker Pass Hydrologic Baseline |
| JOB #:  | 3898        | DRAWN:   | BA                               |
| DATE:   | AUGUST 2019 | CHECKED: | TC                               |
| FIGURE: | 3.23        |          |                                  |





|                |             |          |                                  |
|----------------|-------------|----------|----------------------------------|
| PH-1 Step Test |             |          |                                  |
| CLIENT:        | LNC         | PROJECT: | Thacker Pass Hydrologic Baseline |
| JOB #:         | 3898        | DRAWN:   | BA                               |
| DATE:          | AUGUST 2019 | CHECKED: | TC                               |
| FIGURE:        | 3.24        |          |                                  |

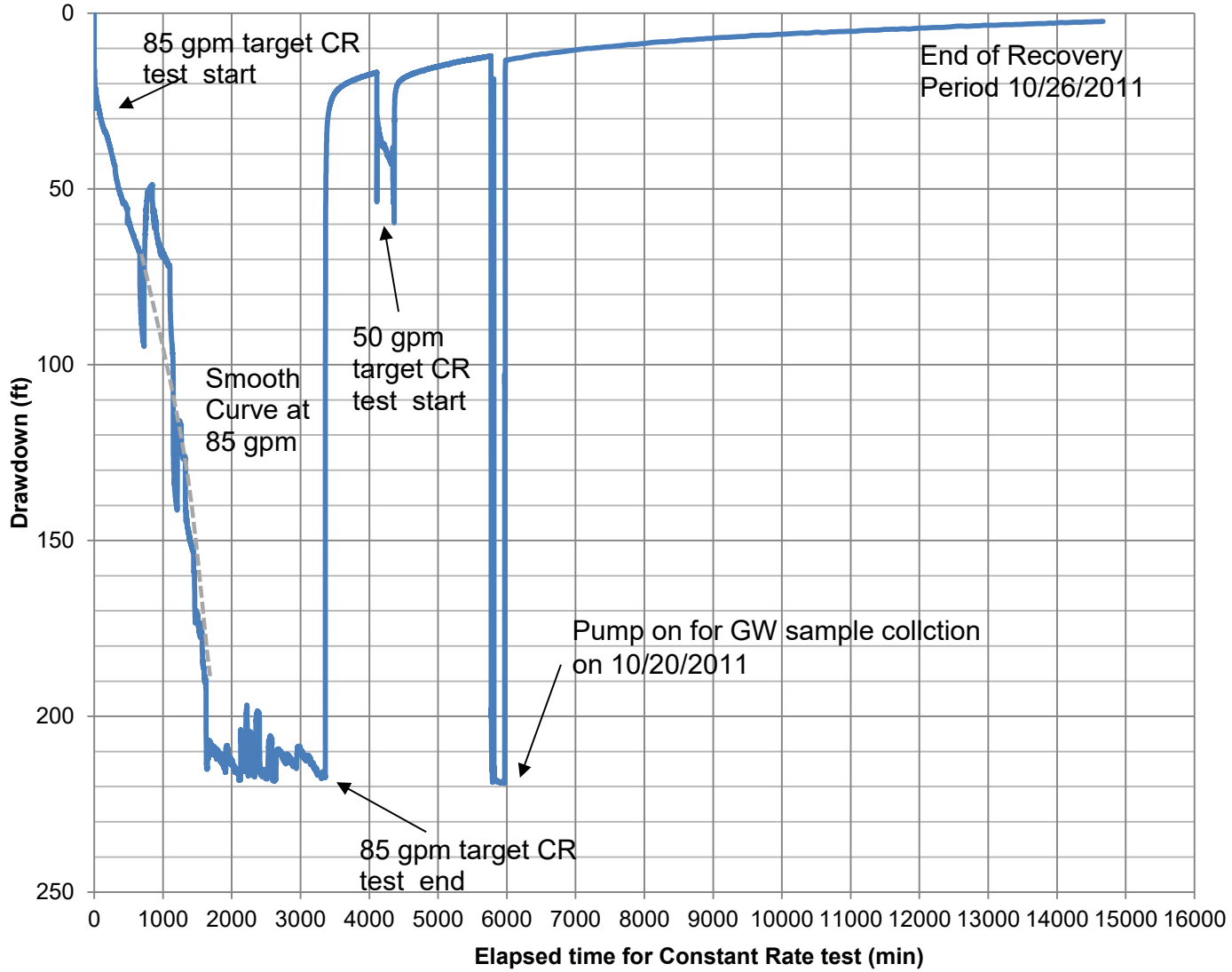




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GROUNDWATER ANALYSIS & HYDROLOGIC CONSULTING

### PH-1 Constant Rate Hydrograph

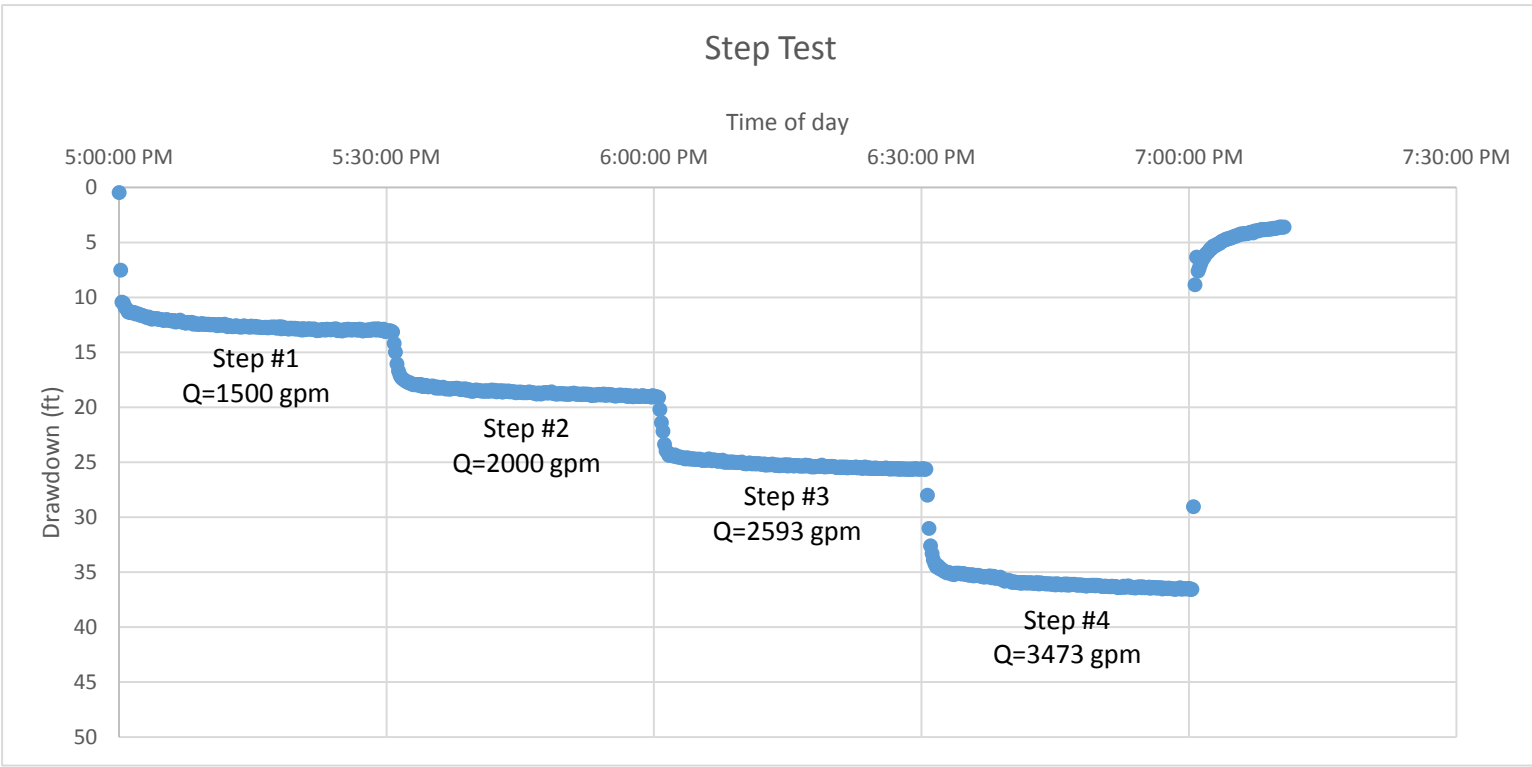
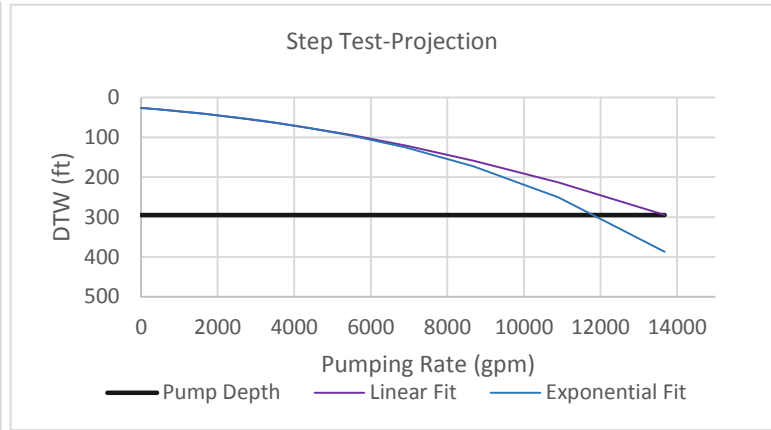
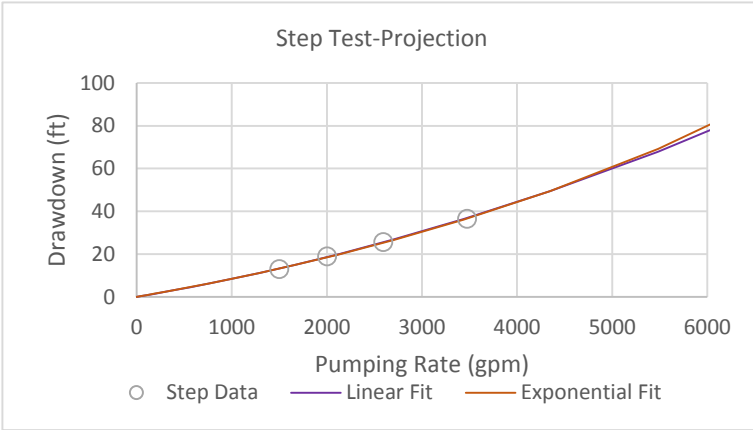
|         |             |          |                                  |
|---------|-------------|----------|----------------------------------|
| CLIENT: | LNC         | PROJECT: | Thacker Pass Hydrologic Baseline |
| JOB #:  | 3898        | DRAWN:   | BA                               |
| DATE:   | AUGUST 2019 | CHECKED: | TC                               |
| FIGURE: | 3.25        |          |                                  |

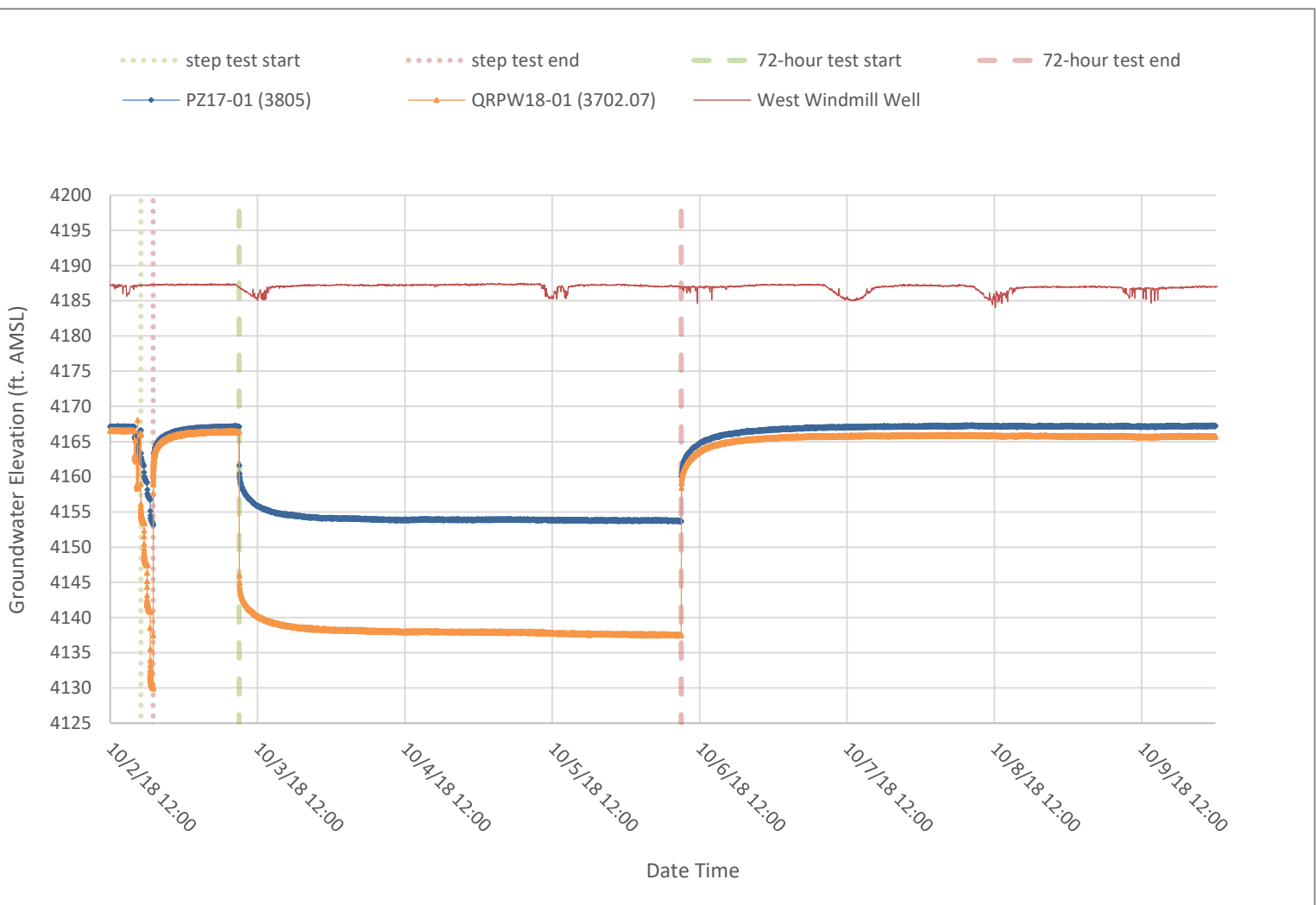




**QRPW18-01 Step-Test Analysis**

|         |             |          |                                  |
|---------|-------------|----------|----------------------------------|
| CLIENT: | LNC         | PROJECT: | Thacker Pass Hydrologic Baseline |
| JOB #:  | 3898        | DRAWN:   | BA                               |
| DATE:   | August 2019 | CHECKED: | TC                               |
| FIGURE: | 3.26        |          |                                  |



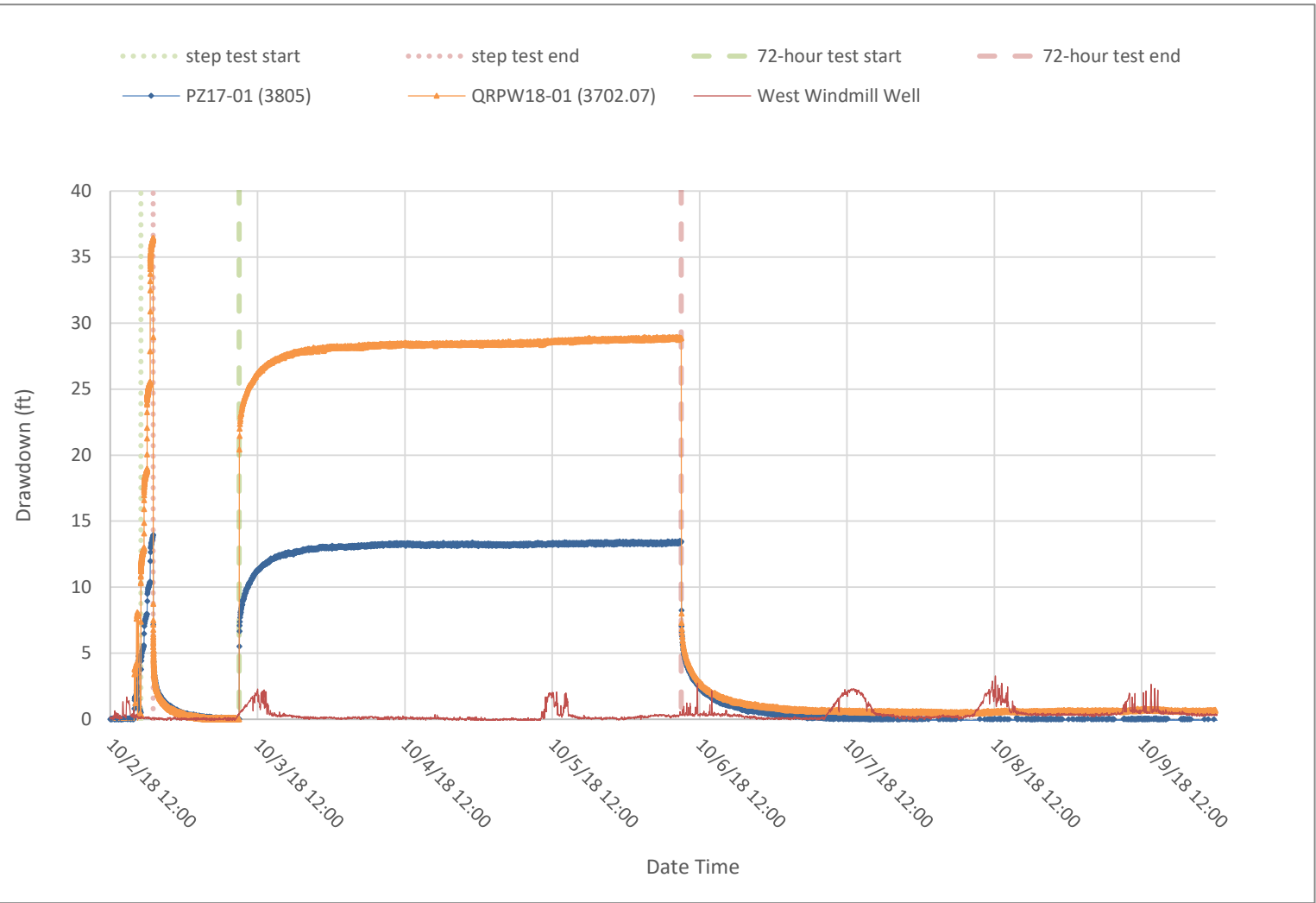


### QRPW18-01 Pumping Test Hydrograph with Observation Wells



|                   |                                           |
|-------------------|-------------------------------------------|
| CLIENT: LNC       | PROJECT: Thacker Pass Hydrologic Baseline |
| JOB #: 3898       | DRAWN: GS                                 |
| DATE: AUGUST 2019 | CHECKED: TC                               |
| FIGURE: 3.27      |                                           |



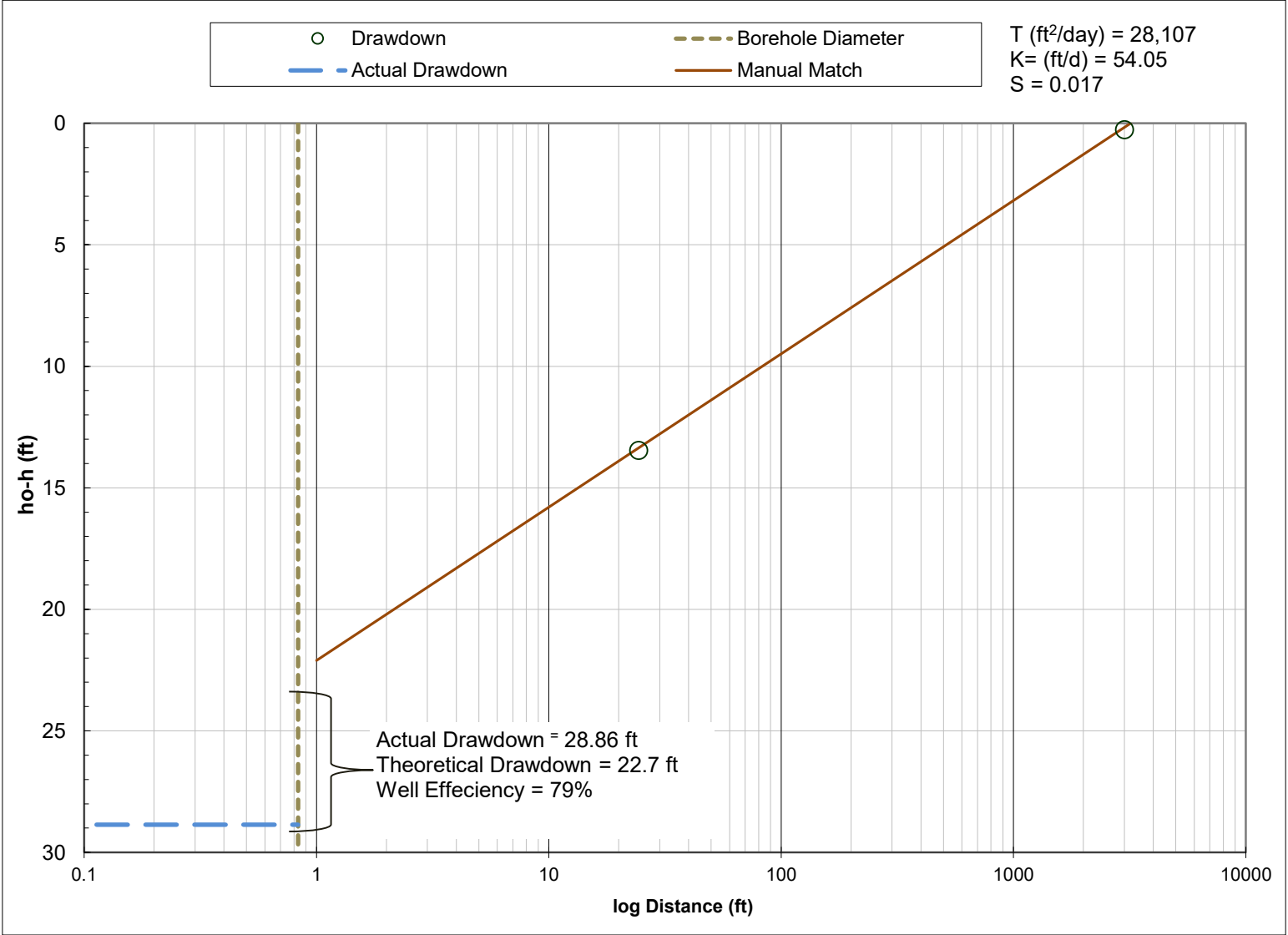


### QRPW18-01 Pumping Test Drawdown with Observation Wells

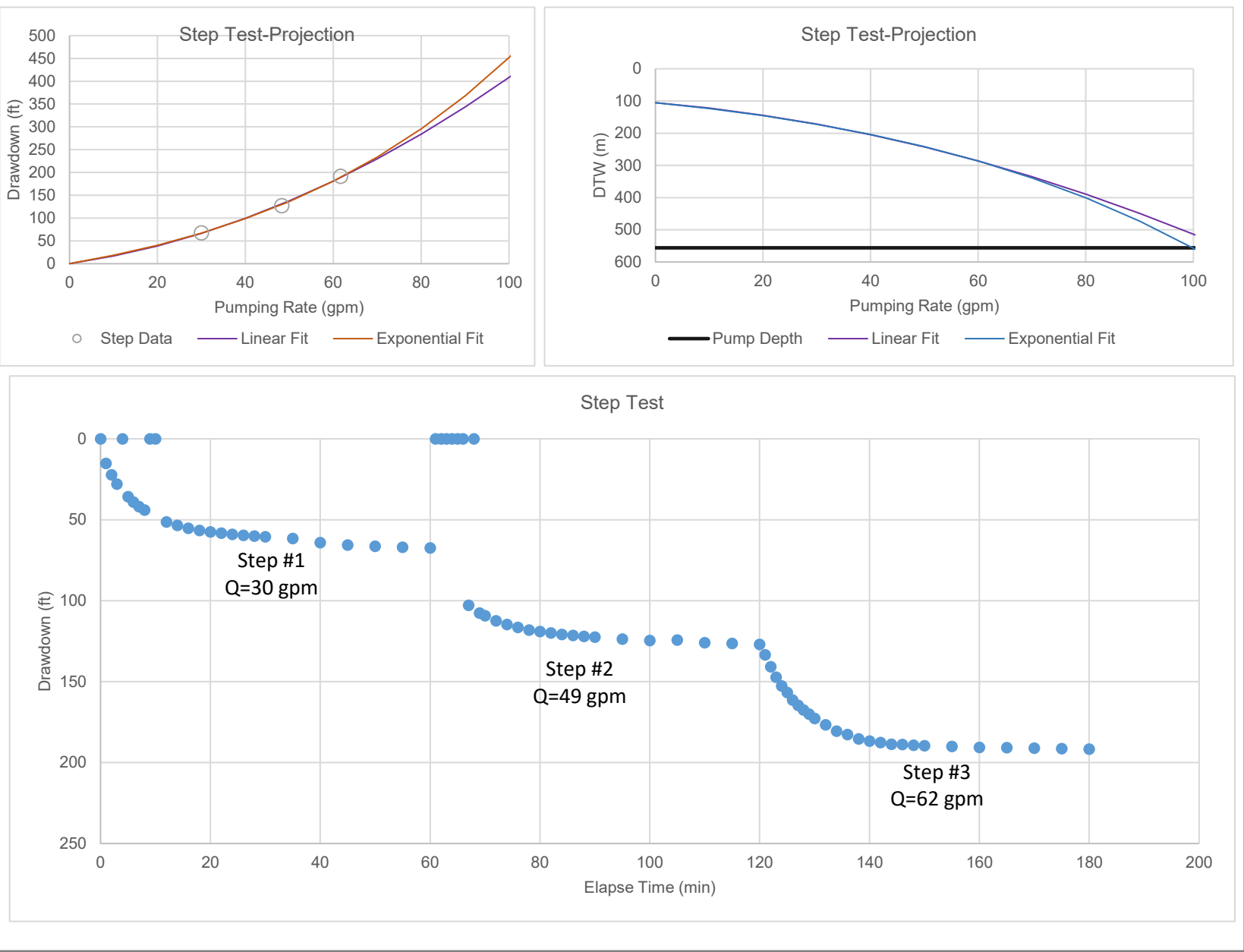


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HYDROGEOLOGICAL AND WATER MANAGEMENT CONSULTANTS

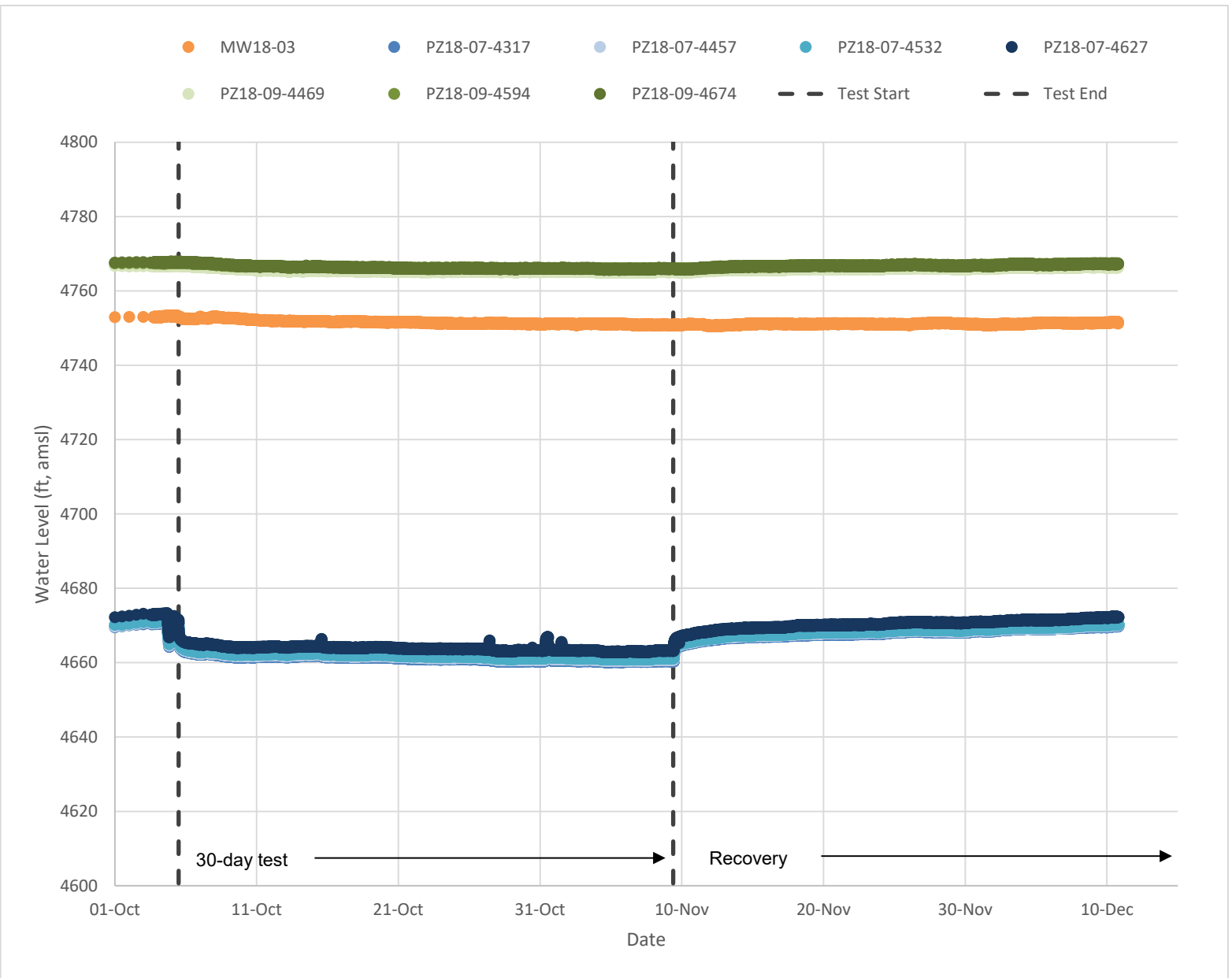
|                   |                                           |
|-------------------|-------------------------------------------|
| CLIENT: LNC       | PROJECT: Thacker Pass Hydrologic Baseline |
| JOB #: 3898       | DRAWN: GS                                 |
| DATE: AUGUST 2019 | CHECKED: TC                               |
| FIGURE: 3.28      |                                           |







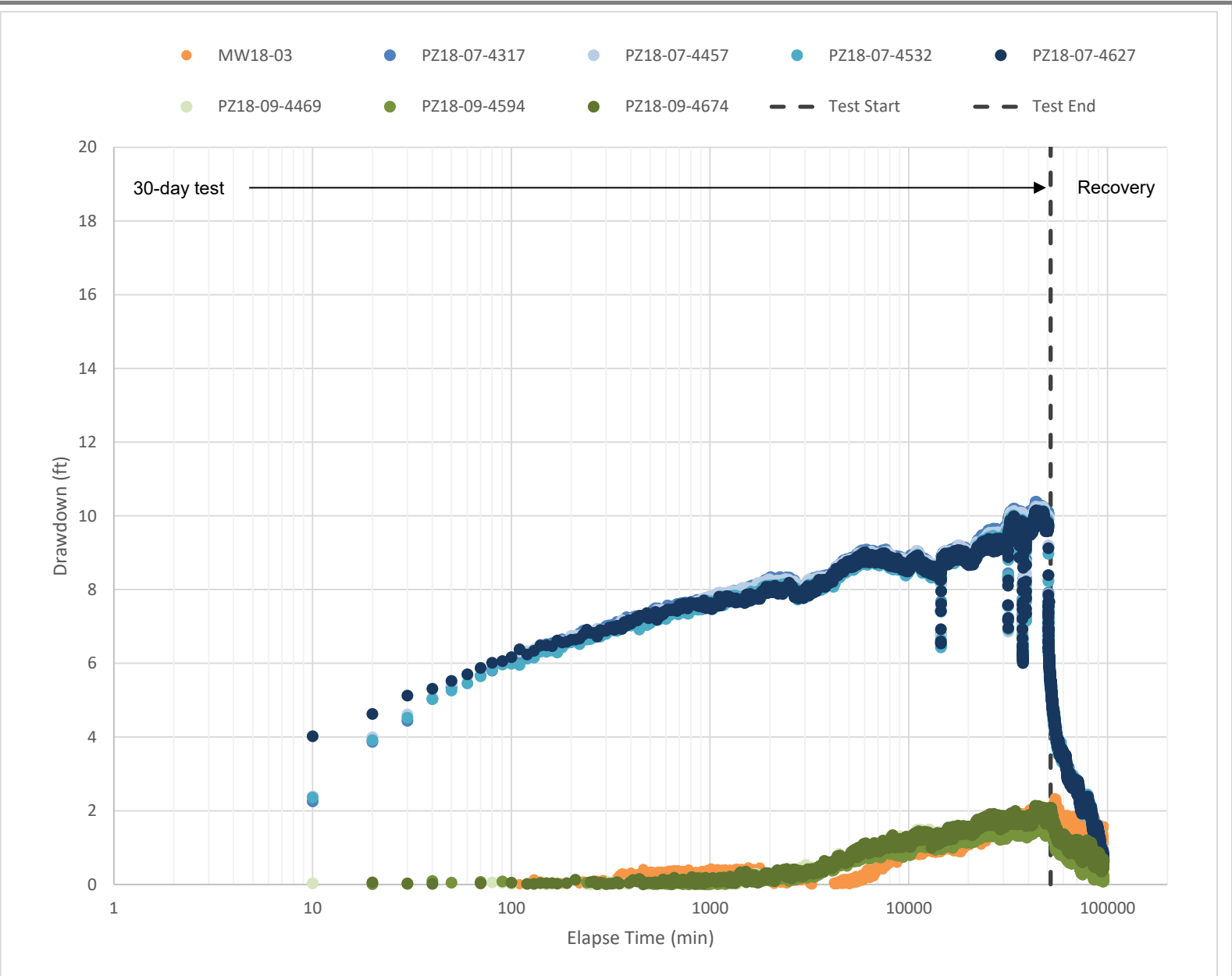
|                                                                                                                                                         |  |              |                                           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------|-------------------------------------------|
| TW18-02 Step-Test Analysis                                                                                                                              |  |              |                                           |
| <br>PITEAU ASSOCIATES<br>GEOTECHNICAL AND WATER MANAGEMENT CONSULTANTS |  | CLIENT: LNC  | PROJECT: Thacker Pass Hydrologic Baseline |
| JOB #: 3898                                                                                                                                             |  | DRAWN: BA    | CHECKED: TC                               |
| DATE: AUGUST 2019                                                                                                                                       |  | FIGURE: 3.30 |                                           |



### TW18-02 Water Level Hydrograph

|                   |                                           |
|-------------------|-------------------------------------------|
| CLIENT: LNC       | PROJECT: Thacker Pass Hydrologic Baseline |
| JOB #: 3898       | DRAWN: TC                                 |
| DATE: AUGUST 2019 | CHECKED: TC                               |
| FIGURE: 3.31      |                                           |



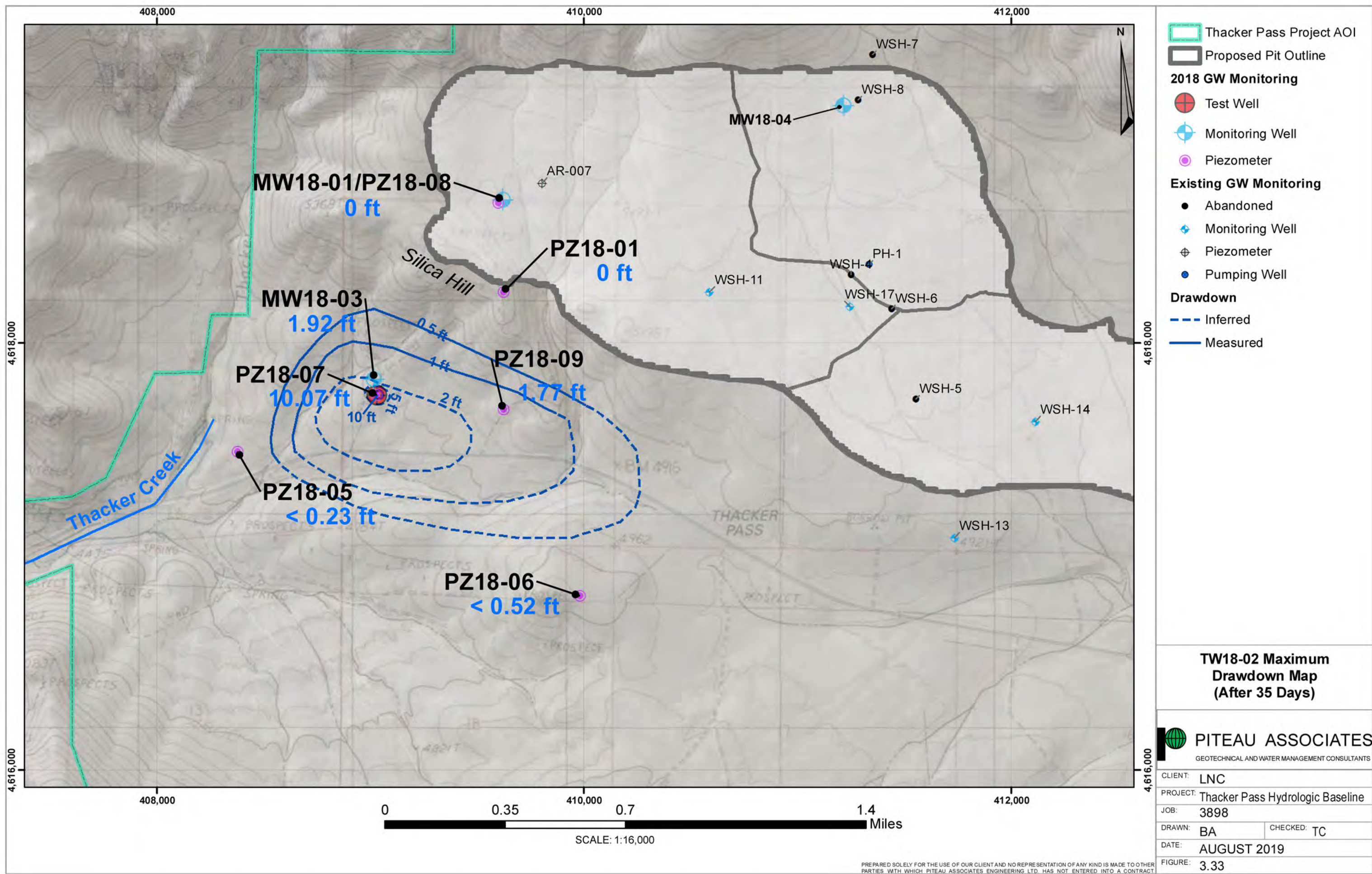


HITEAU ASSOCIATES  
HYDROLOGIC AND HYDRAULIC ENGINEERING CONSULTANTS

### TW18-02 Drawdown Hydrograph

|         |             |          |                                  |
|---------|-------------|----------|----------------------------------|
| CLIENT: | LNC         | PROJECT: | Thacker Pass Hydrologic Baseline |
| JOB #:  | 3898        | DRAWN:   | TC                               |
| DATE:   | AUGUST 2019 | CHECKED: | TC                               |
| FIGURE: | 3.32        |          |                                  |

H:\Project\3898\GIS\Kings Valley EIS\Mxd\Baseline Report\Figure 3.33 Maximum Drawdown Map.mxd



**PITEAU ASSOCIATES**  
GEOTECHNICAL AND WATER MANAGEMENT CONSULTANTS

CLIENT: LNC  
PROJECT: Thacker Pass Hydrologic Baseline  
JOB: 3898  
DRAWN: BA  
CHECKED: TC  
DATE: AUGUST 2019  
FIGURE: 3.33

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PZ18-07 Water level and Temperature Hydrograph

## TW18-02 Cooper-Jacob Distance Drawdown Analysis

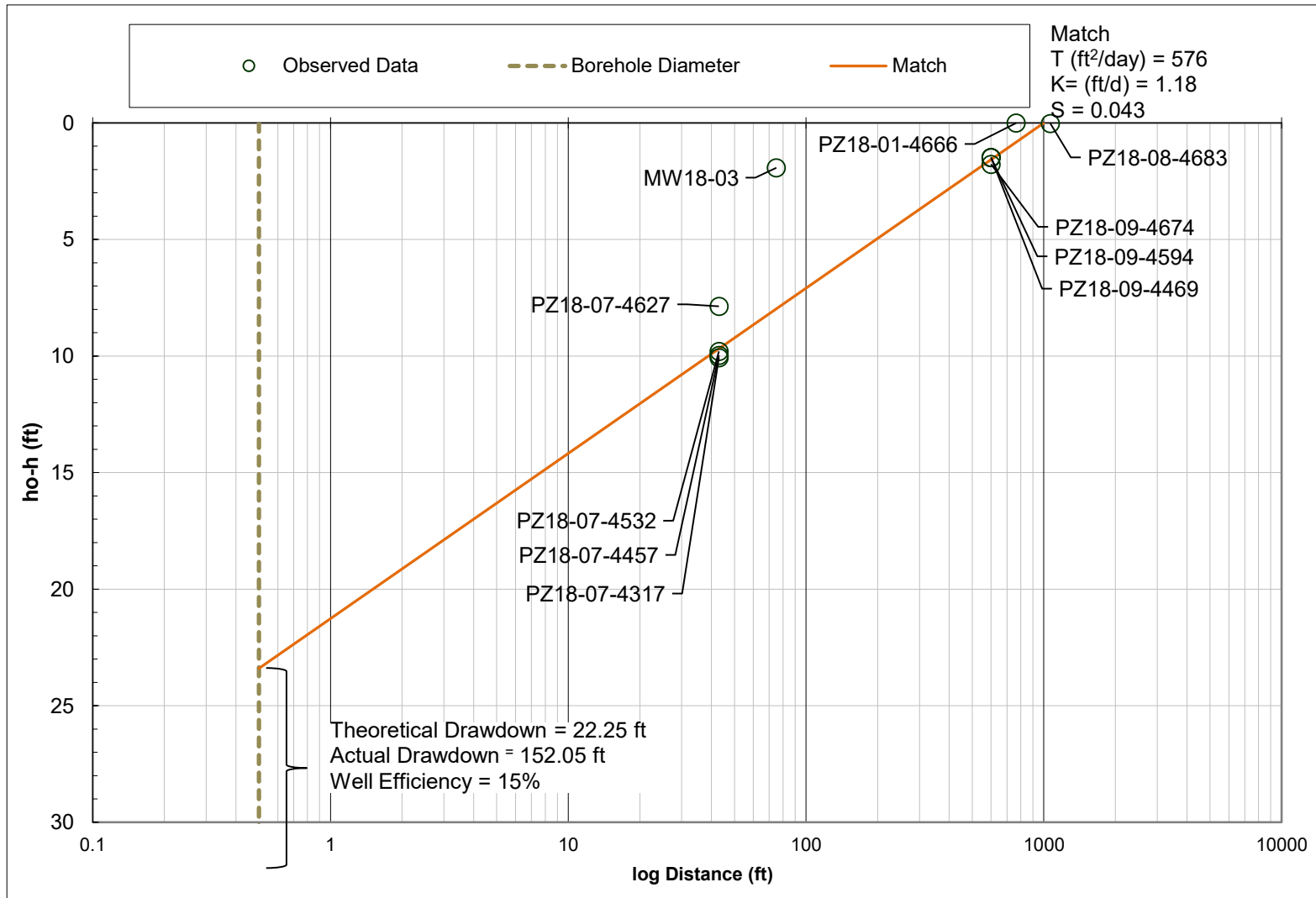
CLIENT: LNC

PROJECT: Thacker Pass Hydrologic

JOB #: 3898

DRAWN:

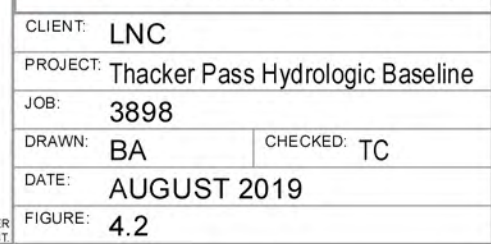
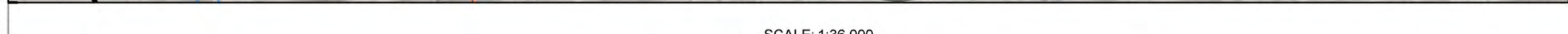
CHECKED TC











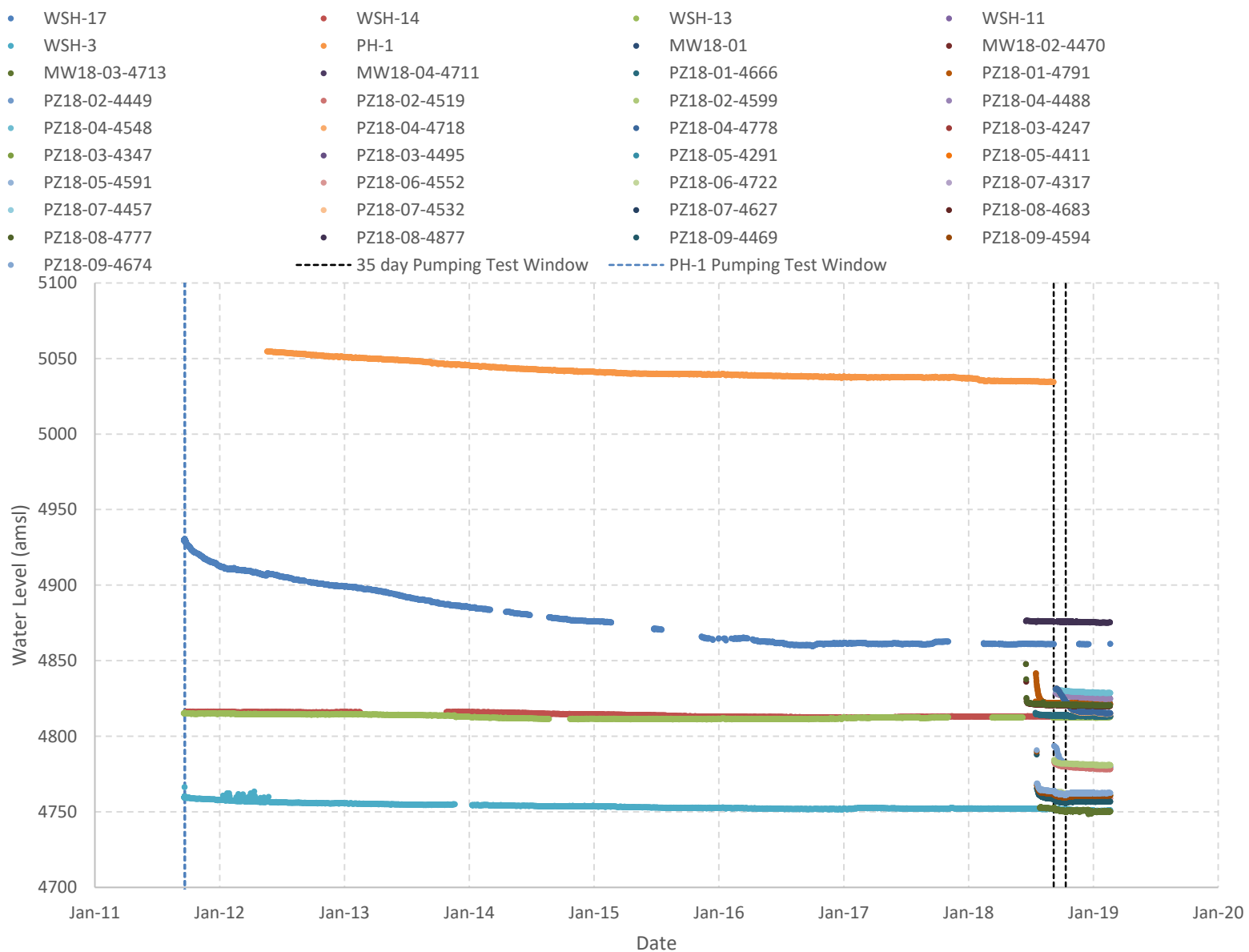
PREPARED SOLELY FOR THE USE OF OUR CLIENT AND NO REPRESENTATION OF ANY KIND IS MADE TO OTHER PARTIES WITH WHICH PITEAU ASSOCIATES ENGINEERING LTD. HAS NOT ENTERED INTO A CONTRACT



PROJECT: Thacker Pass Hydrologic Baseline

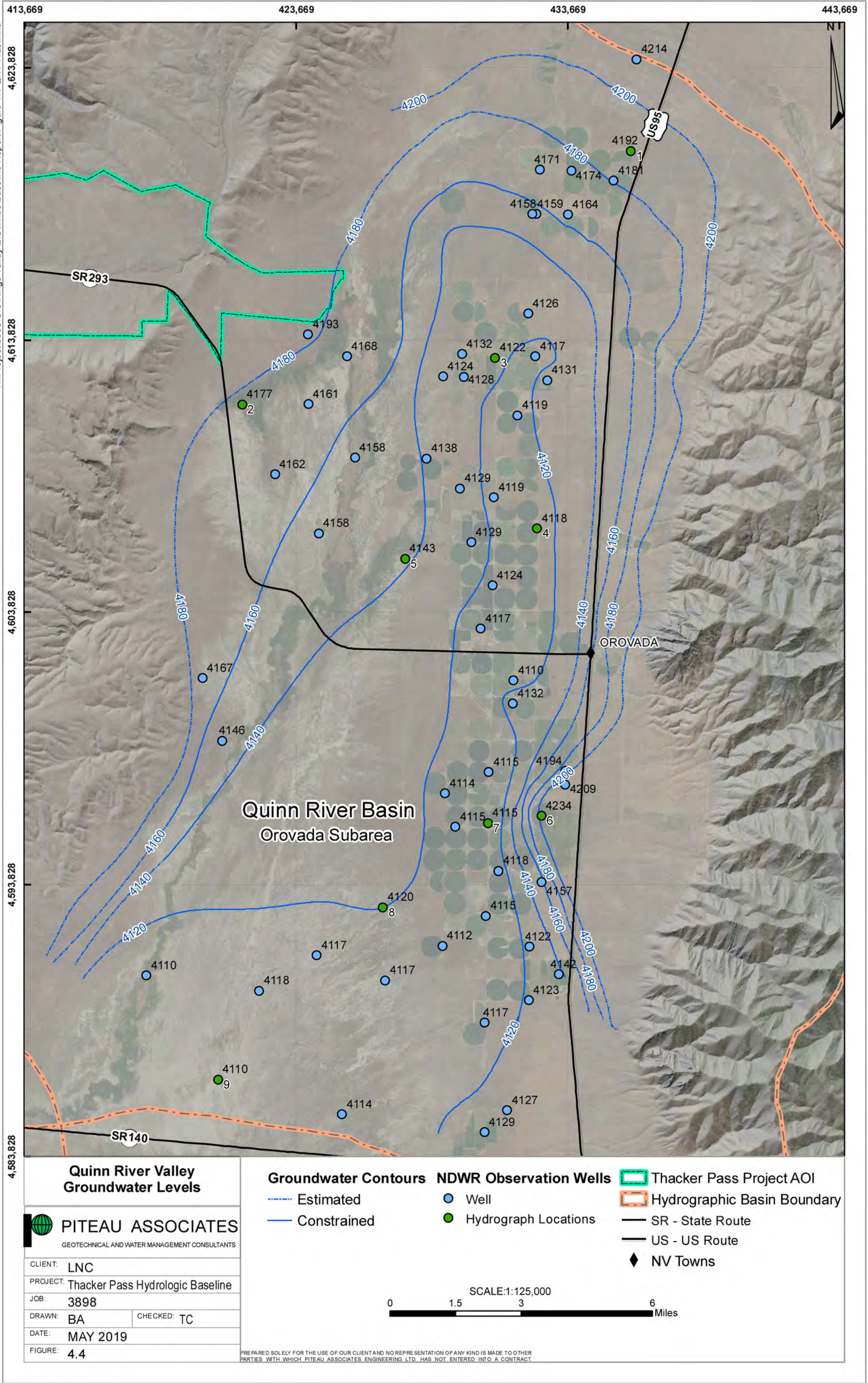
DRAWN: BA

CHECKED: TC

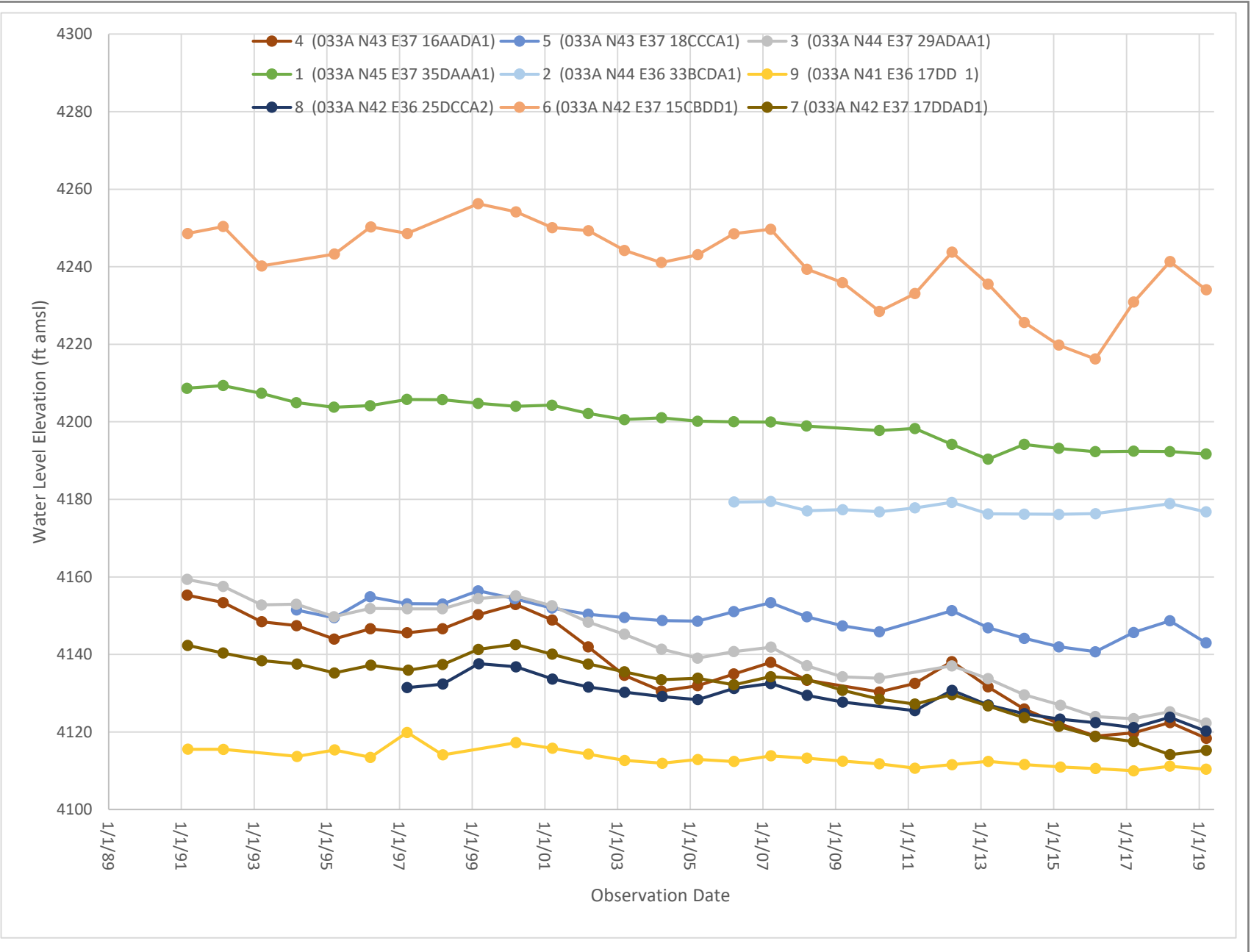




H:\Project\3898\GIS\Kings Valley EIS\mxd\Baseline Report\Figure 4.4 QRV WLS.mxd







Quirm River Valley NDWR Observation Well Water Level Hydrograph

|         |             |          |                                  |
|---------|-------------|----------|----------------------------------|
| CLIENT: | LNC         | PROJECT: | Thacker Pass Hydrologic Baseline |
| JOB #:  | 3898        | DRAWN:   | BA                               |
| DATE:   | AUGUST 2019 | CHECKED: | TC                               |
| FIGURE: | 4.5         |          |                                  |



H:\Project\3898\GIS\Kings Valley EIS\Mxds\Baseline Report\Figure 4.6 KRV WLs.mxd

4,634,352

4,624,352

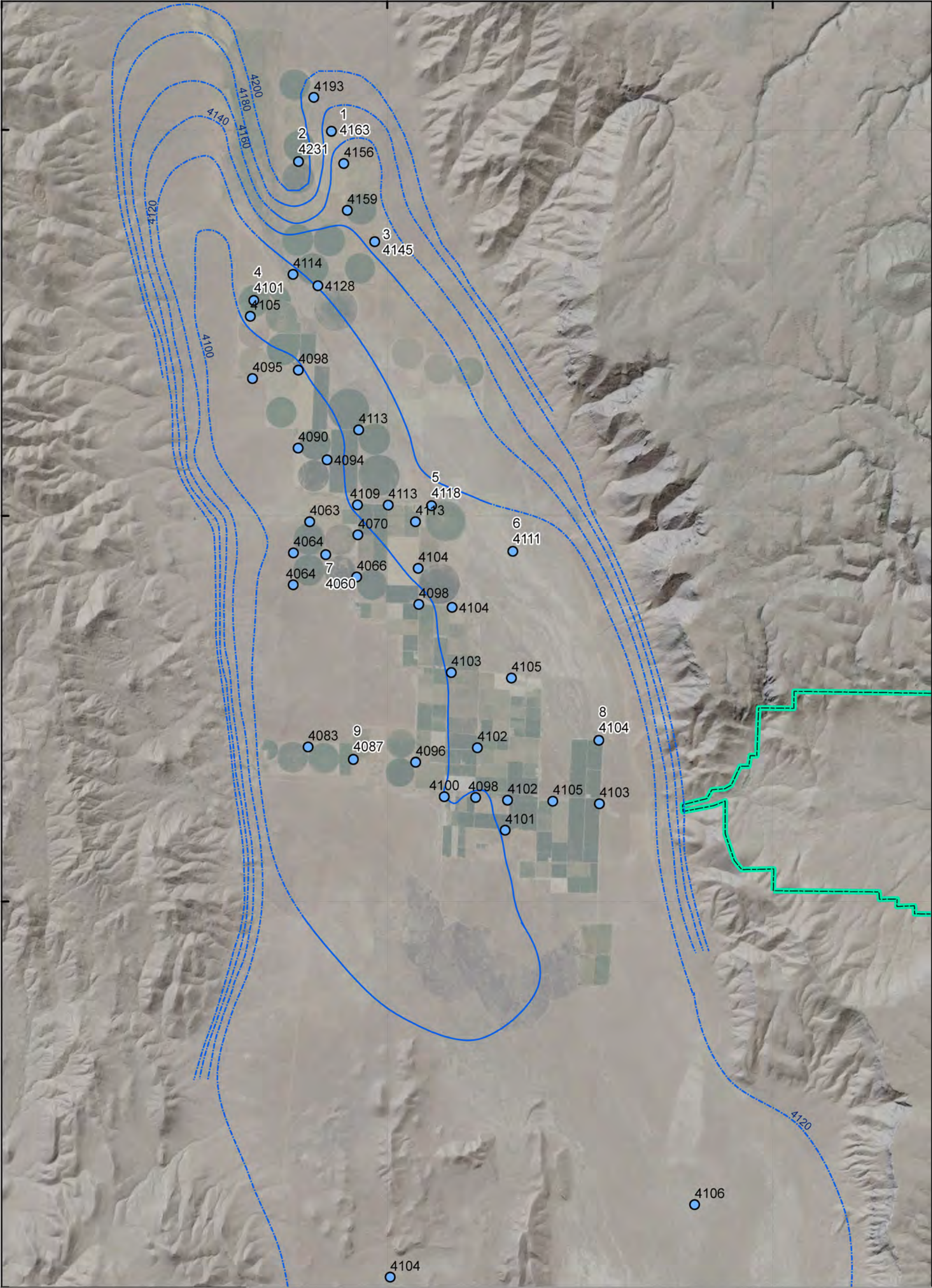
4,614,352

4,604,352

388,838

398,838

408,838



**Kings River Valley  
Groundwater Levels**



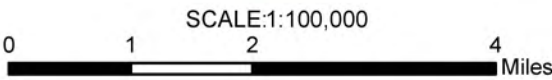
|          |                                  |          |    |
|----------|----------------------------------|----------|----|
| CLIENT:  | LNC                              |          |    |
| PROJECT: | Thacker Pass Hydrologic Baseline |          |    |
| JOB:     | 3898                             |          |    |
| DRAWN:   | BA                               | CHECKED: | TC |
| DATE:    | AUGUST 2019                      |          |    |
| FIGURE:  | 4.6                              |          |    |

**Groundwater Contours**

- Estimated
- Constrained

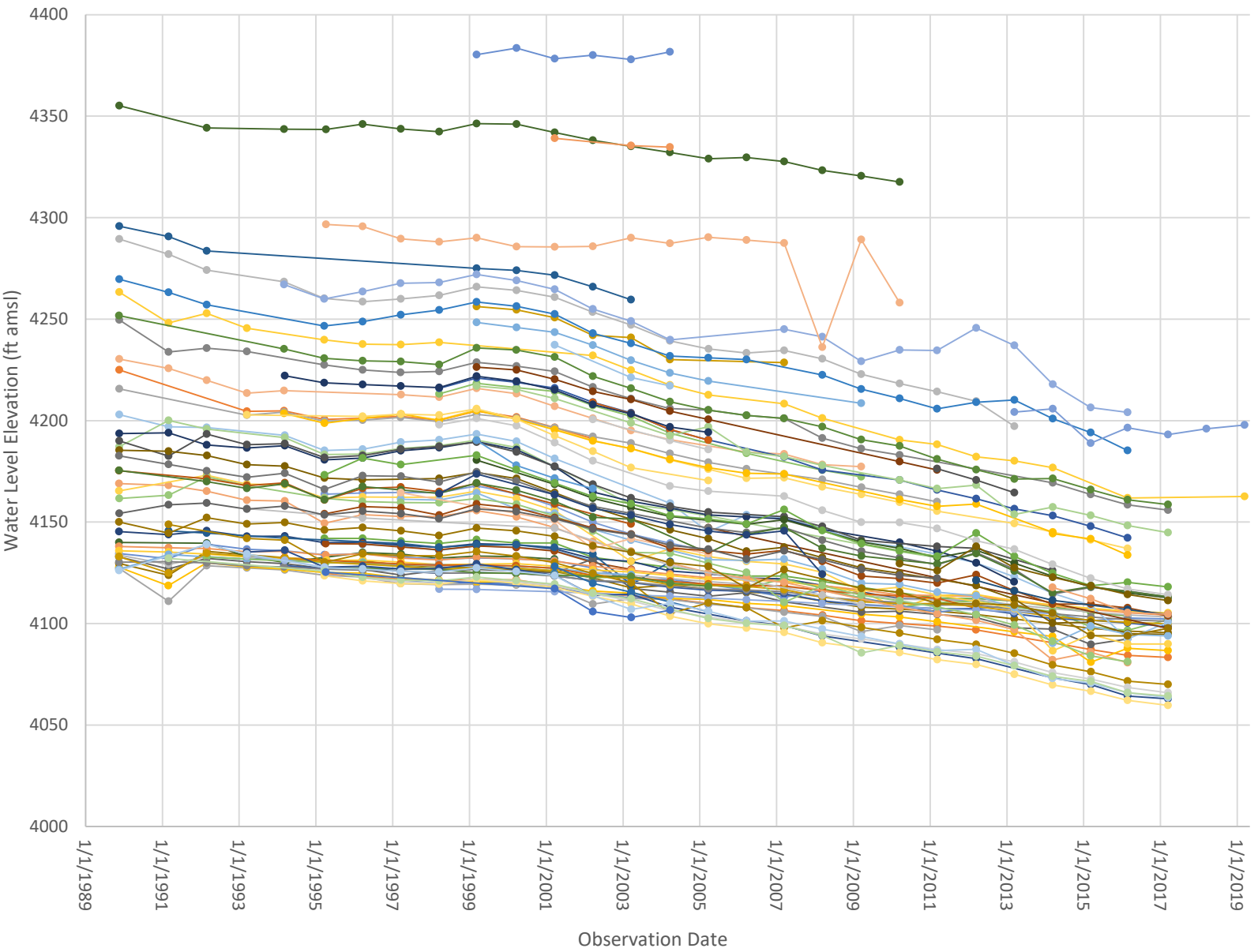
**NDWR Observation Wells**

- (2017 GW Elevation)
- Thacker Pass Project AOI
- Hydrologic Basin Boundary



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### Kings River Valley NDMR Observation Well Water Level Hydrograph



CLIENT: LNC

PROJECT: Thacker Pass Hydrologic Baseline

JOB #: 3898

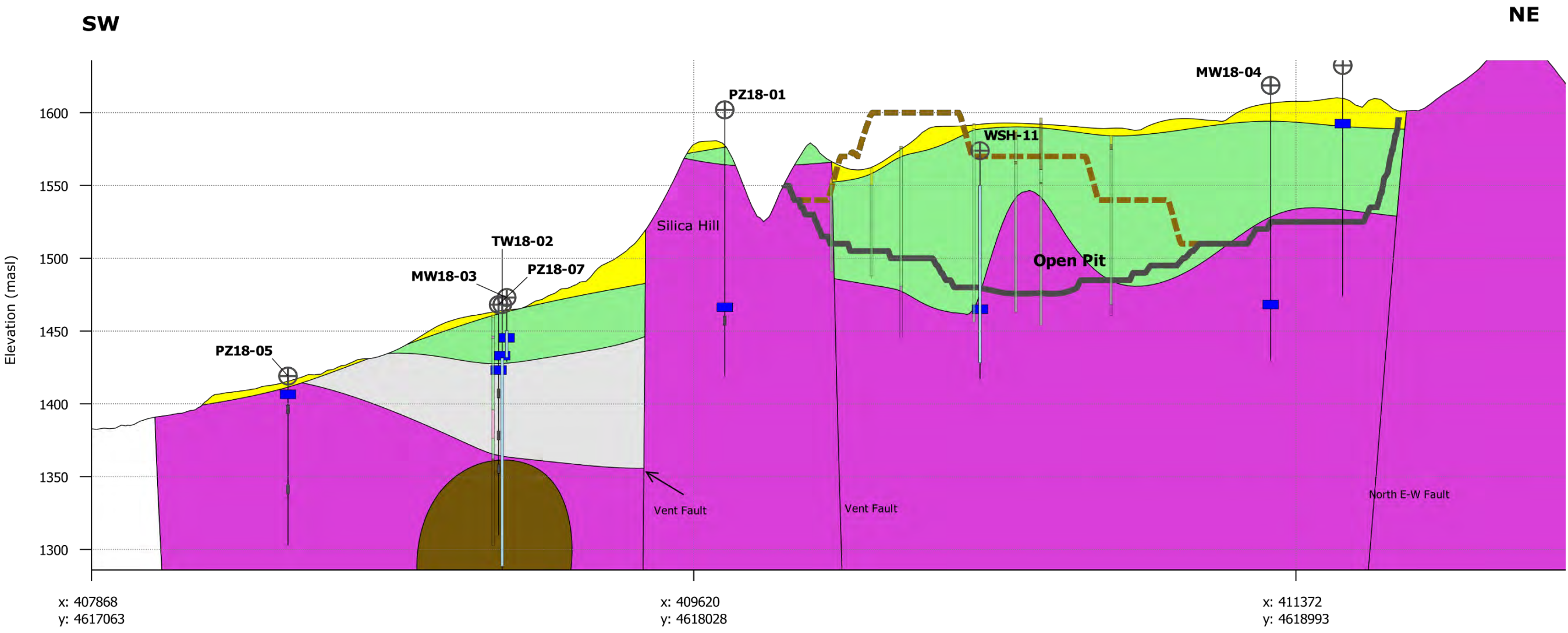
DRAWN: BA

CHECKED: TC

DATE: AUGUST 2019

FIGURE: 4.7

A: 407868, 4617063  
B: 412817, 4619789



Scale: 1:13,000  
Vertical exaggeration: 5x  
0m 500m

**GM-GW Model**

- Alluvium
- Sediments
- Tuff of Long Ridge
- Unknown
- Basalt
- Ash

**Water Table**

- WL

**Screen**

- Screen
- Xducer

**Formation**

- Alluvium
- Basalt
- Minor Tuff
- NS
- Sediments
- Tuff of Long Ridge

**Pit Shells**

- Backfill
- Ultimate Pit Shell

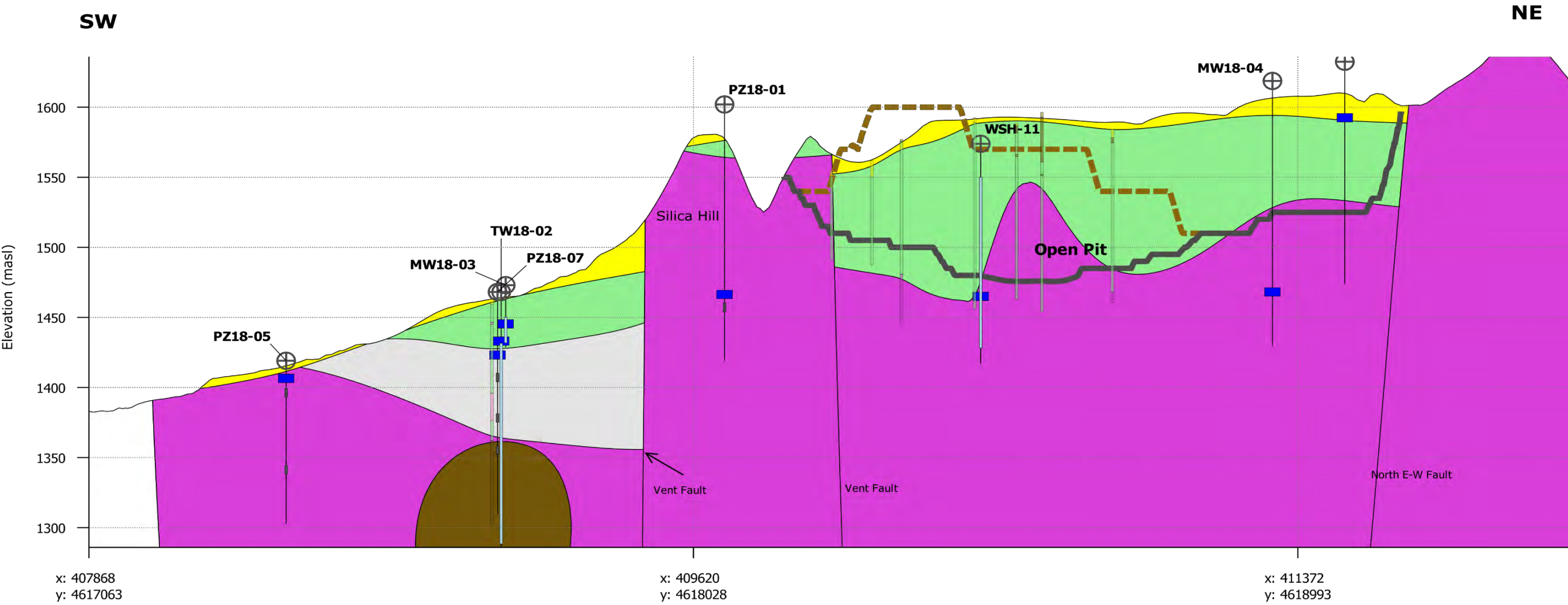


**Hydrogeologic Cross-section D-D'**

|             |           |                                           |             |
|-------------|-----------|-------------------------------------------|-------------|
| CLIENT: LNC |           | PROJECT: Thacker Pass Hydrologic Baseline |             |
| JOB         | 3898      | DRAWN: TC                                 | CHECKED: TC |
| DATE:       | JUNE 2019 | FIGURE:                                   | 4.8         |



A: 407868, 4617063  
B: 412817, 4619789



Scale: 1:13,000  
Vertical exaggeration: 5x  
0m 500m

**GM-GW Model**

- Alluvium
- Sediments
- Tuff of Long Ridge
- Unknown
- Basalt
- Ash

**Water Table**

- WL

**Screen**

- Screen
- Xducer

**Formation**

- Alluvium
- Basalt
- Minor Tuff
- NS
- Sediments
- Tuff of Long Ridge

**Pit Shells**

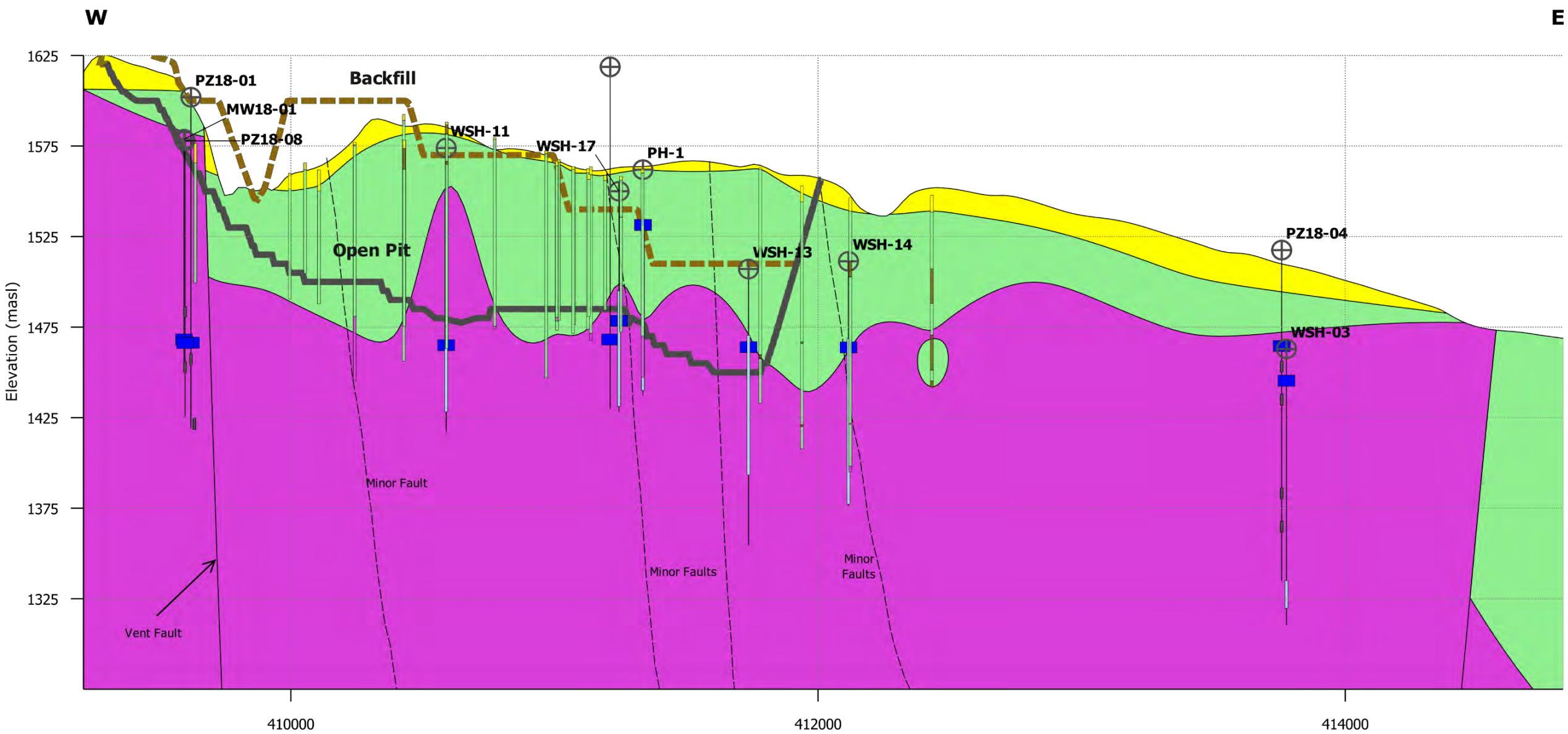
- Backfill
- Ultimate Pit Shell



**Hydrogeologic Cross-section E-E'**

|         |           |          |                                  |             |
|---------|-----------|----------|----------------------------------|-------------|
| CLIENT: | LNC       | PROJECT: | Thacker Pass Hydrologic Baseline |             |
| JOB     | 3898      | DRAWN:   | TC                               | CHECKED: TC |
| DATE:   | JUNE 2019 | FIGURE:  | 4.9                              |             |

A: 409213, 4618400  
B: 414827, 4618400



**GM-GW Model**

- Alluvium
- Sediments
- Tuff of Long Ridge
- Unknown

**Water Table**

- WL

**Screen**

- Screen
- Xducer

**Formation**

- Alluvium
- Basalt
- Minor Tuff
- NS
- Sediments
- Tuff of Long Ridge

**Pit Shells**

- Backfill
- Ultimate Pit Shell



**Hydrogeologic Cross-section F-F'**

CLIENT: LNC

JOB 3898

DATE: JUNE 2019

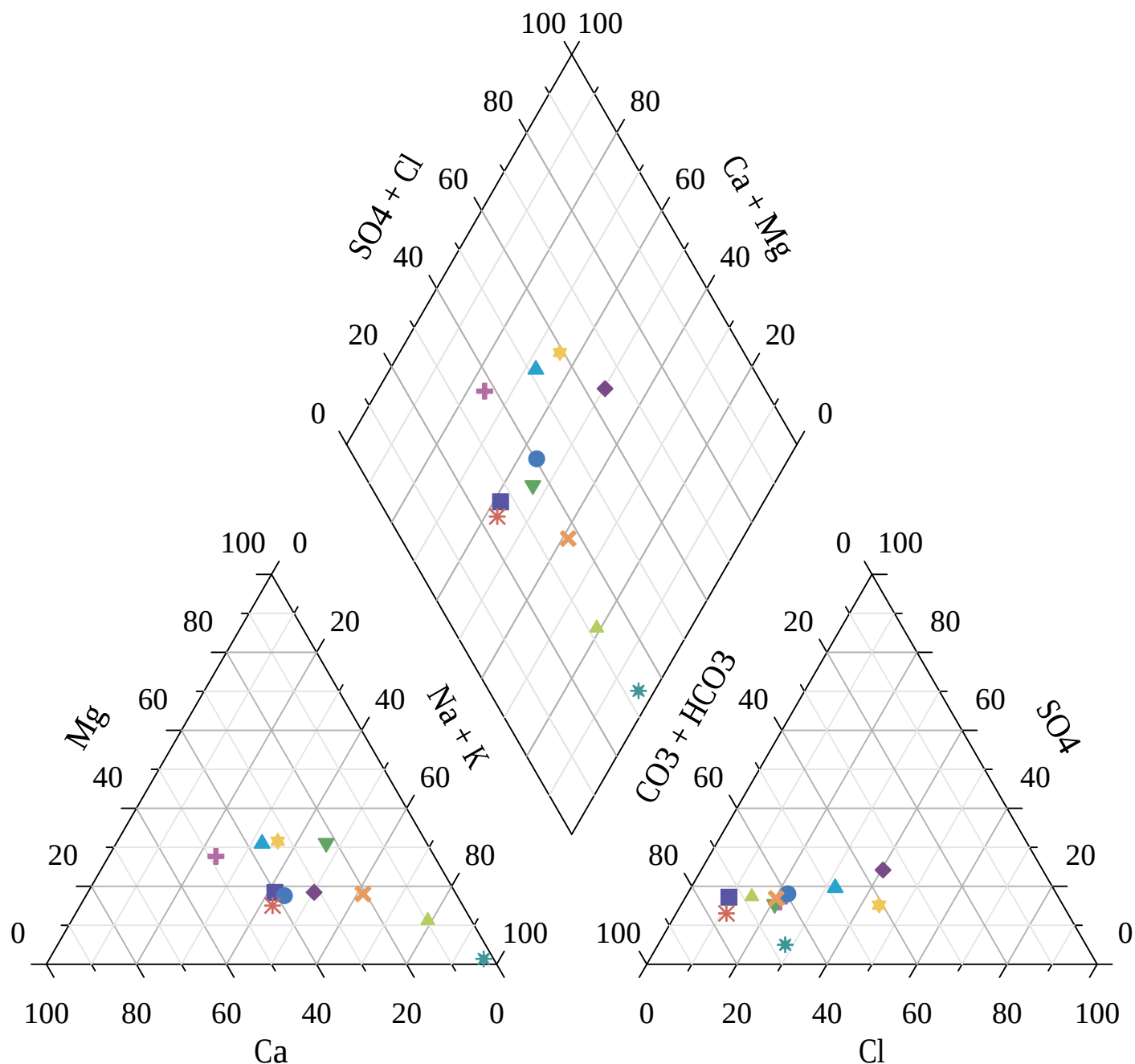
PROJECT: Thacker Pass Hydrologic Baseline

DRAWN: TC

CHECKED: TC

FIGURE: 4.10





#### Legend

|   |         |   |         |   |        |   |        |   |        |   |         |
|---|---------|---|---------|---|--------|---|--------|---|--------|---|---------|
| + | MW18-01 | ■ | MW18-03 | ▲ | PH-1   | ▼ | WSH-11 | ★ | WSH-14 | ✱ | TW18-02 |
| ◆ | MW18-02 | ● | MW18-04 | ✱ | WSH-03 | ▲ | WSH-13 | × | WSH-17 |   |         |

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Lithium Nevada Corporation  
Thacker Pass Hydrologic Baseline  
Humboldt County, Nevada



**PITEAU ASSOCIATES**

GEOTECHNICAL AND HYDROGEOLOGICAL CONSULTANTS

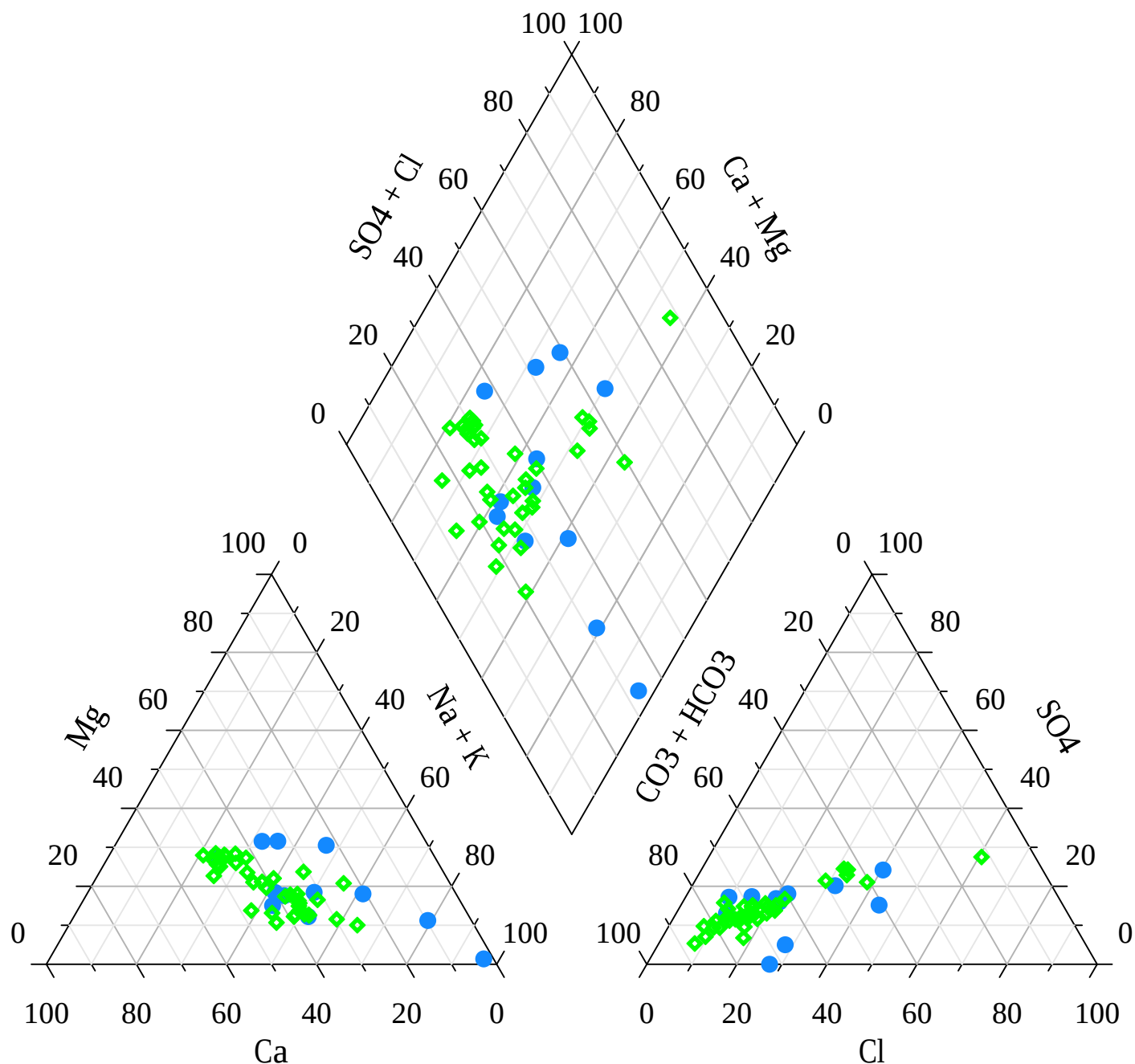
## Groundwater Piper Diagram

Figure:  
4.11

Date:  
AUG 2019

By:  
BA

Approved:  
TC



PREPARED SOLELY FOR THE USE OF OUR CLIENT AND NO REPRESENTATION OF ANY KIND IS MADE TO OTHER PARTIES WITH WHICH PITEAU ASSOCIATES ENGINEERING LTD. HAS NOT ENTERED INTO A CONTRACT.

Lithium Nevada Corporation  
Thacker Pass Hydrologic Baseline  
Humboldt County, Nevada



**PITEAU ASSOCIATES**

GEOTECHNICAL AND HYDROGEOLOGICAL CONSULTANTS

## Groundwater and Spring Piper Diagram

Figure:  
4.12

Date:  
AUG 2019

By:  
BA

Approved:  
TC



H:\Project\3898\GIS\Kings Valley EIS\Mxds\Baseline Report\Plan 4.2 Spring Stiff Diagram Map\_zoomed\_region.mxd

T44N R34E

T44N R34E

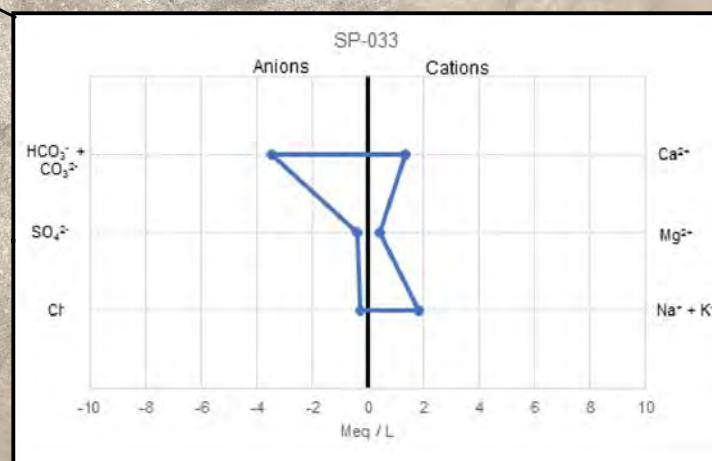
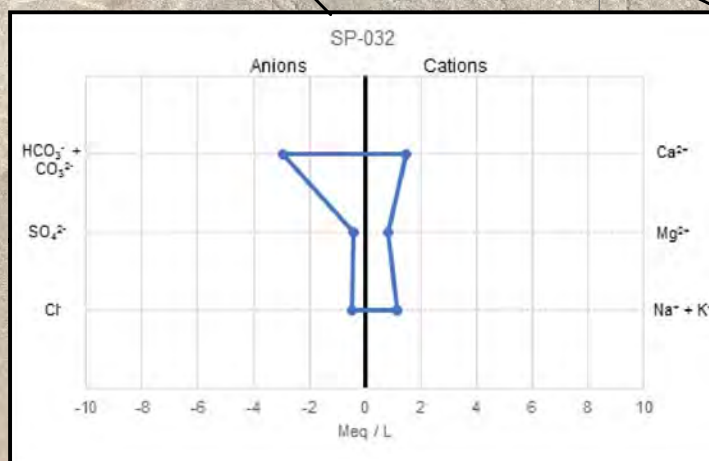
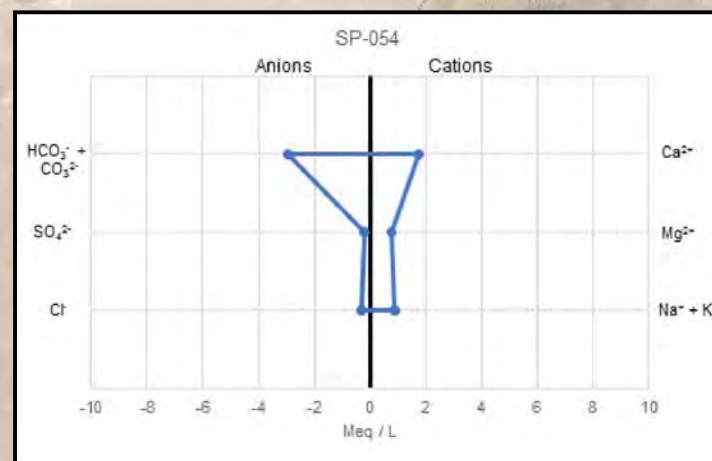
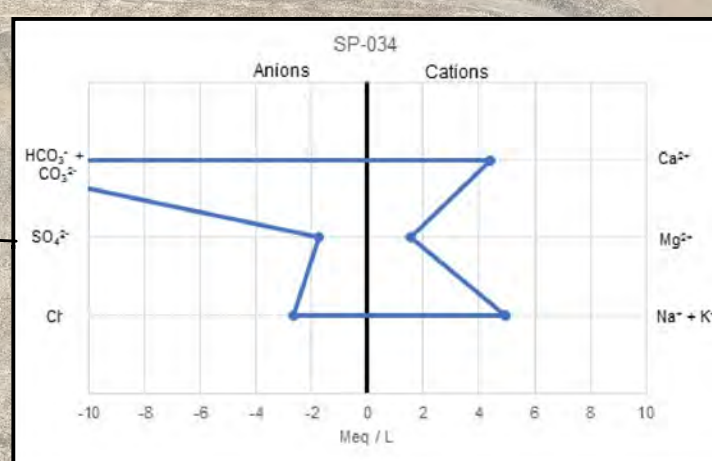
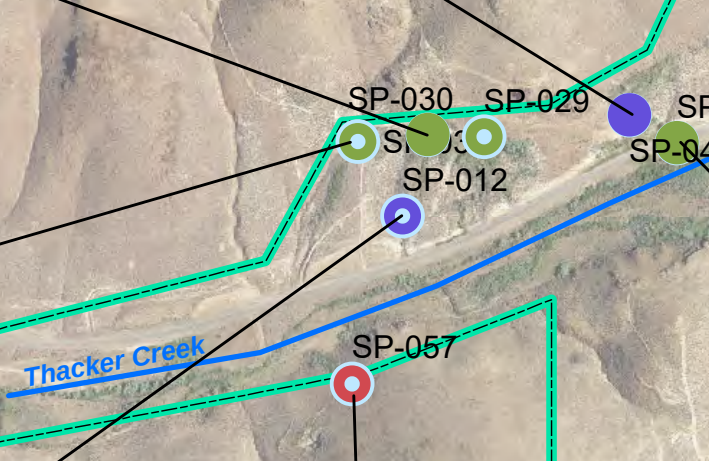
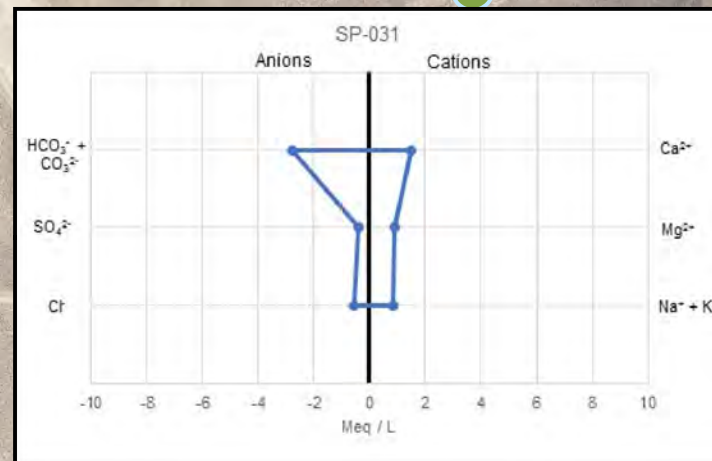
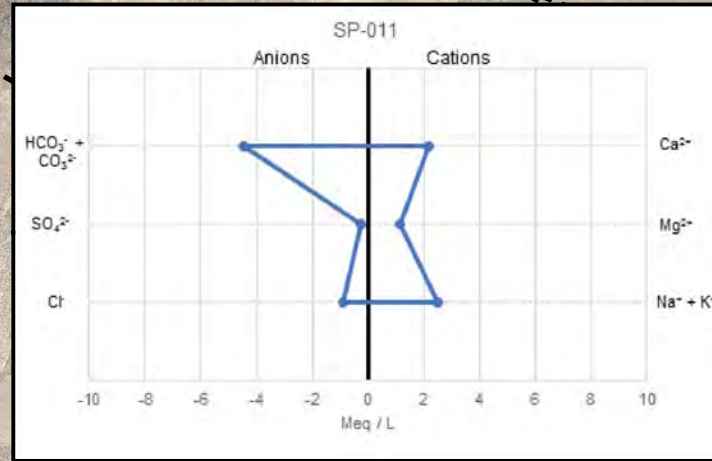
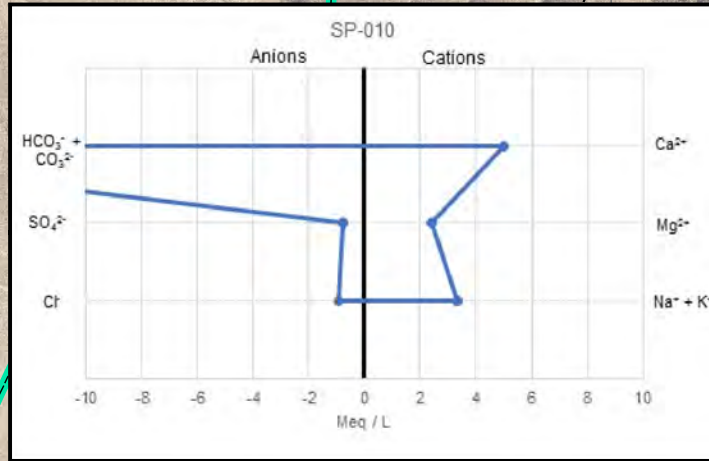
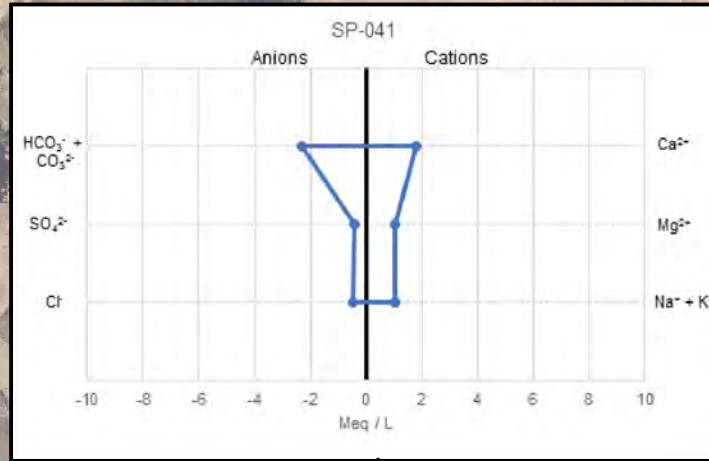
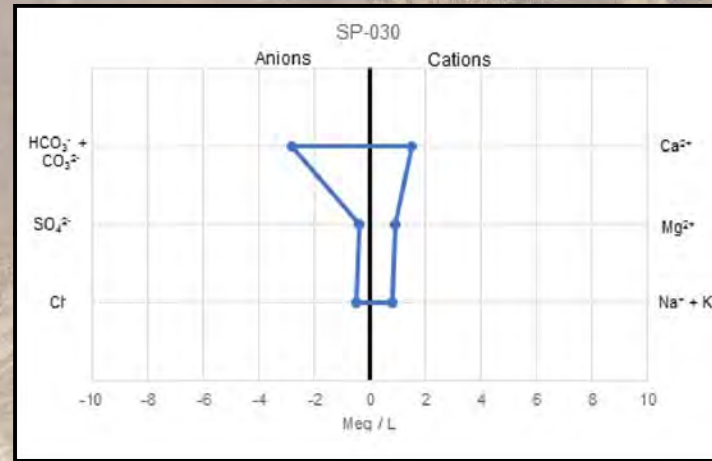
T44N R34E

T44N R34E

T44N R35E

T44N R35E

T44N R35E



## Springs

### Monitoring Status

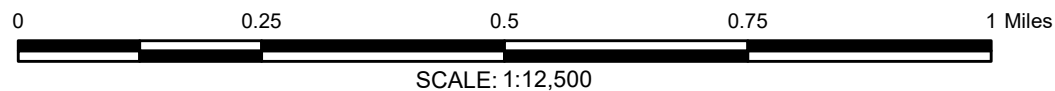
- Complete
- Continue
- New

## Surface Water

- Ephemeral
- Perennial

## ----- Faults

Thacker Pass Project AOI



LITHIUM NEVADA CORPORATION  
THACKER PASS HYDROLOGIC BASELINE

STIFF DIAGRAM MAP: THACKER CREEK AREA

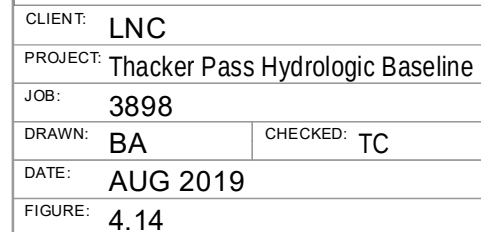
PREPARED SOLELY FOR THE USE OF OUR CLIENT AND NO REPRESENTATION OF ANY KIND IS MADE TO OTHER PARTIES WITH WHICH PITEAU ASSOCIATES ENGINEERING LTD. HAS NOT ENTERED INTO A CONTRACT.



**PITEAU ASSOCIATES**  
GEOTECHNICAL AND WATER MANAGEMENT CONSULTANTS

|           |        |
|-----------|--------|
| BY:       | DATE:  |
| GS        | AUG 19 |
| APPROVED: | PLAN:  |
| TC        | 4.13   |

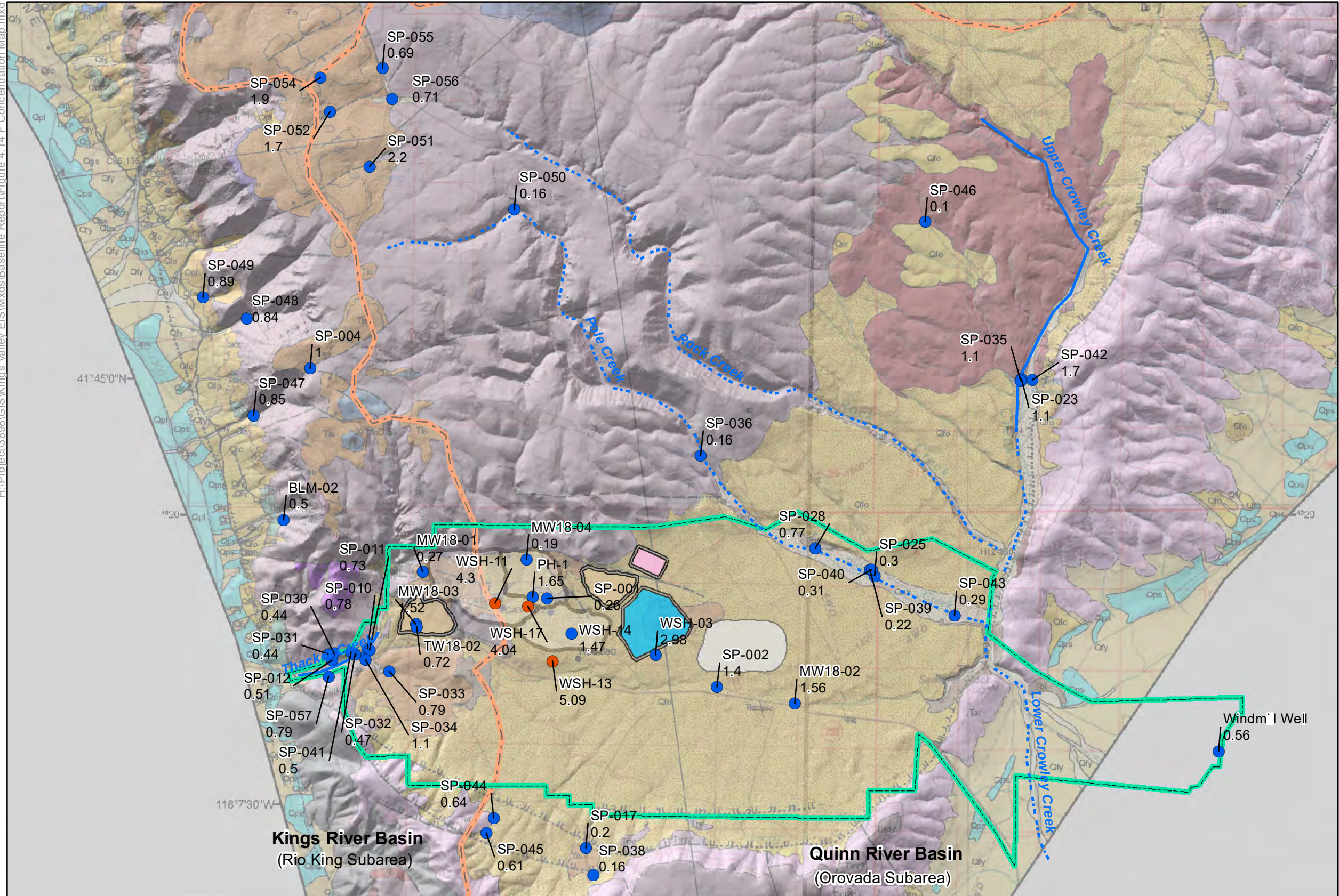




PREPARED SOLELY FOR THE USE OF OUR CLIENT AND NO REPRESENTATION OF ANY KIND IS MADE TO OTHER PARTIES WITH WHICH PITEAU ASSOCIATES ENGINEERING LTD. HAS NOT ENTERED INTO A CONTRACT.



H:\Project\3898\GIS\Kings Valley EIS\MapDocs\Baseline Report\Figure 4.14 F Concentration Map.mxd



**Fluoride Average Conc (mg/L)**

- Below NRVs
- Above NRVs

**Surface Water**

- Ephemeral
- Perennial

- Sub-Pit Outline
- Tailings Facility
- Gangue Stockpile
- WRFs
- Growth Media Stockpile
- Thacker Pass Project AOI
- Hydrologic Basin Boundary

**Fluoride Concentration (mg/L) in Groundwater**

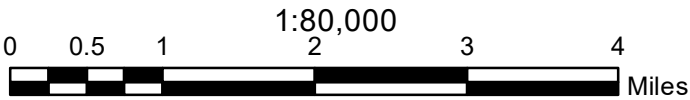
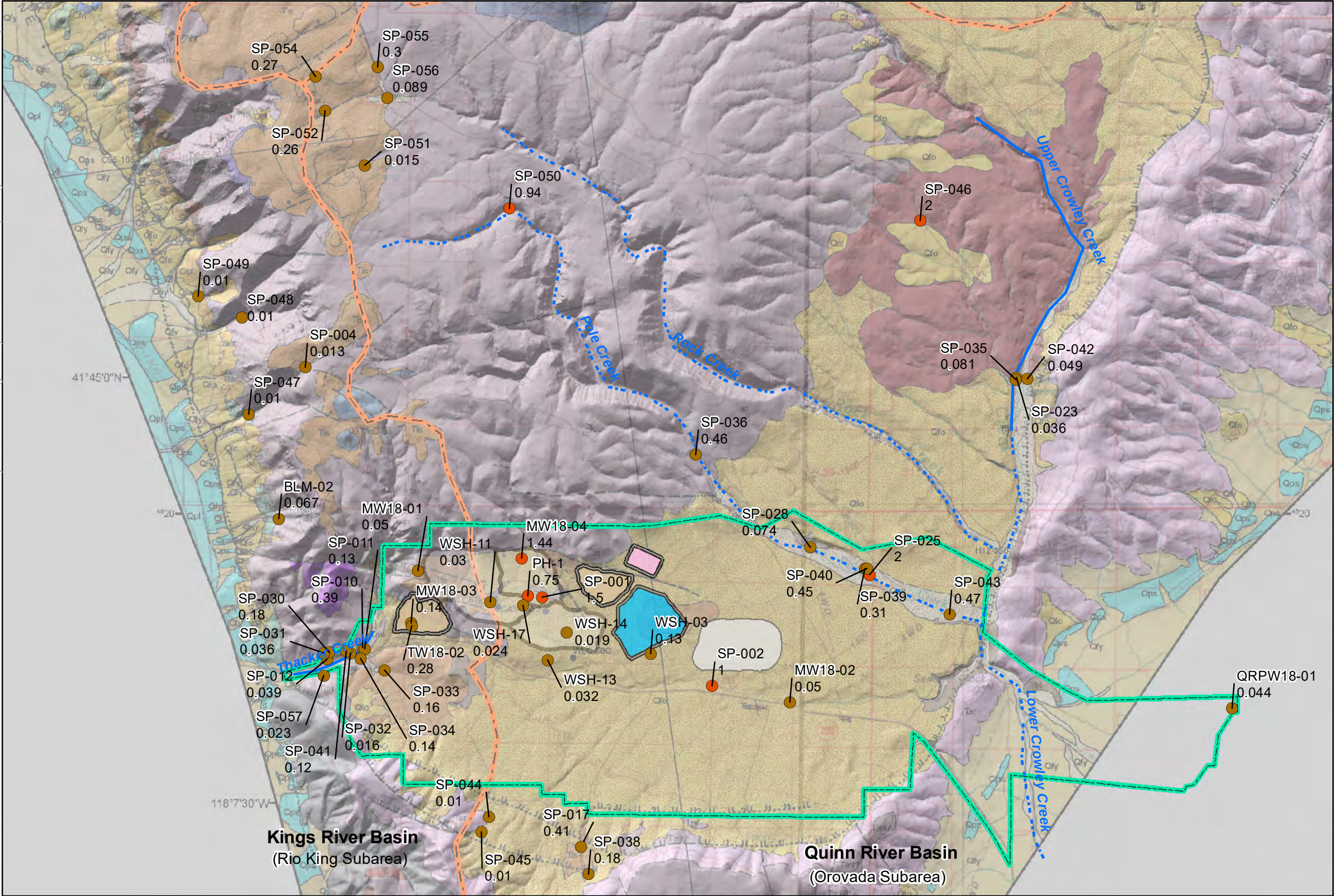


|          |                                  |          |    |
|----------|----------------------------------|----------|----|
| CLIENT:  | LNC                              |          |    |
| PROJECT: | Thacker Pass Hydrologic Baseline |          |    |
| JOB:     | 3898                             |          |    |
| DRAWN:   | BA                               | CHECKED: | TC |
| DATE:    | AUG 2019                         |          |    |
| FIGURE:  | 4.15                             |          |    |

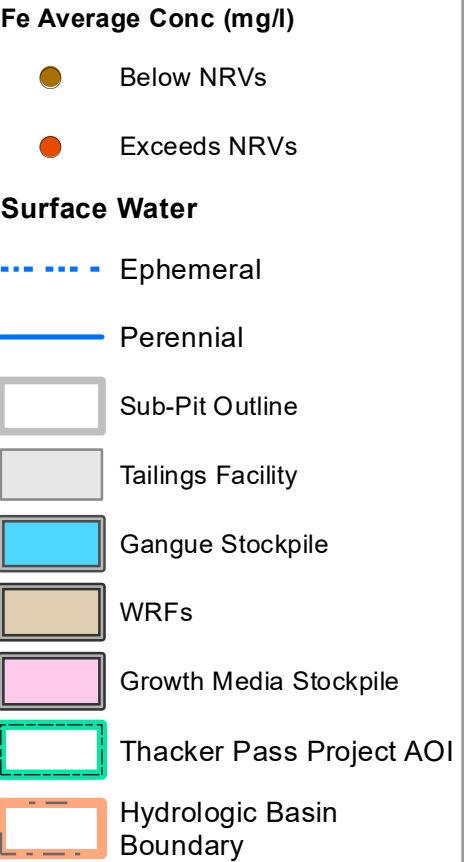
PREPARED SOLELY FOR THE USE OF OUR CLIENT AND NO REPRESENTATION OF ANY KIND IS MADE TO OTHER PARTIES WITH WHICH PITEAU ASSOCIATES ENGINEERING LTD. HAS NOT ENTERED INTO A CONTRACT.



H:\Project\3898\GIS\Kings Valley EIS\MapDocs\Baseline Report\Figure 4.15 Fe Concentration Map.mxd



PREPARED SOLELY FOR THE USE OF OUR CLIENT AND NO REPRESENTATION OF ANY KIND IS MADE TO OTHER PARTIES WITH WHICH PITEAU ASSOCIATES ENGINEERING LTD. HAS NOT ENTERED INTO A CONTRACT.



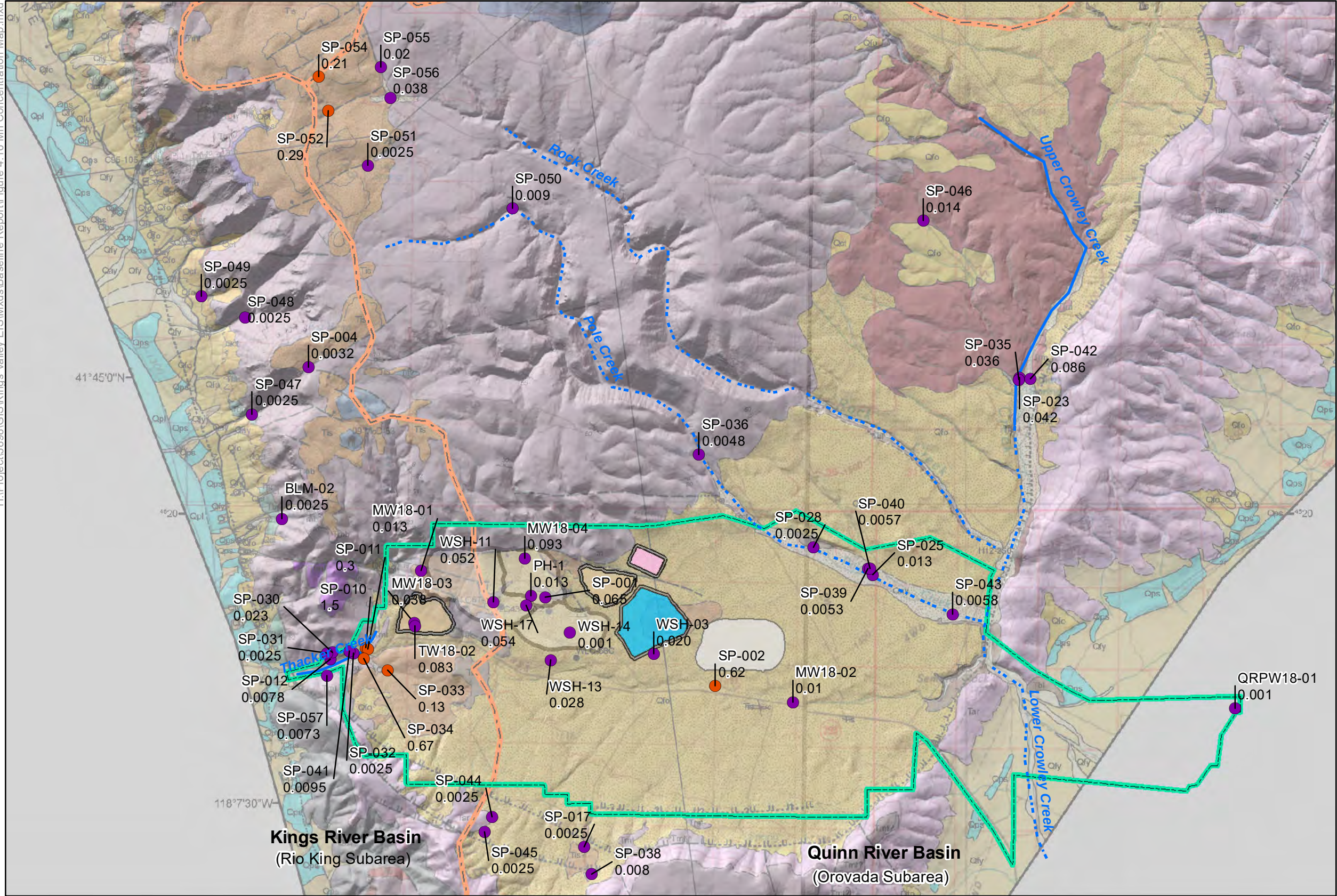
**Iron Concentration (mg/L) in Groundwater**



|          |                                  |          |    |
|----------|----------------------------------|----------|----|
| CLIENT:  | LNC                              |          |    |
| PROJECT: | Thacker Pass Hydrologic Baseline |          |    |
| JOB:     | 3898                             |          |    |
| DRAWN:   | BA                               | CHECKED: | TC |
| DATE:    | AUG 2019                         |          |    |
| FIGURE:  | 4.16                             |          |    |



H:\Project\3898\GIS\Kings Valley EIS\Mxds\Baseline Report\Figure 4.16 Mn Concentration Map.mxd



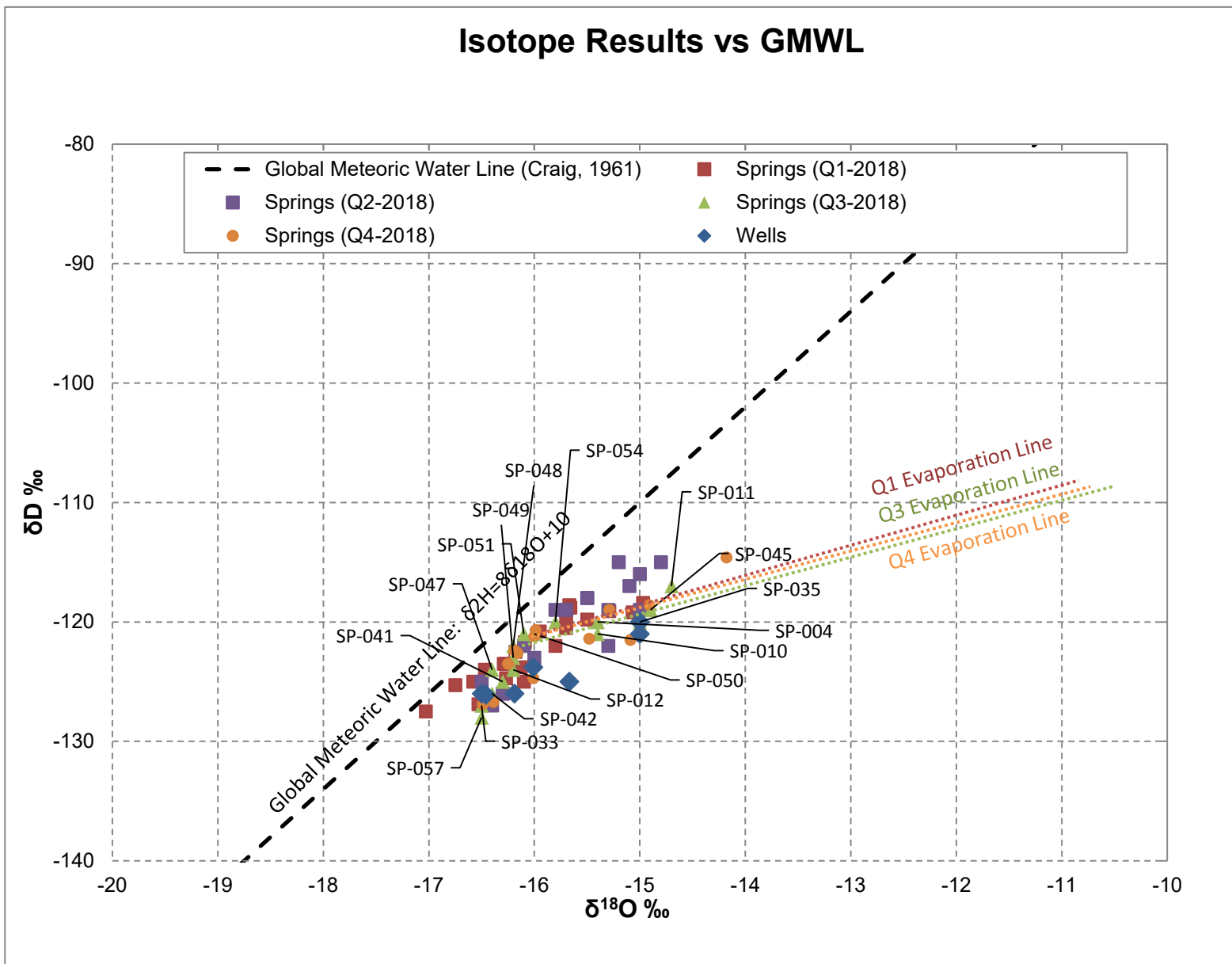
PREPARED SOLELY FOR THE USE OF OUR CLIENT AND NO REPRESENTATION OF ANY KIND IS MADE TO OTHER PARTIES WITH WHICH PITEAU ASSOCIATES ENGINEERING LTD. HAS NOT ENTERED INTO A CONTRACT.

**Manganese Concentration (mg/L) in Groundwater**



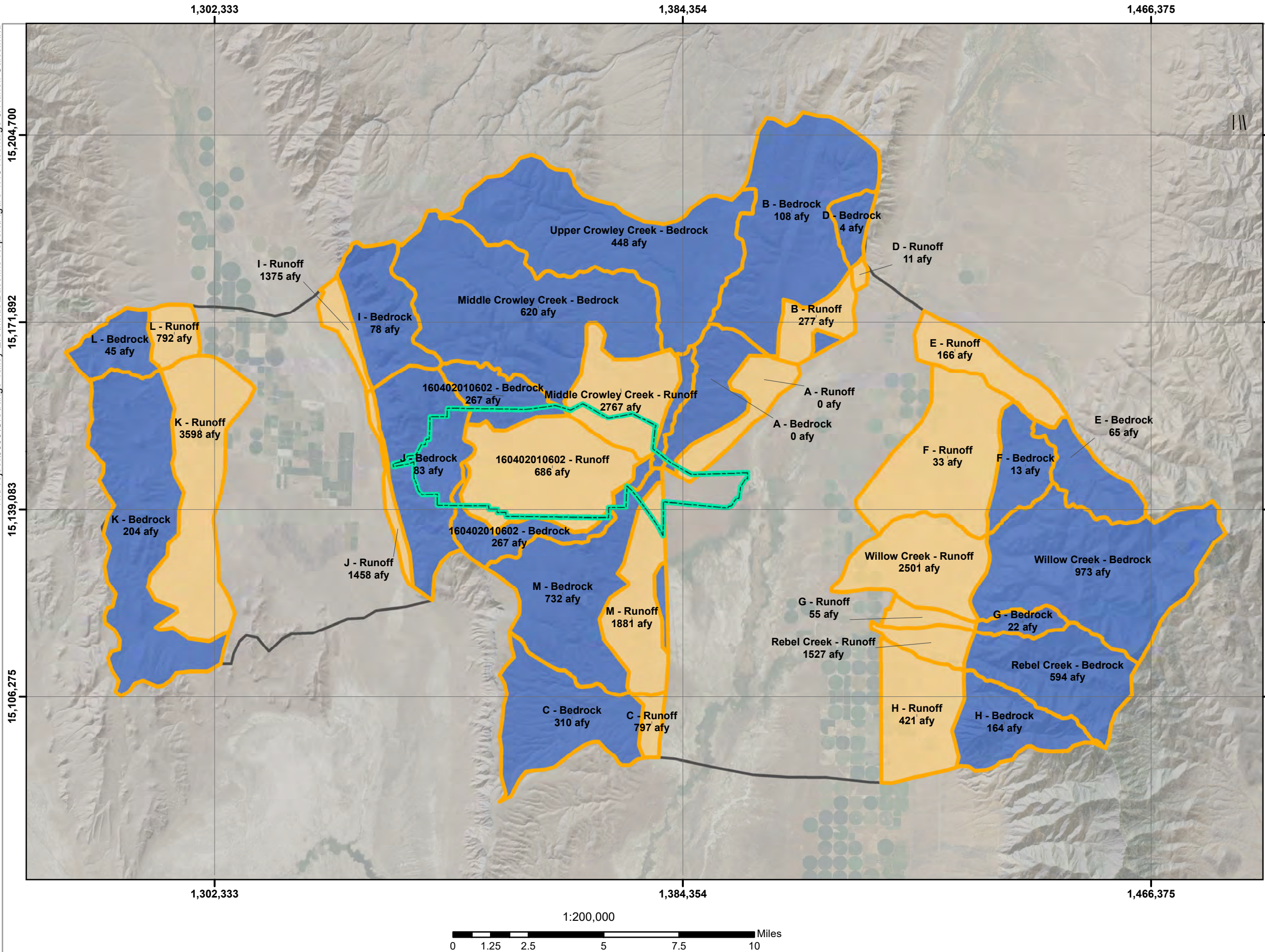
|          |                                  |          |    |
|----------|----------------------------------|----------|----|
| CLIENT:  | LNC                              |          |    |
| PROJECT: | Thacker Pass Hydrologic Baseline |          |    |
| JOB:     | 3898                             |          |    |
| DRAWN:   | BA                               | CHECKED: | TC |
| DATE:    | AUG 2019                         |          |    |
| FIGURE:  | 4.17                             |          |    |







H:\Project\3898\GIS\Kings Valley EIS\Mxds\Baseline Report\Figure 4.18 Recharge & Runoff Calcs.mxd



- Thacker Pass Project AOI
- Catchments
- Catchment Type**
  - Bedrock
  - Runoff

### Conceptual Model Recharge Distribution



|          |                                  |          |    |
|----------|----------------------------------|----------|----|
| CLIENT:  | LNC                              |          |    |
| PROJECT: | Thacker Pass Hydrologic Baseline |          |    |
| JOB:     | 3898                             |          |    |
| DRAWN:   | LH                               | CHECKED: | TC |
| DATE:    | AUGUST 2019                      |          |    |
| FIGURE:  | 4.19                             |          |    |

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