Transients Analysis for Navajo Gallup Water Supply Project Reach 24.1 JAN

May 4, 2016

URS

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Andrew Robertson, PE
Souder, Miller & Associates
3451 Candelaria Road NE, Suite D
Albuquerque, NM 87107

Re: NGWSP Reach 24.1 JAN Transient Analysis and Transient Control Recommendations

Dear Mr. Robertson:

URS has completed a transient pressure analysis and evaluation of surge protection devices for the Navajo-Gallup Water Supply Project (NGWSP) Reach 24.1 Jicarilla Apache Nation (JAN) system in accordance with the Scope of Work. This study includes flush valve operation on Reach 24.1/25 in addition to the flush valve locations on the JAN pipeline.

The intent of this study is to identify system conditions that could create undesirable transient pressures in the Reach 24.1/Reach 25 or Reach 24.1 JAN system, and provide mitigation measures if any undesirable pressures are determined. Souder, Miller & Associates (SMA) has identified the following system operating conditions that could contribute to transient pressures:

1) JAN altitude valve operation resulting in a change in JAN flow
2) Reach 25 pump station operation such as startup or shutdown
3) JAN altitude valve operation and pump station operation occurring concurrently
4) Isolation valve closure for Reach 24.1 JAN
5) Transition between gravity flow and pump station startup or shutdown on Reach 25
6) Flush valve operation for Reach 24.1/25 and Reach 24.1 JAN
7) Pipeline breaks on the JAN line followed by upstream isolation valve closure

The most conservative case system conditions were used for the analysis. In general, the resulting transient pressures for these models were found to be greatest when the Counselor Tank was empty and the Ojo-Encino Tank was full since flow would reverse direction when the pump or a valve closes. The maximum flow rates for each branch were used, and are listed in Table 1. (Also, note that the unprotected scenarios were analyzed using the normal maximum flow rate of 1,409 gpm, but the protected scenarios were analyzed using the higher maximum flow rate of 1,900 gpm.)

Table 1. Transient Analysis Flowrates

Reach	Flowrate (gpm)
Reach 24.1	2,375
Reach 24.1 JAN	966
Reach 25, normal maximum	1,409
Reach 25, maximum	1,900*

**An increased flow rate on Reach 25 was evaluated in this study and resulted in revisions to the pre-charge pressures associated with the two (2) surge tanks recommended in the Reach 25/24.1 Transient Analysis Report (URS, February 18, 2013).*

This report summarizes the transient pressure analysis and mitigation recommendations to protect the Reach 24.1 JAN pipeline and Reach 24.1/25 pipeline from transient pressures resulting from a change in pump operation, closure of in-line system valves, operation of flush valves, operation of the JAN altitude valve, and other similar typical operational conditions, as previously discussed. A detailed summary of our review and recommendations including detailed considerations follows. Model output files are included in Attachment 2 for the possible modes of failure considered. Please note, on many figures a significant headloss occurs at STA 300+00 on the JAN pipeline, this is due to the headloss at the rate of flow control (RF) valve located upstream of the JAN tank site. Downstream of the RF valve low pressures occur, which are necessary to enter JAN tank safely.

1.0 INITIAL TRANSIENT PRESSURE ANALYSIS

A transient hydraulic model was developed using InfoWater® software for the Reach 24.1/25 and Reach 24.1 JAN pipelines based on the following information:

- Design calculations, *Cutter 6A 24.JAN Design 10-23-14.xls* by SMA(Attached)
- WaterCAD Analysis of Flush Valve Rates for Reach 24 by SMA (Attached)
- Previous Reach 24.1/25 Transient Analysis Report:
    - *NGWSP Reach 24.1/25 Transient Analysis and Recommendations Technical Memorandum*, URS, February 18, 2013
    - *Addendum 01 Technical Memorandum, URS, December 24, 2013*

The Reach 24.1/25 model used to develop the Reach 24.1/25 Transient Report was modified to include the Reach 24.1 JAN pipeline and tank. A total of 15,750 lf of DR 18 PVC 10 inch pipe, 32 junctions, and one tank, were added to the model to represent the Reach 24.1 JAN system. The InfoWater Input Report is located in Attachment 2.

The hydraulic model was calibrated to the steady state hydraulic design spreadsheet provided by SMA. Following calibration, the model was used to evaluate transient pressure conditions during each of the following possible failure modes without any inclusion of possible surge protection or mitigation. For each failure scenario, the system conditions that would create the worst surge pressures were modeled.

High transient pressure criteria used for this analysis was to limit maximum pipeline pressures to within allowable pipe material pressure ratings for transient pressures. Low transient pressure criteria used for this analysis was to limit minimum transient pressure to 5 psi or greater, unless noted otherwise. Full vacuum or cavitation pressure used in this analysis was -14.4 psi and represents the vapor pressure of water at approximately 70 degrees Fahrenheit.

1.1 TRANSIENT PRESSURE DUE JAN BORDER ALTITUDE VALVE OPERATION

Altitude valves open and close automatically when the water in the JAN Border tank reaches a specified water level. If the valve closes suddenly while the pipeline is flowing, the sudden stoppage of flow could result in potentially damaging transient pressures. Conversely, if the altitude valve opens suddenly, low pressures could result when water suddenly begins to flow.

URS completed a transient pressure analysis for sudden altitude valve opening and closing. Neither opening or closing resulted in high pressures exceeding the pipe pressure rating of 235 psi, however both the sudden opening and sudden closing scenarios resulted in negative pressures, with the worst being -12.5 psi upon valve opening.

The transient analysis results are shown in Table 2 and Attachment 3, Exhibits 1.17 and 1.18. The exhibits for these scenarios include the hydraulic grade line (HGL) profile of steady state and maximum and minimum transient pressures for the Reach 24.1/25 and Reach 24.1 JAN pipelines.

1.2 TRANSIENT PRESSURE DUE TO PUMP STARTUP OR SHUTDOWN

The suction and discharge surge tanks located at the Reach 25 pump station were designed before the 24.1 JAN pipeline was designed. The intention of the pump station surge tanks is to provide protection to the Reach 24.1/25 system. Pump sudden startup and sudden shutdown was modeled further in this analysis to verify whether additional surge tank protection may be required to protect the Reach 24.1 JAN pipeline.

The sudden pump shutdown resulted in a maximum pressure of 195 psi, and the sudden start resulted in a minimum pressure of 2.4 psi. The maximum pressure is below the pressure class of the pipe, 235 psi; however the minimum pressure of 2.9 psi is below the minimum pressure criteria of 5 psi.

The transient analysis results are shown in Table 2 and Attachment 3, Exhibits 1.19 and 1.20. The exhibits for these scenarios include the HGL profile of steady state and maximum and minimum transient pressures for the Reach 24.1/25 and Reach 24.1 JAN pipelines.

1.3 TRANSIENT PRESSURE DUE REACH 24.1 JAN AND REACH 24.1/25 INTERACTION

Because Reach 24.1 JAN and Reach 24.1/25 are hydraulically connected, transient pressures resulting from pipeline operation on either Reach will have effects on the entire system. Possible combinations of the pump suddenly opening or closing, in conjunction with JAN altitude valve opening or closing were considered as follows:

- JAN altitude valve sudden open during controlled pump start up, over a 75 second time period
- JAN altitude valve sudden close during controlled pump shut down, over a 75 second time period
- JAN altitude valve sudden open during controlled pump shut down, over a 75 second time period
- JAN altitude valve sudden close during controlled pump start up, over a 75 second time period

- JAN altitude valve sudden open after pump sudden start, with no time delay between operations
- JAN altitude valve sudden close after pump sudden stop, with no time delay between operations
- JAN altitude valve sudden open after pump sudden stop, with no time delay between operations
- JAN altitude valve sudden close after pump sudden start, with no time delay between operations

- JAN altitude valve sudden open before pump sudden start, with no time delay between operations
- JAN altitude valve sudden close before pump sudden stop, with no time delay between operations
- JAN altitude valve sudden open before pump sudden stop, with no time delay between operations
- JAN altitude valve sudden close before pump sudden start, with no time delay between operations

The most conservative case transient pressures would involve both the JAN altitude valve and the Reach 25 pump operation suddenly changing at the same time, without any time delay between operations.

The maximum pressure from the considered scenarios was 217 psi which is below the pipe pressure rating of 235 psi; however, the majority of the considered scenarios resulted in negative pressures, with the pump start/JAN altitude valve open scenarios resulting in full vacuum pressure which is below the minimum pressure criteria of 5 psi and also indicates likely water column separation.

The transient analysis results are shown in Table 2 and Attachment 3, Exhibits 1.1 through 1.12. The exhibits for these scenarios include the HGL profile of steady state and maximum and minimum transient pressures for the Reach 24.1/25 and Reach 24.1 JAN pipelines.

1.4 TRANSIENT PRESSURE DUE TO IN-LINE VALVE CLOSURE

Closure of in-line valves is done by manual operation. Similar to the altitude valve, if Reach 24.1 JAN in-line valves are closed while the pipeline is flowing, a sudden stoppage of flow will result in potentially damaging transient pressures. Transient pressures will tend to increase upstream of the closed valve and decrease downstream of the valve. It is typically necessary to determine the effects from such valve closures in order to set limits on the maximum allowable valve closure rates that the system can withstand.

URS completed a transient pressure analysis for the closure of Reach 24.1 JAN in-line valves. The analysis considered the effects from possible valve closures at four planned locations for isolation valves between the JAN turnout and the JAN tank. The butterfly valves used in the previous Reach 24.1/25 report were assumed to be similar to the planned Reach 24.1 JAN valves. The likely maximum possible valve closure rate was estimated assuming manual operation of butterfly valves conservatively could involve an average of 1 second per turn. The 10 inch butterfly valves with manual MDT-2S actuators will require 32 turns to close and therefore an estimated maximum closure rate of 32 seconds was estimated. This is equivalent to each turn being completed in one second. For butterfly valves, the greatest change in flow rate occurs during the very end of closure, and this last portion of closure is the controlling factor on the level of surge experienced. Reach 25 was assumed to be off during these scenarios.

A similar rate of closure, of about 30 seconds, also applies for gate valve actuators. Gate valves also tend to cut off the greatest amount of flow in the last 20% of closure, resulting in comparable pressures as the butterfly valve simulation.

The analysis results indicated maximum pipeline transient pressure as high as 207 psi due to closure of in-line valves at the maximum closure rate which is below the pipe pressure rating of 235 psi. Multiple isolation valve locations resulted in negative pipeline pressures and possible full vacuum pressure, which is below the minimum pressure criteria of 5 psi and also indicates likely water column separation.

The transient analysis results are shown in Table 2 and Attachment 3, Exhibits 1.21 through 1.24. The exhibits for this scenario include the HGL profile of steady state and maximum and minimum transient pressures for the Reach 24.1/25 and Reach 24.1 JAN pipelines.

1.5 TRANSIENT PRESSURE DUE TO PUMP AND GRAVITY TRANSITION

The NGWSP Reach 24.1/25 Transient Analysis Report made a recommendation for a 10 minute delay between gravity and pumping flow, to allow the transition surge wave to dissipate, and allow the system to come to rest before another transient condition was created. SMA has indicated that a time delay between gravity and pump flow may be manually overridden, and as an extra precaution, URS has modeled the system transitioning to or from gravity without any time delay.

The pump station is currently designed without a control valve downstream of the pumps. When the suction head is greater than the discharge head, water will flow through the pumps, even when the bypass control valve is closed. This configuration is beneficial for surge pressures because the rate of change in flow is minimized when transitioning to or from gravity flow.

The analysis included both sudden and controlled pump and gravity transition scenarios. Controlled bypass operation and pump operation is over a 75 second time period, fast operation occurs in a 32 second time period. The scenarios that have been considered are:

- Gravity sudden close to sudden pump start
- Gravity controlled close to controlled pump start
- Pump sudden stop to gravity sudden open
- Pump controlled stop to gravity controlled open

None of the analyzed pump to gravity scenarios resulted in any excessively high pressures. The resulting minimum pressures are below the low pressure criteria of 5 psi, near the Ojo-Encino Tank and the Counselor Tank sites. The low pressure at the Ojo-Encino Tank is a result of the steady state condition when Ojo-Encino Tank is empty, as identified in the steady state hydraulic model provided by SMA and included in Attachment 1.

The transient analysis results are shown in Table 2 and Attachment 3, Exhibits 1.13 through 1.16. The exhibits for this scenario include the HGL profile of steady state and maximum and minimum transient pressures for the Reach 24.1/25 and Reach 24.1 JAN pipelines.

1.6 TRANSIENT PRESSURE DUE TO FLUSH VALVE OPERATION

Opening or closure of a flush line valve can occur due to the manual operation of planned 4" gate valves along the Reach 24.1/25 and Reach 24.1 JAN pipelines resulting in sudden start or stoppage of flow and potentially damaging transient pressures. It can be necessary to limit the size of flush line flow rates in order to limit transient pressures. URS completed a transient pressure analysis for the opening and closure of flush line valves for Reaches 24.1/25 and 24.1 JAN. The analysis considered the effects from a flush line valve operation at the planned locations for flush valves which are:

Reach 24.1:
- 22+91
- 66+05

Reach 25:
- 148+29
- 176+00
- 218+08
- 218+90
- 276+80
- 357+50
- 469+30

Reach 24.1 JAN (stationed from the Counselor Tank):
- 190+30 JAN
- 234+80 JAN
- 289+80 JAN

Each scenario considered the system conditions that would create the most conservative resulting transient pressures. The flow rates and system conditions that are used in the analysis were provided by SMA and are included in Attachment 1. The estimated flush line valve opening and closure rate was 14 seconds, due to the 14 turns required to close the 4" gate valve. The use of a 4" ball valve with worm geared actuator would also be acceptable for the flush lines and representative of the results presented in this report provided that the worm gearing provides for a 14 stroke valve closure.

Results from the flush valve analysis are located in Table 2 and Appendix 3, Exhibits 1.25 through 1.48. It was determined that 9 of the 12 flush valve locations resulted in pressures below the minimum transient pressure criteria of 5 psi and 2 scenarios exceed 235 psi.

1.7 TRANSIENT PRESSURE DUE TO PIPE BREAK

The possible concern during a pipeline break scenario would be that subsequent to the break, an upstream isolation valve is closed quickly, further damaging the pipeline. The pipe break scenario is similar to the isolation valve scenarios, except the system would be flowing at a higher than normal flow rate, depending on the location of the break. Pipe breaks and subsequent isolation valve closures were modeled at several important locations in the system:

- STA 189+30 JAN (low point)

- STA 234+30 JAN
- STA 289+80 JAN

During the pipe break scenarios, each scenario modeled produced negative pressures reaching cavitation pressure downstream of the closed isolation valve. The highest pressure due to a pipe break and subsequent isolation valve closure is 265.2 psig (Scenario 1.50), as seen on Table 2 and Exhibit 1.50a in Attachment 3.

1.8 INITIAL TRANSIENT ANALYSIS RESULTS SUMMARY

Results from the initial transient analysis scenarios described above are presented in Table 2 below along with corresponding Attachment 3 exhibit numbers.

Table 2. Initial Transient Analysis Results Summary

Transient Scenario	Attachment 3 Exhibit No.	Maximum Pressure (psi)	Location of Maximum Pressure (STA)	Minimum Pressure (psi)	Location of Minimum Pressure (STA)	Assumptions
JAN sudden open during pump controlled start up	1.1	145.1	276+80 (Reach 25)	-14.4	4+00 (Reach 24.1)	75 sec pump ramp up time
JAN sudden close during pump controlled shutdown	1.2	196.5	289+80 (Reach 24.1JAN)	-3.8	4+00 (Reach 24.1)	75 sec pump ramp down time
JAN sudden open during pump controlled shutdown	1.3	139.3	276+80 (Reach 25)	-9.4	4+00 (Reach 24.1)	75 sec pump ramp down time
JAN sudden close during pump controlled start up	1.4	157.4	189+30 (Reach 24.1JAN)	2.3	4+00 (Reach 24.1)	75 sec pump ramp up time
JAN sudden open after pump sudden start	1.5	147.4	276+80 (Reach 25)	-14.4	Multiple Stations	No time delay
JAN sudden close after pump sudden stop	1.6	217.2	289+80 (Reach 24.1JAN)	-2.1	4+00 (Reach 24.1)	No time delay
JAN sudden open after pump sudden stop	1.7	156.3	176+56 (Reach 24.1)	-7.4	4+00 (Reach 24.1)	No time delay
JAN sudden close after pump sudden start	1.8	171.9	289+80 (Reach 24.1JAN)	1.9	4+00 (Reach 24.1)	No time delay
JAN sudden open before pump sudden start	1.9	145.3	276+80 (Reach 25)	-14.4	Multiple Stations	No time delay
JAN sudden close before pump sudden stop	1.10	216.7	289+80 (Reach 24.1JAN)	-2.4	4+00 (Reach 24.1)	No time delay
JAN sudden open before pump sudden stop	1.11	156.3	176+56 (Reach 24.1JAN)	-8.5	4+00 (Reach 24.1)	No time delay
JAN sudden close before pump sudden start	1.12	172.9	289+80 (Reach 24.1JAN)	1.7	4+00 (Reach 24.1)	No time delay
Gravity sudden close to sudden pump start	1.13	153.8	189+30 (Reach 24.1JAN)	1.3	565+56 (Reach 25)	No time delay between gravity and pump; 32 second bypass valve close time. JAN altitude valve is closed. A high pressure within 0.1 psi of the reported high pressure also exists at STA 276+80 (Reach 25)
Gravity controlled close to controlled pump start	1.14	152.7	289+80 (Reach 24.1JAN)	1.3	565+56 (Reach 25)	No time delay between gravity and pump; 75 second bypass valve close time; JAN altitude valve is closed
Pump sudden stop to gravity sudden open	1.15	187.6	289+80 (Reach 24.1JAN)	1.3	565+56 (Reach 25)	No time delay between pump and graviy; 32 second bypass valve open time. JAN altitude valve is closed
Pump controlled stop to gravity controlled open	1.16	158.3	189+30 (Reach 24.1JAN)	1.3	565+56 (Reach 25)	No time delay between pump and gravity; 75 second bypass valve open time.; JAN altitude valve is closed
JAN sudden open	1.17	140.2	276+80 (Reach 25)	-12.5	4+00 (Reach 24.1)	pump on, JAN empty
JAN sudden close	1.18	185.2	289+80 (Reach 24.1JAN)	-0.6	4+00 (Reach 24.1)	pump off, JAN full
Pump sudden start	1.19	152.4	276+80 (Reach 25)	2.4	4+00 (Reach 24.1)	JAN on
Pump sudden stop	1.20	194.9	289+80 (Reach 24.1JAN)	9.9	565+56 (Reach 25)	JAN off
Isolation Valve closure at STA 143+30 (Reach 24.1JAN)	1.21	173.9	176+56 (Reach 25)	-14.4	Multiple Stations	Pump off
Isolation Valve closure at STA 194+80 (Reach 24.1JAN)	1.22	206.8	189+30 (Reach 24.1JAN)	-14.4	263+30 (Reach 24.1JAN)	Pump off
Isolation Valve closure at STA 247+30 (Reach 24.1JAN)	1.23	197.3	201+80 (Reach 24.1 JAN)	-14.4	263+30 (Reach 24.1JAN)	Pump off
Isolation Valve closure at STA 299+80 (Reach 24.1JAN)	1.24	193.1	189+30 (Reach 24.1JAN)	-0.9	JAN Tank (Reach 24.1JAN)	Pump off
Flush Line Close, STA 22+91 (Reach 24.1)	1.25	158.2	189+30 (Reach 24.1JAN)	8.7	565+56 (Ojo Tank)	FV flow rate = 2223 gpm, JAN altitude valve is closed

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Transient Scenario	Attachment 3 Exhibit No.	Maximum Pressure (psi)	Location of Maximum Pressure (STA)	Minimum Pressure (psi)	Location of Minimum Pressure (STA)	Assumptions
Flush Line Close, STA 66+05 (Reach 24.1)	1.26	171.1	289+80 (Reach 24.1JAN)	1.2*	565+56 (Ojo Tank)	FV flow rate = 2459 gpm, No flow in JAN line; JAN altitude valve is closed. *Low pressure is due to Ojo Tank level (empty)*
Flush Line Close, STA 148+29 (Reach 25)	1.27	177.8	289+80 (Reach 24.1JAN)	8.7	565+56 (Ojo Tank)	FV flow rate = 2286 gpm, JAN altitude valve is closed
Flush Line Close, STA 176+00(Reach 25)	1.28	170.8	189+30 (Reach 24.1JAN)	8.7	565+56 (Ojo Tank)	FV flow rate = 2434 gpm, JAN altitude valve is closed
Flush Line Close, STA 218+08 (Reach 25)	1.29	177.2	189+30 (Reach 24.1JAN)	9.6	565+56 (Ojo Tank)	FV flow rate = 2116 gpm, JAN altitude valve is closed
Flush Line Close, STA 218+90 (Reach 25)	1.30	258.7	469+14 (Reach 25)	11.8	565+56 (Ojo Tank)	FV flow rate = 2203 gpm, JAN altitude valve is closed
Flush Line Close, STA 276+80 (Reach 25)	1.31	154.6	276+80 (Reach 25)	5.1	565+56 (Ojo Tank)	FV flow rate = 2365 gpm, JAN altitude valve is closed
Flush Line Close, STA 357+50 (Reach 25)	1.32	179.5	469+14(Reach 25)	8.6	565+56 (Ojo Tank)	FV flow rate = 2829 gpm, JAN altitude valve is closed
Flush Line Close, STA 469+30 (Reach 25)	1.33	187.0	469+14 (Reach 25)	8.6	565+56 (Ojo Tank)	FV flow rate = 2825 gpm, JAN altitude valve is closed
Flush Line Close, STA 190+30 (Reach 24.1JAN)	1.34	150.5	276+80 (Reach 25)	3.2	263+30 (Reach 24.1 JAN)	FV flow rate = 1736 gpm
Flush Line Close, STA 234+80 (Reach 24.1JAN)	1.35	150.4	276+80 (Reach 25)	-1.6	263+30 (Reach 24.1 JAN)	FV flow rate = 1424 gpm
Flush Line Close, STA 289+80 (Reach 24.1JAN)	1.36	154.7	289+80 (Reach 24.1 JAN)	-5.5	263+30(Reach 24.1 JAN)	FV flow rate = 1321 gpm
Flush Line Open, STA 22+91(Reach 24.1)	1.37	133.5	189+30 (Reach 24.1 JAN)	9.9	565+56 (Ojo Tank)	FV flow rate = 2223 gpm
Flush Line Open, STA 66+05 (Reach 24.1)	1.38	149.4	189+30(Reach 24.1 JAN)	1.2*	565+56 (Ojo Tank)	FV flow rate = 2459 gpm
Flush Line Open, STA 148+29 (Reach 25)	1.39	151.4	189+30(Reach 24.1 JAN)	5.6	315+35 (Reach 25)	FV flow rate = 2286 gpm
Flush Line Open, STA 176+00 (Reach 25)	1.40	151.4	189+30(Reach 24.1 JAN)	2.1	315+35 (Reach 25)	FV flow rate = 2434 gpm
Flush Line Open, STA 218+08 (Reach 25)	1.41	151.6	189+30(Reach 24.1 JAN)	3.1	315+35 (Reach 25)	FV flow rate = 2116 gpm
Flush Line Open, STA 218+90 (Reach 25)	1.42	136.1	189+30(Reach 24.1 JAN)	-14.4	315+35 (Reach 25)	FV flow rate = 1541 gpm
Flush Line Open, STA 276+80 (Reach 25)	1.43	129.6	189+30(Reach 24.1 JAN)	-3.8	315+35 (Reach 25)	FV flow rate = 1597 gpm
Flush Line Open, STA 357+50 (Reach 25)	1.44	129.6	189+30(Reach 24.1 JAN)	-14.4	392+70 (Reach 25)	FV flow rate = 2242 gpm
Flush Line Open, STA 469+30 (Reach 25)	1.45	129.6	189+30(Reach 24.1 JAN)	-14.4	392+70 (Reach 25)	FV flow rate = 2458 gpm
Flush Line Open, STA 190+30 (Reach 24.1JAN)	1.46	139.2	276+80 (Reach 25)	-14.4	263+30 (Reach 24.1 JAN)	FV flow rate = 1800 gpm
Flush Line Open, STA 234+80 (Reach 24.1JAN)	1.47	139.2	276+80 (Reach 25)	-14.4	263+30 (Reach 24.1 JAN)	FV flow rate = 1400 gpm
Flush Line Open, STA 289+80 (Reach 24.1JAN)	1.48	139.2	276+80 (Reach 25)	-14.4	263+30 (Reach 24.1 JAN)	FV flow rate = 1250 gpm
Pipe Break at STA 189+30 (Reach 24.1JAN)	1.49	223.8	176+50 (Reach 24.1)	-14.4	Multiple Stations	Reach 24.1 JAN Flow Rate = 3066 gpm
Pipe Break at STA 234+30 (Reach 24.1JAN)	1.50	265.2	189+30 (Reach 24.1 JAN)	-14.4	Multiple Stations	Reach 24.1 JAN Flow Rate = 2304 gpm
Pipe Break at STA 289+80 (Reach 24.1JAN)	1.51	217.2	234+30 (Reach 24.1 JAN)	-14.4	Multiple Stations	Reach 24.1 JAN Flow Rate = 1677 gpm

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2.0 TRANSIENT MITIGATION EVALUATION

URS has completed transient modeling to evaluate surge protection devices to mitigate the effects due to the transient conditions identified in Section 1. Tabular results for maximum and minimum pressures and respective locations are provided in Table 3 located at the end of the section. Exhibits are located in Attachment 3.

2.1 JAN ALTITUDE VALVE TRANSIENT MITIGATION

Typical operation should involve controlled opening and closing of the JAN altitude valve of a period of 180 seconds or longer. However, in the event that controlled closure of the altitude valve cannot be relied upon, a surge tank located at the JAN turnout will mitigate the effects of sudden valve operation.

A bladder-type hydropneumatic surge tank, comparable to the horizontal, clear water type vessels manufactured by Charlatte is recommended to mitigate the effects of sudden JAN altitude valve operation.

The transient mitigation evaluation indicated that the required size of the surge tank is governed by the JAN altitude valve sudden open scenario and a 650 cubic feet (18.4 cubic meters / 4862 gallons / 18,406 liters) with an initial air pre-charge pressure of 35 psi will protect the system. The vessel size includes a 20% factor of safety, which is an industry standard intended to ensure failsafe operation of the vessel despite slight variances in performance that may occur in the field compared to modeled conditions presented here. A summary of the transient analysis results showing an HGL profile of steady state and maximum and minimum transient pressures during JAN altitude valve sudden opening and closing with the surge tank are shown in Table 3 and Exhibits 2.17 and 2.18 in Attachment 3.

2.2 PUMP STARTUP OR SHUTDOWN TRANSIENT MITIGATION OPTIONS

The addition of the Reach 24.1 JAN pipeline resulted in a slight decrease in the minimum suction pressure upon sudden startup of the Reach 25 pump station compared to previous estimates provided in the NGWSP Reach 24.1/25 Transient Analysis Report. High pressures remained below the pipe pressure rating.

Transient pressures resulting from the Reach 25 pump station sudden startup and shutdown are mitigated primarily by the pump station suction and discharge surge tanks recommended in the NGWSP Reach 24.1/25 Transient Analysis Report. The transient pressures are further mitigated by the recommended Reach 24.1 JAN surge tank discussed in Section 2.1 and the resulting pressures are within the system pressure criteria. See Table 3 and Attachment 3, Exhibits 2.19 and 2.20 for the final HGL profile including the surge tank protection.

2.3 REACH 24.1 JAN AND REACH 24.1/25 INTERACTION TRANSIENT MITIGATION OPTIONS

All of the combinations of Reach 24.1/25 and Reach 24.1 JAN operational scenarios listed in Section 1.3 resulted in pressures below the minimum pressure criteria of 5 psi. Several of the scenarios resulted in full vacuum pressure indicating likely cavitation and associated water column separation.

These scenarios were modeled with the recommended Reach 24.1 JAN surge tank discussed in Section 2.1. The majority of the low pressure issues were resolved as a result of the implementation of the 650 cf surge tank. However, scenarios where both the Reach 25 pump station and the Reach 24.1 JAN pipeline are starting (2.1, 2.5, 2.6, and 2.9) remained below the minimum pressure criteria. For these scenarios, additional protection measures are required to maintain system pressures above 5 psi.

Three alternatives are presented for Scenarios 2.5 and 2.9. Scenario 2.1 was not re-modeled; scenarios 2.5 and 2.9 were the governing scenarios for mitigation requirements.

Option 1: Scenario 2.5a and 2.9a implement a surge tank with a minimum tank volume of 650 cubic feet with an initial air pre-charge pressure of 35psi, located at the JAN turnout.

Option 2: Scenario 2.5b and 2.9b include a time delay in addition to a 115 cf surge tank. It was determined that a 300 second (5 minute) delay between the Reach 25 pump station startup and the Reach 24.1 JAN startup will be necessary to maintain a minimum pressure above the low pressure criteria of 5 psi.

Option 3: Scenario 2.5c and 2.9c implement a 115 cf surge tank at the JAN turnout as well as a 225 cf surge tank, with a pre-charge pressure of 17 psi, located at STA 263+30 on Reach 24.1 JAN.

See Table 3 and Exhibits 2.1 through 2.12 for the final pressures and HGL profiles based on the Reach 25 maximum flow rate of 1,900 gpm. Option 2 and 3 were not selected for implementation and have been excluded from the tables and exhibits.

It should be noted that the scenarios considered in this section are for sudden operation of the Reach 24.1 JAN pipeline and the Reach 25 pump station. Controlled operation of the Reach 24.1 JAN pipeline and the Reach 25 pump station will mitigate the transient pressures. Controlled operation of the Reach 24.1 JAN pipeline and the Reach 25 pump station along with a 5 minute time delay between each operation should be the standard practice for operation of this system.

2.4 IN-LINE VALVE CLOSURE MITIGATION OPTIONS

The most reliable mitigation of transient pressures for the closure of in-line valves involves prevention through sound operational practices and operator education, emphasizing that in-line valves should not be permitted to close while the Reach 24.1 JAN pipeline is flowing. Flow to JAN should be shut-off at designated shut-off locations; station 300+65 located upstream of the JAN tank, or at the JAN turnout, are acceptable locations for the rate of flow control valve and flow shut off valve. This can be achieved by clear documentation for operators in system O&M manuals, through signage at all valve locations, and through continued system specific operator training.

A rate of flow control valve to regulate and start and stop flow on the JAN pipeline would be a reliable method of controlling flow in the system. Typical operation should involve controlled opening and closing of the control valve over a period of 180 seconds.

In the event of an improper isolation valve closure on the Reach 24.1 JAN pipeline, 2-inch vacuum breaker valves with 1/8" air release (VBV with ARV) , located at all system high points will prevent excessive negative pressures from occurring due to isolation valve close during pipeline operation. In addition, a 2" VBV with 1/8" ARV should be located downstream of the isolation valve located at 143+30, and the VBV with ARV located at STA 263+30, should have a with 4” vacuum orifice inlet and 1/8” air release outlet. See Table 3 and Attachment 3 for Exhibits 2.21 through 2.24 for the final HGL profile including the VBV with ARV protection.

Recommendations 9 and 10 made in the previous NGWSP Reach 24.1/25 Transient Analysis and Recommendations Technical Memorandum recommended vacuum breaker valves for Reach 24.1. No special valve considerations were recommended in Reach 25; combination air/vacuum valves for typical filling and draining purposes were recommended. The additional system analysis presented in this report has determined that the valve types recommended in the previous report remain valid; no change is required.

2.5 PUMP AND GRAVITY TRANSITION MITIGATION OPTIONS

The current design of the Reach 25 pump station has a beneficial configuration to minimize surge pressures. For the transition from gravity flow, following closure of the bypass, to pump start, Scenario 1.13, the low pressure at the Counselor Tank is mitigated when the surge tank at the JAN turnout is in use. For all the gravity flow scenarios, a minimum pressure above 5 psi near the Ojo-Encino Tank can be achieved by maintaining a minimum tank level of 9 ft at the Ojo Enicno Tank.

In addition, the pump and bypass system should be operated slowly, utilizing the VFDs at the pump station and slow, controlled opening or closing the bypass valve over a period of at least 75 seconds while transitioning to or from gravity flow. This will mitigate transient pressures particularly during periods when the Reach 24.1 JAN surge tank is offline. If a failsafe mechanism cannot ensure slow pump and bypass valve operation during all conditions, consider incorporating standard operating procedures that provide a 10 minute time delay between pump and bypass operations, and vise-versa, operations, to allow the surge wave to dissipate before another pump or bypass operation is performed. This will mitigate the effects of a sudden pump start or bypass opening during periods when the Reach 24.1 JAN surge tank is offline. See Table 3 and Exhibit 2.13 for results and HGL profile.

2.6 FLUSH VALVE CLOSURE MITIGATION OPTIONS

The flush line locations that resulted in unacceptable pressures as determined in Section 1.6 are:

Reach 25

- 176+00
- 218+08
- 218+90
- 276+80
- 357+50
- 469+30

Reach 24.1 JAN (stationed from the Counselor Tank)

- 190+30 JAN
- 234+80 JAN
- 289+80 JAN

These flush line locations should be designed to limit the maximum flush line flow rates to the flow rates presented in Table 3, in order to maintain a minimum transient pressure of 5 psi. In addition, all of the VBVs with ARVs recommended at each isolation valve in Section 2.4 for in-line valve closure mitigation should also be provided along with other suitable locations as necessary for pipeline draining in accordance with standard practice for pipeline design, which is beyond the scope of this transient analysis. See Table 3 and Exhibits 2.31 – 2.48 for results and HGL profiles.

2.7 PIPE BREAK MITIGATION

2-inch vacuum breaker valves with 1/8" air release (VBV with ARV) located on the downstream side of each isolation valve will prevent cavitation pressures from forming in the case of closure while the pipeline is flowing. A 2-inch VBV with 1/8" ARV should also be installed at all local high points to prevent cavitation pressures. The concern in this scenario is not to keep a residual 5 psig, but to increase the reliability of the system by preventing further damage to the pipe if an operator were to close an isolation valve after a pipe break event. Due to the higher flow rates in the system following a pipe break controlled closure of inline isolation valves alone was not a reliable mitigation approach; therefore 2-inch VBV with 1/8" ARV are recommended. 2-inch VRV with 1/8" ARV should be installed immediately downstream of all isolation valves and at all local high points to prevent full vacuum pressure. See Table 3 and Attachment 3, Exhibits 2.49 and 2.51 for the final HGL profile including the surge tank protection.

2.8 JAN FLOW CONTROL VALVE FAILURE

Subsequently to the initial submittal of the Transient Pressure Analysis to the Bureau of Reclamation, SMA has identified an additional scenario for consideration due to the JAN flow control valve (FCV) possibly failing to a full open position, resulting in a maximum flow rate of 1296 gpm in the JAN line. An additional scenario has been evaluated assuming that the JAN FCV can rapidly fail full open from a fully closed position, with the following system conditions:

- Counselor Full
- JAN Tank empty
- Reach 24.1 JAN Flow Rate = 1296 gpm
- Reach 25 Flow Rate = 0 gpm
- RFC Valve failure rate = 0.1 seconds

The protected scenario results for the FCV failure are shown in Table 3 and Exhibit 2.52. The resulting pressures remain within the pressure criteria, and no additional surge equipment is recommended to mitigate this scenario.

A controlled emergency shutdown would be required after a FCV failure. The closure rate of 180 seconds at either of the master control valve locations is acceptable for shutdown. In addition, the fastest closure rate possible of 32 seconds at each of the isolation valve locations was also modeled, and was confirmed that minimum pressures do not result in negative pressure below about -2 psi. Based on these result, no additional recommendations are required for this scenario.

Table 3. Protected System Transient Analysis Results Summary

Transient Scenario	Attachment 3 Exhibit No.	Maximum Pressure (psi)	Location of Maximum Pressure (STA)	Minimum Pressure (psi)	Location of Minimum Pressure (STA)	Assumptions
JAN sudden open during pump start up	2.1	172.7	276+80 (Reach 25)	3.3	300+80 (Reach 24.1JAN)	650 cf surge tank located at the turnout. The reduction in minimum pressure is due to a lower initial pressure that results from a higher flow on R25. This scenario assumes R25 flow rate of 1900 gpm, which exceeds the normal flow rate of 1409 gpm. At normal flow in R25 (1409 gpm), the minimum pressure is above 5 psi.
JAN sudden close during pump shutdown	2.2	187.8	289+80 (Reach 24.1JAN)	3.8	315+35 (Reach 25)	650 cf surge tank located at the turnout. The reduction in minimum pressure is due to a lower initial pressure that results from a higher flow on R25. This scenario assumes R25 flow rate of 1900 gpm, which exceeds the normal flow rate of 1409 gpm. At normal flow in R25 (1409 gpm), the minimum pressure is above 5 psi.
JAN sudden open during pump shutdown	2.3	172.5	276+80 (Reach 25)	3.2	300+80 (Reach 24.1JAN)	650 cf surge tank located at the turnout. The reduction in minimum pressure is due to a lower initial pressure that results from a higher flow on R25. This scenario assumes R25 flow rate of 1900 gpm, which exceeds the normal flow rate of 1409 gpm. At normal flow in R25 (1409 gpm), the minimum pressure is above 5 psi.
JAN sudden close during pump start up	2.4	194.4	289+80 (Reach 24.1JAN)	5.2	315+35 (Reach 25)	650 cf surge tank located at the turnout.
JAN sudden open after pump sudden start	2.5a (Option1)	188.04	276+80 (Reach 25)	0	263+30 (Reach 24.1 JAN)	650cf (35 psi preset)surge tank located at the turnout , No time delay between operations. The minimum pressure of 0 psi on the JAN line may be acceptable, as it only occurs when Reach 25 is flowing at 1900 gpm, which is not a normal condition.
JAN sudden close after pump sudden stop	2.6	184.4	289+80 (Reach 24.1JAN)	0	315+35 (Reach 25)	650 cf surge tank located at the turnout , No time delay between operations. The reduction in minimum pressure is due to a lower initial pressure that results from a higher flow on R25. This scenario assumes R25 flow rate of 1900 gpm, which exceeds the normal flow rate of 1409 gpm. At normal flow in R25 (1409 gpm), the minimum pressure is above 5 psi.
JAN sudden open after pump sudden stop	2.7	183.6	289+80 (Reach 24.1JAN)	6.6	0+70 (Reach 24.1)	650 cf surge tank located at the turnout, No time delay between operations
JAN sudden close after pump sudden start	2.8	190.2	289+80 (Reach 24.1JAN)	5.1	4+00 (Reach 24.1)	650 cf surge tank located at the turnout, No time delay between operations
JAN sudden open before pump sudden start	2.9a (Option 1)	188.0	276+80 (Reach 25)	0	263+30 (Reach 24.1 JAN)	650 cf (35 psi preset) surge tank located at the turnout, No time delay between operations. The reduction in minimum pressure is due to a lower initial pressure that results from a higher flow on R25. This scenario assumes R25 flow rate of 1900 gpm, which exceeds the normal flow rate of 1409 gpm. At normal flow in R25 (1409 gpm), the minimum pressure is above 5 psi.
JAN sudden close before pump sudden stop	2.10	196.8	289+80 (Reach 24.1JAN)	6.2	4+00 (Reach 24.1	650 cf surge tank located at the turnout, No time delay between operations
JAN sudden open before pump sudden stop	2.11	177.0	176+56 (Reach 25)	6.2	4+00 (Reach 24.1)	650 cf surge tank located at the turnout, No time delay between operations
JAN sudden close before pump sudden start	2.12	190.4	289+80 (Reach 24.1JAN)	5.1	4+00 (Reach 24.1)	650 cf surge tank located at the turnout, No time delay between operations
Gravity sudden close to sudden pump start	2.13	175.5	276+80 (Reach 25)	5.1	565+56 (Reach 25)	Limit Ojo tank to 9 ft above empty, 650 cf surge tank at turnout
Gravity controlled close to controlled pump start	2.14	175.7	289+80 (Reach 24.1JAN)	5.2	565+56 (Reach 25)	Limit Ojo tank to 9 ft above empty
Pump sudden stop to gravity sudden open	2.15	175.7	289+80 (Reach 24.1JAN)	5.2	565+56 (Reach 25)	Limit Ojo tank to 9 ft above empty
Pump controlled stop to gravity controlled open	2.16	175.7	289+80 (Reach 24.1JAN)	5.2	565+56 (Reach 25)	Limit Ojo tank to 9 ft above empty
JAN sudden open	2.17	169.2	276+80 (Reach 25)	0	263+30 (Reach 24.1 JAN)	650 cf surge tank located at the turnout. The reduction in minimum pressure is due to a lower initial pressure that results from a higher flow on R25. This scenario assumes

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Transient Scenario	Attachment 3 Exhibit No.	Maximum Pressure (psi)	Location of Maximum Pressure (STA)	Minimum Pressure (psi)	Location of Minimum Pressure (STA)	Assumptions
						R25 flow rate of 1900 gpm, which exceeds the normal flow rate of 1409 gpm. At normal flow in R25 (1409 gpm), the minimum pressure is above 5 psi.
JAN sudden close	2.18	185.2	289+80 (Reach 24.1JAN)	6.7	0+70 (Reach 24.1)	650 cf surge tank located at the turnout
Pump sudden start	2.19	141.9	189+30 (Reach 24.1JAN)	5.1	4+00 (Reach 24.1)	650 cf surge tank located at the turnout
Pump sudden stop	2.20	201.0	289+80 (Reach 24.1JAN)	9.9	565+56 (Reach 25)	650 cf surge tank located at the turnout
Isolation Valve closure at STA 143+30 (Reach 24.1JAN)	2.21	173.9	176+56 (Reach 25)	0	263+30 (Reach 24.1JAN)	2" VBV+1/8 " ARV at high points and D/S of 143+30 iso valve; 4" VBV+1/8 " ARV at 263+30
Isolation Valve closure at STA 194+80 (Reach 24.1JAN)	2.22	206.8	189+30 (Reach 24.1JAN)	0	263+30 (Reach 24.1JAN)	2" VBV+1/8 " ARV at high points and D/S of 143+30 iso valve; 4" VBV+1/8 " ARV at 263+30
Isolation Valve closure at STA 247+30 (Reach 24.1JAN)	2.23	201.1	189+30 (Reach 24.1JAN)	-0.4	266+02 (Reach 24.1JAN)	2" VBV+1/8 " ARV at high points and D/S of 143+30 iso valve; 4" VBV+1/8 " ARV at 263+30
Isolation Valve closure at STA 299+80 (Reach 24.1JAN)	2.24	195.6	289+80 (Reach 24.1JAN)	1.8	300+30 (Reach 24.1JAN)	2" VBV+1/8 " ARV at high points and D/S of 143+30 iso valve; 4" VBV+1/8 " ARV at 263+30
Flush Line Close, STA 276+80 (Reach 25)	2.31	234.1	469+14 (Reach 25)	17.1	0+70 (Reach 24.1)	FV flow rate = 750 gpm. STA 0+70 is located downstream of Counselor Tank. JAN alt valve closed
Flush Line Close, STA 190+30 (Reach 24.1 JAN)	2.34	149.2	276+80 (Reach 25)	6.7	0+70 (Reach 24.1)	FV flow rate = 750 gpm. STA 0+70 is located downstream of Counselor Tank. JAN alt valve closed
Flush Line Close, STA 234+80 (Reach 24.1 JAN)	2.35	148.9	276+80 (Reach 25)	6.7	0+70 (Reach 24.1)	FV flow rate = 500 gpm. STA 0+70 is located downstream of Counselor Tank. JAN alt valve closed
Flush Line Close, STA 289+80 (Reach 24.1 JAN)	2.36	149.2	276+80 (Reach 25)	6.7	0+70 (Reach 24.1)	FV flow rate = 520 gpm. STA 0+70 is located downstream of Counselor Tank. JAN alt valve closed
Flush Line Open, STA 176+00 (Reach 25)	2.40	151.6	189+30 (Reach 24.1JAN)	5.0	315+35 (Reach 25)	FV flow rate = 2100gpm
Flush Line Open, STA 218+08 (Reach 25)	2.41	151.6	189+30 (Reach 24.1JAN)	5.0	315+35 (Reach 25)	FV flow rate = 1950 gpm
Flush Line Open, STA 218+90 (Reach 25)	2.42	136.1	189+30 (Reach 24.1JAN)	5.3	565+56 (Reach 25)	FV flow rate = 300 gpm
Flush Line Open, STA 276+80 (Reach 25)	2.43	129.6	189+30 (Reach 24.1JAN)	5.1	565+56 (Reach 25)	FV flow rate = 260 gpm
Flush Line Open, STA 357+50 (Reach 25)	2.44	129.6	189+30 (Reach 24.1JAN)	5.3	315+35 (Reach 25)	FV flow rate = 750 gpm
Flush Line Open, STA 469+30 (Reach 25)	2.45	129.6	189+30 (Reach 24.1JAN)	5.2	565+56 (Reach 25)	FV flow rate = 825 gpm
Flush Line Open, STA 190+30 (Reach 24.1JAN)	2.46	139.2	276+80 (Reach 25)	5.2	263+30 (Reach 24.1JAN)	FV flow rate = 750 gpm
Flush Line Open, STA 234+80 (Reach 24.1JAN)	2.47	139.2	276+80 (Reach 25)	5.2	263+30 (Reach 24.1JAN)	FV flow rate = 500 gpm
Flush Line Open, STA 289+80 (Reach 24.1JAN)	2.48	139.2	276+80 (Reach 25)	5.1	263+30 (Reach 24.1JAN)	FV flow rate = 520 gpm
Pipe Break at STA 189+30 (Reach 24.1JAN)	2.49	223.0	176+56 (Reach 24.1)	-2.6	187+80 (Reach 24.1 JAN)	Reach 24.1 JAN Flow Rate = 3066 gpm
Pipe Break at STA 234+30 (Reach 24.1JAN)	2.50	264.8	189+30 (Reach 24.1JAN)	-0.3	198+30 (Reach 24.1 JAN)	Reach 24.1 JAN Flow Rate = 2304 gpm
Pipe Break at STA 289+80 (Reach 24.1JAN)	2.51	215.7	234+30 (Reach 24.1JAN)	-2.4	252+30 (Reach 24.1 JAN)	Reach 24.1 JAN Flow Rate = 1677 gpm
JAN FCV Fail open	2.52	162.6	201+80 (Reach 24.1JAN)	5.2	266+03 (Reach 24.1JAN)	650 cf surge tank located at the turnout. Maximum flow rate in JAN is 1296 gpm.

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3.0 TRANSIENT MITIGATION RECOMMENDATIONS

A surge tank is recommended at the Reach 24.1 JAN turnout to mitigate transient pressures within the Reach 24.1/25 pipeline during Reach 24.1 JAN opening or closing during 24.1/25 operation. Vacuum breaker valves (VBV) with air release valves (ARV) are also recommended to provide additional system protection for isolation valve closures. URS recommends the following considerations be included into the design and construction associated with the Reach 24.1 JAN pipeline.

1. SMA has indicated that they have selected Option 1 as the preferred mitigation option. The Reach 24.1 JAN Surge Tank should include:
   A. 650 cf JAN Turnout Surge Tank: <u>At STA 143+00 (JAN turnout), provide a bladder-type hydropneumatic tank with the following attributes</u>:
   - Minimum vessel size: 650 cubic feet (18.4cubic meters / 4862 gallons / 1841 liters) with an initial air pre-charge pressure of 35 psi. Approximate dimensions as indicated in the Attachment 4 will be 75-inch diameter, 305-inch length, 75-inch height, with actual dimensions varying by manufacturer.
   - Tank pre-charge should be confirmed during design based on actual location and distances as the pre-charge can vary significantly.
   - Maximum working pressure: 235 psi.
   - Outlet: Single, appropriately sized bottom outlet with anti-extrusion grid.
   - Internal Lining: NSF 61 approved epoxy.
   - External Coating: Polyurethane with insulation, heat tracing and temperature control to prevent freezing if located outside.
   - Bladder: Butyl rubber, restrained between removable full face mating flange assembly with access manway and davit for removal and replacement.
   - Level Monitoring: Load cell with automated alarm, and level gauge for visual observation.
   - We understand a flow meter, and shut-off valve, is planned to be located on the downstream side of the surge tank tee. This is considered acceptable from a transient pressure perspective.

2. Reach 24.1 JAN Surge Tank Outlet and Piping:
   - Install the surge tank or connect the tank outlet piping as close as possible to the Reach 24.1 JAN pipeline. Limit the total surge tank inlet resistance (between the surge tank and the main pipeline), as well as the outlet resistance , to 0.021 feet per cubic feet per second (CFS) squared (ft/CFS2).
   - SMA should determine if this resistance allows for suitable sizes of pipe, fittings, and the surge tank outlet. If this resistance is not suitable, SMA should request URS revise the resistance and update the associated surge tank sizes recommended in this report.

3. JAN Altitude Valve:
   - The altitude valve should be located as close as practical to the JAN tank.
   - Install a 2-inch vacuum breaker valve (VBV) with 1/8” air release (ARV) immediately downstream of the altitude valve.

- o Piping, joints, fittings, and appurtenances between the altitude valve and the tank inlet should be capable of withstanding full vacuum pressure.
- o Altitude valve opening and closing speed should be 180 seconds, minimum.
- o Additional protection is provided by the surge tank.

4. Rate of Flow Control Valve
   - o A rate of flow control valve should be installed to regulate flow, and the isolation valve used to start and stop flow on the JAN pipeline should be installed at the same location.
   - o The valve should be installed at Station 300+65 located upstream of the JAN tank.
   - o Typical operation should involve controlled opening and closing of the control valve over a period of 180 seconds.

5. Reach 24.1 Pipeline:
   - o It has been confirmed by SMA that the selected Reach 24.1 pipeline material(s) including all appurtenances can withstand the predicted negative pressures shown in Table 3, which are -3 psi or greater.
   - o It has been confirmed by SMA that the pipeline material(s) including all appurtenances can withstand the maximum transient pressures summarized in Table 3, which are 265 psi or less.

6. Ojo Tank:
   - o The Ojo tank requires a minimum water level of 9 feet to prevent low pressures below 5 psi due to steady state pressures for a number of scenarios considered in this report.

7. Reach 24.1 JAN Vacuum Valves:
   - o 2-inch vacuum breaker valves with 1/8” air release (VBV with ARV) should be located at high points throughout the Reach 24.1 JAN pipeline between the Reach 24.1 JAN turnout and the JAN tank.
   - o A 2” VBV with 1/8” ARV should be located directly downstream of the isolation valve located at STA 143+30.
   - o A 4” VBV with 1/8” ARV should be located at the high point of the Reach 24.1 JAN pipeline, STA 263+30.
   - o A redundant valve of the same type and size at each location is acceptable and provides an additional measure of protection.

8. Reach 24.1 JAN Inline Valves:
   - o Utilize a multiple barrier approach to prevent closure of inline valves during system operation including the following:
   - o Prevent the closure of in-line valves while the pipeline is flowing through prescribed operational practices and operator education. This can be achieved by clear documentation in system O&M manuals, signage at all valve locations, and regular system specific operator training.
   - o Install the VBV with ARV valves at high points and stations identified above.

- o Due to the limited air release on each vacuum valve, separate removable large diameter air release valves (ARVs) can be considered for adequate pipeline filling if desired.
- o Additional protection is provided by the surge tank.

9. Reach 25 and 24.1 JAN Flush Lines
   - o Limit the maximum flow rate of the following flush lines as follows:

Reach	Flush Valve Station	Maximum Flowrate (gpm)
25	176+00	2100
25	218+08	1950
25	218+90	300
25	276+80	260
25	357+50	750
25	469+30	825
24.1 JAN	190+30	750
24.1 JAN	234+80	500
24.1 JAN	289+80	520

10. Revised Reach 25 Surge Tank Precharge Pressures:
    - o Based on the increased maximum Reach 25 flow rate of 1,900 gpm, the 450 cubic foot discharge surge tank should have a revised precharge pressure of 53 psig.
    - o Based on the increased maximum Reach 25 flow rate of 1,900 gpm, the 80 cubic foot suction surge tank should have a revised precharge pressure of 12 psig.

11. Reach 24.1 JAN Secondary Surge Mitigation Measures:
    - o Consider a standard operating procedure that includes a 10 minute time delay between Reach 25 pump station and bypass operations, and vise-versa, OR establish a failsafe mechanism to prevent uncontrolled fast operation of the pumps and bypass valve. This will provide surge mitigation in the event the Reach 24.1 JAN surge tank is offline.
    - o Consider a standard operating procedure that includes a 5 minute time delay between Reach 25 pump station and the JAN altitude valve, and vise-versa, OR establish a standard operating procedure or failsafe mechanism that ensures the Reach 25 pipeline is closed when the Reach 24.1JAN surge tank is offline. An example of the failsafe mechanism would be communication via SCADA to disable the pumps in the event that a surge tank is offline. This will provide surge mitigation in the event the Reach 24.1 JAN surge tank is offline.

12. Reach 24.1/25 Vacuum Valves:
    - o Recommendations 9 and 10 made in the previous NGWSP Reach 24.1/25 Transient Analysis and Recommendations Technical Memorandum recommended vacuum breaker valves for Reach 24.1. No special valve considerations were recommended in Reach 25; combination air/vacuum valves for typical filling and draining purposes were recommended. The additional

system analysis presented in this report has determined that the valve types recommended in the previous report remain valid; no change is required.

13. Reach 24.1 JAN pipeline operations should be limited to only permit controlled startup, shutdown and/or flow regulation via 1 of the following 3 locations:
    - JAN altitude valve
    - Rate of flow control valve
    - Surge tank site

Please contact me at 303-740-2622 should you have questions or wish to discuss these recommendations further.

Sincerely,

URS Corporation
Nathan O. Walker, PE
Project Manager

Attachment 1 – SMA Supplied Data

	Counselor Tank Base Elev	7,302.36	ft-AMSL				
	Counselor Tank Height	30	ft				
	Counselor Tank Overflow Elev	7,332.36	ft-AMSL	JAN pipe:			
	JAN Base Elev	7050	ft-AMSL	Pipe Volume	221,143	gallons	
	JAN Tank Height	30	ft		1072260	gal/day	
	JAN Overflow Elev	7080	ft-AMSL	Retention Tim	0.21	days	
	Ojo-Encino, Torreon, Pueblo Pintado, JAN Flow	2375	gpm				
MAX	JAN Flow	966	gpm				
MAX	Ojo-Encino, Torreon, Pueblo Pintado	1409	gpm	Max Flow rate, no NTUA, C=140, full to empty			1619
	C-factor (low)	130					
	C-factor (high)	140					

14"x10" MAX NTUA FLOW WITH MAX JAN FLOW

Comments	Quantity	Station	Pipe Elev	Pipe Material	Pipe Nom Dia	Pipe DR	Pressure Class	Pipe ID	Flow	HL C=130	HL C=140	Individual Minor Loss	Cumulative Minor Losses	HGL - Max TDH (C=130)	HGL - Min TDH (C=140)	Pressure - Max TDH (C=130)	Pressure (Max Static)	Pressure - Min TDH (C=140)	Fluid Velocity
		ft	ft-AMSL		in		psi	in	gpm	ft	ft	ft	ft	ft-AMSL	ft-AMSL	psi	psi	psi	ft/s
Counselor Tank		0+00.000	7,302.4	PVC	14	18	235	13.50	2375	0.0	0.0	0.00	0.00	7,302.36	7,332.36	0.00	12.99	12.99	5.33
45	1.0	0+70.000	7292.7	PVC	14	18	235	13.50	2375	0.5	0.4	0.08	0.08	7301.8	7331.8	3.93	17.17	16.94	5.33
BFV	1.0	4+00.000	7290.72	PVC	14	18	235	13.50	2375	2.9	2.5	0.17	0.25	7299.3	7329.6	3.69	18.03	16.84	5.33
		8+00.000	7280.31	PVC	14	18	235	13.50	2375	5.7	5.0	0.00	0.25	7296.4	7327.1	6.97	22.53	20.27	5.33
		10+00.000	7272.53	PVC	14	18	235	13.50	2375	7.1	6.2	0.00	0.25	7295.0	7325.9	9.72	25.90	23.10	5.33
		12+42.879	7258.22	PVC	14	18	235	13.50	2375	8.9	7.7	0.00	0.25	7293.2	7324.4	15.16	32.10	28.64	5.33
		13+79.010	7247.78	PVC	14	18	235	13.50	2375	9.8	8.6	0.00	0.25	7292.3	7323.5	19.26	36.61	32.79	5.33
		15+12.000	7235.34	PVC	14	18	235	13.50	2375	10.8	9.4	0.00	0.25	7291.3	7322.7	24.23	42.00	37.82	5.33
		16+54.000	7235.2	PVC	14	18	235	13.50	2375	11.8	10.3	0.00	0.25	7290.3	7321.8	23.86	42.06	37.50	5.33
		18+00.000	7233.86	PVC	14	18	235	13.50	2375	12.8	11.2	0.00	0.25	7289.3	7320.9	23.99	42.64	37.68	5.33
		20+00.000	7226.99	PVC	14	18	235	13.50	2375	14.3	12.4	0.00	0.25	7287.8	7319.7	26.34	45.61	40.12	5.33
		22+00.000	7215.6	PVC	14	18	235	13.50	2375	15.7	13.7	0.00	0.25	7286.4	7318.4	30.66	50.55	44.51	5.33
		23+90.007	7207.31	PVC	14	18	235	13.50	2375	17.0	14.9	0.00	0.25	7285.1	7317.2	33.66	54.13	47.59	5.33
		24+77.507	7207.4	PVC	14	18	235	13.50	2375	17.7	15.4	0.00	0.25	7284.4	7316.7	33.35	54.10	47.32	5.33
		25+62.050	7214.13	PVC	14	18	235	13.50	2375	18.3	15.9	0.00	0.25	7283.8	7316.2	30.17	51.18	44.17	5.33
		26+29.000	7219.4	PVC	14	18	235	13.50	2375	18.8	16.3	0.00	0.25	7283.4	7315.8	27.69	48.90	41.71	5.33
ARV	1.0	27+86.231	7233.64	PVC	14	18	235	13.50	2375	19.9	17.3	0.00	0.25	7282.2	7314.8	21.04	42.74	35.13	5.33
BFV	1.0	29+84.000	7219.79	PVC	14	18	235	13.50	2375	21.3	18.6	0.17	0.42	7280.7	7313.4	26.35	48.73	40.51	5.33
ARV	1.0	33+05.000	7237.17	PVC	14	18	235	13.50	2375	23.6	20.6	0.00	0.42	7278.4	7311.4	17.83	41.21	32.13	5.33
		39+90.000	7185.1	PVC	14	18	235	13.50	2375	28.5	24.8	0.00	0.42	7273.5	7307.1	38.26	63.75	52.82	5.33
		41+30.000	7184.96	PVC	14	18	235	13.50	2375	29.5	25.7	0.00	0.42	7272.5	7306.3	37.89	63.81	52.51	5.33
		42+01.577	7180.12	PVC	14	18	235	13.50	2375	30.0	26.1	0.00	0.42	7272.0	7305.8	39.76	65.90	54.41	5.33
45	4.0	42+16.390	7165.31	PVC	14	18	235	13.50	2375	30.1	26.2	0.33	0.76	7271.5	7305.4	45.98	72.32	60.64	5.33
		43+57.936	7165.16	PVC	14	18	235	13.50	2375	31.1	27.1	0.00	0.76	7270.5	7304.5	45.61	72.38	60.32	5.33
		43+70.893	7178.12	PVC	14	18	235	13.50	2375	31.2	27.2	0.00	0.76	7270.4	7304.4	39.96	66.77	54.68	5.33
		45+82.107	7179.72	PVC	14	18	235	13.50	2375	32.7	28.5	0.00	0.76	7268.9	7303.1	38.61	66.08	53.41	5.33
ARV	1.0	47+12.013	7188.52	PVC	14	18	235	13.50	2375	33.6	29.3	0.00	0.76	7268.0	7302.3	34.40	62.27	49.25	5.33
		48+38.409	7182.41	PVC	14	18	235	13.50	2375	34.5	30.1	0.00	0.76	7267.1	7301.5	36.66	64.91	51.56	5.33
		50+00.000	7178.63	PVC	14	18	235	13.50	2375	35.7	31.1	0.00	0.76	7265.9	7300.5	37.80	66.55	52.76	5.33
		51+76.545	7169.32	PVC	14	18	235	13.50	2375	36.9	32.2	0.00	0.76	7264.7	7299.4	41.28	70.58	56.32	5.33
ARV	1.0	54+02.000	7163.95	PVC	14	18	235	13.50	2375	38.5	33.6	0.00	0.76	7263.1	7298.0	42.91	72.90	58.03	5.33
		55+33.000	7165.87	PVC	14	18	235	13.50	2375	39.5	34.4	0.00	0.76	7262.1	7297.2	41.67	72.07	56.85	5.33
		57+36.000	7154.22	PVC	14	18	235	13.50	2375	40.9	35.7	0.00	0.76	7260.7	7295.9	46.09	77.12	61.35	5.33
		62+00.000	7140.24	PVC	14	18	235	13.50	2375	44.2	38.6	0.00	0.76	7257.4	7293.0	50.71	83.17	66.15	5.33
BFV	1.0	63+50.000	7135.12	PVC	14	18	235	13.50	2375	45.3	39.5	0.17	0.93	7256.1	7291.9	52.39	85.39	67.89	5.33
		65+00.000	7130	PVC	14	18	235	13.50	2375	46.4	40.4	0.00	0.93	7255.1	7291.0	54.14	87.60	69.70	5.33
		65+89.472	7126.24	PVC	14	18	235	13.50	2375	47.0	41.0	0.00	0.93	7254.4	7290.5	55.49	89.23	71.09	5.33
		66+59.500	7123.3	PVC	14	18	235	13.50	2375	47.5	41.4	0.00	0.93	7253.9	7290.0	56.55	90.50	72.17	5.33
		66+65.491	7117.31	PVC	14	18	235	13.50	2375	47.5	41.5	0.00	0.93	7253.9	7290.0	59.12	93.10	74.75	5.33
45	4.0	67+78.702	7117.19	PVC	14	18	235	13.50	2375	48.3	42.2	0.33	1.26	7252.7	7288.9	58.68	93.15	74.35	5.33
		67+82.652	7121.14	PVC	14	18	235	13.50	2375	48.4	42.2	0.00	1.26	7252.7	7288.9	56.96	91.44	72.63	5.33

			69+00.000	7124.7	PVC	14	18	235	13.50	2375	49.2	42.9	0.00	1.26	7251.9	7288.2	55.06	89.90	70.77	5.33
			73+25.000	7125.13	PVC	14	18	235	13.50	2375	52.2	45.6	0.00	1.26	7248.9	7285.5	53.56	89.71	69.44	5.33
ARV		1.0	75+58.000	7127.89	PVC	14	18	235	13.50	2375	53.9	47.0	0.00	1.26	7247.2	7284.1	51.64	88.52	67.62	5.33
			76+85.000	7121.31	PVC	14	18	235	13.50	2375	54.8	47.8	0.00	1.26	7246.3	7283.3	54.10	91.36	70.13	5.33
			78+45.000	7121.15	PVC	14	18	235	13.50	2375	56.0	48.8	0.00	1.26	7245.1	7282.3	53.68	91.43	69.77	5.33
			80+00.000	7125.86	PVC	14	18	235	13.50	2375	57.1	49.7	0.00	1.26	7244.0	7281.3	51.16	89.39	67.31	5.33
			82+00.000	7131.45	PVC	14	18	235	13.50	2375	58.5	51.0	0.00	1.26	7242.6	7280.1	48.12	86.97	64.35	5.33
			83+99.999	7136.53	PVC	14	18	235	13.50	2375	59.9	52.2	0.00	1.26	7241.2	7278.9	45.30	84.77	61.61	5.33
			85+99.999	7143.48	PVC	14	18	235	13.50	2375	61.3	53.5	0.00	1.26	7239.8	7277.6	41.68	81.77	58.07	5.33
			87+25.000	7146.28	PVC	14	18	235	13.50	2375	62.2	54.3	0.00	1.26	7238.9	7276.8	40.08	80.55	56.52	5.33
			88+85.000	7152.67	PVC	14	18	235	13.50	2375	63.4	55.3	0.00	1.26	7237.7	7275.8	36.82	77.79	53.32	5.33
			90+50.000	7156.57	PVC	14	18	235	13.50	2375	64.5	56.3	0.00	1.26	7236.5	7274.8	34.62	76.10	51.19	5.33
			95+75.000	7172.45	PVC	14	18	235	13.50	2375	68.3	59.5	0.00	1.26	7232.8	7271.6	26.13	69.23	42.90	5.33
ARV		1.0	97+35.000	7172.61	PVC	14	18	235	13.50	2375	69.4	60.5	0.00	1.26	7231.7	7270.6	25.56	69.16	42.40	5.33
			98+40.000	7168.74	PVC	14	18	235	13.50	2375	70.2	61.2	0.00	1.26	7230.9	7269.9	26.91	70.83	43.79	5.33
			102+00.000	7167.59	PVC	14	18	235	13.50	2375	72.8	63.4	0.00	1.26	7228.3	7267.7	26.30	71.33	43.32	5.33
			103+24.819	7165.93	PVC	14	18	235	13.50	2375	73.6	64.2	0.00	1.26	7227.5	7266.9	26.63	72.05	43.71	5.33
	45	1.0	103+38.130	7160.48	PVC	14	18	235	13.50	2375	73.7	64.3	0.08	1.35	7227.3	7266.7	28.92	74.41	45.99	5.33
			103+58.191	7160.46	PVC	14	18	235	13.50	2375	73.9	64.4	0.00	1.35	7227.1	7266.6	28.86	74.42	45.95	5.33
BFV		1.0	103+71.456	7165.95	PVC	14	18	235	13.50	2375	74.0	64.5	0.17	1.52	7226.9	7266.3	26.37	72.04	43.46	5.33
ARV		1.0	104+50.000	7169.4	PVC	14	18	235	13.50	2375	74.5	65.0	0.00	1.52	7226.3	7265.9	24.64	70.55	41.76	5.33
			107+00.000	7166.21	PVC	14	18	235	13.50	2375	76.3	66.5	0.00	1.52	7224.5	7264.3	25.24	71.93	42.46	5.33
			108+00.000	7170.41	PVC	14	18	235	13.50	2375	77.0	67.2	0.00	1.52	7223.8	7263.7	23.12	70.11	40.38	5.33
			109+75.000	7161.59	PVC	14	18	235	13.50	2375	78.3	68.3	0.00	1.52	7222.6	7262.6	26.40	73.93	43.72	5.33
			112+00.000	7151.8	PVC	14	18	235	13.50	2375	79.9	69.6	0.00	1.52	7221.0	7261.2	29.94	78.16	47.36	5.33
			113+00.888	7149.29	PVC	14	18	235	13.50	2375	80.6	70.3	0.00	1.52	7220.2	7260.6	30.71	79.25	48.17	5.33
			114+59.818	7148.97	PVC	14	18	235	13.50	2375	81.7	71.3	0.00	1.52	7219.1	7259.6	30.36	79.39	47.88	5.33
			115+38.336	7145.27	PVC	14	18	235	13.50	2375	82.3	71.8	0.00	1.52	7218.5	7259.1	31.72	80.99	49.27	5.33
			118+65.000	7144.94	PVC	14	18	235	13.50	2375	84.6	73.8	0.00	1.52	7216.2	7257.1	30.85	81.13	48.54	5.33
			121+44.599	7149.33	PVC	14	18	235	13.50	2375	86.6	75.5	0.00	1.52	7214.2	7255.3	28.09	79.23	45.88	5.33
			124+56.655	7149.64	PVC	14	18	235	13.50	2375	88.8	77.5	0.00	1.52	7212.0	7253.4	26.99	79.10	44.91	5.33
BFV		1.0	124+70.966	7155.57	PVC	14	18	235	13.50	2375	88.9	77.6	0.17	1.69	7211.7	7253.1	24.31	76.53	42.23	5.33
		2.0	126+75.000	7157.61	PVC	14	18	235	13.50	2375	90.4	78.8	0.00	1.69	7210.3	7251.8	22.80	75.65	40.80	5.33
ARV		1.0	127+00.000	7157.86	PVC	14	18	235	13.50	2375	90.6	79.0	0.00	1.69	7210.1	7251.7	22.61	75.54	40.62	5.33
	90	1.0	128+28.674	7157.74	PVC	14	18	235	13.50	2375	91.5	79.8	0.12	1.80	7209.1	7250.8	22.21	75.59	40.28	5.33
			128+45.386	7150.9	PVC	14	18	235	13.50	2375	91.6	79.9	0.00	1.80	7208.9	7250.7	25.12	78.55	43.19	5.33
			129+55.456	7150.79	PVC	14	18	235	13.50	2375	92.4	80.6	0.00	1.80	7208.2	7250.0	24.83	78.60	42.94	5.33
			130+10.000	7147.5	PVC	14	18	235	13.50	2375	92.8	80.9	0.00	1.80	7207.8	7249.6	26.09	80.03	44.22	5.33
			131+38.511	7139.46	PVC	14	18	235	13.50	2375	93.7	81.7	0.00	1.80	7206.8	7248.9	29.17	83.51	47.36	5.33
ARV		1.0	132+45.644	7133.55	PVC	14	18	235	13.50	2375	94.5	82.4	0.00	1.80	7206.1	7248.2	31.40	86.06	49.63	5.33
			133+35.023	7134.02	PVC	14	18	235	13.50	2375	95.1	82.9	0.00	1.80	7205.4	7247.6	30.92	85.86	49.18	5.33
BFV		1.0	135+70.000	7111.57	PVC	14	18	235	13.50	2375	96.8	84.4	0.17	1.97	7203.6	7246.0	39.84	95.58	58.19	5.33
			137+92.000	7095.36	PVC	14	18	235	13.50	2375	98.4	85.8	0.00	1.97	7202.0	7244.6	46.17	102.60	64.61	5.33
			139+58.000	7095.2	PVC	14	18	235	13.50	2375	99.6	86.8	0.00	1.97	7200.8	7243.6	45.73	102.67	64.24	5.33
			141+39.096	7089.41	PVC	14	18	235	13.50	2375	100.8	87.9	0.00	1.97	7199.5	7242.5	47.67	105.17	66.25	5.33
JAN Turnout			143+30.000	7078.65	PVC	14	18	235	13.50	2375	102.2	89.1	0.00	1.97	7198.2	7241.3	51.74	109.83	70.40	5.33
Tee		1.0	143+30.000	7078.65	PVC	14	18	235	13.50	2375	102.2	89.1	0.19	2.16	7198.0	7241.1	51.66	109.83	70.32	5.33
JAN Turnout			143+30.000	7078.65	PVC	10	18	235	9.79	966	102.2	89.1	0.00	2.16	7198.0	7241.1	51.66	109.83	70.32	4.12
JAN Line			143+30.000	7078.65	PVC	10	18	235	9.79	966	102.2	89.1	0.00	2.16	7198.0	7241.1	51.66	109.83	70.32	4.12
BFV		1	143+30.000	7078.65	PVC	10	18	235	9.79	966	102.2	89.1	0.17	2.33	7197.8	7240.9	51.59	109.83	70.25	4.12
ARV		1	143+30.000	7078.65	PVC	10	18	235	9.79	966	102.2	89.1	0.00	2.33	7197.8	7240.9	51.59	109.83	70.25	4.12
			143+80.000	7077.5	PVC	10	18	235	9.79	966	102.5	89.4	0.00	2.33	7197.5	7240.6	51.95	110.33	70.62	4.12
			144+30.000	7076.33	PVC	10	18	235	9.79	966	102.9	89.7	0.00	2.33	7197.2	7240.4	52.31	110.83	71.00	4.12
			144+80.000	7074.31	PVC	10	18	235	9.79	966	103.2	90.0	0.00	2.33	7196.9	7240.1	53.05	111.71	71.76	4.12
			145+30.000	7072.17	PVC	10	18	235	9.79	966	103.5	90.2	0.00	2.33	7196.5	7239.8	53.84	112.64	72.56	4.12
			145+80.000	7070.02	PVC	10	18	235	9.79	966	103.8	90.5	0.00	2.33	7196.2	7239.5	54.62	113.57	73.37	4.12
			146+30.000	7067.88	PVC	10	18	235	9.79	966	104.1	90.8	0.00	2.33	7195.9	7239.2	55.41	114.49	74.18	4.12

			146+80.000	7065.75	PVC	10	18	235	9.79	966	104.5	91.1	0.00	2.33	7195.6	7238.9	56.19	115.41	74.97	4.12
			147+30.000	7065.04	PVC	10	18	235	9.79	966	104.8	91.4	0.00	2.33	7195.2	7238.7	56.36	115.72	75.16	4.12
			147+80.000	7064.87	PVC	10	18	235	9.79	966	105.1	91.6	0.00	2.33	7194.9	7238.4	56.29	115.79	75.11	4.12
			148+30.000	7064.71	PVC	10	18	235	9.79	966	105.4	91.9	0.00	2.33	7194.6	7238.1	56.23	115.86	75.06	4.12
			148+80.000	7064.55	PVC	10	18	235	9.79	966	105.8	92.2	0.00	2.33	7194.3	7237.8	56.16	115.93	75.01	4.12
			149+30.000	7064.39	PVC	10	18	235	9.79	966	106.1	92.5	0.00	2.33	7193.9	7237.5	56.09	116.00	74.96	4.12
			149+80.000	7064.23	PVC	10	18	235	9.79	966	106.4	92.8	0.00	2.33	7193.6	7237.3	56.02	116.07	74.90	4.12
			150+30.000	7064.07	PVC	10	18	235	9.79	966	106.7	93.1	0.00	2.33	7193.3	7237.0	55.95	116.14	74.85	4.12
			150+80.000	7063.9	PVC	10	18	235	9.79	966	107.0	93.3	0.00	2.33	7193.0	7236.7	55.88	116.22	74.80	4.12
			151+30.000	7063.62	PVC	10	18	235	9.79	966	107.4	93.6	0.00	2.33	7192.7	7236.4	55.86	116.34	74.80	4.12
			151+80.000	7063.31	PVC	10	18	235	9.79	966	107.7	93.9	0.00	2.33	7192.3	7236.1	55.86	116.47	74.82	4.12
			152+30.000	7062.85	PVC	10	18	235	9.79	966	108.0	94.2	0.00	2.33	7192.0	7235.9	55.92	116.67	74.89	4.12
			152+80.000	7061.89	PVC	10	18	235	9.79	966	108.3	94.5	0.00	2.33	7191.7	7235.6	56.19	117.08	75.18	4.12
			153+30.000	7060.94	PVC	10	18	235	9.79	966	108.7	94.7	0.00	2.33	7191.4	7235.3	56.46	117.50	75.48	4.12
			153+80.000	7058.6	PVC	10	18	235	9.79	966	109.0	95.0	0.00	2.33	7191.0	7235.0	57.34	118.51	76.37	4.12
			154+30.000	7054.89	PVC	10	18	235	9.79	966	109.3	95.3	0.00	2.33	7190.7	7234.7	58.80	120.12	77.85	4.12
			154+80.000	7054.86	PVC	10	18	235	9.79	966	109.6	95.6	0.00	2.33	7190.4	7234.4	58.68	120.13	77.75	4.12
			155+30.000	7057.24	PVC	10	18	235	9.79	966	109.9	95.9	0.00	2.33	7190.1	7234.2	57.51	119.10	76.59	4.12
			155+80.000	7058.89	PVC	10	18	235	9.79	966	110.3	96.1	0.00	2.33	7189.8	7233.9	56.65	118.39	75.76	4.12
ARV		1	156+30.000	7058.97	PVC	10	18	235	9.79	966	110.6	96.4	0.00	2.33	7189.4	7233.6	56.48	118.35	75.60	4.12
			156+80.000	7058.37	PVC	10	18	235	9.79	966	110.9	96.7	0.00	2.33	7189.1	7233.3	56.60	118.61	75.74	4.12
ARV		1	157+30.000	7058.86	PVC	10	18	235	9.79	966	111.2	97.0	0.00	2.33	7188.8	7233.0	56.25	118.40	75.40	4.12
			157+80.000	7058.08	PVC	10	18	235	9.79	966	111.6	97.3	0.00	2.33	7188.5	7232.8	56.45	118.74	75.62	4.12
			158+30.000	7057.8	PVC	10	18	235	9.79	966	111.9	97.5	0.00	2.33	7188.1	7232.5	56.43	118.86	75.62	4.12
	45	1	158+80.000	7057.72	PVC	10	18	235	9.79	966	112.2	97.8	0.08	2.42	7187.7	7232.1	56.28	118.89	75.49	4.12
			159+30.000	7056.17	PVC	10	18	235	9.79	966	112.5	98.1	0.00	2.42	7187.4	7231.8	56.82	119.56	76.05	4.12
			159+80.000	7053.89	PVC	10	18	235	9.79	966	112.8	98.4	0.00	2.42	7187.1	7231.6	57.66	120.55	76.91	4.12
	45	1	160+30.000	7051.61	PVC	10	18	235	9.79	966	113.2	98.7	0.08	2.50	7186.7	7231.2	58.47	121.54	77.74	4.12
			160+80.000	7049.36	PVC	10	18	235	9.79	966	113.5	99.0	0.00	2.50	7186.4	7230.9	59.31	122.51	78.59	4.12
			161+30.000	7048.87	PVC	10	18	235	9.79	966	113.8	99.2	0.00	2.50	7186.0	7230.6	59.38	122.72	78.68	4.12
			161+80.000	7046.65	PVC	10	18	235	9.79	966	114.1	99.5	0.00	2.50	7185.7	7230.3	60.20	123.68	79.52	4.12
			162+30.000	7044.04	PVC	10	18	235	9.79	966	114.5	99.8	0.00	2.50	7185.4	7230.1	61.19	124.81	80.53	4.12
			162+80.000	7042.91	PVC	10	18	235	9.79	966	114.8	100.1	0.00	2.50	7185.1	7229.8	61.55	125.31	80.90	4.12
			163+30.000	7041.43	PVC	10	18	235	9.79	966	115.1	100.4	0.00	2.50	7184.8	7229.5	62.04	125.94	81.41	4.12
			163+80.000	7039.59	PVC	10	18	235	9.79	966	115.4	100.6	0.00	2.50	7184.4	7229.2	62.70	126.74	82.09	4.12
			164+30.000	7038.3	PVC	10	18	235	9.79	966	115.8	100.9	0.00	2.50	7184.1	7228.9	63.12	127.30	82.53	4.12
			164+80.000	7036.22	PVC	10	18	235	9.79	966	116.1	101.2	0.00	2.50	7183.8	7228.7	63.88	128.20	83.31	4.12
			165+30.000	7035.18	PVC	10	18	235	9.79	966	116.4	101.5	0.00	2.50	7183.5	7228.4	64.19	128.65	83.64	4.12
			165+80.000	7033.76	PVC	10	18	235	9.79	966	116.7	101.8	0.00	2.50	7183.1	7228.1	64.67	129.27	84.13	4.12
			166+30.000	7033.01	PVC	10	18	235	9.79	966	117.0	102.0	0.00	2.50	7182.8	7227.8	64.85	129.59	84.33	4.12
ARV		1	166+60.300	7032.9	PVC	10	18	235	9.79	966	117.2	102.2	0.00	2.50	7182.6	7227.6	64.82	129.64	84.30	4.12
			166+80.000	7032.57	PVC	10	18	235	9.79	966	117.4	102.3	0.00	2.50	7182.5	7227.5	64.90	129.78	84.40	4.12
			167+30.000	7029.71	PVC	10	18	235	9.79	966	117.7	102.6	0.00	2.50	7182.2	7227.3	66.00	131.02	85.51	4.12
			167+80.000	7028.04	PVC	10	18	235	9.79	966	118.0	102.9	0.00	2.50	7181.9	7227.0	66.59	131.74	86.12	4.12
			168+30.000	7024.89	PVC	10	18	235	9.79	966	118.3	103.2	0.00	2.50	7181.5	7226.7	67.81	133.11	87.36	4.12
ARV		1	168+80.000	7024.11	PVC	10	18	235	9.79	966	118.7	103.5	0.00	2.50	7181.2	7226.4	68.01	133.44	87.58	4.12
			169+30.000	7022.95	PVC	10	18	235	9.79	966	119.0	103.7	0.00	2.50	7180.9	7226.1	68.37	133.95	87.96	4.12
			169+80.000	7020.75	PVC	10	18	235	9.79	966	119.3	104.0	0.00	2.50	7180.6	7225.8	69.18	134.89	88.78	4.12
			170+30.000	7017.51	PVC	10	18	235	9.79	966	119.6	104.3	0.00	2.50	7180.2	7225.6	70.45	136.30	90.07	4.12
			170+80.000	7014.74	PVC	10	18	235	9.79	966	119.9	104.6	0.00	2.50	7179.9	7225.3	71.50	137.50	91.14	4.12
			171+30.000	7012.77	PVC	10	18	235	9.79	966	120.3	104.9	0.00	2.50	7179.6	7225.0	72.22	138.35	91.88	4.12
			171+80.000	7011.04	PVC	10	18	235	9.79	966	120.6	105.1	0.00	2.50	7179.3	7224.7	72.83	139.10	92.50	4.12
			172+30.000	7009.47	PVC	10	18	235	9.79	966	120.9	105.4	0.00	2.50	7178.9	7224.4	73.37	139.78	93.06	4.12
			172+80.000	7008.27	PVC	10	18	235	9.79	966	121.2	105.7	0.00	2.50	7178.6	7224.2	73.75	140.30	93.46	4.12
			173+30.000	7006.94	PVC	10	18	235	9.79	966	121.6	106.0	0.00	2.50	7178.3	7223.9	74.18	140.87	93.91	4.12
			173+80.000	7005.85	PVC	10	18	235	9.79	966	121.9	106.3	0.00	2.50	7178.0	7223.6	74.52	141.35	94.26	4.12
			174+30.000	7004.7	PVC	10	18	235	9.79	966	122.2	106.5	0.00	2.50	7177.7	7223.3	74.87	141.84	94.64	4.12

			174+80.000	7002.69	PVC	10	18	235	9.79	966	122.5	106.8	0.00	2.50	7177.3	7223.0	75.60	142.71	95.39	4.12
			175+30.000	7000.93	PVC	10	18	235	9.79	966	122.8	107.1	0.00	2.50	7177.0	7222.8	76.23	143.48	96.03	4.12
			175+80.000	6999.53	PVC	10	18	235	9.79	966	123.2	107.4	0.00	2.50	7176.7	7222.5	76.69	144.08	96.51	4.12
			176+30.000	6998.14	PVC	10	18	235	9.79	966	123.5	107.7	0.00	2.50	7176.4	7222.2	77.15	144.68	96.99	4.12
			176+80.000	6996.75	PVC	10	18	235	9.79	966	123.8	107.9	0.00	2.50	7176.0	7221.9	77.62	145.28	97.47	4.12
			177+30.000	6995.48	PVC	10	18	235	9.79	966	124.1	108.2	0.00	2.50	7175.7	7221.6	78.03	145.83	97.90	4.12
			177+80.000	6993.62	PVC	10	18	235	9.79	966	124.5	108.5	0.00	2.50	7175.4	7221.3	78.69	146.64	98.58	4.12
			178+30.000	6992.36	PVC	10	18	235	9.79	966	124.8	108.8	0.00	2.50	7175.1	7221.1	79.10	147.19	99.01	4.12
			178+80.000	6991.33	PVC	10	18	235	9.79	966	125.1	109.1	0.00	2.50	7174.8	7220.8	79.41	147.63	99.33	4.12
			179+30.000	6990.31	PVC	10	18	235	9.79	966	125.4	109.4	0.00	2.50	7174.4	7220.5	79.71	148.07	99.65	4.12
			179+80.000	6989.5	PVC	10	18	235	9.79	966	125.7	109.6	0.00	2.50	7174.1	7220.2	79.92	148.43	99.88	4.12
			180+30.000	6989.54	PVC	10	18	235	9.79	966	126.1	109.9	0.00	2.50	7173.8	7219.9	79.76	148.41	99.74	4.12
			180+80.000	6989.69	PVC	10	18	235	9.79	966	126.4	110.2	0.00	2.50	7173.5	7219.7	79.56	148.34	99.56	4.12
ARV		1	181+30.000	6990.38	PVC	10	18	235	9.79	966	126.7	110.5	0.00	2.50	7173.1	7219.4	79.12	148.05	99.14	4.12
			181+80.000	6990.09	PVC	10	18	235	9.79	966	127.0	110.8	0.00	2.50	7172.8	7219.1	79.11	148.17	99.14	4.12
			182+30.000	6989.52	PVC	10	18	235	9.79	966	127.4	111.0	0.00	2.50	7172.5	7218.8	79.21	148.41	99.26	4.12
			182+80.000	6987.67	PVC	10	18	235	9.79	966	127.7	111.3	0.00	2.50	7172.2	7218.5	79.87	149.22	99.94	4.12
			183+30.000	6985.86	PVC	10	18	235	9.79	966	128.0	111.6	0.00	2.50	7171.9	7218.3	80.52	150.00	100.60	4.12
			183+80.000	6984.31	PVC	10	18	235	9.79	966	128.3	111.9	0.00	2.50	7171.5	7218.0	81.05	150.67	101.15	4.12
			184+30.000	6982.36	PVC	10	18	235	9.79	966	128.6	112.2	0.00	2.50	7171.2	7217.7	81.76	151.52	101.88	4.12
	45	1	184+45.700	6982.3	PVC	10	18	235	9.79	966	128.7	112.3	0.08	2.58	7171.0	7217.5	81.70	151.54	101.83	4.12
			184+80.000	6981.1	PVC	10	18	235	9.79	966	129.0	112.4	0.00	2.58	7170.8	7217.3	82.13	152.06	102.27	4.12
ARV		1	185+30.000	6982.12	PVC	10	18	235	9.79	966	129.3	112.7	0.00	2.58	7170.5	7217.0	81.54	151.62	101.70	4.12
			185+80.000	6981.8	PVC	10	18	235	9.79	966	129.6	113.0	0.00	2.58	7170.2	7216.8	81.54	151.76	101.72	4.12
			186+30.000	6981.95	PVC	10	18	235	9.79	966	129.9	113.3	0.00	2.58	7169.8	7216.5	81.34	151.69	101.53	4.12
	45	1	186+80.000	6982.26	PVC	10	18	235	9.79	966	130.3	113.6	0.08	2.67	7169.4	7216.1	81.03	151.56	101.24	4.12
			187+30.000	6982.66	PVC	10	18	235	9.79	966	130.6	113.9	0.00	2.67	7169.1	7215.8	80.71	151.38	100.94	4.12
ARV		1	187+80.000	6983.06	PVC	10	18	235	9.79	966	130.9	114.1	0.00	2.67	7168.8	7215.6	80.40	151.21	100.65	4.12
			188+30.000	6980.97	PVC	10	18	235	9.79	966	131.2	114.4	0.00	2.67	7168.5	7215.3	81.17	152.12	101.43	4.12
			188+80.000	6976.77	PVC	10	18	235	9.79	966	131.6	114.7	0.00	2.67	7168.1	7215.0	82.84	153.93	103.13	4.12
			189+30.000	6976.35	PVC	10	18	235	9.79	966	131.9	115.0	0.00	2.67	7167.8	7214.7	82.89	154.12	103.19	4.12
			189+80.000	6979.57	PVC	10	18	235	9.79	966	132.2	115.3	0.00	2.67	7167.5	7214.4	81.35	152.72	101.67	4.12
	45	1	190+30.000	6980.74	PVC	10	18	235	9.79	966	132.5	115.5	0.08	2.75	7167.1	7214.1	80.67	152.22	101.01	4.12
			190+80.000	6981.09	PVC	10	18	235	9.79	966	132.8	115.8	0.00	2.75	7166.8	7213.8	80.38	152.06	100.73	4.12
			191+30.000	6981.84	PVC	10	18	235	9.79	966	133.2	116.1	0.00	2.75	7166.4	7213.5	79.92	151.74	100.29	4.12
			191+80.000	6982.8	PVC	10	18	235	9.79	966	133.5	116.4	0.00	2.75	7166.1	7213.2	79.36	151.32	99.75	4.12
			192+30.000	6983.81	PVC	10	18	235	9.79	966	133.8	116.7	0.00	2.75	7165.8	7212.9	78.79	150.89	99.19	4.12
ARV		1	192+80.000	6984.43	PVC	10	18	235	9.79	966	134.1	116.9	0.00	2.75	7165.5	7212.7	78.38	150.62	98.80	4.12
			193+30.000	6984.38	PVC	10	18	235	9.79	966	134.5	117.2	0.00	2.75	7165.2	7212.4	78.26	150.64	98.70	4.12
			193+80.000	6984.97	PVC	10	18	235	9.79	966	134.8	117.5	0.00	2.75	7164.8	7212.1	77.86	150.38	98.32	4.12
			194+30.000	6986.43	PVC	10	18	235	9.79	966	135.1	117.8	0.00	2.75	7164.5	7211.8	77.09	149.76	97.57	4.12
BFV		1	194+80.000	6988.21	PVC	10	18	235	9.79	966	135.4	118.1	0.17	2.92	7164.0	7211.4	76.11	148.98	96.61	4.12
ARV		1	195+01.000	6988.42	PVC	10	18	235	9.79	966	135.6	118.2	0.00	2.92	7163.9	7211.3	75.96	148.89	96.46	4.12
			195+30.000	6987.75	PVC	10	18	235	9.79	966	135.7	118.4	0.00	2.92	7163.7	7211.1	76.17	149.18	96.68	4.12
			195+80.000	6986.64	PVC	10	18	235	9.79	966	136.1	118.6	0.00	2.92	7163.4	7210.8	76.51	149.66	97.04	4.12
			196+30.000	6985.96	PVC	10	18	235	9.79	966	136.4	118.9	0.00	2.92	7163.1	7210.5	76.66	149.96	97.21	4.12
			196+80.000	6985.51	PVC	10	18	235	9.79	966	136.7	119.2	0.00	2.92	7162.7	7210.2	76.72	150.15	97.29	4.12
			197+30.000	6985.34	PVC	10	18	235	9.79	966	137.0	119.5	0.00	2.92	7162.4	7210.0	76.65	150.23	97.24	4.12
			197+80.000	6984.44	PVC	10	18	235	9.79	966	137.4	119.8	0.00	2.92	7162.1	7209.7	76.90	150.61	97.51	4.12
			198+30.000	6983.98	PVC	10	18	235	9.79	966	137.7	120.0	0.00	2.92	7161.8	7209.4	76.96	150.82	97.59	4.12
			198+80.000	6983.78	PVC	10	18	235	9.79	966	138.0	120.3	0.00	2.92	7161.4	7209.1	76.91	150.90	97.55	4.12
			199+30.000	6983.63	PVC	10	18	235	9.79	966	138.3	120.6	0.00	2.92	7161.1	7208.8	76.83	150.97	97.49	4.12
			199+30.000	6983.63	PVC	10	18	235	9.79	966	138.3	120.6	0.00	2.92	7161.1	7208.8	76.83	150.97	97.49	4.12
			199+80.000	6982.74	PVC	10	18	235	9.79	966	138.6	120.9	0.00	2.92	7160.8	7208.6	77.08	151.35	97.75	4.12
			200+30.000	6981.9	PVC	10	18	235	9.79	966	139.0	121.2	0.00	2.92	7160.5	7208.3	77.30	151.71	98.00	4.12
			200+80.000	6980.62	PVC	10	18	235	9.79	966	139.3	121.4	0.00	2.92	7160.2	7208.0	77.72	152.27	98.43	4.12
			201+30.000	6979.92	PVC	10	18	235	9.79	966	139.6	121.7	0.00	2.92	7159.8	7207.7	77.88	152.57	98.61	4.12

		201+80.000	6979.4	PVC	10	18	235	9.79	966	139.9	122.0	0.00	2.92	7159.5	7207.4	77.97	152.80	98.71	4.12
		202+30.000	6979.79	PVC	10	18	235	9.79	966	140.3	122.3	0.00	2.92	7159.2	7207.2	77.66	152.63	98.43	4.12
		202+80.000	6980.91	PVC	10	18	235	9.79	966	140.6	122.6	0.00	2.92	7158.9	7206.9	77.04	152.14	97.82	4.12
		203+30.000	6982.03	PVC	10	18	235	9.79	966	140.9	122.8	0.00	2.92	7158.5	7206.6	76.41	151.66	97.21	4.12
		203+80.000	6983.16	PVC	10	18	235	9.79	966	141.2	123.1	0.00	2.92	7158.2	7206.3	75.78	151.17	96.60	4.12
		204+30.000	6984.11	PVC	10	18	235	9.79	966	141.5	123.4	0.00	2.92	7157.9	7206.0	75.23	150.76	96.07	4.12
ARV	1	204+80.000	6984.86	PVC	10	18	235	9.79	966	141.9	123.7	0.00	2.92	7157.6	7205.7	74.76	150.43	95.62	4.12
		205+30.000	6986.17	PVC	10	18	235	9.79	966	142.2	124.0	0.00	2.92	7157.2	7205.5	74.06	149.87	94.93	4.12
		205+80.000	6987.83	PVC	10	18	235	9.79	966	142.5	124.3	0.00	2.92	7156.9	7205.2	73.20	149.15	94.09	4.12
		206+30.000	6989.63	PVC	10	18	235	9.79	966	142.8	124.5	0.00	2.92	7156.6	7204.9	72.28	148.37	93.19	4.12
		206+80.000	6992.36	PVC	10	18	235	9.79	966	143.2	124.8	0.00	2.92	7156.3	7204.6	70.96	147.19	91.89	4.12
		207+30.000	6995.8	PVC	10	18	235	9.79	966	143.5	125.1	0.00	2.92	7156.0	7204.3	69.33	145.70	90.28	4.12
		207+80.000	6999.59	PVC	10	18	235	9.79	966	143.8	125.4	0.00	2.92	7155.6	7204.1	67.55	144.06	88.52	4.12
ARV	1	208+30.000	7002.81	PVC	10	18	235	9.79	966	144.1	125.7	0.00	2.92	7155.3	7203.8	66.02	142.66	87.00	4.12
		208+80.000	7004.66	PVC	10	18	235	9.79	966	144.4	125.9	0.00	2.92	7155.0	7203.5	65.08	141.86	86.08	4.12
		209+30.000	7005.91	PVC	10	18	235	9.79	966	144.8	126.2	0.00	2.92	7154.7	7203.2	64.40	141.32	85.41	4.12
		209+80.000	7006.53	PVC	10	18	235	9.79	966	145.1	126.5	0.00	2.92	7154.3	7202.9	63.99	141.05	85.02	4.12
		210+30.000	7007.59	PVC	10	18	235	9.79	966	145.4	126.8	0.00	2.92	7154.0	7202.7	63.39	140.59	84.44	4.12
		210+80.000	7008.85	PVC	10	18	235	9.79	966	145.7	127.1	0.00	2.92	7153.7	7202.4	62.70	140.05	83.77	4.12
		211+30.000	7010.51	PVC	10	18	235	9.79	966	146.1	127.3	0.00	2.92	7153.4	7202.1	61.85	139.33	82.93	4.12
		211+80.000	7012.76	PVC	10	18	235	9.79	966	146.4	127.6	0.00	2.92	7153.1	7201.8	60.73	138.35	81.84	4.12
		212+30.000	7015.28	PVC	10	18	235	9.79	966	146.7	127.9	0.00	2.92	7152.7	7201.5	59.51	137.27	80.63	4.12
		212+80.000	7017.86	PVC	10	18	235	9.79	966	147.0	128.2	0.00	2.92	7152.4	7201.2	58.25	136.15	79.39	4.12
		213+30.000	7021.51	PVC	10	18	235	9.79	966	147.3	128.5	0.00	2.92	7152.1	7201.0	56.53	134.57	77.69	4.12
		213+80.000	7025.8	PVC	10	18	235	9.79	966	147.7	128.8	0.00	2.92	7151.8	7200.7	54.53	132.71	75.71	4.12
		214+30.000	7029.55	PVC	10	18	235	9.79	966	148.0	129.0	0.00	2.92	7151.4	7200.4	52.77	131.09	73.96	4.12
		214+80.000	7033.12	PVC	10	18	235	9.79	966	148.3	129.3	0.00	2.92	7151.1	7200.1	51.09	129.54	72.30	4.12
		215+30.000	7036.15	PVC	10	18	235	9.79	966	148.6	129.6	0.00	2.92	7150.8	7199.8	49.63	128.23	70.86	4.12
ARV	1	215+60.000	7036	PVC	10	18	235	9.79	966	148.8	129.8	0.00	2.92	7150.6	7199.7	49.61	128.29	70.85	4.12
		215+80.000	7035.52	PVC	10	18	235	9.79	966	149.0	129.9	0.00	2.92	7150.5	7199.6	49.77	128.50	71.02	4.12
		216+30.000	7031.31	PVC	10	18	235	9.79	966	149.3	130.2	0.00	2.92	7150.2	7199.3	51.45	130.33	72.72	4.12
		216+80.000	7028.55	PVC	10	18	235	9.79	966	149.6	130.4	0.00	2.92	7149.8	7199.0	52.50	131.52	73.79	4.12
		217+30.000	7029.56	PVC	10	18	235	9.79	966	149.9	130.7	0.00	2.92	7149.5	7198.7	51.93	131.08	73.23	4.12
		217+80.000	7031.2	PVC	10	18	235	9.79	966	150.3	131.0	0.00	2.92	7149.2	7198.4	51.08	130.37	72.40	4.12
ARV	1	218+30.000	7031.96	PVC	10	18	235	9.79	966	150.6	131.3	0.00	2.92	7148.9	7198.2	50.61	130.04	71.95	4.12
		218+80.000	7030.56	PVC	10	18	235	9.79	966	150.9	131.6	0.00	2.92	7148.5	7197.9	51.07	130.65	72.43	4.12
		219+30.000	7028.85	PVC	10	18	235	9.79	966	151.2	131.8	0.00	2.92	7148.2	7197.6	51.67	131.39	73.05	4.12
		219+80.000	7027.15	PVC	10	18	235	9.79	966	151.5	132.1	0.00	2.92	7147.9	7197.3	52.27	132.13	73.66	4.12
		220+30.000	7025.44	PVC	10	18	235	9.79	966	151.9	132.4	0.00	2.92	7147.6	7197.0	52.87	132.87	74.28	4.12
		220+80.000	7023.74	PVC	10	18	235	9.79	966	152.2	132.7	0.00	2.92	7147.3	7196.8	53.47	133.60	74.90	4.12
		221+30.000	7022.55	PVC	10	18	235	9.79	966	152.5	133.0	0.00	2.92	7146.9	7196.5	53.84	134.12	75.29	4.12
		221+80.000	7021.37	PVC	10	18	235	9.79	966	152.8	133.3	0.00	2.92	7146.6	7196.2	54.22	134.63	75.68	4.12
		222+30.000	7018.3	PVC	10	18	235	9.79	966	153.2	133.5	0.00	2.92	7146.3	7195.9	55.41	135.96	76.89	4.12
ARV	1	222+80.000	7015.1	PVC	10	18	235	9.79	966	153.5	133.8	0.00	2.92	7146.0	7195.6	56.65	137.34	78.15	4.12
		223+30.000	7012.53	PVC	10	18	235	9.79	966	153.8	134.1	0.00	2.92	7145.6	7195.3	57.62	138.45	79.14	4.12
		223+80.000	7010.48	PVC	10	18	235	9.79	966	154.1	134.4	0.00	2.92	7145.3	7195.1	58.37	139.34	79.91	4.12
		224+30.000	7012.08	PVC	10	18	235	9.79	966	154.4	134.7	0.00	2.92	7145.0	7194.8	57.54	138.65	79.09	4.12
		224+80.000	7017.14	PVC	10	18	235	9.79	966	154.8	134.9	0.00	2.92	7144.7	7194.5	55.21	136.46	76.78	4.12
		225+30.000	7020.06	PVC	10	18	235	9.79	966	155.1	135.2	0.00	2.92	7144.4	7194.2	53.81	135.20	75.40	4.12
		225+80.000	7021.68	PVC	10	18	235	9.79	966	155.4	135.5	0.00	2.92	7144.0	7193.9	52.96	134.49	74.57	4.12
		226+30.000	7023.12	PVC	10	18	235	9.79	966	155.7	135.8	0.00	2.92	7143.7	7193.7	52.20	133.87	73.83	4.12
ARV	1	226+80.000	7024.2	PVC	10	18	235	9.79	966	156.1	136.1	0.00	2.92	7143.4	7193.4	51.60	133.40	73.24	4.12
		227+30.000	7021.68	PVC	10	18	235	9.79	966	156.4	136.3	0.00	2.92	7143.1	7193.1	52.55	134.49	74.21	4.12
		227+80.000	7018.33	PVC	10	18	235	9.79	966	156.7	136.6	0.00	2.92	7142.7	7192.8	53.86	135.95	75.54	4.12
		228+30.000	7015.01	PVC	10	18	235	9.79	966	157.0	136.9	0.00	2.92	7142.4	7192.5	55.15	137.38	76.85	4.12
		228+80.000	7012.95	PVC	10	18	235	9.79	966	157.3	137.2	0.00	2.92	7142.1	7192.3	55.91	138.27	77.62	4.12
		229+30.000	7006.74	PVC	10	18	235	9.79	966	157.7	137.5	0.00	2.92	7141.8	7192.0	58.45	140.96	80.19	4.12

		229+80.000	7002.51	PVC	10	18	235	9.79	966	158.0	137.7	0.00	2.92	7141.4	7191.7	60.15	142.79	81.90	4.12
		230+30.000	7001.89	PVC	10	18	235	9.79	966	158.3	138.0	0.00	2.92	7141.1	7191.4	60.28	143.06	82.04	4.12
		230+80.000	7001.73	PVC	10	18	235	9.79	966	158.6	138.3	0.00	2.92	7140.8	7191.1	60.20	143.13	81.99	4.12
		231+30.000	7001.22	PVC	10	18	235	9.79	966	159.0	138.6	0.00	2.92	7140.5	7190.8	60.29	143.35	82.09	4.12
		231+80.000	7000.66	PVC	10	18	235	9.79	966	159.3	138.9	0.00	2.92	7140.2	7190.6	60.39	143.59	82.21	4.12
		232+30.000	6998.71	PVC	10	18	235	9.79	966	159.6	139.2	0.00	2.92	7139.8	7190.3	61.09	144.44	82.93	4.12
		232+80.000	6998.14	PVC	10	18	235	9.79	966	159.9	139.4	0.00	2.92	7139.5	7190.0	61.20	144.69	83.06	4.12
ARV	1	233+30.000	6998.29	PVC	10	18	235	9.79	966	160.2	139.7	0.00	2.92	7139.2	7189.7	61.00	144.62	82.87	4.12
		233+80.000	6997.51	PVC	10	18	235	9.79	966	160.6	140.0	0.00	2.92	7138.9	7189.4	61.20	144.96	83.09	4.12
		234+30.000	6996.62	PVC	10	18	235	9.79	966	160.9	140.3	0.00	2.92	7138.5	7189.2	61.44	145.34	83.35	4.12
ARV	1	234+65.200	6997.18	PVC	10	18	235	9.79	966	161.1	140.5	0.00	2.92	7138.3	7189.0	61.10	145.10	83.02	4.12
		234+80.000	6997.08	PVC	10	18	235	9.79	966	161.2	140.6	0.00	2.92	7138.2	7188.9	61.10	145.14	83.03	4.12
		235+30.000	6996.66	PVC	10	18	235	9.79	966	161.5	140.8	0.00	2.92	7137.9	7188.6	61.14	145.32	83.09	4.12
		235+80.000	6996.24	PVC	10	18	235	9.79	966	161.9	141.1	0.00	2.92	7137.6	7188.3	61.18	145.50	83.15	4.12
		236+30.000	6995.83	PVC	10	18	235	9.79	966	162.2	141.4	0.00	2.92	7137.3	7188.0	61.23	145.69	83.21	4.12
		236+80.000	6995.41	PVC	10	18	235	9.79	966	162.5	141.7	0.00	2.92	7136.9	7187.8	61.27	145.87	83.27	4.12
		237+30.000	6995	PVC	10	18	235	9.79	966	162.8	142.0	0.00	2.92	7136.6	7187.5	61.30	146.04	83.32	4.12
		237+80.000	6994.82	PVC	10	18	235	9.79	966	163.1	142.2	0.00	2.92	7136.3	7187.2	61.24	146.12	83.28	4.12
		238+30.000	6994.75	PVC	10	18	235	9.79	966	163.5	142.5	0.00	2.92	7136.0	7186.9	61.14	146.15	83.19	4.12
		238+80.000	6994.78	PVC	10	18	235	9.79	966	163.8	142.8	0.00	2.92	7135.6	7186.6	60.98	146.14	83.05	4.12
		239+30.000	6995.41	PVC	10	18	235	9.79	966	164.1	143.1	0.00	2.92	7135.3	7186.3	60.57	145.87	82.66	4.12
		239+80.000	6996.32	PVC	10	18	235	9.79	966	164.4	143.4	0.00	2.92	7135.0	7186.1	60.04	145.47	82.14	4.12
		240+30.000	6997.75	PVC	10	18	235	9.79	966	164.8	143.7	0.00	2.92	7134.7	7185.8	59.28	144.85	81.40	4.12
		240+80.000	6999.22	PVC	10	18	235	9.79	966	165.1	143.9	0.00	2.92	7134.4	7185.5	58.50	144.22	80.64	4.12
		241+30.000	7001.07	PVC	10	18	235	9.79	966	165.4	144.2	0.00	2.92	7134.0	7185.2	57.56	143.42	79.72	4.12
		241+80.000	7002.98	PVC	10	18	235	9.79	966	165.7	144.5	0.00	2.92	7133.7	7184.9	56.59	142.59	78.77	4.12
		242+30.000	7005.82	PVC	10	18	235	9.79	966	166.0	144.8	0.00	2.92	7133.4	7184.7	55.22	141.36	77.42	4.12
		242+80.000	7008.82	PVC	10	18	235	9.79	966	166.4	145.1	0.00	2.92	7133.1	7184.4	53.79	140.06	76.00	4.12
		243+30.000	7011.99	PVC	10	18	235	9.79	966	166.7	145.3	0.00	2.92	7132.7	7184.1	52.27	138.69	74.51	4.12
		243+80.000	7014.84	PVC	10	18	235	9.79	966	167.0	145.6	0.00	2.92	7132.4	7183.8	50.90	137.45	73.15	4.12
		244+30.000	7016.73	PVC	10	18	235	9.79	966	167.3	145.9	0.00	2.92	7132.1	7183.5	49.94	136.64	72.21	4.12
		244+80.000	7018.5	PVC	10	18	235	9.79	966	167.7	146.2	0.00	2.92	7131.8	7183.3	49.04	135.87	71.32	4.12
		245+30.000	7020.65	PVC	10	18	235	9.79	966	168.0	146.5	0.00	2.92	7131.5	7183.0	47.97	134.94	70.27	4.12
		245+80.000	7022.94	PVC	10	18	235	9.79	966	168.3	146.7	0.00	2.92	7131.1	7182.7	46.84	133.95	69.16	4.12
		246+30.000	7025.64	PVC	10	18	235	9.79	966	168.6	147.0	0.00	2.92	7130.8	7182.4	45.53	132.78	67.87	4.12
		246+80.000	7028.39	PVC	10	18	235	9.79	966	169.0	147.3	0.00	2.92	7130.5	7182.1	44.20	131.59	66.55	4.12
BFV	1	247+30.000	7031.42	PVC	10	18	235	9.79	966	169.3	147.6	0.17	3.09	7130.0	7181.7	42.67	130.28	65.05	4.12
ARV	1	247+80.000	7033.75	PVC	10	18	235	9.79	966	169.6	147.9	0.00	3.09	7129.7	7181.4	41.53	129.27	63.92	4.12
		248+30.000	7034.84	PVC	10	18	235	9.79	966	169.9	148.1	0.00	3.09	7129.3	7181.1	40.91	128.80	63.32	4.12
		248+80.000	7035.44	PVC	10	18	235	9.79	966	170.2	148.4	0.00	3.09	7129.0	7180.8	40.51	128.54	62.94	4.12
		249+30.000	7035.84	PVC	10	18	235	9.79	966	170.6	148.7	0.00	3.09	7128.7	7180.6	40.20	128.36	62.65	4.12
		249+80.000	7036.67	PVC	10	18	235	9.79	966	170.9	149.0	0.00	3.09	7128.4	7180.3	39.70	128.00	62.17	4.12
		250+30.000	7036.81	PVC	10	18	235	9.79	966	171.2	149.3	0.00	3.09	7128.1	7180.0	39.50	127.95	61.99	4.12
		250+80.000	7037.08	PVC	10	18	235	9.79	966	171.5	149.6	0.00	3.09	7127.7	7179.7	39.24	127.83	61.74	4.12
		251+30.000	7038.84	PVC	10	18	235	9.79	966	171.9	149.8	0.00	3.09	7127.4	7179.4	38.34	127.06	60.86	4.12
		251+80.000	7041.4	PVC	10	18	235	9.79	966	172.2	150.1	0.00	3.09	7127.1	7179.2	37.10	125.96	59.63	4.12
ARV	1	252+30.000	7042.93	PVC	10	18	235	9.79	966	172.5	150.4	0.00	3.09	7126.8	7178.9	36.29	125.29	58.85	4.12
		252+80.000	7041.7	PVC	10	18	235	9.79	966	172.8	150.7	0.00	3.09	7126.4	7178.6	36.69	125.83	59.26	4.12
		253+30.000	7042.59	PVC	10	18	235	9.79	966	173.1	151.0	0.00	3.09	7126.1	7178.3	36.16	125.44	58.75	4.12
		253+80.000	7044.7	PVC	10	18	235	9.79	966	173.5	151.2	0.00	3.09	7125.8	7178.0	35.11	124.53	57.72	4.12
		254+30.000	7047.35	PVC	10	18	235	9.79	966	173.8	151.5	0.00	3.09	7125.5	7177.7	33.82	123.38	56.45	4.12
		254+80.000	7050.53	PVC	10	18	235	9.79	966	174.1	151.8	0.00	3.09	7125.2	7177.5	32.31	122.00	54.95	4.12
		255+30.000	7053.74	PVC	10	18	235	9.79	966	174.4	152.1	0.00	3.09	7124.8	7177.2	30.78	120.61	53.44	4.12
		255+80.000	7056.95	PVC	10	18	235	9.79	966	174.8	152.4	0.00	3.09	7124.5	7176.9	29.25	119.23	51.93	4.12
		256+30.000	7060.15	PVC	10	18	235	9.79	966	175.1	152.6	0.00	3.09	7124.2	7176.6	27.72	117.84	50.42	4.12
		256+80.000	7063.36	PVC	10	18	235	9.79	966	175.4	152.9	0.00	3.09	7123.9	7176.3	26.19	116.45	48.91	4.12
		257+30.000	7065.3	PVC	10	18	235	9.79	966	175.7	153.2	0.00	3.09	7123.5	7176.1	25.21	115.61	47.95	4.12

			257+80.000	7065.79	PVC	10	18	235	9.79	966	176.0	153.5	0.00	3.09	7123.2	7175.8	24.86	115.40	47.61	4.12
			258+30.000	7068.31	PVC	10	18	235	9.79	966	176.4	153.8	0.00	3.09	7122.9	7175.5	23.63	114.31	46.40	4.12
	45	1	258+49.200	7068.9	PVC	10	18	235	9.79	966	176.5	153.9	0.08	3.18	7122.7	7175.3	23.29	114.05	46.06	4.12
			258+80.000	7070.77	PVC	10	18	235	9.79	966	176.7	154.1	0.00	3.18	7122.5	7175.1	22.39	113.24	45.18	4.12
			259+30.000	7072.13	PVC	10	18	235	9.79	966	177.0	154.3	0.00	3.18	7122.2	7174.9	21.66	112.65	44.47	4.12
			259+80.000	7074.21	PVC	10	18	235	9.79	966	177.3	154.6	0.00	3.18	7121.8	7174.6	20.62	111.75	43.45	4.12
			260+30.000	7076.52	PVC	10	18	235	9.79	966	177.7	154.9	0.00	3.18	7121.5	7174.3	19.48	110.75	42.32	4.12
			260+80.000	7080.08	PVC	10	18	235	9.79	966	178.0	155.2	0.00	3.18	7121.2	7174.0	17.80	109.21	40.66	4.12
			261+30.000	7083.88	PVC	10	18	235	9.79	966	178.3	155.5	0.00	3.18	7120.9	7173.7	16.02	107.57	38.89	4.12
			261+80.000	7087.69	PVC	10	18	235	9.79	966	178.6	155.7	0.00	3.18	7120.6	7173.4	14.23	105.92	37.13	4.12
			262+30.000	7091.49	PVC	10	18	235	9.79	966	178.9	156.0	0.00	3.18	7120.2	7173.2	12.45	104.27	35.36	4.12
			262+80.000	7095.59	PVC	10	18	235	9.79	966	179.3	156.3	0.00	3.18	7119.9	7172.9	10.53	102.50	33.46	4.12
ARV		1	263+30.000	7098.35	PVC	10	18	235	9.79	966	179.6	156.6	0.00	3.18	7119.6	7172.6	9.19	101.30	32.14	4.12
			263+80.000	7097.38	PVC	10	18	235	9.79	966	179.9	156.9	0.00	3.18	7119.3	7172.3	9.47	101.72	32.44	4.12
			264+30.000	7095.78	PVC	10	18	235	9.79	966	180.2	157.1	0.00	3.18	7118.9	7172.0	10.03	102.41	33.01	4.12
			264+80.000	7094.18	PVC	10	18	235	9.79	966	180.6	157.4	0.00	3.18	7118.6	7171.8	10.58	103.11	33.58	4.12
			265+30.000	7092.58	PVC	10	18	235	9.79	966	180.9	157.7	0.00	3.18	7118.3	7171.5	11.13	103.80	34.15	4.12
			265+80.000	7091.95	PVC	10	18	235	9.79	966	181.2	158.0	0.00	3.18	7118.0	7171.2	11.27	104.07	34.30	4.12
ARV		1	266+02.100	7092.06	PVC	10	18	235	9.79	966	181.3	158.1	0.00	3.18	7117.8	7171.1	11.16	104.03	34.20	4.12
			266+30.000	7091.41	PVC	10	18	235	9.79	966	181.5	158.3	0.00	3.18	7117.7	7170.9	11.36	104.31	34.42	4.12
			266+80.000	7088.29	PVC	10	18	235	9.79	966	181.8	158.6	0.00	3.18	7117.3	7170.6	12.58	105.66	35.65	4.12
			267+30.000	7084.18	PVC	10	18	235	9.79	966	182.2	158.8	0.00	3.18	7117.0	7170.4	14.21	107.44	37.30	4.12
			267+80.000	7079.94	PVC	10	18	235	9.79	966	182.5	159.1	0.00	3.18	7116.7	7170.1	15.91	109.27	39.02	4.12
			268+30.000	7077.69	PVC	10	18	235	9.79	966	182.8	159.4	0.00	3.18	7116.4	7169.8	16.74	110.25	39.87	4.12
			268+80.000	7076.47	PVC	10	18	235	9.79	966	183.1	159.7	0.00	3.18	7116.0	7169.5	17.13	110.77	40.27	4.12
			269+30.000	7075.34	PVC	10	18	235	9.79	966	183.5	160.0	0.00	3.18	7115.7	7169.2	17.48	111.26	40.64	4.12
			269+80.000	7073.44	PVC	10	18	235	9.79	966	183.8	160.2	0.00	3.18	7115.4	7168.9	18.16	112.09	41.34	4.12
			270+30.000	7072.89	PVC	10	18	235	9.79	966	184.1	160.5	0.00	3.18	7115.1	7168.7	18.26	112.33	41.46	4.12
ARV		1	270+80.000	7074.11	PVC	10	18	235	9.79	966	184.4	160.8	0.00	3.18	7114.8	7168.4	17.60	111.80	40.81	4.12
			271+30.000	7072.24	PVC	10	18	235	9.79	966	184.8	161.1	0.00	3.18	7114.4	7168.1	18.26	112.60	41.50	4.12
			271+80.000	7070.21	PVC	10	18	235	9.79	966	185.1	161.4	0.00	3.18	7114.1	7167.8	19.01	113.49	42.26	4.12
			272+30.000	7071.37	PVC	10	18	235	9.79	966	185.4	161.6	0.00	3.18	7113.8	7167.5	18.36	112.98	41.63	4.12
ARV		1	272+80.000	7072.62	PVC	10	18	235	9.79	966	185.7	161.9	0.00	3.18	7113.5	7167.3	17.68	112.44	40.97	4.12
			273+30.000	7070.89	PVC	10	18	235	9.79	966	186.0	162.2	0.00	3.18	7113.1	7167.0	18.29	113.19	41.60	4.12
			273+80.000	7067.65	PVC	10	18	235	9.79	966	186.4	162.5	0.00	3.18	7112.8	7166.7	19.55	114.59	42.88	4.12
			274+30.000	7064.55	PVC	10	18	235	9.79	966	186.7	162.8	0.00	3.18	7112.5	7166.4	20.76	115.94	44.10	4.12
			274+80.000	7061.64	PVC	10	18	235	9.79	966	187.0	163.0	0.00	3.18	7112.2	7166.1	21.88	117.20	45.24	4.12
			275+30.000	7058.92	PVC	10	18	235	9.79	966	187.3	163.3	0.00	3.18	7111.9	7165.9	22.92	118.37	46.29	4.12
			275+80.000	7056.38	PVC	10	18	235	9.79	966	187.7	163.6	0.00	3.18	7111.5	7165.6	23.88	119.47	47.27	4.12
			276+30.000	7054.68	PVC	10	18	235	9.79	966	188.0	163.9	0.00	3.18	7111.2	7165.3	24.47	120.21	47.89	4.12
			276+80.000	7053.26	PVC	10	18	235	9.79	966	188.3	164.2	0.00	3.18	7110.9	7165.0	24.95	120.82	48.38	4.12
			277+30.000	7051.84	PVC	10	18	235	9.79	966	188.6	164.5	0.00	3.18	7110.6	7164.7	25.42	121.44	48.87	4.12
			277+80.000	7050.98	PVC	10	18	235	9.79	966	188.9	164.7	0.00	3.18	7110.2	7164.4	25.66	121.81	49.12	4.12
			278+30.000	7050.33	PVC	10	18	235	9.79	966	189.3	165.0	0.00	3.18	7109.9	7164.2	25.80	122.09	49.28	4.12
			278+80.000	7050.91	PVC	10	18	235	9.79	966	189.6	165.3	0.00	3.18	7109.6	7163.9	25.41	121.84	48.91	4.12
ARV		1	278+90.000	7072.63	PVC	10	18	235	9.79	966	189.7	165.4	0.00	3.18	7109.5	7163.8	15.98	112.44	39.48	4.12
			279+30.000	7049.57	PVC	10	18	235	9.79	966	189.9	165.6	0.00	3.18	7109.3	7163.6	25.85	122.42	49.36	4.12
			279+80.000	7046.33	PVC	10	18	235	9.79	966	190.2	165.9	0.00	3.18	7109.0	7163.3	27.11	123.82	50.65	4.12
			280+30.000	7043.08	PVC	10	18	235	9.79	966	190.6	166.1	0.00	3.18	7108.6	7163.0	28.38	125.23	51.93	4.12
			280+80.000	7039.83	PVC	10	18	235	9.79	966	190.9	166.4	0.00	3.18	7108.3	7162.8	29.64	126.64	53.22	4.12
			281+30.000	7036.58	PVC	10	18	235	9.79	966	191.2	166.7	0.00	3.18	7108.0	7162.5	30.91	128.04	54.50	4.12
			281+80.000	7033.34	PVC	10	18	235	9.79	966	191.5	167.0	0.00	3.18	7107.7	7162.2	32.18	129.45	55.78	4.12
			282+30.000	7028.24	PVC	10	18	235	9.79	966	191.8	167.3	0.00	3.18	7107.3	7161.9	34.24	131.65	57.87	4.12
			282+80.000	7022.7	PVC	10	18	235	9.79	966	192.2	167.5	0.00	3.18	7107.0	7161.6	36.50	134.05	60.15	4.12
			283+30.000	7021.25	PVC	10	18	235	9.79	966	192.5	167.8	0.00	3.18	7106.7	7161.4	36.99	134.68	60.65	4.12
	90	1	283+53.600	7021.2	PVC	10	18	235	9.79	966	192.6	168.0	0.12	3.29	7106.4	7161.1	36.90	134.70	60.57	4.12
			283+80.000	7021.1	PVC	10	18	235	9.79	966	192.8	168.1	0.00	3.29	7106.3	7161.0	36.86	134.74	60.55	4.12

ARV	1	284+30.000	7020.95	PVC	10	18	235	9.79	966	193.1	168.4	0.00	3.29	7105.9	7160.7	36.79	134.81	60.49	4.12
		284+80.000	7020.12	PVC	10	18	235	9.79	966	193.5	168.7	0.00	3.29	7105.6	7160.4	37.01	135.17	60.73	4.12
		285+30.000	7017.16	PVC	10	18	235	9.79	966	193.8	169.0	0.00	3.29	7105.3	7160.1	38.15	136.45	61.88	4.12
		285+80.000	7014.18	PVC	10	18	235	9.79	966	194.1	169.2	0.00	3.29	7105.0	7159.8	39.30	137.74	63.05	4.12
		286+30.000	7011.2	PVC	10	18	235	9.79	966	194.4	169.5	0.00	3.29	7104.6	7159.6	40.45	139.03	64.22	4.12
		286+80.000	7008.39	PVC	10	18	235	9.79	966	194.7	169.8	0.00	3.29	7104.3	7159.3	41.53	140.25	65.32	4.12
		287+30.000	7005.49	PVC	10	18	235	9.79	966	195.1	170.1	0.00	3.29	7104.0	7159.0	42.64	141.50	66.45	4.12
		287+80.000	7001.29	PVC	10	18	235	9.79	966	195.4	170.4	0.00	3.29	7103.7	7158.7	44.32	143.32	68.15	4.12
		288+30.000	6999.3	PVC	10	18	235	9.79	966	195.7	170.6	0.00	3.29	7103.4	7158.4	45.05	144.18	68.89	4.12
		288+80.000	6999.15	PVC	10	18	235	9.79	966	196.0	170.9	0.00	3.29	7103.0	7158.1	44.97	144.25	68.83	4.12
		289+30.000	6999	PVC	10	18	235	9.79	966	196.4	171.2	0.00	3.29	7102.7	7157.9	44.90	144.31	68.78	4.12
		289+80.000	6998.85	PVC	10	18	235	9.79	966	196.7	171.5	0.00	3.29	7102.4	7157.6	44.82	144.38	68.72	4.12
		290+30.000	6998.85	PVC	10	18	235	9.79	966	197.0	171.8	0.00	3.29	7102.1	7157.3	44.68	144.38	68.60	4.12
		290+80.000	6999	PVC	10	18	235	9.79	966	197.3	172.0	0.00	3.29	7101.7	7157.0	44.48	144.31	68.41	4.12
		291+30.000	6999.15	PVC	10	18	235	9.79	966	197.6	172.3	0.00	3.29	7101.4	7156.7	44.27	144.25	68.22	4.12
		291+80.000	6999.31	PVC	10	18	235	9.79	966	198.0	172.6	0.00	3.29	7101.1	7156.5	44.07	144.18	68.03	4.12
		292+30.000	6999.91	PVC	10	18	235	9.79	966	198.3	172.9	0.00	3.29	7100.8	7156.2	43.66	143.92	67.65	4.12
		292+80.000	7000.6	PVC	10	18	235	9.79	966	198.6	173.2	0.00	3.29	7100.5	7155.9	43.23	143.62	67.23	4.12
		293+30.000	7001.78	PVC	10	18	235	9.79	966	198.9	173.4	0.00	3.29	7100.1	7155.6	42.58	143.11	66.60	4.12
		293+80.000	7003.28	PVC	10	18	235	9.79	966	199.3	173.7	0.00	3.29	7099.8	7155.3	41.79	142.46	65.83	4.12
ARV	1	294+30.000	7004.68	PVC	10	18	235	9.79	966	199.6	174.0	0.00	3.29	7099.5	7155.1	41.04	141.85	65.10	4.12
		294+80.000	7005.68	PVC	10	18	235	9.79	966	199.9	174.3	0.00	3.29	7099.2	7154.8	40.47	141.42	64.54	4.12
		295+30.000	7006.71	PVC	10	18	235	9.79	966	200.2	174.6	0.00	3.29	7098.8	7154.5	39.88	140.97	63.97	4.12
		295+80.000	7007.86	PVC	10	18	235	9.79	966	200.5	174.9	0.00	3.29	7098.5	7154.2	39.25	140.48	63.36	4.12
		296+30.000	7009	PVC	10	18	235	9.79	966	200.9	175.1	0.00	3.29	7098.2	7153.9	38.61	139.98	62.74	4.12
		296+80.000	7010.15	PVC	10	18	235	9.79	966	201.2	175.4	0.00	3.29	7097.9	7153.7	37.98	139.49	62.12	4.12
		297+30.000	7011.29	PVC	10	18	235	9.79	966	201.5	175.7	0.00	3.29	7097.6	7153.4	37.34	138.99	61.51	4.12
		297+80.000	7012.55	PVC	10	18	235	9.79	966	201.8	176.0	0.00	3.29	7097.2	7153.1	36.66	138.45	60.84	4.12
		298+30.000	7013.95	PVC	10	18	235	9.79	966	202.2	176.3	0.00	3.29	7096.9	7152.8	35.91	137.84	60.11	4.12
		298+80.000	7015.35	PVC	10	18	235	9.79	966	202.5	176.5	0.00	3.29	7096.6	7152.5	35.17	137.23	59.38	4.12
		299+30.000	7016.75	PVC	10	18	235	9.79	966	202.8	176.8	0.00	3.29	7096.3	7152.2	34.42	136.63	58.66	4.12
45	1	299+80.000	7018.15	PVC	10	18	235	9.79	966	203.1	177.1	0.08	3.37	7095.9	7151.9	33.64	136.02	57.89	4.12
BFV	1	299+80.000	7018.15	PVC	10	18	235	9.79	966	203.1	177.1	0.17	3.55	7095.7	7151.7	33.56	136.02	57.82	4.12
ARV	1	300+30.000	7019.92	PVC	10	18	235	9.79	966	203.5	177.4	0.00	3.55	7095.4	7151.4	32.66	135.26	56.93	4.12
Flow Control Valve		300+80.000	7021.42	PVC	10	18	235	9.79	966	203.8	177.7	69.30	72.85	7025.7	7081.8	1.87	134.61	26.16	4.12
Tank Base		305+80.000	7050	PVC	10	18	235	9.79	966	207.0	180.5	0.00	72.85	7022.5	7079.0	-24.88	122.23	12.57	4.12

WaterCAD Analysis

		Pump On		Pump Off		Pump On	Pump Off	Pump On, JAN Flow			Pump Off, JAN Flow			
		C Full, Ojo Full	C Full, Ojo Empty	C Full, Ojo Full	C Full, Ojo Empty	C Full, Ojo closed	C closed, Ojo Full	C Full, Ojo Full	C Full, Ojo Empty	C Full, Ojo Closed	C Full, Ojo Full	C Full, Ojo Empty	C closed, Ojo Full	Max Flow
FV1	From Counselor	3766	3893	1882	2693	2190	0	4371	4499	3044	2553	3166	0	4499
	From Ojo	(1813)	(1966)	341	(564)	0	1156	(2548)	(2706)	(966)	(406)	(1107)	503	2706
	To Flush	1953	1927	2223	2129	2190	1156	1823	1793	2078	2147	2059	503	2223
FV2	From Counselor	3557	3674	1787	2364	2287	0	4065	4182	3050	2376	2698	0	4182
	From Ojo	(1646)	(1809)	599	95	0	1494	(2369)	(2543)	(966)	(109)	(2186)	894	2543
	To Flush	1911	1865	2386	2459	2287	1494	1696	1639	2084	2267	512	894	2459
FV3	From Counselor	3070	3182	1454	1761	2094	0	2589	2703	1841	1059	1283	(966)	3182
	From Ojo	(1439)	(1622)	832	441	0	1695	(1209)	(1414)	0	1096	796	2166	2166
	To Flush	1631	1560	2286	2202	2094	1695	1380	1289	1841	2155	2079	1200	2286
FV4	From Counselor	3038	3152	1474	1738	2185	0	2592	2710	1946	1109	1316	(966)	3152
	From Ojo	(1318)	(1514)	960	616	0	1850	(1082)	(1302)	0	1206	924	2292	2292
	To Flush	1720	1638	2434	2354	2185	1850	1510	1408	1946	2315	2240	1326	2434
FV PS Suction	From Counselor	2640	2735	1190	1467	1830	0	2232	2323	1592	850	1071	(966)	2735
	From Ojo	(1442)	(1646)	926	543	0	1650	(1269)	(1496)	0	1153	832	2099	2099
	To Flush	1198	1089	2116	2010	1830	1650	963	827	1592	2003	1903	1133	2116
FV PS Discharge	From Counselor	2663	2796	956	1320	2203	0	2342	2490	2052	630	904	(966)	2796
	From Ojo	(748)	(983)	746	289	0	1425	(484)	(748)	0	993	637	1979	1979
	To Flush	1915	1813	1702	1609	2203	1425	1858	1742	2052	1623	1541	1013	2203
FV5	From Counselor	2539	2672	940	1226	2365	0	2222	2376	2168	619	854	(966)	2672
	From Ojo	(403)	(736)	919	474	0	1482	(126)	(516)	0	1127	743	1925	1925
	To Flush	2136	1936	1859	1700	2365	1482	2096	1860	2168	1746	1597	959	2365
FV6	From Counselor	2355	2505	1068	1278	2527	0	2090	2226	2335	783	974	(966)	2527
	From Ojo	474	65	1432	1061	0	2076	692	320	0	1616	1268	2556	2556
	To Flush	2829	2570	2500	2339	2527	2076	2782	2546	2335	2399	2242	1590	2829
FV7	From Counselor	2099	2241	791	1058	2388	0	1869	2008	2235	528	787	(966)	2388
	From Ojo	726	385	1864	1444	0	2500	935	602	0	2080	1671	3226	3226
	To Flush	2825	2626	2655	2502	2388	2500	2804	2610	2235	2608	2458	2260	2825

	Used for flush valve close scenario
	Used for flush valve open scenario
	Used for open and close scenarios

Attachment 2 – InfoWater Input/Output Report

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***                                                          ***
***                Comprehensive Analysis of                 ***
***             Water Distribution Piping Network            ***
***                                                          ***
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Input Data File .... C:\USERS\BETSY_YOUNG\DOCUMENTS\CUTTER LATERAL\JAN\JAN_2014_12_03.OUT\SCENARIO\JAN_START_BEFORE_PUMP_ON\~INP
Number of Junctions................ 64
Number of Reservoirs............... 3
Number of Tanks 0
Number of Pipes 77
Number of Pumps 1
Number of Valves 9
Headloss Formula .... Hazen-Williams
Hydraulic Timestep .... 1.00 hrs
Hydraulic Accuracy 0.001000
Status Check Frequency 2
Maximum Trials Checked 10
Damping Limit Threshold 0.000000
Maximum Trials 40
Quality Analysis .... None
Specific Gravity 1.00
Relative Kinematic Viscosity 1.00
Relative Chemical Diffusivity 1.00
Demand Multiplier 1.00
Total Duration .... 24.00 hrs
Reporting Criteria:
All Junctions/Tanks/Reservoirs
All Pipes
All Pumps/Valves

Analysis began Tue Dec 16 13:14:16 2014

Node Results at 0:00:00 hrs:

Node	Demand gpm	Head ft	Pressure psi
0+70	0.00	7307.98	6.62
103+38	0.00	7246.75	37.38
104+50	0.00	7245.93	33.16
118+65	0.00	7237.49	40.10
127+00	0.00	7232.51	32.35
130+00	0.00	7230.66	36.03
132+45	0.00	7229.26	41.47
133+35	0.00	7228.73	41.04
143+00	0.00	7222.79	62.48
143+30	0.00	7222.49	62.35
149+87	0.00	7221.23	74.12
154+80	0.00	7216.26	69.92
155+63	0.00	7219.92	59.85
157+30	0.00	7214.87	67.58
164+14	0.00	7217.99	46.52
167+80	0.00	7209.00	78.43
171+80	0.00	7206.77	84.83
176+56	0.00	7215.16	86.57
179+80	0.00	7202.30	92.21

181+30	0.00	7201.46	91.45	
184+80	0.00	7199.51	94.64	
187+80	0.00	7197.83	93.04	
189+30	0.00	7196.99	95.63	
194+80	0.00	7193.85	89.11	
198+30	0.00	7191.92	90.09	
201+80	0.00	7189.96	91.24	
215+60	0.00	7182.26	63.37	
216+80	0.00	7181.59	66.29	
218+30	0.00	7180.75	64.45	
218+40_DS	0.00	7387.76	120.35	
218+40_US	5.00	7205.65	41.44	
223+80	0.00	7177.68	72.52	
226+80	0.00	7176.00	65.78	
23+90	0.00	7294.15	37.63	
232+80	0.00	7172.65	75.63	
234+30	0.00	7171.81	75.92	
243+30	0.00	7166.78	67.07	
247+30	0.00	7164.48	57.66	
252+30	0.00	7162.27	51.72	
263+30	0.00	7156.13	25.01	
266+02	0.00	7154.61	27.08	
270+80	0.00	7151.94	33.73	
272+80	0.00	7150.82	33.89	
276+80	0.00	7374.56	139.20	
278+90	0.00	7147.41	32.42	
279+30	0.00	7147.19	42.29	
289+80	0.00	7141.32	61.76	
300+30	0.00	7078.85	25.54	
315+35	0.00	7365.86	49.36	
33+05	0.00	7288.69	22.32	
331+15	0.00	7362.29	74.99	
343+15	0.00	7359.58	80.55	
355+68	0.00	7356.75	107.95	
392+70	0.00	7348.39	55.69	
4+00	0.00	7306.01	6.63	
42+16	0.00	7283.26	51.11	
469+14	0.00	7331.12	127.80	
47+12	0.00	7280.30	39.77	
528+00	0.00	7317.83	70.82	
565+56	0.00	7309.34	10.44	
67+78	0.00	7267.98	65.34	
97+35	0.00	7250.35	33.68	
DISCHARGE_SURGE_TANK	0.00	7387.75	120.35	
SUCTION_SURGE_TANK	0.00	7205.65	41.44	
COUNSELOR_TANK	-2379.96	7308.40	-	Reservoir
JAN	966.00	7050.00	-	Reservoir
OJO-ENCINO_TANK	1408.96	7308.00	-	Reservoir

Pipe Results at 0:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft
P101	966.00	4.12	1.96
P103	966.00	4.12	7.71
P105	966.00	4.12	0.67
P107	966.00	4.12	0.84
P109	966.00	4.12	3.07
P11	2379.96	5.33	0.42
P111	966.00	4.12	1.68
P113	966.00	4.12	3.35

P115	966.00	4.12	0.84
P117	966.00	4.12	5.03
P119	966.00	4.12	2.23
P121	966.00	4.12	6.14
P123	966.00	4.12	1.52
P125	966.00	4.12	2.67
P127	966.00	4.12	1.12
P129	966.00	4.12	3.41
P13	2379.96	5.33	1.97
P131	966.00	4.12	0.22
P133	966.00	4.12	5.87
P135	966.00	4.12	5.59
P137	966.00	4.12	2.68
P139	966.00	4.12	0.28
P141	1408.96	3.16	8.71
P143	1408.96	3.16	13.29
P145	1408.96	3.16	8.48
P147	1408.96	3.16	0.00
P15	2379.96	5.33	11.87
P151	966.00	4.12	0.11
P153	0.00	0.00	0.00
P155	1413.96	3.17	0.00
P157	1408.96	3.16	13.19
P163	966.00	4.12	0.03
P165	966.00	4.12	6.23
P167	966.00	4.12	0.03
P169	966.00	4.12	1.93
P17	2379.96	5.33	5.46
P171	966.00	4.12	0.03
P173	966.00	4.12	2.21
P175	966.00	4.12	0.28
P19	2379.96	5.33	5.44
P21	2379.96	5.33	2.96
P23	2379.96	5.33	12.32
P25	2379.96	5.33	17.63
P27	2379.96	5.33	3.60
P29	2379.96	5.33	0.20
P31	2379.96	5.33	8.44
P33	2379.96	5.33	4.98
P35	2379.96	5.33	1.85
P37	2379.96	5.33	1.41
P39	2379.96	5.33	0.53
P41	2379.96	5.33	5.93
P43	1413.96	3.17	1.31
P45	1413.96	3.17	1.93
P47	1413.96	3.17	2.82
P49	1413.96	3.17	9.51
P51	1408.95	3.16	0.02
P53	1408.96	3.16	3.57
P55	1408.96	3.16	2.71
P57	1408.96	3.16	2.83
P59	1408.96	3.16	8.36
P61	1408.96	3.16	17.27
P65	1408.95	3.16	0.02
P67	1408.96	3.16	0.00
P73	1408.96	3.16	0.00
P75	2379.96	5.33	0.47
P77	0.00	0.00	0.00
P79	1413.96	3.17	1.56
P81	966.00	4.12	0.17
P83	966.00	4.12	2.23
P85	966.00	4.12	1.40
P87	966.00	4.12	5.86

P89	966.00	4.12	4.47
P91	966.00	4.12	0.84
P93	966.00	4.12	1.96
P95	966.00	4.12	1.68
P97	966.00	4.12	0.84
P99	966.00	4.12	3.07

Pump Results at 0:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft	
PS_218+40	1408.95	3.16	182.15	Pump

Valve Results at 0:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft	
300+80	966.00	6.17	19.87	TCV
BFV_103+71	2379.96	4.96	0.15	TCV
BYPASS	0.00	0.00	0.00	TCV
ISO_143+30	966.00	4.12	0.10	TCV
ISO_194+80	966.00	2.74	0.05	TCV
ISO_247+30	966.00	2.74	0.05	TCV
ISO_299+80	966.00	2.74	56.61	FCV
JAN_ALT_VALVE	966.00	6.17	5.90	TCV
OJO_ENCINO_ALT_VALVE	1408.96	2.94	1.34	TCV

Node Results at 1:00:00 hrs:

Node	Demand gpm	Head ft	Pressure psi
0+70	0.00	7307.98	6.62
103+38	0.00	7246.75	37.38
104+50	0.00	7245.93	33.16
118+65	0.00	7237.49	40.10
127+00	0.00	7232.51	32.35
130+00	0.00	7230.66	36.03
132+45	0.00	7229.26	41.47
133+35	0.00	7228.73	41.04
143+00	0.00	7222.79	62.48
143+30	0.00	7222.49	62.35
149+87	0.00	7221.23	74.12
154+80	0.00	7216.26	69.92
155+63	0.00	7219.92	59.85
157+30	0.00	7214.87	67.58
164+14	0.00	7217.99	46.52
167+80	0.00	7209.00	78.43
171+80	0.00	7206.77	84.83
176+56	0.00	7215.16	86.57
179+80	0.00	7202.30	92.21
181+30	0.00	7201.46	91.45
184+80	0.00	7199.51	94.64
187+80	0.00	7197.83	93.04
189+30	0.00	7196.99	95.63
194+80	0.00	7193.85	89.11
198+30	0.00	7191.92	90.09
201+80	0.00	7189.96	91.24
215+60	0.00	7182.26	63.37
216+80	0.00	7181.59	66.29

218+30	0.00	7180.75	64.45	
218+40_DS	0.00	7387.75	120.35	
218+40_US	5.00	7205.65	41.44	
223+80	0.00	7177.68	72.52	
226+80	0.00	7176.00	65.78	
23+90	0.00	7294.15	37.63	
232+80	0.00	7172.65	75.63	
234+30	0.00	7171.81	75.92	
243+30	0.00	7166.78	67.07	
247+30	0.00	7164.48	57.66	
252+30	0.00	7162.27	51.72	
263+30	0.00	7156.13	25.01	
266+02	0.00	7154.60	27.08	
270+80	0.00	7151.94	33.73	
272+80	0.00	7150.82	33.89	
276+80	0.00	7374.56	139.20	
278+90	0.00	7147.41	32.42	
279+30	0.00	7147.19	42.28	
289+80	0.00	7141.32	61.76	
300+30	0.00	7078.85	25.54	
315+35	0.00	7365.85	49.36	
33+05	0.00	7288.69	22.32	
331+15	0.00	7362.29	74.99	
343+15	0.00	7359.57	80.55	
355+68	0.00	7356.75	107.95	
392+70	0.00	7348.38	55.69	
4+00	0.00	7306.01	6.63	
42+16	0.00	7283.26	51.11	
469+14	0.00	7331.12	127.80	
47+12	0.00	7280.30	39.77	
528+00	0.00	7317.83	70.82	
565+56	0.00	7309.34	10.44	
67+78	0.00	7267.98	65.34	
97+35	0.00	7250.35	33.68	
DISCHARGE_SURGE_TANK	0.00	7387.75	120.35	
SUCTION_SURGE_TANK	0.00	7205.65	41.44	
COUNSELOR_TANK	-2379.96	7308.40	-	Reservoir
JAN	966.00	7050.00	-	Reservoir
OJO-ENCINO_TANK	1408.95	7308.00	-	Reservoir

Pipe Results at 1:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft
P101	966.00	4.12	1.95
P103	966.00	4.12	7.71
P105	966.00	4.12	0.67
P107	966.00	4.12	0.84
P109	966.00	4.12	3.07
P11	2379.96	5.33	0.42
P111	966.00	4.12	1.68
P113	966.00	4.12	3.35
P115	966.00	4.12	0.84
P117	966.00	4.12	5.03
P119	966.00	4.12	2.23
P121	966.00	4.12	6.14
P123	966.00	4.12	1.52
P125	966.00	4.12	2.67
P127	966.00	4.12	1.12
P129	966.00	4.12	3.41
P13	2379.96	5.33	1.97

P131	966.00	4.12	0.22
P133	966.00	4.12	5.86
P135	966.00	4.12	5.59
P137	966.00	4.12	2.68
P139	966.00	4.12	0.28
P141	1408.95	3.16	8.71
P143	1408.95	3.16	13.29
P145	1408.95	3.16	8.48
P147	1408.95	3.16	0.00
P15	2379.96	5.33	11.87
P151	966.00	4.12	0.11
P153	0.00	0.00	0.00
P155	1413.96	3.17	0.00
P157	1408.95	3.16	13.19
P163	966.00	4.12	0.03
P165	966.00	4.12	6.23
P167	966.00	4.12	0.03
P169	966.00	4.12	1.93
P17	2379.96	5.33	5.46
P171	966.00	4.12	0.03
P173	966.00	4.12	2.21
P175	966.00	4.12	0.28
P19	2379.96	5.33	5.43
P21	2379.96	5.33	2.96
P23	2379.96	5.33	12.32
P25	2379.96	5.33	17.63
P27	2379.96	5.33	3.60
P29	2379.96	5.33	0.20
P31	2379.96	5.33	8.44
P33	2379.96	5.33	4.98
P35	2379.96	5.33	1.85
P37	2379.96	5.33	1.40
P39	2379.96	5.33	0.53
P41	2379.96	5.33	5.93
P43	1413.96	3.17	1.31
P45	1413.96	3.17	1.93
P47	1413.96	3.17	2.82
P49	1413.96	3.17	9.51
P51	1408.96	3.16	0.02
P53	1408.95	3.16	3.57
P55	1408.95	3.16	2.71
P57	1408.95	3.16	2.83
P59	1408.95	3.16	8.36
P61	1408.95	3.16	17.26
P65	1408.96	3.16	0.02
P67	1408.95	3.16	0.00
P73	1408.95	3.16	0.00
P75	2379.96	5.33	0.47
P77	0.00	0.00	0.00
P79	1413.96	3.17	1.56
P81	966.00	4.12	0.17
P83	966.00	4.12	2.23
P85	966.00	4.12	1.40
P87	966.00	4.12	5.87
P89	966.00	4.12	4.47
P91	966.00	4.12	0.84
P93	966.00	4.12	1.95
P95	966.00	4.12	1.68
P97	966.00	4.12	0.84
P99	966.00	4.12	3.07

Pump Results at 1:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft	
PS_218+40	1408.96	3.16	182.15	Pump

Valve Results at 1:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft	
300+80	966.00	6.17	19.87	TCV
BFV_103+71	2379.96	4.96	0.15	TCV
BYPASS	0.00	0.00	0.00	TCV
ISO_143+30	966.00	4.12	0.11	TCV
ISO_194+80	966.00	2.74	0.05	TCV
ISO_247+30	966.00	2.74	0.05	TCV
ISO_299+80	966.00	2.74	56.61	FCV
JAN_ALT_VALVE	966.00	6.17	5.90	TCV
OJO_ENCINO_ALT_VALVE	1408.95	2.94	1.34	TCV

Node Results at 2:00:00 hrs:

Node	Demand gpm	Head ft	Pressure psi
0+70	0.00	7307.98	6.62
103+38	0.00	7246.75	37.38
104+50	0.00	7245.93	33.16
118+65	0.00	7237.49	40.10
127+00	0.00	7232.51	32.35
130+00	0.00	7230.66	36.03
132+45	0.00	7229.26	41.47
133+35	0.00	7228.73	41.04
143+00	0.00	7222.79	62.48
143+30	0.00	7222.49	62.35
149+87	0.00	7221.23	74.12
154+80	0.00	7216.26	69.92
155+63	0.00	7219.92	59.85
157+30	0.00	7214.87	67.58
164+14	0.00	7217.99	46.52
167+80	0.00	7209.00	78.43
171+80	0.00	7206.77	84.83
176+56	0.00	7215.16	86.57
179+80	0.00	7202.30	92.21
181+30	0.00	7201.46	91.45
184+80	0.00	7199.51	94.64
187+80	0.00	7197.83	93.04
189+30	0.00	7196.99	95.63
194+80	0.00	7193.85	89.11
198+30	0.00	7191.92	90.09
201+80	0.00	7189.96	91.24
215+60	0.00	7182.26	63.37
216+80	0.00	7181.59	66.29
218+30	0.00	7180.75	64.45
218+40_DS	0.00	7387.75	120.35
218+40_US	5.00	7205.65	41.44
223+80	0.00	7177.68	72.52
226+80	0.00	7176.00	65.78
23+90	0.00	7294.15	37.63
232+80	0.00	7172.65	75.63
234+30	0.00	7171.81	75.92
243+30	0.00	7166.78	67.07

247+30	0.00	7164.48	57.66	
252+30	0.00	7162.27	51.72	
263+30	0.00	7156.13	25.01	
266+02	0.00	7154.61	27.08	
270+80	0.00	7151.94	33.73	
272+80	0.00	7150.82	33.89	
276+80	0.00	7374.56	139.20	
278+90	0.00	7147.41	32.42	
279+30	0.00	7147.19	42.28	
289+80	0.00	7141.32	61.76	
300+30	0.00	7078.85	25.54	
315+35	0.00	7365.86	49.36	
33+05	0.00	7288.69	22.32	
331+15	0.00	7362.29	74.99	
343+15	0.00	7359.58	80.55	
355+68	0.00	7356.75	107.95	
392+70	0.00	7348.39	55.69	
4+00	0.00	7306.01	6.63	
42+16	0.00	7283.26	51.11	
469+14	0.00	7331.12	127.80	
47+12	0.00	7280.30	39.77	
528+00	0.00	7317.83	70.82	
565+56	0.00	7309.34	10.44	
67+78	0.00	7267.98	65.34	
97+35	0.00	7250.35	33.68	
DISCHARGE_SURGE_TANK	0.00	7387.75	120.35	
SUCTION_SURGE_TANK	0.00	7205.65	41.44	
COUNSELOR_TANK	-2379.96	7308.40	-	Reservoir
JAN	966.00	7050.00	-	Reservoir
OJO-ENCINO_TANK	1408.96	7308.00	-	Reservoir

Pipe Results at 2:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft
P101	966.00	4.12	1.96
P103	966.00	4.12	7.71
P105	966.00	4.12	0.67
P107	966.00	4.12	0.84
P109	966.00	4.12	3.07
P11	2379.96	5.33	0.42
P111	966.00	4.12	1.68
P113	966.00	4.12	3.35
P115	966.00	4.12	0.84
P117	966.00	4.12	5.03
P119	966.00	4.12	2.23
P121	966.00	4.12	6.14
P123	966.00	4.12	1.52
P125	966.00	4.12	2.67
P127	966.00	4.12	1.12
P129	966.00	4.12	3.41
P13	2379.96	5.33	1.97
P131	966.00	4.12	0.22
P133	966.00	4.12	5.86
P135	966.00	4.12	5.59
P137	966.00	4.12	2.68
P139	966.00	4.12	0.28
P141	1408.96	3.16	8.71
P143	1408.96	3.16	13.29
P145	1408.96	3.16	8.48
P147	1408.96	3.16	0.00

P15	2379.96	5.33	11.87
P151	966.00	4.12	0.11
P153	0.00	0.00	0.00
P155	1413.96	3.17	0.00
P157	1408.96	3.16	13.19
P163	966.00	4.12	0.03
P165	966.00	4.12	6.23
P167	966.00	4.12	0.03
P169	966.00	4.12	1.93
P17	2379.96	5.33	5.46
P171	966.00	4.12	0.03
P173	966.00	4.12	2.21
P175	966.00	4.12	0.28
P19	2379.96	5.33	5.44
P21	2379.96	5.33	2.96
P23	2379.96	5.33	12.32
P25	2379.96	5.33	17.63
P27	2379.96	5.33	3.60
P29	2379.96	5.33	0.20
P31	2379.96	5.33	8.44
P33	2379.96	5.33	4.98
P35	2379.96	5.33	1.85
P37	2379.96	5.33	1.41
P39	2379.96	5.33	0.53
P41	2379.96	5.33	5.93
P43	1413.96	3.17	1.31
P45	1413.96	3.17	1.93
P47	1413.96	3.17	2.83
P49	1413.96	3.17	9.51
P51	1408.96	3.16	0.02
P53	1408.96	3.16	3.57
P55	1408.96	3.16	2.71
P57	1408.96	3.16	2.83
P59	1408.96	3.16	8.36
P61	1408.96	3.16	17.27
P65	1408.96	3.16	0.02
P67	1408.96	3.16	0.00
P73	1408.96	3.16	0.00
P75	2379.96	5.33	0.47
P77	0.00	0.00	0.00
P79	1413.96	3.17	1.56
P81	966.00	4.12	0.17
P83	966.00	4.12	2.23
P85	966.00	4.12	1.40
P87	966.00	4.12	5.86
P89	966.00	4.12	4.47
P91	966.00	4.12	0.84
P93	966.00	4.12	1.96
P95	966.00	4.12	1.68
P97	966.00	4.12	0.84
P99	966.00	4.12	3.07

Pump Results at 2:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft	
PS_218+40	1408.96	3.16	182.15	Pump

Valve Results at 2:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft

300+80	966.00	6.17	19.87	TCV
BFV_103+71	2379.96	4.96	0.15	TCV
BYPASS	0.00	0.00	0.00	TCV
ISO_143+30	966.00	4.12	0.10	TCV
ISO_194+80	966.00	2.74	0.05	TCV
ISO_247+30	966.00	2.74	0.05	TCV
ISO_299+80	966.00	2.74	56.61	FCV
JAN_ALT_VALVE	966.00	6.17	5.90	TCV
OJO_ENCINO_ALT_VALVE	1408.96	2.94	1.34	TCV

Node Results at 3:00:00 hrs:

Node	Demand gpm	Head ft	Pressure psi
0+70	0.00	7307.98	6.62
103+38	0.00	7246.75	37.38
104+50	0.00	7245.93	33.16
118+65	0.00	7237.49	40.10
127+00	0.00	7232.51	32.35
130+00	0.00	7230.66	36.03
132+45	0.00	7229.26	41.47
133+35	0.00	7228.73	41.04
143+00	0.00	7222.79	62.48
143+30	0.00	7222.49	62.35
149+87	0.00	7221.23	74.12
154+80	0.00	7216.26	69.92
155+63	0.00	7219.92	59.85
157+30	0.00	7214.87	67.58
164+14	0.00	7217.99	46.52
167+80	0.00	7209.00	78.43
171+80	0.00	7206.77	84.83
176+56	0.00	7215.16	86.57
179+80	0.00	7202.30	92.21
181+30	0.00	7201.46	91.45
184+80	0.00	7199.51	94.64
187+80	0.00	7197.83	93.04
189+30	0.00	7196.99	95.63
194+80	0.00	7193.85	89.11
198+30	0.00	7191.92	90.09
201+80	0.00	7189.96	91.24
215+60	0.00	7182.26	63.37
216+80	0.00	7181.59	66.29
218+30	0.00	7180.75	64.45
218+40_DS	0.00	7387.75	120.35
218+40_US	5.00	7205.65	41.44
223+80	0.00	7177.68	72.52
226+80	0.00	7176.00	65.78
23+90	0.00	7294.15	37.63
232+80	0.00	7172.65	75.63
234+30	0.00	7171.81	75.92
243+30	0.00	7166.78	67.07
247+30	0.00	7164.48	57.66
252+30	0.00	7162.27	51.72
263+30	0.00	7156.13	25.01
266+02	0.00	7154.61	27.08
270+80	0.00	7151.94	33.73
272+80	0.00	7150.82	33.89
276+80	0.00	7374.56	139.20
278+90	0.00	7147.41	32.42
279+30	0.00	7147.19	42.29

289+80	0.00	7141.32	61.76	
300+30	0.00	7078.85	25.54	
315+35	0.00	7365.86	49.36	
33+05	0.00	7288.69	22.32	
331+15	0.00	7362.29	74.99	
343+15	0.00	7359.58	80.55	
355+68	0.00	7356.75	107.95	
392+70	0.00	7348.39	55.69	
4+00	0.00	7306.01	6.63	
42+16	0.00	7283.26	51.11	
469+14	0.00	7331.12	127.80	
47+12	0.00	7280.30	39.77	
528+00	0.00	7317.83	70.82	
565+56	0.00	7309.34	10.44	
67+78	0.00	7267.98	65.34	
97+35	0.00	7250.35	33.68	
DISCHARGE_SURGE_TANK	0.00	7387.75	120.35	
SUCTION_SURGE_TANK	0.00	7205.65	41.44	
COUNSELOR_TANK	-2379.96	7308.40	-	Reservoir
JAN	966.00	7050.00	-	Reservoir
OJO-ENCINO_TANK	1408.96	7308.00	-	Reservoir

Pipe Results at 3:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft
P101	966.00	4.12	1.96
P103	966.00	4.12	7.71
P105	966.00	4.12	0.67
P107	966.00	4.12	0.84
P109	966.00	4.12	3.07
P11	2379.96	5.33	0.42
P111	966.00	4.12	1.68
P113	966.00	4.12	3.35
P115	966.00	4.12	0.84
P117	966.00	4.12	5.03
P119	966.00	4.12	2.23
P121	966.00	4.12	6.14
P123	966.00	4.12	1.52
P125	966.00	4.12	2.67
P127	966.00	4.12	1.12
P129	966.00	4.12	3.41
P13	2379.96	5.33	1.97
P131	966.00	4.12	0.22
P133	966.00	4.12	5.86
P135	966.00	4.12	5.59
P137	966.00	4.12	2.68
P139	966.00	4.12	0.28
P141	1408.96	3.16	8.71
P143	1408.96	3.16	13.29
P145	1408.96	3.16	8.48
P147	1408.96	3.16	0.00
P15	2379.96	5.33	11.87
P151	966.00	4.12	0.11
P153	0.00	0.00	0.00
P155	1413.96	3.17	0.00
P157	1408.96	3.16	13.19
P163	966.00	4.12	0.03
P165	966.00	4.12	6.23
P167	966.00	4.12	0.03
P169	966.00	4.12	1.93

P17	2379.96	5.33	5.46
P171	966.00	4.12	0.03
P173	966.00	4.12	2.21
P175	966.00	4.12	0.28
P19	2379.96	5.33	5.44
P21	2379.96	5.33	2.96
P23	2379.96	5.33	12.32
P25	2379.96	5.33	17.63
P27	2379.96	5.33	3.60
P29	2379.96	5.33	0.20
P31	2379.96	5.33	8.44
P33	2379.96	5.33	4.98
P35	2379.96	5.33	1.85
P37	2379.96	5.33	1.41
P39	2379.96	5.33	0.53
P41	2379.96	5.33	5.93
P43	1413.96	3.17	1.31
P45	1413.96	3.17	1.93
P47	1413.96	3.17	2.82
P49	1413.96	3.17	9.51
P51	1408.96	3.16	0.02
P53	1408.96	3.16	3.57
P55	1408.96	3.16	2.71
P57	1408.96	3.16	2.83
P59	1408.96	3.16	8.36
P61	1408.96	3.16	17.27
P65	1408.96	3.16	0.02
P67	1408.96	3.16	0.00
P73	1408.96	3.16	0.00
P75	2379.96	5.33	0.47
P77	0.00	0.00	0.00
P79	1413.96	3.17	1.56
P81	966.00	4.12	0.17
P83	966.00	4.12	2.23
P85	966.00	4.12	1.40
P87	966.00	4.12	5.86
P89	966.00	4.12	4.47
P91	966.00	4.12	0.84
P93	966.00	4.12	1.96
P95	966.00	4.12	1.68
P97	966.00	4.12	0.84
P99	966.00	4.12	3.07

Pump Results at 3:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft	
PS_218+40	1408.96	3.16	182.15	Pump

Valve Results at 3:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft	
300+80	966.00	6.17	19.87	TCV
BFV_103+71	2379.96	4.96	0.15	TCV
BYPASS	0.00	0.00	0.00	TCV
ISO_143+30	966.00	4.12	0.11	TCV
ISO_194+80	966.00	2.74	0.05	TCV
ISO_247+30	966.00	2.74	0.05	TCV
ISO_299+80	966.00	2.74	56.61	FCV
JAN_ALT_VALVE	966.00	6.17	5.90	TCV

OJO_ENCINO_ALT_VALVE	1408.96	2.94	1.34	TCV

Node Results at 4:00:00 hrs:

Node	Demand gpm	Head ft	Pressure psi
0+70	0.00	7307.98	6.62
103+38	0.00	7246.75	37.38
104+50	0.00	7245.93	33.16
118+65	0.00	7237.49	40.10
127+00	0.00	7232.51	32.35
130+00	0.00	7230.66	36.03
132+45	0.00	7229.26	41.47
133+35	0.00	7228.73	41.04
143+00	0.00	7222.79	62.48
143+30	0.00	7222.49	62.35
149+87	0.00	7221.23	74.12
154+80	0.00	7216.26	69.92
155+63	0.00	7219.92	59.85
157+30	0.00	7214.87	67.58
164+14	0.00	7217.99	46.52
167+80	0.00	7209.00	78.43
171+80	0.00	7206.77	84.83
176+56	0.00	7215.16	86.57
179+80	0.00	7202.30	92.21
181+30	0.00	7201.46	91.45
184+80	0.00	7199.51	94.64
187+80	0.00	7197.83	93.04
189+30	0.00	7196.99	95.63
194+80	0.00	7193.85	89.11
198+30	0.00	7191.92	90.09
201+80	0.00	7189.96	91.24
215+60	0.00	7182.26	63.37
216+80	0.00	7181.59	66.29
218+30	0.00	7180.75	64.45
218+40_DS	0.00	7387.75	120.35
218+40_US	5.00	7205.65	41.44
223+80	0.00	7177.68	72.52
226+80	0.00	7176.00	65.78
23+90	0.00	7294.15	37.63
232+80	0.00	7172.65	75.63
234+30	0.00	7171.81	75.92
243+30	0.00	7166.78	67.07
247+30	0.00	7164.48	57.66
252+30	0.00	7162.27	51.72
263+30	0.00	7156.13	25.01
266+02	0.00	7154.60	27.08
270+80	0.00	7151.94	33.73
272+80	0.00	7150.82	33.89
276+80	0.00	7374.56	139.20
278+90	0.00	7147.41	32.42
279+30	0.00	7147.19	42.28
289+80	0.00	7141.32	61.76
300+30	0.00	7078.85	25.54
315+35	0.00	7365.85	49.36
33+05	0.00	7288.69	22.32
331+15	0.00	7362.29	74.99
343+15	0.00	7359.57	80.55
355+68	0.00	7356.75	107.95
392+70	0.00	7348.38	55.69
4+00	0.00	7306.01	6.63

42+16	0.00	7283.26	51.11	
469+14	0.00	7331.12	127.80	
47+12	0.00	7280.30	39.77	
528+00	0.00	7317.83	70.82	
565+56	0.00	7309.34	10.44	
67+78	0.00	7267.98	65.34	
97+35	0.00	7250.35	33.68	
DISCHARGE_SURGE_TANK	0.00	7387.75	120.35	
SUCTION_SURGE_TANK	0.00	7205.65	41.44	
COUNSELOR_TANK	-2379.96	7308.40	-	Reservoir
JAN	966.00	7050.00	-	Reservoir
OJO-ENCINO_TANK	1408.95	7308.00	-	Reservoir

Pipe Results at 4:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft
P101	966.00	4.12	1.95
P103	966.00	4.12	7.71
P105	966.00	4.12	0.67
P107	966.00	4.12	0.84
P109	966.00	4.12	3.07
P11	2379.96	5.33	0.42
P111	966.00	4.12	1.68
P113	966.00	4.12	3.35
P115	966.00	4.12	0.84
P117	966.00	4.12	5.03
P119	966.00	4.12	2.23
P121	966.00	4.12	6.14
P123	966.00	4.12	1.52
P125	966.00	4.12	2.67
P127	966.00	4.12	1.12
P129	966.00	4.12	3.41
P13	2379.96	5.33	1.97
P131	966.00	4.12	0.22
P133	966.00	4.12	5.86
P135	966.00	4.12	5.59
P137	966.00	4.12	2.68
P139	966.00	4.12	0.28
P141	1408.95	3.16	8.71
P143	1408.95	3.16	13.29
P145	1408.95	3.16	8.48
P147	1408.95	3.16	0.00
P15	2379.96	5.33	11.87
P151	966.00	4.12	0.11
P153	0.00	0.00	0.00
P155	1413.96	3.17	0.00
P157	1408.95	3.16	13.19
P163	966.00	4.12	0.03
P165	966.00	4.12	6.23
P167	966.00	4.12	0.03
P169	966.00	4.12	1.93
P17	2379.96	5.33	5.46
P171	966.00	4.12	0.03
P173	966.00	4.12	2.21
P175	966.00	4.12	0.28
P19	2379.96	5.33	5.43
P21	2379.96	5.33	2.96
P23	2379.96	5.33	12.32
P25	2379.96	5.33	17.63
P27	2379.96	5.33	3.60

P29	2379.96	5.33	0.20
P31	2379.96	5.33	8.44
P33	2379.96	5.33	4.98
P35	2379.96	5.33	1.85
P37	2379.96	5.33	1.41
P39	2379.96	5.33	0.53
P41	2379.96	5.33	5.93
P43	1413.96	3.17	1.31
P45	1413.96	3.17	1.93
P47	1413.96	3.17	2.82
P49	1413.96	3.17	9.51
P51	1408.96	3.16	0.02
P53	1408.95	3.16	3.57
P55	1408.95	3.16	2.71
P57	1408.95	3.16	2.83
P59	1408.95	3.16	8.36
P61	1408.95	3.16	17.26
P65	1408.96	3.16	0.02
P67	1408.95	3.16	0.00
P73	1408.95	3.16	0.00
P75	2379.96	5.33	0.47
P77	0.00	0.00	0.00
P79	1413.96	3.17	1.56
P81	966.00	4.12	0.17
P83	966.00	4.12	2.23
P85	966.00	4.12	1.40
P87	966.00	4.12	5.86
P89	966.00	4.12	4.47
P91	966.00	4.12	0.84
P93	966.00	4.12	1.96
P95	966.00	4.12	1.68
P97	966.00	4.12	0.84
P99	966.00	4.12	3.07

Pump Results at 4:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft	
PS_218+40	1408.96	3.16	182.15	Pump

Valve Results at 4:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft	
300+80	966.00	6.17	19.87	TCV
BFV_103+71	2379.96	4.96	0.15	TCV
BYPASS	0.00	0.00	0.00	TCV
ISO_143+30	966.00	4.12	0.11	TCV
ISO_194+80	966.00	2.74	0.05	TCV
ISO_247+30	966.00	2.74	0.05	TCV
ISO_299+80	966.00	2.74	56.61	FCV
JAN_ALT_VALVE	966.00	6.17	5.90	TCV
OJO_ENCINO_ALT_VALVE	1408.95	2.94	1.34	TCV

Node Results at 5:00:00 hrs:

Node	Demand gpm	Head ft	Pressure psi
0+70	0.00	7307.98	6.62

103+38	0.00	7246.75	37.38
104+50	0.00	7245.93	33.16
118+65	0.00	7237.49	40.10
127+00	0.00	7232.51	32.35
130+00	0.00	7230.66	36.03
132+45	0.00	7229.26	41.47
133+35	0.00	7228.73	41.04
143+00	0.00	7222.79	62.48
143+30	0.00	7222.49	62.35
149+87	0.00	7221.23	74.12
154+80	0.00	7216.26	69.92
155+63	0.00	7219.92	59.85
157+30	0.00	7214.87	67.58
164+14	0.00	7217.99	46.52
167+80	0.00	7209.00	78.43
171+80	0.00	7206.77	84.83
176+56	0.00	7215.16	86.57
179+80	0.00	7202.30	92.21
181+30	0.00	7201.46	91.45
184+80	0.00	7199.51	94.64
187+80	0.00	7197.83	93.04
189+30	0.00	7196.99	95.63
194+80	0.00	7193.85	89.11
198+30	0.00	7191.92	90.09
201+80	0.00	7189.96	91.24
215+60	0.00	7182.26	63.37
216+80	0.00	7181.59	66.29
218+30	0.00	7180.75	64.45
218+40_DS	0.00	7387.76	120.35
218+40_US	5.00	7205.65	41.44
223+80	0.00	7177.68	72.52
226+80	0.00	7176.00	65.78
23+90	0.00	7294.15	37.63
232+80	0.00	7172.65	75.63
234+30	0.00	7171.81	75.92
243+30	0.00	7166.78	67.07
247+30	0.00	7164.48	57.66
252+30	0.00	7162.27	51.72
263+30	0.00	7156.13	25.01
266+02	0.00	7154.61	27.08
270+80	0.00	7151.94	33.73
272+80	0.00	7150.82	33.89
276+80	0.00	7374.56	139.20
278+90	0.00	7147.41	32.42
279+30	0.00	7147.19	42.29
289+80	0.00	7141.32	61.76
300+30	0.00	7078.85	25.54
315+35	0.00	7365.86	49.36
33+05	0.00	7288.69	22.32
331+15	0.00	7362.29	74.99
343+15	0.00	7359.58	80.55
355+68	0.00	7356.75	107.95
392+70	0.00	7348.39	55.69
4+00	0.00	7306.01	6.63
42+16	0.00	7283.26	51.11
469+14	0.00	7331.12	127.80
47+12	0.00	7280.30	39.77
528+00	0.00	7317.83	70.82
565+56	0.00	7309.34	10.44
67+78	0.00	7267.98	65.34
97+35	0.00	7250.35	33.68
DISCHARGE_SURGE_TANK	0.00	7387.75	120.35
SUCTION_SURGE_TANK	0.00	7205.65	41.44

COUNSELOR_TANK	-2379.96	7308.40	-	Reservoir
JAN	966.00	7050.00	-	Reservoir
OJO-ENCINO_TANK	1408.96	7308.00	-	Reservoir

Pipe Results at 5:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft
P101	966.00	4.12	1.96
P103	966.00	4.12	7.71
P105	966.00	4.12	0.67
P107	966.00	4.12	0.84
P109	966.00	4.12	3.07
P11	2379.96	5.33	0.42
P111	966.00	4.12	1.68
P113	966.00	4.12	3.35
P115	966.00	4.12	0.84
P117	966.00	4.12	5.03
P119	966.00	4.12	2.23
P121	966.00	4.12	6.14
P123	966.00	4.12	1.52
P125	966.00	4.12	2.67
P127	966.00	4.12	1.12
P129	966.00	4.12	3.41
P13	2379.96	5.33	1.97
P131	966.00	4.12	0.22
P133	966.00	4.12	5.87
P135	966.00	4.12	5.59
P137	966.00	4.12	2.68
P139	966.00	4.12	0.28
P141	1408.96	3.16	8.71
P143	1408.96	3.16	13.29
P145	1408.96	3.16	8.48
P147	1408.96	3.16	0.00
P15	2379.96	5.33	11.87
P151	966.00	4.12	0.11
P153	0.00	0.00	0.00
P155	1413.96	3.17	0.00
P157	1408.96	3.16	13.19
P163	966.00	4.12	0.03
P165	966.00	4.12	6.23
P167	966.00	4.12	0.03
P169	966.00	4.12	1.93
P17	2379.96	5.33	5.46
P171	966.00	4.12	0.03
P173	966.00	4.12	2.21
P175	966.00	4.12	0.28
P19	2379.96	5.33	5.44
P21	2379.96	5.33	2.96
P23	2379.96	5.33	12.32
P25	2379.96	5.33	17.63
P27	2379.96	5.33	3.60
P29	2379.96	5.33	0.20
P31	2379.96	5.33	8.44
P33	2379.96	5.33	4.98
P35	2379.96	5.33	1.85
P37	2379.96	5.33	1.41
P39	2379.96	5.33	0.53
P41	2379.96	5.33	5.93
P43	1413.96	3.17	1.31
P45	1413.96	3.17	1.93

P47	1413.96	3.17	2.82
P49	1413.96	3.17	9.51
P51	1408.95	3.16	0.02
P53	1408.96	3.16	3.57
P55	1408.96	3.16	2.71
P57	1408.96	3.16	2.83
P59	1408.96	3.16	8.36
P61	1408.96	3.16	17.26
P65	1408.95	3.16	0.02
P67	1408.96	3.16	0.00
P73	1408.96	3.16	0.00
P75	2379.96	5.33	0.47
P77	0.00	0.00	0.00
P79	1413.96	3.17	1.56
P81	966.00	4.12	0.17
P83	966.00	4.12	2.23
P85	966.00	4.12	1.40
P87	966.00	4.12	5.86
P89	966.00	4.12	4.47
P91	966.00	4.12	0.84
P93	966.00	4.12	1.96
P95	966.00	4.12	1.68
P97	966.00	4.12	0.84
P99	966.00	4.12	3.07

Pump Results at 5:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft	
PS_218+40	1408.95	3.16	182.15	Pump

Valve Results at 5:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft	
300+80	966.00	6.17	19.87	TCV
BFV_103+71	2379.96	4.96	0.15	TCV
BYPASS	0.00	0.00	0.00	TCV
ISO_143+30	966.00	4.12	0.10	TCV
ISO_194+80	966.00	2.74	0.05	TCV
ISO_247+30	966.00	2.74	0.05	TCV
ISO_299+80	966.00	2.74	56.61	FCV
JAN_ALT_VALVE	966.00	6.17	5.90	TCV
OJO_ENCINO_ALT_VALVE	1408.96	2.94	1.34	TCV

Node Results at 6:00:00 hrs:

Node	Demand gpm	Head ft	Pressure psi
0+70	0.00	7307.98	6.62
103+38	0.00	7246.75	37.38
104+50	0.00	7245.93	33.16
118+65	0.00	7237.49	40.10
127+00	0.00	7232.51	32.35
130+00	0.00	7230.66	36.03
132+45	0.00	7229.26	41.47
133+35	0.00	7228.73	41.04
143+00	0.00	7222.79	62.48
143+30	0.00	7222.49	62.35

149+87	0.00	7221.23	74.12	
154+80	0.00	7216.26	69.92	
155+63	0.00	7219.92	59.85	
157+30	0.00	7214.87	67.58	
164+14	0.00	7217.99	46.52	
167+80	0.00	7209.00	78.43	
171+80	0.00	7206.77	84.83	
176+56	0.00	7215.16	86.57	
179+80	0.00	7202.30	92.21	
181+30	0.00	7201.46	91.45	
184+80	0.00	7199.51	94.64	
187+80	0.00	7197.83	93.04	
189+30	0.00	7196.99	95.63	
194+80	0.00	7193.85	89.11	
198+30	0.00	7191.92	90.09	
201+80	0.00	7189.96	91.24	
215+60	0.00	7182.26	63.37	
216+80	0.00	7181.59	66.29	
218+30	0.00	7180.75	64.45	
218+40_DS	0.00	7387.75	120.35	
218+40_US	5.00	7205.65	41.44	
223+80	0.00	7177.68	72.52	
226+80	0.00	7176.00	65.78	
23+90	0.00	7294.15	37.63	
232+80	0.00	7172.65	75.63	
234+30	0.00	7171.81	75.92	
243+30	0.00	7166.78	67.07	
247+30	0.00	7164.48	57.66	
252+30	0.00	7162.27	51.72	
263+30	0.00	7156.13	25.01	
266+02	0.00	7154.61	27.08	
270+80	0.00	7151.94	33.73	
272+80	0.00	7150.82	33.89	
276+80	0.00	7374.56	139.20	
278+90	0.00	7147.41	32.42	
279+30	0.00	7147.19	42.28	
289+80	0.00	7141.32	61.76	
300+30	0.00	7078.85	25.54	
315+35	0.00	7365.86	49.36	
33+05	0.00	7288.69	22.32	
331+15	0.00	7362.29	74.99	
343+15	0.00	7359.58	80.55	
355+68	0.00	7356.75	107.95	
392+70	0.00	7348.39	55.69	
4+00	0.00	7306.01	6.63	
42+16	0.00	7283.26	51.11	
469+14	0.00	7331.12	127.80	
47+12	0.00	7280.30	39.77	
528+00	0.00	7317.83	70.82	
565+56	0.00	7309.34	10.44	
67+78	0.00	7267.98	65.34	
97+35	0.00	7250.35	33.68	
DISCHARGE_SURGE_TANK	0.00	7387.75	120.35	
SUCTION_SURGE_TANK	0.00	7205.65	41.44	
COUNSELOR_TANK	-2379.96	7308.40	-	Reservoir
JAN	966.00	7050.00	-	Reservoir
OJO-ENCINO_TANK	1408.96	7308.00	-	Reservoir

Pipe Results at 6:00:00 hrs:

	Flow	Velocity	Headloss
Link	gpm	fps	/1000ft

P101	966.00	4.12	1.96
P103	966.00	4.12	7.71
P105	966.00	4.12	0.67
P107	966.00	4.12	0.84
P109	966.00	4.12	3.07
P11	2379.96	5.33	0.42
P111	966.00	4.12	1.68
P113	966.00	4.12	3.35
P115	966.00	4.12	0.84
P117	966.00	4.12	5.03
P119	966.00	4.12	2.23
P121	966.00	4.12	6.14
P123	966.00	4.12	1.52
P125	966.00	4.12	2.67
P127	966.00	4.12	1.12
P129	966.00	4.12	3.41
P13	2379.96	5.33	1.97
P131	966.00	4.12	0.22
P133	966.00	4.12	5.86
P135	966.00	4.12	5.59
P137	966.00	4.12	2.68
P139	966.00	4.12	0.28
P141	1408.96	3.16	8.71
P143	1408.96	3.16	13.29
P145	1408.96	3.16	8.48
P147	1408.96	3.16	0.00
P15	2379.96	5.33	11.87
P151	966.00	4.12	0.11
P153	0.00	0.00	0.00
P155	1413.96	3.17	0.00
P157	1408.96	3.16	13.19
P163	966.00	4.12	0.03
P165	966.00	4.12	6.23
P167	966.00	4.12	0.03
P169	966.00	4.12	1.93
P17	2379.96	5.33	5.46
P171	966.00	4.12	0.03
P173	966.00	4.12	2.21
P175	966.00	4.12	0.28
P19	2379.96	5.33	5.44
P21	2379.96	5.33	2.96
P23	2379.96	5.33	12.32
P25	2379.96	5.33	17.63
P27	2379.96	5.33	3.60
P29	2379.96	5.33	0.20
P31	2379.96	5.33	8.44
P33	2379.96	5.33	4.98
P35	2379.96	5.33	1.85
P37	2379.96	5.33	1.41
P39	2379.96	5.33	0.53
P41	2379.96	5.33	5.93
P43	1413.96	3.17	1.31
P45	1413.96	3.17	1.93
P47	1413.96	3.17	2.83
P49	1413.96	3.17	9.51
P51	1408.95	3.16	0.02
P53	1408.96	3.16	3.57
P55	1408.96	3.16	2.71
P57	1408.96	3.16	2.83
P59	1408.96	3.16	8.36
P61	1408.96	3.16	17.27
P65	1408.95	3.16	0.02

P67	1408.96	3.16	0.00
P73	1408.96	3.16	0.00
P75	2379.96	5.33	0.47
P77	0.00	0.00	0.00
P79	1413.96	3.17	1.56
P81	966.00	4.12	0.17
P83	966.00	4.12	2.23
P85	966.00	4.12	1.40
P87	966.00	4.12	5.86
P89	966.00	4.12	4.47
P91	966.00	4.12	0.84
P93	966.00	4.12	1.96
P95	966.00	4.12	1.68
P97	966.00	4.12	0.84
P99	966.00	4.12	3.07

Pump Results at 6:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft	
PS_218+40	1408.95	3.16	182.15	Pump

Valve Results at 6:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft	
300+80	966.00	6.17	19.87	TCV
BFV_103+71	2379.96	4.96	0.15	TCV
BYPASS	0.00	0.00	0.00	TCV
ISO_143+30	966.00	4.12	0.10	TCV
ISO_194+80	966.00	2.74	0.05	TCV
ISO_247+30	966.00	2.74	0.05	TCV
ISO_299+80	966.00	2.74	56.61	FCV
JAN_ALT_VALVE	966.00	6.17	5.90	TCV
OJO_ENCINO_ALT_VALVE	1408.96	2.94	1.34	TCV

Node Results at 7:00:00 hrs:

Node	Demand gpm	Head ft	Pressure psi
0+70	0.00	7307.98	6.62
103+38	0.00	7246.75	37.38
104+50	0.00	7245.93	33.16
118+65	0.00	7237.49	40.10
127+00	0.00	7232.51	32.35
130+00	0.00	7230.66	36.03
132+45	0.00	7229.26	41.47
133+35	0.00	7228.73	41.04
143+00	0.00	7222.79	62.48
143+30	0.00	7222.49	62.35
149+87	0.00	7221.23	74.12
154+80	0.00	7216.26	69.92
155+63	0.00	7219.92	59.85
157+30	0.00	7214.87	67.58
164+14	0.00	7217.99	46.52
167+80	0.00	7209.00	78.43
171+80	0.00	7206.77	84.83
176+56	0.00	7215.16	86.57
179+80	0.00	7202.30	92.21

181+30	0.00	7201.46	91.45	
184+80	0.00	7199.51	94.64	
187+80	0.00	7197.83	93.04	
189+30	0.00	7196.99	95.63	
194+80	0.00	7193.85	89.11	
198+30	0.00	7191.92	90.09	
201+80	0.00	7189.96	91.24	
215+60	0.00	7182.26	63.37	
216+80	0.00	7181.59	66.29	
218+30	0.00	7180.75	64.45	
218+40_DS	0.00	7387.75	120.35	
218+40_US	5.00	7205.65	41.44	
223+80	0.00	7177.68	72.52	
226+80	0.00	7176.00	65.78	
23+90	0.00	7294.15	37.63	
232+80	0.00	7172.65	75.63	
234+30	0.00	7171.81	75.92	
243+30	0.00	7166.78	67.07	
247+30	0.00	7164.48	57.66	
252+30	0.00	7162.27	51.72	
263+30	0.00	7156.13	25.01	
266+02	0.00	7154.61	27.08	
270+80	0.00	7151.94	33.73	
272+80	0.00	7150.82	33.89	
276+80	0.00	7374.56	139.20	
278+90	0.00	7147.41	32.42	
279+30	0.00	7147.19	42.29	
289+80	0.00	7141.32	61.76	
300+30	0.00	7078.85	25.54	
315+35	0.00	7365.86	49.36	
33+05	0.00	7288.69	22.32	
331+15	0.00	7362.29	74.99	
343+15	0.00	7359.58	80.55	
355+68	0.00	7356.75	107.95	
392+70	0.00	7348.39	55.69	
4+00	0.00	7306.01	6.63	
42+16	0.00	7283.26	51.11	
469+14	0.00	7331.12	127.80	
47+12	0.00	7280.30	39.77	
528+00	0.00	7317.83	70.82	
565+56	0.00	7309.34	10.44	
67+78	0.00	7267.98	65.34	
97+35	0.00	7250.35	33.68	
DISCHARGE_SURGE_TANK	0.00	7387.75	120.35	
SUCTION_SURGE_TANK	0.00	7205.65	41.44	
COUNSELOR_TANK	-2379.96	7308.40	-	Reservoir
JAN	966.00	7050.00	-	Reservoir
OJO-ENCINO_TANK	1408.96	7308.00	-	Reservoir

Pipe Results at 7:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft
P101	966.00	4.12	1.96
P103	966.00	4.12	7.71
P105	966.00	4.12	0.67
P107	966.00	4.12	0.84
P109	966.00	4.12	3.07
P11	2379.96	5.33	0.42
P111	966.00	4.12	1.68
P113	966.00	4.12	3.35

P115	966.00	4.12	0.84
P117	966.00	4.12	5.03
P119	966.00	4.12	2.23
P121	966.00	4.12	6.14
P123	966.00	4.12	1.52
P125	966.00	4.12	2.67
P127	966.00	4.12	1.12
P129	966.00	4.12	3.41
P13	2379.96	5.33	1.97
P131	966.00	4.12	0.22
P133	966.00	4.12	5.86
P135	966.00	4.12	5.59
P137	966.00	4.12	2.68
P139	966.00	4.12	0.28
P141	1408.96	3.16	8.71
P143	1408.96	3.16	13.29
P145	1408.96	3.16	8.48
P147	1408.96	3.16	0.00
P15	2379.96	5.33	11.87
P151	966.00	4.12	0.11
P153	0.00	0.00	0.00
P155	1413.96	3.17	0.00
P157	1408.96	3.16	13.19
P163	966.00	4.12	0.03
P165	966.00	4.12	6.23
P167	966.00	4.12	0.03
P169	966.00	4.12	1.93
P17	2379.96	5.33	5.46
P171	966.00	4.12	0.03
P173	966.00	4.12	2.21
P175	966.00	4.12	0.28
P19	2379.96	5.33	5.44
P21	2379.96	5.33	2.96
P23	2379.96	5.33	12.32
P25	2379.96	5.33	17.63
P27	2379.96	5.33	3.60
P29	2379.96	5.33	0.20
P31	2379.96	5.33	8.44
P33	2379.96	5.33	4.98
P35	2379.96	5.33	1.85
P37	2379.96	5.33	1.41
P39	2379.96	5.33	0.53
P41	2379.96	5.33	5.93
P43	1413.96	3.17	1.31
P45	1413.96	3.17	1.93
P47	1413.96	3.17	2.82
P49	1413.96	3.17	9.51
P51	1408.96	3.16	0.02
P53	1408.96	3.16	3.57
P55	1408.96	3.16	2.71
P57	1408.96	3.16	2.83
P59	1408.96	3.16	8.36
P61	1408.96	3.16	17.27
P65	1408.96	3.16	0.02
P67	1408.96	3.16	0.00
P73	1408.96	3.16	0.00
P75	2379.96	5.33	0.47
P77	0.00	0.00	0.00
P79	1413.96	3.17	1.56
P81	966.00	4.12	0.17
P83	966.00	4.12	2.23
P85	966.00	4.12	1.40
P87	966.00	4.12	5.86

P89	966.00	4.12	4.47
P91	966.00	4.12	0.84
P93	966.00	4.12	1.96
P95	966.00	4.12	1.68
P97	966.00	4.12	0.84
P99	966.00	4.12	3.07

Pump Results at 7:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft	
PS_218+40	1408.96	3.16	182.15	Pump

Valve Results at 7:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft	
300+80	966.00	6.17	19.87	TCV
BFV_103+71	2379.96	4.96	0.15	TCV
BYPASS	0.00	0.00	0.00	TCV
ISO_143+30	966.00	4.12	0.11	TCV
ISO_194+80	966.00	2.74	0.05	TCV
ISO_247+30	966.00	2.74	0.05	TCV
ISO_299+80	966.00	2.74	56.61	FCV
JAN_ALT_VALVE	966.00	6.17	5.90	TCV
OJO_ENCINO_ALT_VALVE	1408.96	2.94	1.34	TCV

Node Results at 8:00:00 hrs:

Node	Demand gpm	Head ft	Pressure psi
0+70	0.00	7307.98	6.62
103+38	0.00	7246.75	37.38
104+50	0.00	7245.93	33.16
118+65	0.00	7237.49	40.10
127+00	0.00	7232.51	32.35
130+00	0.00	7230.66	36.03
132+45	0.00	7229.26	41.47
133+35	0.00	7228.73	41.04
143+00	0.00	7222.79	62.48
143+30	0.00	7222.49	62.35
149+87	0.00	7221.23	74.12
154+80	0.00	7216.26	69.92
155+63	0.00	7219.92	59.85
157+30	0.00	7214.87	67.58
164+14	0.00	7217.99	46.52
167+80	0.00	7209.00	78.43
171+80	0.00	7206.77	84.83
176+56	0.00	7215.16	86.57
179+80	0.00	7202.30	92.21
181+30	0.00	7201.46	91.45
184+80	0.00	7199.51	94.64
187+80	0.00	7197.83	93.04
189+30	0.00	7196.99	95.63
194+80	0.00	7193.85	89.11
198+30	0.00	7191.92	90.09
201+80	0.00	7189.96	91.24
215+60	0.00	7182.26	63.37
216+80	0.00	7181.59	66.29

218+30	0.00	7180.75	64.45	
218+40_DS	0.00	7387.75	120.35	
218+40_US	5.00	7205.65	41.44	
223+80	0.00	7177.68	72.52	
226+80	0.00	7176.00	65.78	
23+90	0.00	7294.15	37.63	
232+80	0.00	7172.65	75.63	
234+30	0.00	7171.81	75.92	
243+30	0.00	7166.78	67.07	
247+30	0.00	7164.48	57.66	
252+30	0.00	7162.27	51.72	
263+30	0.00	7156.13	25.01	
266+02	0.00	7154.61	27.08	
270+80	0.00	7151.94	33.73	
272+80	0.00	7150.82	33.89	
276+80	0.00	7374.56	139.20	
278+90	0.00	7147.41	32.42	
279+30	0.00	7147.19	42.28	
289+80	0.00	7141.32	61.76	
300+30	0.00	7078.85	25.54	
315+35	0.00	7365.86	49.36	
33+05	0.00	7288.69	22.32	
331+15	0.00	7362.29	74.99	
343+15	0.00	7359.58	80.55	
355+68	0.00	7356.75	107.95	
392+70	0.00	7348.39	55.69	
4+00	0.00	7306.01	6.63	
42+16	0.00	7283.26	51.11	
469+14	0.00	7331.12	127.80	
47+12	0.00	7280.30	39.77	
528+00	0.00	7317.83	70.82	
565+56	0.00	7309.34	10.44	
67+78	0.00	7267.98	65.34	
97+35	0.00	7250.35	33.68	
DISCHARGE_SURGE_TANK	0.00	7387.75	120.35	
SUCTION_SURGE_TANK	0.00	7205.65	41.44	
COUNSELOR_TANK	-2379.96	7308.40	-	Reservoir
JAN	966.00	7050.00	-	Reservoir
OJO-ENCINO_TANK	1408.96	7308.00	-	Reservoir

Pipe Results at 8:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft
P101	966.00	4.12	1.96
P103	966.00	4.12	7.71
P105	966.00	4.12	0.67
P107	966.00	4.12	0.84
P109	966.00	4.12	3.07
P11	2379.96	5.33	0.42
P111	966.00	4.12	1.68
P113	966.00	4.12	3.35
P115	966.00	4.12	0.84
P117	966.00	4.12	5.03
P119	966.00	4.12	2.23
P121	966.00	4.12	6.14
P123	966.00	4.12	1.52
P125	966.00	4.12	2.67
P127	966.00	4.12	1.12
P129	966.00	4.12	3.41
P13	2379.96	5.33	1.97

P131	966.00	4.12	0.22
P133	966.00	4.12	5.86
P135	966.00	4.12	5.59
P137	966.00	4.12	2.68
P139	966.00	4.12	0.28
P141	1408.96	3.16	8.71
P143	1408.96	3.16	13.29
P145	1408.96	3.16	8.48
P147	1408.96	3.16	0.00
P15	2379.96	5.33	11.87
P151	966.00	4.12	0.11
P153	0.00	0.00	0.00
P155	1413.96	3.17	0.00
P157	1408.96	3.16	13.19
P163	966.00	4.12	0.03
P165	966.00	4.12	6.23
P167	966.00	4.12	0.03
P169	966.00	4.12	1.93
P17	2379.96	5.33	5.46
P171	966.00	4.12	0.03
P173	966.00	4.12	2.21
P175	966.00	4.12	0.28
P19	2379.96	5.33	5.44
P21	2379.96	5.33	2.96
P23	2379.96	5.33	12.32
P25	2379.96	5.33	17.63
P27	2379.96	5.33	3.60
P29	2379.96	5.33	0.20
P31	2379.96	5.33	8.44
P33	2379.96	5.33	4.98
P35	2379.96	5.33	1.85
P37	2379.96	5.33	1.41
P39	2379.96	5.33	0.53
P41	2379.96	5.33	5.93
P43	1413.96	3.17	1.31
P45	1413.96	3.17	1.93
P47	1413.96	3.17	2.83
P49	1413.96	3.17	9.51
P51	1408.96	3.16	0.02
P53	1408.96	3.16	3.57
P55	1408.96	3.16	2.71
P57	1408.96	3.16	2.83
P59	1408.96	3.16	8.36
P61	1408.96	3.16	17.27
P65	1408.96	3.16	0.02
P67	1408.96	3.16	0.00
P73	1408.96	3.16	0.00
P75	2379.96	5.33	0.47
P77	0.00	0.00	0.00
P79	1413.96	3.17	1.56
P81	966.00	4.12	0.17
P83	966.00	4.12	2.23
P85	966.00	4.12	1.40
P87	966.00	4.12	5.86
P89	966.00	4.12	4.47
P91	966.00	4.12	0.84
P93	966.00	4.12	1.96
P95	966.00	4.12	1.68
P97	966.00	4.12	0.84
P99	966.00	4.12	3.07

Pump Results at 8:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft	
PS_218+40	1408.96	3.16	182.15	Pump

Valve Results at 8:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft	
300+80	966.00	6.17	19.87	TCV
BFV_103+71	2379.96	4.96	0.15	TCV
BYPASS	0.00	0.00	0.00	TCV
ISO_143+30	966.00	4.12	0.10	TCV
ISO_194+80	966.00	2.74	0.05	TCV
ISO_247+30	966.00	2.74	0.05	TCV
ISO_299+80	966.00	2.74	56.61	FCV
JAN_ALT_VALVE	966.00	6.17	5.90	TCV
OJO_ENCINO_ALT_VALVE	1408.96	2.94	1.34	TCV

Node Results at 9:00:00 hrs:

Node	Demand gpm	Head ft	Pressure psi
0+70	0.00	7307.98	6.62
103+38	0.00	7246.75	37.38
104+50	0.00	7245.93	33.16
118+65	0.00	7237.49	40.10
127+00	0.00	7232.51	32.35
130+00	0.00	7230.66	36.03
132+45	0.00	7229.26	41.47
133+35	0.00	7228.73	41.04
143+00	0.00	7222.79	62.48
143+30	0.00	7222.49	62.35
149+87	0.00	7221.23	74.12
154+80	0.00	7216.26	69.92
155+63	0.00	7219.92	59.85
157+30	0.00	7214.87	67.58
164+14	0.00	7217.99	46.52
167+80	0.00	7209.00	78.43
171+80	0.00	7206.77	84.83
176+56	0.00	7215.16	86.57
179+80	0.00	7202.30	92.21
181+30	0.00	7201.46	91.45
184+80	0.00	7199.51	94.64
187+80	0.00	7197.83	93.04
189+30	0.00	7196.99	95.63
194+80	0.00	7193.85	89.11
198+30	0.00	7191.92	90.09
201+80	0.00	7189.96	91.24
215+60	0.00	7182.26	63.37
216+80	0.00	7181.59	66.29
218+30	0.00	7180.75	64.45
218+40_DS	0.00	7387.75	120.35
218+40_US	5.00	7205.65	41.44
223+80	0.00	7177.68	72.52
226+80	0.00	7176.00	65.78
23+90	0.00	7294.15	37.63
232+80	0.00	7172.65	75.63
234+30	0.00	7171.81	75.92
243+30	0.00	7166.78	67.07

247+30	0.00	7164.48	57.66	
252+30	0.00	7162.27	51.72	
263+30	0.00	7156.13	25.01	
266+02	0.00	7154.61	27.08	
270+80	0.00	7151.94	33.73	
272+80	0.00	7150.82	33.89	
276+80	0.00	7374.56	139.20	
278+90	0.00	7147.41	32.42	
279+30	0.00	7147.19	42.29	
289+80	0.00	7141.32	61.76	
300+30	0.00	7078.85	25.54	
315+35	0.00	7365.86	49.36	
33+05	0.00	7288.69	22.32	
331+15	0.00	7362.29	74.99	
343+15	0.00	7359.58	80.55	
355+68	0.00	7356.75	107.95	
392+70	0.00	7348.39	55.69	
4+00	0.00	7306.01	6.63	
42+16	0.00	7283.26	51.11	
469+14	0.00	7331.12	127.80	
47+12	0.00	7280.30	39.77	
528+00	0.00	7317.83	70.82	
565+56	0.00	7309.34	10.44	
67+78	0.00	7267.98	65.34	
97+35	0.00	7250.35	33.68	
DISCHARGE_SURGE_TANK	0.00	7387.75	120.35	
SUCTION_SURGE_TANK	0.00	7205.65	41.44	
COUNSELOR_TANK	-2379.96	7308.40	-	Reservoir
JAN	966.00	7050.00	-	Reservoir
OJO-ENCINO_TANK	1408.96	7308.00	-	Reservoir

Pipe Results at 9:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft
P101	966.00	4.12	1.96
P103	966.00	4.12	7.71
P105	966.00	4.12	0.67
P107	966.00	4.12	0.84
P109	966.00	4.12	3.07
P11	2379.96	5.33	0.42
P111	966.00	4.12	1.68
P113	966.00	4.12	3.35
P115	966.00	4.12	0.84
P117	966.00	4.12	5.03
P119	966.00	4.12	2.23
P121	966.00	4.12	6.14
P123	966.00	4.12	1.52
P125	966.00	4.12	2.67
P127	966.00	4.12	1.12
P129	966.00	4.12	3.41
P13	2379.96	5.33	1.97
P131	966.00	4.12	0.22
P133	966.00	4.12	5.86
P135	966.00	4.12	5.59
P137	966.00	4.12	2.68
P139	966.00	4.12	0.28
P141	1408.96	3.16	8.71
P143	1408.96	3.16	13.29
P145	1408.96	3.16	8.48
P147	1408.96	3.16	0.00

P15	2379.96	5.33	11.87
P151	966.00	4.12	0.11
P153	0.00	0.00	0.00
P155	1413.96	3.17	0.00
P157	1408.96	3.16	13.19
P163	966.00	4.12	0.03
P165	966.00	4.12	6.23
P167	966.00	4.12	0.03
P169	966.00	4.12	1.93
P17	2379.96	5.33	5.46
P171	966.00	4.12	0.03
P173	966.00	4.12	2.21
P175	966.00	4.12	0.28
P19	2379.96	5.33	5.44
P21	2379.96	5.33	2.96
P23	2379.96	5.33	12.32
P25	2379.96	5.33	17.63
P27	2379.96	5.33	3.60
P29	2379.96	5.33	0.20
P31	2379.96	5.33	8.44
P33	2379.96	5.33	4.98
P35	2379.96	5.33	1.85
P37	2379.96	5.33	1.41
P39	2379.96	5.33	0.53
P41	2379.96	5.33	5.93
P43	1413.96	3.17	1.31
P45	1413.96	3.17	1.93
P47	1413.96	3.17	2.82
P49	1413.96	3.17	9.51
P51	1408.96	3.16	0.02
P53	1408.96	3.16	3.57
P55	1408.96	3.16	2.71
P57	1408.96	3.16	2.83
P59	1408.96	3.16	8.36
P61	1408.96	3.16	17.27
P65	1408.96	3.16	0.02
P67	1408.96	3.16	0.00
P73	1408.96	3.16	0.00
P75	2379.96	5.33	0.47
P77	0.00	0.00	0.00
P79	1413.96	3.17	1.56
P81	966.00	4.12	0.17
P83	966.00	4.12	2.23
P85	966.00	4.12	1.40
P87	966.00	4.12	5.86
P89	966.00	4.12	4.47
P91	966.00	4.12	0.84
P93	966.00	4.12	1.95
P95	966.00	4.12	1.68
P97	966.00	4.12	0.84
P99	966.00	4.12	3.07

Pump Results at 9:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft	
PS_218+40	1408.96	3.16	182.15	Pump

Valve Results at 9:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft

300+80	966.00	6.17	19.87	TCV
BFV_103+71	2379.96	4.96	0.15	TCV
BYPASS	0.00	0.00	0.00	TCV
ISO_143+30	966.00	4.12	0.11	TCV
ISO_194+80	966.00	2.74	0.05	TCV
ISO_247+30	966.00	2.74	0.05	TCV
ISO_299+80	966.00	2.74	56.61	FCV
JAN_ALT_VALVE	966.00	6.17	5.90	TCV
OJO_ENCINO_ALT_VALVE	1408.96	2.94	1.34	TCV

Node Results at 10:00:00 hrs:

Node	Demand gpm	Head ft	Pressure psi
0+70	0.00	7307.98	6.62
103+38	0.00	7246.75	37.38
104+50	0.00	7245.93	33.16
118+65	0.00	7237.49	40.10
127+00	0.00	7232.51	32.35
130+00	0.00	7230.66	36.03
132+45	0.00	7229.26	41.47
133+35	0.00	7228.73	41.04
143+00	0.00	7222.79	62.48
143+30	0.00	7222.49	62.35
149+87	0.00	7221.23	74.12
154+80	0.00	7216.26	69.92
155+63	0.00	7219.92	59.85
157+30	0.00	7214.87	67.58
164+14	0.00	7217.99	46.52
167+80	0.00	7209.00	78.43
171+80	0.00	7206.77	84.83
176+56	0.00	7215.16	86.57
179+80	0.00	7202.30	92.21
181+30	0.00	7201.46	91.45
184+80	0.00	7199.51	94.64
187+80	0.00	7197.83	93.04
189+30	0.00	7196.99	95.63
194+80	0.00	7193.85	89.11
198+30	0.00	7191.92	90.09
201+80	0.00	7189.96	91.24
215+60	0.00	7182.26	63.37
216+80	0.00	7181.59	66.29
218+30	0.00	7180.75	64.45
218+40_DS	0.00	7387.76	120.35
218+40_US	5.00	7205.65	41.44
223+80	0.00	7177.68	72.52
226+80	0.00	7176.00	65.78
23+90	0.00	7294.15	37.63
232+80	0.00	7172.65	75.63
234+30	0.00	7171.81	75.92
243+30	0.00	7166.78	67.07
247+30	0.00	7164.48	57.66
252+30	0.00	7162.27	51.72
263+30	0.00	7156.13	25.01
266+02	0.00	7154.61	27.08
270+80	0.00	7151.94	33.73
272+80	0.00	7150.82	33.89
276+80	0.00	7374.56	139.20
278+90	0.00	7147.41	32.42
279+30	0.00	7147.19	42.29

289+80	0.00	7141.32	61.76	
300+30	0.00	7078.85	25.54	
315+35	0.00	7365.86	49.36	
33+05	0.00	7288.69	22.32	
331+15	0.00	7362.29	74.99	
343+15	0.00	7359.58	80.55	
355+68	0.00	7356.75	107.95	
392+70	0.00	7348.39	55.69	
4+00	0.00	7306.01	6.63	
42+16	0.00	7283.26	51.11	
469+14	0.00	7331.12	127.80	
47+12	0.00	7280.30	39.77	
528+00	0.00	7317.83	70.82	
565+56	0.00	7309.34	10.44	
67+78	0.00	7267.98	65.34	
97+35	0.00	7250.35	33.68	
DISCHARGE_SURGE_TANK	0.00	7387.75	120.35	
SUCTION_SURGE_TANK	0.00	7205.65	41.44	
COUNSELOR_TANK	-2379.96	7308.40	-	Reservoir
JAN	966.00	7050.00	-	Reservoir
OJO-ENCINO_TANK	1408.96	7308.00	-	Reservoir

Pipe Results at 10:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft
P101	966.00	4.12	1.96
P103	966.00	4.12	7.71
P105	966.00	4.12	0.67
P107	966.00	4.12	0.84
P109	966.00	4.12	3.07
P11	2379.96	5.33	0.42
P111	966.00	4.12	1.68
P113	966.00	4.12	3.35
P115	966.00	4.12	0.84
P117	966.00	4.12	5.03
P119	966.00	4.12	2.23
P121	966.00	4.12	6.14
P123	966.00	4.12	1.52
P125	966.00	4.12	2.67
P127	966.00	4.12	1.12
P129	966.00	4.12	3.41
P13	2379.96	5.33	1.97
P131	966.00	4.12	0.22
P133	966.00	4.12	5.86
P135	966.00	4.12	5.59
P137	966.00	4.12	2.68
P139	966.00	4.12	0.28
P141	1408.96	3.16	8.71
P143	1408.96	3.16	13.29
P145	1408.96	3.16	8.48
P147	1408.96	3.16	0.00
P15	2379.96	5.33	11.87
P151	966.00	4.12	0.11
P153	0.00	0.00	0.00
P155	1413.96	3.17	0.00
P157	1408.96	3.16	13.19
P163	966.00	4.12	0.03
P165	966.00	4.12	6.23
P167	966.00	4.12	0.03
P169	966.00	4.12	1.93

P17	2379.96	5.33	5.46
P171	966.00	4.12	0.03
P173	966.00	4.12	2.21
P175	966.00	4.12	0.28
P19	2379.96	5.33	5.44
P21	2379.96	5.33	2.96
P23	2379.96	5.33	12.32
P25	2379.96	5.33	17.63
P27	2379.96	5.33	3.60
P29	2379.96	5.33	0.20
P31	2379.96	5.33	8.44
P33	2379.96	5.33	4.98
P35	2379.96	5.33	1.85
P37	2379.96	5.33	1.41
P39	2379.96	5.33	0.53
P41	2379.96	5.33	5.93
P43	1413.96	3.17	1.31
P45	1413.96	3.17	1.93
P47	1413.96	3.17	2.82
P49	1413.96	3.17	9.51
P51	1408.96	3.16	0.02
P53	1408.96	3.16	3.57
P55	1408.96	3.16	2.71
P57	1408.96	3.16	2.83
P59	1408.96	3.16	8.36
P61	1408.96	3.16	17.26
P65	1408.96	3.16	0.02
P67	1408.96	3.16	0.00
P73	1408.96	3.16	0.00
P75	2379.96	5.33	0.47
P77	0.00	0.00	0.00
P79	1413.96	3.17	1.56
P81	966.00	4.12	0.17
P83	966.00	4.12	2.23
P85	966.00	4.12	1.40
P87	966.00	4.12	5.86
P89	966.00	4.12	4.47
P91	966.00	4.12	0.84
P93	966.00	4.12	1.95
P95	966.00	4.12	1.68
P97	966.00	4.12	0.84
P99	966.00	4.12	3.07

Pump Results at 10:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft	
PS_218+40	1408.96	3.16	182.15	Pump

Valve Results at 10:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft	
300+80	966.00	6.17	19.87	TCV
BFV_103+71	2379.96	4.96	0.15	TCV
BYPASS	0.00	0.00	0.00	TCV
ISO_143+30	966.00	4.12	0.11	TCV
ISO_194+80	966.00	2.74	0.05	TCV
ISO_247+30	966.00	2.74	0.05	TCV
ISO_299+80	966.00	2.74	56.61	FCV
JAN_ALT_VALVE	966.00	6.17	5.90	TCV

OJO_ENCINO_ALT_VALVE	1408.96	2.94	1.34	TCV

Node Results at 11:00:00 hrs:

Node	Demand gpm	Head ft	Pressure psi
0+70	0.00	7307.98	6.62
103+38	0.00	7246.75	37.38
104+50	0.00	7245.93	33.16
118+65	0.00	7237.49	40.10
127+00	0.00	7232.51	32.35
130+00	0.00	7230.66	36.03
132+45	0.00	7229.26	41.47
133+35	0.00	7228.73	41.04
143+00	0.00	7222.79	62.48
143+30	0.00	7222.49	62.35
149+87	0.00	7221.23	74.12
154+80	0.00	7216.26	69.92
155+63	0.00	7219.92	59.85
157+30	0.00	7214.87	67.58
164+14	0.00	7217.99	46.52
167+80	0.00	7209.00	78.43
171+80	0.00	7206.77	84.83
176+56	0.00	7215.16	86.57
179+80	0.00	7202.30	92.21
181+30	0.00	7201.46	91.45
184+80	0.00	7199.51	94.64
187+80	0.00	7197.83	93.04
189+30	0.00	7196.99	95.63
194+80	0.00	7193.85	89.11
198+30	0.00	7191.92	90.09
201+80	0.00	7189.96	91.24
215+60	0.00	7182.26	63.37
216+80	0.00	7181.59	66.29
218+30	0.00	7180.75	64.45
218+40_DS	0.00	7387.75	120.35
218+40_US	5.00	7205.65	41.44
223+80	0.00	7177.68	72.52
226+80	0.00	7176.00	65.78
23+90	0.00	7294.15	37.63
232+80	0.00	7172.65	75.63
234+30	0.00	7171.81	75.92
243+30	0.00	7166.78	67.07
247+30	0.00	7164.48	57.66
252+30	0.00	7162.27	51.72
263+30	0.00	7156.13	25.01
266+02	0.00	7154.61	27.08
270+80	0.00	7151.94	33.73
272+80	0.00	7150.82	33.89
276+80	0.00	7374.56	139.20
278+90	0.00	7147.41	32.42
279+30	0.00	7147.19	42.29
289+80	0.00	7141.32	61.76
300+30	0.00	7078.85	25.54
315+35	0.00	7365.86	49.36
33+05	0.00	7288.69	22.32
331+15	0.00	7362.29	74.99
343+15	0.00	7359.58	80.55
355+68	0.00	7356.75	107.95
392+70	0.00	7348.39	55.69
4+00	0.00	7306.01	6.63

42+16	0.00	7283.26	51.11	
469+14	0.00	7331.12	127.80	
47+12	0.00	7280.30	39.77	
528+00	0.00	7317.83	70.82	
565+56	0.00	7309.34	10.44	
67+78	0.00	7267.98	65.34	
97+35	0.00	7250.35	33.68	
DISCHARGE_SURGE_TANK	0.00	7387.75	120.35	
SUCTION_SURGE_TANK	0.00	7205.65	41.44	
COUNSELOR_TANK	-2379.96	7308.40	-	Reservoir
JAN	966.00	7050.00	-	Reservoir
OJO-ENCINO_TANK	1408.96	7308.00	-	Reservoir

Pipe Results at 11:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft
P101	966.00	4.12	1.96
P103	966.00	4.12	7.71
P105	966.00	4.12	0.67
P107	966.00	4.12	0.84
P109	966.00	4.12	3.07
P11	2379.96	5.33	0.42
P111	966.00	4.12	1.68
P113	966.00	4.12	3.35
P115	966.00	4.12	0.84
P117	966.00	4.12	5.03
P119	966.00	4.12	2.23
P121	966.00	4.12	6.14
P123	966.00	4.12	1.52
P125	966.00	4.12	2.67
P127	966.00	4.12	1.12
P129	966.00	4.12	3.41
P13	2379.96	5.33	1.97
P131	966.00	4.12	0.22
P133	966.00	4.12	5.86
P135	966.00	4.12	5.59
P137	966.00	4.12	2.68
P139	966.00	4.12	0.28
P141	1408.96	3.16	8.71
P143	1408.96	3.16	13.29
P145	1408.96	3.16	8.48
P147	1408.96	3.16	0.00
P15	2379.96	5.33	11.87
P151	966.00	4.12	0.11
P153	0.00	0.00	0.00
P155	1413.96	3.17	0.00
P157	1408.96	3.16	13.19
P163	966.00	4.12	0.03
P165	966.00	4.12	6.23
P167	966.00	4.12	0.03
P169	966.00	4.12	1.93
P17	2379.96	5.33	5.46
P171	966.00	4.12	0.03
P173	966.00	4.12	2.21
P175	966.00	4.12	0.28
P19	2379.96	5.33	5.44
P21	2379.96	5.33	2.96
P23	2379.96	5.33	12.32
P25	2379.96	5.33	17.63
P27	2379.96	5.33	3.60

P29	2379.96	5.33	0.20
P31	2379.96	5.33	8.44
P33	2379.96	5.33	4.98
P35	2379.96	5.33	1.85
P37	2379.96	5.33	1.41
P39	2379.96	5.33	0.53
P41	2379.96	5.33	5.93
P43	1413.96	3.17	1.31
P45	1413.96	3.17	1.93
P47	1413.96	3.17	2.82
P49	1413.96	3.17	9.51
P51	1408.96	3.16	0.02
P53	1408.96	3.16	3.57
P55	1408.96	3.16	2.71
P57	1408.96	3.16	2.83
P59	1408.96	3.16	8.36
P61	1408.96	3.16	17.27
P65	1408.96	3.16	0.02
P67	1408.96	3.16	0.00
P73	1408.96	3.16	0.00
P75	2379.96	5.33	0.47
P77	0.00	0.00	0.00
P79	1413.96	3.17	1.56
P81	966.00	4.12	0.17
P83	966.00	4.12	2.23
P85	966.00	4.12	1.40
P87	966.00	4.12	5.86
P89	966.00	4.12	4.47
P91	966.00	4.12	0.84
P93	966.00	4.12	1.95
P95	966.00	4.12	1.68
P97	966.00	4.12	0.84
P99	966.00	4.12	3.07

Pump Results at 11:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft	
PS_218+40	1408.96	3.16	182.15	Pump

Valve Results at 11:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft	
300+80	966.00	6.17	19.87	TCV
BFV_103+71	2379.96	4.96	0.15	TCV
BYPASS	0.00	0.00	0.00	TCV
ISO_143+30	966.00	4.12	0.11	TCV
ISO_194+80	966.00	2.74	0.05	TCV
ISO_247+30	966.00	2.74	0.05	TCV
ISO_299+80	966.00	2.74	56.61	FCV
JAN_ALT_VALVE	966.00	6.17	5.90	TCV
OJO_ENCINO_ALT_VALVE	1408.96	2.94	1.34	TCV

Node Results at 12:00:00 hrs:

Node	Demand gpm	Head ft	Pressure psi
0+70	0.00	7307.98	6.62

103+38	0.00	7246.75	37.38
104+50	0.00	7245.93	33.16
118+65	0.00	7237.49	40.10
127+00	0.00	7232.51	32.35
130+00	0.00	7230.66	36.03
132+45	0.00	7229.26	41.47
133+35	0.00	7228.73	41.04
143+00	0.00	7222.79	62.48
143+30	0.00	7222.49	62.35
149+87	0.00	7221.23	74.12
154+80	0.00	7216.26	69.92
155+63	0.00	7219.92	59.85
157+30	0.00	7214.87	67.58
164+14	0.00	7217.99	46.52
167+80	0.00	7209.00	78.43
171+80	0.00	7206.77	84.83
176+56	0.00	7215.16	86.57
179+80	0.00	7202.30	92.21
181+30	0.00	7201.46	91.45
184+80	0.00	7199.51	94.64
187+80	0.00	7197.83	93.04
189+30	0.00	7196.99	95.63
194+80	0.00	7193.85	89.11
198+30	0.00	7191.92	90.09
201+80	0.00	7189.96	91.24
215+60	0.00	7182.26	63.37
216+80	0.00	7181.59	66.29
218+30	0.00	7180.75	64.45
218+40_DS	0.00	7387.75	120.35
218+40_US	5.00	7205.65	41.44
223+80	0.00	7177.68	72.52
226+80	0.00	7176.00	65.78
23+90	0.00	7294.15	37.63
232+80	0.00	7172.65	75.63
234+30	0.00	7171.81	75.92
243+30	0.00	7166.78	67.07
247+30	0.00	7164.48	57.66
252+30	0.00	7162.27	51.72
263+30	0.00	7156.13	25.01
266+02	0.00	7154.61	27.08
270+80	0.00	7151.94	33.73
272+80	0.00	7150.82	33.89
276+80	0.00	7374.56	139.20
278+90	0.00	7147.41	32.42
279+30	0.00	7147.19	42.29
289+80	0.00	7141.32	61.76
300+30	0.00	7078.85	25.54
315+35	0.00	7365.86	49.36
33+05	0.00	7288.69	22.32
331+15	0.00	7362.29	74.99
343+15	0.00	7359.58	80.55
355+68	0.00	7356.75	107.95
392+70	0.00	7348.39	55.69
4+00	0.00	7306.01	6.63
42+16	0.00	7283.26	51.11
469+14	0.00	7331.12	127.80
47+12	0.00	7280.30	39.77
528+00	0.00	7317.83	70.82
565+56	0.00	7309.34	10.44
67+78	0.00	7267.98	65.34
97+35	0.00	7250.35	33.68
DISCHARGE_SURGE_TANK	0.00	7387.75	120.35
SUCTION_SURGE_TANK	0.00	7205.65	41.44

COUNSELOR_TANK	-2379.96	7308.40	-	Reservoir
JAN	966.00	7050.00	-	Reservoir
OJO-ENCINO_TANK	1408.96	7308.00	-	Reservoir

Pipe Results at 12:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft
P101	966.00	4.12	1.96
P103	966.00	4.12	7.71
P105	966.00	4.12	0.67
P107	966.00	4.12	0.84
P109	966.00	4.12	3.07
P11	2379.96	5.33	0.42
P111	966.00	4.12	1.68
P113	966.00	4.12	3.35
P115	966.00	4.12	0.84
P117	966.00	4.12	5.03
P119	966.00	4.12	2.23
P121	966.00	4.12	6.14
P123	966.00	4.12	1.52
P125	966.00	4.12	2.67
P127	966.00	4.12	1.12
P129	966.00	4.12	3.41
P13	2379.96	5.33	1.97
P131	966.00	4.12	0.22
P133	966.00	4.12	5.87
P135	966.00	4.12	5.59
P137	966.00	4.12	2.68
P139	966.00	4.12	0.28
P141	1408.96	3.16	8.71
P143	1408.96	3.16	13.29
P145	1408.96	3.16	8.48
P147	1408.96	3.16	0.00
P15	2379.96	5.33	11.87
P151	966.00	4.12	0.11
P153	0.00	0.00	0.00
P155	1413.96	3.17	0.00
P157	1408.96	3.16	13.19
P163	966.00	4.12	0.03
P165	966.00	4.12	6.23
P167	966.00	4.12	0.03
P169	966.00	4.12	1.93
P17	2379.96	5.33	5.46
P171	966.00	4.12	0.03
P173	966.00	4.12	2.21
P175	966.00	4.12	0.28
P19	2379.96	5.33	5.44
P21	2379.96	5.33	2.96
P23	2379.96	5.33	12.32
P25	2379.96	5.33	17.63
P27	2379.96	5.33	3.60
P29	2379.96	5.33	0.20
P31	2379.96	5.33	8.44
P33	2379.96	5.33	4.98
P35	2379.96	5.33	1.85
P37	2379.96	5.33	1.41
P39	2379.96	5.33	0.53
P41	2379.96	5.33	5.93
P43	1413.96	3.17	1.31
P45	1413.96	3.17	1.93

P47	1413.96	3.17	2.82	
P49	1413.96	3.17	9.51	
P51	1408.96	3.16	0.02	
P53	1408.96	3.16	3.57	
P55	1408.96	3.16	2.71	
P57	1408.96	3.16	2.83	
P59	1408.96	3.16	8.36	
P61	1408.96	3.16	17.27	
P65	1408.96	3.16	0.02	
P67	1408.96	3.16	0.00	
P73	1408.96	3.16	0.00	
P75	2379.96	5.33	0.47	
P77	0.00	0.00	0.00	
P79	1413.96	3.17	1.56	
P81	966.00	4.12	0.17	
P83	966.00	4.12	2.23	
P85	966.00	4.12	1.40	
P87	966.00	4.12	5.86	
P89	966.00	4.12	4.47	
P91	966.00	4.12	0.84	
P93	966.00	4.12	1.96	
P95	966.00	4.12	1.68	
P97	966.00	4.12	0.84	
P99	966.00	4.12	3.07	

Pump Results at 12:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft	
PS_218+40	1408.96	3.16	182.15	Pump

Valve Results at 12:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft	
300+80	966.00	6.17	19.87	TCV
BFV_103+71	2379.96	4.96	0.15	TCV
BYPASS	0.00	0.00	0.00	TCV
ISO_143+30	966.00	4.12	0.10	TCV
ISO_194+80	966.00	2.74	0.05	TCV
ISO_247+30	966.00	2.74	0.05	TCV
ISO_299+80	966.00	2.74	56.61	FCV
JAN_ALT_VALVE	966.00	6.17	5.90	TCV
OJO_ENCINO_ALT_VALVE	1408.96	2.94	1.34	TCV

Node Results at 13:00:00 hrs:

Node	Demand gpm	Head ft	Pressure psi
0+70	0.00	7307.98	6.62
103+38	0.00	7246.75	37.38
104+50	0.00	7245.93	33.16
118+65	0.00	7237.49	40.10
127+00	0.00	7232.51	32.35
130+00	0.00	7230.66	36.03
132+45	0.00	7229.26	41.47
133+35	0.00	7228.73	41.04
143+00	0.00	7222.79	62.48
143+30	0.00	7222.49	62.35

149+87	0.00	7221.23	74.12	
154+80	0.00	7216.26	69.92	
155+63	0.00	7219.92	59.85	
157+30	0.00	7214.87	67.58	
164+14	0.00	7217.99	46.52	
167+80	0.00	7209.00	78.43	
171+80	0.00	7206.77	84.83	
176+56	0.00	7215.16	86.57	
179+80	0.00	7202.30	92.21	
181+30	0.00	7201.46	91.45	
184+80	0.00	7199.51	94.64	
187+80	0.00	7197.83	93.04	
189+30	0.00	7196.99	95.63	
194+80	0.00	7193.85	89.11	
198+30	0.00	7191.92	90.09	
201+80	0.00	7189.96	91.24	
215+60	0.00	7182.26	63.37	
216+80	0.00	7181.59	66.29	
218+30	0.00	7180.75	64.45	
218+40_DS	0.00	7387.75	120.35	
218+40_US	5.00	7205.65	41.44	
223+80	0.00	7177.68	72.52	
226+80	0.00	7176.00	65.78	
23+90	0.00	7294.15	37.63	
232+80	0.00	7172.65	75.63	
234+30	0.00	7171.81	75.92	
243+30	0.00	7166.78	67.07	
247+30	0.00	7164.48	57.66	
252+30	0.00	7162.27	51.72	
263+30	0.00	7156.13	25.01	
266+02	0.00	7154.61	27.08	
270+80	0.00	7151.94	33.73	
272+80	0.00	7150.82	33.89	
276+80	0.00	7374.56	139.20	
278+90	0.00	7147.41	32.42	
279+30	0.00	7147.19	42.29	
289+80	0.00	7141.32	61.76	
300+30	0.00	7078.85	25.54	
315+35	0.00	7365.86	49.36	
33+05	0.00	7288.69	22.32	
331+15	0.00	7362.29	74.99	
343+15	0.00	7359.58	80.55	
355+68	0.00	7356.75	107.95	
392+70	0.00	7348.39	55.69	
4+00	0.00	7306.01	6.63	
42+16	0.00	7283.26	51.11	
469+14	0.00	7331.12	127.80	
47+12	0.00	7280.30	39.77	
528+00	0.00	7317.83	70.82	
565+56	0.00	7309.34	10.44	
67+78	0.00	7267.98	65.34	
97+35	0.00	7250.35	33.68	
DISCHARGE_SURGE_TANK	0.00	7387.75	120.35	
SUCTION_SURGE_TANK	0.00	7205.65	41.44	
COUNSELOR_TANK	-2379.96	7308.40	-	Reservoir
JAN	966.00	7050.00	-	Reservoir
OJO-ENCINO_TANK	1408.96	7308.00	-	Reservoir

Pipe Results at 13:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft

P101	966.00	4.12	1.96
P103	966.00	4.12	7.71
P105	966.00	4.12	0.67
P107	966.00	4.12	0.84
P109	966.00	4.12	3.07
P11	2379.96	5.33	0.42
P111	966.00	4.12	1.68
P113	966.00	4.12	3.35
P115	966.00	4.12	0.84
P117	966.00	4.12	5.03
P119	966.00	4.12	2.23
P121	966.00	4.12	6.14
P123	966.00	4.12	1.52
P125	966.00	4.12	2.67
P127	966.00	4.12	1.12
P129	966.00	4.12	3.41
P13	2379.96	5.33	1.97
P131	966.00	4.12	0.22
P133	966.00	4.12	5.87
P135	966.00	4.12	5.59
P137	966.00	4.12	2.68
P139	966.00	4.12	0.28
P141	1408.96	3.16	8.71
P143	1408.96	3.16	13.29
P145	1408.96	3.16	8.48
P147	1408.96	3.16	0.00
P15	2379.96	5.33	11.87
P151	966.00	4.12	0.11
P153	0.00	0.00	0.00
P155	1413.96	3.17	0.00
P157	1408.96	3.16	13.19
P163	966.00	4.12	0.03
P165	966.00	4.12	6.23
P167	966.00	4.12	0.03
P169	966.00	4.12	1.93
P17	2379.96	5.33	5.46
P171	966.00	4.12	0.03
P173	966.00	4.12	2.21
P175	966.00	4.12	0.28
P19	2379.96	5.33	5.44
P21	2379.96	5.33	2.96
P23	2379.96	5.33	12.32
P25	2379.96	5.33	17.63
P27	2379.96	5.33	3.60
P29	2379.96	5.33	0.20
P31	2379.96	5.33	8.44
P33	2379.96	5.33	4.98
P35	2379.96	5.33	1.85
P37	2379.96	5.33	1.41
P39	2379.96	5.33	0.53
P41	2379.96	5.33	5.93
P43	1413.96	3.17	1.31
P45	1413.96	3.17	1.93
P47	1413.96	3.17	2.82
P49	1413.96	3.17	9.51
P51	1408.96	3.16	0.02
P53	1408.96	3.16	3.57
P55	1408.96	3.16	2.71
P57	1408.96	3.16	2.83
P59	1408.96	3.16	8.36
P61	1408.96	3.16	17.27
P65	1408.96	3.16	0.02

P67	1408.96	3.16	0.00	
P73	1408.96	3.16	0.00	
P75	2379.96	5.33	0.47	
P77	0.00	0.00	0.00	
P79	1413.96	3.17	1.56	
P81	966.00	4.12	0.17	
P83	966.00	4.12	2.23	
P85	966.00	4.12	1.40	
P87	966.00	4.12	5.86	
P89	966.00	4.12	4.47	
P91	966.00	4.12	0.84	
P93	966.00	4.12	1.96	
P95	966.00	4.12	1.68	
P97	966.00	4.12	0.84	
P99	966.00	4.12	3.07	

Pump Results at 13:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft	
PS_218+40	1408.96	3.16	182.15	Pump

Valve Results at 13:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft	
300+80	966.00	6.17	19.87	TCV
BFV_103+71	2379.96	4.96	0.15	TCV
BYPASS	0.00	0.00	0.00	TCV
ISO_143+30	966.00	4.12	0.10	TCV
ISO_194+80	966.00	2.74	0.05	TCV
ISO_247+30	966.00	2.74	0.05	TCV
ISO_299+80	966.00	2.74	56.61	FCV
JAN_ALT_VALVE	966.00	6.17	5.90	TCV
OJO_ENCINO_ALT_VALVE	1408.96	2.94	1.34	TCV

Node Results at 14:00:00 hrs:

Node	Demand gpm	Head ft	Pressure psi
0+70	0.00	7307.98	6.62
103+38	0.00	7246.75	37.38
104+50	0.00	7245.93	33.16
118+65	0.00	7237.49	40.10
127+00	0.00	7232.51	32.35
130+00	0.00	7230.66	36.03
132+45	0.00	7229.26	41.47
133+35	0.00	7228.73	41.04
143+00	0.00	7222.79	62.48
143+30	0.00	7222.49	62.35
149+87	0.00	7221.23	74.12
154+80	0.00	7216.26	69.92
155+63	0.00	7219.92	59.85
157+30	0.00	7214.87	67.58
164+14	0.00	7217.99	46.52
167+80	0.00	7209.00	78.43
171+80	0.00	7206.77	84.83
176+56	0.00	7215.16	86.57
179+80	0.00	7202.30	92.21

181+30	0.00	7201.46	91.45	
184+80	0.00	7199.51	94.64	
187+80	0.00	7197.83	93.04	
189+30	0.00	7196.99	95.63	
194+80	0.00	7193.85	89.11	
198+30	0.00	7191.92	90.09	
201+80	0.00	7189.96	91.24	
215+60	0.00	7182.26	63.37	
216+80	0.00	7181.59	66.29	
218+30	0.00	7180.75	64.45	
218+40_DS	0.00	7387.75	120.35	
218+40_US	5.00	7205.65	41.44	
223+80	0.00	7177.68	72.52	
226+80	0.00	7176.00	65.78	
23+90	0.00	7294.15	37.63	
232+80	0.00	7172.65	75.63	
234+30	0.00	7171.81	75.92	
243+30	0.00	7166.78	67.07	
247+30	0.00	7164.48	57.66	
252+30	0.00	7162.27	51.72	
263+30	0.00	7156.13	25.01	
266+02	0.00	7154.61	27.08	
270+80	0.00	7151.94	33.73	
272+80	0.00	7150.82	33.89	
276+80	0.00	7374.56	139.20	
278+90	0.00	7147.41	32.42	
279+30	0.00	7147.19	42.29	
289+80	0.00	7141.32	61.76	
300+30	0.00	7078.85	25.54	
315+35	0.00	7365.86	49.36	
33+05	0.00	7288.69	22.32	
331+15	0.00	7362.29	74.99	
343+15	0.00	7359.58	80.55	
355+68	0.00	7356.75	107.95	
392+70	0.00	7348.39	55.69	
4+00	0.00	7306.01	6.63	
42+16	0.00	7283.26	51.11	
469+14	0.00	7331.12	127.80	
47+12	0.00	7280.30	39.77	
528+00	0.00	7317.83	70.82	
565+56	0.00	7309.34	10.44	
67+78	0.00	7267.98	65.34	
97+35	0.00	7250.35	33.68	
DISCHARGE_SURGE_TANK	0.00	7387.75	120.35	
SUCTION_SURGE_TANK	0.00	7205.65	41.44	
COUNSELOR_TANK	-2379.96	7308.40	-	Reservoir
JAN	966.00	7050.00	-	Reservoir
OJO-ENCINO_TANK	1408.96	7308.00	-	Reservoir

Pipe Results at 14:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft
P101	966.00	4.12	1.96
P103	966.00	4.12	7.71
P105	966.00	4.12	0.67
P107	966.00	4.12	0.84
P109	966.00	4.12	3.07
P11	2379.96	5.33	0.42
P111	966.00	4.12	1.68
P113	966.00	4.12	3.35

P115	966.00	4.12	0.84
P117	966.00	4.12	5.03
P119	966.00	4.12	2.23
P121	966.00	4.12	6.14
P123	966.00	4.12	1.52
P125	966.00	4.12	2.67
P127	966.00	4.12	1.12
P129	966.00	4.12	3.41
P13	2379.96	5.33	1.97
P131	966.00	4.12	0.22
P133	966.00	4.12	5.87
P135	966.00	4.12	5.59
P137	966.00	4.12	2.68
P139	966.00	4.12	0.28
P141	1408.96	3.16	8.71
P143	1408.96	3.16	13.29
P145	1408.96	3.16	8.48
P147	1408.96	3.16	0.00
P15	2379.96	5.33	11.87
P151	966.00	4.12	0.11
P153	0.00	0.00	0.00
P155	1413.96	3.17	0.00
P157	1408.96	3.16	13.19
P163	966.00	4.12	0.03
P165	966.00	4.12	6.23
P167	966.00	4.12	0.03
P169	966.00	4.12	1.93
P17	2379.96	5.33	5.46
P171	966.00	4.12	0.03
P173	966.00	4.12	2.21
P175	966.00	4.12	0.28
P19	2379.96	5.33	5.44
P21	2379.96	5.33	2.96
P23	2379.96	5.33	12.32
P25	2379.96	5.33	17.63
P27	2379.96	5.33	3.60
P29	2379.96	5.33	0.20
P31	2379.96	5.33	8.44
P33	2379.96	5.33	4.98
P35	2379.96	5.33	1.85
P37	2379.96	5.33	1.41
P39	2379.96	5.33	0.53
P41	2379.96	5.33	5.93
P43	1413.96	3.17	1.31
P45	1413.96	3.17	1.93
P47	1413.96	3.17	2.83
P49	1413.96	3.17	9.51
P51	1408.96	3.16	0.02
P53	1408.96	3.16	3.57
P55	1408.96	3.16	2.71
P57	1408.96	3.16	2.83
P59	1408.96	3.16	8.36
P61	1408.96	3.16	17.27
P65	1408.96	3.16	0.02
P67	1408.96	3.16	0.00
P73	1408.96	3.16	0.00
P75	2379.96	5.33	0.47
P77	0.00	0.00	0.00
P79	1413.96	3.17	1.56
P81	966.00	4.12	0.17
P83	966.00	4.12	2.23
P85	966.00	4.12	1.40
P87	966.00	4.12	5.86

P89	966.00	4.12	4.47	
P91	966.00	4.12	0.84	
P93	966.00	4.12	1.96	
P95	966.00	4.12	1.68	
P97	966.00	4.12	0.84	
P99	966.00	4.12	3.07	

Pump Results at 14:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft	
PS_218+40	1408.96	3.16	182.15	Pump

Valve Results at 14:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft	
300+80	966.00	6.17	19.87	TCV
BFV_103+71	2379.96	4.96	0.15	TCV
BYPASS	0.00	0.00	0.00	TCV
ISO_143+30	966.00	4.12	0.10	TCV
ISO_194+80	966.00	2.74	0.05	TCV
ISO_247+30	966.00	2.74	0.05	TCV
ISO_299+80	966.00	2.74	56.61	FCV
JAN_ALT_VALVE	966.00	6.17	5.90	TCV
OJO_ENCINO_ALT_VALVE	1408.96	2.94	1.34	TCV

Node Results at 15:00:00 hrs:

Node	Demand gpm	Head ft	Pressure psi
0+70	0.00	7307.98	6.62
103+38	0.00	7246.75	37.38
104+50	0.00	7245.93	33.16
118+65	0.00	7237.49	40.10
127+00	0.00	7232.51	32.35
130+00	0.00	7230.66	36.03
132+45	0.00	7229.26	41.47
133+35	0.00	7228.73	41.04
143+00	0.00	7222.79	62.48
143+30	0.00	7222.49	62.35
149+87	0.00	7221.23	74.12
154+80	0.00	7216.26	69.92
155+63	0.00	7219.92	59.85
157+30	0.00	7214.87	67.58
164+14	0.00	7217.99	46.52
167+80	0.00	7209.00	78.43
171+80	0.00	7206.77	84.83
176+56	0.00	7215.16	86.57
179+80	0.00	7202.30	92.21
181+30	0.00	7201.46	91.45
184+80	0.00	7199.51	94.64
187+80	0.00	7197.83	93.04
189+30	0.00	7196.99	95.63
194+80	0.00	7193.85	89.11
198+30	0.00	7191.92	90.09
201+80	0.00	7189.96	91.24
215+60	0.00	7182.26	63.37
216+80	0.00	7181.59	66.29

218+30	0.00	7180.75	64.45	
218+40_DS	0.00	7387.75	120.35	
218+40_US	5.00	7205.65	41.44	
223+80	0.00	7177.68	72.52	
226+80	0.00	7176.00	65.78	
23+90	0.00	7294.15	37.63	
232+80	0.00	7172.65	75.63	
234+30	0.00	7171.81	75.92	
243+30	0.00	7166.78	67.07	
247+30	0.00	7164.48	57.66	
252+30	0.00	7162.27	51.72	
263+30	0.00	7156.13	25.01	
266+02	0.00	7154.60	27.08	
270+80	0.00	7151.94	33.73	
272+80	0.00	7150.82	33.89	
276+80	0.00	7374.56	139.20	
278+90	0.00	7147.41	32.42	
279+30	0.00	7147.19	42.28	
289+80	0.00	7141.32	61.76	
300+30	0.00	7078.85	25.54	
315+35	0.00	7365.86	49.36	
33+05	0.00	7288.69	22.32	
331+15	0.00	7362.29	74.99	
343+15	0.00	7359.58	80.55	
355+68	0.00	7356.75	107.95	
392+70	0.00	7348.38	55.69	
4+00	0.00	7306.01	6.63	
42+16	0.00	7283.26	51.11	
469+14	0.00	7331.12	127.80	
47+12	0.00	7280.30	39.77	
528+00	0.00	7317.83	70.82	
565+56	0.00	7309.34	10.44	
67+78	0.00	7267.98	65.34	
97+35	0.00	7250.35	33.68	
DISCHARGE_SURGE_TANK	0.00	7387.75	120.35	
SUCTION_SURGE_TANK	0.00	7205.65	41.44	
COUNSELOR_TANK	-2379.96	7308.40	-	Reservoir
JAN	966.00	7050.00	-	Reservoir
OJO-ENCINO_TANK	1408.96	7308.00	-	Reservoir

Pipe Results at 15:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft
P101	966.00	4.12	1.95
P103	966.00	4.12	7.71
P105	966.00	4.12	0.67
P107	966.00	4.12	0.84
P109	966.00	4.12	3.07
P11	2379.96	5.33	0.42
P111	966.00	4.12	1.68
P113	966.00	4.12	3.35
P115	966.00	4.12	0.84
P117	966.00	4.12	5.03
P119	966.00	4.12	2.23
P121	966.00	4.12	6.14
P123	966.00	4.12	1.52
P125	966.00	4.12	2.67
P127	966.00	4.12	1.12
P129	966.00	4.12	3.41
P13	2379.96	5.33	1.97

P131	966.00	4.12	0.22
P133	966.00	4.12	5.86
P135	966.00	4.12	5.59
P137	966.00	4.12	2.68
P139	966.00	4.12	0.28
P141	1408.96	3.16	8.71
P143	1408.96	3.16	13.29
P145	1408.96	3.16	8.48
P147	1408.96	3.16	0.00
P15	2379.96	5.33	11.87
P151	966.00	4.12	0.11
P153	0.00	0.00	0.00
P155	1413.96	3.17	0.00
P157	1408.96	3.16	13.19
P163	966.00	4.12	0.03
P165	966.00	4.12	6.23
P167	966.00	4.12	0.03
P169	966.00	4.12	1.93
P17	2379.96	5.33	5.46
P171	966.00	4.12	0.03
P173	966.00	4.12	2.21
P175	966.00	4.12	0.28
P19	2379.96	5.33	5.43
P21	2379.96	5.33	2.96
P23	2379.96	5.33	12.32
P25	2379.96	5.33	17.63
P27	2379.96	5.33	3.60
P29	2379.96	5.33	0.20
P31	2379.96	5.33	8.44
P33	2379.96	5.33	4.98
P35	2379.96	5.33	1.85
P37	2379.96	5.33	1.40
P39	2379.96	5.33	0.53
P41	2379.96	5.33	5.93
P43	1413.96	3.17	1.31
P45	1413.96	3.17	1.93
P47	1413.96	3.17	2.82
P49	1413.96	3.17	9.51
P51	1408.95	3.16	0.02
P53	1408.96	3.16	3.57
P55	1408.96	3.16	2.71
P57	1408.96	3.16	2.83
P59	1408.96	3.16	8.36
P61	1408.96	3.16	17.26
P65	1408.95	3.16	0.02
P67	1408.96	3.16	0.00
P73	1408.96	3.16	0.00
P75	2379.96	5.33	0.47
P77	0.00	0.00	0.00
P79	1413.96	3.17	1.56
P81	966.00	4.12	0.17
P83	966.00	4.12	2.23
P85	966.00	4.12	1.40
P87	966.00	4.12	5.87
P89	966.00	4.12	4.47
P91	966.00	4.12	0.84
P93	966.00	4.12	1.95
P95	966.00	4.12	1.68
P97	966.00	4.12	0.84
P99	966.00	4.12	3.07

Pump Results at 15:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft	
PS_218+40	1408.95	3.16	182.15	Pump

Valve Results at 15:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft	
300+80	966.00	6.17	19.87	TCV
BFV_103+71	2379.96	4.96	0.15	TCV
BYPASS	0.00	0.00	0.00	TCV
ISO_143+30	966.00	4.12	0.11	TCV
ISO_194+80	966.00	2.74	0.05	TCV
ISO_247+30	966.00	2.74	0.05	TCV
ISO_299+80	966.00	2.74	56.61	FCV
JAN_ALT_VALVE	966.00	6.17	5.90	TCV
OJO_ENCINO_ALT_VALVE	1408.96	2.94	1.34	TCV

Node Results at 16:00:00 hrs:

Node	Demand gpm	Head ft	Pressure psi
0+70	0.00	7307.98	6.62
103+38	0.00	7246.75	37.38
104+50	0.00	7245.93	33.16
118+65	0.00	7237.49	40.10
127+00	0.00	7232.51	32.35
130+00	0.00	7230.66	36.03
132+45	0.00	7229.26	41.47
133+35	0.00	7228.73	41.04
143+00	0.00	7222.79	62.48
143+30	0.00	7222.49	62.35
149+87	0.00	7221.23	74.12
154+80	0.00	7216.26	69.92
155+63	0.00	7219.92	59.85
157+30	0.00	7214.87	67.58
164+14	0.00	7217.99	46.52
167+80	0.00	7209.00	78.43
171+80	0.00	7206.77	84.83
176+56	0.00	7215.16	86.57
179+80	0.00	7202.30	92.21
181+30	0.00	7201.46	91.45
184+80	0.00	7199.51	94.64
187+80	0.00	7197.83	93.04
189+30	0.00	7196.99	95.63
194+80	0.00	7193.85	89.11
198+30	0.00	7191.92	90.09
201+80	0.00	7189.96	91.24
215+60	0.00	7182.26	63.37
216+80	0.00	7181.59	66.29
218+30	0.00	7180.75	64.45
218+40_DS	0.00	7387.75	120.35
218+40_US	5.00	7205.65	41.44
223+80	0.00	7177.68	72.52
226+80	0.00	7176.00	65.78
23+90	0.00	7294.15	37.63
232+80	0.00	7172.65	75.63
234+30	0.00	7171.81	75.92
243+30	0.00	7166.78	67.07

247+30	0.00	7164.48	57.66	
252+30	0.00	7162.27	51.72	
263+30	0.00	7156.13	25.01	
266+02	0.00	7154.60	27.08	
270+80	0.00	7151.94	33.73	
272+80	0.00	7150.82	33.89	
276+80	0.00	7374.56	139.20	
278+90	0.00	7147.41	32.42	
279+30	0.00	7147.19	42.28	
289+80	0.00	7141.32	61.76	
300+30	0.00	7078.85	25.54	
315+35	0.00	7365.85	49.36	
33+05	0.00	7288.69	22.32	
331+15	0.00	7362.29	74.99	
343+15	0.00	7359.57	80.55	
355+68	0.00	7356.75	107.95	
392+70	0.00	7348.38	55.69	
4+00	0.00	7306.01	6.63	
42+16	0.00	7283.26	51.11	
469+14	0.00	7331.12	127.80	
47+12	0.00	7280.30	39.77	
528+00	0.00	7317.83	70.82	
565+56	0.00	7309.34	10.44	
67+78	0.00	7267.98	65.34	
97+35	0.00	7250.35	33.68	
DISCHARGE_SURGE_TANK	0.00	7387.75	120.35	
SUCTION_SURGE_TANK	0.00	7205.65	41.44	
COUNSELOR_TANK	-2379.96	7308.40	-	Reservoir
JAN	966.00	7050.00	-	Reservoir
OJO-ENCINO_TANK	1408.95	7308.00	-	Reservoir

Pipe Results at 16:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft
P101	966.00	4.12	1.95
P103	966.00	4.12	7.71
P105	966.00	4.12	0.67
P107	966.00	4.12	0.84
P109	966.00	4.12	3.07
P11	2379.96	5.33	0.42
P111	966.00	4.12	1.68
P113	966.00	4.12	3.35
P115	966.00	4.12	0.84
P117	966.00	4.12	5.03
P119	966.00	4.12	2.23
P121	966.00	4.12	6.14
P123	966.00	4.12	1.52
P125	966.00	4.12	2.67
P127	966.00	4.12	1.12
P129	966.00	4.12	3.41
P13	2379.96	5.33	1.97
P131	966.00	4.12	0.22
P133	966.00	4.12	5.86
P135	966.00	4.12	5.59
P137	966.00	4.12	2.68
P139	966.00	4.12	0.28
P141	1408.95	3.16	8.71
P143	1408.95	3.16	13.29
P145	1408.95	3.16	8.48
P147	1408.95	3.16	0.00

P15	2379.96	5.33	11.87
P151	966.00	4.12	0.11
P153	0.00	0.00	0.00
P155	1413.96	3.17	0.00
P157	1408.95	3.16	13.19
P163	966.00	4.12	0.03
P165	966.00	4.12	6.23
P167	966.00	4.12	0.03
P169	966.00	4.12	1.93
P17	2379.96	5.33	5.46
P171	966.00	4.12	0.03
P173	966.00	4.12	2.21
P175	966.00	4.12	0.28
P19	2379.96	5.33	5.43
P21	2379.96	5.33	2.96
P23	2379.96	5.33	12.32
P25	2379.96	5.33	17.63
P27	2379.96	5.33	3.60
P29	2379.96	5.33	0.20
P31	2379.96	5.33	8.44
P33	2379.96	5.33	4.98
P35	2379.96	5.33	1.85
P37	2379.96	5.33	1.40
P39	2379.96	5.33	0.53
P41	2379.96	5.33	5.93
P43	1413.96	3.17	1.31
P45	1413.96	3.17	1.93
P47	1413.96	3.17	2.82
P49	1413.96	3.17	9.51
P51	1408.96	3.16	0.02
P53	1408.95	3.16	3.57
P55	1408.95	3.16	2.71
P57	1408.95	3.16	2.83
P59	1408.95	3.16	8.36
P61	1408.95	3.16	17.26
P65	1408.96	3.16	0.02
P67	1408.95	3.16	0.00
P73	1408.95	3.16	0.00
P75	2379.96	5.33	0.47
P77	0.00	0.00	0.00
P79	1413.96	3.17	1.56
P81	966.00	4.12	0.17
P83	966.00	4.12	2.23
P85	966.00	4.12	1.40
P87	966.00	4.12	5.87
P89	966.00	4.12	4.47
P91	966.00	4.12	0.84
P93	966.00	4.12	1.96
P95	966.00	4.12	1.68
P97	966.00	4.12	0.84
P99	966.00	4.12	3.07

Pump Results at 16:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft	
PS_218+40	1408.96	3.16	182.15	Pump

Valve Results at 16:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft

300+80	966.00	6.17	19.87	TCV
BFV_103+71	2379.96	4.96	0.15	TCV
BYPASS	0.00	0.00	0.00	TCV
ISO_143+30	966.00	4.12	0.11	TCV
ISO_194+80	966.00	2.74	0.05	TCV
ISO_247+30	966.00	2.74	0.05	TCV
ISO_299+80	966.00	2.74	56.61	FCV
JAN_ALT_VALVE	966.00	6.17	5.90	TCV
OJO_ENCINO_ALT_VALVE	1408.95	2.94	1.34	TCV

Node Results at 17:00:00 hrs:

Node	Demand gpm	Head ft	Pressure psi
0+70	0.00	7307.98	6.62
103+38	0.00	7246.75	37.38
104+50	0.00	7245.93	33.16
118+65	0.00	7237.49	40.10
127+00	0.00	7232.51	32.35
130+00	0.00	7230.66	36.03
132+45	0.00	7229.26	41.47
133+35	0.00	7228.73	41.04
143+00	0.00	7222.79	62.48
143+30	0.00	7222.49	62.35
149+87	0.00	7221.23	74.12
154+80	0.00	7216.26	69.92
155+63	0.00	7219.92	59.85
157+30	0.00	7214.87	67.58
164+14	0.00	7217.99	46.52
167+80	0.00	7209.00	78.43
171+80	0.00	7206.77	84.83
176+56	0.00	7215.16	86.57
179+80	0.00	7202.30	92.21
181+30	0.00	7201.46	91.45
184+80	0.00	7199.51	94.64
187+80	0.00	7197.83	93.04
189+30	0.00	7196.99	95.63
194+80	0.00	7193.85	89.11
198+30	0.00	7191.92	90.09
201+80	0.00	7189.96	91.24
215+60	0.00	7182.26	63.37
216+80	0.00	7181.59	66.29
218+30	0.00	7180.75	64.45
218+40_DS	0.00	7387.75	120.35
218+40_US	5.00	7205.65	41.44
223+80	0.00	7177.68	72.52
226+80	0.00	7176.00	65.78
23+90	0.00	7294.15	37.63
232+80	0.00	7172.65	75.63
234+30	0.00	7171.81	75.92
243+30	0.00	7166.78	67.07
247+30	0.00	7164.48	57.66
252+30	0.00	7162.27	51.72
263+30	0.00	7156.13	25.01
266+02	0.00	7154.61	27.08
270+80	0.00	7151.94	33.73
272+80	0.00	7150.82	33.89
276+80	0.00	7374.56	139.20
278+90	0.00	7147.41	32.42
279+30	0.00	7147.19	42.28

289+80	0.00	7141.32	61.76	
300+30	0.00	7078.85	25.54	
315+35	0.00	7365.86	49.36	
33+05	0.00	7288.69	22.32	
331+15	0.00	7362.29	74.99	
343+15	0.00	7359.58	80.55	
355+68	0.00	7356.75	107.95	
392+70	0.00	7348.39	55.69	
4+00	0.00	7306.01	6.63	
42+16	0.00	7283.26	51.11	
469+14	0.00	7331.12	127.80	
47+12	0.00	7280.30	39.77	
528+00	0.00	7317.83	70.82	
565+56	0.00	7309.34	10.44	
67+78	0.00	7267.98	65.34	
97+35	0.00	7250.35	33.68	
DISCHARGE_SURGE_TANK	0.00	7387.75	120.35	
SUCTION_SURGE_TANK	0.00	7205.65	41.44	
COUNSELOR_TANK	-2379.96	7308.40	-	Reservoir
JAN	966.00	7050.00	-	Reservoir
OJO-ENCINO_TANK	1408.96	7308.00	-	Reservoir

Pipe Results at 17:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft
P101	966.00	4.12	1.96
P103	966.00	4.12	7.71
P105	966.00	4.12	0.67
P107	966.00	4.12	0.84
P109	966.00	4.12	3.07
P11	2379.96	5.33	0.42
P111	966.00	4.12	1.68
P113	966.00	4.12	3.35
P115	966.00	4.12	0.84
P117	966.00	4.12	5.03
P119	966.00	4.12	2.23
P121	966.00	4.12	6.14
P123	966.00	4.12	1.52
P125	966.00	4.12	2.67
P127	966.00	4.12	1.12
P129	966.00	4.12	3.41
P13	2379.96	5.33	1.97
P131	966.00	4.12	0.22
P133	966.00	4.12	5.86
P135	966.00	4.12	5.59
P137	966.00	4.12	2.68
P139	966.00	4.12	0.28
P141	1408.96	3.16	8.71
P143	1408.96	3.16	13.29
P145	1408.96	3.16	8.48
P147	1408.96	3.16	0.00
P15	2379.96	5.33	11.87
P151	966.00	4.12	0.11
P153	0.00	0.00	0.00
P155	1413.96	3.17	0.00
P157	1408.96	3.16	13.19
P163	966.00	4.12	0.03
P165	966.00	4.12	6.23
P167	966.00	4.12	0.03
P169	966.00	4.12	1.93

P17	2379.96	5.33	5.46
P171	966.00	4.12	0.03
P173	966.00	4.12	2.21
P175	966.00	4.12	0.28
P19	2379.96	5.33	5.44
P21	2379.96	5.33	2.96
P23	2379.96	5.33	12.32
P25	2379.96	5.33	17.63
P27	2379.96	5.33	3.60
P29	2379.96	5.33	0.20
P31	2379.96	5.33	8.44
P33	2379.96	5.33	4.98
P35	2379.96	5.33	1.85
P37	2379.96	5.33	1.41
P39	2379.96	5.33	0.53
P41	2379.96	5.33	5.93
P43	1413.96	3.17	1.31
P45	1413.96	3.17	1.93
P47	1413.96	3.17	2.83
P49	1413.96	3.17	9.51
P51	1408.96	3.16	0.02
P53	1408.96	3.16	3.57
P55	1408.96	3.16	2.71
P57	1408.96	3.16	2.83
P59	1408.96	3.16	8.36
P61	1408.96	3.16	17.27
P65	1408.96	3.16	0.02
P67	1408.96	3.16	0.00
P73	1408.96	3.16	0.00
P75	2379.96	5.33	0.47
P77	0.00	0.00	0.00
P79	1413.96	3.17	1.56
P81	966.00	4.12	0.17
P83	966.00	4.12	2.23
P85	966.00	4.12	1.40
P87	966.00	4.12	5.86
P89	966.00	4.12	4.47
P91	966.00	4.12	0.84
P93	966.00	4.12	1.96
P95	966.00	4.12	1.68
P97	966.00	4.12	0.84
P99	966.00	4.12	3.07

Pump Results at 17:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft	
PS_218+40	1408.96	3.16	182.15	Pump

Valve Results at 17:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft	
300+80	966.00	6.17	19.87	TCV
BFV_103+71	2379.96	4.96	0.15	TCV
BYPASS	0.00	0.00	0.00	TCV
ISO_143+30	966.00	4.12	0.10	TCV
ISO_194+80	966.00	2.74	0.05	TCV
ISO_247+30	966.00	2.74	0.05	TCV
ISO_299+80	966.00	2.74	56.61	FCV
JAN_ALT_VALVE	966.00	6.17	5.90	TCV

OJO_ENCINO_ALT_VALVE	1408.96	2.94	1.34	TCV

Node Results at 18:00:00 hrs:

Node	Demand gpm	Head ft	Pressure psi
0+70	0.00	7307.98	6.62
103+38	0.00	7246.75	37.38
104+50	0.00	7245.93	33.16
118+65	0.00	7237.49	40.10
127+00	0.00	7232.51	32.35
130+00	0.00	7230.66	36.03
132+45	0.00	7229.26	41.47
133+35	0.00	7228.73	41.04
143+00	0.00	7222.79	62.48
143+30	0.00	7222.49	62.35
149+87	0.00	7221.23	74.12
154+80	0.00	7216.26	69.92
155+63	0.00	7219.92	59.85
157+30	0.00	7214.87	67.58
164+14	0.00	7217.99	46.52
167+80	0.00	7209.00	78.43
171+80	0.00	7206.77	84.83
176+56	0.00	7215.16	86.57
179+80	0.00	7202.30	92.21
181+30	0.00	7201.46	91.45
184+80	0.00	7199.51	94.64
187+80	0.00	7197.83	93.04
189+30	0.00	7196.99	95.63
194+80	0.00	7193.85	89.11
198+30	0.00	7191.92	90.09
201+80	0.00	7189.96	91.24
215+60	0.00	7182.26	63.37
216+80	0.00	7181.59	66.29
218+30	0.00	7180.75	64.45
218+40_DS	0.00	7387.76	120.35
218+40_US	5.00	7205.65	41.44
223+80	0.00	7177.68	72.52
226+80	0.00	7176.00	65.78
23+90	0.00	7294.15	37.63
232+80	0.00	7172.65	75.63
234+30	0.00	7171.81	75.92
243+30	0.00	7166.78	67.07
247+30	0.00	7164.48	57.66
252+30	0.00	7162.27	51.72
263+30	0.00	7156.13	25.01
266+02	0.00	7154.61	27.08
270+80	0.00	7151.94	33.73
272+80	0.00	7150.82	33.89
276+80	0.00	7374.56	139.20
278+90	0.00	7147.41	32.42
279+30	0.00	7147.19	42.29
289+80	0.00	7141.32	61.76
300+30	0.00	7078.85	25.54
315+35	0.00	7365.86	49.36
33+05	0.00	7288.69	22.32
331+15	0.00	7362.29	74.99
343+15	0.00	7359.58	80.55
355+68	0.00	7356.75	107.95
392+70	0.00	7348.39	55.69
4+00	0.00	7306.01	6.63

42+16	0.00	7283.26	51.11	
469+14	0.00	7331.12	127.80	
47+12	0.00	7280.30	39.77	
528+00	0.00	7317.83	70.82	
565+56	0.00	7309.34	10.44	
67+78	0.00	7267.98	65.34	
97+35	0.00	7250.35	33.68	
DISCHARGE_SURGE_TANK	0.00	7387.75	120.35	
SUCTION_SURGE_TANK	0.00	7205.65	41.44	
COUNSELOR_TANK	-2379.96	7308.40	-	Reservoir
JAN	966.00	7050.00	-	Reservoir
OJO-ENCINO_TANK	1408.96	7308.00	-	Reservoir

Pipe Results at 18:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft
P101	966.00	4.12	1.96
P103	966.00	4.12	7.71
P105	966.00	4.12	0.67
P107	966.00	4.12	0.84
P109	966.00	4.12	3.07
P11	2379.96	5.33	0.42
P111	966.00	4.12	1.68
P113	966.00	4.12	3.35
P115	966.00	4.12	0.84
P117	966.00	4.12	5.03
P119	966.00	4.12	2.23
P121	966.00	4.12	6.14
P123	966.00	4.12	1.52
P125	966.00	4.12	2.67
P127	966.00	4.12	1.12
P129	966.00	4.12	3.41
P13	2379.96	5.33	1.97
P131	966.00	4.12	0.22
P133	966.00	4.12	5.87
P135	966.00	4.12	5.59
P137	966.00	4.12	2.68
P139	966.00	4.12	0.28
P141	1408.96	3.16	8.71
P143	1408.96	3.16	13.29
P145	1408.96	3.16	8.48
P147	1408.96	3.16	0.00
P15	2379.96	5.33	11.87
P151	966.00	4.12	0.11
P153	0.00	0.00	0.00
P155	1413.96	3.17	0.00
P157	1408.96	3.16	13.19
P163	966.00	4.12	0.03
P165	966.00	4.12	6.23
P167	966.00	4.12	0.03
P169	966.00	4.12	1.93
P17	2379.96	5.33	5.46
P171	966.00	4.12	0.03
P173	966.00	4.12	2.21
P175	966.00	4.12	0.28
P19	2379.96	5.33	5.44
P21	2379.96	5.33	2.96
P23	2379.96	5.33	12.32
P25	2379.96	5.33	17.63
P27	2379.96	5.33	3.60

P29	2379.96	5.33	0.20
P31	2379.96	5.33	8.44
P33	2379.96	5.33	4.98
P35	2379.96	5.33	1.85
P37	2379.96	5.33	1.41
P39	2379.96	5.33	0.53
P41	2379.96	5.33	5.93
P43	1413.96	3.17	1.31
P45	1413.96	3.17	1.93
P47	1413.96	3.17	2.83
P49	1413.96	3.17	9.51
P51	1408.95	3.16	0.02
P53	1408.96	3.16	3.57
P55	1408.96	3.16	2.71
P57	1408.96	3.16	2.83
P59	1408.96	3.16	8.36
P61	1408.96	3.16	17.26
P65	1408.95	3.16	0.02
P67	1408.96	3.16	0.00
P73	1408.96	3.16	0.00
P75	2379.96	5.33	0.47
P77	0.00	0.00	0.00
P79	1413.96	3.17	1.56
P81	966.00	4.12	0.17
P83	966.00	4.12	2.23
P85	966.00	4.12	1.40
P87	966.00	4.12	5.86
P89	966.00	4.12	4.47
P91	966.00	4.12	0.84
P93	966.00	4.12	1.96
P95	966.00	4.12	1.68
P97	966.00	4.12	0.84
P99	966.00	4.12	3.07

Pump Results at 18:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft	
PS_218+40	1408.95	3.16	182.15	Pump

Valve Results at 18:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft	
300+80	966.00	6.17	19.87	TCV
BFV_103+71	2379.96	4.96	0.15	TCV
BYPASS	0.00	0.00	0.00	TCV
ISO_143+30	966.00	4.12	0.10	TCV
ISO_194+80	966.00	2.74	0.05	TCV
ISO_247+30	966.00	2.74	0.05	TCV
ISO_299+80	966.00	2.74	56.61	FCV
JAN_ALT_VALVE	966.00	6.17	5.90	TCV
OJO_ENCINO_ALT_VALVE	1408.96	2.94	1.34	TCV

Node Results at 19:00:00 hrs:

Node	Demand gpm	Head ft	Pressure psi
0+70	0.00	7307.98	6.62

103+38	0.00	7246.75	37.38
104+50	0.00	7245.93	33.16
118+65	0.00	7237.49	40.10
127+00	0.00	7232.51	32.35
130+00	0.00	7230.66	36.03
132+45	0.00	7229.26	41.47
133+35	0.00	7228.73	41.04
143+00	0.00	7222.79	62.48
143+30	0.00	7222.49	62.35
149+87	0.00	7221.23	74.12
154+80	0.00	7216.26	69.92
155+63	0.00	7219.92	59.85
157+30	0.00	7214.87	67.58
164+14	0.00	7217.99	46.52
167+80	0.00	7209.00	78.43
171+80	0.00	7206.77	84.83
176+56	0.00	7215.16	86.57
179+80	0.00	7202.30	92.21
181+30	0.00	7201.46	91.45
184+80	0.00	7199.51	94.64
187+80	0.00	7197.83	93.04
189+30	0.00	7196.99	95.63
194+80	0.00	7193.85	89.11
198+30	0.00	7191.92	90.09
201+80	0.00	7189.96	91.24
215+60	0.00	7182.26	63.37
216+80	0.00	7181.59	66.29
218+30	0.00	7180.75	64.45
218+40_DS	0.00	7387.75	120.35
218+40_US	5.00	7205.65	41.44
223+80	0.00	7177.68	72.52
226+80	0.00	7176.00	65.78
23+90	0.00	7294.15	37.63
232+80	0.00	7172.65	75.63
234+30	0.00	7171.81	75.92
243+30	0.00	7166.78	67.07
247+30	0.00	7164.48	57.66
252+30	0.00	7162.27	51.72
263+30	0.00	7156.13	25.01
266+02	0.00	7154.61	27.08
270+80	0.00	7151.94	33.73
272+80	0.00	7150.82	33.89
276+80	0.00	7374.56	139.20
278+90	0.00	7147.41	32.42
279+30	0.00	7147.19	42.29
289+80	0.00	7141.32	61.76
300+30	0.00	7078.85	25.54
315+35	0.00	7365.86	49.36
33+05	0.00	7288.69	22.32
331+15	0.00	7362.29	74.99
343+15	0.00	7359.58	80.55
355+68	0.00	7356.75	107.95
392+70	0.00	7348.39	55.69
4+00	0.00	7306.01	6.63
42+16	0.00	7283.26	51.11
469+14	0.00	7331.12	127.80
47+12	0.00	7280.30	39.77
528+00	0.00	7317.83	70.82
565+56	0.00	7309.34	10.44
67+78	0.00	7267.98	65.34
97+35	0.00	7250.35	33.68
DISCHARGE_SURGE_TANK	0.00	7387.75	120.35
SUCTION_SURGE_TANK	0.00	7205.65	41.44

COUNSELOR_TANK	-2379.96	7308.40	-	Reservoir
JAN	966.00	7050.00	-	Reservoir
OJO-ENCINO_TANK	1408.96	7308.00	-	Reservoir

Pipe Results at 19:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft
P101	966.00	4.12	1.96
P103	966.00	4.12	7.71
P105	966.00	4.12	0.67
P107	966.00	4.12	0.84
P109	966.00	4.12	3.07
P11	2379.96	5.33	0.42
P111	966.00	4.12	1.68
P113	966.00	4.12	3.35
P115	966.00	4.12	0.84
P117	966.00	4.12	5.03
P119	966.00	4.12	2.23
P121	966.00	4.12	6.14
P123	966.00	4.12	1.52
P125	966.00	4.12	2.67
P127	966.00	4.12	1.12
P129	966.00	4.12	3.41
P13	2379.96	5.33	1.97
P131	966.00	4.12	0.22
P133	966.00	4.12	5.87
P135	966.00	4.12	5.59
P137	966.00	4.12	2.68
P139	966.00	4.12	0.28
P141	1408.96	3.16	8.71
P143	1408.96	3.16	13.29
P145	1408.96	3.16	8.48
P147	1408.96	3.16	0.00
P15	2379.96	5.33	11.87
P151	966.00	4.12	0.11
P153	0.00	0.00	0.00
P155	1413.96	3.17	0.00
P157	1408.96	3.16	13.19
P163	966.00	4.12	0.03
P165	966.00	4.12	6.23
P167	966.00	4.12	0.03
P169	966.00	4.12	1.93
P17	2379.96	5.33	5.46
P171	966.00	4.12	0.03
P173	966.00	4.12	2.21
P175	966.00	4.12	0.28
P19	2379.96	5.33	5.44
P21	2379.96	5.33	2.96
P23	2379.96	5.33	12.32
P25	2379.96	5.33	17.63
P27	2379.96	5.33	3.60
P29	2379.96	5.33	0.20
P31	2379.96	5.33	8.44
P33	2379.96	5.33	4.98
P35	2379.96	5.33	1.85
P37	2379.96	5.33	1.41
P39	2379.96	5.33	0.53
P41	2379.96	5.33	5.93
P43	1413.96	3.17	1.31
P45	1413.96	3.17	1.93

P47	1413.96	3.17	2.82
P49	1413.96	3.17	9.51
P51	1408.96	3.16	0.02
P53	1408.96	3.16	3.57
P55	1408.96	3.16	2.71
P57	1408.96	3.16	2.83
P59	1408.96	3.16	8.36
P61	1408.96	3.16	17.27
P65	1408.96	3.16	0.02
P67	1408.96	3.16	0.00
P73	1408.96	3.16	0.00
P75	2379.96	5.33	0.47
P77	0.00	0.00	0.00
P79	1413.96	3.17	1.56
P81	966.00	4.12	0.17
P83	966.00	4.12	2.23
P85	966.00	4.12	1.40
P87	966.00	4.12	5.86
P89	966.00	4.12	4.47
P91	966.00	4.12	0.84
P93	966.00	4.12	1.96
P95	966.00	4.12	1.68
P97	966.00	4.12	0.84
P99	966.00	4.12	3.07

Pump Results at 19:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft	
PS_218+40	1408.96	3.16	182.15	Pump

Valve Results at 19:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft	
300+80	966.00	6.17	19.87	TCV
BFV_103+71	2379.96	4.96	0.15	TCV
BYPASS	0.00	0.00	0.00	TCV
ISO_143+30	966.00	4.12	0.11	TCV
ISO_194+80	966.00	2.74	0.05	TCV
ISO_247+30	966.00	2.74	0.05	TCV
ISO_299+80	966.00	2.74	56.61	FCV
JAN_ALT_VALVE	966.00	6.17	5.90	TCV
OJO_ENCINO_ALT_VALVE	1408.96	2.94	1.34	TCV

Node Results at 20:00:00 hrs:

Node	Demand gpm	Head ft	Pressure psi
0+70	0.00	7307.98	6.62
103+38	0.00	7246.75	37.38
104+50	0.00	7245.93	33.16
118+65	0.00	7237.49	40.10
127+00	0.00	7232.51	32.35
130+00	0.00	7230.66	36.03
132+45	0.00	7229.26	41.47
133+35	0.00	7228.73	41.04
143+00	0.00	7222.79	62.48
143+30	0.00	7222.49	62.35

149+87	0.00	7221.23	74.12	
154+80	0.00	7216.26	69.92	
155+63	0.00	7219.92	59.85	
157+30	0.00	7214.87	67.58	
164+14	0.00	7217.99	46.52	
167+80	0.00	7209.00	78.43	
171+80	0.00	7206.77	84.83	
176+56	0.00	7215.16	86.57	
179+80	0.00	7202.30	92.21	
181+30	0.00	7201.46	91.45	
184+80	0.00	7199.51	94.64	
187+80	0.00	7197.83	93.04	
189+30	0.00	7196.99	95.63	
194+80	0.00	7193.85	89.11	
198+30	0.00	7191.92	90.09	
201+80	0.00	7189.96	91.24	
215+60	0.00	7182.26	63.37	
216+80	0.00	7181.59	66.29	
218+30	0.00	7180.75	64.45	
218+40_DS	0.00	7387.75	120.35	
218+40_US	5.00	7205.65	41.44	
223+80	0.00	7177.68	72.52	
226+80	0.00	7176.00	65.77	
23+90	0.00	7294.15	37.63	
232+80	0.00	7172.65	75.63	
234+30	0.00	7171.81	75.92	
243+30	0.00	7166.78	67.07	
247+30	0.00	7164.48	57.66	
252+30	0.00	7162.27	51.72	
263+30	0.00	7156.13	25.01	
266+02	0.00	7154.60	27.08	
270+80	0.00	7151.94	33.73	
272+80	0.00	7150.82	33.89	
276+80	0.00	7374.56	139.20	
278+90	0.00	7147.41	32.42	
279+30	0.00	7147.19	42.28	
289+80	0.00	7141.32	61.76	
300+30	0.00	7078.85	25.54	
315+35	0.00	7365.85	49.36	
33+05	0.00	7288.69	22.32	
331+15	0.00	7362.29	74.99	
343+15	0.00	7359.57	80.55	
355+68	0.00	7356.75	107.95	
392+70	0.00	7348.38	55.69	
4+00	0.00	7306.01	6.63	
42+16	0.00	7283.26	51.11	
469+14	0.00	7331.12	127.80	
47+12	0.00	7280.30	39.77	
528+00	0.00	7317.83	70.82	
565+56	0.00	7309.34	10.44	
67+78	0.00	7267.98	65.34	
97+35	0.00	7250.35	33.68	
DISCHARGE_SURGE_TANK	0.00	7387.75	120.35	
SUCTION_SURGE_TANK	0.00	7205.65	41.44	
COUNSELOR_TANK	-2379.97	7308.40	-	Reservoir
JAN	966.00	7050.00	-	Reservoir
OJO-ENCINO_TANK	1408.95	7308.00	-	Reservoir

Pipe Results at 20:00:00 hrs:

	Flow	Velocity	Headloss
Link	gpm	fps	/1000ft

P101	966.00	4.12	1.96
P103	966.00	4.12	7.71
P105	966.00	4.12	0.67
P107	966.00	4.12	0.84
P109	966.00	4.12	3.07
P11	2379.97	5.33	0.42
P111	966.00	4.12	1.68
P113	966.00	4.12	3.35
P115	966.00	4.12	0.84
P117	966.00	4.12	5.03
P119	966.00	4.12	2.23
P121	966.00	4.12	6.14
P123	966.00	4.12	1.52
P125	966.00	4.12	2.67
P127	966.00	4.12	1.12
P129	966.00	4.12	3.41
P13	2379.97	5.33	1.97
P131	966.00	4.12	0.22
P133	966.00	4.12	5.86
P135	966.00	4.12	5.59
P137	966.00	4.12	2.68
P139	966.00	4.12	0.28
P141	1408.95	3.16	8.71
P143	1408.95	3.16	13.29
P145	1408.95	3.16	8.48
P147	1408.95	3.16	0.00
P15	2379.97	5.33	11.87
P151	966.00	4.12	0.11
P153	0.00	0.00	0.00
P155	1413.96	3.17	0.00
P157	1408.95	3.16	13.19
P163	966.00	4.12	0.03
P165	966.00	4.12	6.23
P167	966.00	4.12	0.03
P169	966.00	4.12	1.93
P17	2379.97	5.33	5.46
P171	966.00	4.12	0.03
P173	966.00	4.12	2.21
P175	966.00	4.12	0.28
P19	2379.97	5.33	5.43
P21	2379.97	5.33	2.96
P23	2379.97	5.33	12.32
P25	2379.97	5.33	17.63
P27	2379.97	5.33	3.60
P29	2379.97	5.33	0.20
P31	2379.97	5.33	8.44
P33	2379.97	5.33	4.98
P35	2379.97	5.33	1.85
P37	2379.97	5.33	1.41
P39	2379.97	5.33	0.53
P41	2379.97	5.33	5.93
P43	1413.96	3.17	1.31
P45	1413.96	3.17	1.93
P47	1413.96	3.17	2.82
P49	1413.96	3.17	9.51
P51	1408.96	3.16	0.02
P53	1408.95	3.16	3.57
P55	1408.95	3.16	2.71
P57	1408.95	3.16	2.83
P59	1408.95	3.16	8.36
P61	1408.95	3.16	17.26
P65	1408.96	3.16	0.02

P67	1408.95	3.16	0.00
P73	1408.95	3.16	0.00
P75	2379.97	5.33	0.47
P77	0.00	0.00	0.00
P79	1413.96	3.17	1.56
P81	966.00	4.12	0.17
P83	966.00	4.12	2.23
P85	966.00	4.12	1.40
P87	966.00	4.12	5.86
P89	966.00	4.12	4.47
P91	966.00	4.12	0.84
P93	966.00	4.12	1.95
P95	966.00	4.12	1.68
P97	966.00	4.12	0.84
P99	966.00	4.12	3.07

Pump Results at 20:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft	
PS_218+40	1408.96	3.16	182.15	Pump

Valve Results at 20:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft	
300+80	966.00	6.17	19.87	TCV
BFV_103+71	2379.97	4.96	0.15	TCV
BYPASS	0.00	0.00	0.00	TCV
ISO_143+30	966.00	4.12	0.11	TCV
ISO_194+80	966.00	2.74	0.05	TCV
ISO_247+30	966.00	2.74	0.05	TCV
ISO_299+80	966.00	2.74	56.61	FCV
JAN_ALT_VALVE	966.00	6.17	5.90	TCV
OJO_ENCINO_ALT_VALVE	1408.95	2.94	1.34	TCV

Node Results at 21:00:00 hrs:

Node	Demand gpm	Head ft	Pressure psi
0+70	0.00	7307.98	6.62
103+38	0.00	7246.75	37.38
104+50	0.00	7245.93	33.16
118+65	0.00	7237.49	40.10
127+00	0.00	7232.51	32.35
130+00	0.00	7230.66	36.03
132+45	0.00	7229.26	41.47
133+35	0.00	7228.73	41.04
143+00	0.00	7222.79	62.48
143+30	0.00	7222.49	62.35
149+87	0.00	7221.23	74.12
154+80	0.00	7216.26	69.92
155+63	0.00	7219.92	59.85
157+30	0.00	7214.87	67.58
164+14	0.00	7217.99	46.52
167+80	0.00	7209.00	78.43
171+80	0.00	7206.77	84.83
176+56	0.00	7215.16	86.57
179+80	0.00	7202.30	92.21

181+30	0.00	7201.46	91.45	
184+80	0.00	7199.51	94.64	
187+80	0.00	7197.83	93.04	
189+30	0.00	7196.99	95.63	
194+80	0.00	7193.85	89.11	
198+30	0.00	7191.92	90.09	
201+80	0.00	7189.96	91.24	
215+60	0.00	7182.26	63.37	
216+80	0.00	7181.59	66.29	
218+30	0.00	7180.75	64.45	
218+40_DS	0.00	7387.76	120.35	
218+40_US	5.00	7205.65	41.44	
223+80	0.00	7177.68	72.52	
226+80	0.00	7176.00	65.78	
23+90	0.00	7294.15	37.63	
232+80	0.00	7172.65	75.63	
234+30	0.00	7171.81	75.92	
243+30	0.00	7166.78	67.07	
247+30	0.00	7164.48	57.66	
252+30	0.00	7162.27	51.72	
263+30	0.00	7156.13	25.01	
266+02	0.00	7154.61	27.08	
270+80	0.00	7151.94	33.73	
272+80	0.00	7150.82	33.89	
276+80	0.00	7374.56	139.20	
278+90	0.00	7147.41	32.42	
279+30	0.00	7147.19	42.29	
289+80	0.00	7141.32	61.76	
300+30	0.00	7078.85	25.54	
315+35	0.00	7365.86	49.36	
33+05	0.00	7288.69	22.32	
331+15	0.00	7362.29	74.99	
343+15	0.00	7359.58	80.55	
355+68	0.00	7356.75	107.95	
392+70	0.00	7348.39	55.69	
4+00	0.00	7306.01	6.63	
42+16	0.00	7283.26	51.11	
469+14	0.00	7331.12	127.80	
47+12	0.00	7280.30	39.77	
528+00	0.00	7317.83	70.82	
565+56	0.00	7309.34	10.44	
67+78	0.00	7267.98	65.34	
97+35	0.00	7250.35	33.68	
DISCHARGE_SURGE_TANK	0.00	7387.75	120.35	
SUCTION_SURGE_TANK	0.00	7205.65	41.44	
COUNSELOR_TANK	-2379.96	7308.40	-	Reservoir
JAN	966.00	7050.00	-	Reservoir
OJO-ENCINO_TANK	1408.96	7308.00	-	Reservoir

Pipe Results at 21:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft
P101	966.00	4.12	1.95
P103	966.00	4.12	7.71
P105	966.00	4.12	0.67
P107	966.00	4.12	0.84
P109	966.00	4.12	3.07
P11	2379.96	5.33	0.42
P111	966.00	4.12	1.68
P113	966.00	4.12	3.35

P115	966.00	4.12	0.84
P117	966.00	4.12	5.03
P119	966.00	4.12	2.23
P121	966.00	4.12	6.14
P123	966.00	4.12	1.52
P125	966.00	4.12	2.67
P127	966.00	4.12	1.12
P129	966.00	4.12	3.41
P13	2379.96	5.33	1.97
P131	966.00	4.12	0.22
P133	966.00	4.12	5.86
P135	966.00	4.12	5.59
P137	966.00	4.12	2.68
P139	966.00	4.12	0.28
P141	1408.96	3.16	8.71
P143	1408.96	3.16	13.29
P145	1408.96	3.16	8.48
P147	1408.96	3.16	0.00
P15	2379.96	5.33	11.87
P151	966.00	4.12	0.11
P153	0.00	0.00	0.00
P155	1413.96	3.17	0.00
P157	1408.96	3.16	13.19
P163	966.00	4.12	0.03
P165	966.00	4.12	6.23
P167	966.00	4.12	0.03
P169	966.00	4.12	1.93
P17	2379.96	5.33	5.46
P171	966.00	4.12	0.03
P173	966.00	4.12	2.21
P175	966.00	4.12	0.28
P19	2379.96	5.33	5.44
P21	2379.96	5.33	2.96
P23	2379.96	5.33	12.32
P25	2379.96	5.33	17.63
P27	2379.96	5.33	3.60
P29	2379.96	5.33	0.20
P31	2379.96	5.33	8.44
P33	2379.96	5.33	4.98
P35	2379.96	5.33	1.85
P37	2379.96	5.33	1.41
P39	2379.96	5.33	0.53
P41	2379.96	5.33	5.93
P43	1413.96	3.17	1.31
P45	1413.96	3.17	1.93
P47	1413.96	3.17	2.82
P49	1413.96	3.17	9.51
P51	1408.96	3.16	0.02
P53	1408.96	3.16	3.57
P55	1408.96	3.16	2.71
P57	1408.96	3.16	2.83
P59	1408.96	3.16	8.36
P61	1408.96	3.16	17.26
P65	1408.96	3.16	0.02
P67	1408.96	3.16	0.00
P73	1408.96	3.16	0.00
P75	2379.96	5.33	0.47
P77	0.00	0.00	0.00
P79	1413.96	3.17	1.56
P81	966.00	4.12	0.17
P83	966.00	4.12	2.23
P85	966.00	4.12	1.40
P87	966.00	4.12	5.87

P89	966.00	4.12	4.47
P91	966.00	4.12	0.84
P93	966.00	4.12	1.95
P95	966.00	4.12	1.68
P97	966.00	4.12	0.84
P99	966.00	4.12	3.07

Pump Results at 21:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft	
PS_218+40	1408.96	3.16	182.15	Pump

Valve Results at 21:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft	
300+80	966.00	6.17	19.87	TCV
BFV_103+71	2379.96	4.96	0.15	TCV
BYPASS	0.00	0.00	0.00	TCV
ISO_143+30	966.00	4.12	0.11	TCV
ISO_194+80	966.00	2.74	0.05	TCV
ISO_247+30	966.00	2.74	0.05	TCV
ISO_299+80	966.00	2.74	56.61	FCV
JAN_ALT_VALVE	966.00	6.17	5.90	TCV
OJO_ENCINO_ALT_VALVE	1408.96	2.94	1.34	TCV

Node Results at 22:00:00 hrs:

Node	Demand gpm	Head ft	Pressure psi
0+70	0.00	7307.98	6.62
103+38	0.00	7246.75	37.38
104+50	0.00	7245.93	33.16
118+65	0.00	7237.49	40.10
127+00	0.00	7232.51	32.35
130+00	0.00	7230.66	36.03
132+45	0.00	7229.26	41.47
133+35	0.00	7228.73	41.04
143+00	0.00	7222.79	62.48
143+30	0.00	7222.49	62.35
149+87	0.00	7221.23	74.12
154+80	0.00	7216.26	69.92
155+63	0.00	7219.92	59.85
157+30	0.00	7214.87	67.58
164+14	0.00	7217.99	46.52
167+80	0.00	7209.00	78.43
171+80	0.00	7206.77	84.83
176+56	0.00	7215.16	86.57
179+80	0.00	7202.30	92.21
181+30	0.00	7201.46	91.45
184+80	0.00	7199.51	94.64
187+80	0.00	7197.83	93.04
189+30	0.00	7196.99	95.63
194+80	0.00	7193.85	89.11
198+30	0.00	7191.92	90.09
201+80	0.00	7189.96	91.24
215+60	0.00	7182.26	63.37
216+80	0.00	7181.59	66.29

218+30	0.00	7180.75	64.45	
218+40_DS	0.00	7387.75	120.35	
218+40_US	5.00	7205.65	41.44	
223+80	0.00	7177.68	72.52	
226+80	0.00	7176.00	65.78	
23+90	0.00	7294.15	37.63	
232+80	0.00	7172.65	75.63	
234+30	0.00	7171.81	75.92	
243+30	0.00	7166.78	67.07	
247+30	0.00	7164.48	57.66	
252+30	0.00	7162.27	51.72	
263+30	0.00	7156.13	25.01	
266+02	0.00	7154.60	27.08	
270+80	0.00	7151.94	33.73	
272+80	0.00	7150.82	33.89	
276+80	0.00	7374.56	139.20	
278+90	0.00	7147.41	32.42	
279+30	0.00	7147.19	42.28	
289+80	0.00	7141.32	61.76	
300+30	0.00	7078.85	25.54	
315+35	0.00	7365.86	49.36	
33+05	0.00	7288.69	22.32	
331+15	0.00	7362.29	74.99	
343+15	0.00	7359.57	80.55	
355+68	0.00	7356.75	107.95	
392+70	0.00	7348.38	55.69	
4+00	0.00	7306.01	6.63	
42+16	0.00	7283.26	51.11	
469+14	0.00	7331.12	127.80	
47+12	0.00	7280.30	39.77	
528+00	0.00	7317.83	70.82	
565+56	0.00	7309.34	10.44	
67+78	0.00	7267.98	65.34	
97+35	0.00	7250.35	33.68	
DISCHARGE_SURGE_TANK	0.00	7387.75	120.35	
SUCTION_SURGE_TANK	0.00	7205.65	41.44	
COUNSELOR_TANK	-2379.96	7308.40	-	Reservoir
JAN	966.00	7050.00	-	Reservoir
OJO-ENCINO_TANK	1408.96	7308.00	-	Reservoir

Pipe Results at 22:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft
P101	966.00	4.12	1.96
P103	966.00	4.12	7.71
P105	966.00	4.12	0.67
P107	966.00	4.12	0.84
P109	966.00	4.12	3.07
P11	2379.96	5.33	0.42
P111	966.00	4.12	1.68
P113	966.00	4.12	3.35
P115	966.00	4.12	0.84
P117	966.00	4.12	5.03
P119	966.00	4.12	2.23
P121	966.00	4.12	6.14
P123	966.00	4.12	1.52
P125	966.00	4.12	2.67
P127	966.00	4.12	1.12
P129	966.00	4.12	3.41
P13	2379.96	5.33	1.97

P131	966.00	4.12	0.22
P133	966.00	4.12	5.86
P135	966.00	4.12	5.59
P137	966.00	4.12	2.68
P139	966.00	4.12	0.28
P141	1408.96	3.16	8.71
P143	1408.96	3.16	13.29
P145	1408.96	3.16	8.48
P147	1408.96	3.16	0.00
P15	2379.96	5.33	11.87
P151	966.00	4.12	0.11
P153	0.00	0.00	0.00
P155	1413.96	3.17	0.00
P157	1408.96	3.16	13.19
P163	966.00	4.12	0.03
P165	966.00	4.12	6.23
P167	966.00	4.12	0.03
P169	966.00	4.12	1.93
P17	2379.96	5.33	5.46
P171	966.00	4.12	0.03
P173	966.00	4.12	2.21
P175	966.00	4.12	0.28
P19	2379.96	5.33	5.44
P21	2379.96	5.33	2.96
P23	2379.96	5.33	12.32
P25	2379.96	5.33	17.63
P27	2379.96	5.33	3.60
P29	2379.96	5.33	0.20
P31	2379.96	5.33	8.44
P33	2379.96	5.33	4.98
P35	2379.96	5.33	1.85
P37	2379.96	5.33	1.41
P39	2379.96	5.33	0.53
P41	2379.96	5.33	5.93
P43	1413.96	3.17	1.31
P45	1413.96	3.17	1.93
P47	1413.96	3.17	2.82
P49	1413.96	3.17	9.51
P51	1408.96	3.16	0.02
P53	1408.96	3.16	3.57
P55	1408.96	3.16	2.71
P57	1408.96	3.16	2.83
P59	1408.96	3.16	8.36
P61	1408.96	3.16	17.26
P65	1408.96	3.16	0.02
P67	1408.96	3.16	0.00
P73	1408.96	3.16	0.00
P75	2379.96	5.33	0.47
P77	0.00	0.00	0.00
P79	1413.96	3.17	1.56
P81	966.00	4.12	0.17
P83	966.00	4.12	2.23
P85	966.00	4.12	1.40
P87	966.00	4.12	5.86
P89	966.00	4.12	4.47
P91	966.00	4.12	0.84
P93	966.00	4.12	1.96
P95	966.00	4.12	1.68
P97	966.00	4.12	0.84
P99	966.00	4.12	3.07

Pump Results at 22:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft	
PS_218+40	1408.96	3.16	182.15	Pump

Valve Results at 22:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft	
300+80	966.00	6.17	19.87	TCV
BFV_103+71	2379.96	4.96	0.15	TCV
BYPASS	0.00	0.00	0.00	TCV
ISO_143+30	966.00	4.12	0.10	TCV
ISO_194+80	966.00	2.74	0.05	TCV
ISO_247+30	966.00	2.74	0.05	TCV
ISO_299+80	966.00	2.74	56.61	FCV
JAN_ALT_VALVE	966.00	6.17	5.90	TCV
OJO_ENCINO_ALT_VALVE	1408.96	2.94	1.34	TCV

Node Results at 23:00:00 hrs:

Node	Demand gpm	Head ft	Pressure psi
0+70	0.00	7307.98	6.62
103+38	0.00	7246.75	37.38
104+50	0.00	7245.93	33.16
118+65	0.00	7237.49	40.10
127+00	0.00	7232.51	32.35
130+00	0.00	7230.66	36.03
132+45	0.00	7229.26	41.47
133+35	0.00	7228.73	41.04
143+00	0.00	7222.79	62.48
143+30	0.00	7222.49	62.35
149+87	0.00	7221.23	74.12
154+80	0.00	7216.26	69.92
155+63	0.00	7219.92	59.85
157+30	0.00	7214.87	67.58
164+14	0.00	7217.99	46.52
167+80	0.00	7209.00	78.43
171+80	0.00	7206.77	84.83
176+56	0.00	7215.16	86.57
179+80	0.00	7202.30	92.21
181+30	0.00	7201.46	91.45
184+80	0.00	7199.51	94.64
187+80	0.00	7197.83	93.04
189+30	0.00	7196.99	95.63
194+80	0.00	7193.85	89.11
198+30	0.00	7191.92	90.09
201+80	0.00	7189.96	91.24
215+60	0.00	7182.26	63.37
216+80	0.00	7181.59	66.29
218+30	0.00	7180.75	64.45
218+40_DS	0.00	7387.76	120.35
218+40_US	5.00	7205.65	41.44
223+80	0.00	7177.68	72.52
226+80	0.00	7176.00	65.78
23+90	0.00	7294.15	37.63
232+80	0.00	7172.65	75.63
234+30	0.00	7171.81	75.92
243+30	0.00	7166.78	67.07

247+30	0.00	7164.48	57.66	
252+30	0.00	7162.27	51.72	
263+30	0.00	7156.13	25.01	
266+02	0.00	7154.61	27.08	
270+80	0.00	7151.94	33.73	
272+80	0.00	7150.82	33.89	
276+80	0.00	7374.56	139.20	
278+90	0.00	7147.41	32.42	
279+30	0.00	7147.19	42.29	
289+80	0.00	7141.32	61.76	
300+30	0.00	7078.85	25.54	
315+35	0.00	7365.86	49.36	
33+05	0.00	7288.69	22.32	
331+15	0.00	7362.29	74.99	
343+15	0.00	7359.58	80.55	
355+68	0.00	7356.75	107.95	
392+70	0.00	7348.39	55.69	
4+00	0.00	7306.01	6.63	
42+16	0.00	7283.26	51.11	
469+14	0.00	7331.12	127.80	
47+12	0.00	7280.30	39.77	
528+00	0.00	7317.83	70.82	
565+56	0.00	7309.34	10.44	
67+78	0.00	7267.98	65.34	
97+35	0.00	7250.35	33.68	
DISCHARGE_SURGE_TANK	0.00	7387.75	120.35	
SUCTION_SURGE_TANK	0.00	7205.65	41.44	
COUNSELOR_TANK	-2379.96	7308.40	-	Reservoir
JAN	966.00	7050.00	-	Reservoir
OJO-ENCINO_TANK	1408.96	7308.00	-	Reservoir

Pipe Results at 23:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft
P101	966.00	4.12	1.96
P103	966.00	4.12	7.71
P105	966.00	4.12	0.67
P107	966.00	4.12	0.84
P109	966.00	4.12	3.07
P11	2379.96	5.33	0.42
P111	966.00	4.12	1.68
P113	966.00	4.12	3.35
P115	966.00	4.12	0.84
P117	966.00	4.12	5.03
P119	966.00	4.12	2.23
P121	966.00	4.12	6.14
P123	966.00	4.12	1.52
P125	966.00	4.12	2.67
P127	966.00	4.12	1.12
P129	966.00	4.12	3.41
P13	2379.96	5.33	1.97
P131	966.00	4.12	0.22
P133	966.00	4.12	5.86
P135	966.00	4.12	5.59
P137	966.00	4.12	2.68
P139	966.00	4.12	0.28
P141	1408.96	3.16	8.71
P143	1408.96	3.16	13.29
P145	1408.96	3.16	8.48
P147	1408.96	3.16	0.00

P15	2379.96	5.33	11.87
P151	966.00	4.12	0.11
P153	0.00	0.00	0.00
P155	1413.96	3.17	0.00
P157	1408.96	3.16	13.19
P163	966.00	4.12	0.03
P165	966.00	4.12	6.23
P167	966.00	4.12	0.03
P169	966.00	4.12	1.93
P17	2379.96	5.33	5.46
P171	966.00	4.12	0.03
P173	966.00	4.12	2.21
P175	966.00	4.12	0.28
P19	2379.96	5.33	5.44
P21	2379.96	5.33	2.96
P23	2379.96	5.33	12.32
P25	2379.96	5.33	17.63
P27	2379.96	5.33	3.60
P29	2379.96	5.33	0.20
P31	2379.96	5.33	8.44
P33	2379.96	5.33	4.98
P35	2379.96	5.33	1.85
P37	2379.96	5.33	1.41
P39	2379.96	5.33	0.53
P41	2379.96	5.33	5.93
P43	1413.96	3.17	1.31
P45	1413.96	3.17	1.93
P47	1413.96	3.17	2.82
P49	1413.96	3.17	9.51
P51	1408.95	3.16	0.02
P53	1408.96	3.16	3.57
P55	1408.96	3.16	2.71
P57	1408.96	3.16	2.83
P59	1408.96	3.16	8.36
P61	1408.96	3.16	17.26
P65	1408.95	3.16	0.02
P67	1408.96	3.16	0.00
P73	1408.96	3.16	0.00
P75	2379.96	5.33	0.47
P77	0.00	0.00	0.00
P79	1413.96	3.17	1.56
P81	966.00	4.12	0.17
P83	966.00	4.12	2.23
P85	966.00	4.12	1.40
P87	966.00	4.12	5.86
P89	966.00	4.12	4.47
P91	966.00	4.12	0.84
P93	966.00	4.12	1.95
P95	966.00	4.12	1.68
P97	966.00	4.12	0.84
P99	966.00	4.12	3.07

Pump Results at 23:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft	
PS_218+40	1408.95	3.16	182.15	Pump

Valve Results at 23:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft

300+80	966.00	6.17	19.87	TCV
BFV_103+71	2379.96	4.96	0.15	TCV
BYPASS	0.00	0.00	0.00	TCV
ISO_143+30	966.00	4.12	0.11	TCV
ISO_194+80	966.00	2.74	0.05	TCV
ISO_247+30	966.00	2.74	0.05	TCV
ISO_299+80	966.00	2.74	56.61	FCV
JAN_ALT_VALVE	966.00	6.17	5.90	TCV
OJO_ENCINO_ALT_VALVE	1408.96	2.94	1.34	TCV

Node Results at 24:00:00 hrs:

Node	Demand gpm	Head ft	Pressure psi
0+70	0.00	7307.98	6.62
103+38	0.00	7246.75	37.38
104+50	0.00	7245.93	33.16
118+65	0.00	7237.49	40.10
127+00	0.00	7232.51	32.35
130+00	0.00	7230.66	36.03
132+45	0.00	7229.26	41.47
133+35	0.00	7228.73	41.04
143+00	0.00	7222.79	62.48
143+30	0.00	7222.49	62.35
149+87	0.00	7221.23	74.12
154+80	0.00	7216.26	69.92
155+63	0.00	7219.92	59.85
157+30	0.00	7214.87	67.58
164+14	0.00	7217.99	46.52
167+80	0.00	7209.00	78.43
171+80	0.00	7206.77	84.83
176+56	0.00	7215.16	86.57
179+80	0.00	7202.30	92.21
181+30	0.00	7201.46	91.45
184+80	0.00	7199.51	94.64
187+80	0.00	7197.83	93.04
189+30	0.00	7196.99	95.63
194+80	0.00	7193.85	89.11
198+30	0.00	7191.92	90.09
201+80	0.00	7189.96	91.24
215+60	0.00	7182.26	63.37
216+80	0.00	7181.59	66.29
218+30	0.00	7180.75	64.45
218+40_DS	0.00	7387.75	120.35
218+40_US	5.00	7205.65	41.44
223+80	0.00	7177.68	72.52
226+80	0.00	7176.00	65.78
23+90	0.00	7294.15	37.63
232+80	0.00	7172.65	75.63
234+30	0.00	7171.81	75.92
243+30	0.00	7166.78	67.07
247+30	0.00	7164.48	57.66
252+30	0.00	7162.27	51.72
263+30	0.00	7156.13	25.01
266+02	0.00	7154.61	27.08
270+80	0.00	7151.94	33.73
272+80	0.00	7150.82	33.89
276+80	0.00	7374.56	139.20
278+90	0.00	7147.41	32.42
279+30	0.00	7147.19	42.28

289+80	0.00	7141.32	61.76	
300+30	0.00	7078.85	25.54	
315+35	0.00	7365.85	49.36	
33+05	0.00	7288.69	22.32	
331+15	0.00	7362.29	74.99	
343+15	0.00	7359.57	80.55	
355+68	0.00	7356.75	107.95	
392+70	0.00	7348.38	55.69	
4+00	0.00	7306.01	6.63	
42+16	0.00	7283.26	51.11	
469+14	0.00	7331.12	127.80	
47+12	0.00	7280.30	39.77	
528+00	0.00	7317.83	70.82	
565+56	0.00	7309.34	10.44	
67+78	0.00	7267.98	65.34	
97+35	0.00	7250.35	33.68	
DISCHARGE_SURGE_TANK	0.00	7387.75	120.35	
SUCTION_SURGE_TANK	0.00	7205.65	41.44	
COUNSELOR_TANK	-2379.96	7308.40	-	Reservoir
JAN	966.00	7050.00	-	Reservoir
OJO-ENCINO_TANK	1408.95	7308.00	-	Reservoir

Pipe Results at 24:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft
P101	966.00	4.12	1.96
P103	966.00	4.12	7.71
P105	966.00	4.12	0.67
P107	966.00	4.12	0.84
P109	966.00	4.12	3.07
P11	2379.96	5.33	0.42
P111	966.00	4.12	1.68
P113	966.00	4.12	3.35
P115	966.00	4.12	0.84
P117	966.00	4.12	5.03
P119	966.00	4.12	2.23
P121	966.00	4.12	6.14
P123	966.00	4.12	1.52
P125	966.00	4.12	2.67
P127	966.00	4.12	1.12
P129	966.00	4.12	3.41
P13	2379.96	5.33	1.97
P131	966.00	4.12	0.22
P133	966.00	4.12	5.86
P135	966.00	4.12	5.59
P137	966.00	4.12	2.68
P139	966.00	4.12	0.28
P141	1408.95	3.16	8.71
P143	1408.95	3.16	13.29
P145	1408.95	3.16	8.48
P147	1408.95	3.16	0.00
P15	2379.96	5.33	11.87
P151	966.00	4.12	0.11
P153	0.00	0.00	0.00
P155	1413.96	3.17	0.00
P157	1408.95	3.16	13.19
P163	966.00	4.12	0.03
P165	966.00	4.12	6.23
P167	966.00	4.12	0.03
P169	966.00	4.12	1.93

P17	2379.96	5.33	5.46
P171	966.00	4.12	0.03
P173	966.00	4.12	2.21
P175	966.00	4.12	0.28
P19	2379.96	5.33	5.44
P21	2379.96	5.33	2.96
P23	2379.96	5.33	12.32
P25	2379.96	5.33	17.63
P27	2379.96	5.33	3.60
P29	2379.96	5.33	0.20
P31	2379.96	5.33	8.44
P33	2379.96	5.33	4.98
P35	2379.96	5.33	1.85
P37	2379.96	5.33	1.41
P39	2379.96	5.33	0.53
P41	2379.96	5.33	5.93
P43	1413.96	3.17	1.31
P45	1413.96	3.17	1.93
P47	1413.96	3.17	2.83
P49	1413.96	3.17	9.51
P51	1408.96	3.16	0.02
P53	1408.95	3.16	3.57
P55	1408.95	3.16	2.71
P57	1408.95	3.16	2.83
P59	1408.95	3.16	8.36
P61	1408.95	3.16	17.26
P65	1408.96	3.16	0.02
P67	1408.95	3.16	0.00
P73	1408.95	3.16	0.00
P75	2379.96	5.33	0.47
P77	0.00	0.00	0.00
P79	1413.96	3.17	1.56
P81	966.00	4.12	0.17
P83	966.00	4.12	2.23
P85	966.00	4.12	1.40
P87	966.00	4.12	5.86
P89	966.00	4.12	4.47
P91	966.00	4.12	0.84
P93	966.00	4.12	1.96
P95	966.00	4.12	1.68
P97	966.00	4.12	0.84
P99	966.00	4.12	3.07

Pump Results at 24:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft	
PS_218+40	1408.96	3.16	182.15	Pump

Valve Results at 24:00:00 hrs:

Link	Flow gpm	Velocity fps	Headloss /1000ft	
300+80	966.00	6.17	19.87	TCV
BFV_103+71	2379.96	4.96	0.15	TCV
BYPASS	0.00	0.00	0.00	TCV
ISO_143+30	966.00	4.12	0.10	TCV
ISO_194+80	966.00	2.74	0.05	TCV
ISO_247+30	966.00	2.74	0.05	TCV
ISO_299+80	966.00	2.74	56.61	FCV
JAN_ALT_VALVE	966.00	6.17	5.90	TCV

OJO_ENCINO_ALT_VALVE	1408.95	2.94	1.34	TCV

Analysis ended Tue Dec 16 13:14:16 2014

Attachment 3 – Exhibits

Notes for the figures:

- For each exhibit, Graph A is showing the profile from Counselor to Ojo Tank, and Graph B is showing the profile from Counselor Tank to JAN Tank.
- Stationing for the JAN alignment is from the Counselor Tank.
- The green line labeled ‘Head’ in the legend represents the system steady state initial conditions.

Exhibit 1.1a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Unprotected Scenario: JAN altitude valve sudden open during pump ramp up)

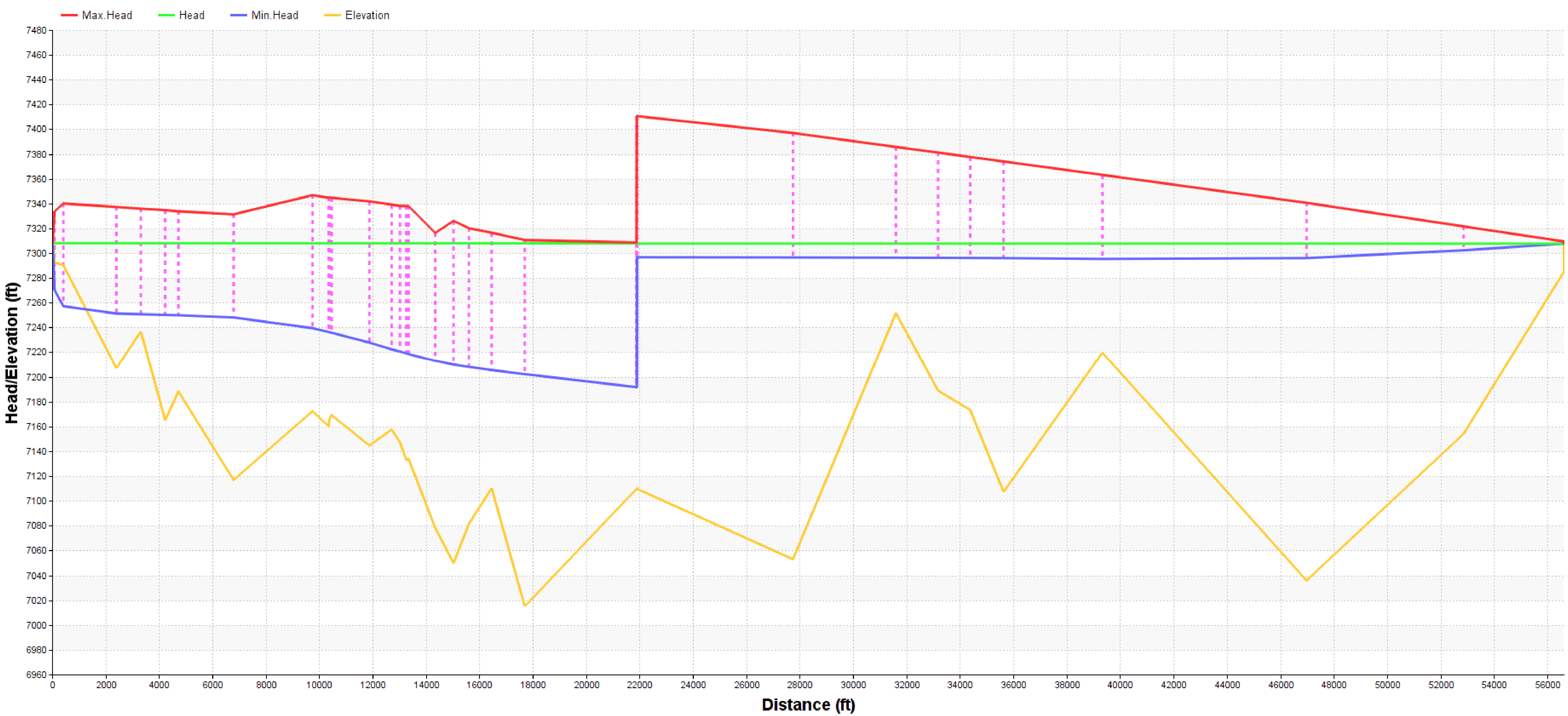


Exhibit 1.1b Surge Head Profile from Counselor Tank to JAN Tank (Unprotected Scenario: JAN altitude valve sudden open during pump ramp up)

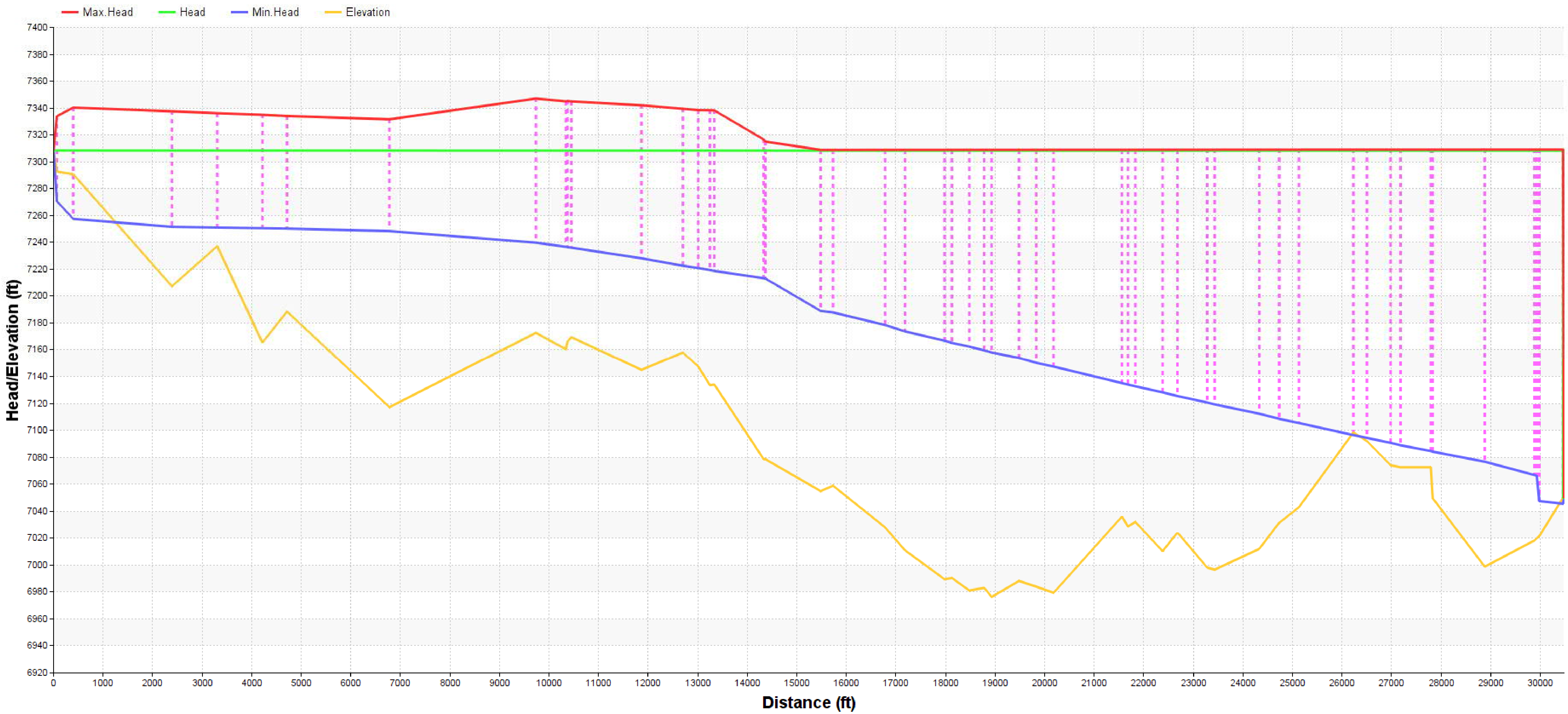


Exhibit 1.2a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Unprotected Scenario: JAN altitude valve sudden close during pump ramp down)

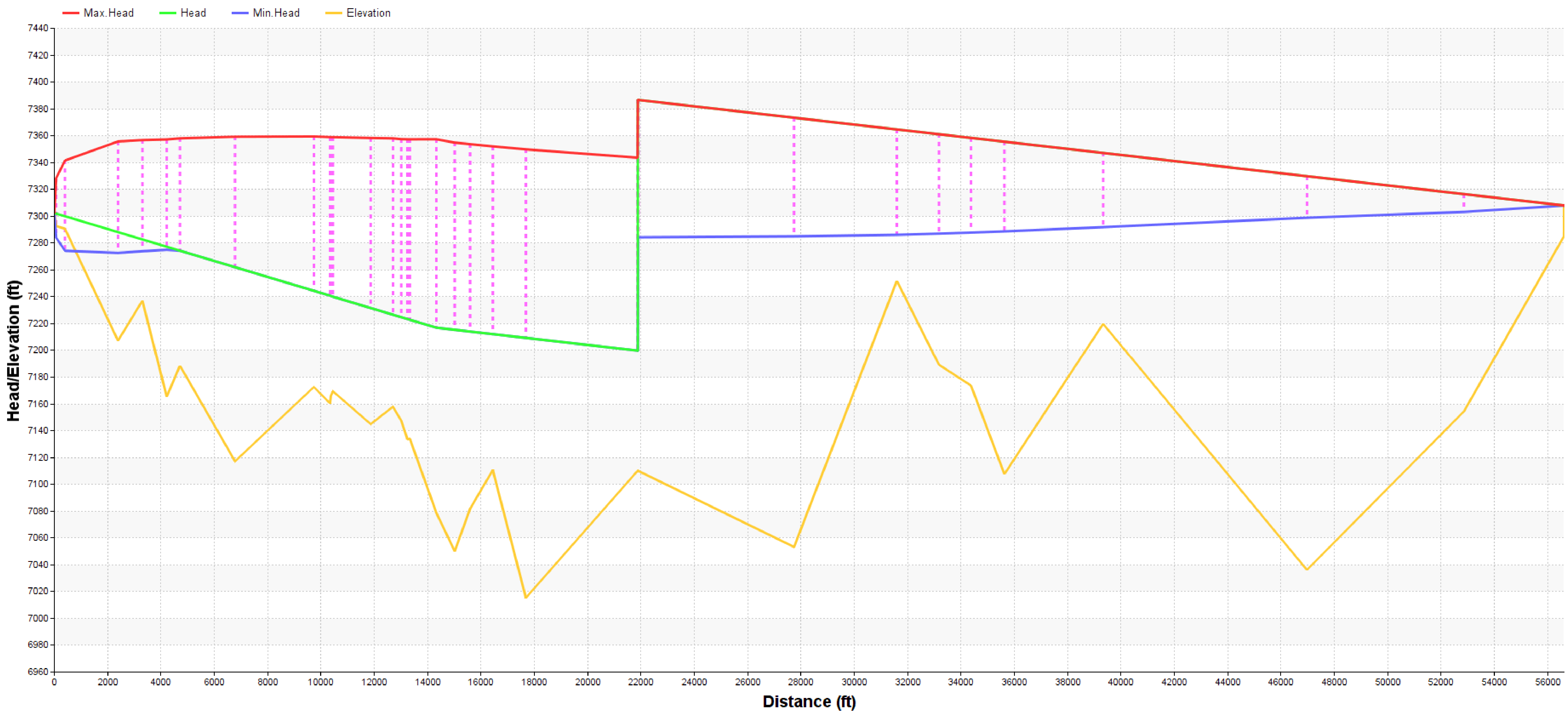


Exhibit 1.2b Surge Head Profile from Counselor Tank to JAN Tank (Unprotected Scenario: JAN altitude valve sudden close during pump ramp down)

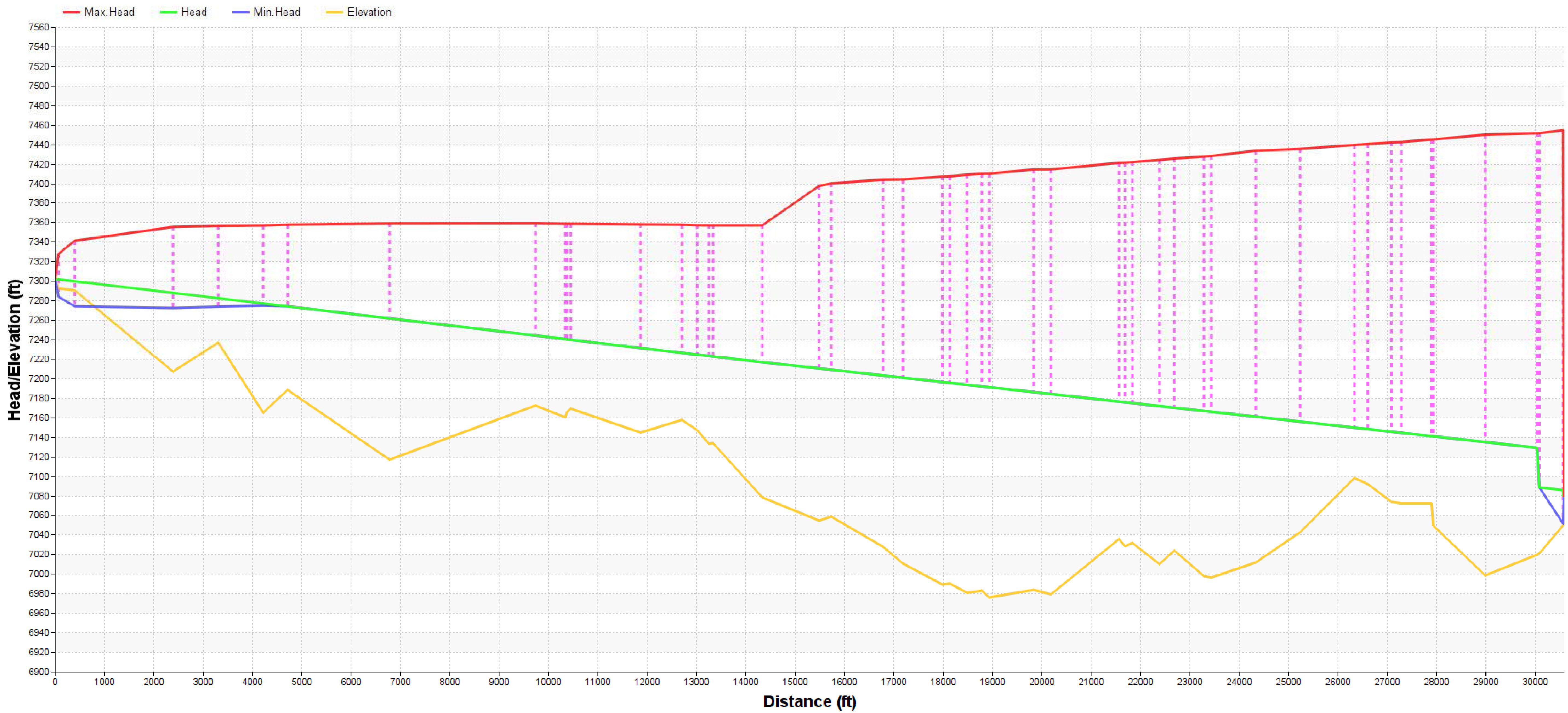


Exhibit 1.3a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Unprotected Scenario: JAN altitude valve sudden open during pump ramp down)

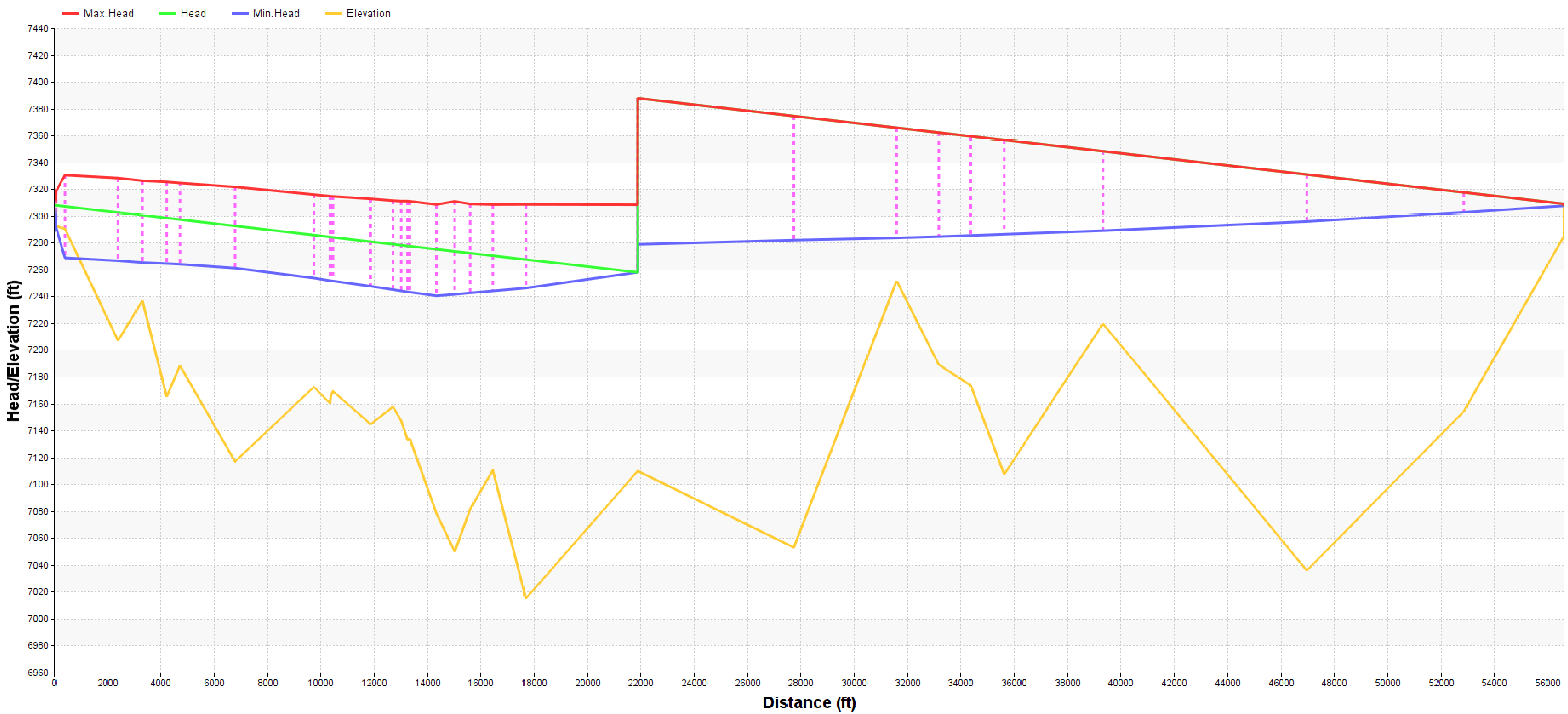


Exhibit 1.3b Surge Head Profile from Counselor Tank to JAN Tank (Unprotected Scenario: JAN altitude valve sudden open during pump ramp down)

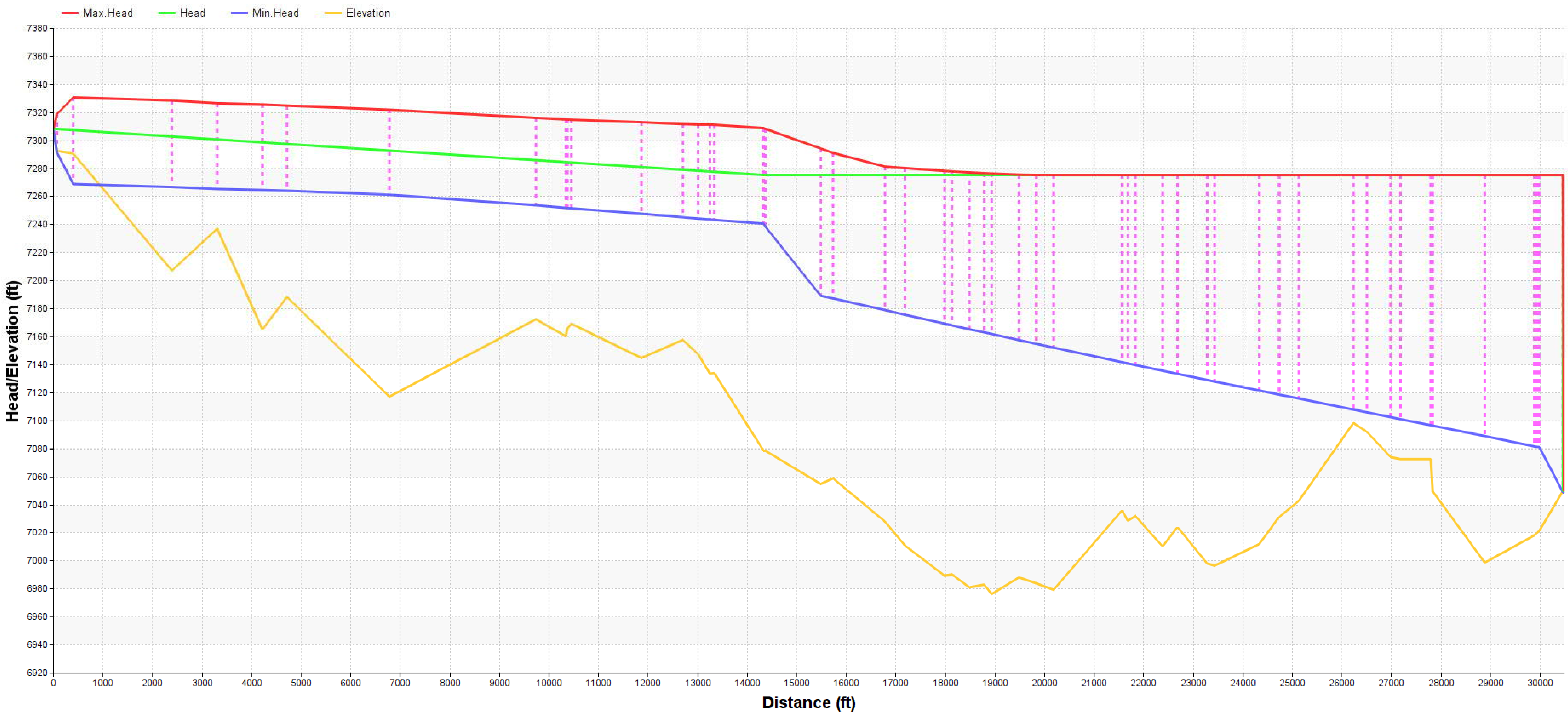


Exhibit 1.4a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Unprotected Scenario: JAN altitude valve sudden close during pump ramp up)

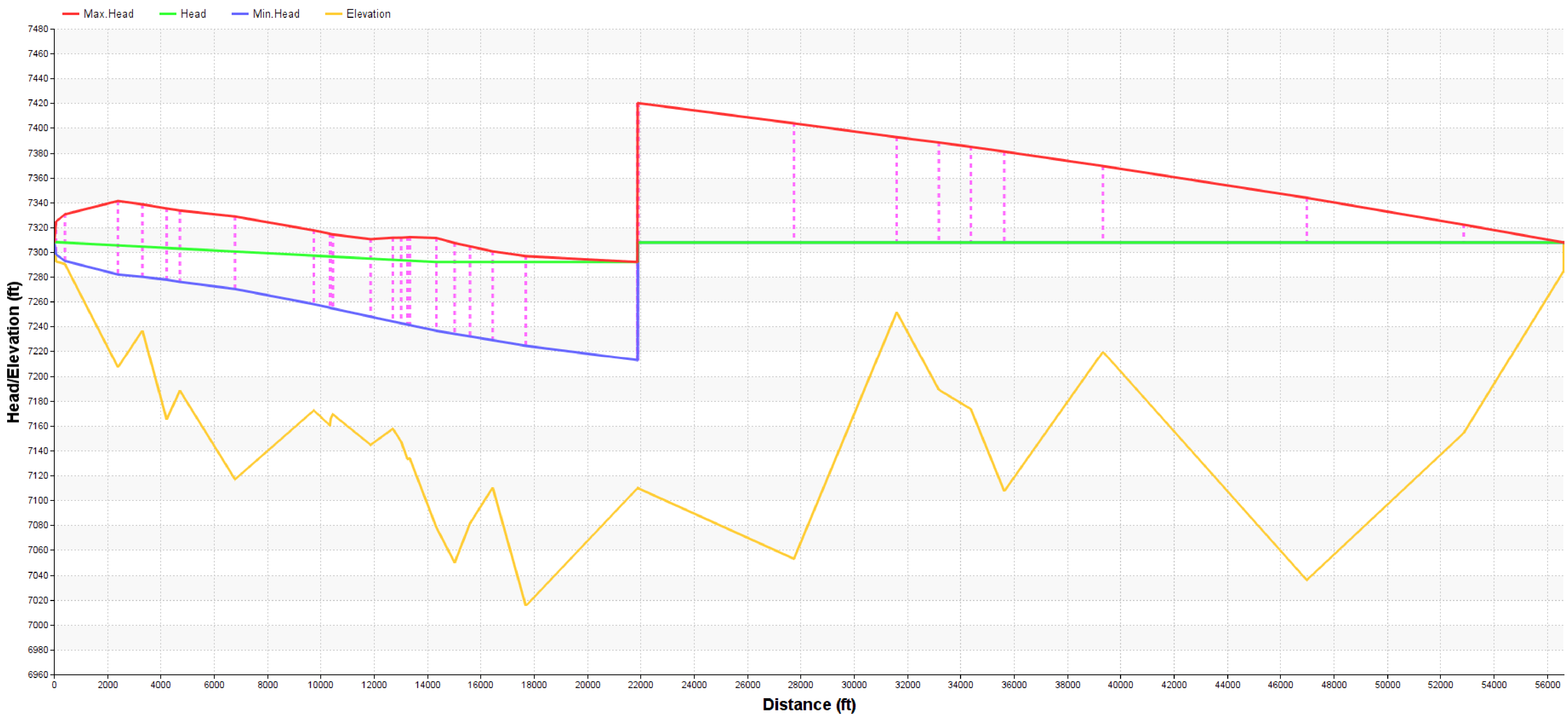


Exhibit 1.4b Surge Head Profile from Counselor Tank to JAN Tank (Unprotected Scenario: JAN altitude valve sudden close during pump ramp up)

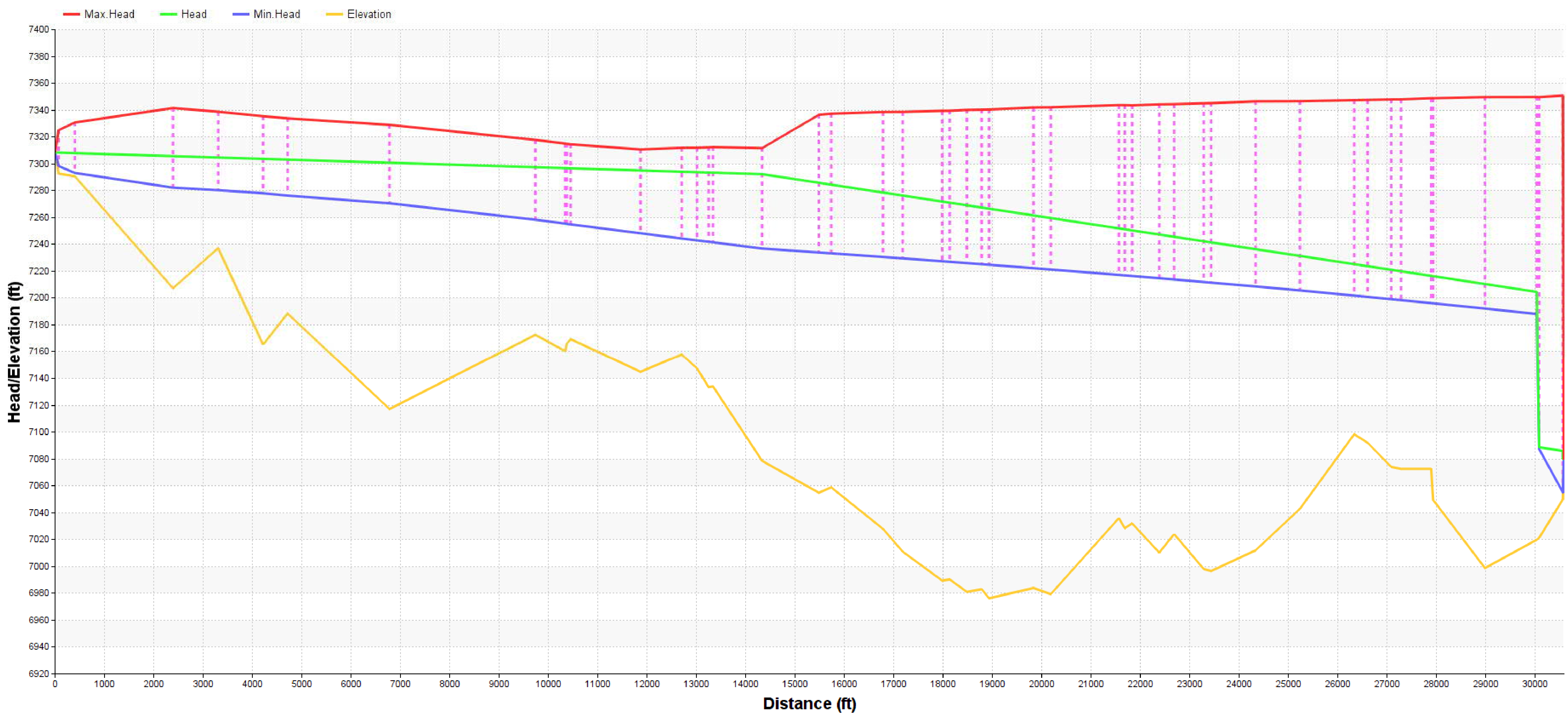


Exhibit 1.5a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Unprotected Scenario: JAN sudden open after pump sudden start)

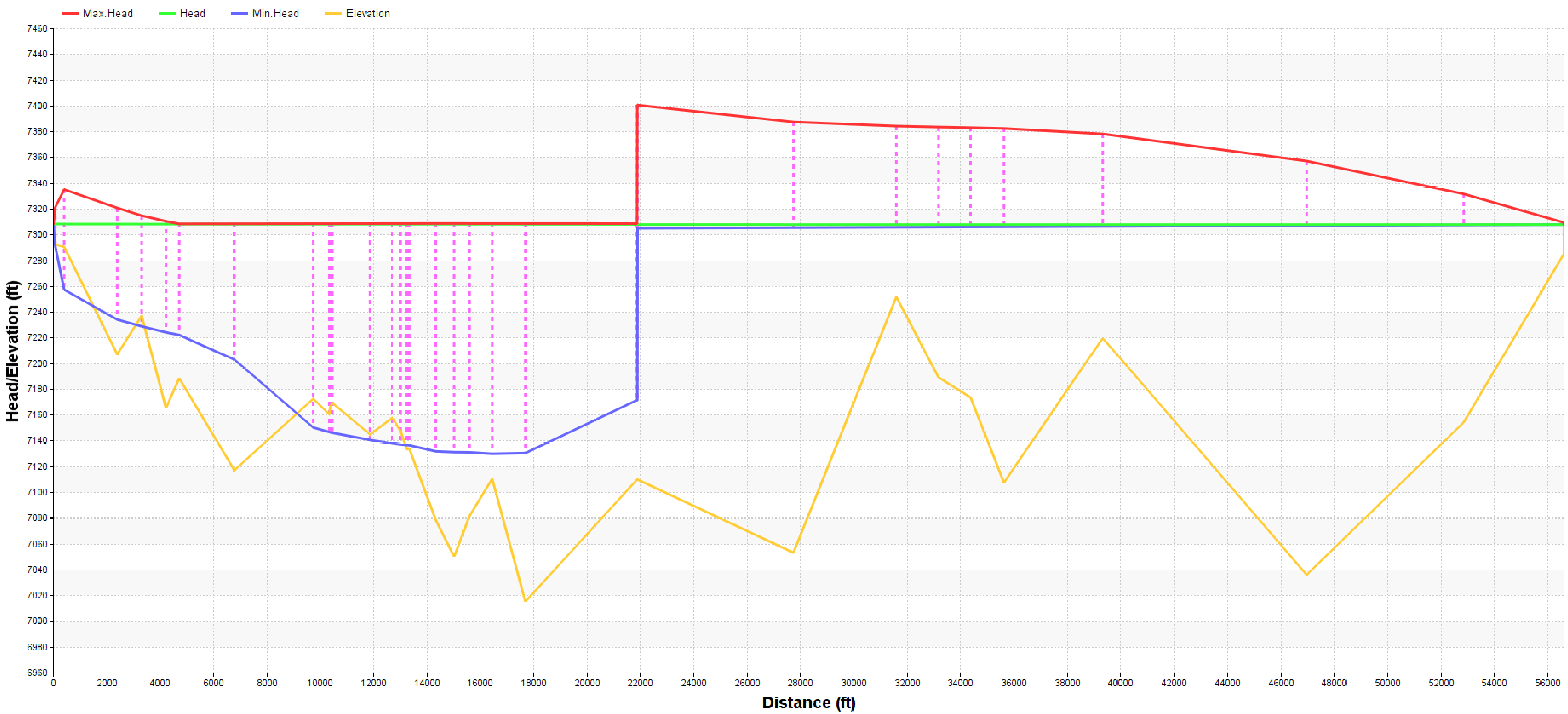


Exhibit 1.5b Surge Head Profile from Counselor Tank to JAN Tank (Unprotected Scenario: JAN sudden open after pump sudden start)

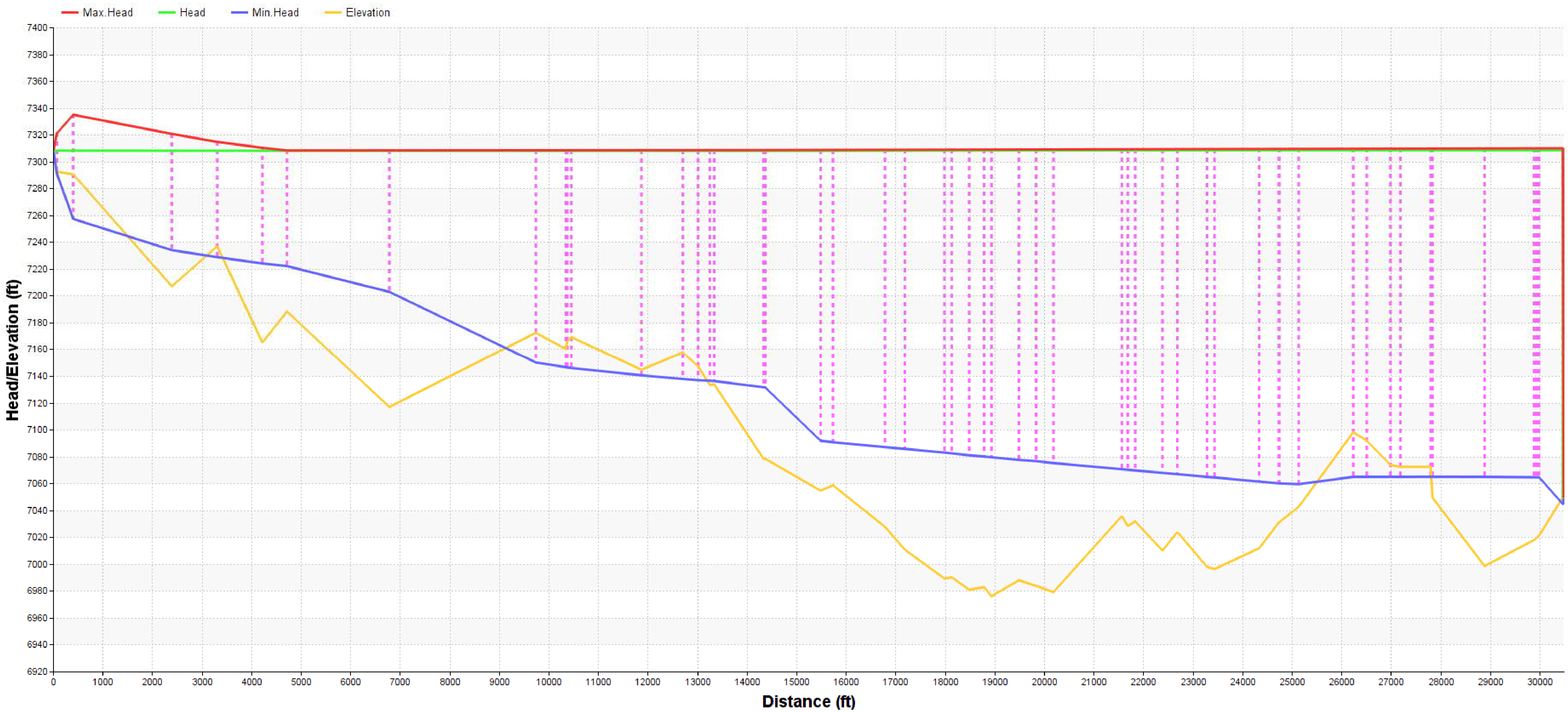


Exhibit 1.6a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Unprotected Scenario: JAN sudden close after pump sudden shutdown)

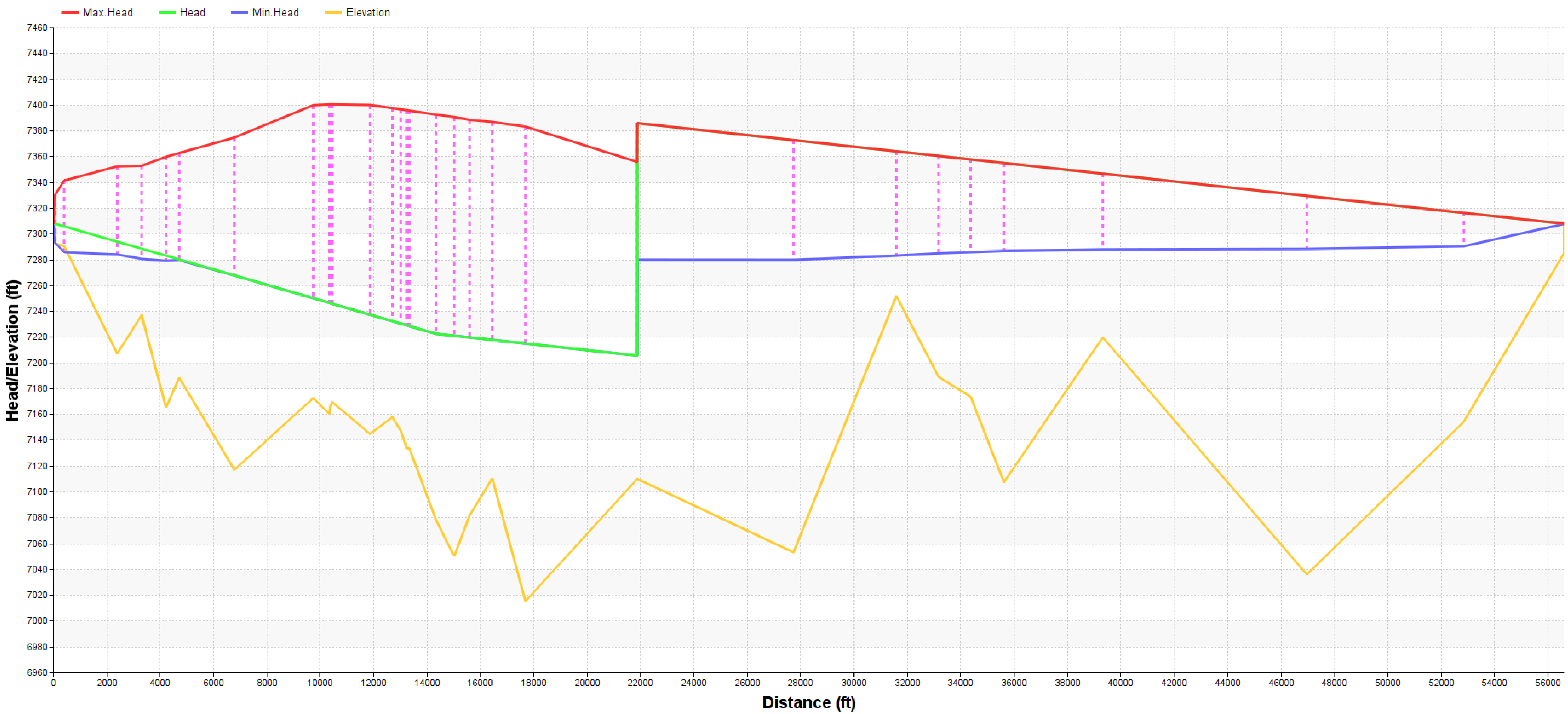


Exhibit 1.6b Surge Head Profile from Counselor Tank to JAN Tank (Unprotected Scenario: JAN sudden close after pump sudden shutdown)

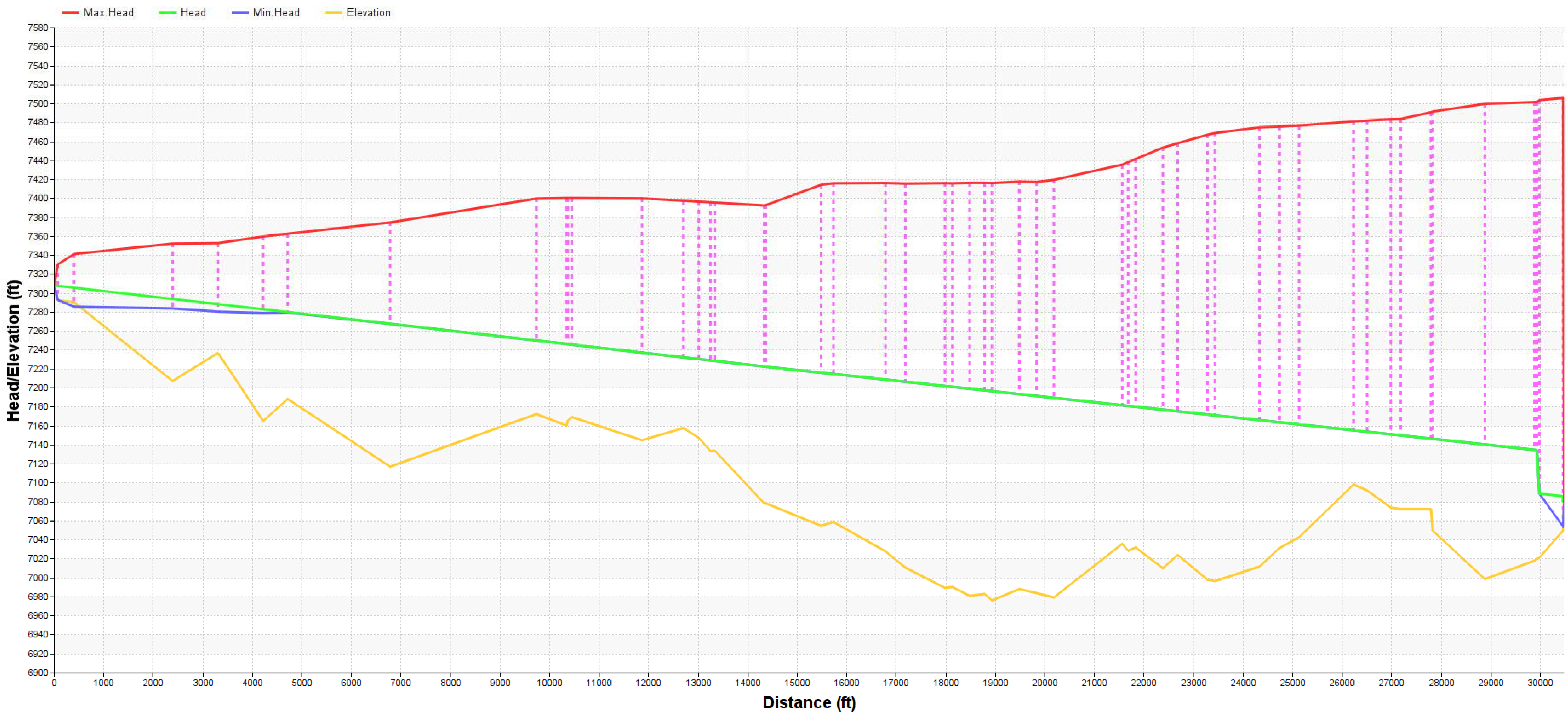


Exhibit 1.7a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Unprotected Scenario: JAN sudden open after pump sudden shutdown)

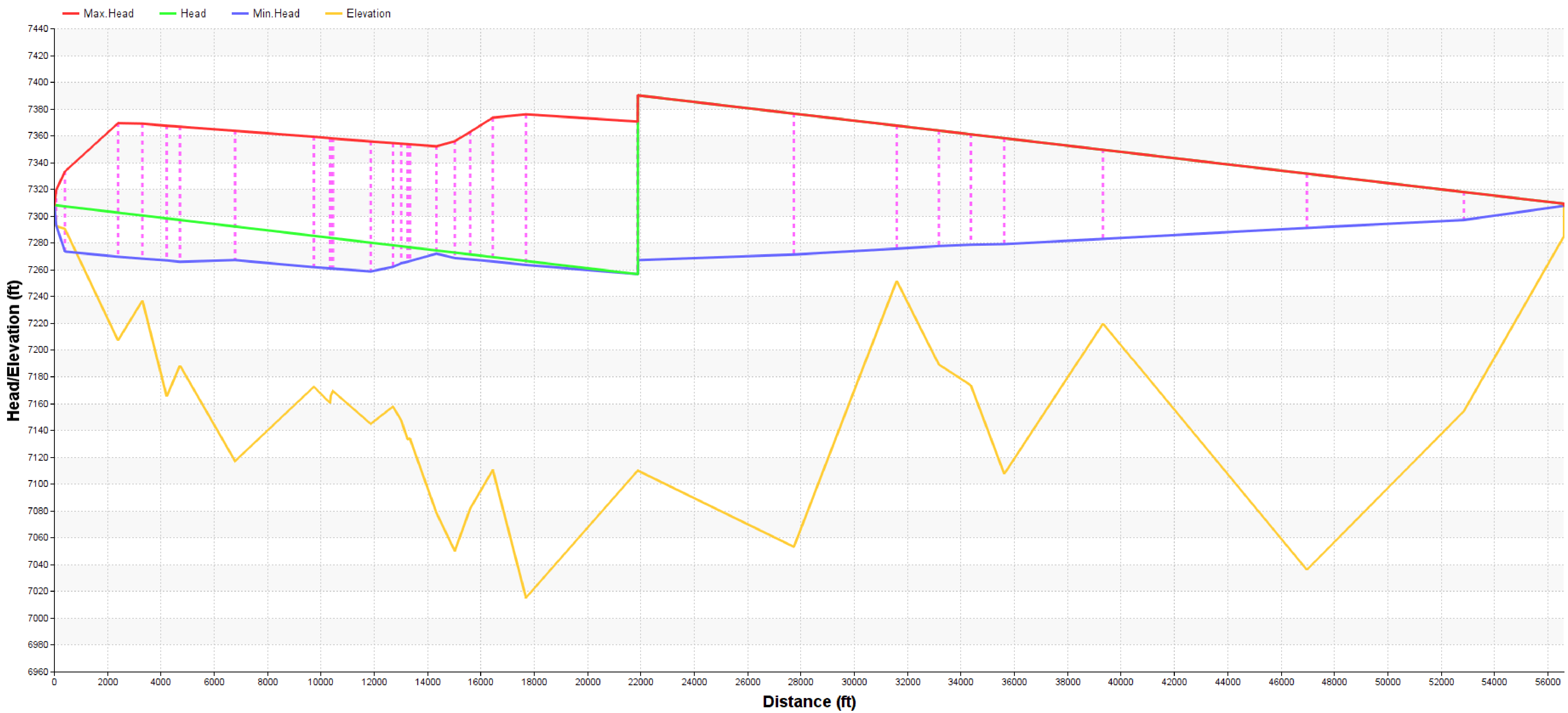


Exhibit 1.7b Surge Head Profile from Counselor Tank to JAN Tank (Unprotected Scenario: JAN sudden open after pump sudden shutdown)

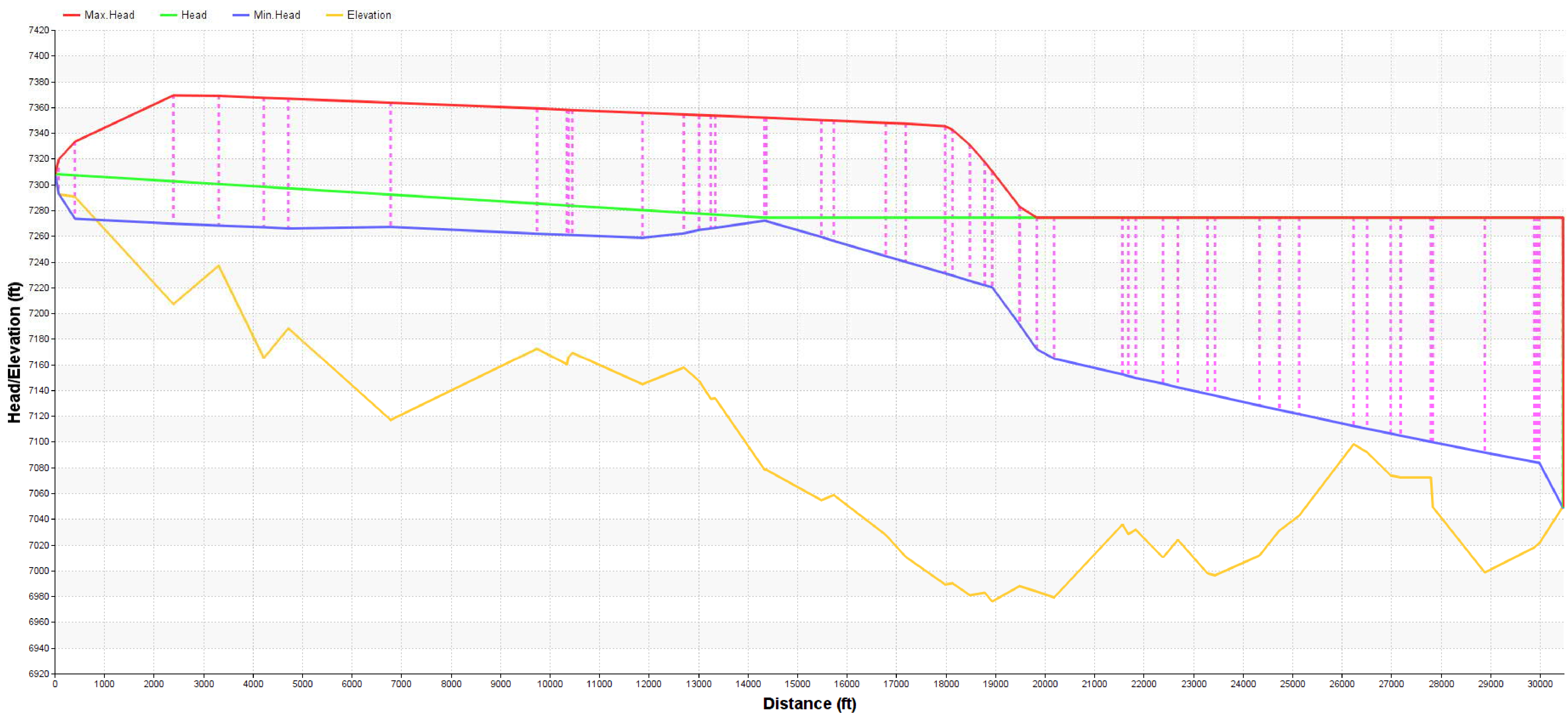


Exhibit 1.8a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Unprotected Scenario: JAN sudden close after pump sudden start)

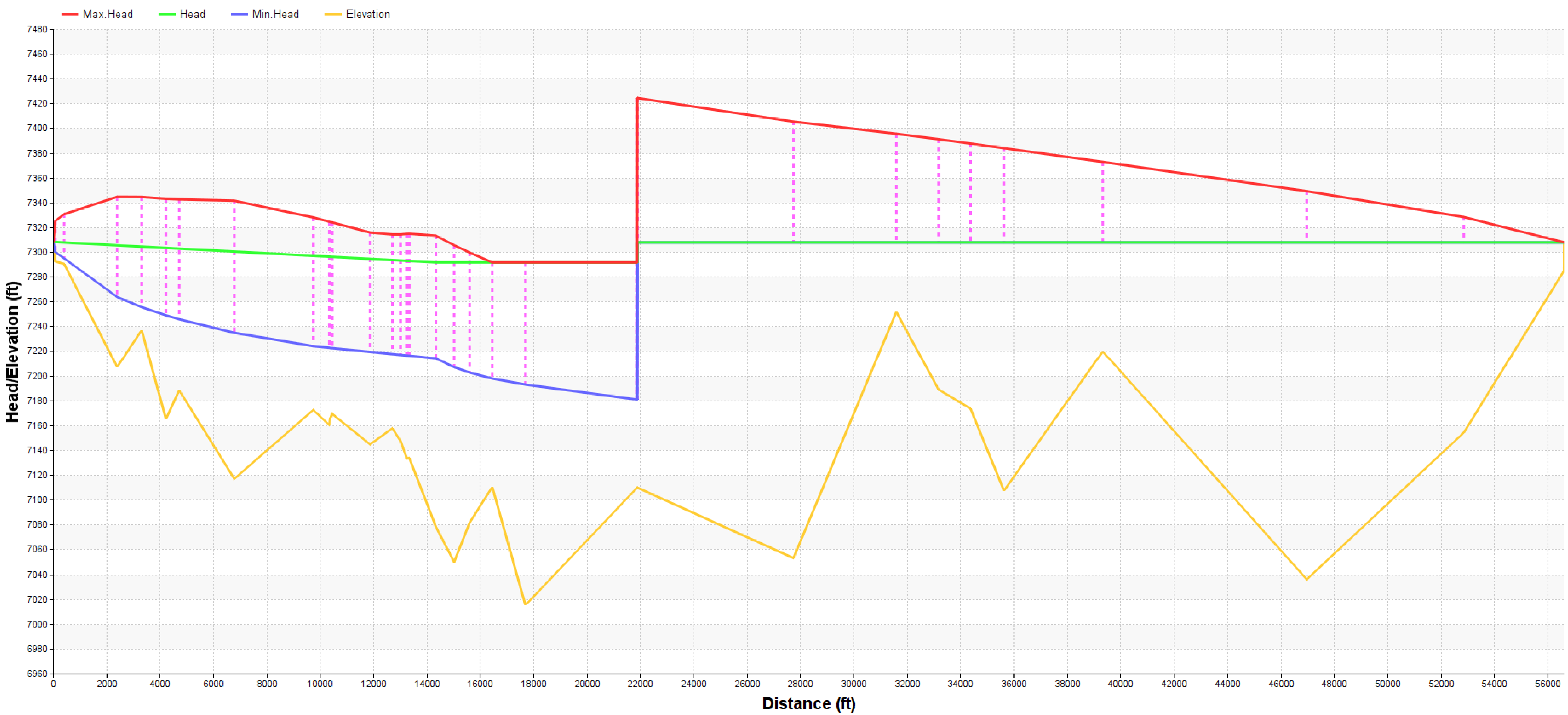


Exhibit 1.8b Surge Head Profile from Counselor Tank to JAN Tank (Unprotected Scenario: JAN sudden close after pump sudden start)

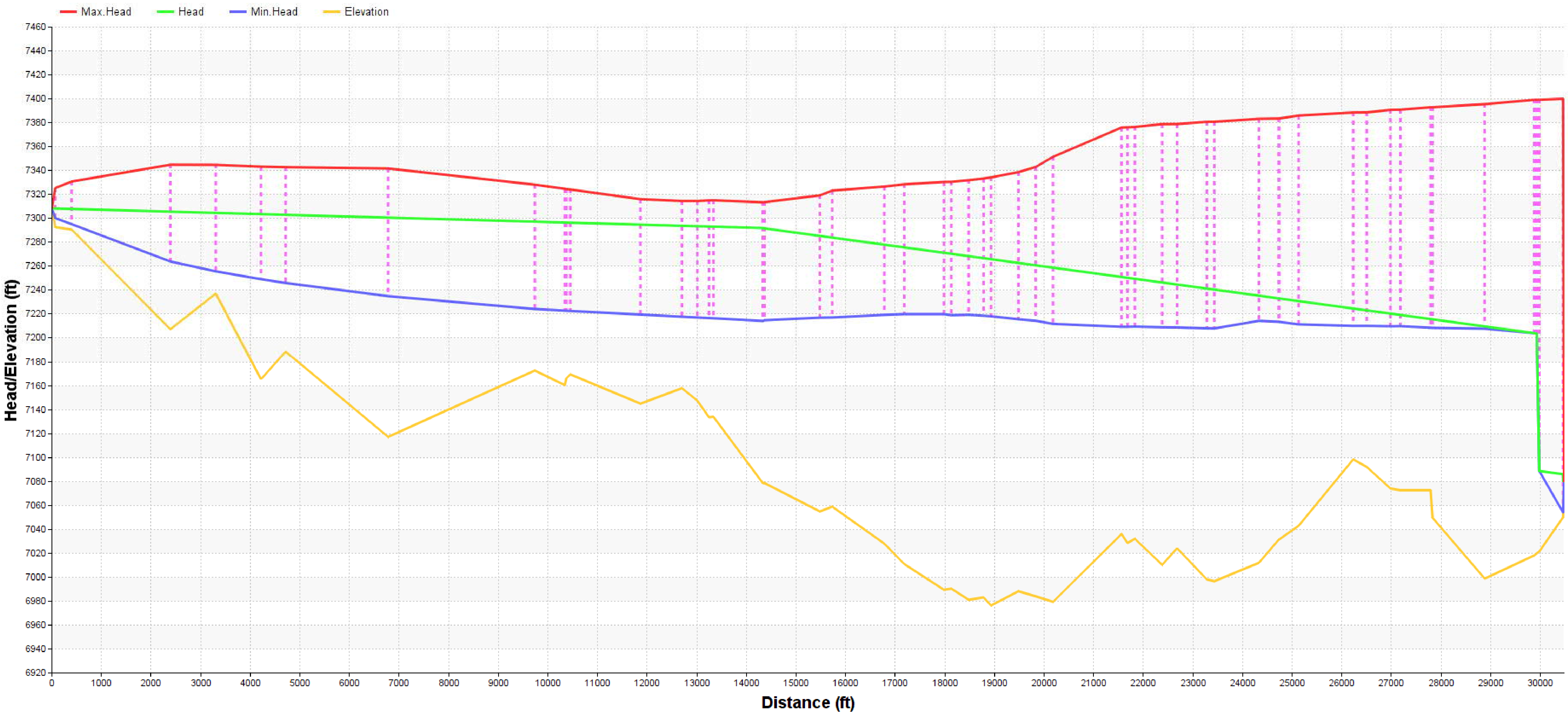


Exhibit 1.9a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Unprotected Scenario: JAN sudden start before pump sudden startup)

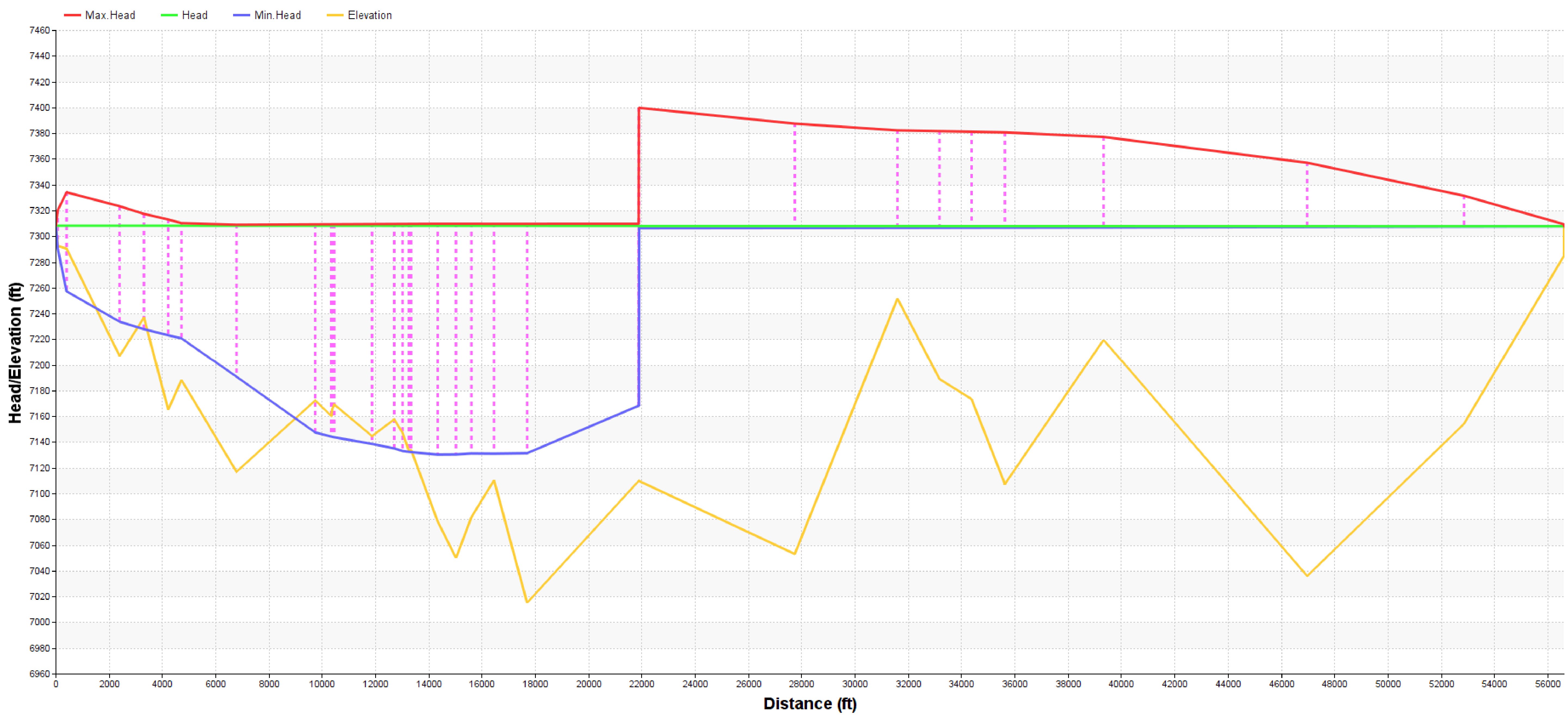


Exhibit 1.9b Surge Head Profile from Counselor Tank to JAN Tank (Unprotected Scenario: JAN sudden start before pump sudden startup)

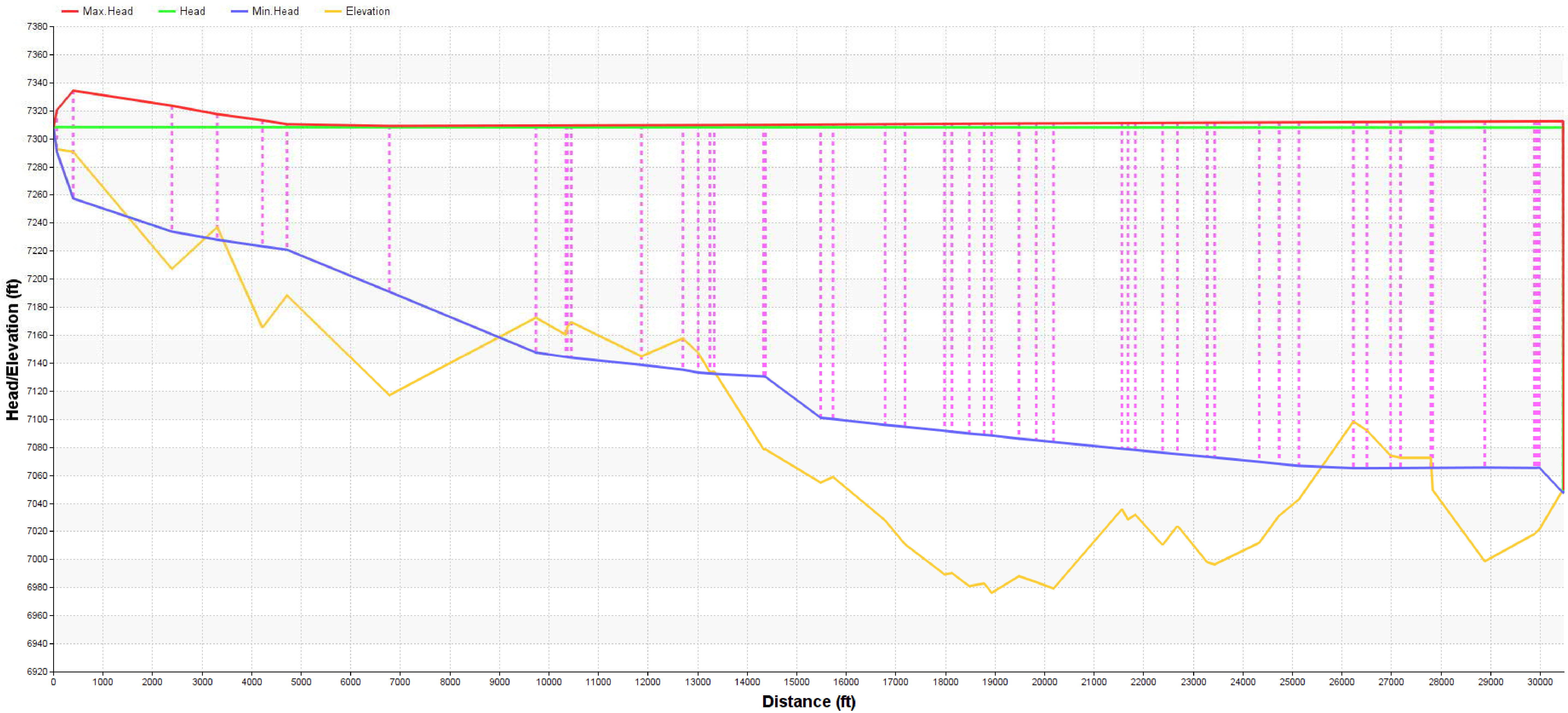


Exhibit 1.10a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Unprotected Scenario: JAN sudden close before pump sudden stop)

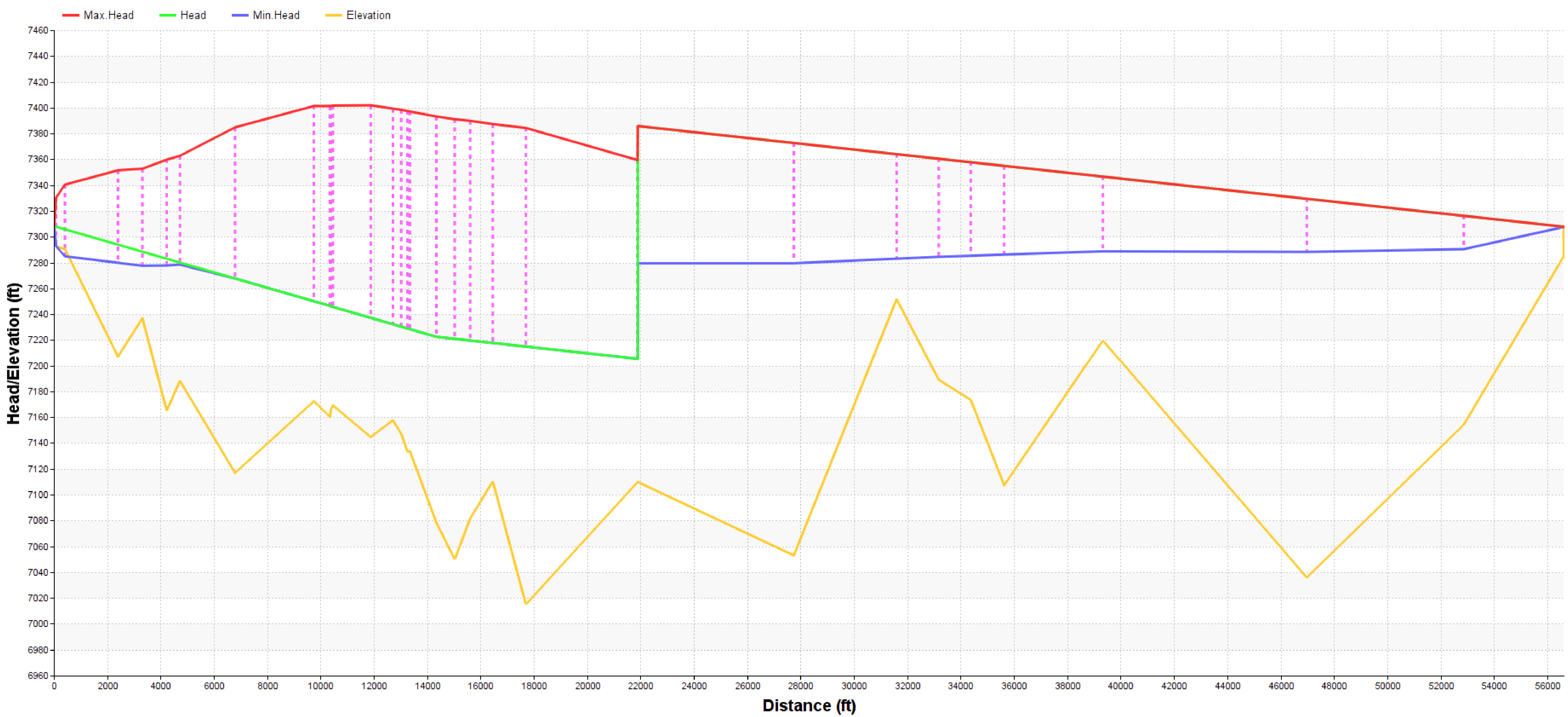


Exhibit 1.10b Surge Head Profile from Counselor Tank to JAN Tank (Unprotected Scenario: JAN sudden close before pump sudden stop)

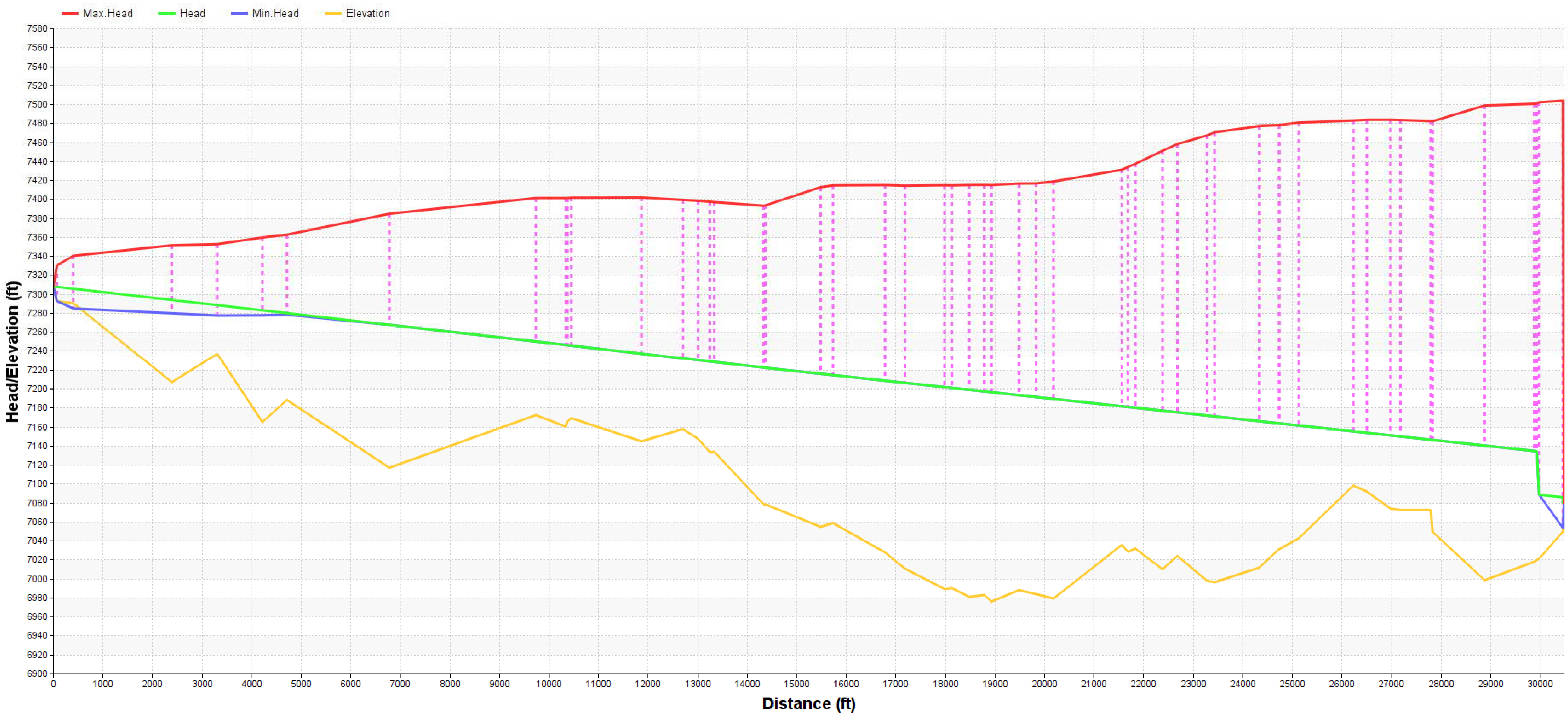


Exhibit 1.11a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Unprotected Scenario: JAN sudden open before pump sudden stop)

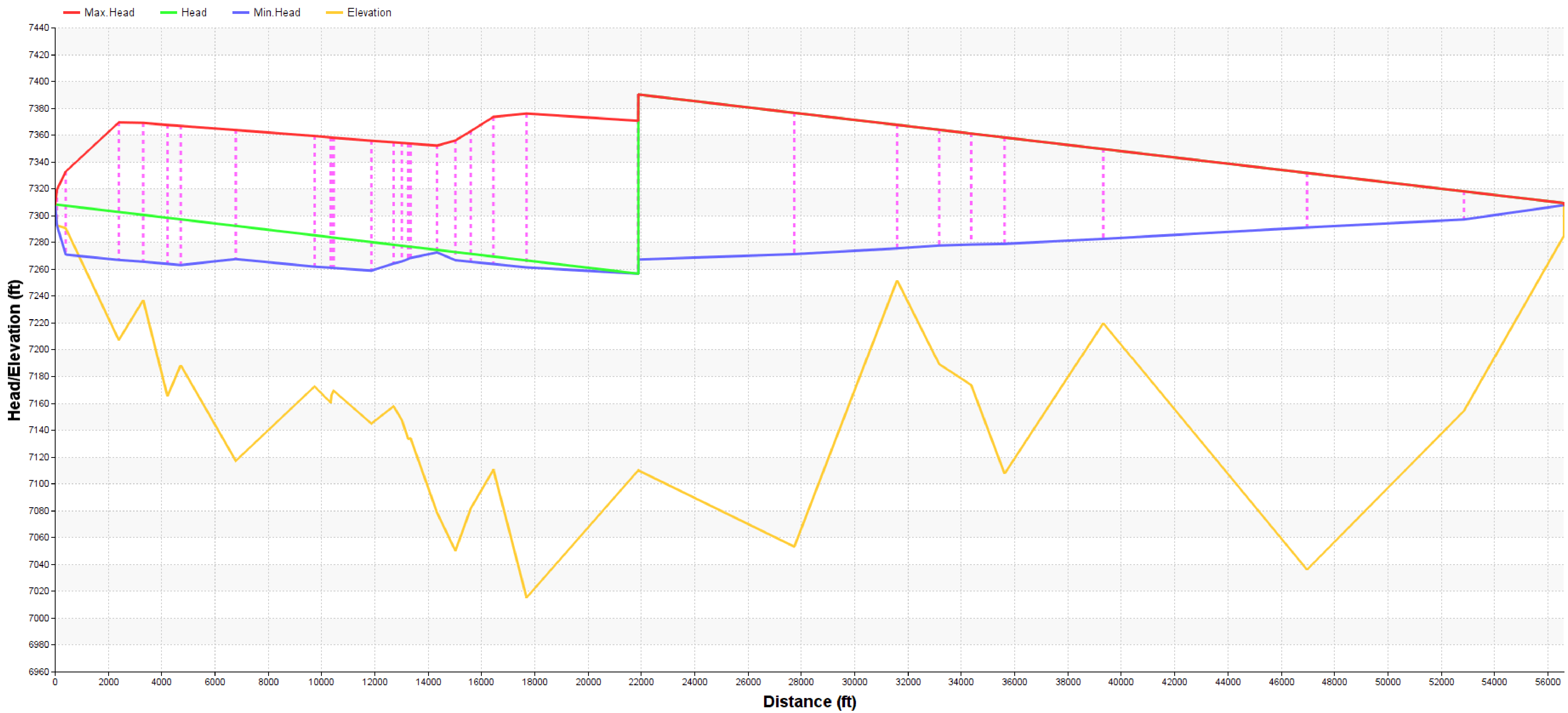


Exhibit 1.11b Surge Head Profile from Counselor Tank to JAN Tank (Unprotected Scenario: JAN sudden open before pump sudden stop)

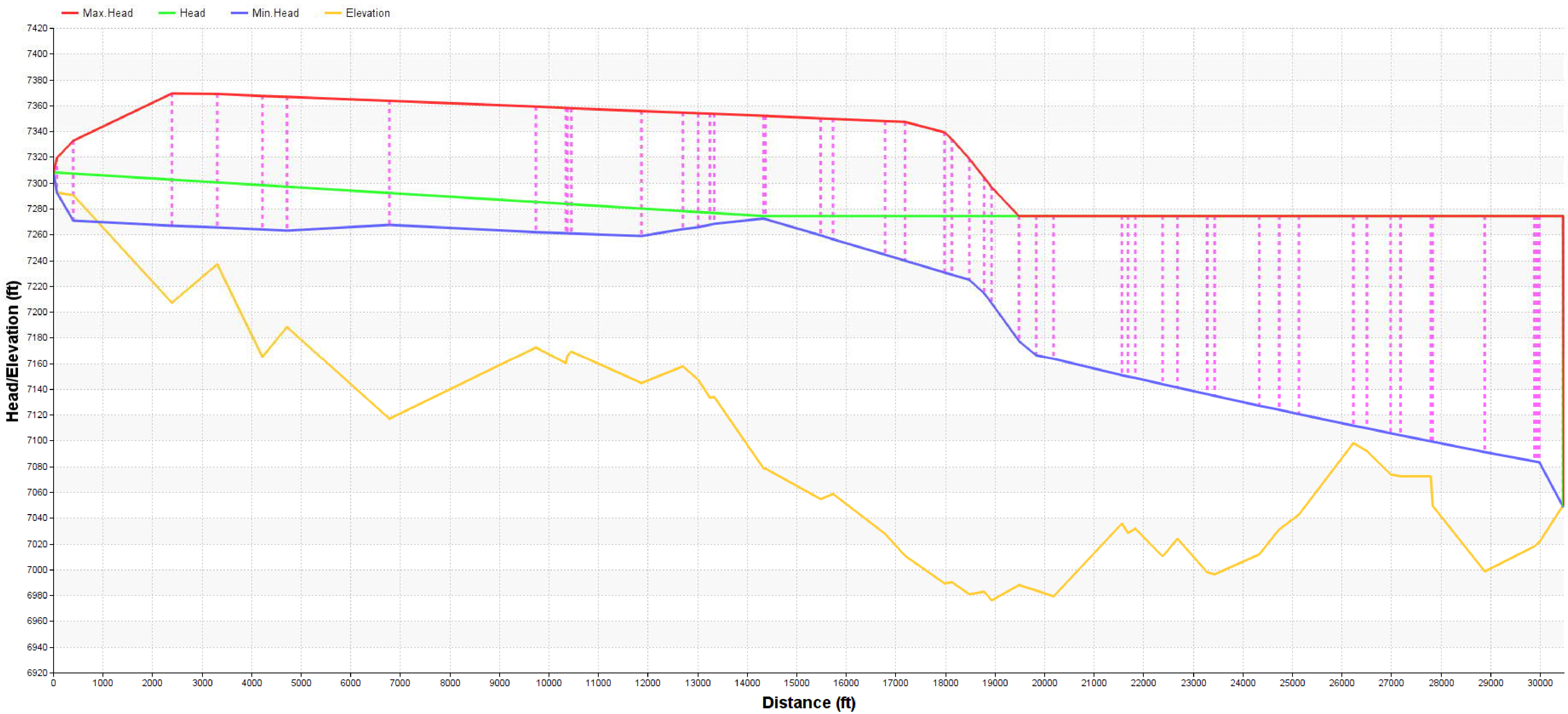


Exhibit 1.12a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Unprotected Scenario: JAN sudden close before pump sudden start)

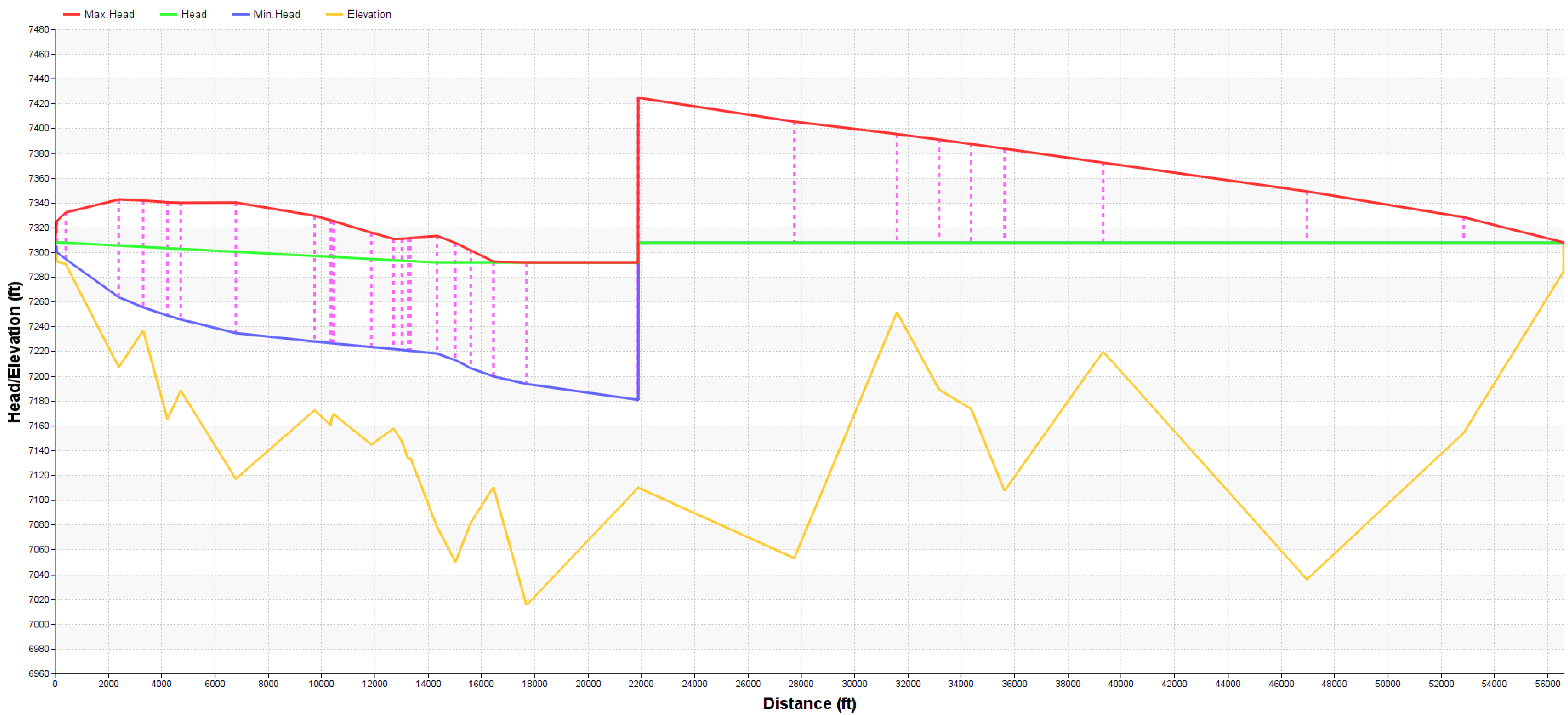


Exhibit 1.12b Surge Head Profile from Counselor Tank to JAN Tank (Unprotected Scenario: JAN sudden close before pump sudden start)

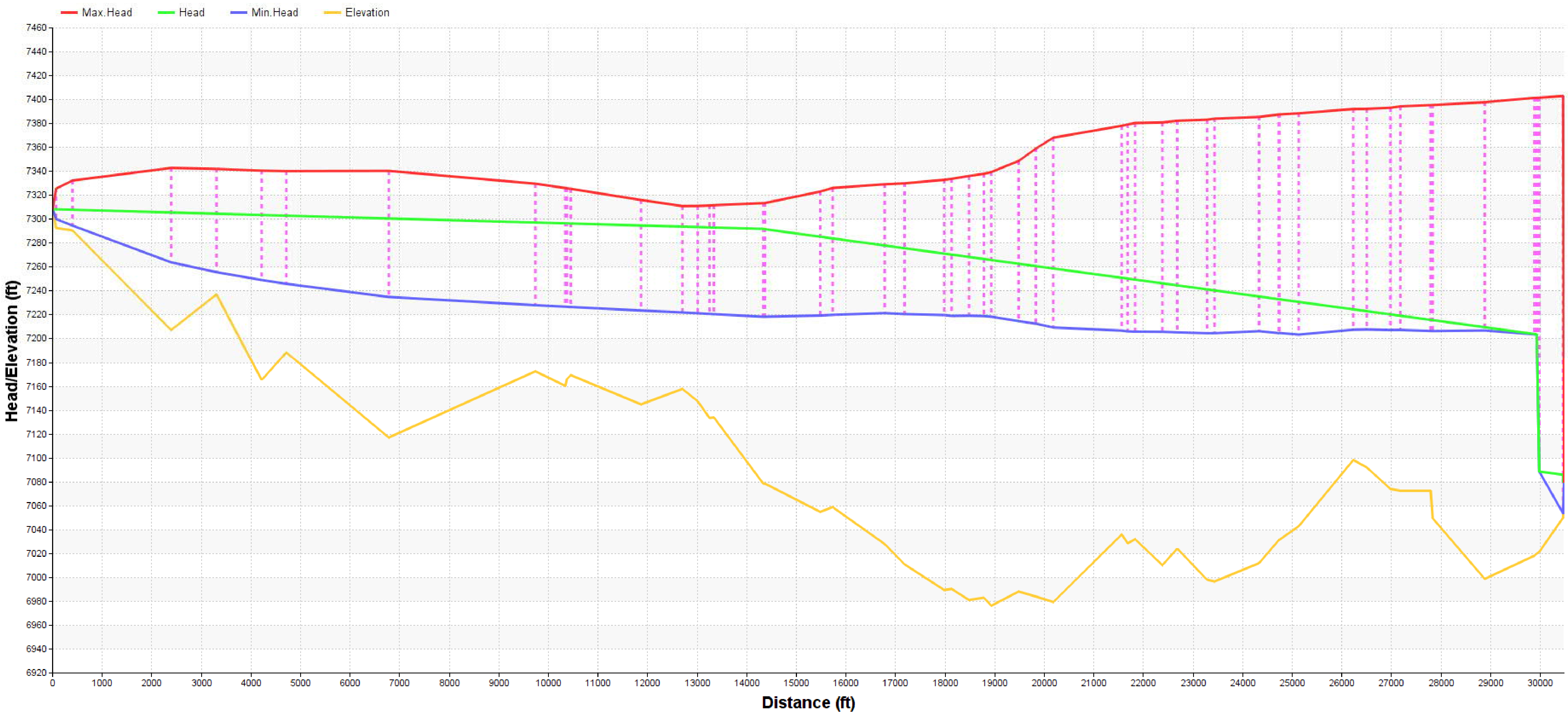


Exhibit 1.13a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Unprotected Scenario: Sudden Bypass Close Transition to Sudden Pump Start)

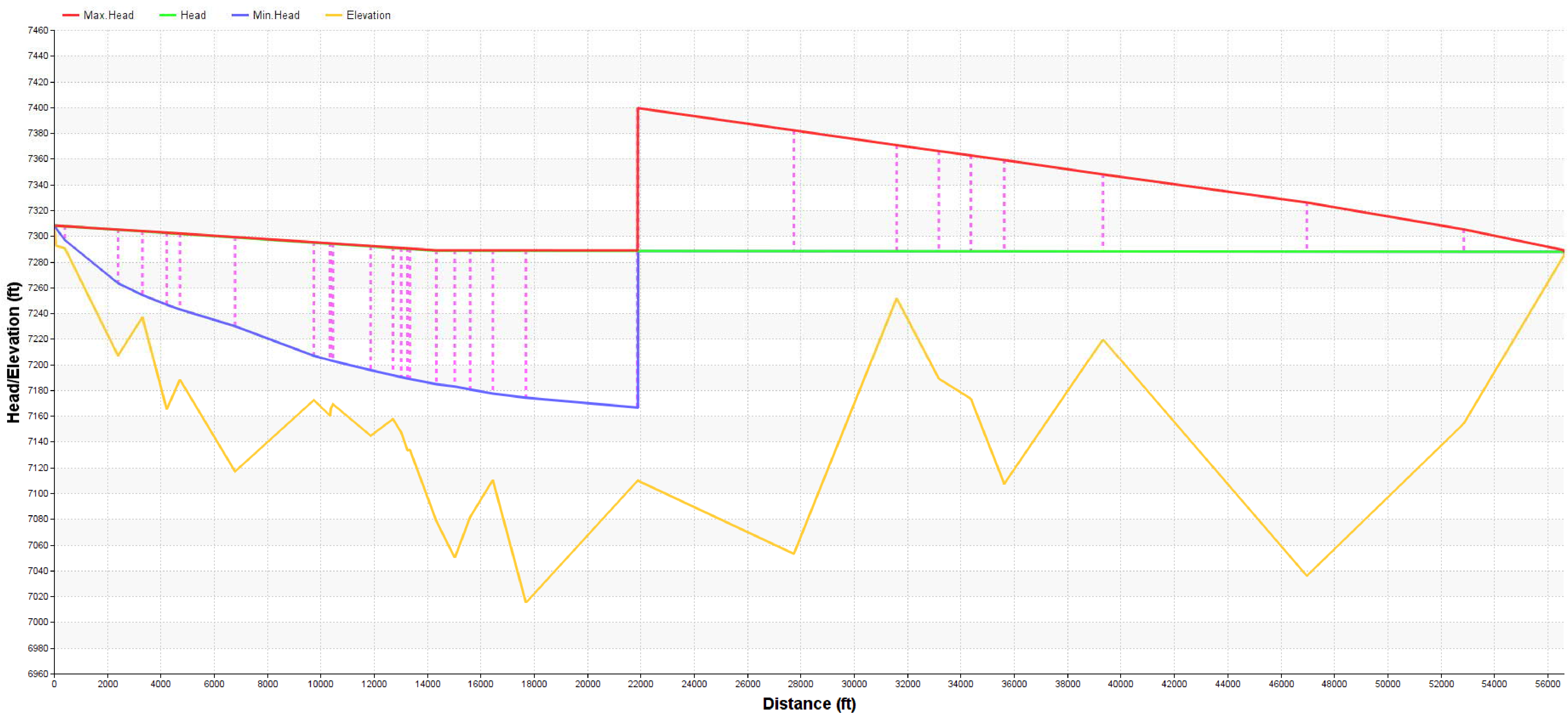


Exhibit 1.13b Surge Head Profile from Counselor Tank to JAN Tank (Unprotected Scenario: Sudden Bypass Close Transition to Sudden Pump Start)

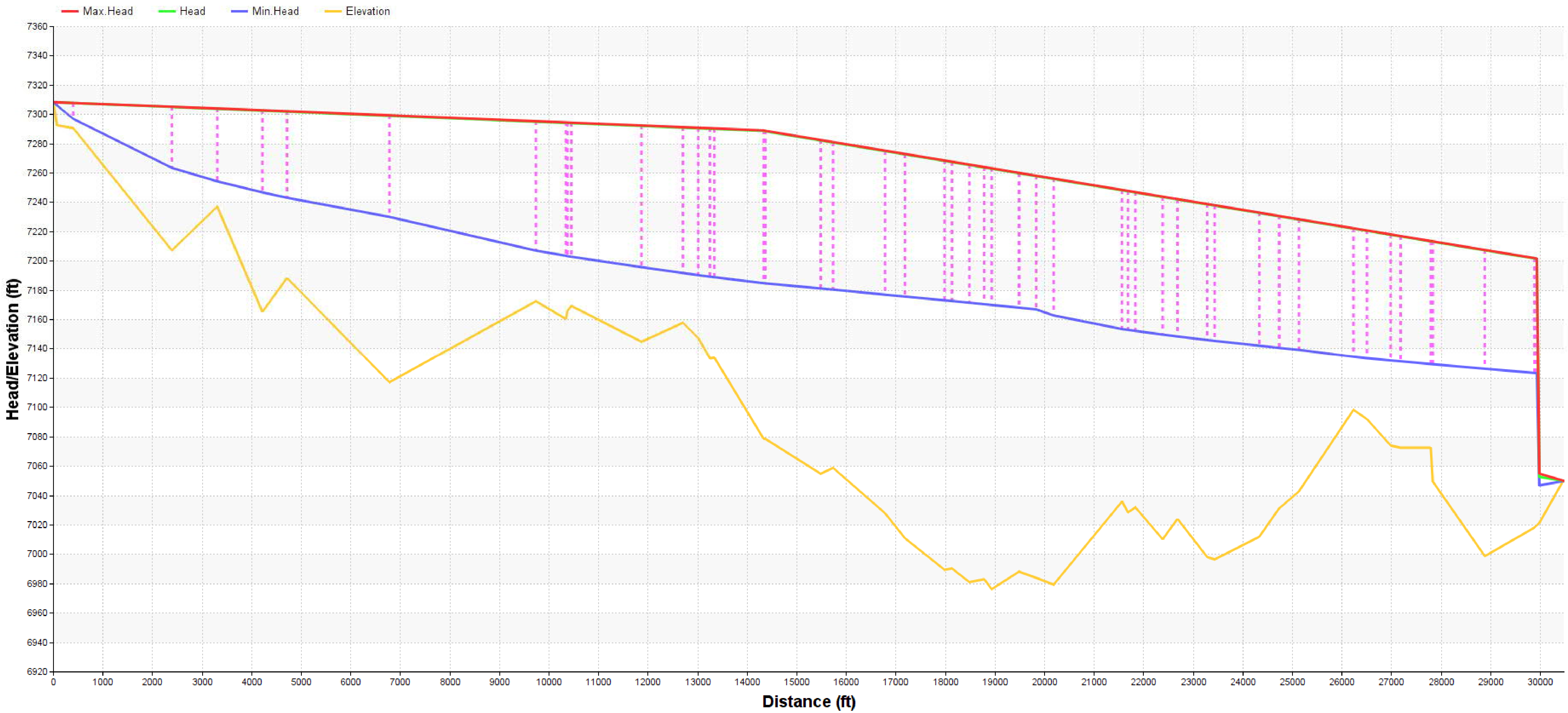


Exhibit 1.14a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Unprotected Scenario: Transition from Gravity Flow to VFD Pump Start)

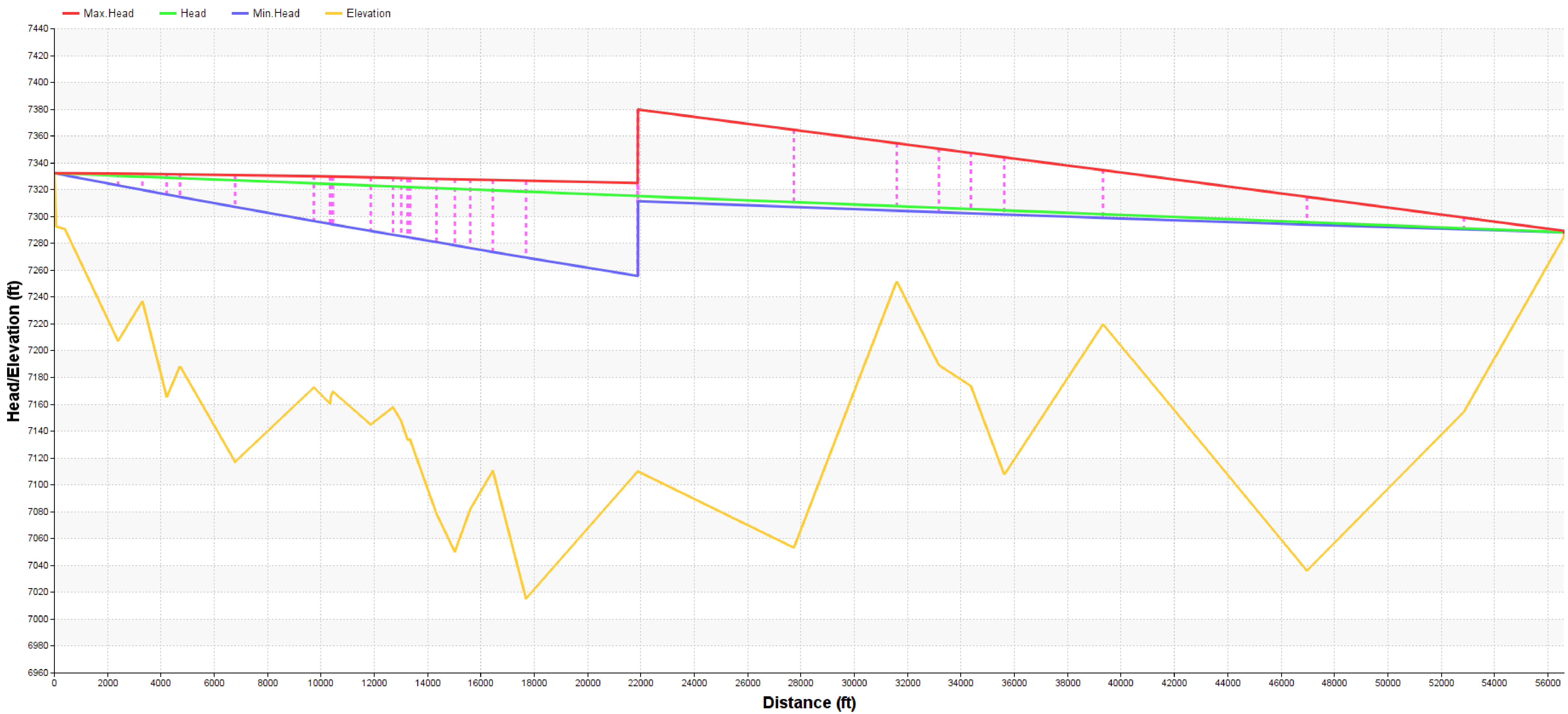


Exhibit 1.14b Surge Head Profile from Counselor Tank to JAN Tank (Unprotected Scenario: Transition from gravity flow to VDF pump start)

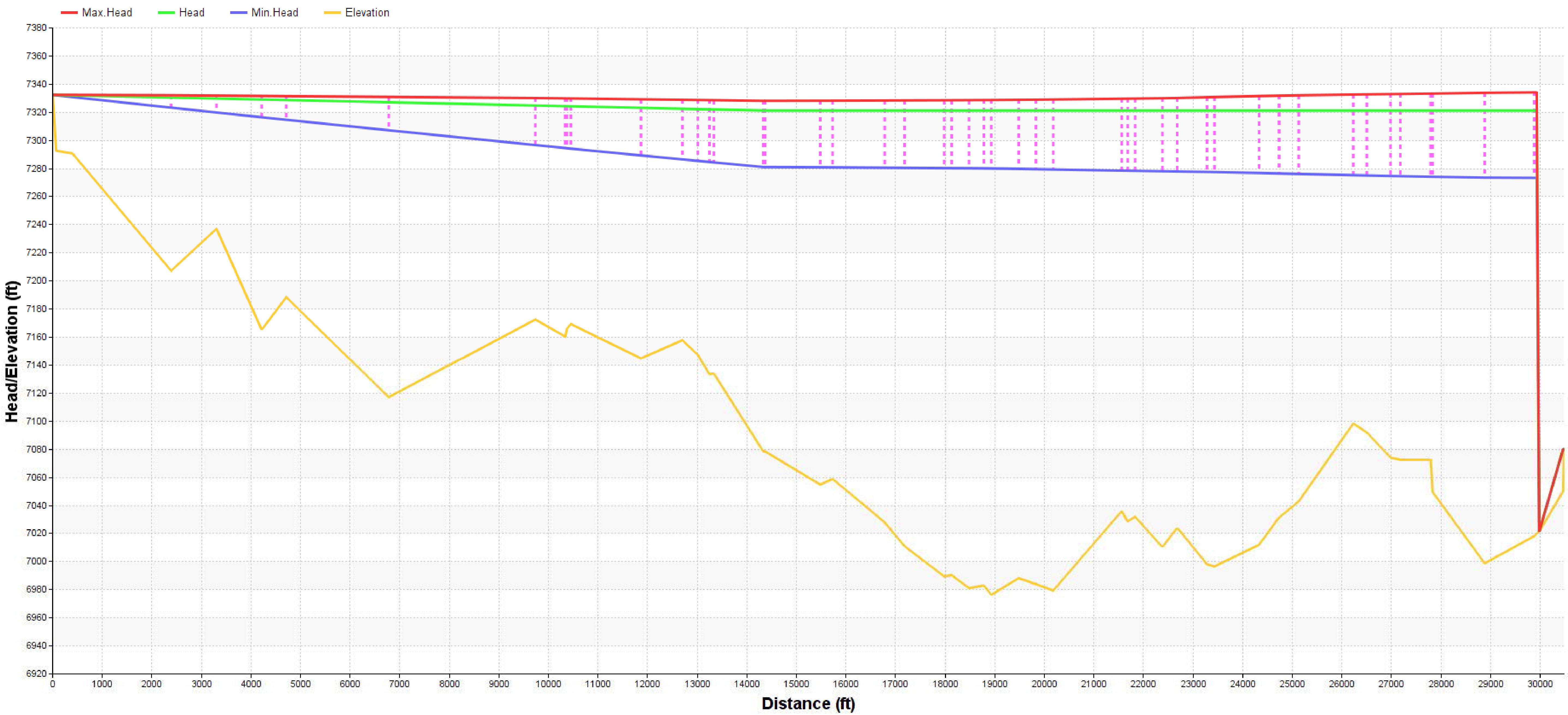


Exhibit 1.15a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Unprotected Scenario: Transition from Sudden Pump Stop to Gravity Sudden Open)

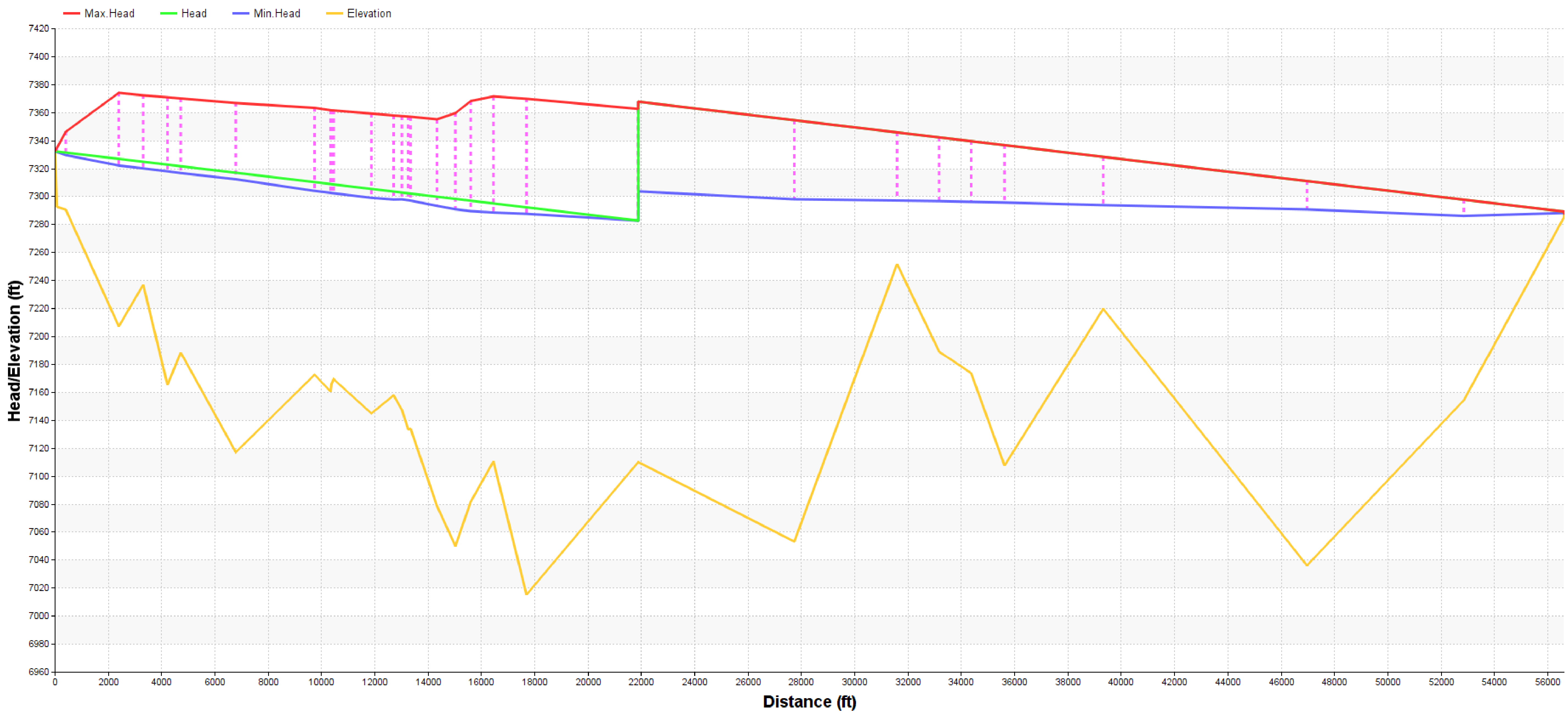


Exhibit 1.15b Surge Head Profile from Counselor Tank to JAN Tank (Unprotected Scenario: Transition From Sudden Pump Stop to Gravity Sudden Open)

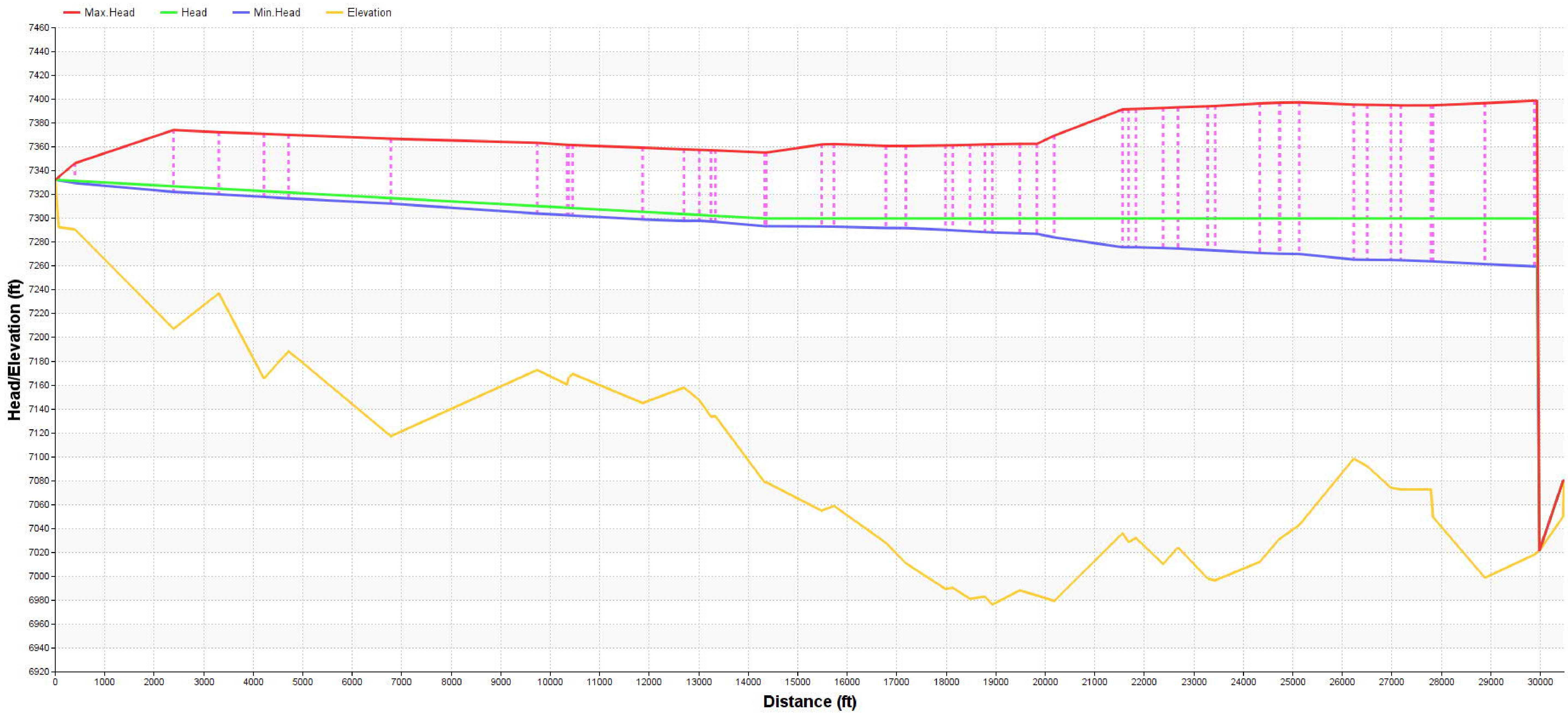


Exhibit 1.16a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Unprotected Scenario: Transition from VFD Pump Stop to Gravity Slow Open)

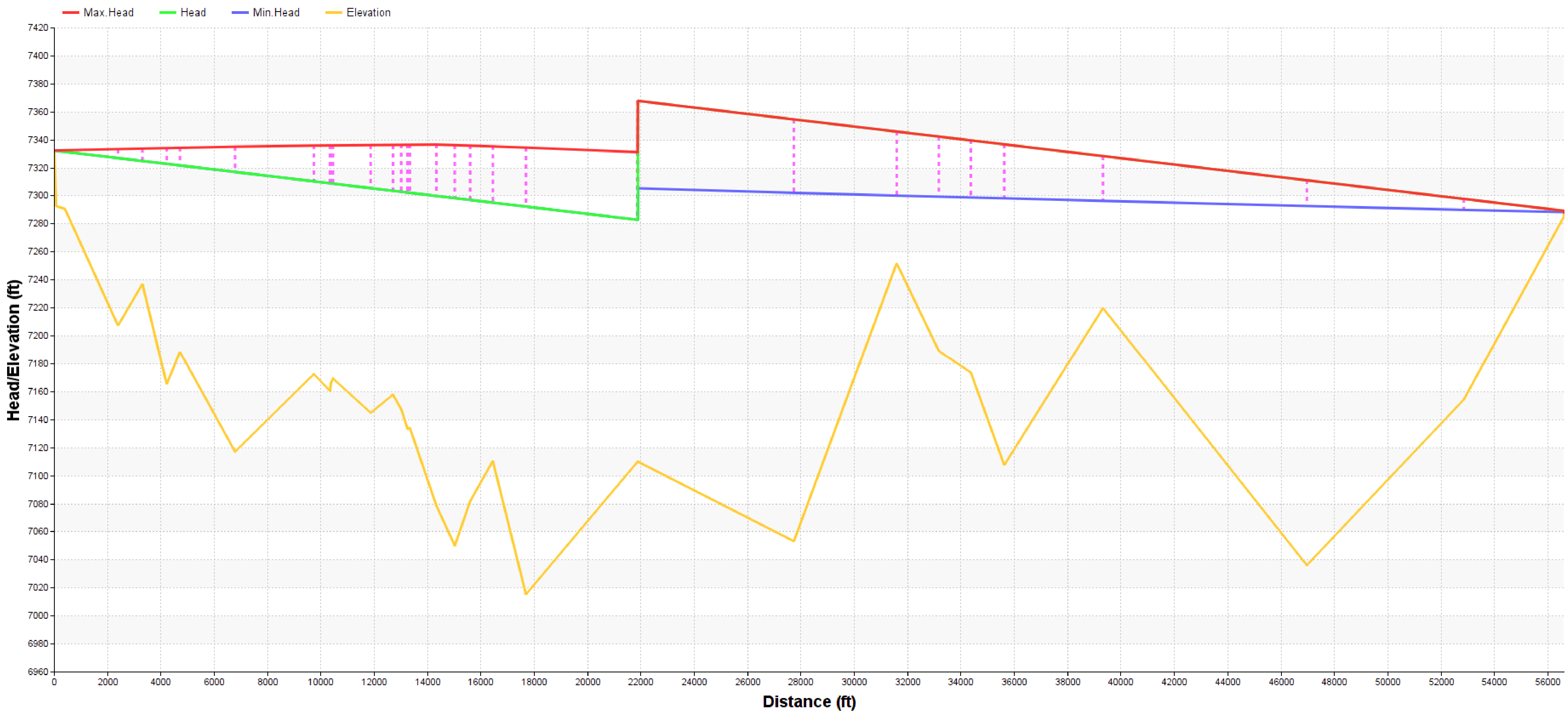


Exhibit 1.16b Surge Head Profile from Counselor Tank to JAN Tank (Unprotected Scenario: Transition from VFD Pump Stop to Gravity Slow Open)

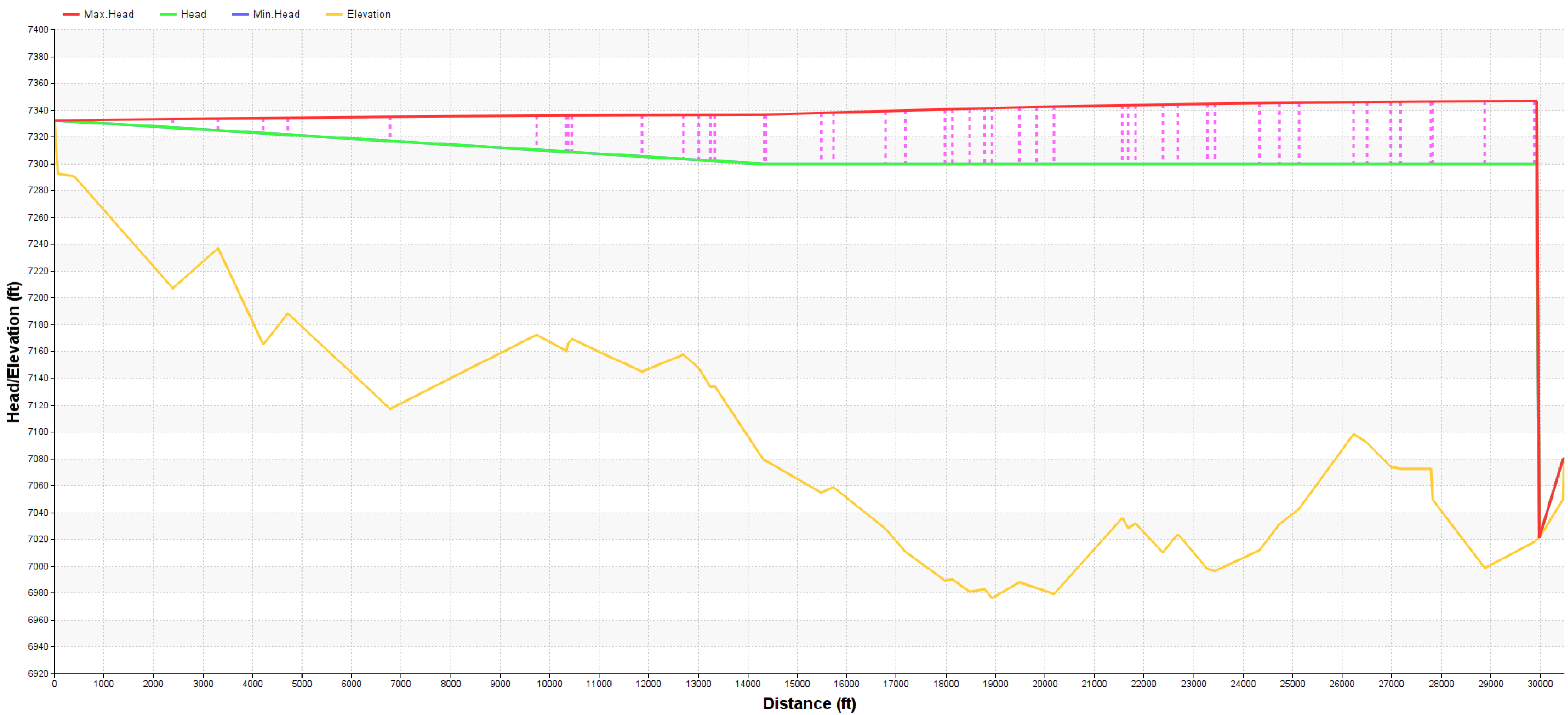


Exhibit 1.17a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Unprotected Scenario: JAN sudden open)

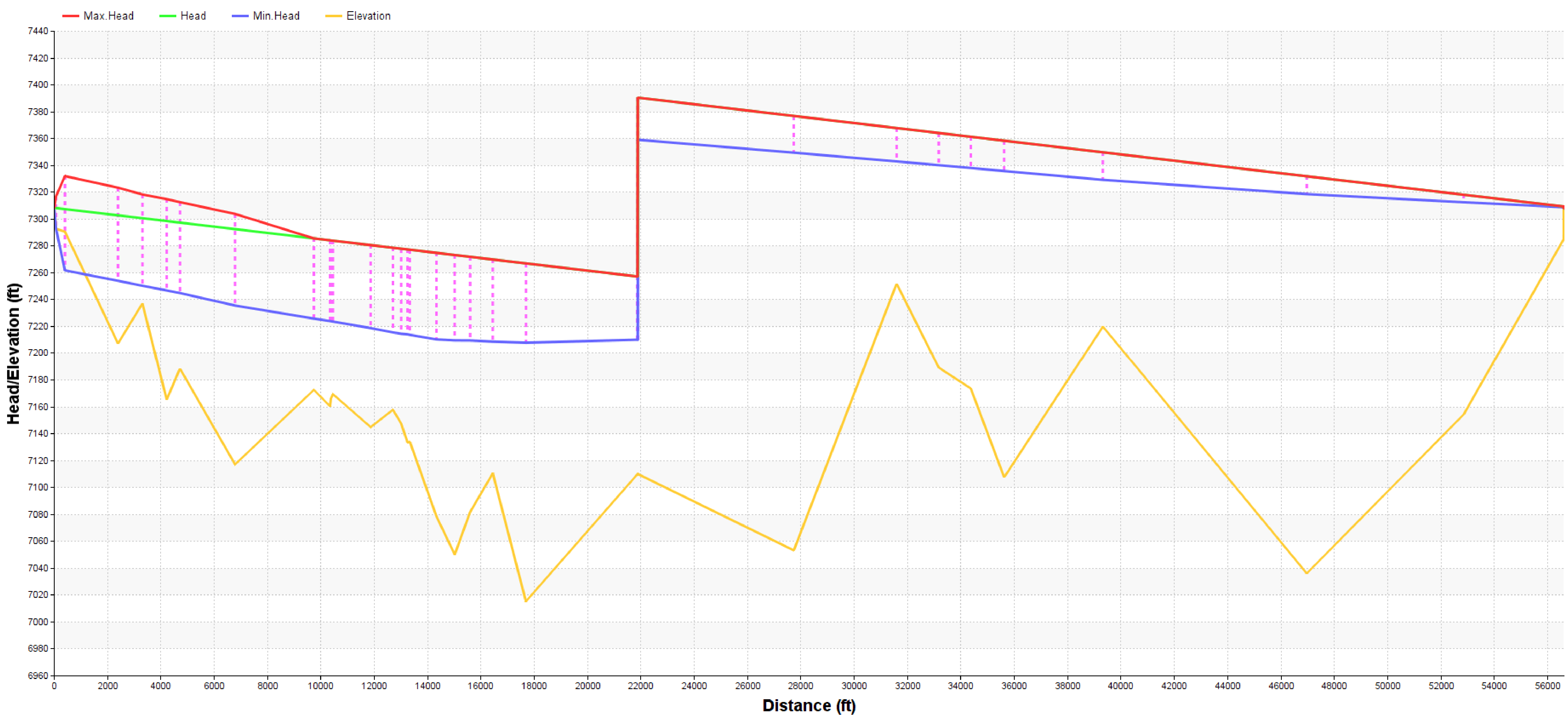


Exhibit 1.17b Surge Head Profile from Counselor Tank to JAN Tank (Unprotected Scenario: JAN sudden open)

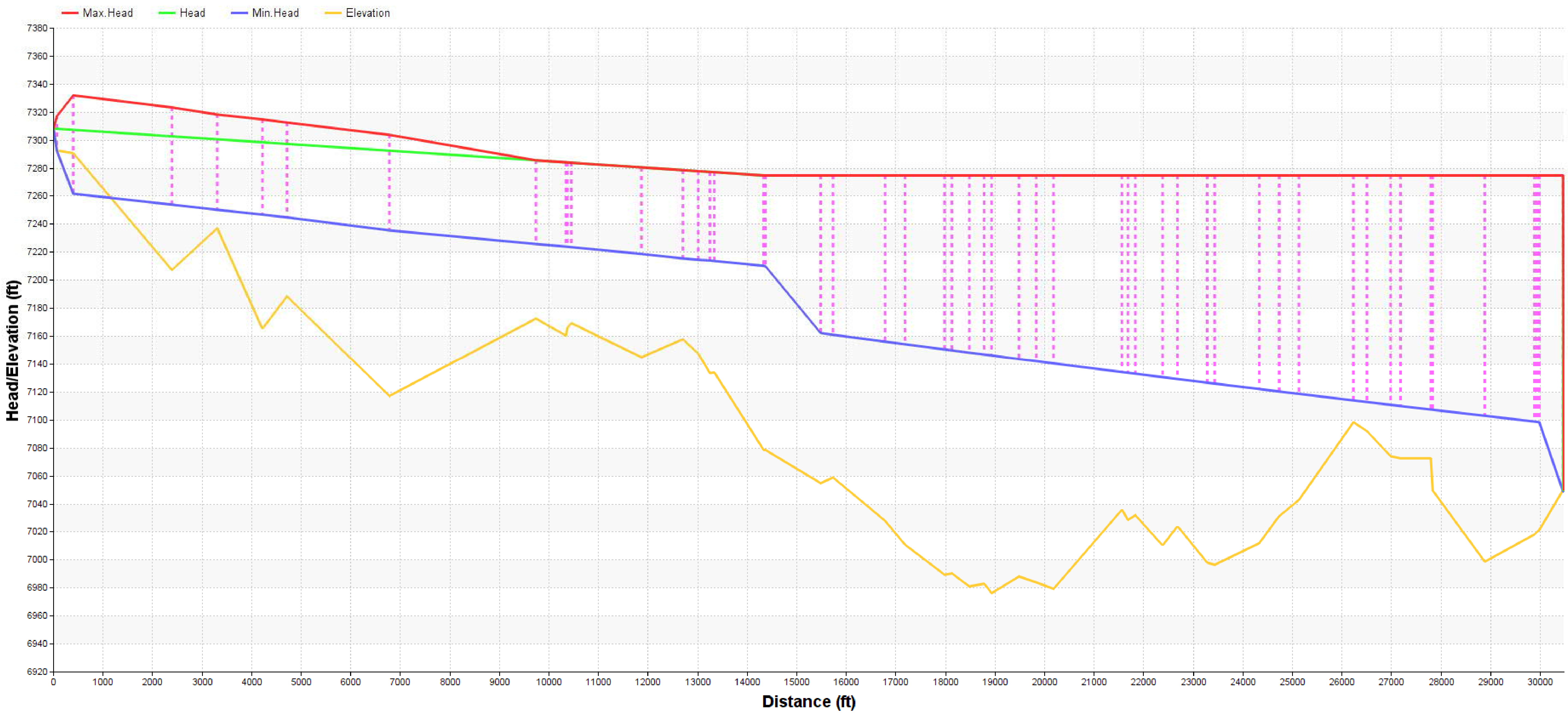


Exhibit 1.18a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Unprotected Scenario: JAN sudden close)

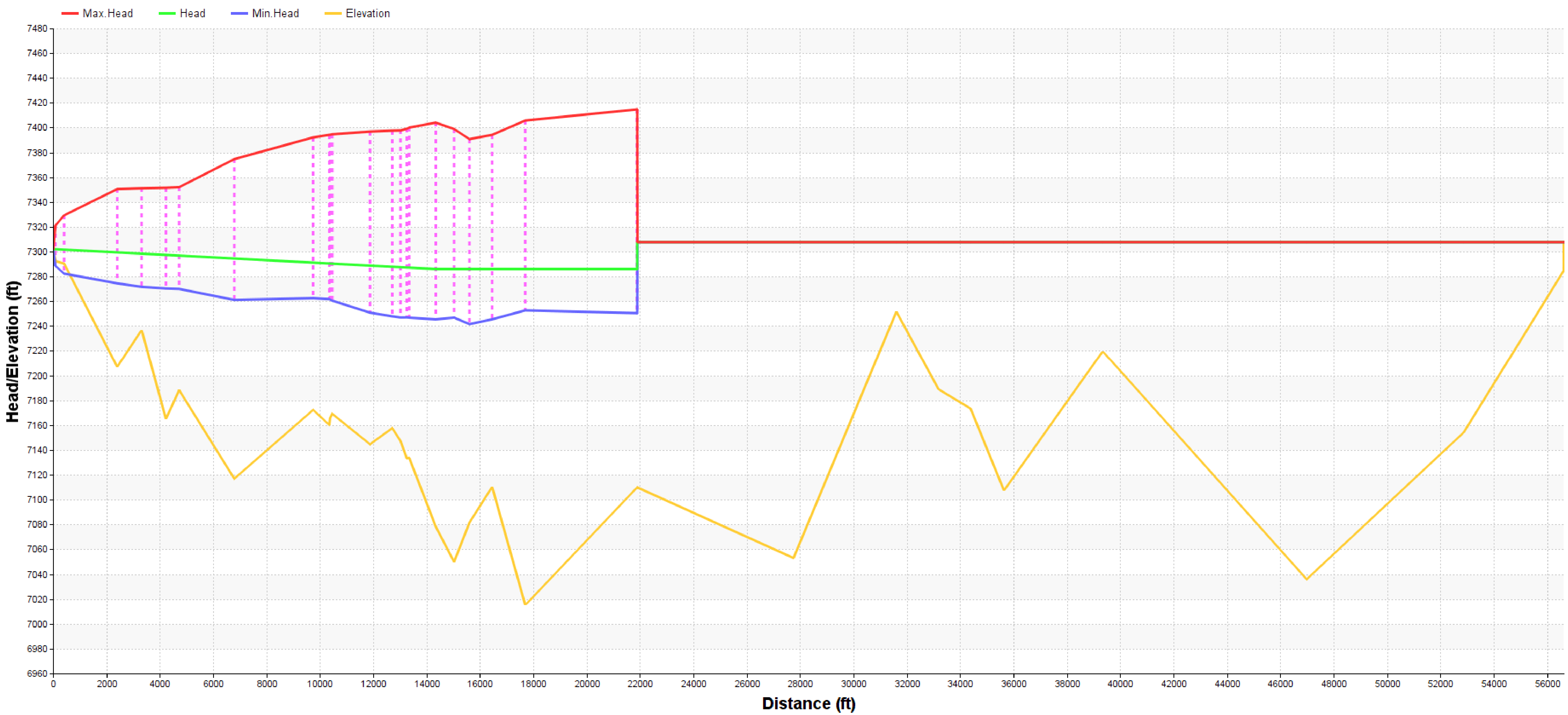


Exhibit 1.18b Surge Head Profile from Counselor Tank to JAN Tank (Unprotected Scenario: JAN sudden close)

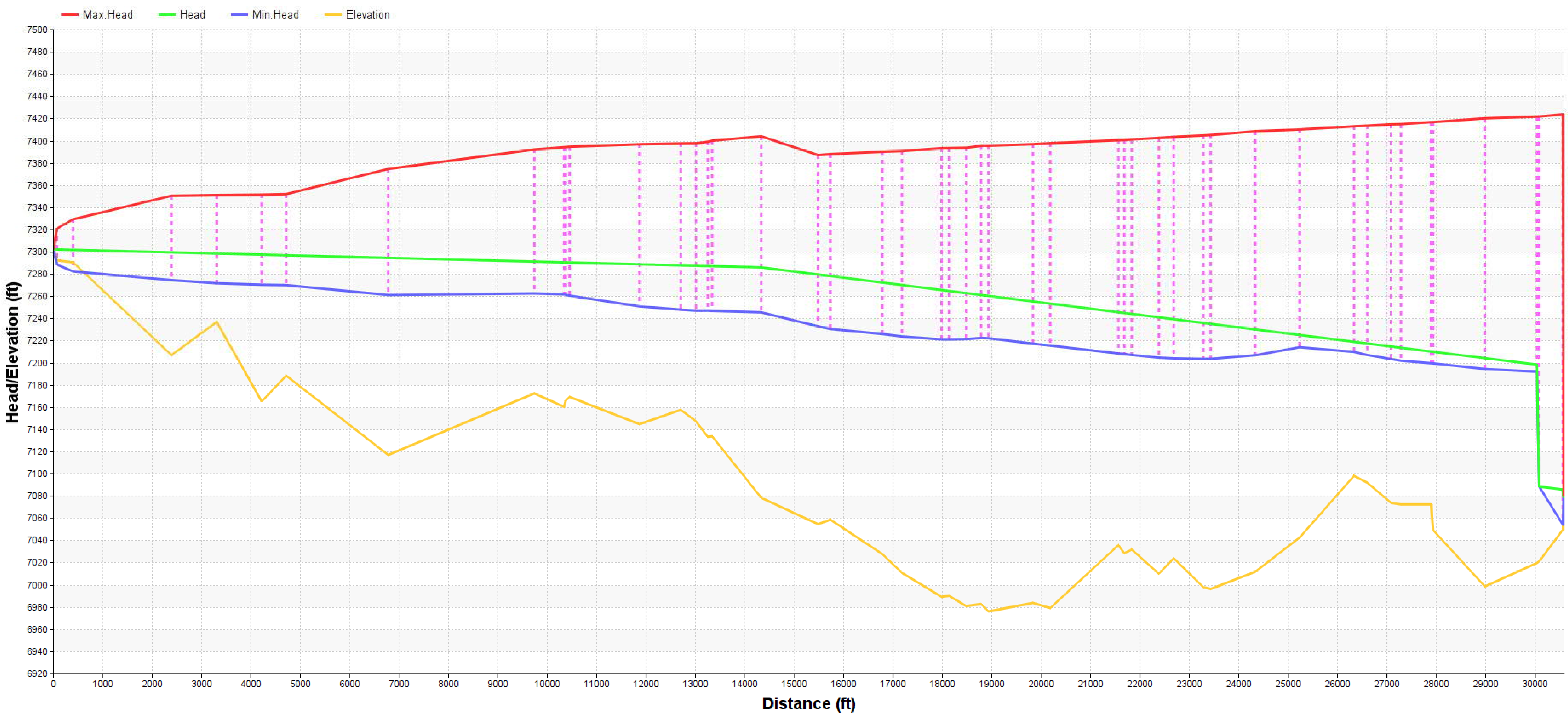


Exhibit 1.19a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Unprotected Scenario: Pump sudden start)

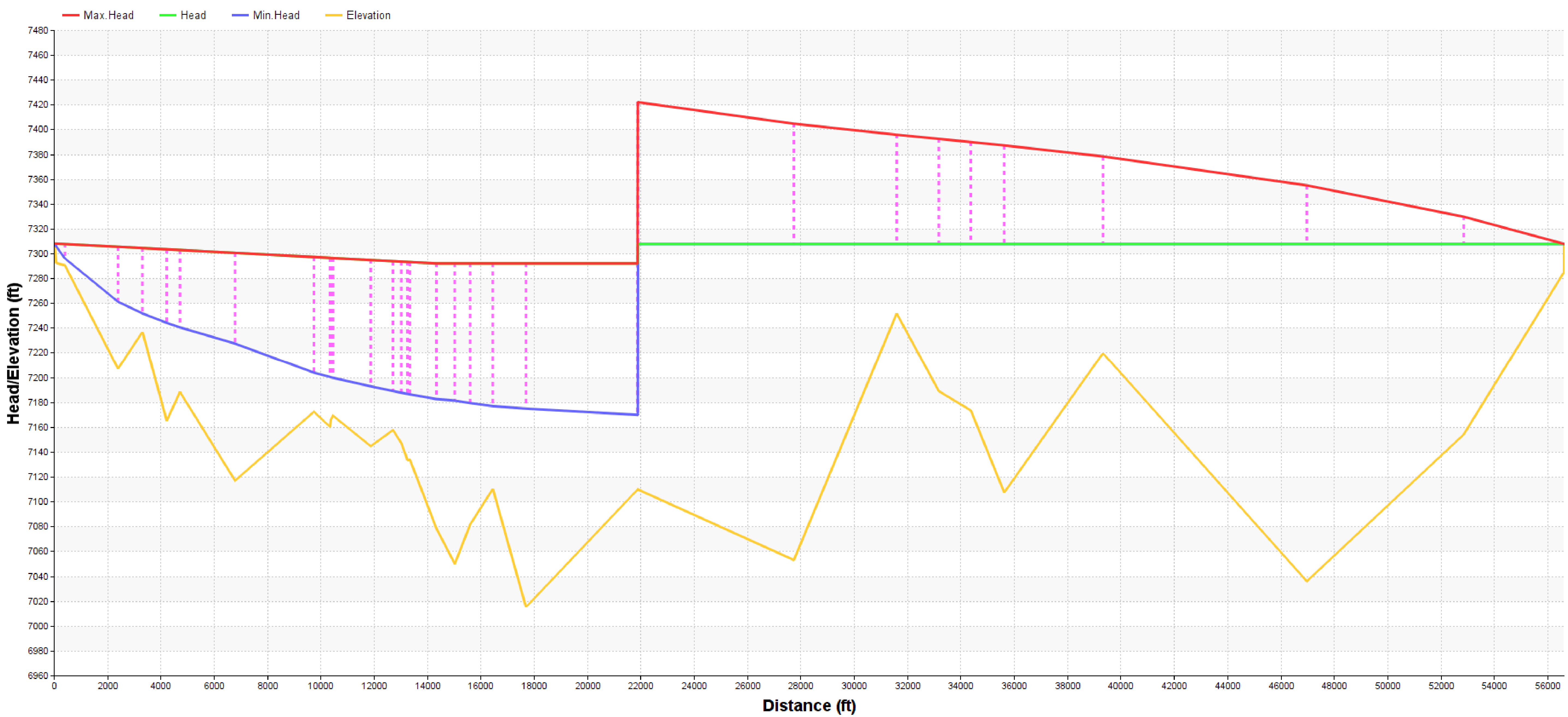


Exhibit 1.19b Surge Head Profile from Counselor Tank to JAN Tank (Unprotected Scenario: Pump sudden start)

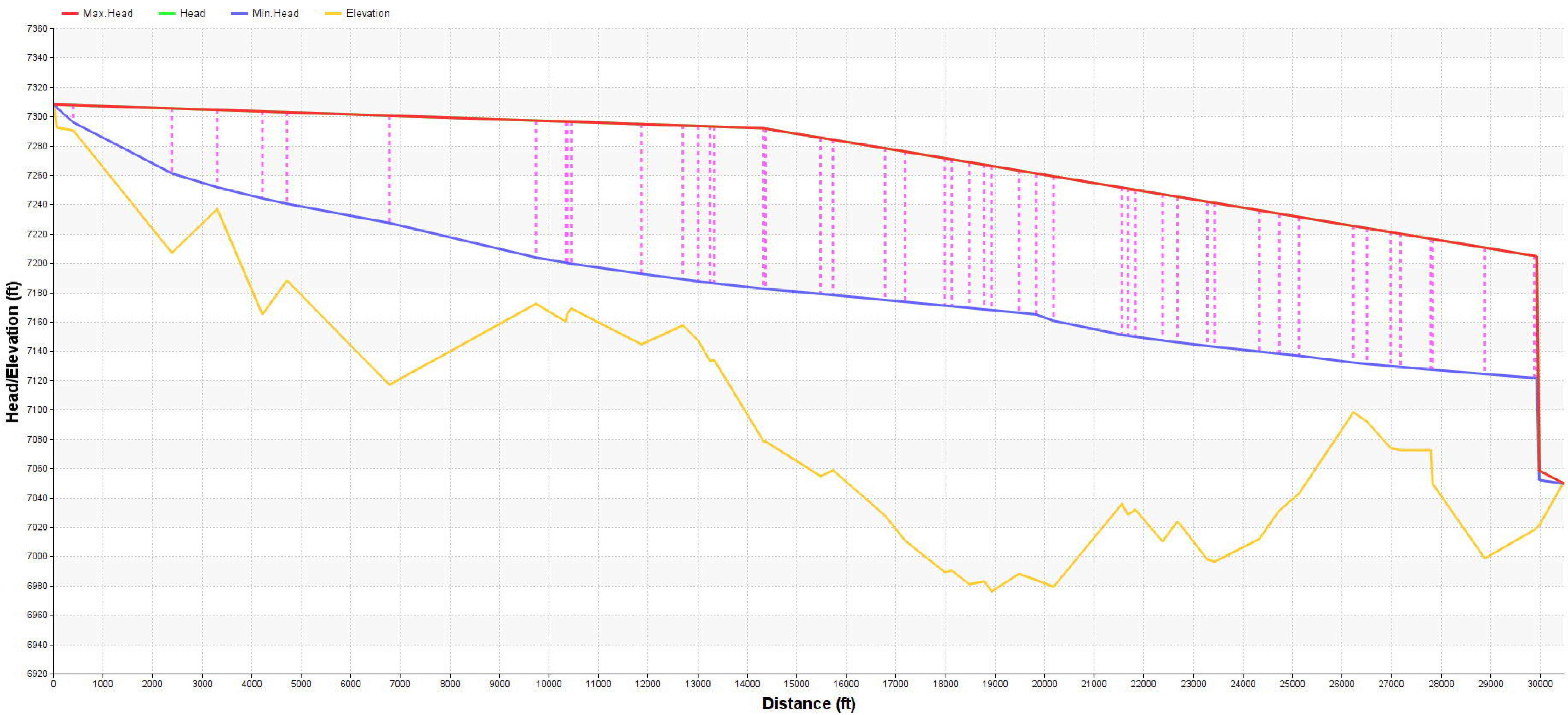


Exhibit 1.20a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Unprotected Scenario: Pump sudden stop)

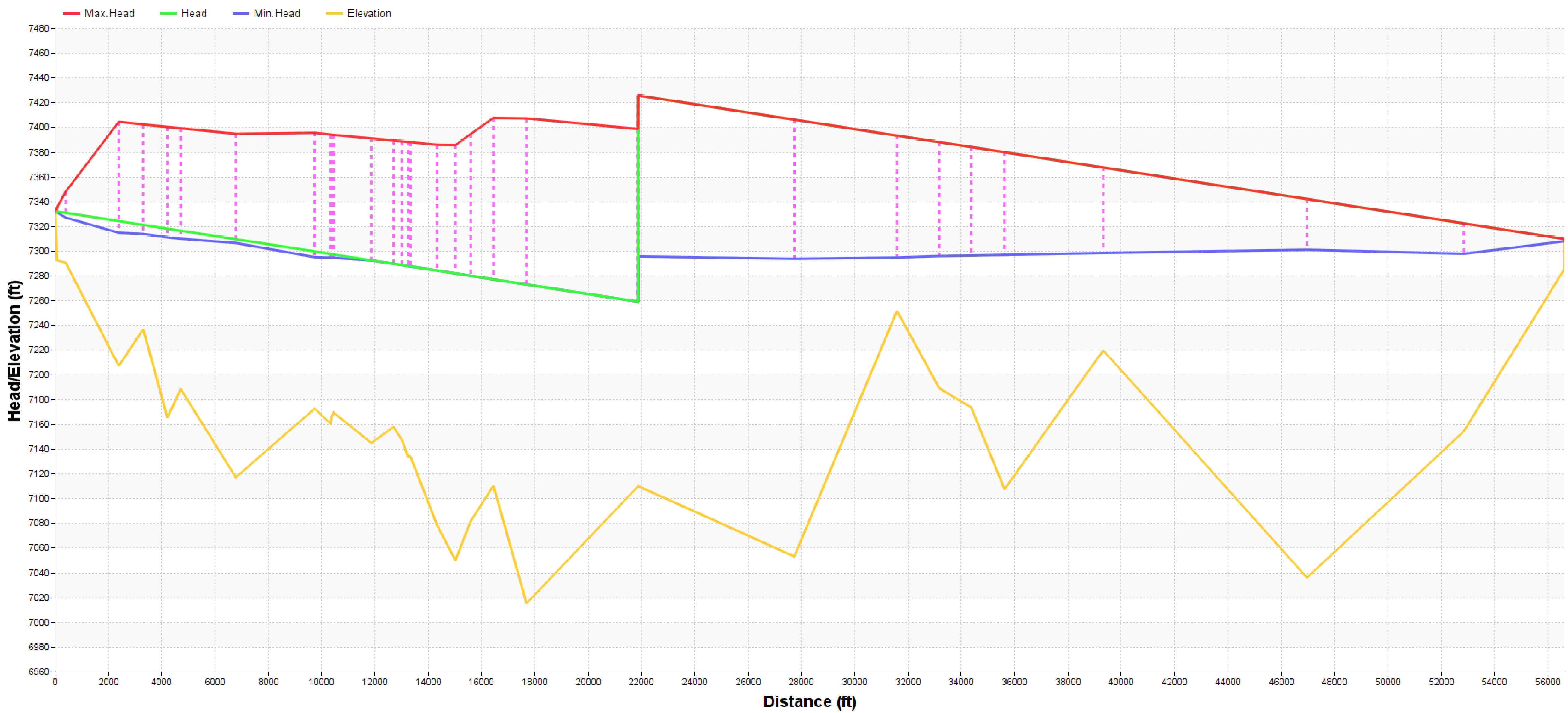


Exhibit 1.20b Surge Head Profile from Counselor Tank to JAN Tank (Unprotected Scenario: Pump sudden stop)

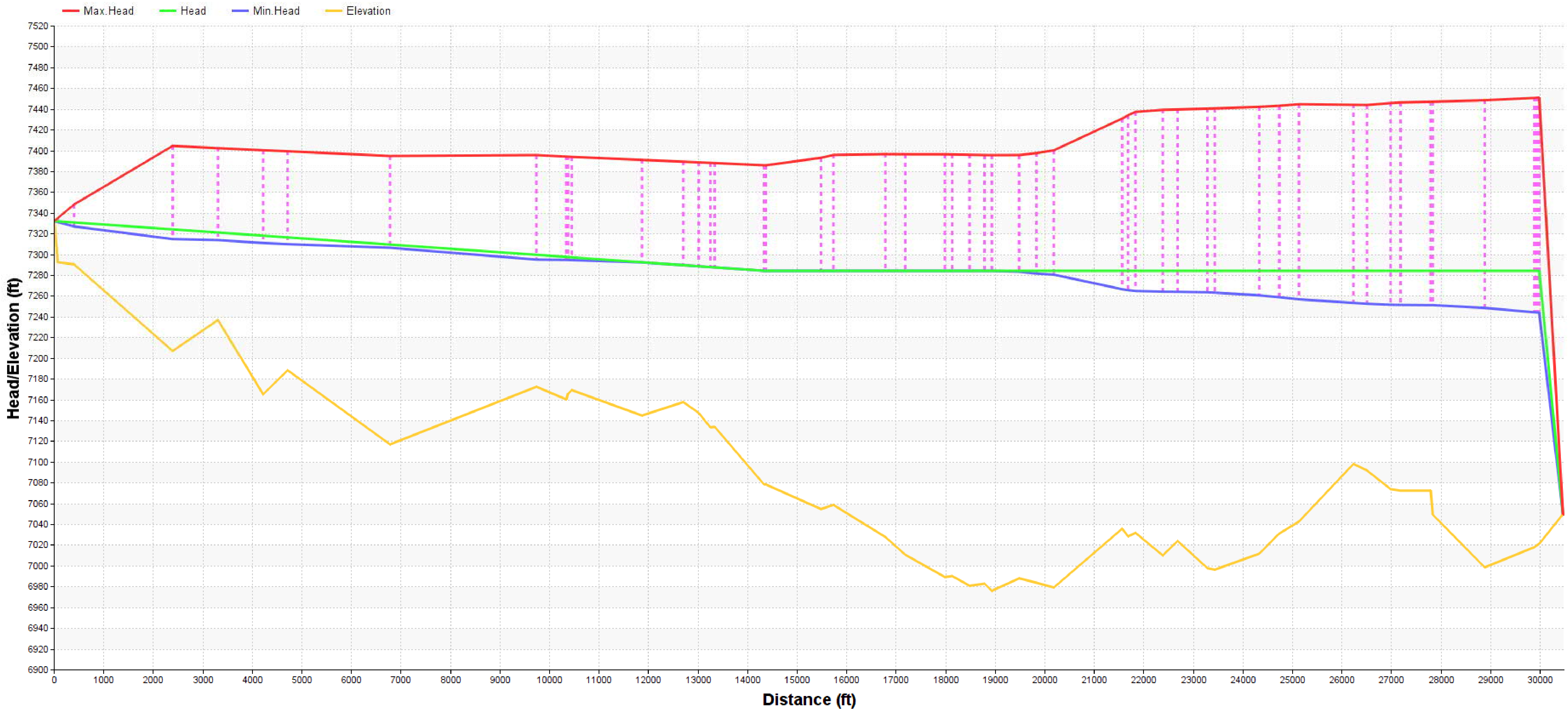


Exhibit 1.21a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Unprotected Scenario: Isolation valve closure at STA 143+30)

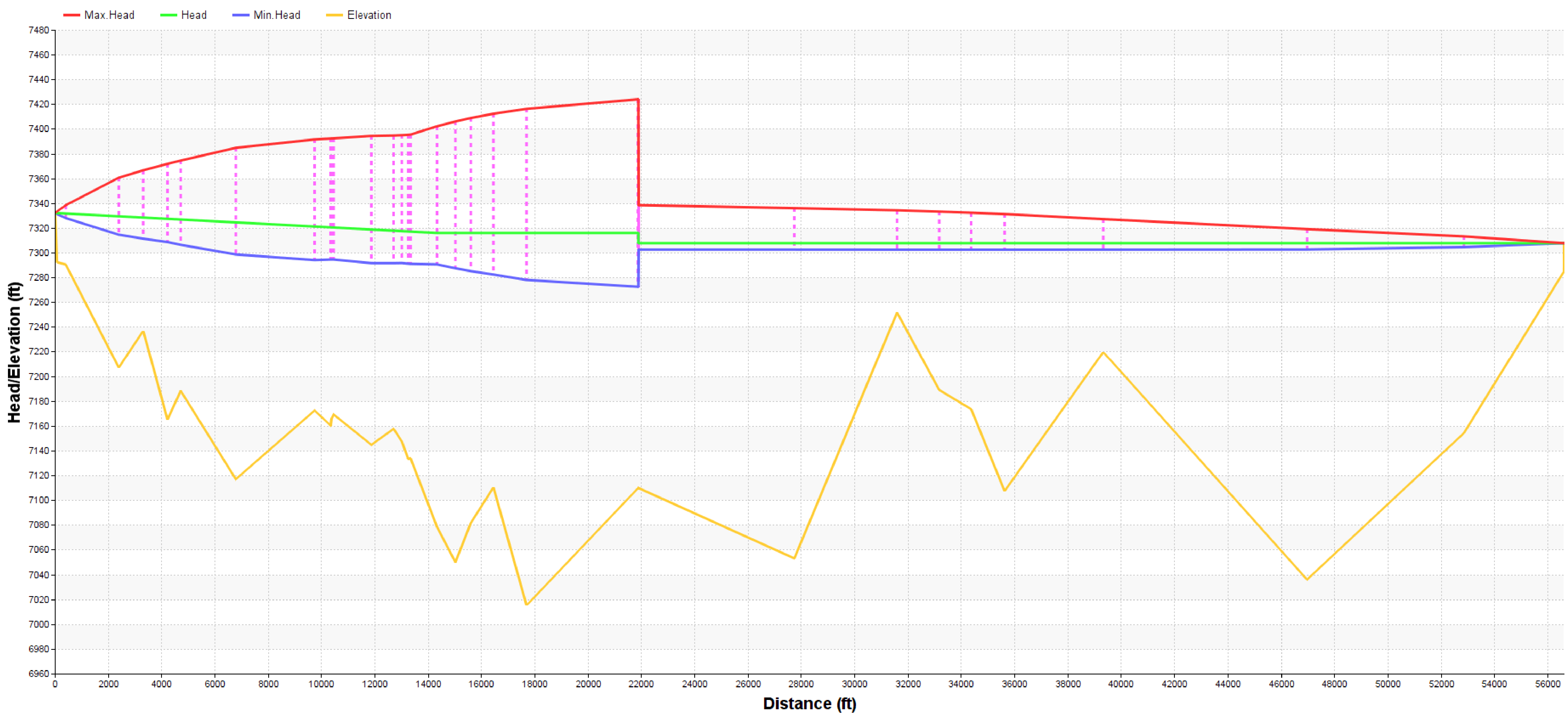


Exhibit 1.21b Surge Head Profile from Counselor Tank to JAN Tank (Scenario: Isolation valve closure at STA 143+30)

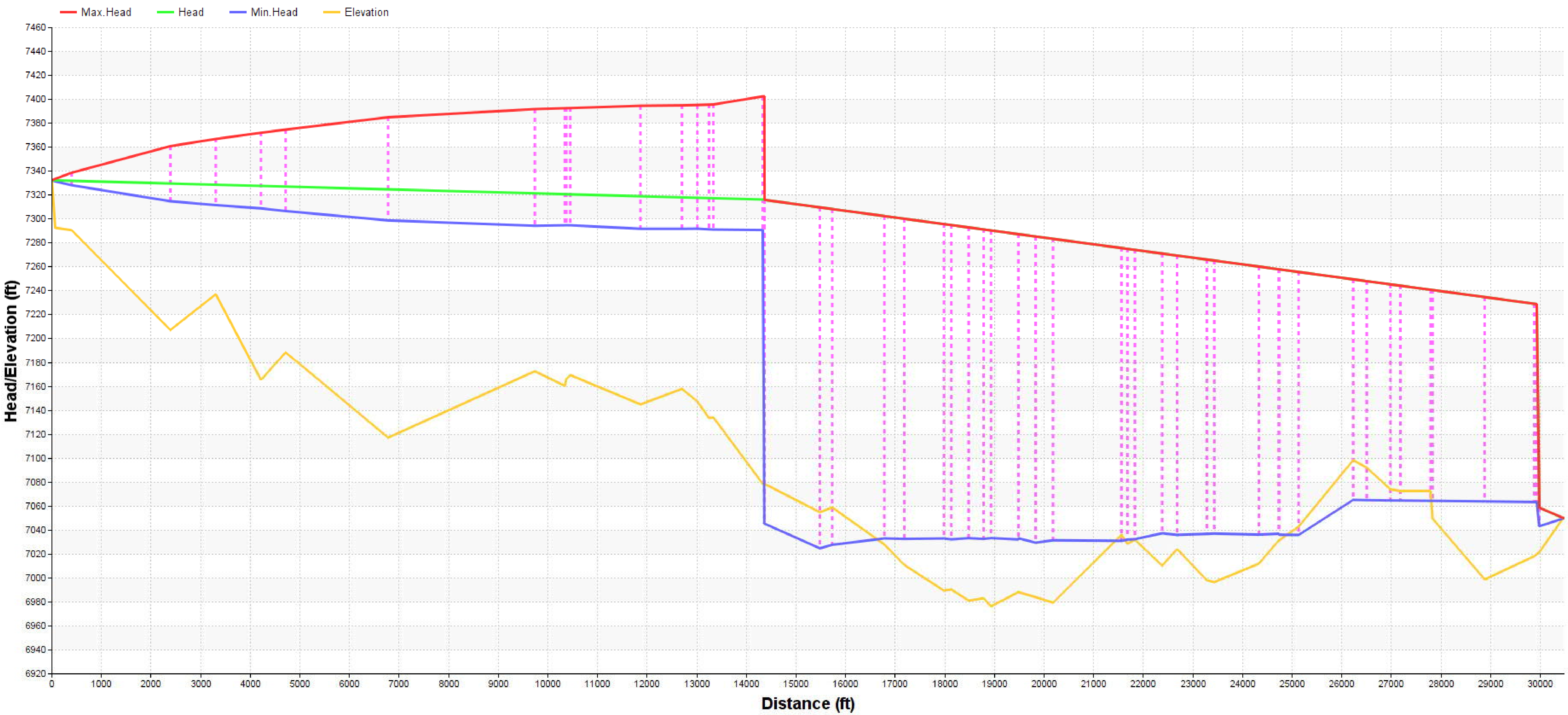


Exhibit 1.22a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Unprotected Scenario: Isolation valve closure at STA 194+80)

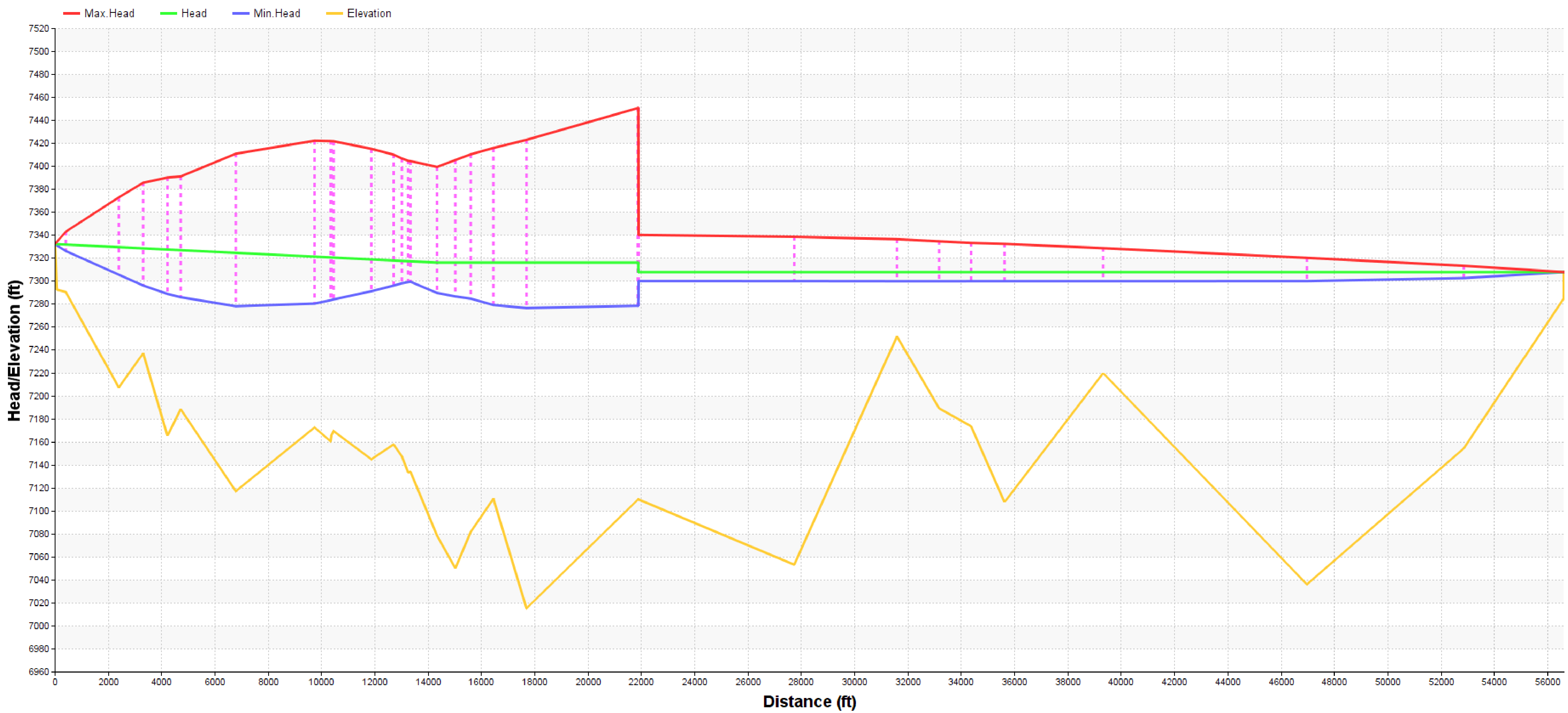


Exhibit 1.22b Surge Head Profile from Counselor Tank to JAN Tank (Unprotected Scenario: Isolation valve closure at STA 194+80)

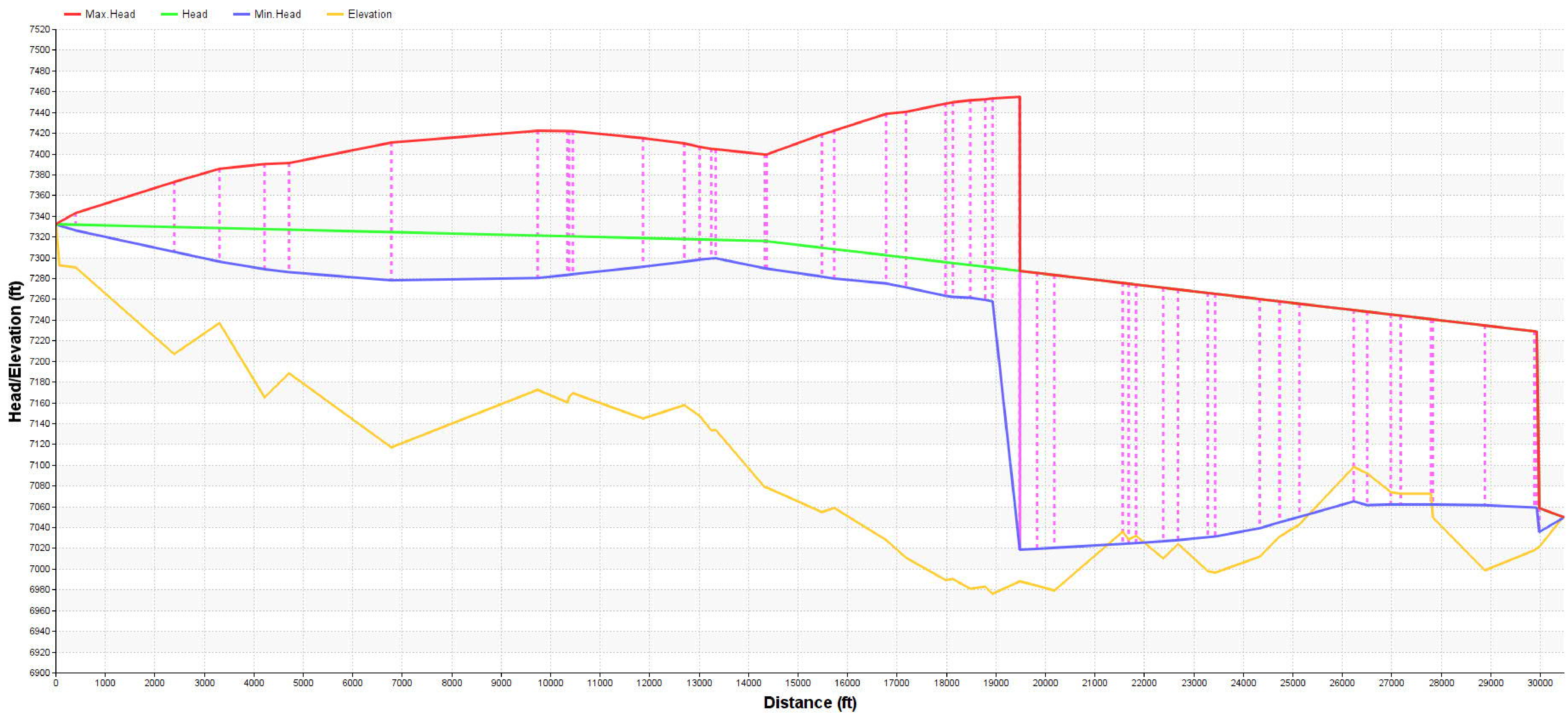


Exhibit 1.23a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Unprotected Scenario: Isolation valve closure at STA 247+30)

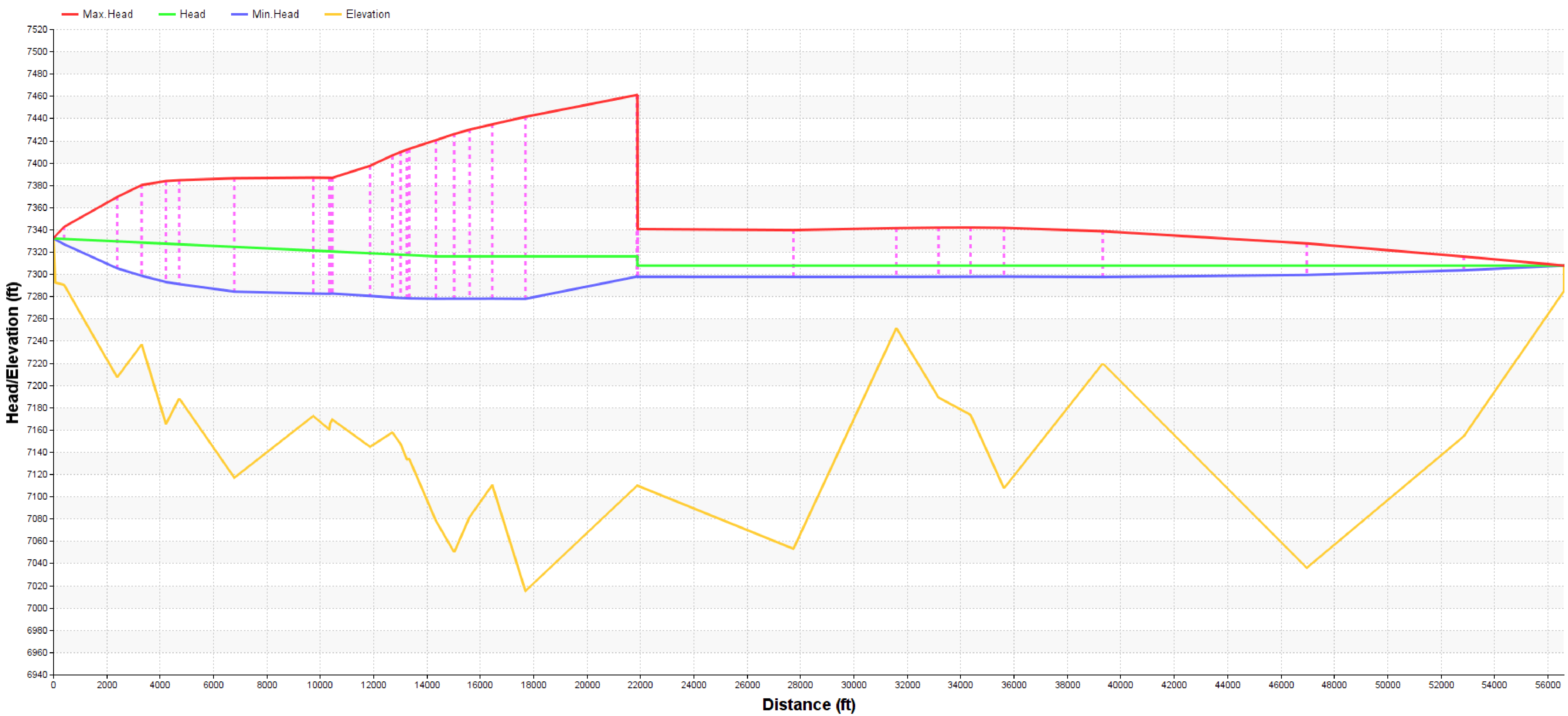


Exhibit 1.23b Surge Head Profile from Counselor Tank to JAN Tank (Unprotected Scenario: Isolation valve closure at STA 247+30)

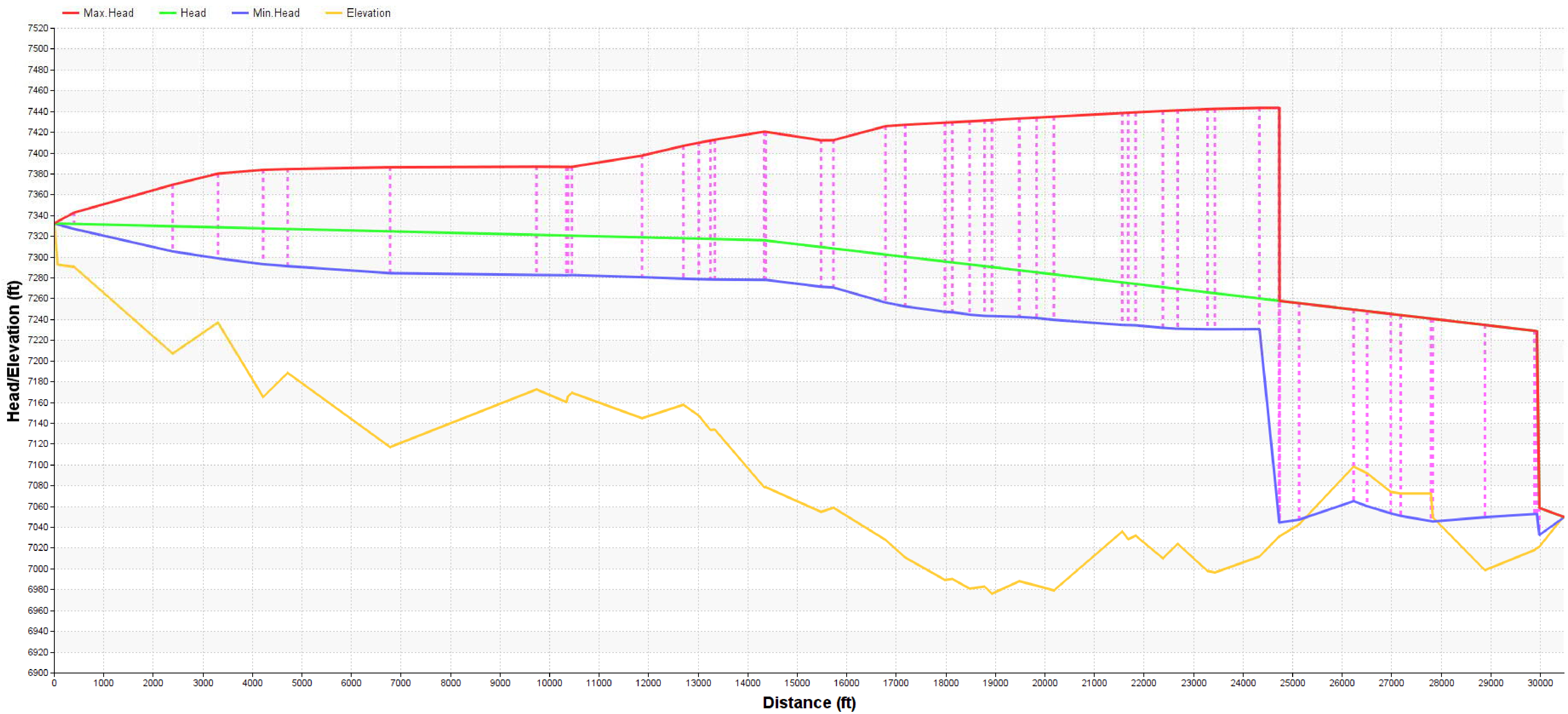


Exhibit 1.24a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Unprotected Scenario: Isolation valve closure at STA 299+80)

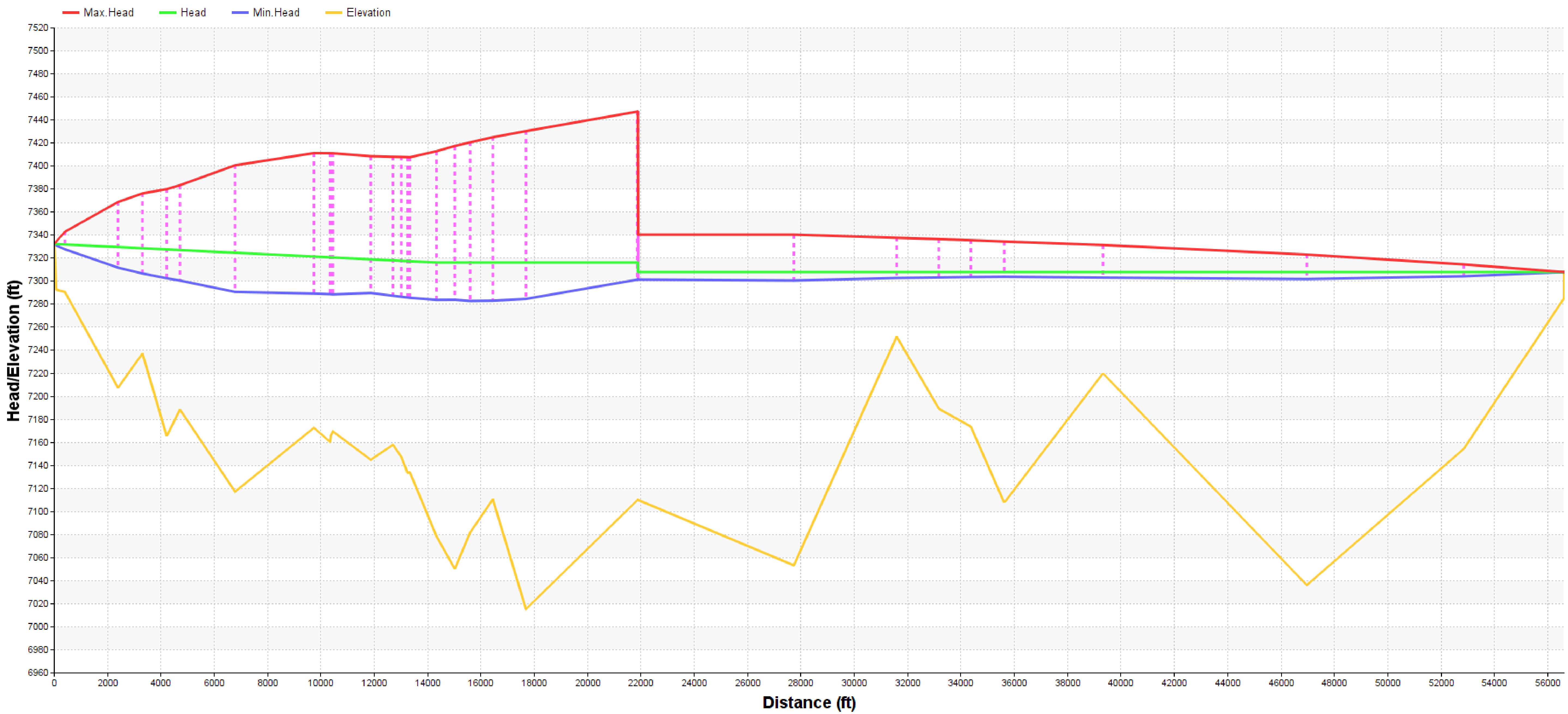


Exhibit 1.24b Surge Head Profile from Counselor Tank to JAN Tank (Unprotected Scenario: Isolation valve closure at STA 299+80)

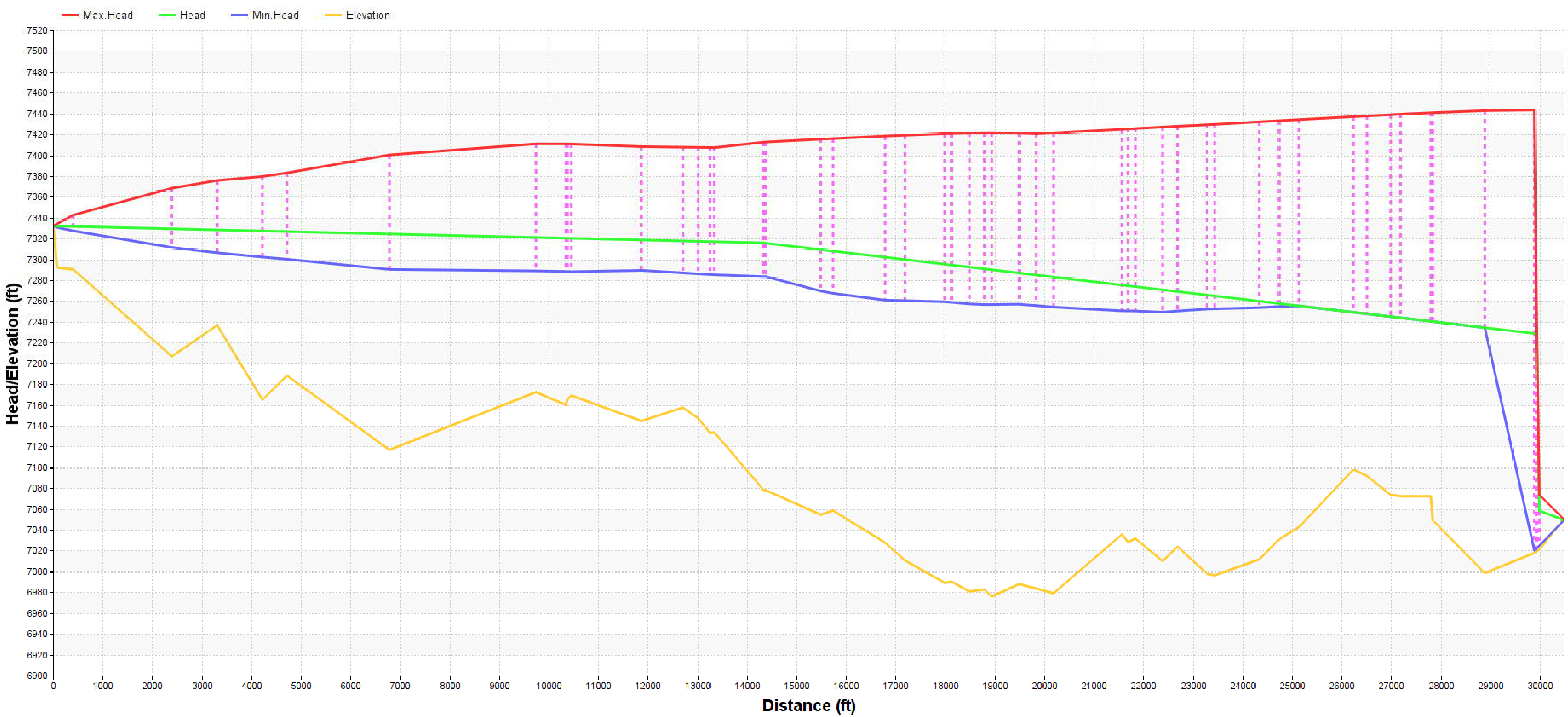


Exhibit 1.25a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Unprotected Scenario: Flush Valve at STA 22+91 close)

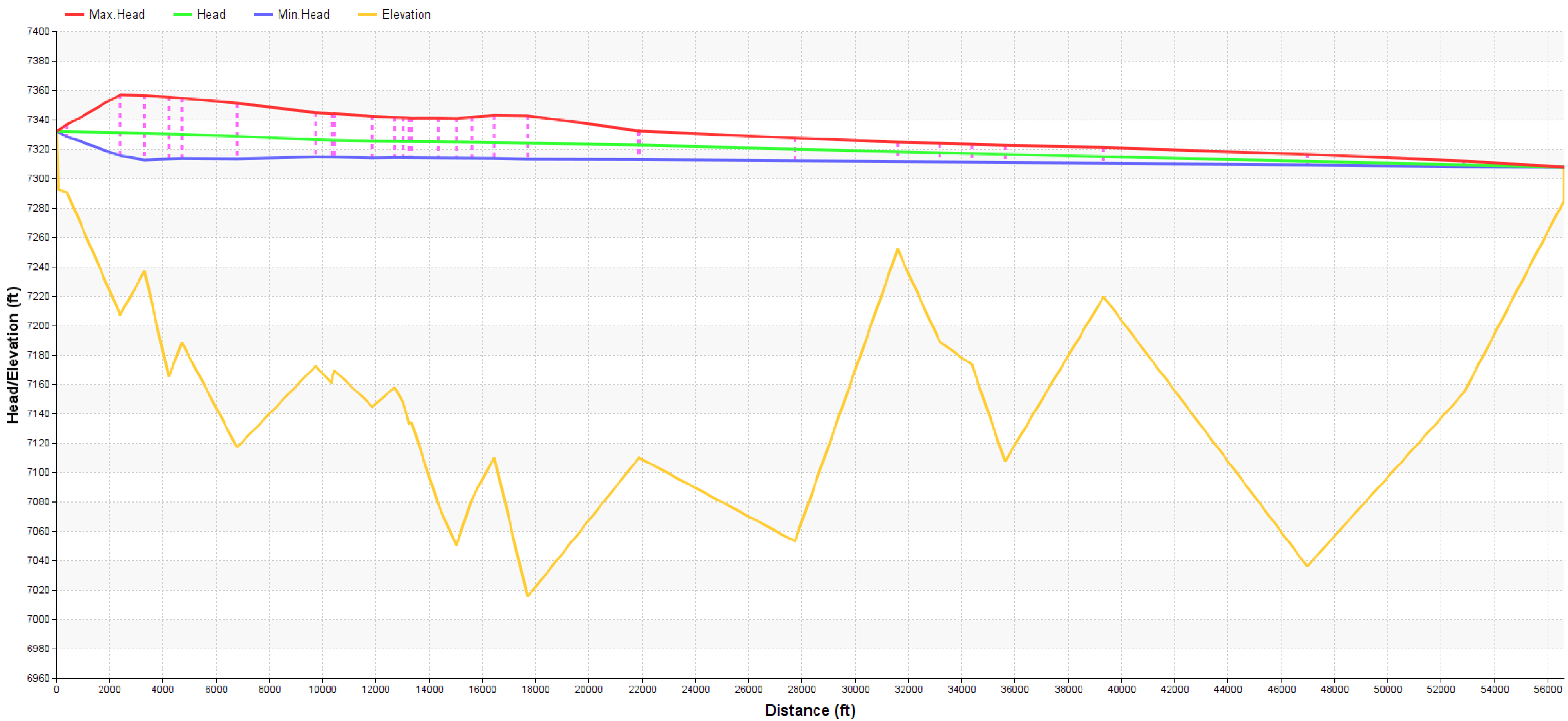


Exhibit 1.25b Surge Head Profile from Counselor Tank to JAN Tank (Unprotected Scenario: Flush Valve at STA 22+91 close)

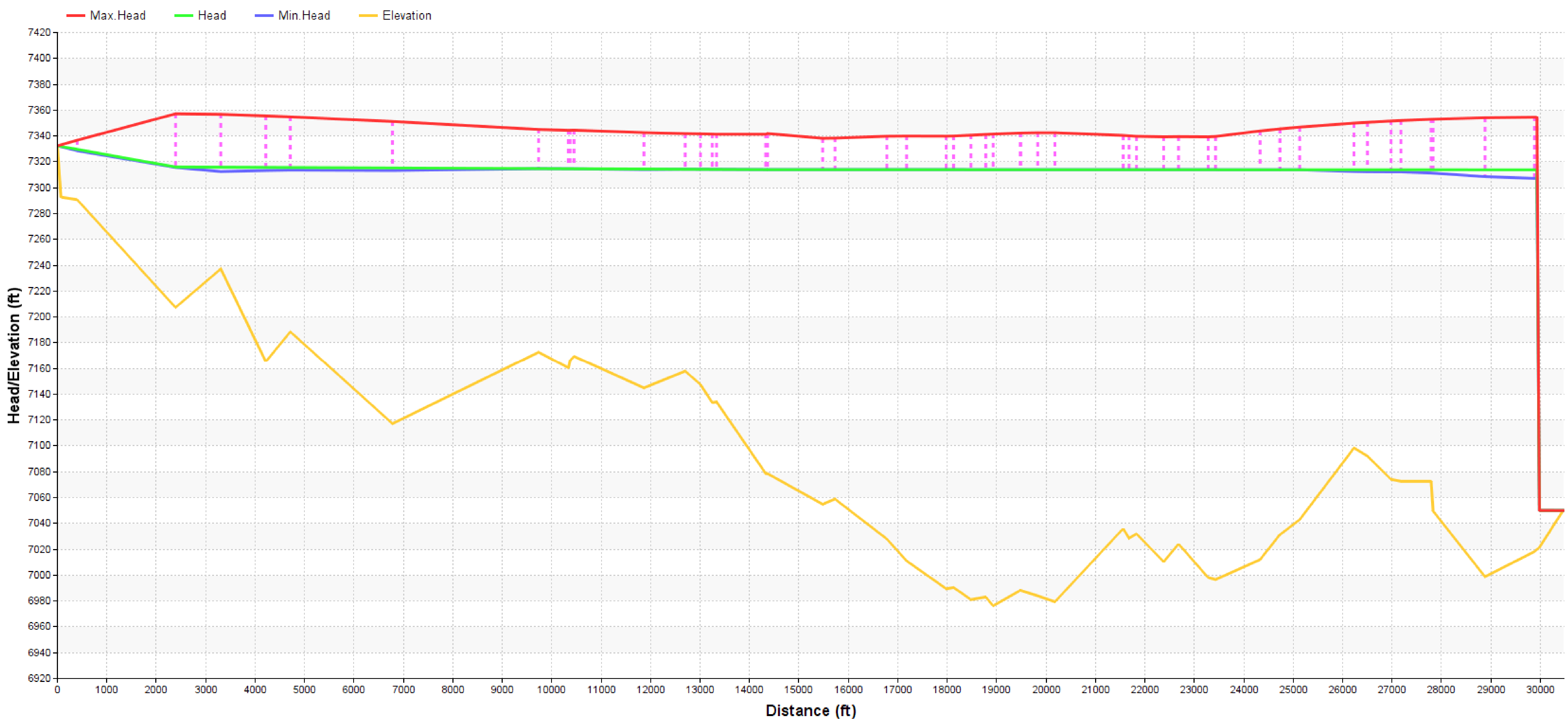


Exhibit 1.26a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Unprotected Scenario: Flush Valve at STA 66+05 close)

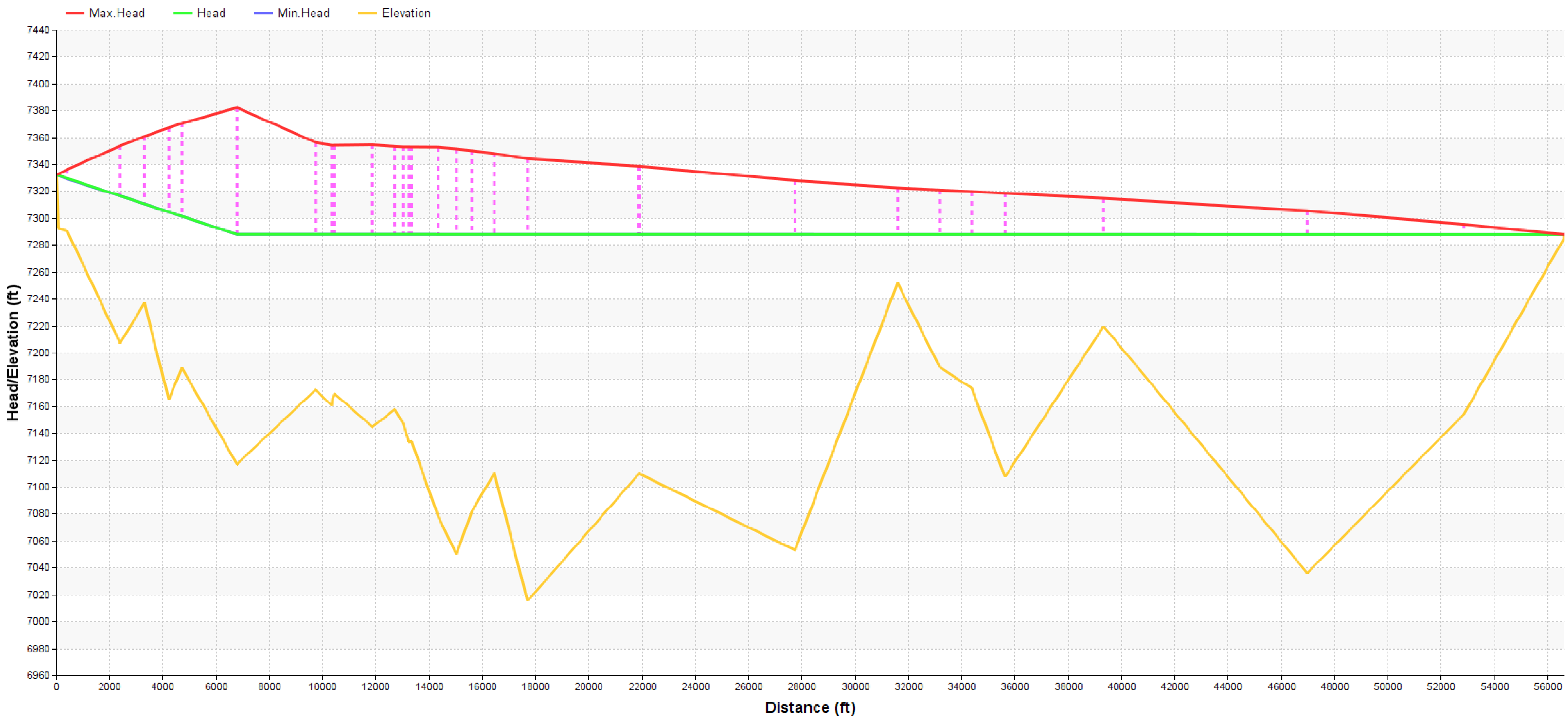


Exhibit 1.26b Surge Head Profile from Counselor Tank to JAN Tank (Unprotected Scenario: Flush Valve at STA 66+05 close)

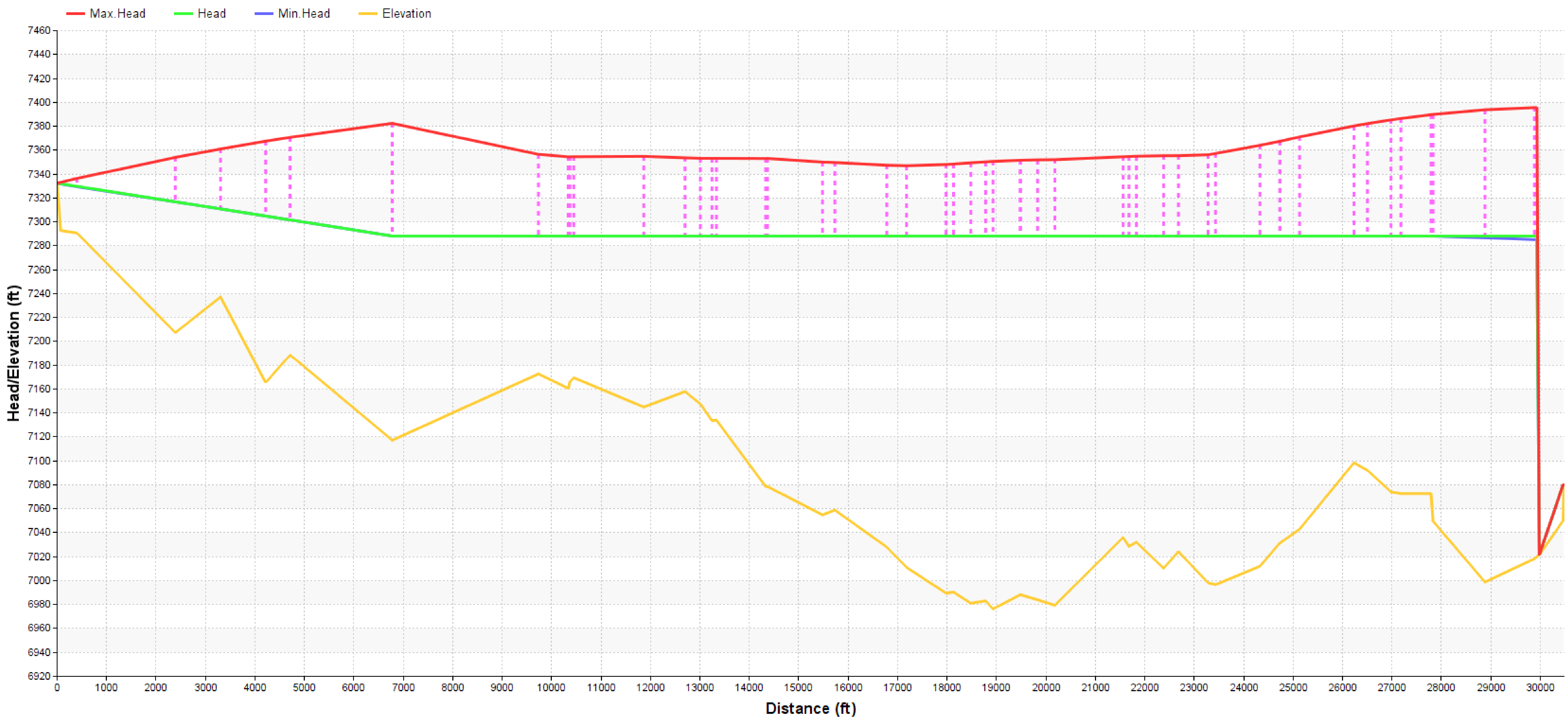


Exhibit 1.27a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Unprotected Scenario: Flush Valve at STA 148+29 close)

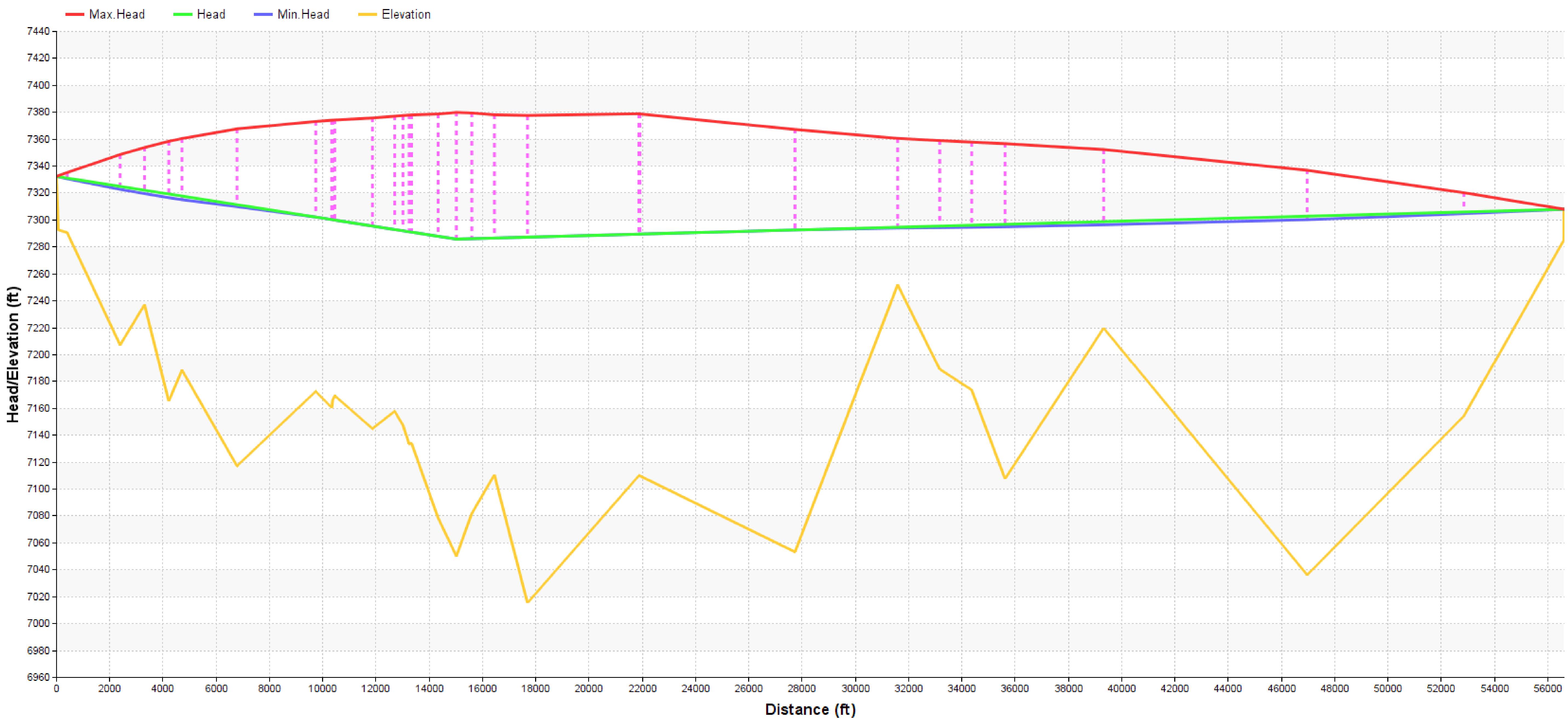


Exhibit 1.27b Surge Head Profile from Counselor Tank to JAN Tank (Unprotected Scenario: Flush Valve at STA 148+29 close)

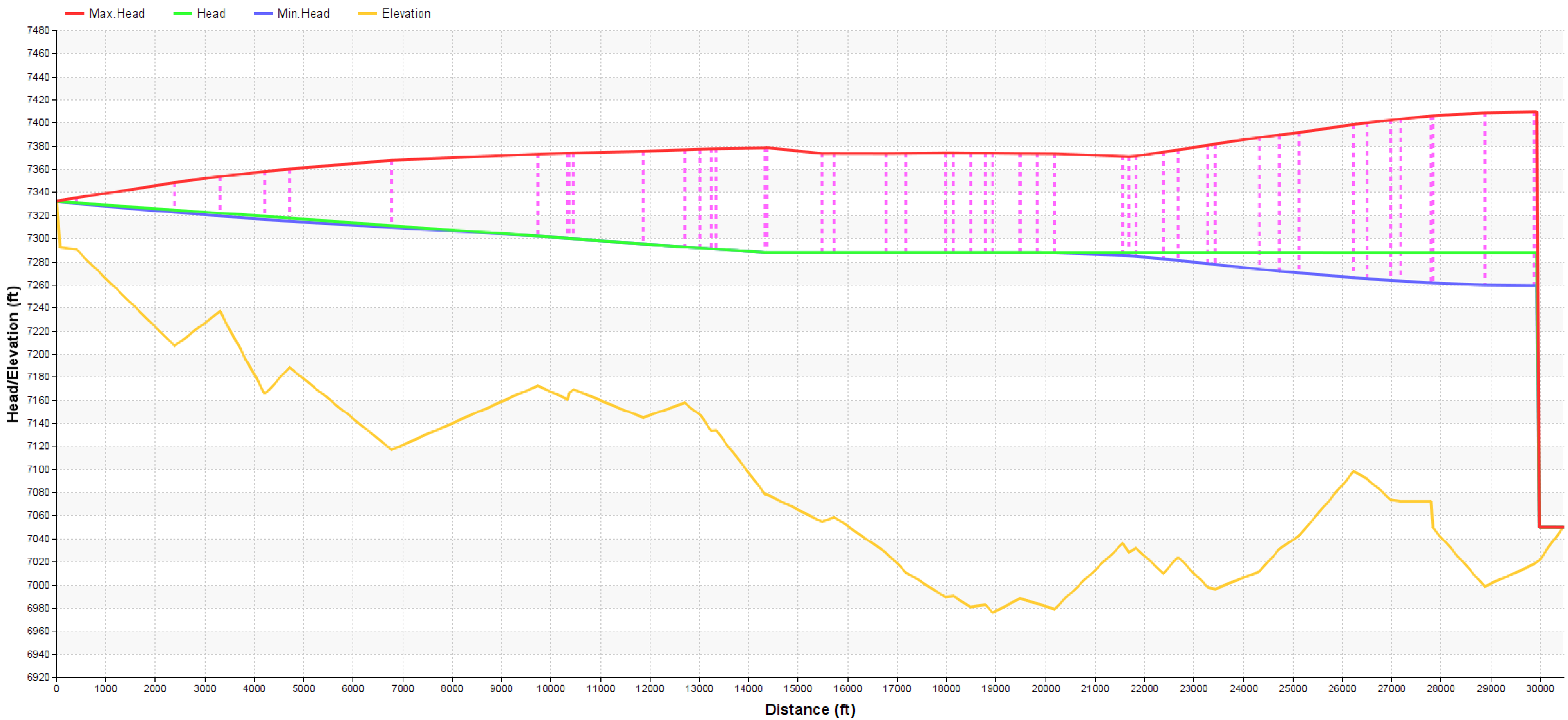


Exhibit 1.28a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Unprotected Scenario: Flush Valve at STA 176+00 close)

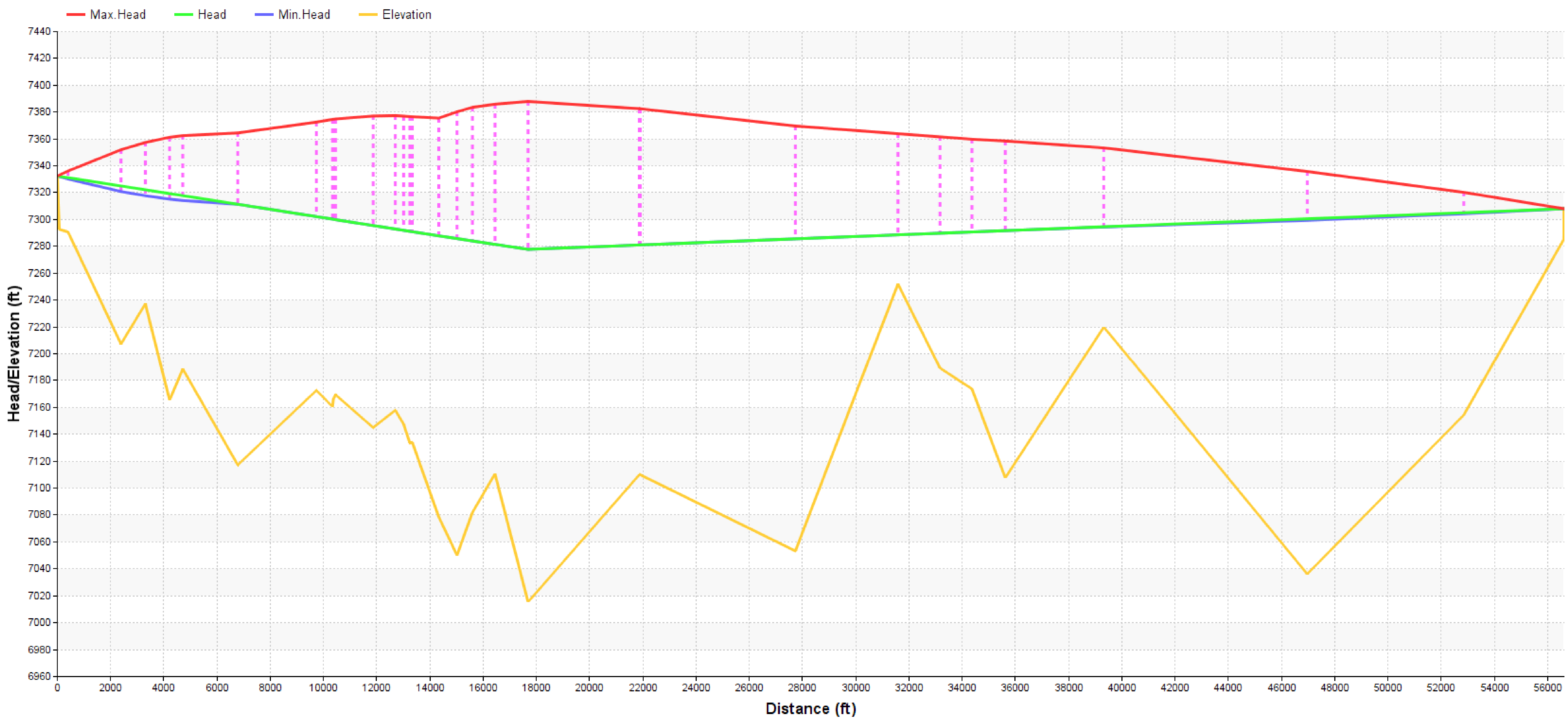


Exhibit 1.28b Surge Head Profile from Counselor Tank to JAN Tank (Unprotected Scenario: Flush Valve at STA 176+00 close)

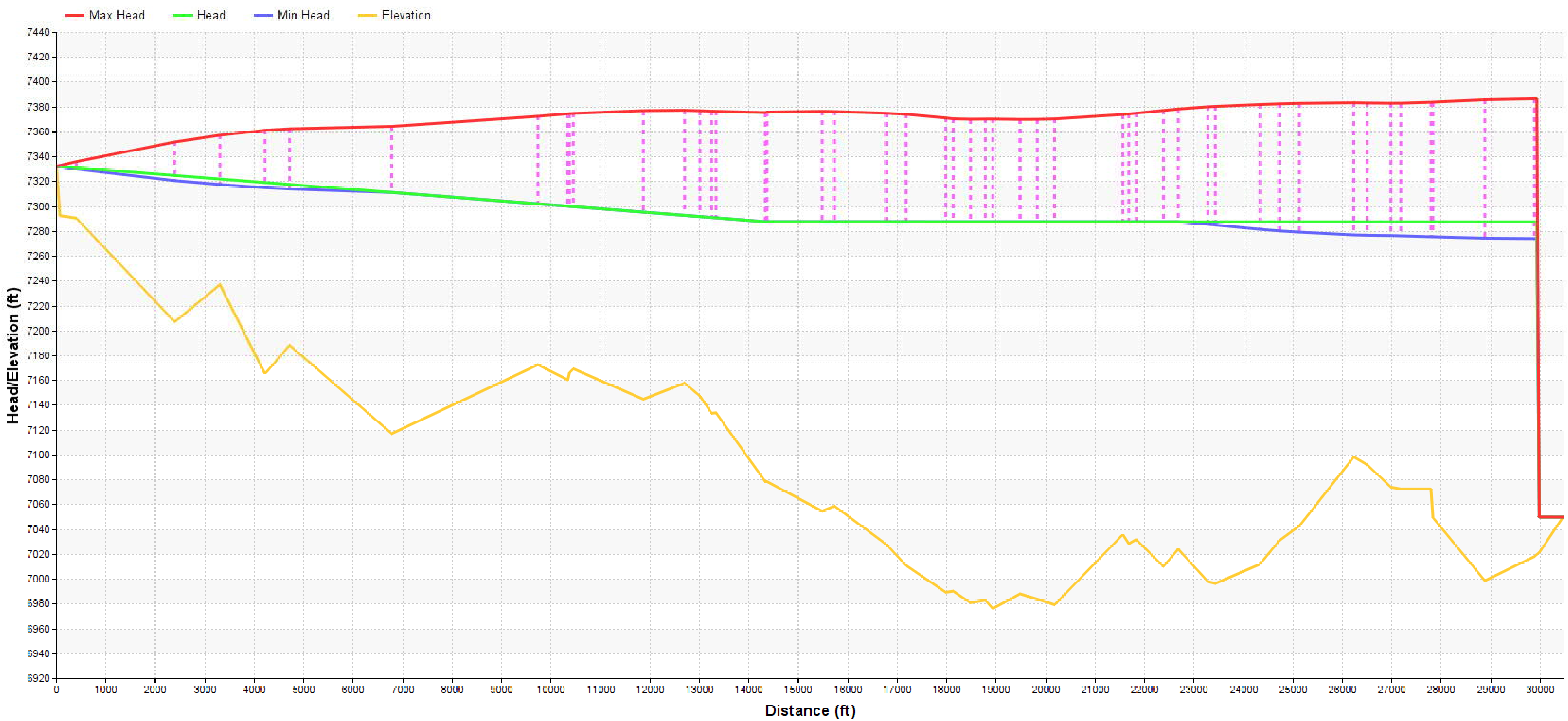


Exhibit 1.29a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Unprotected Scenario: Flush Valve at STA 218+08 close)

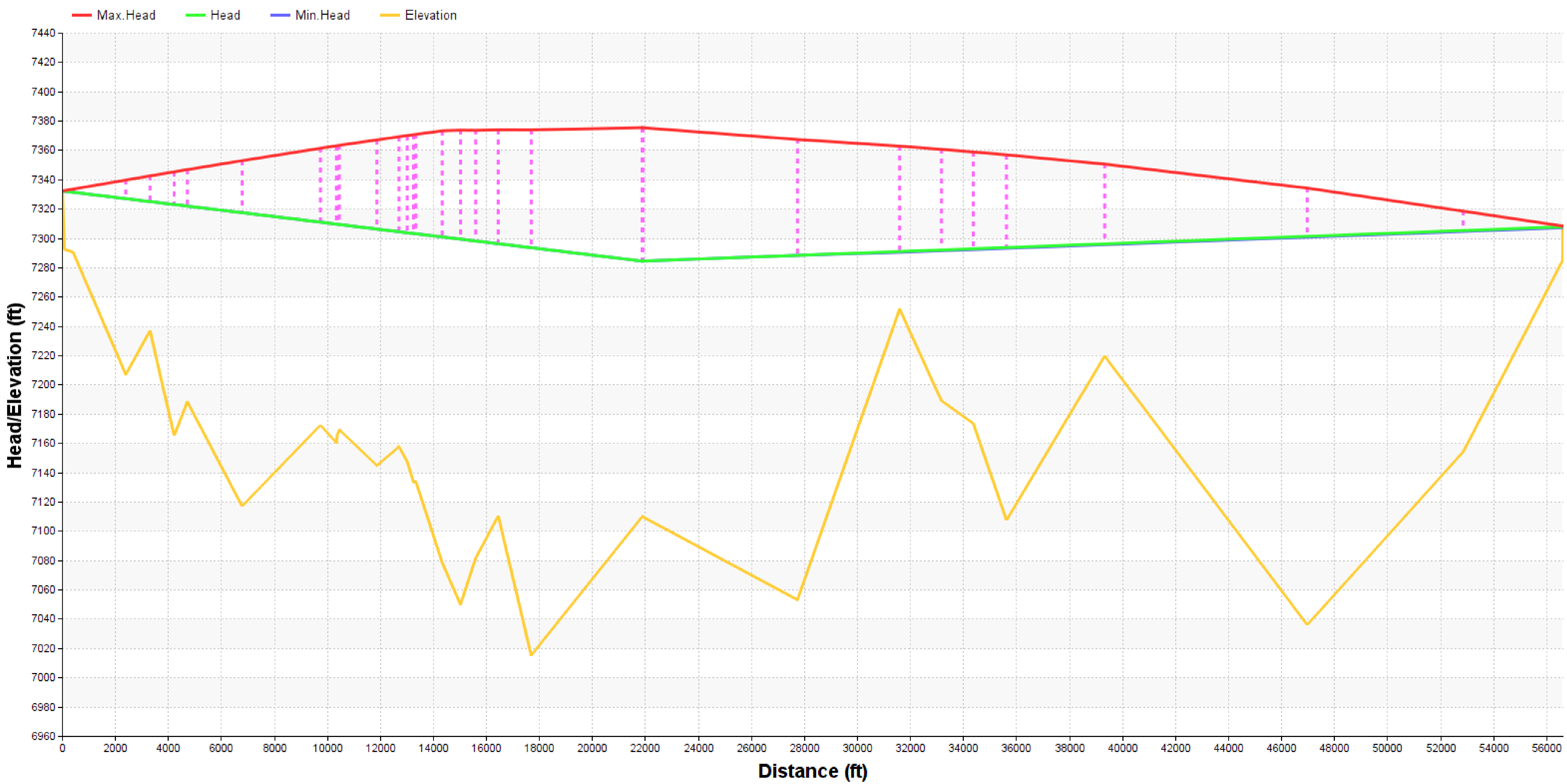


Exhibit 1.29b Surge Head Profile from Counselor Tank to JAN Tank (Unprotected Scenario: Flush Valve at STA 218+08 close)

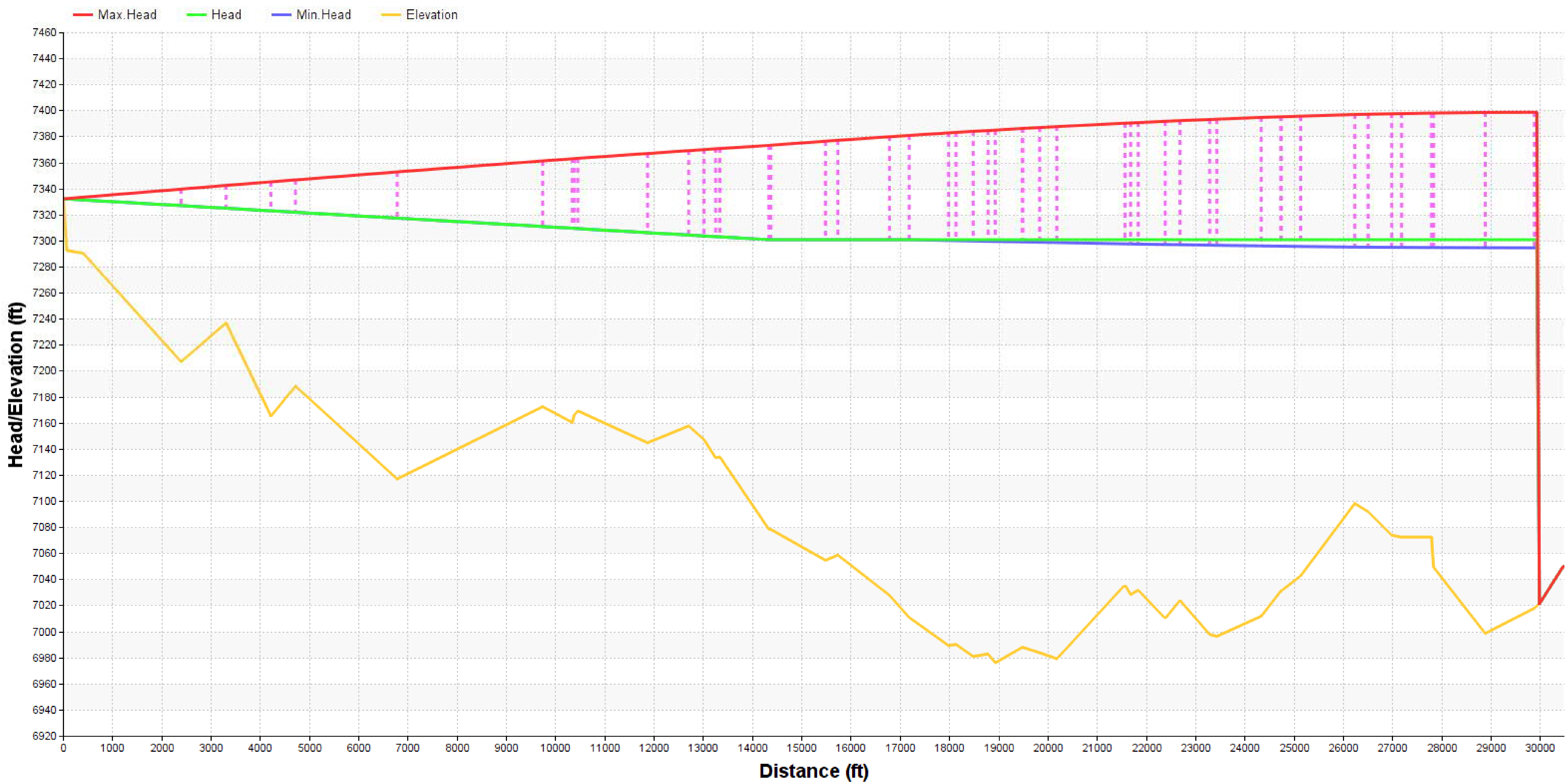


Exhibit 1.30a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Unprotected Scenario: Flush Valve at STA 218+90 close)

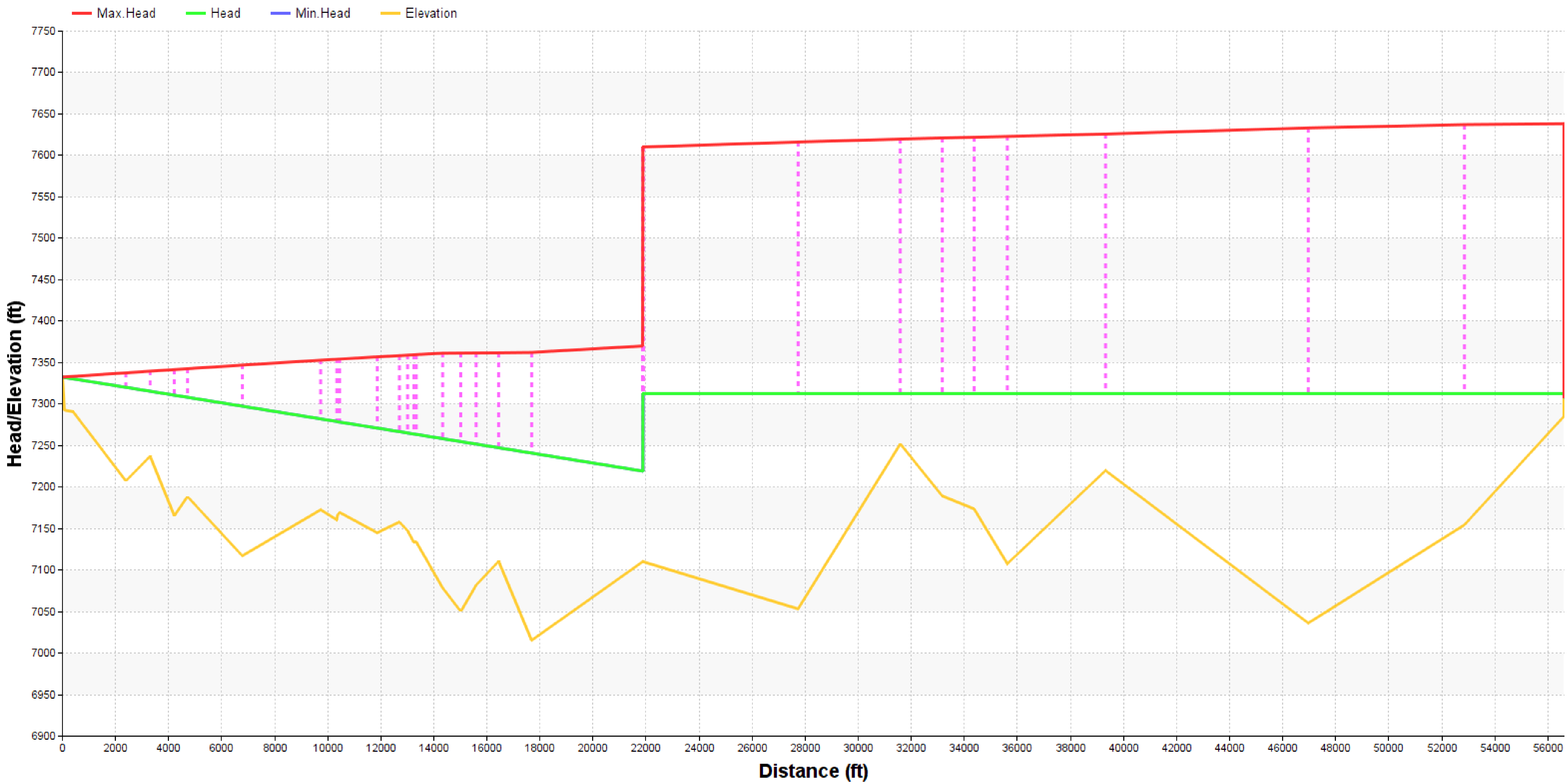


Exhibit 1.30b Surge Head Profile from Counselor Tank to JAN Tank (Unprotected Scenario: Flush Valve at STA 218+90 close)

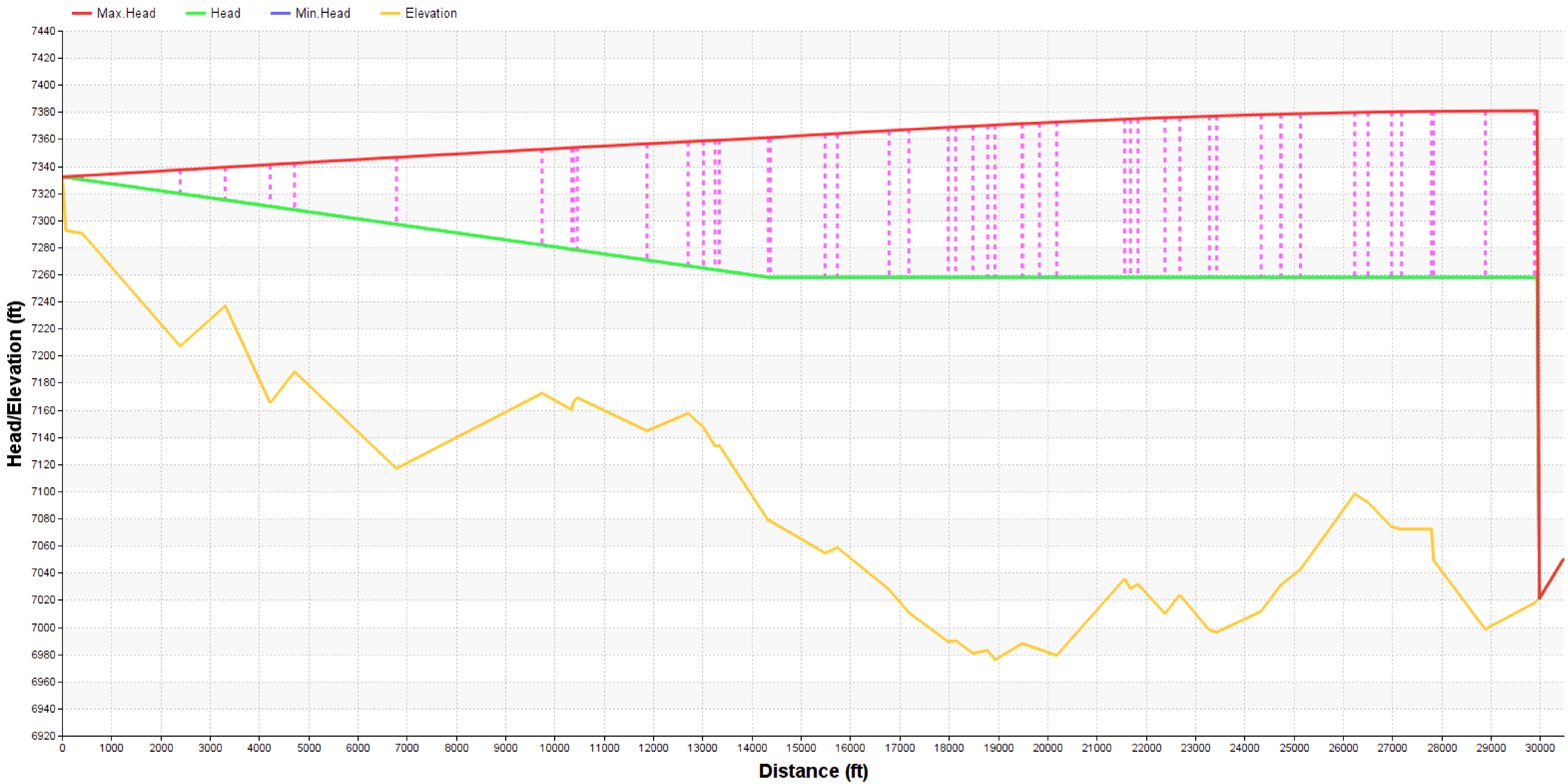


Exhibit 1.31a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Unprotected Scenario: Flush Valve at STA 276+80 close)

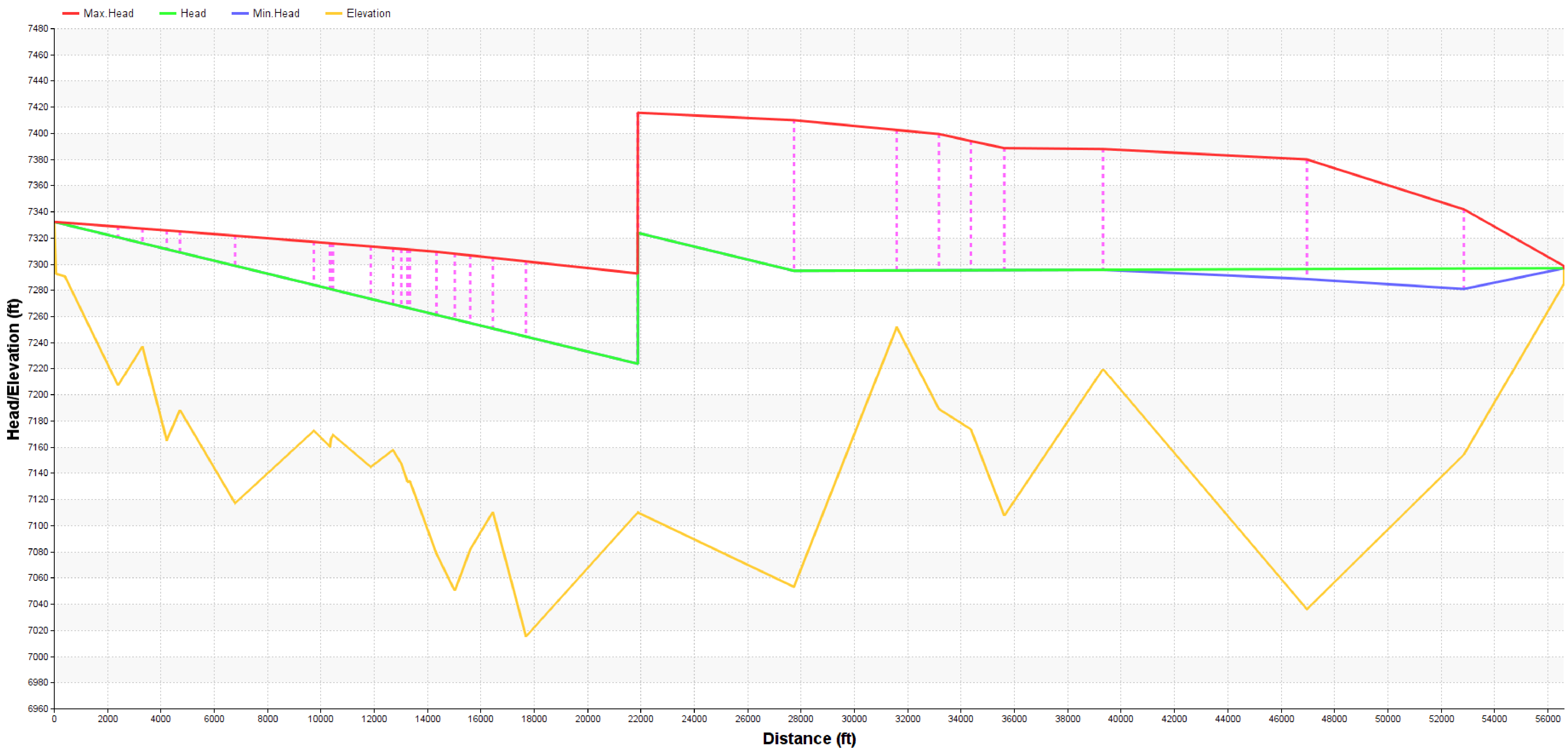


Exhibit 1.31b Surge Head Profile from Counselor Tank to JAN Tank (Unprotected Scenario: Flush Valve at STA 276+80 close)

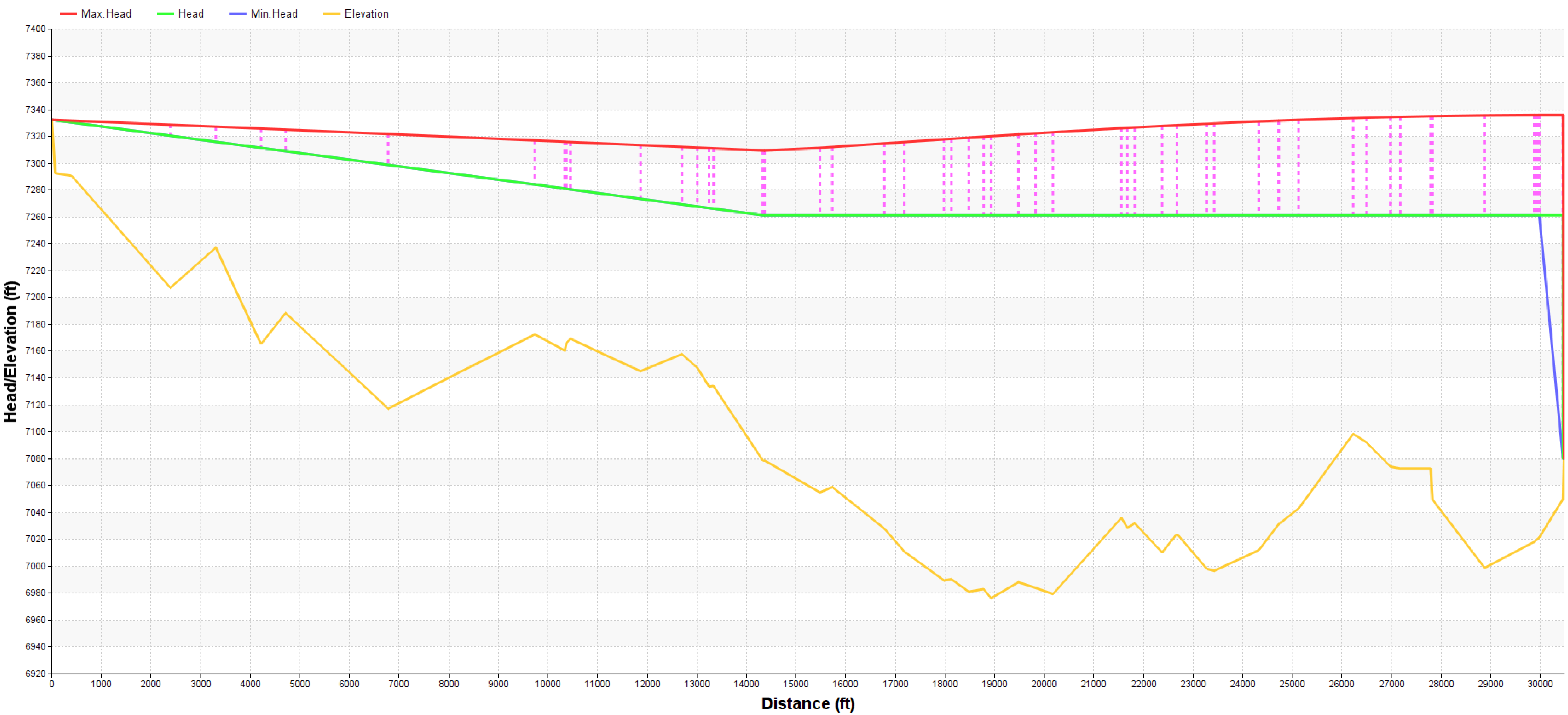


Exhibit 1.32a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Unprotected Scenario: Flush Valve at STA 357+50 close)

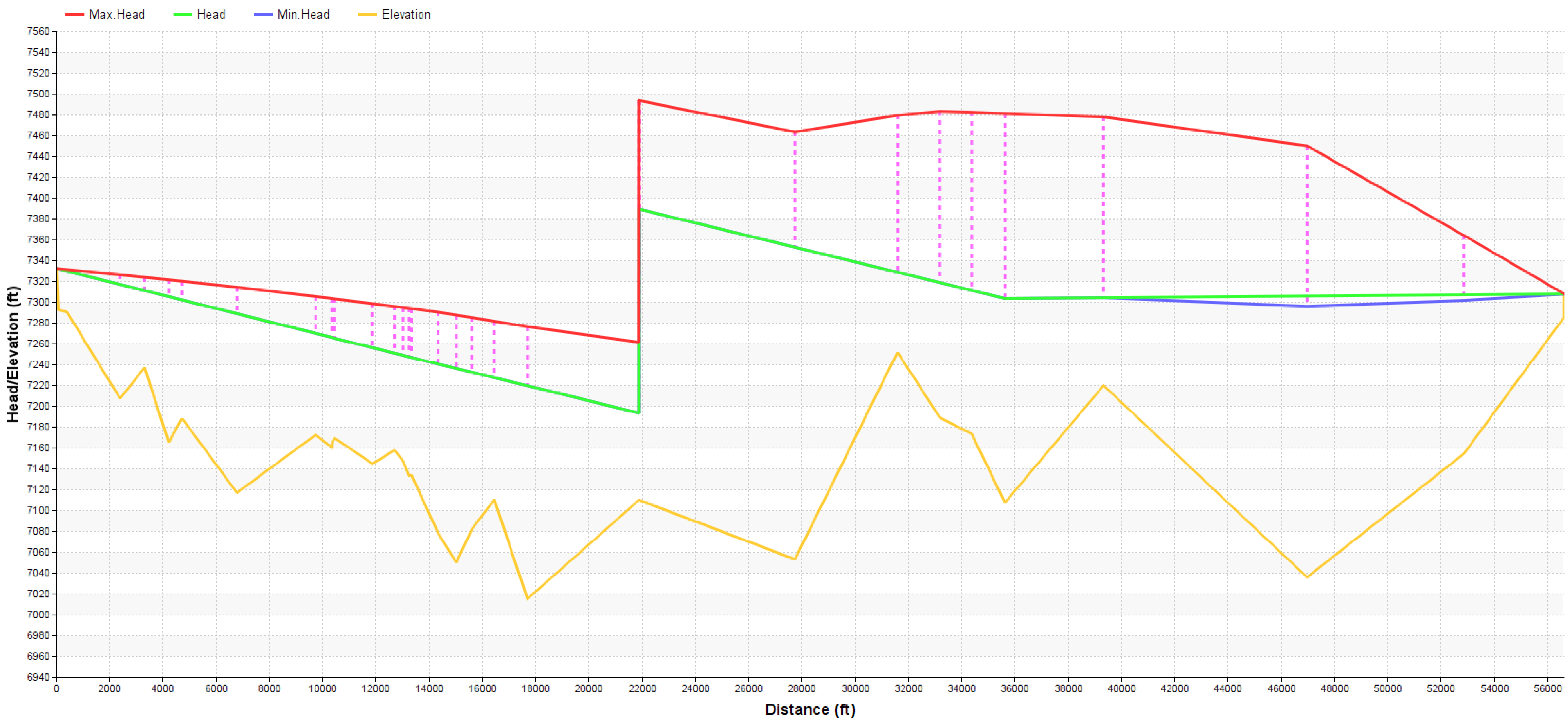


Exhibit 1.32b Surge Head Profile from Counselor Tank to JAN Tank (Unprotected Scenario: Flush Valve at STA 357+50 close)

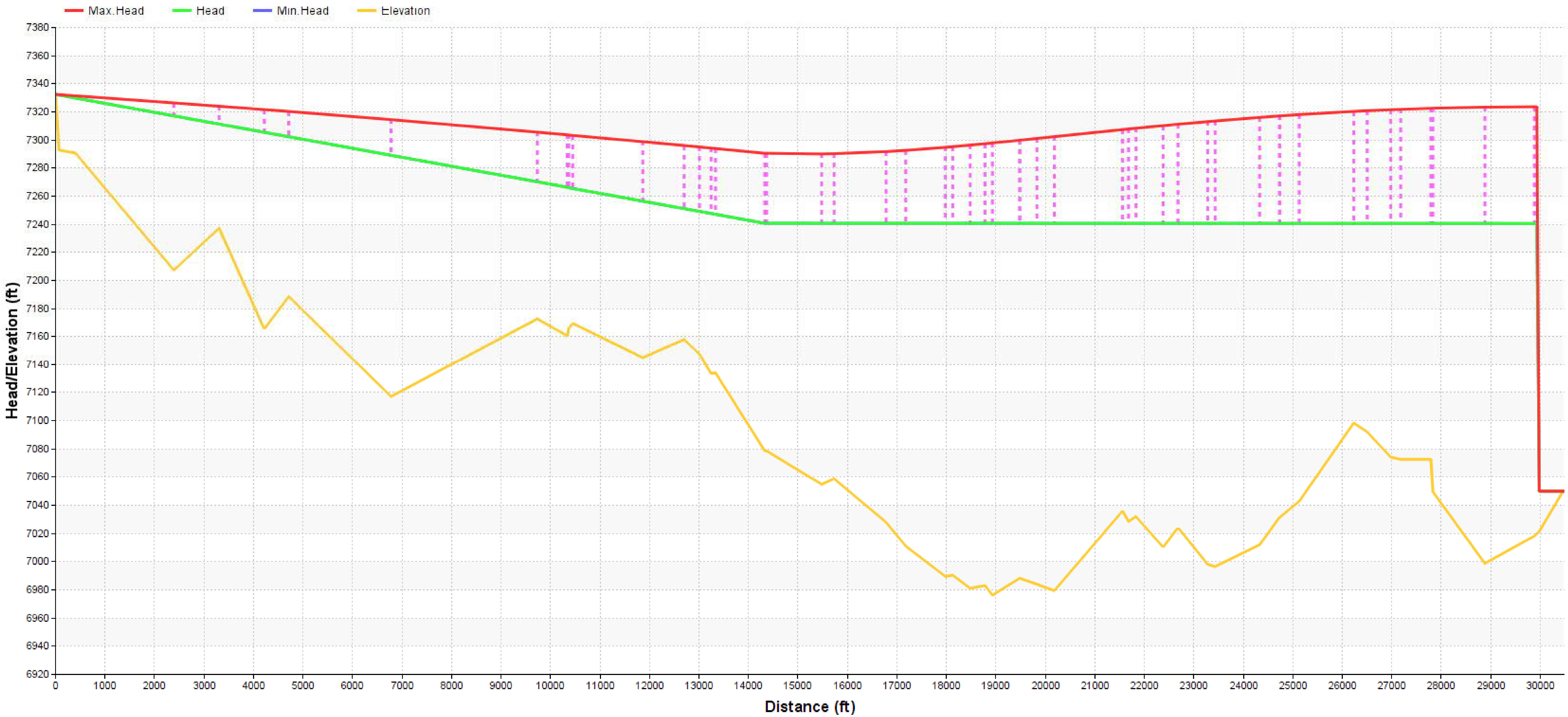


Exhibit 1.33a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Unprotected Scenario: Flush Valve at STA 469+30 close)

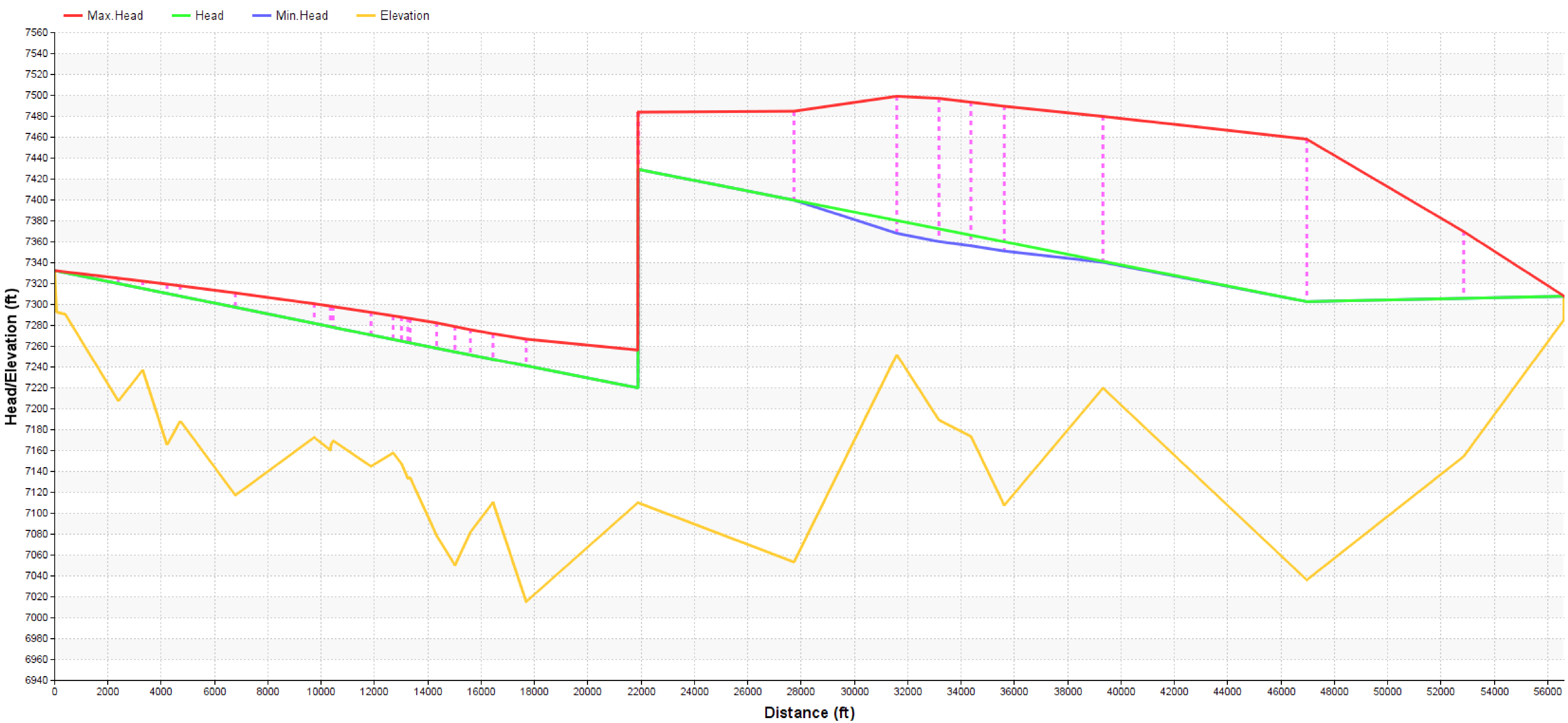


Exhibit 1.33b Surge Head Profile from Counselor Tank to JAN Tank (Unprotected Scenario: Flush Valve at STA 469+30 close)

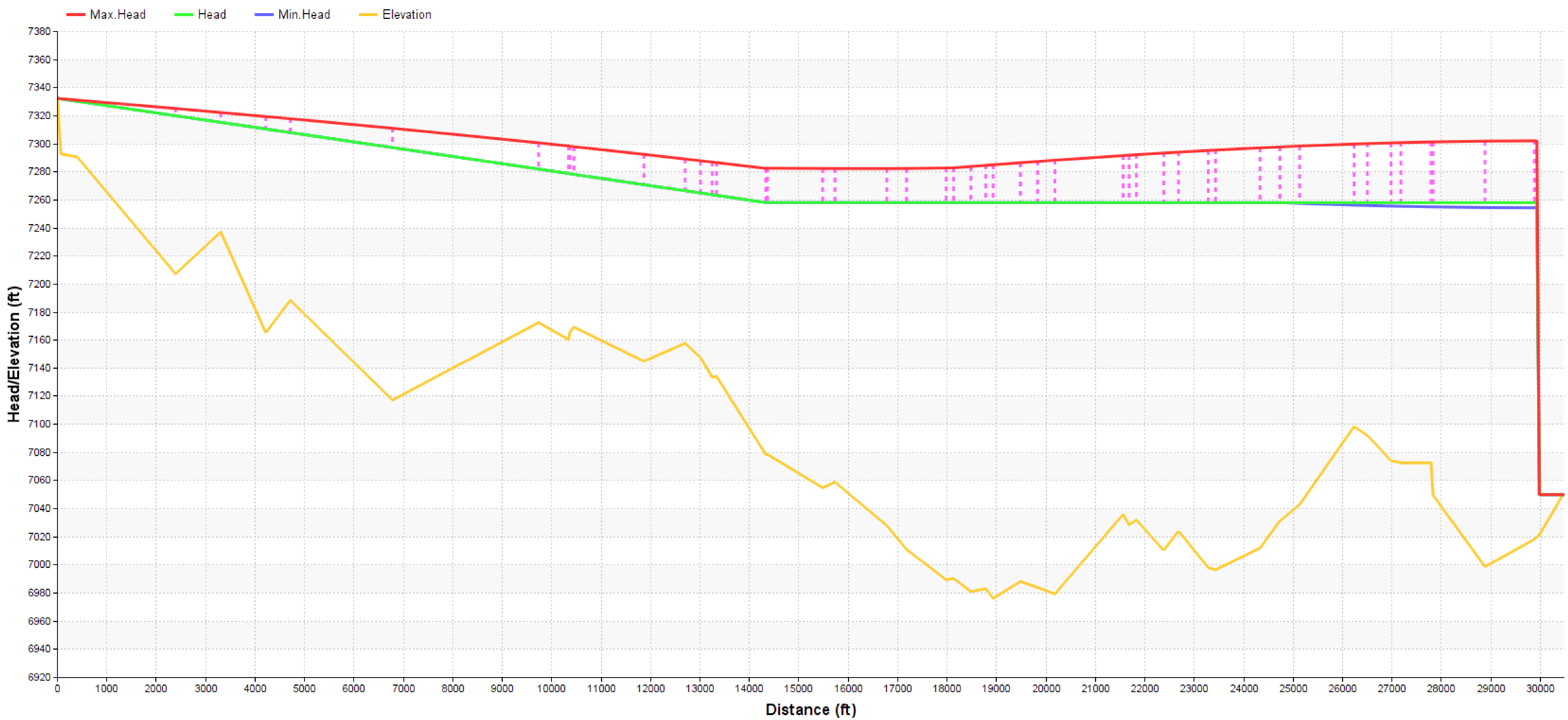


Exhibit 1.34a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Unprotected Scenario: Flush Valve at STA 190+30 JAN close)

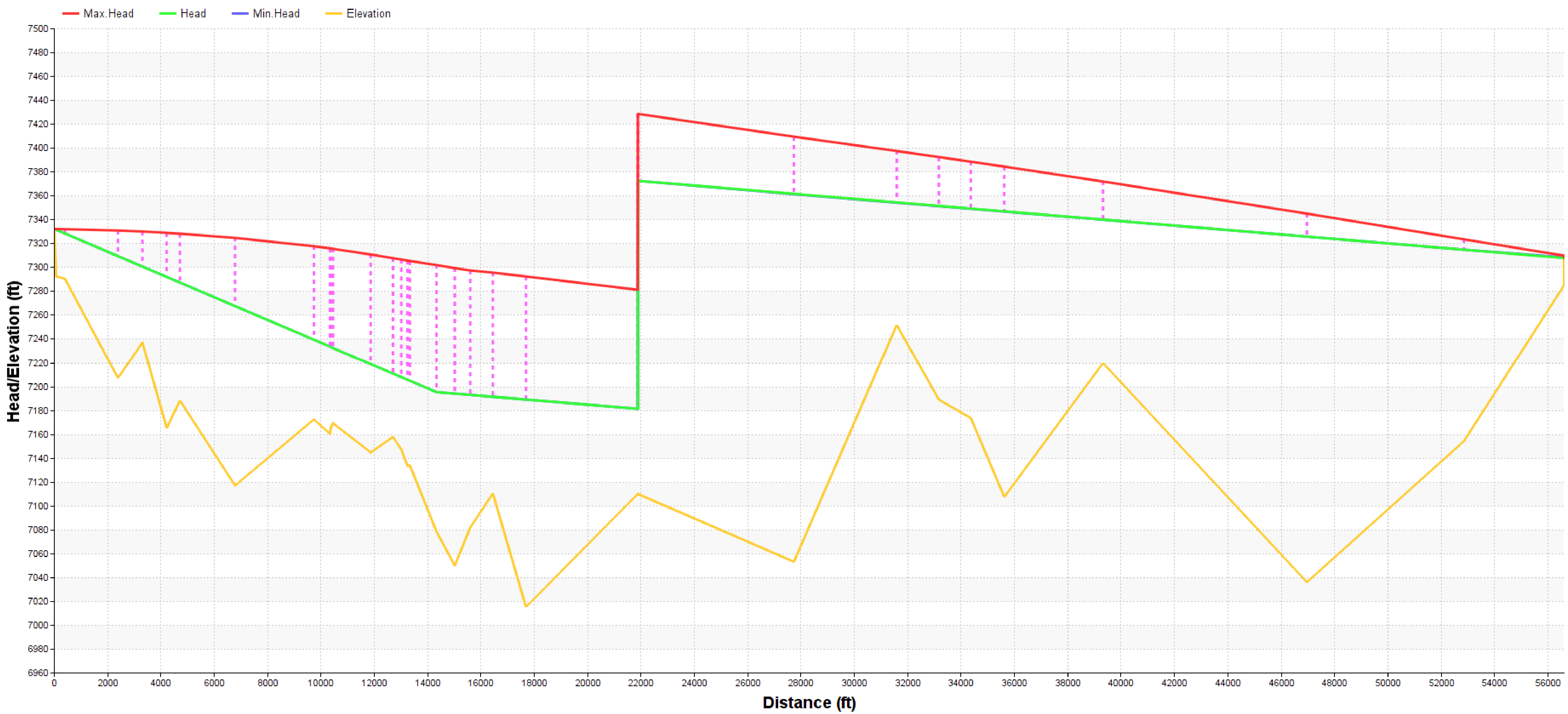


Exhibit 1.34b Surge Head Profile from Counselor Tank to JAN Tank (Unprotected Scenario: Flush Valve at STA 190+30 JAN close)

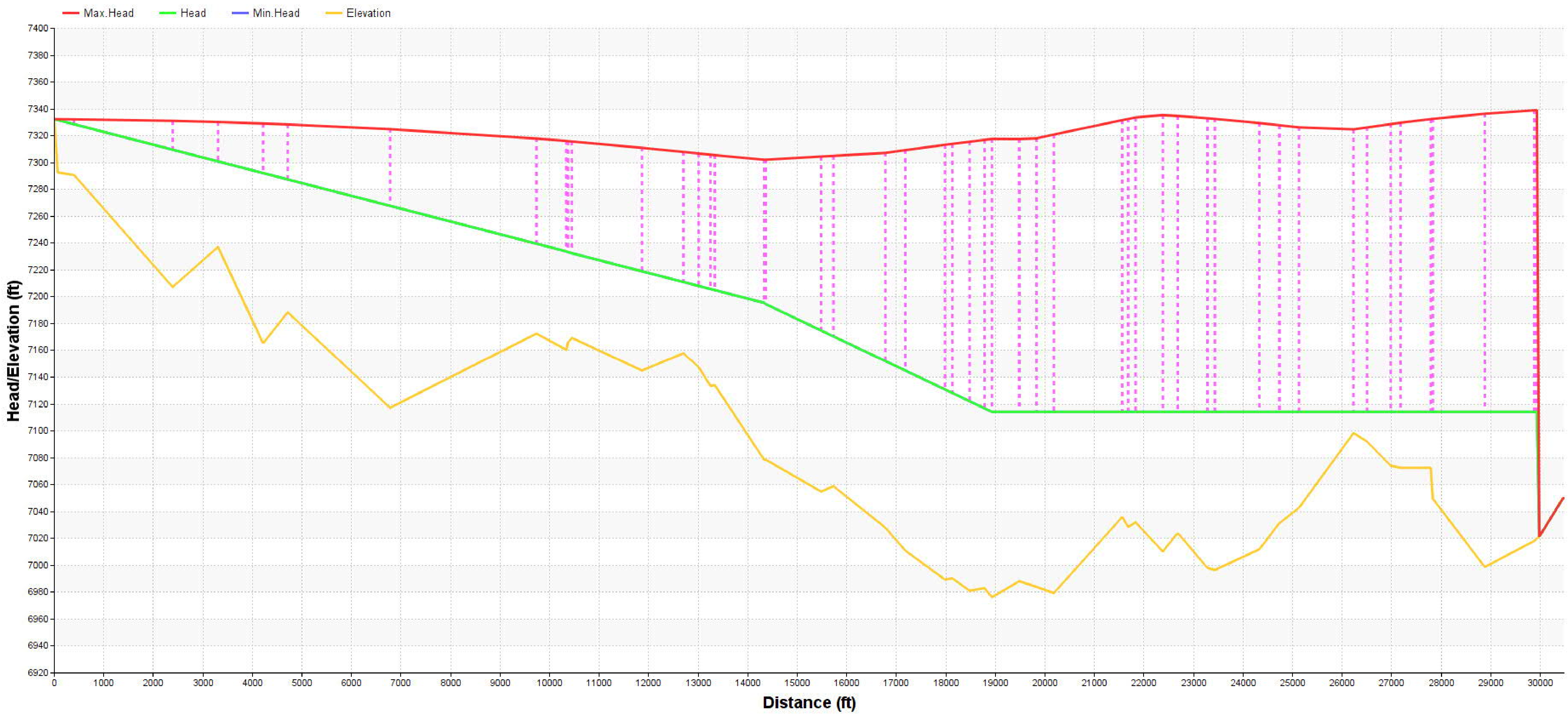


Exhibit 1.35a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Unprotected Scenario: Flush Valve at STA 234+80 JAN close)

Exhibit 1.35b Surge Head Profile from Counselor Tank to JAN Tank (Unprotected Scenario: Flush Valve at STA 234+80 JAN close)

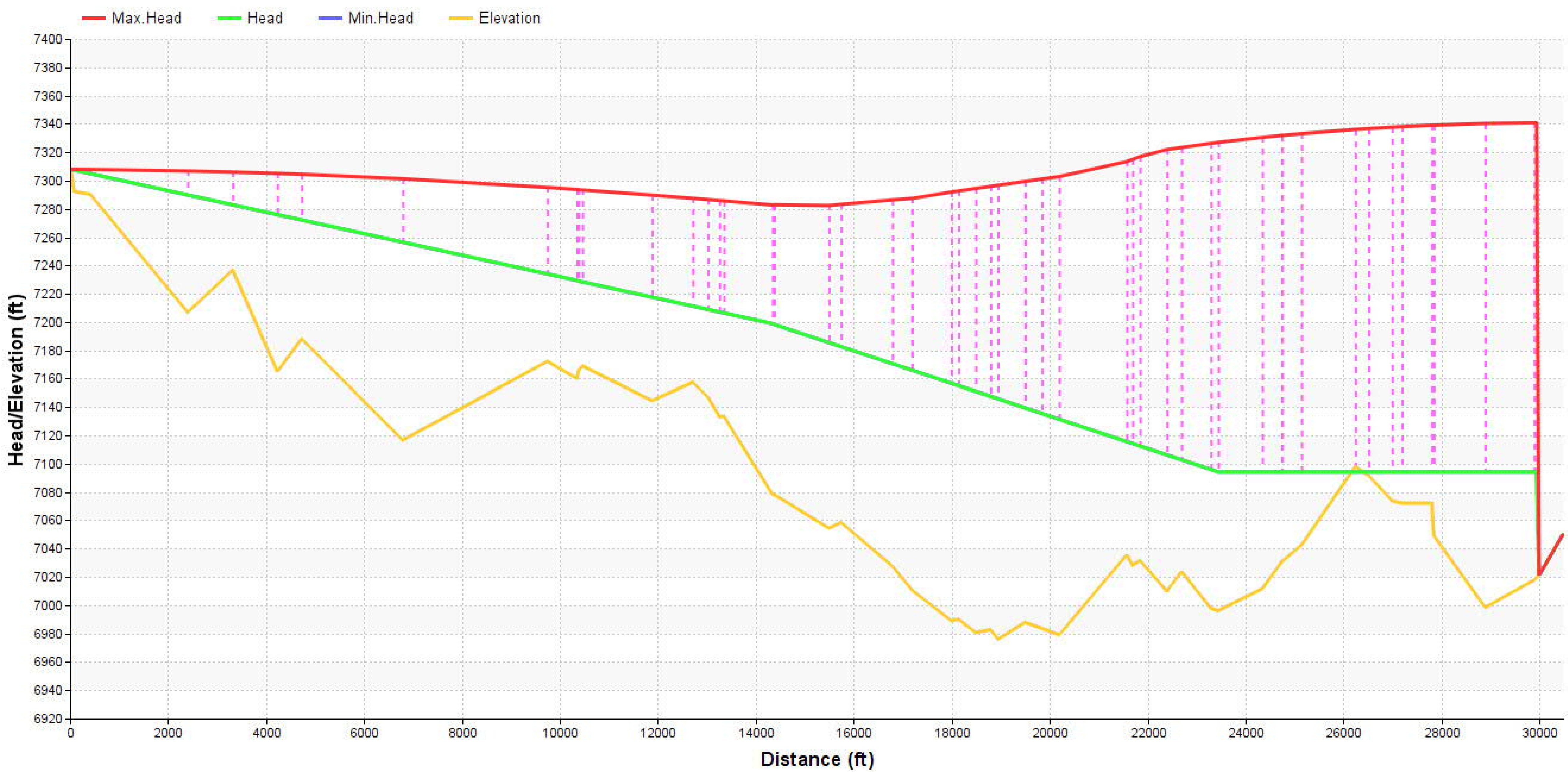


Exhibit 1.36a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Unprotected Scenario: Flush Valve at STA 289+80 JAN close)

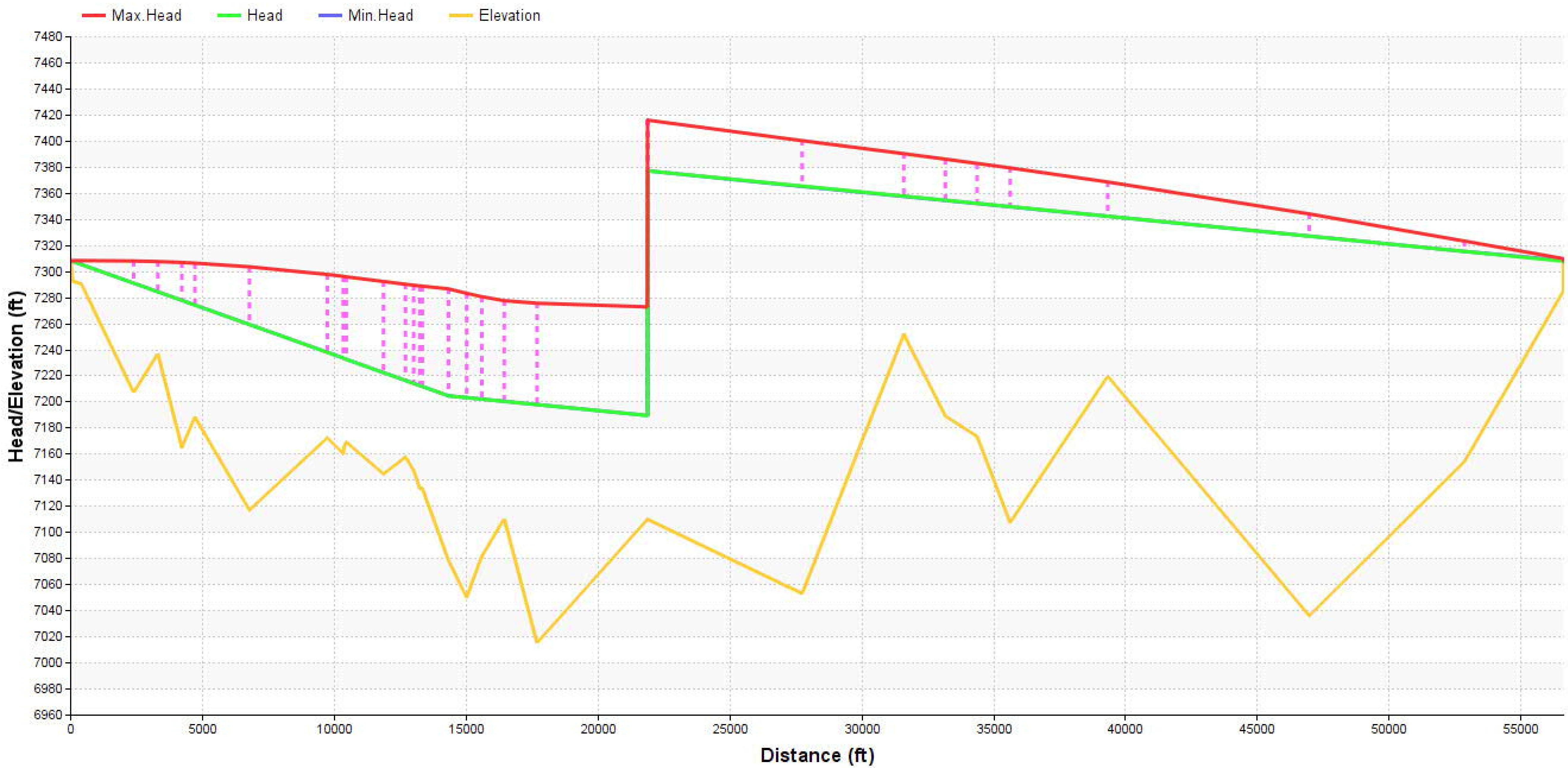


Exhibit 1.36b Surge Head Profile from Counselor Tank to JAN Tank (Unprotected Scenario: Flush Valve at STA 289+80 JAN close)

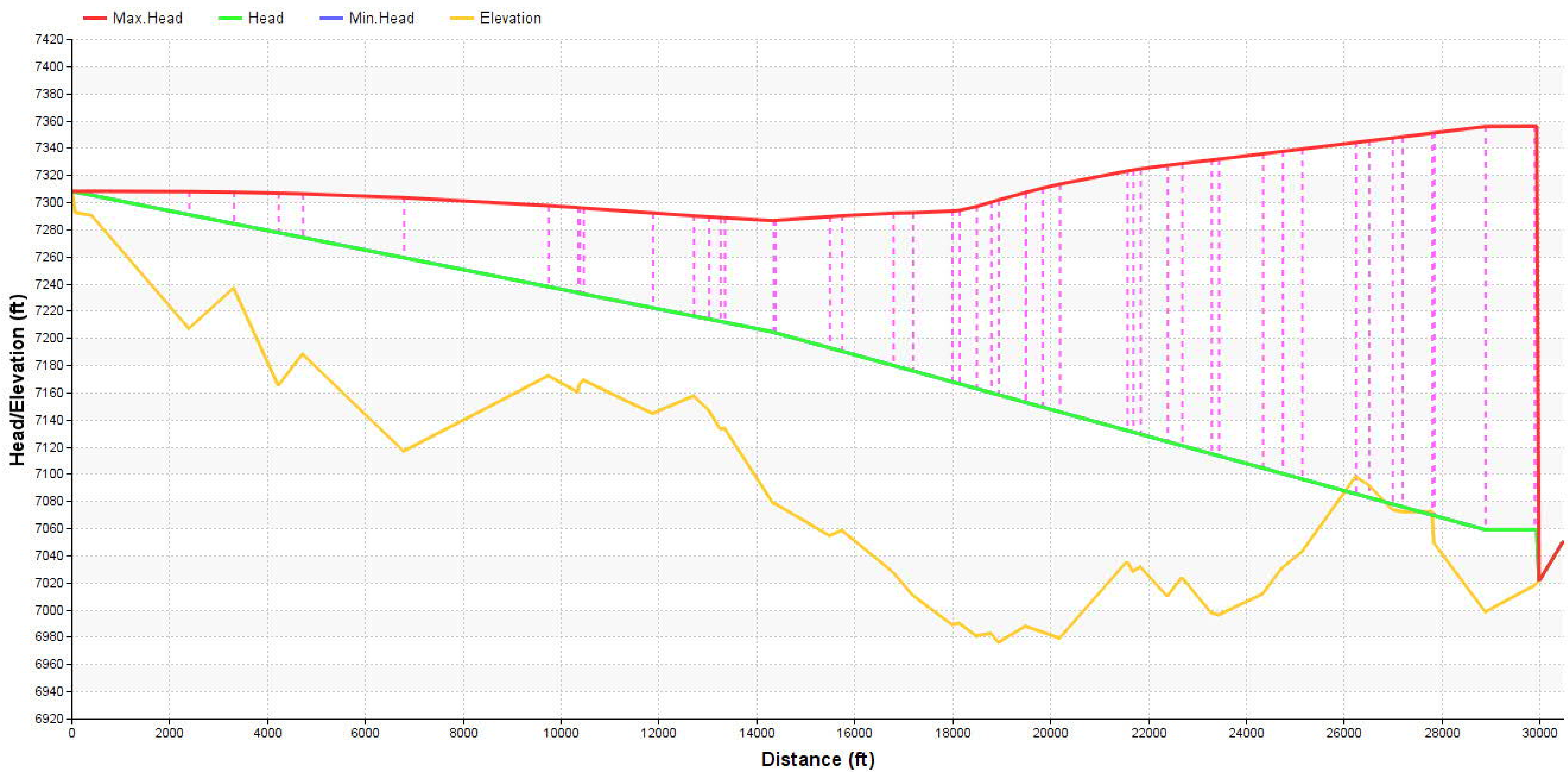


Exhibit 1.37a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Unprotected Scenario: Flush Valve at STA 22+91 open)

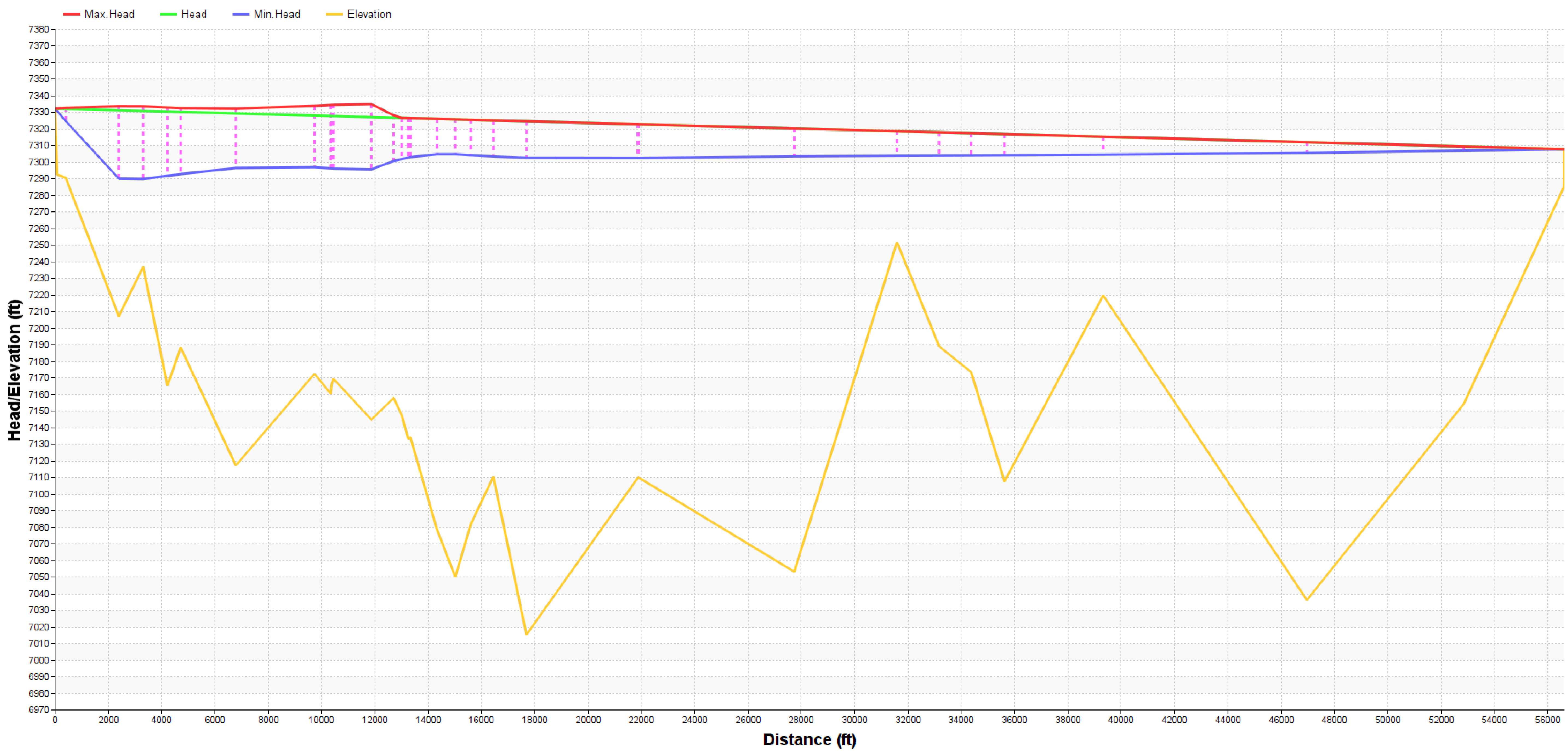


Exhibit 1.37b Surge Head Profile from Counselor Tank to JAN Tank (Unprotected Scenario: Flush Valve at STA 22+91 open)

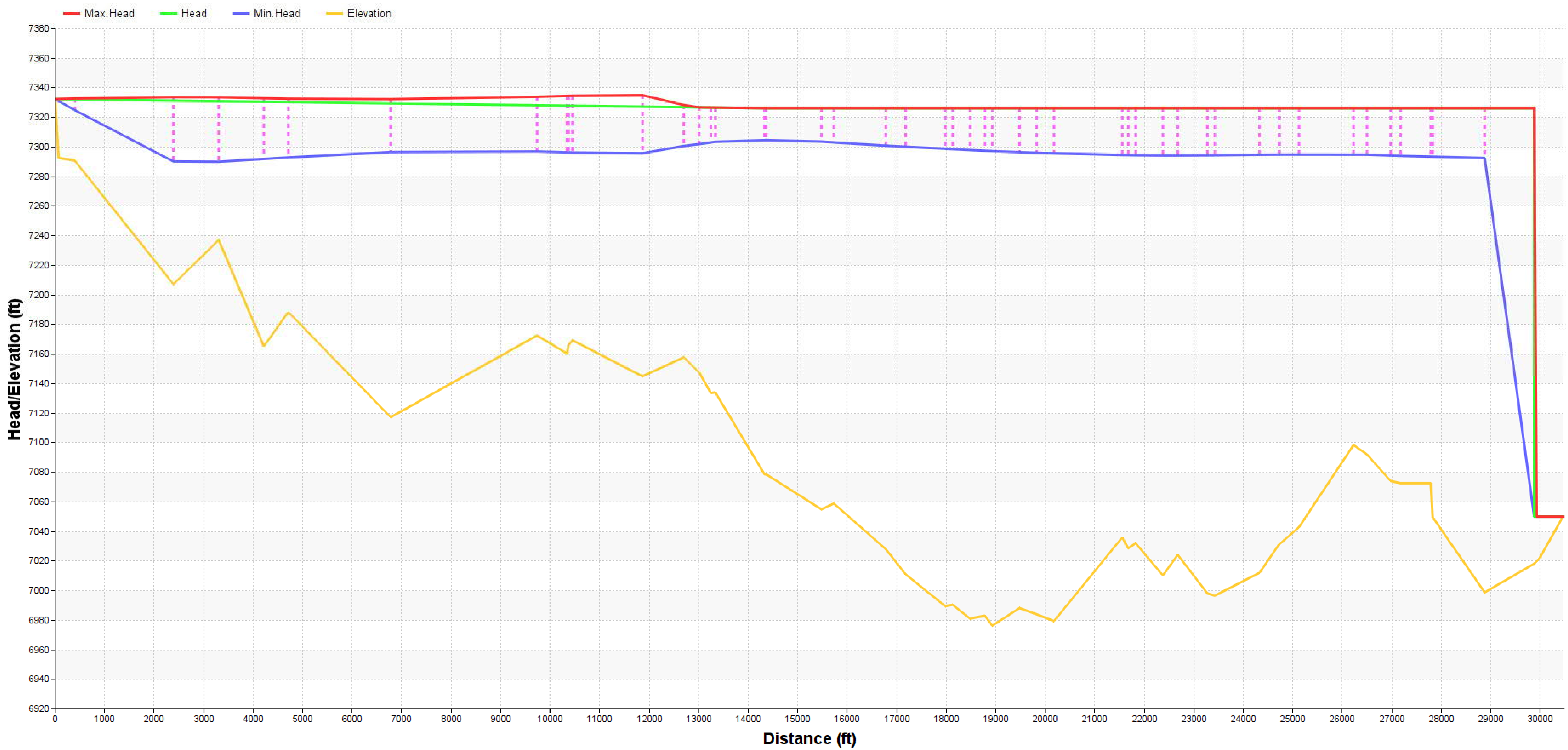


Exhibit 1.38a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Unprotected Scenario: Flush Valve at STA 66+05 open)

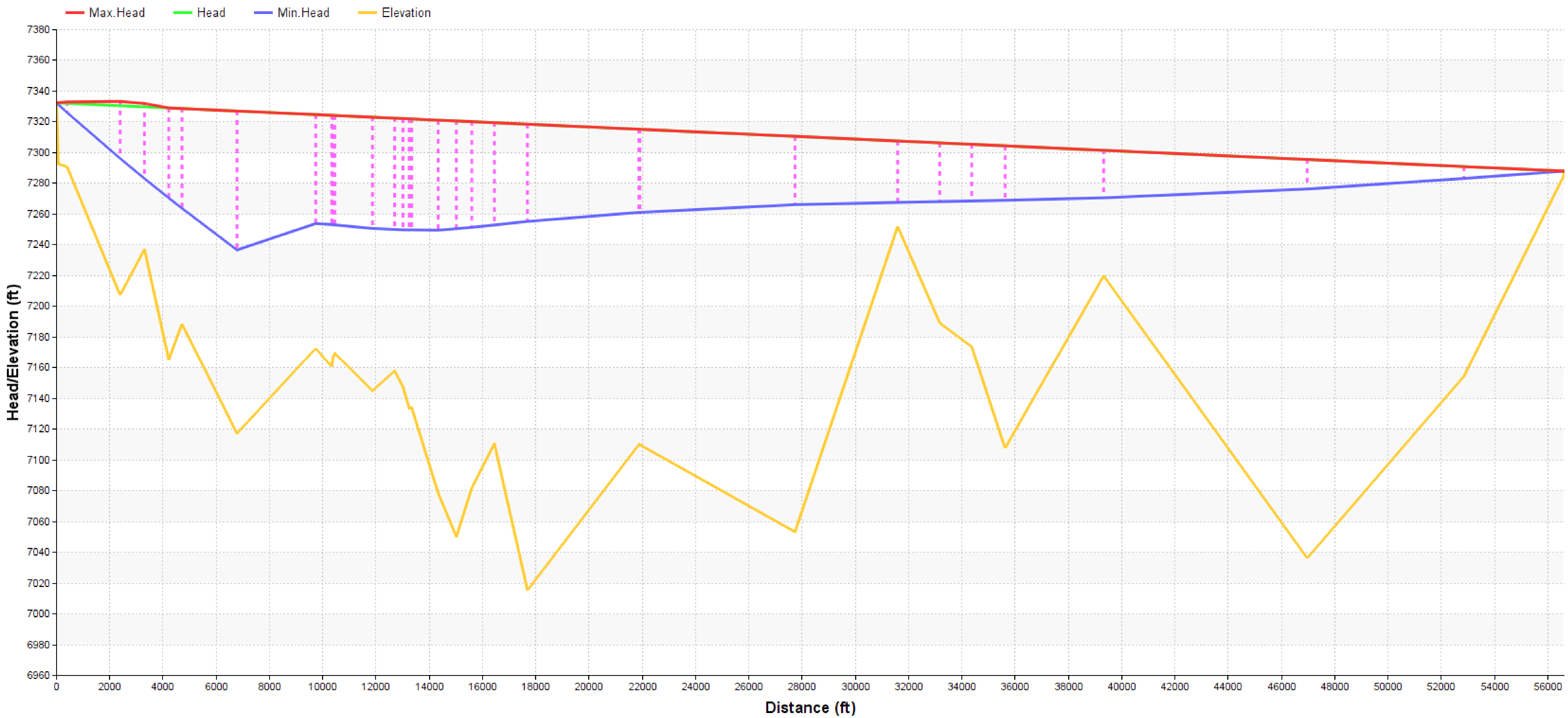


Exhibit 1.38b Surge Head Profile from Counselor Tank to JAN Tank (Unprotected Scenario: Flush Valve at STA 66+05 open)

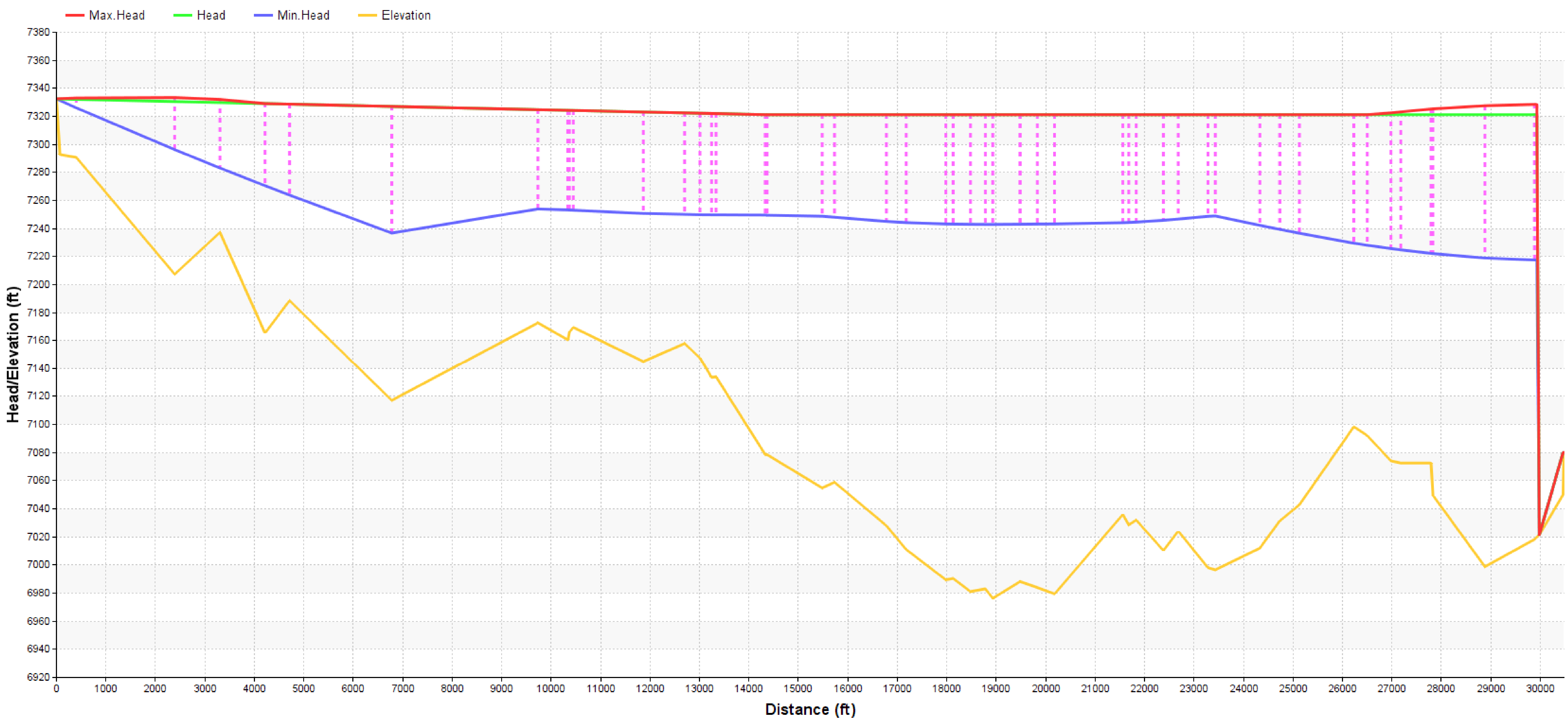


Exhibit 1.39a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Unprotected Scenario: Flush Valve at STA 148+29 open)

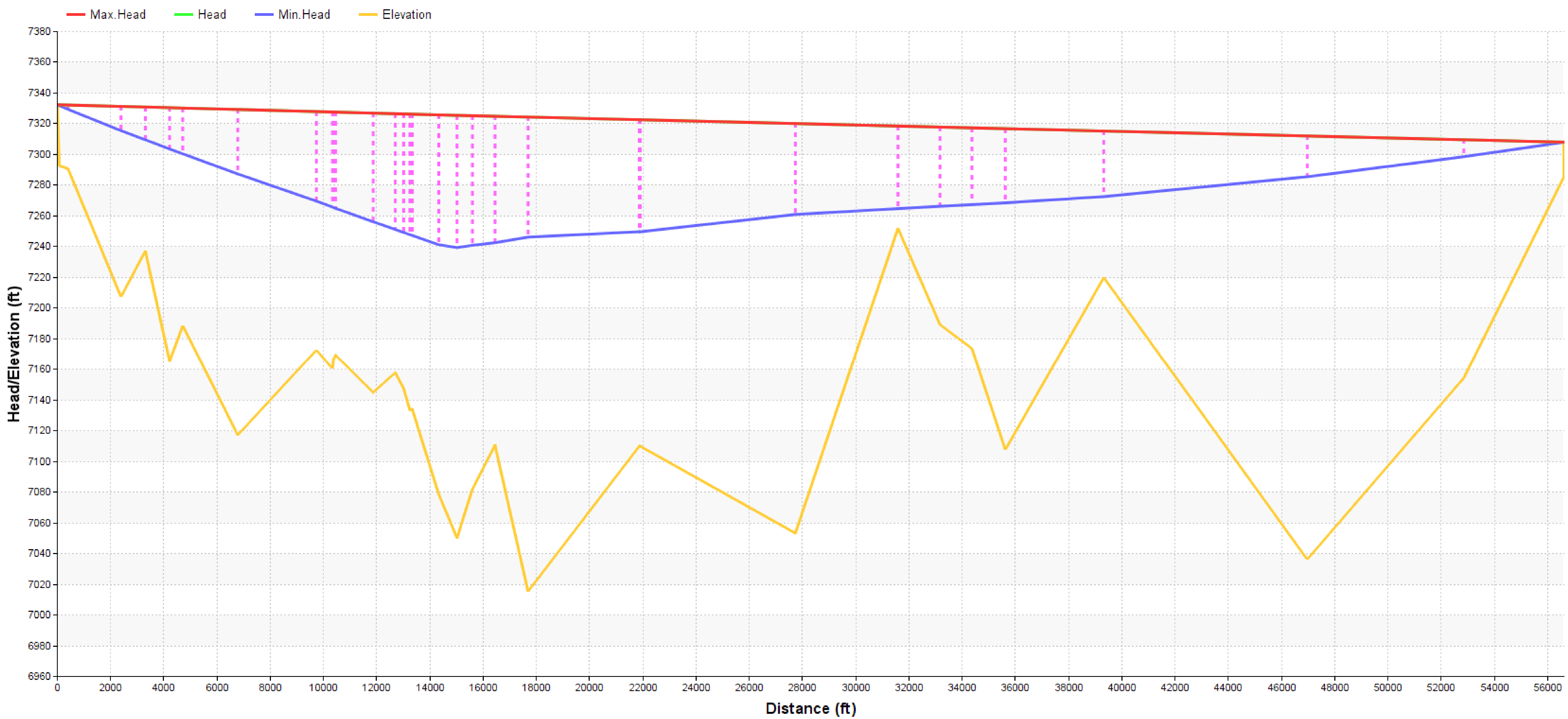


Exhibit 1.39b Surge Head Profile from Counselor Tank to JAN Tank (Unprotected Scenario: Flush Valve at STA 148+29 open)

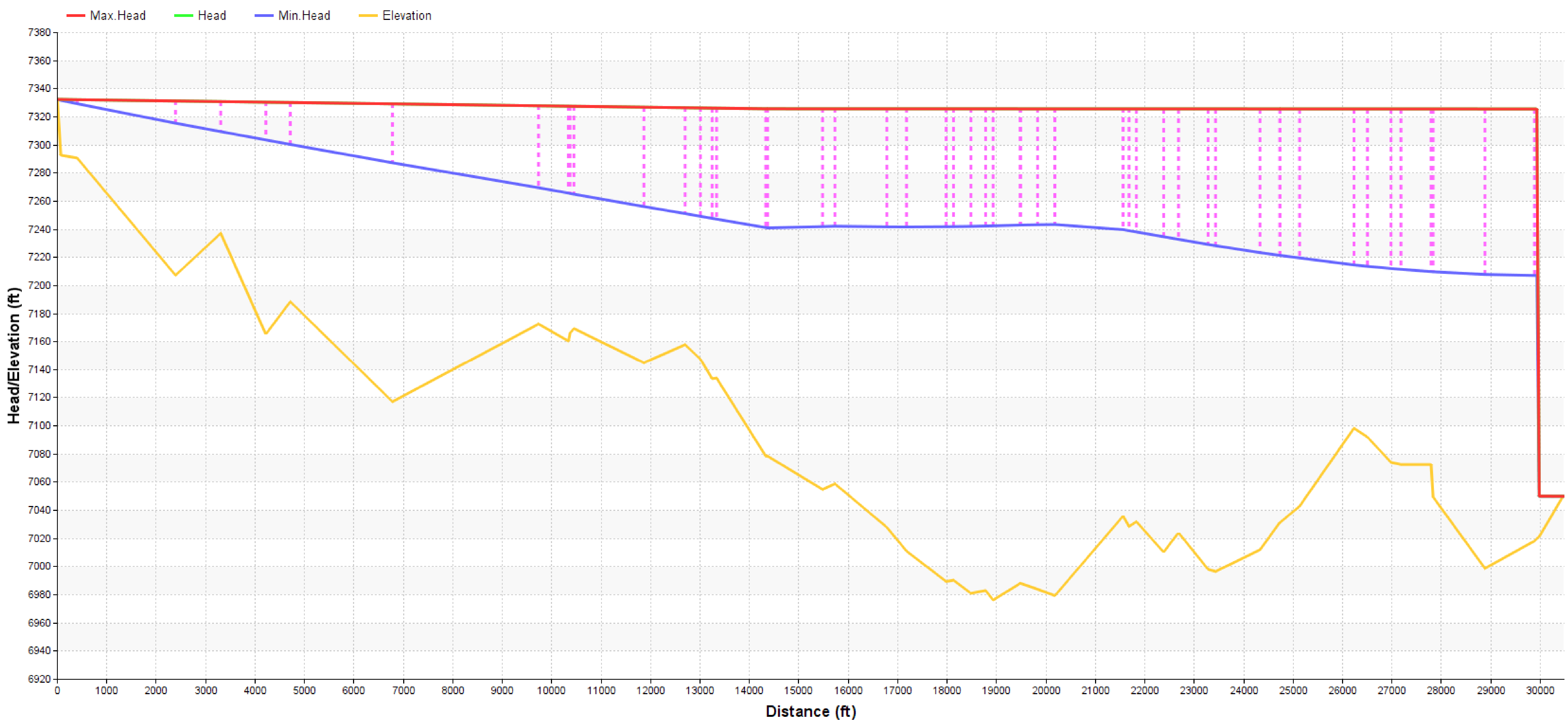


Exhibit 1.40a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Unprotected Scenario: Flush Valve at STA 176+00 open)

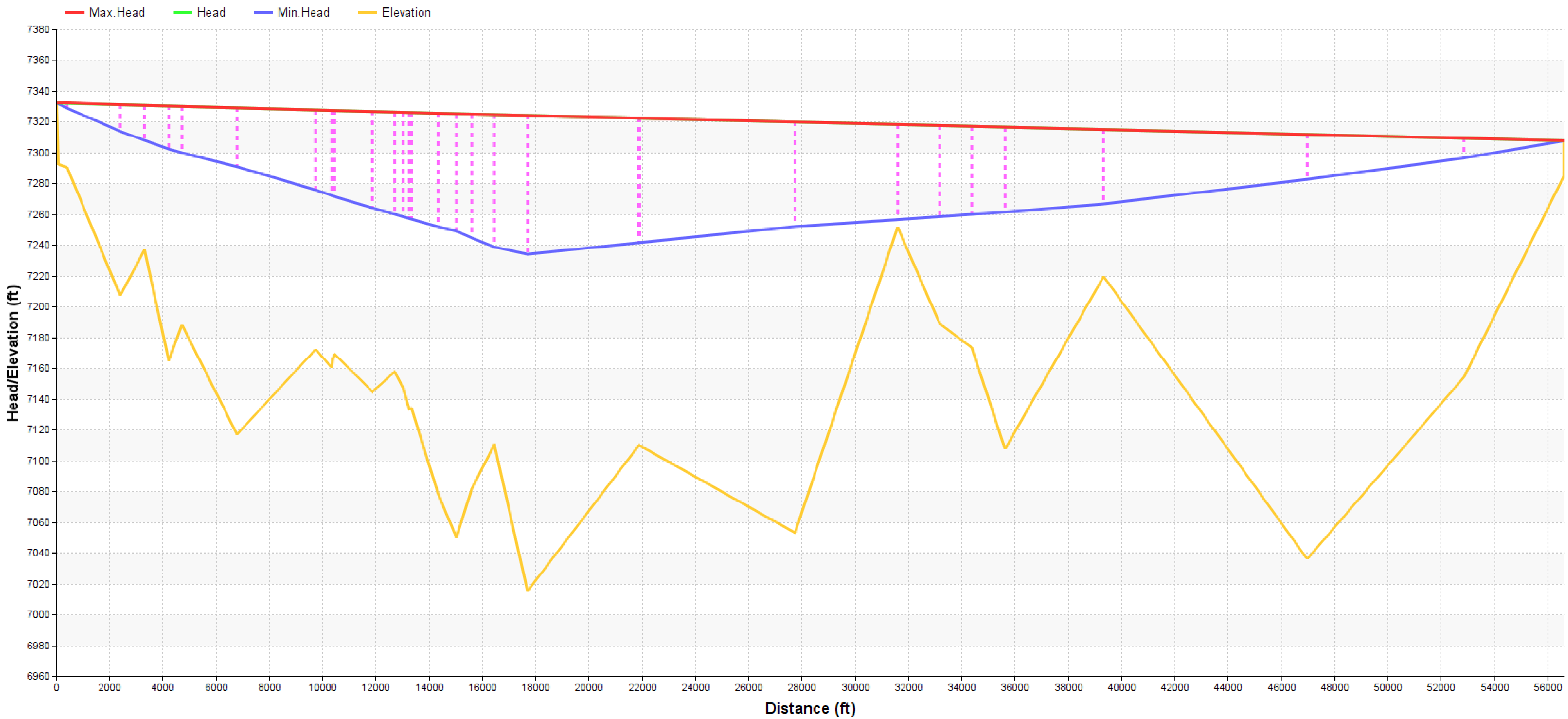


Exhibit 1.40b Surge Head Profile from Counselor Tank to JAN Tank (Unprotected Scenario: Flush Valve at STA 176+00 open)

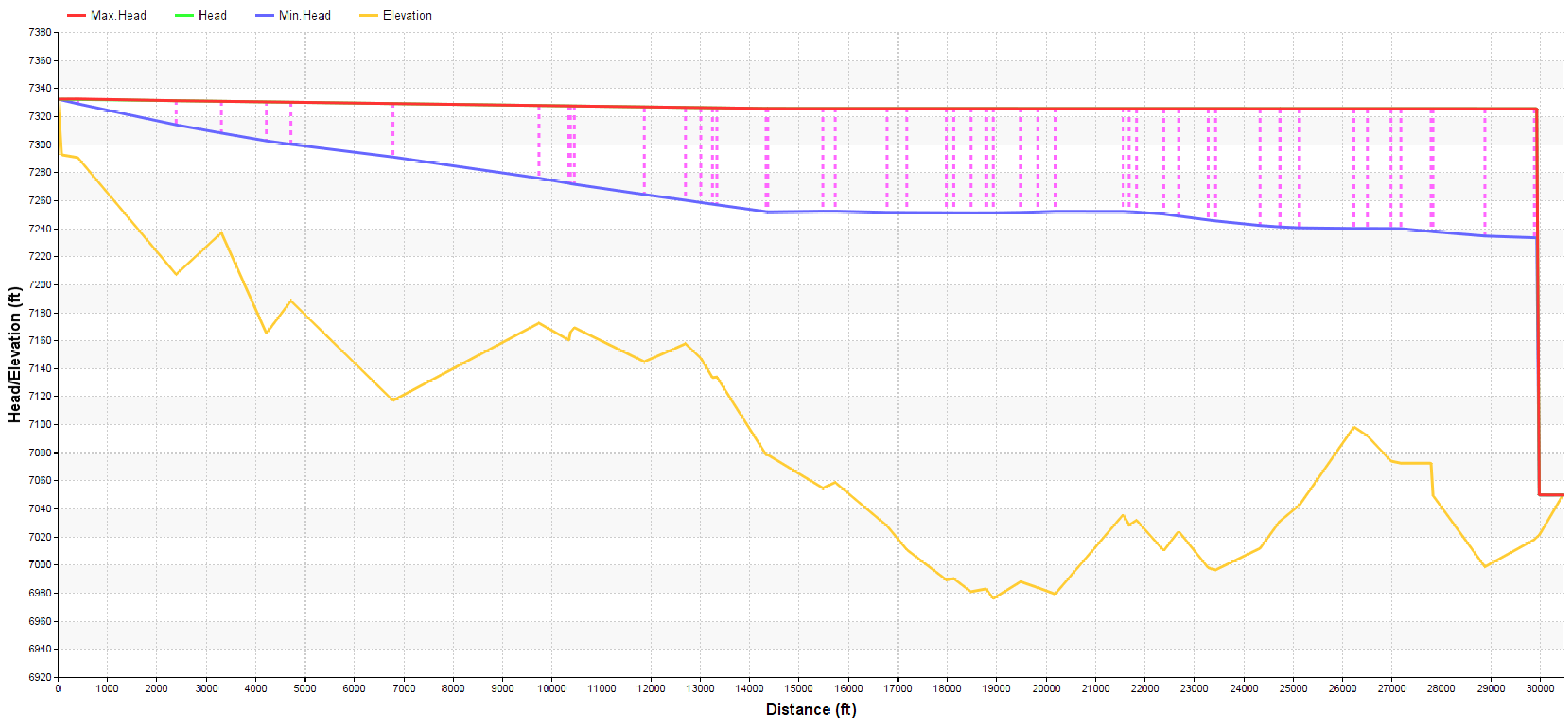


Exhibit 1.41a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Unprotected Scenario: Flush Valve at STA 218+08 open)

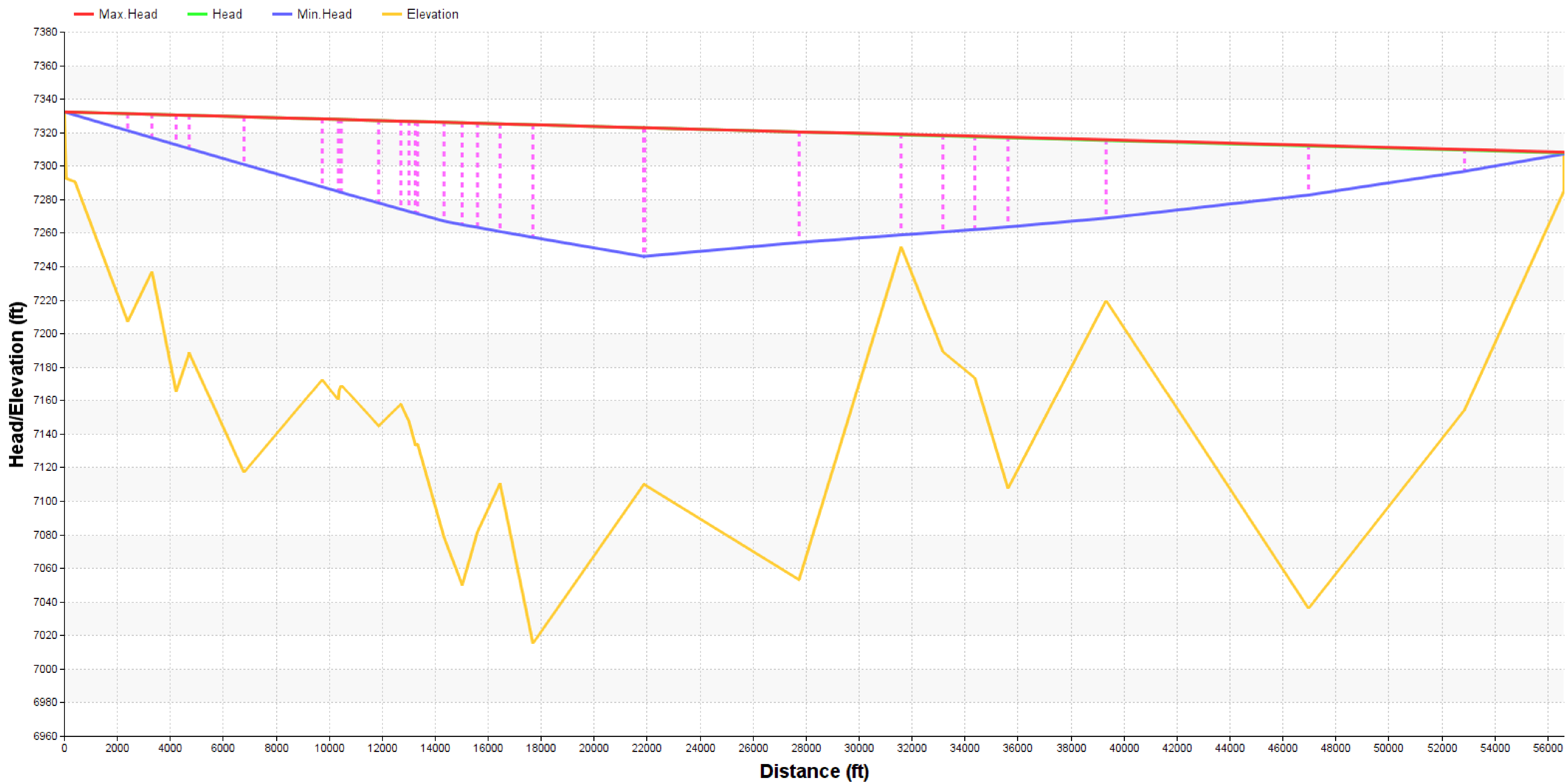


Exhibit 1.41b Surge Head Profile from Counselor Tank to JAN Tank (Unprotected Scenario: Flush Valve at STA 218+08 open)

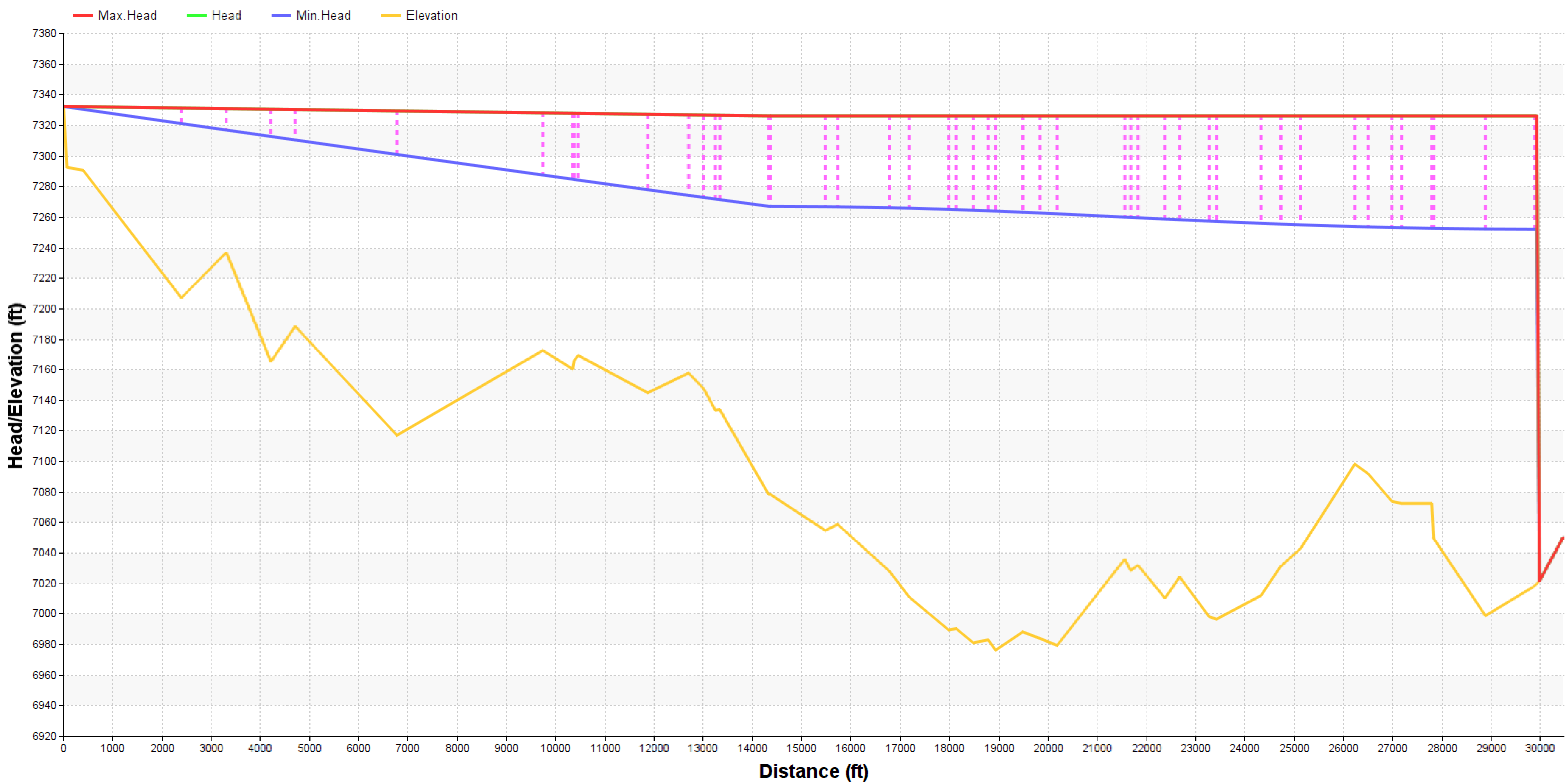


Exhibit 1.42a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Unprotected Scenario: Flush Valve at STA 218+90 open)

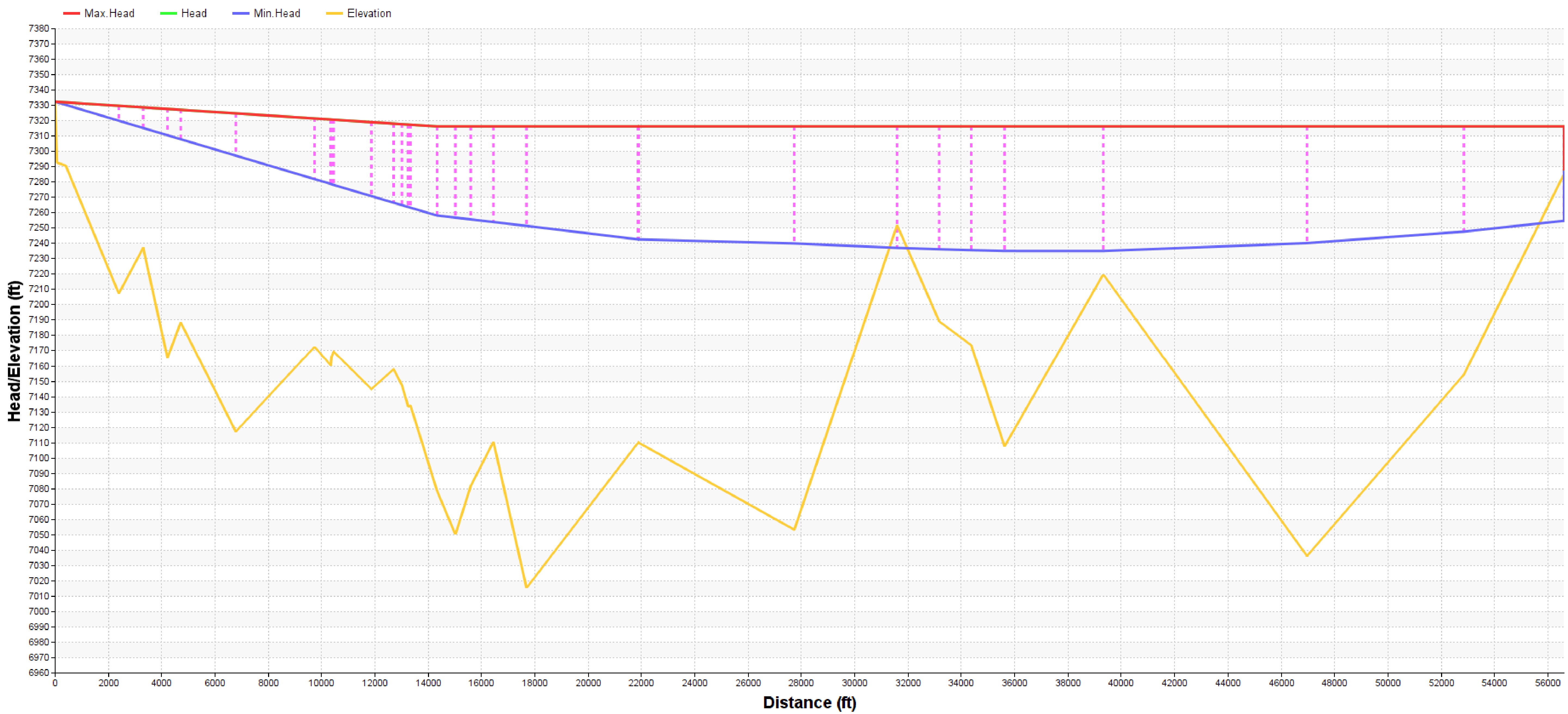


Exhibit 1.42b Surge Head Profile from Counselor Tank to JAN Tank (Unprotected Scenario: Flush Valve at STA 218+90 open)

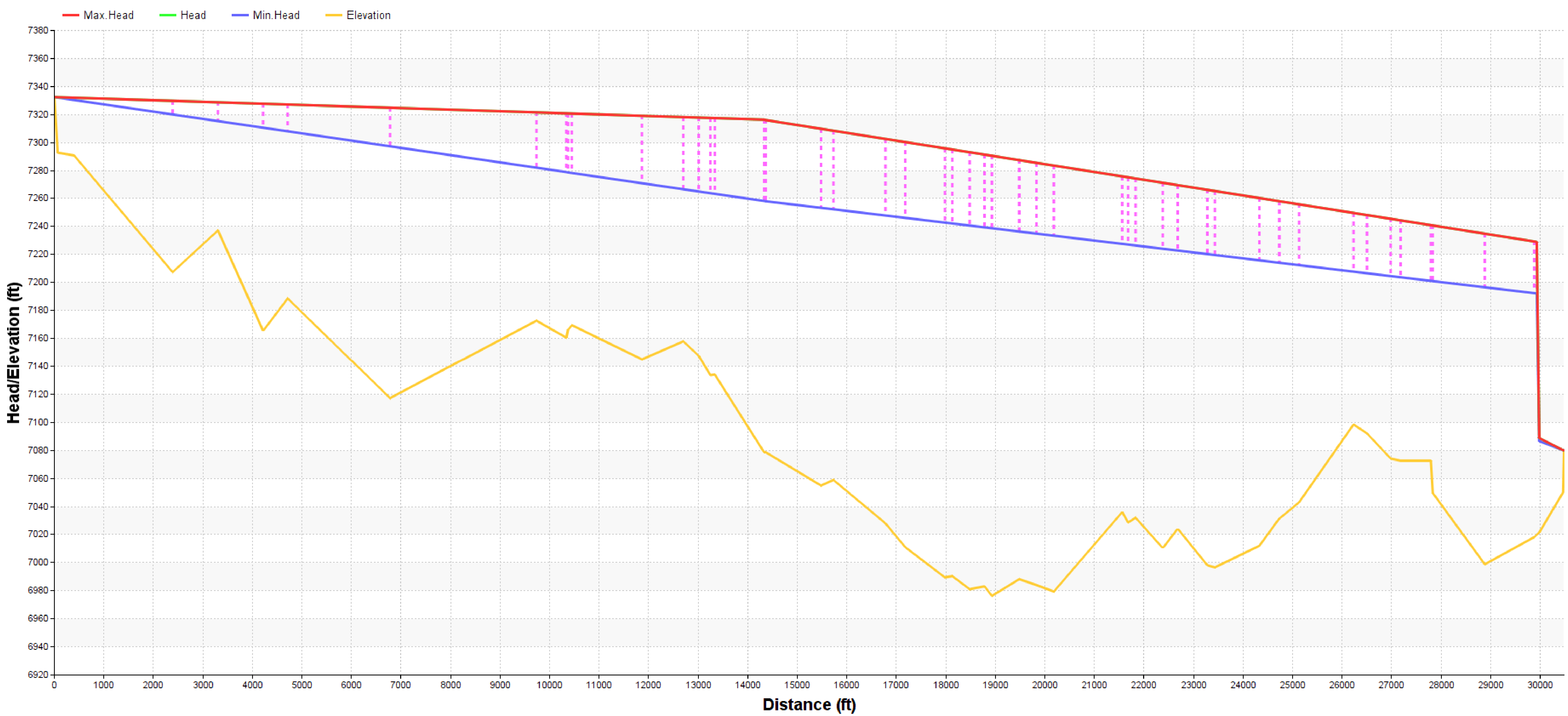


Exhibit 1.43a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Unprotected Scenario: Flush Valve at STA 276+80 open)

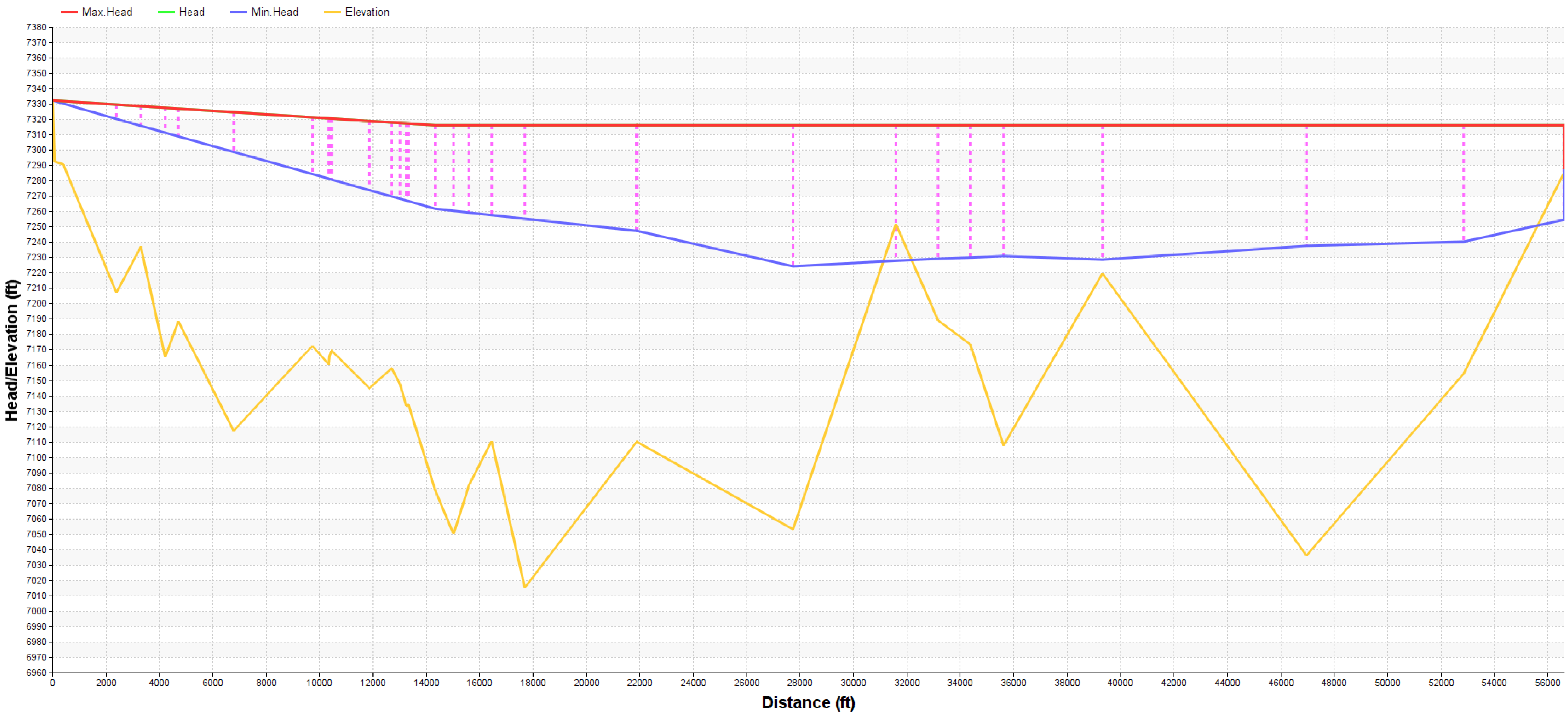


Exhibit 1.43b Surge Head Profile from Counselor Tank to JAN Tank (Unprotected Scenario: Flush Valve at STA 276+80 open)

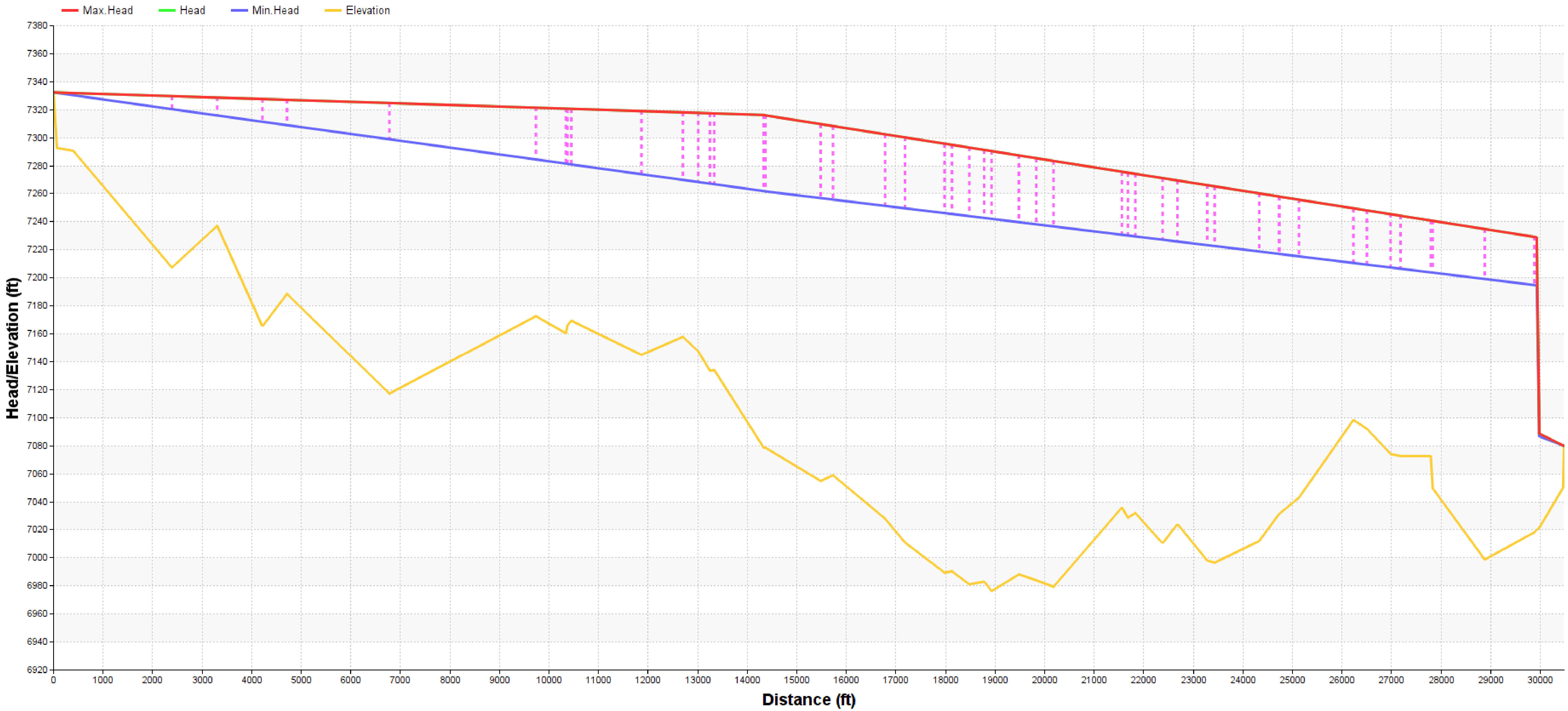


Exhibit 1.44a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Unprotected Scenario: Flush Valve at STA 357+50 open)

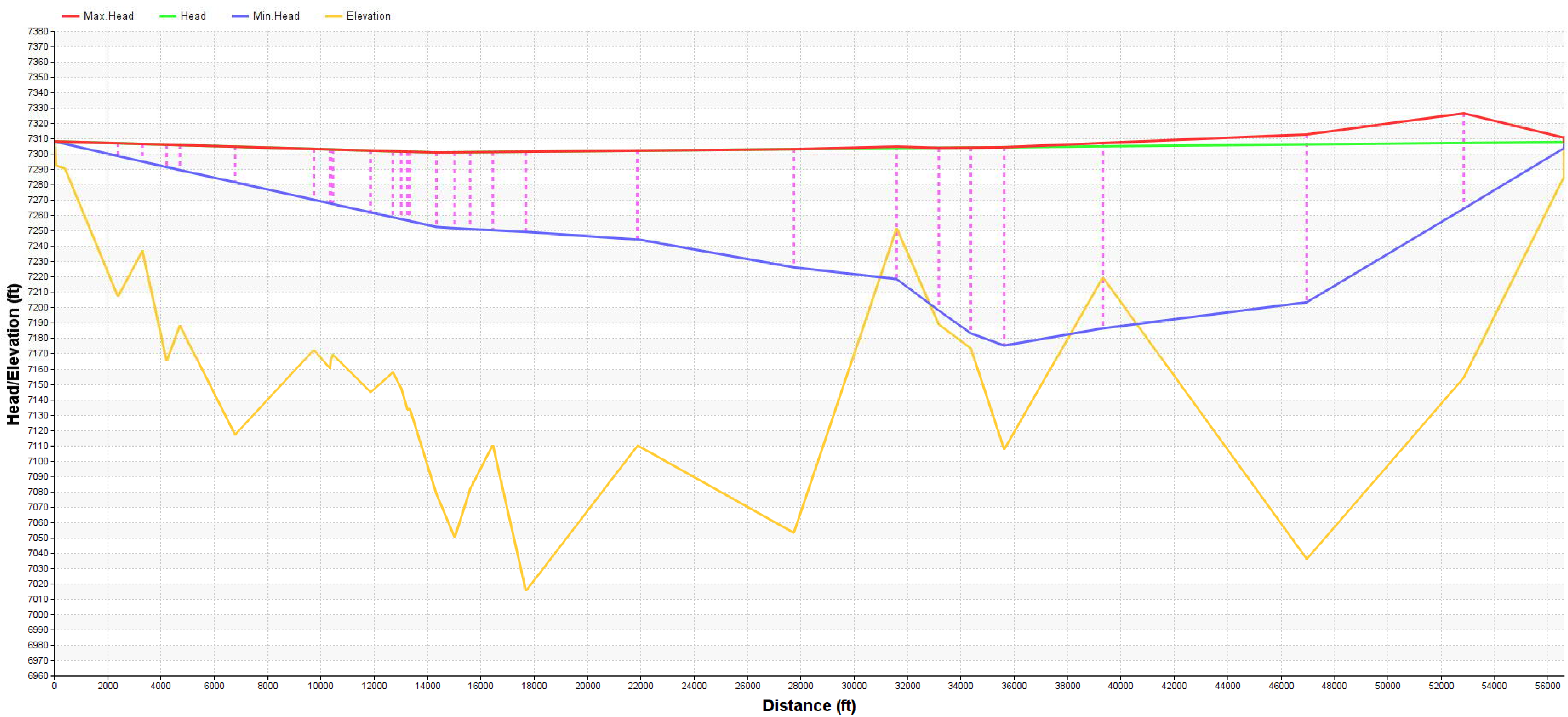


Exhibit 1.44b Surge Head Profile from Counselor Tank to JAN Tank (Unprotected Scenario: Flush Valve at STA 357+50 open)

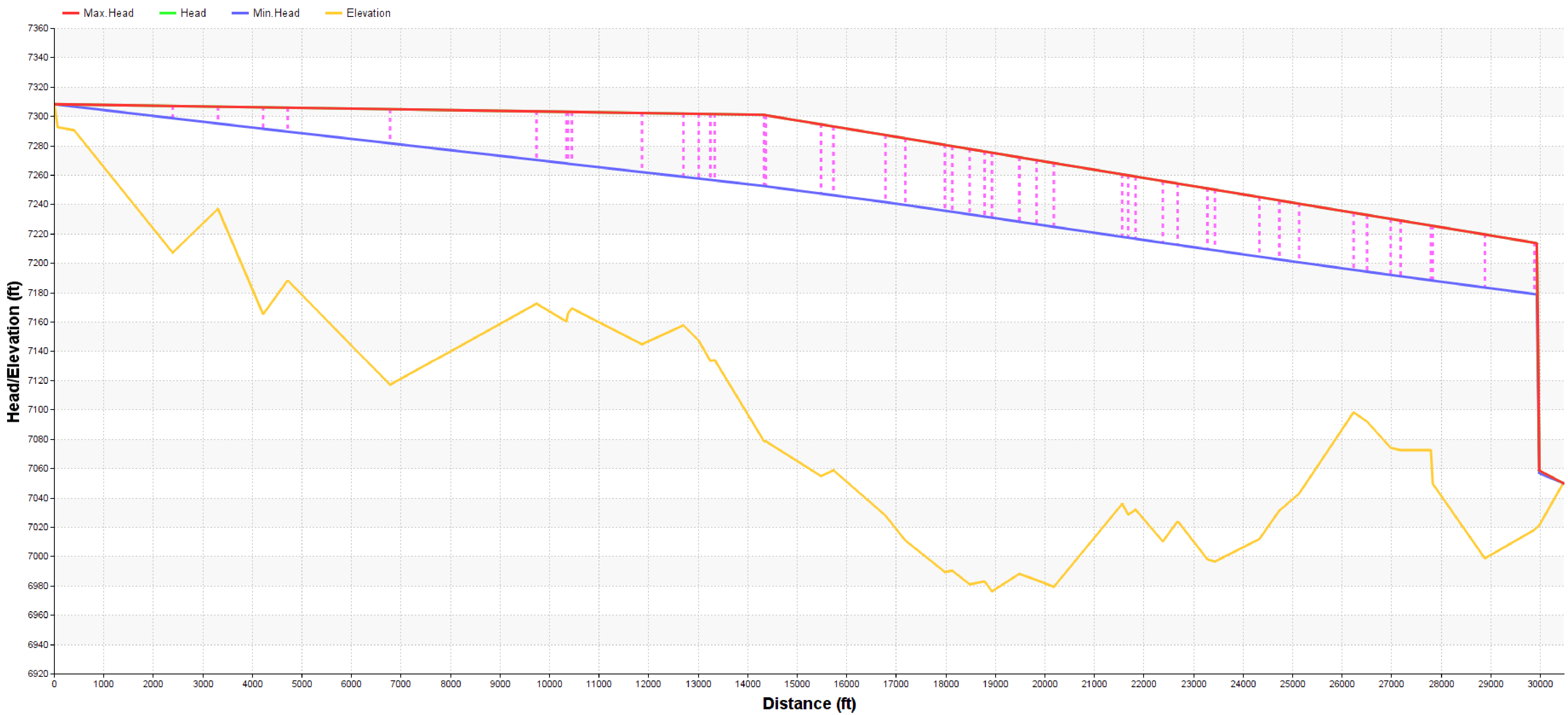


Exhibit 1.45a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Unprotected Scenario: Flush Valve at STA 469+30 open)

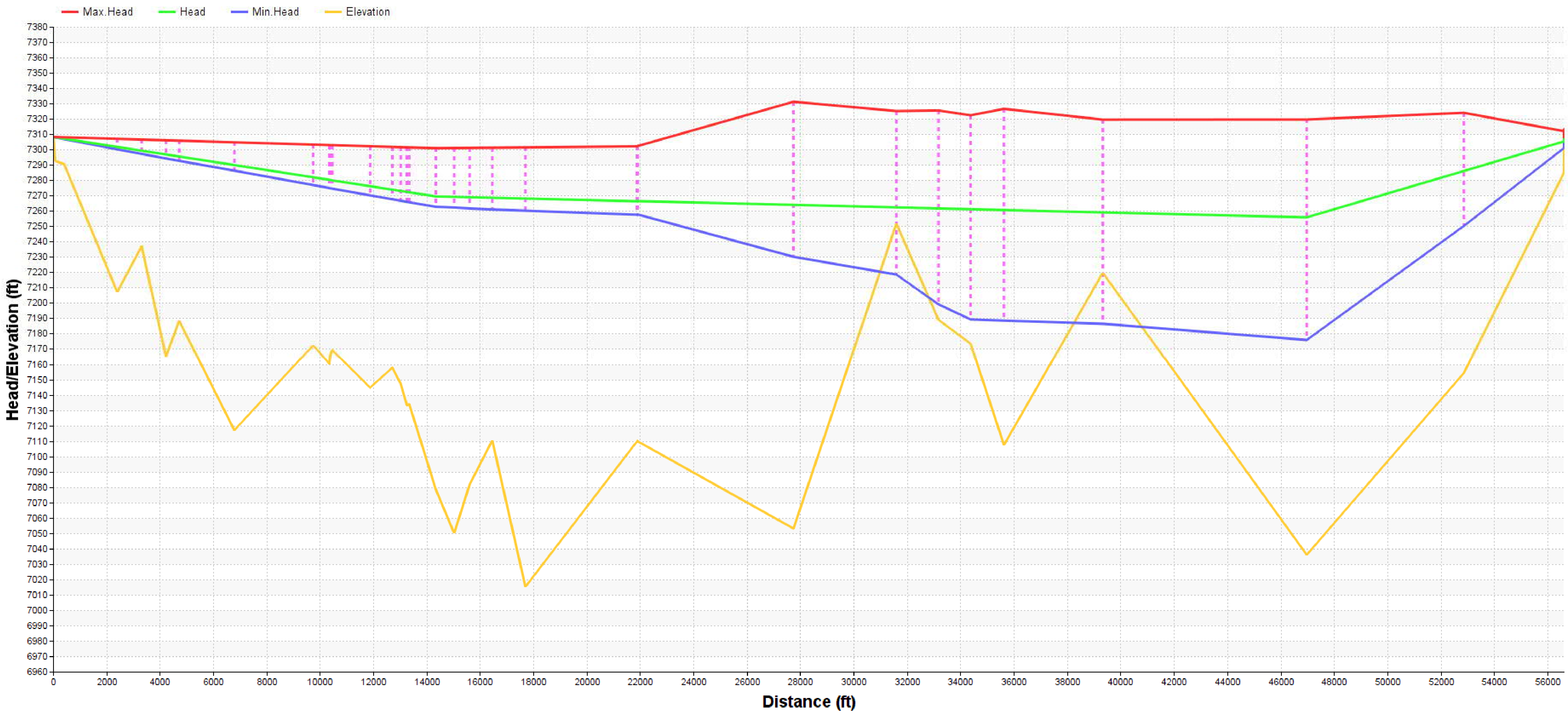


Exhibit 1.45b Surge Head Profile from Counselor Tank to JAN Tank (Unprotected Scenario: Flush Valve at STA 469+30 open)

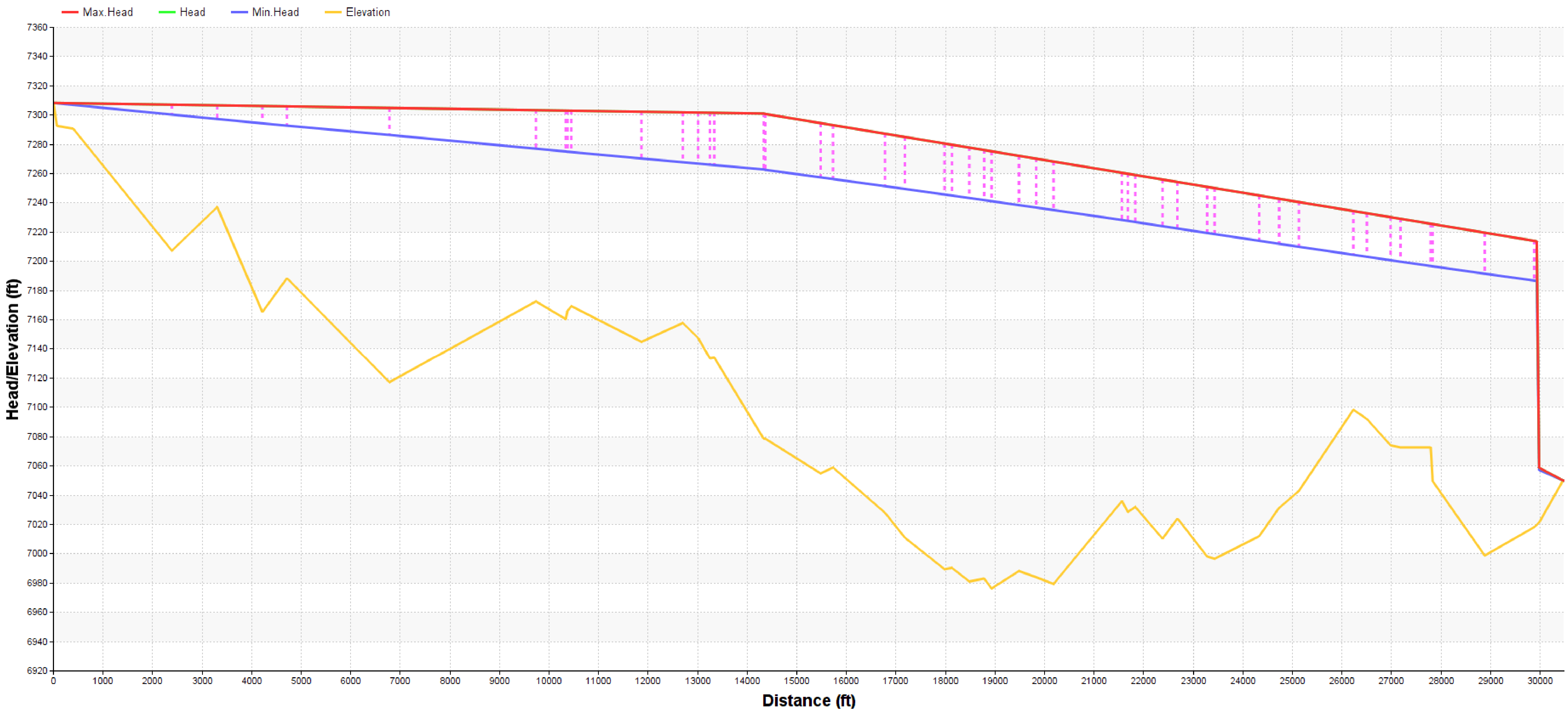


Exhibit 1.46a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Unprotected Scenario: Flush Valve at STA 190+30 JAN open)

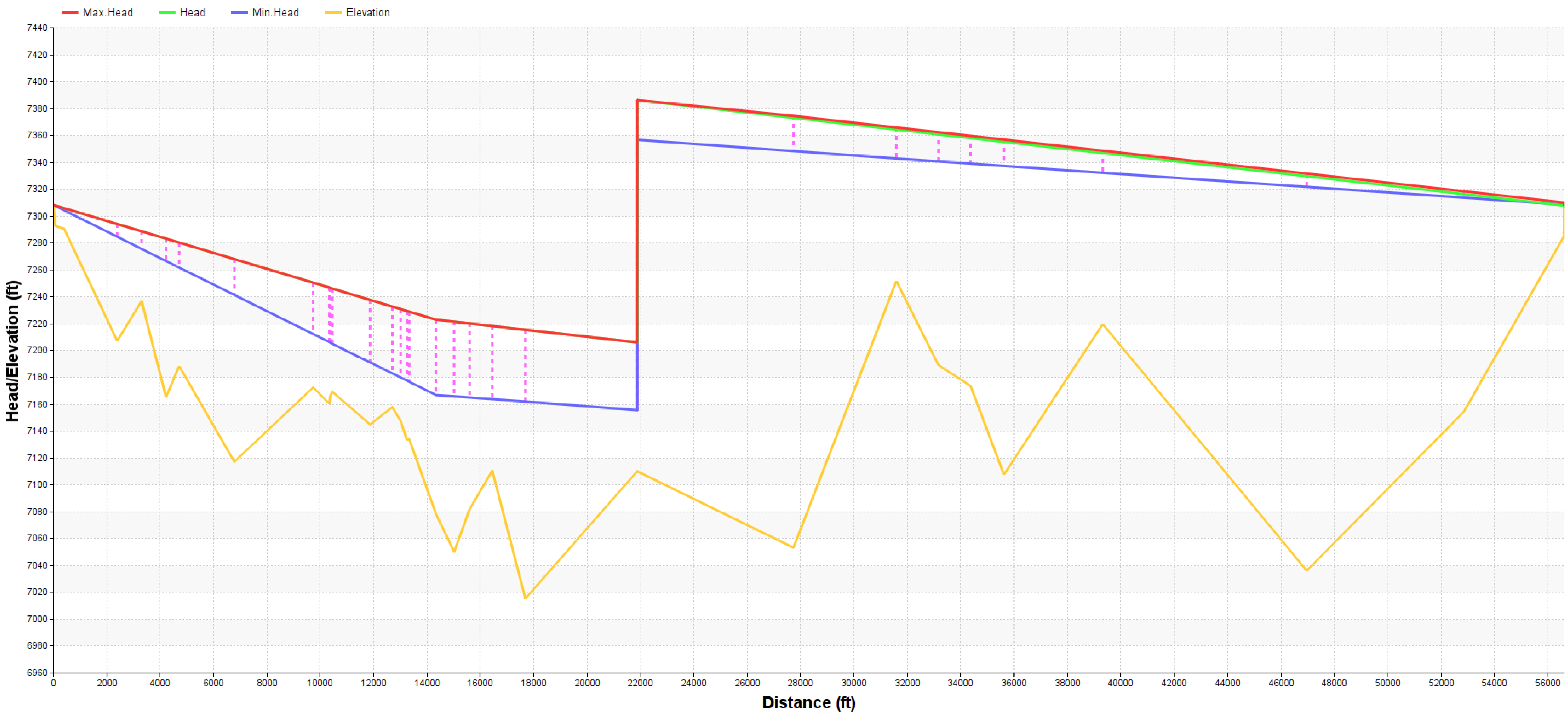


Exhibit 1.46b Surge Head Profile from Counselor Tank to JAN Tank (Unprotected Scenario: Flush Valve at STA 190+30 JAN open)

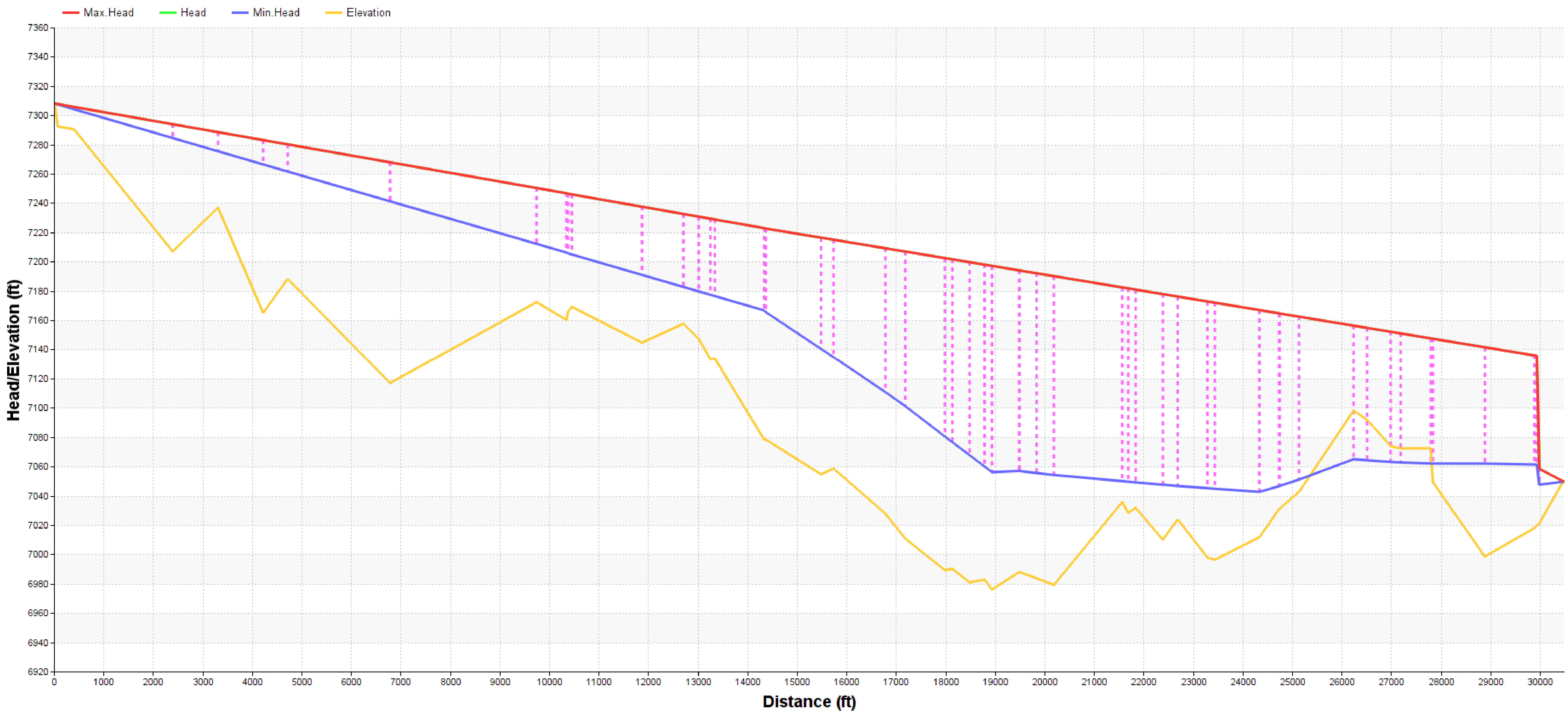


Exhibit 1.47a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Unprotected Scenario: Flush Valve at STA 234+80 JAN open)

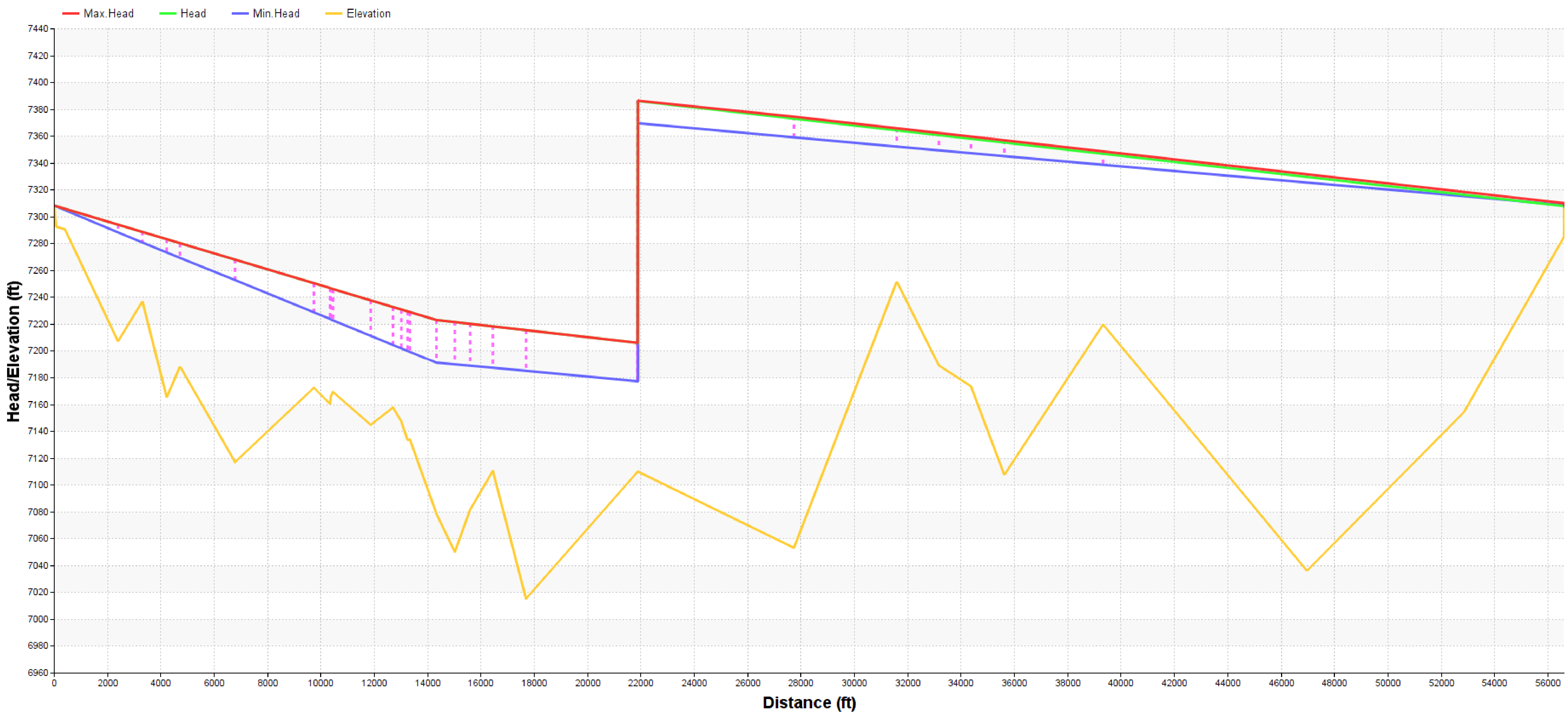


Exhibit 1.47b Surge Head Profile from Counselor Tank to JAN Tank (Unprotected Scenario: Flush Valve at STA 234+80 JAN open)

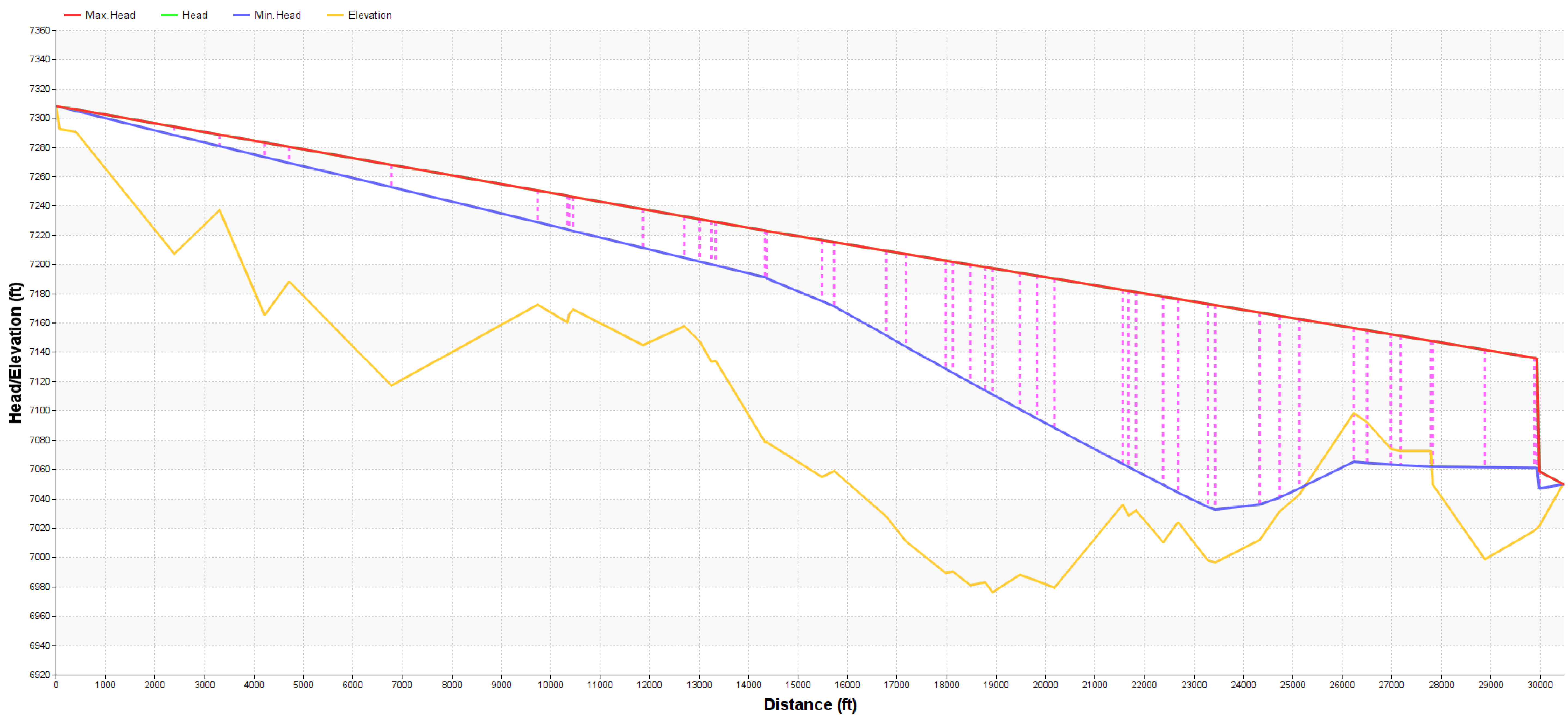


Exhibit 1.48a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Unprotected Scenario: Flush Valve at STA 289+80 open)

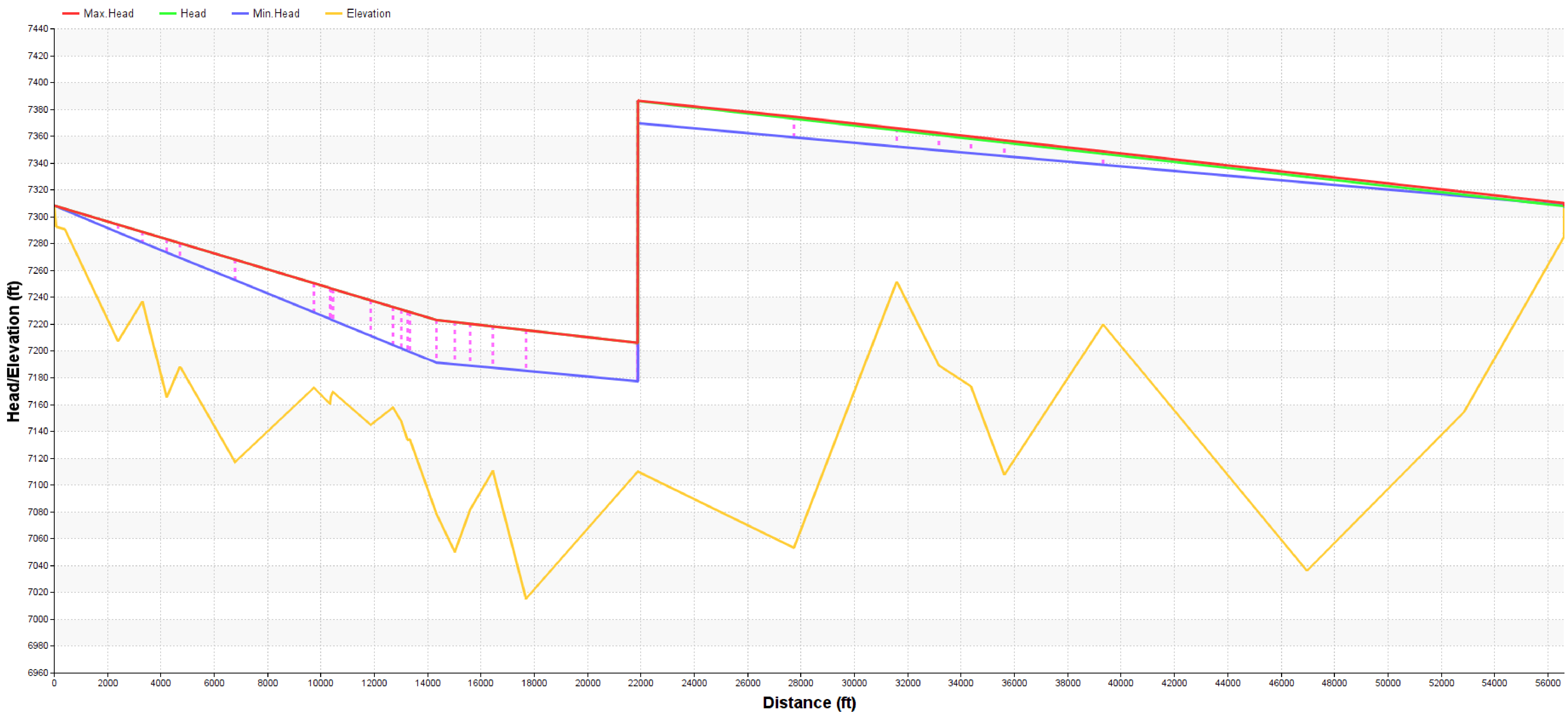


Exhibit 1.48b Surge Head Profile from Counselor Tank to JAN Tank (Unprotected Scenario: Flush Valve at STA 289+80 open)

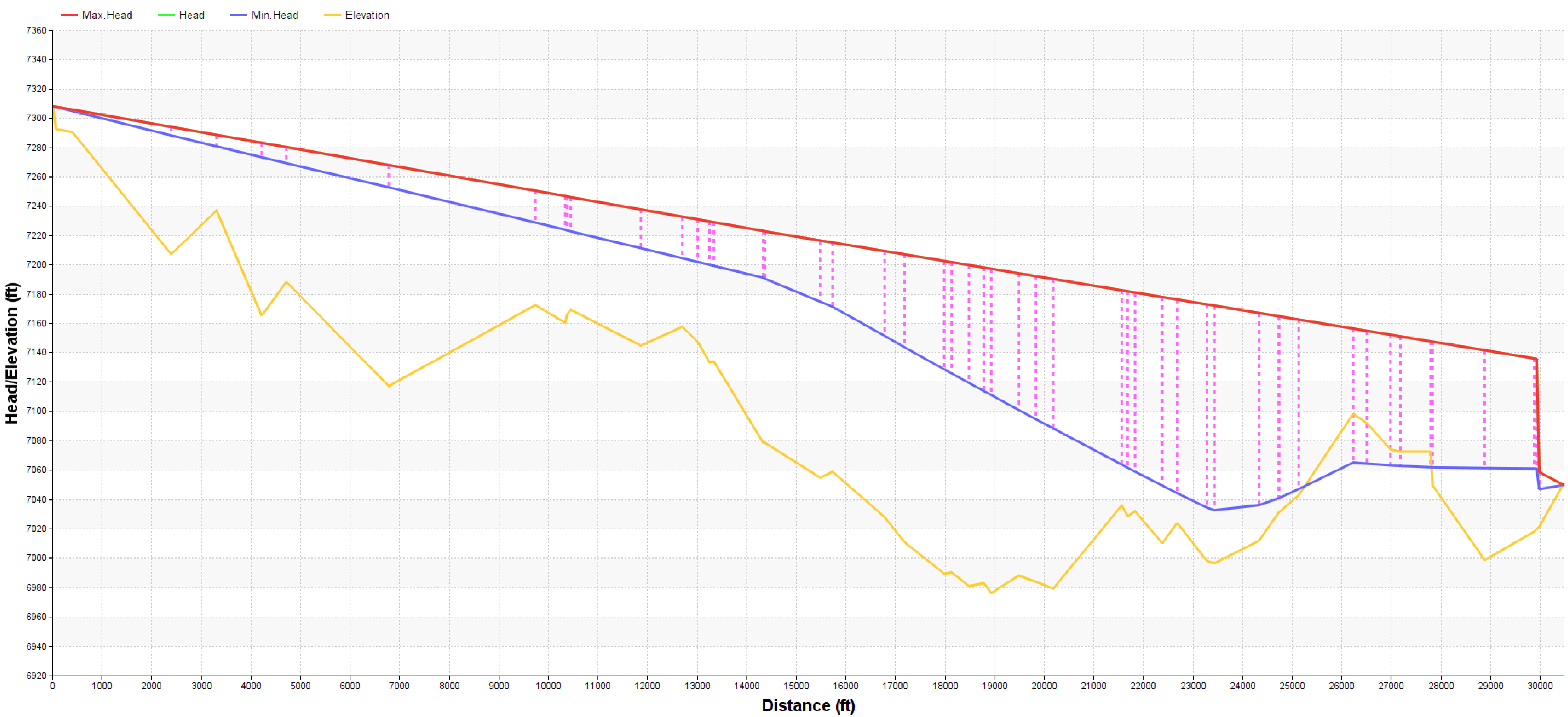


Exhibit 1.49a Surge Head Profile from Counselor Tank to Pipe Break at 189+30 (Reach 24.1 JAN) (Unprotected Scenario: Pipe Break at STA 189+80)

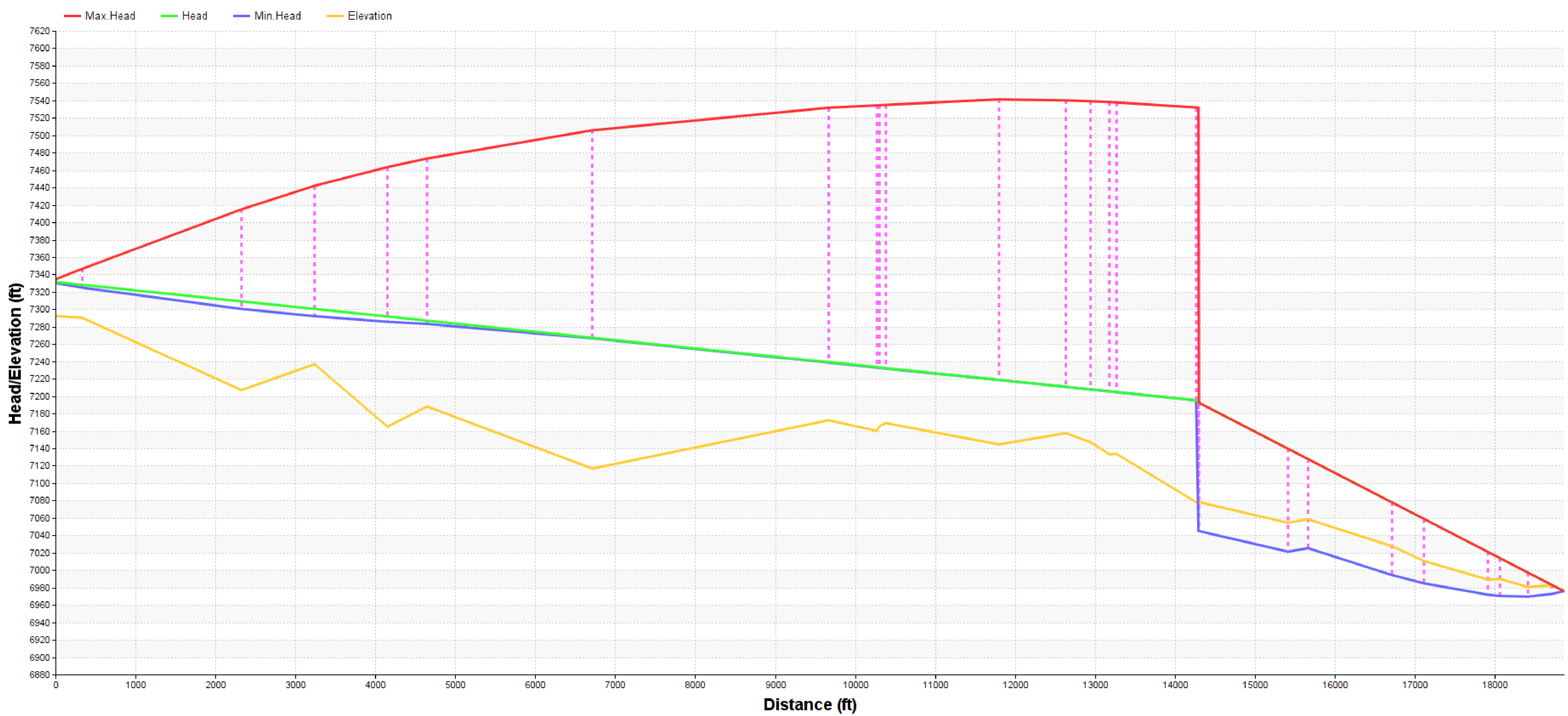


Exhibit 1.49b Surge Head Profile from Counselor Tank to Pumps (Unprotected Scenario: Pipe Break at STA 189+80)

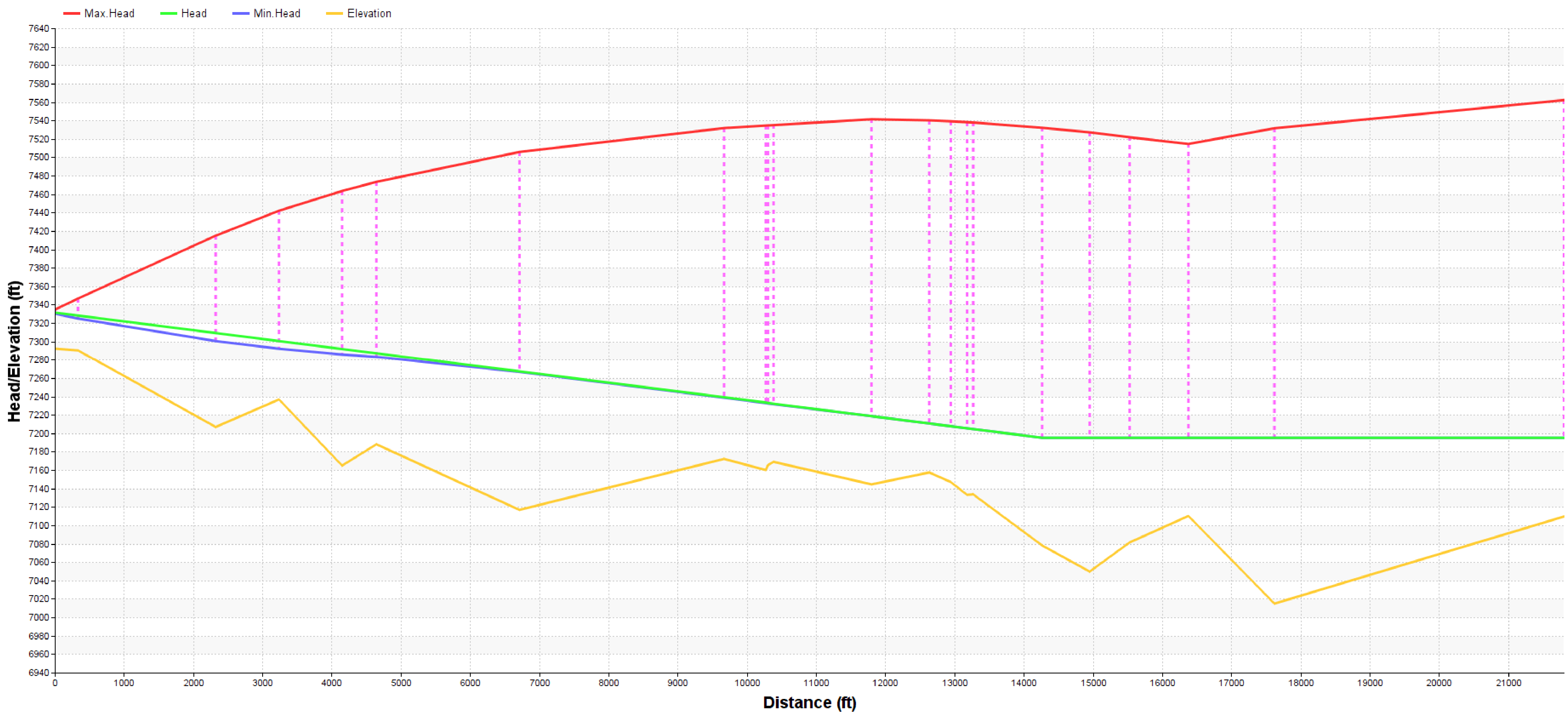


Exhibit 1.50a Surge Head Profile from Counselor Tank to Pipe Break at 234+30 (Reach 24.1 JAN) (Unprotected Scenario: Pipe Break at STA 234+30)

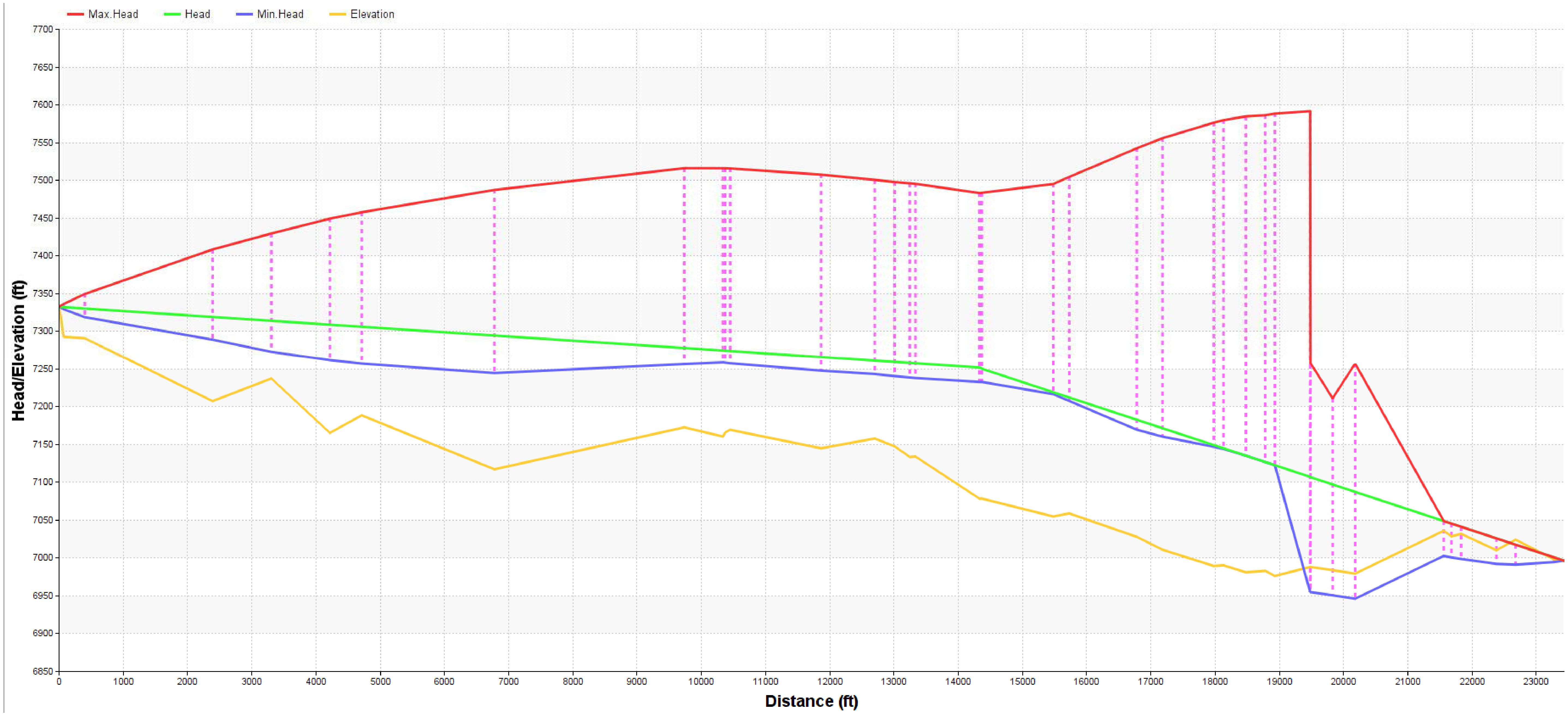


Exhibit 1.50b Surge Head Profile from Counselor Tank to Pumps (Unprotected Scenario: Pipe Break at STA 234+30)

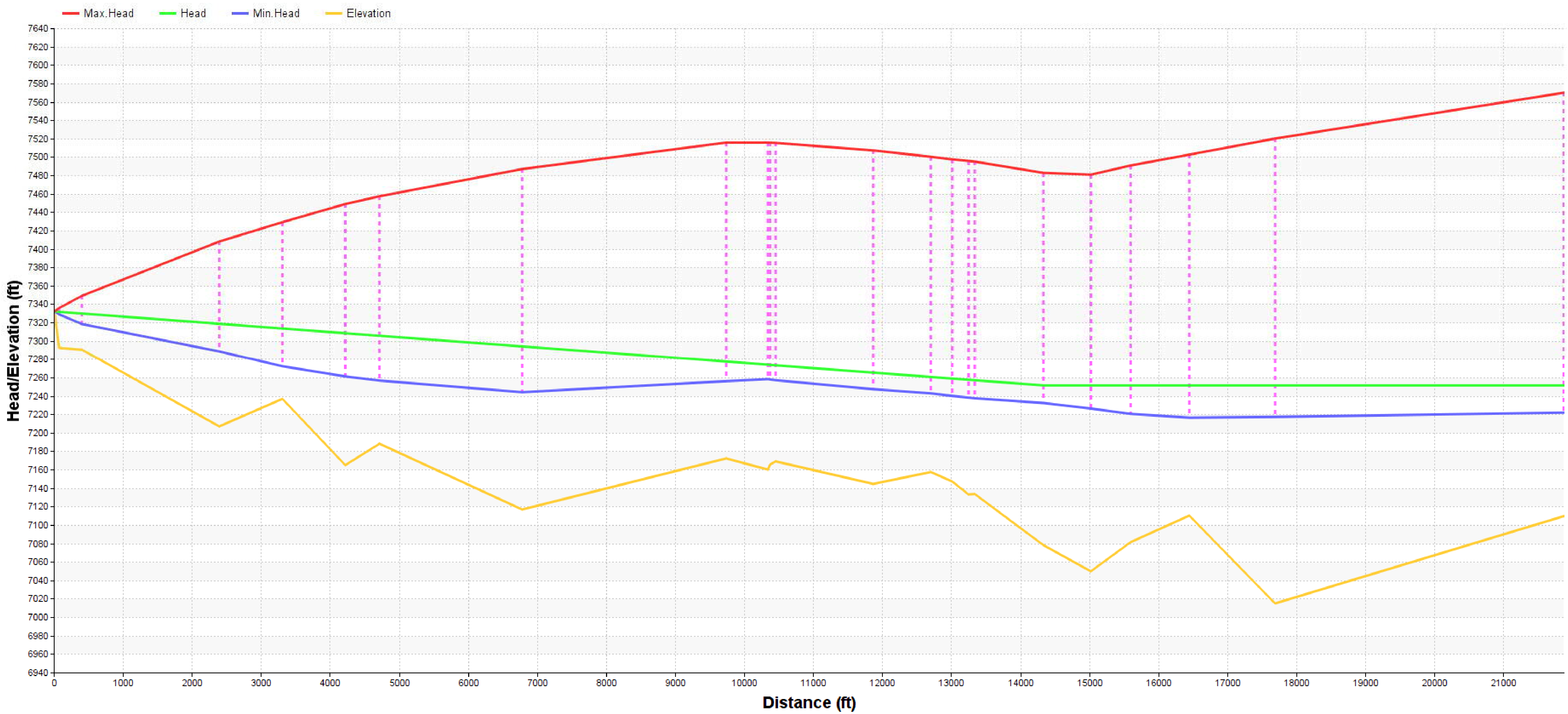


Exhibit 1.51a Surge Head Profile from Counselor Tank to Pipe Break at 289+80 (Reach 24.1 JAN) (Unprotected Scenario: Pipe Break at STA 289+80)

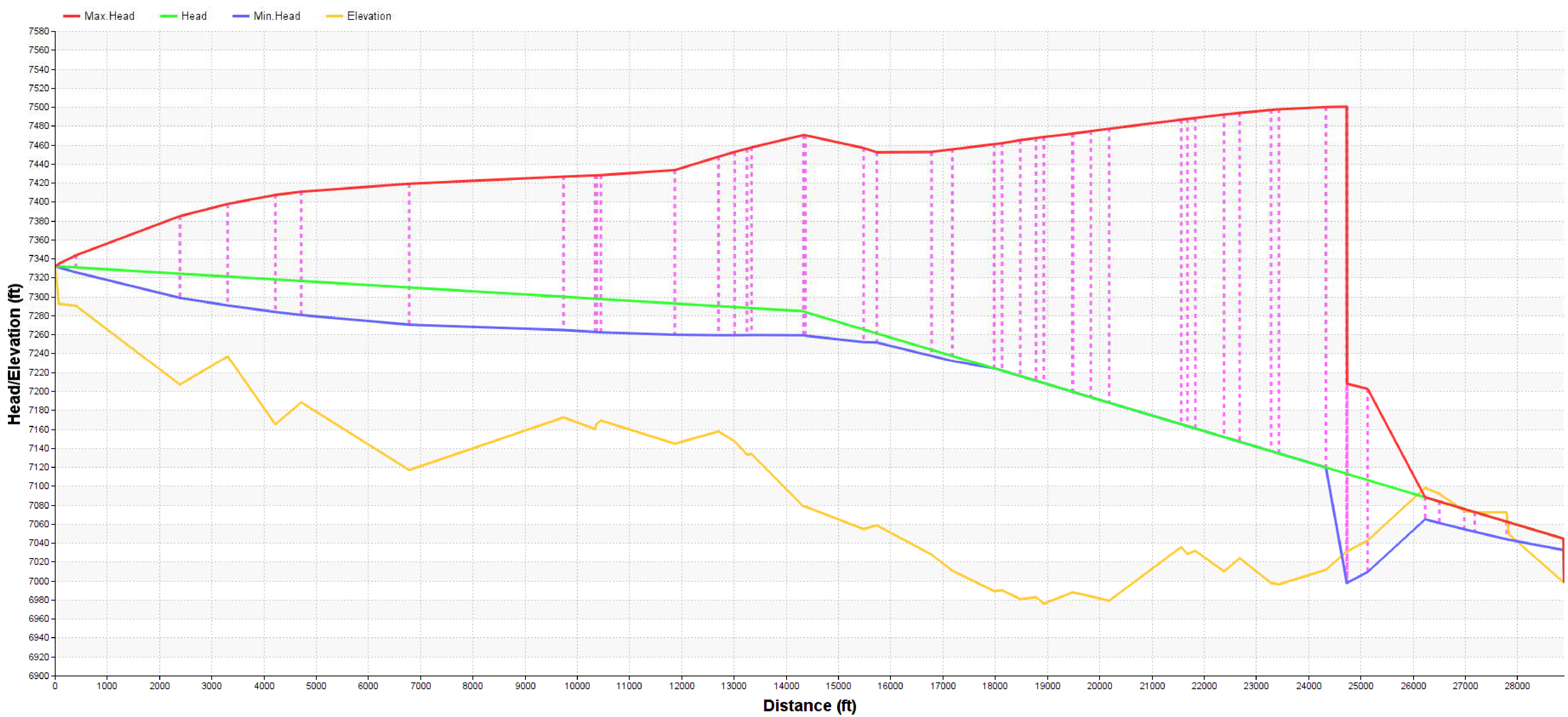


Exhibit 1.51b Surge Head Profile from Counselor Tank to Pumps (Unprotected Scenario: Pipe Break at STA 234+30)

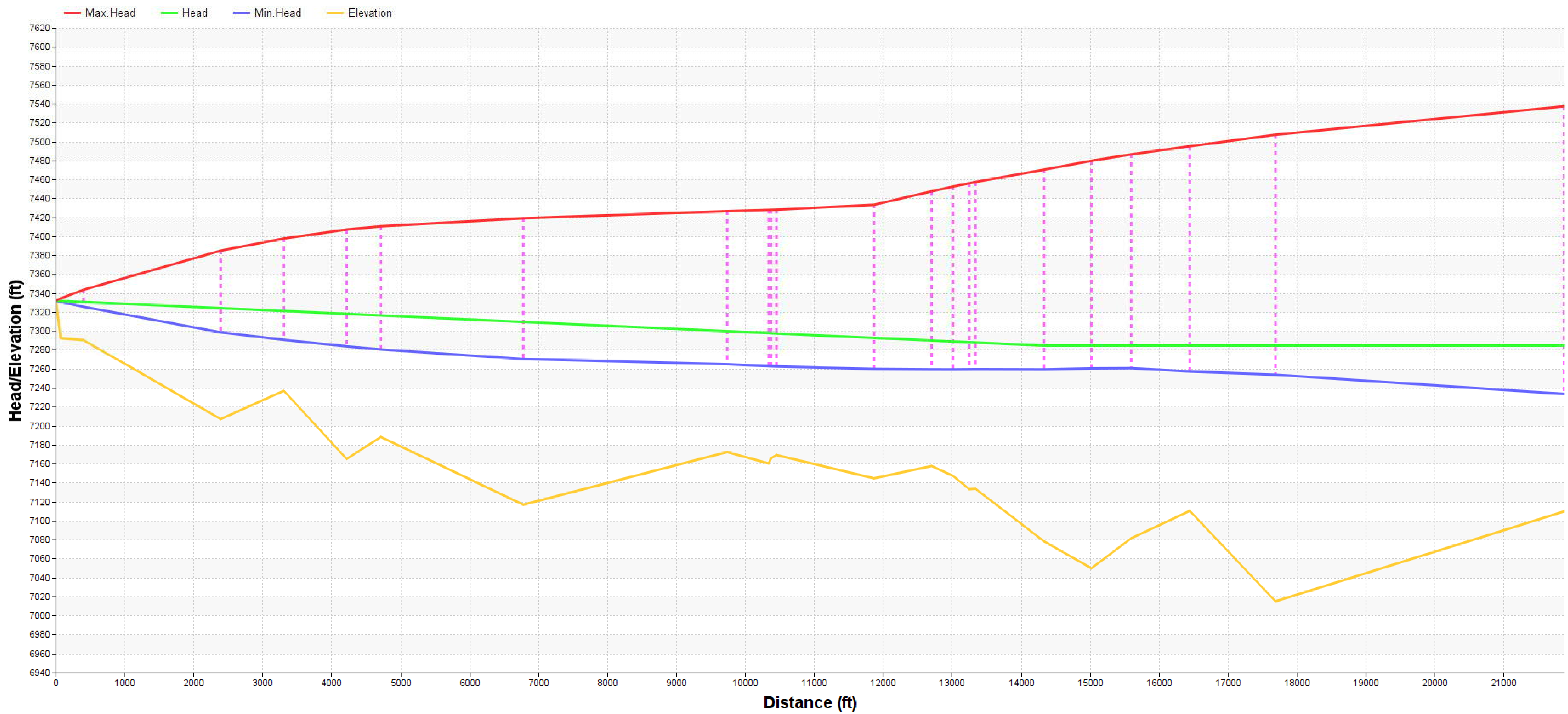


Exhibit 2.1a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Protected Scenario: JAN altitude valve sudden open during pump ramp up)

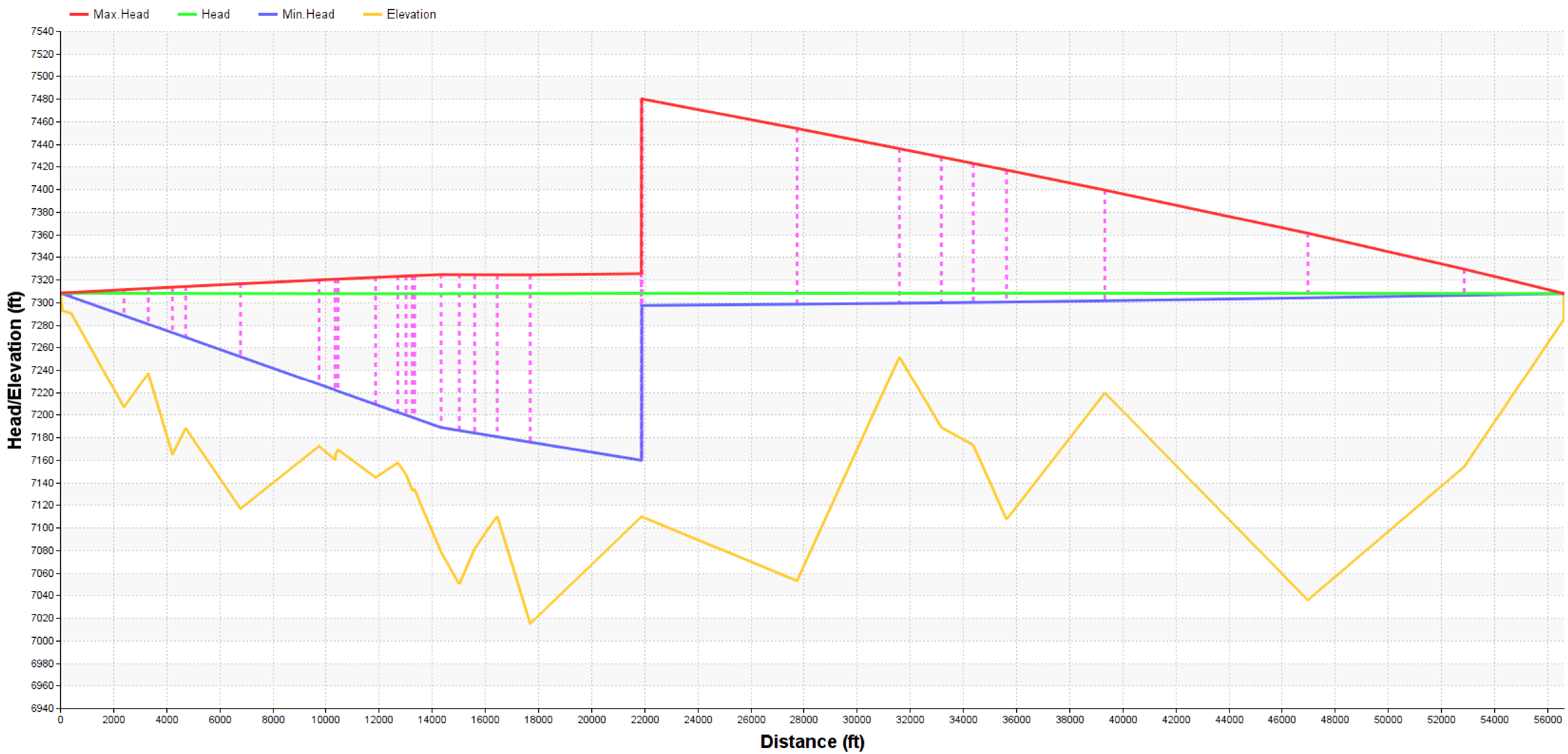


Exhibit 2.1b Surge Head Profile from Counselor Tank to JAN Tank (Protected Scenario: JAN altitude valve sudden open during pump ramp up)

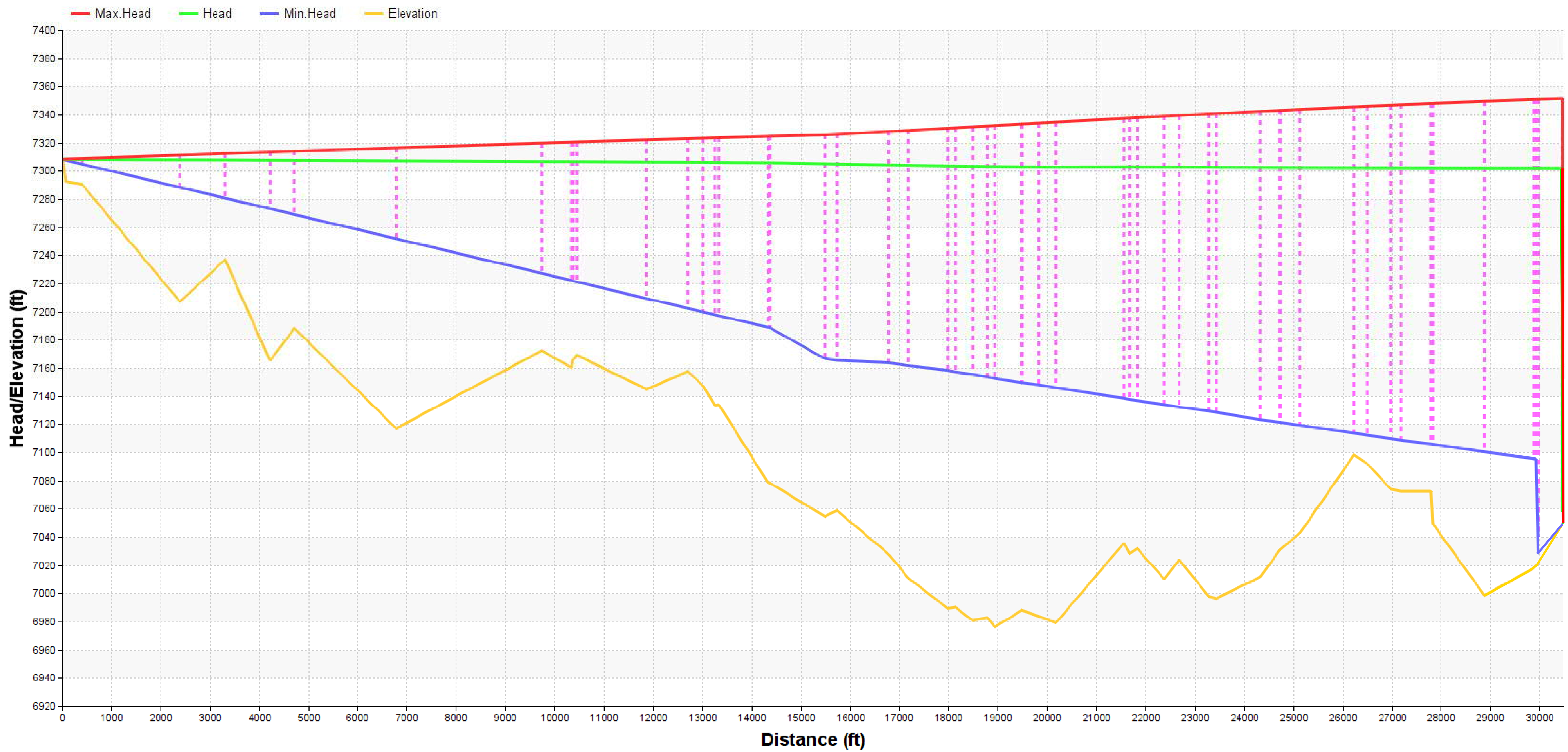


Exhibit 2.2a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Protected Scenario: JAN sudden close during pump ramp down)

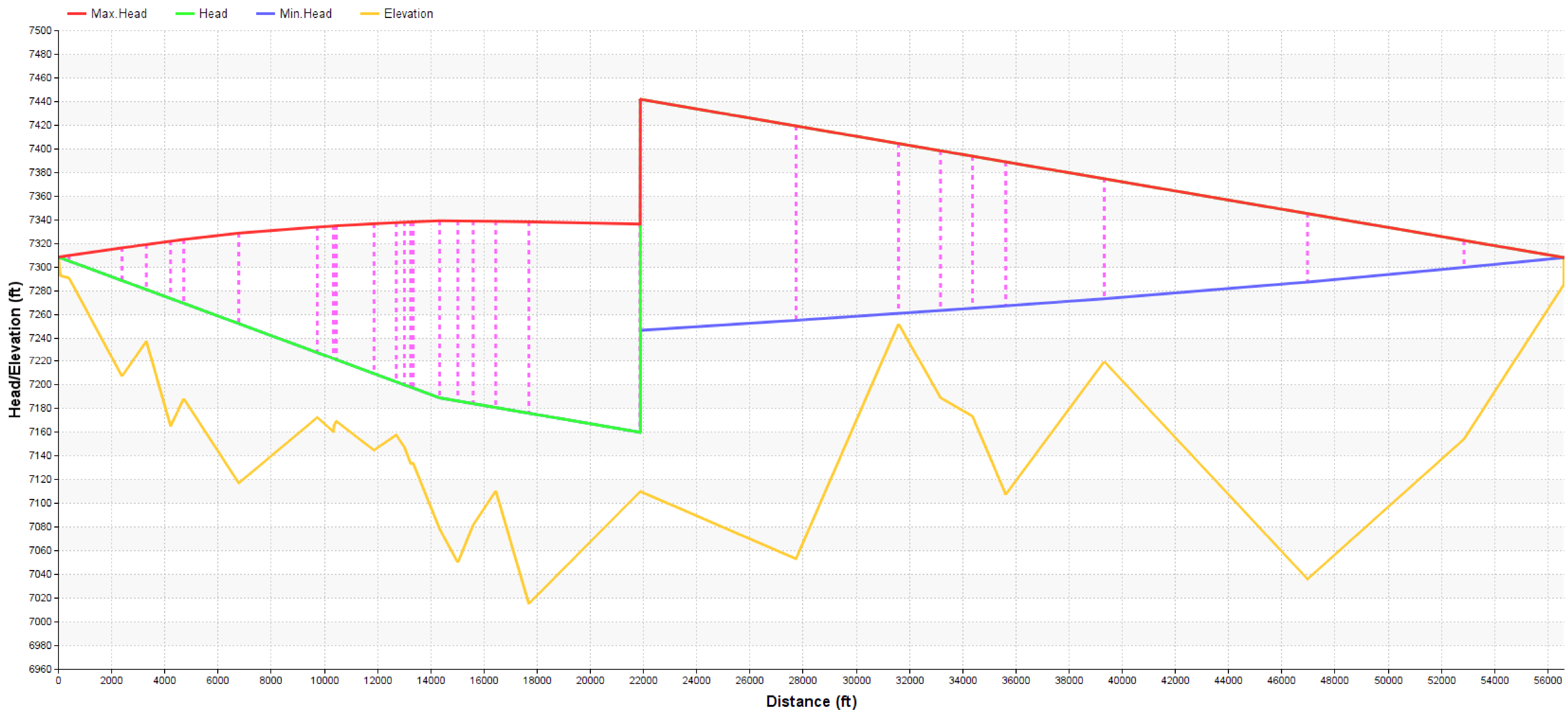


Exhibit 2.2b Surge Head Profile from Counselor Tank to JAN Tank (Protected Scenario: JAN sudden close during pump ramp down)

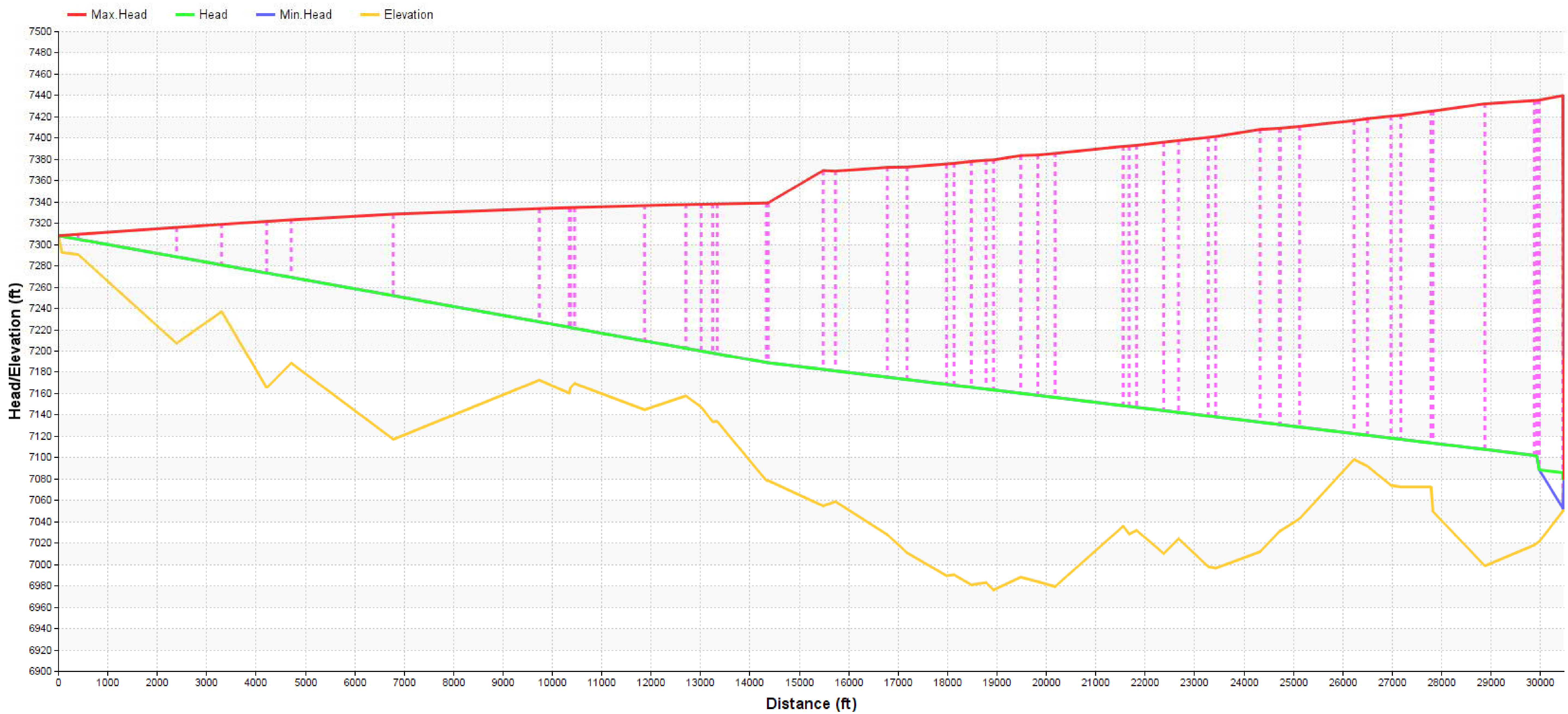


Exhibit 2.3a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Protected Scenario: JAN altitude valve sudden open during pump ramp down)

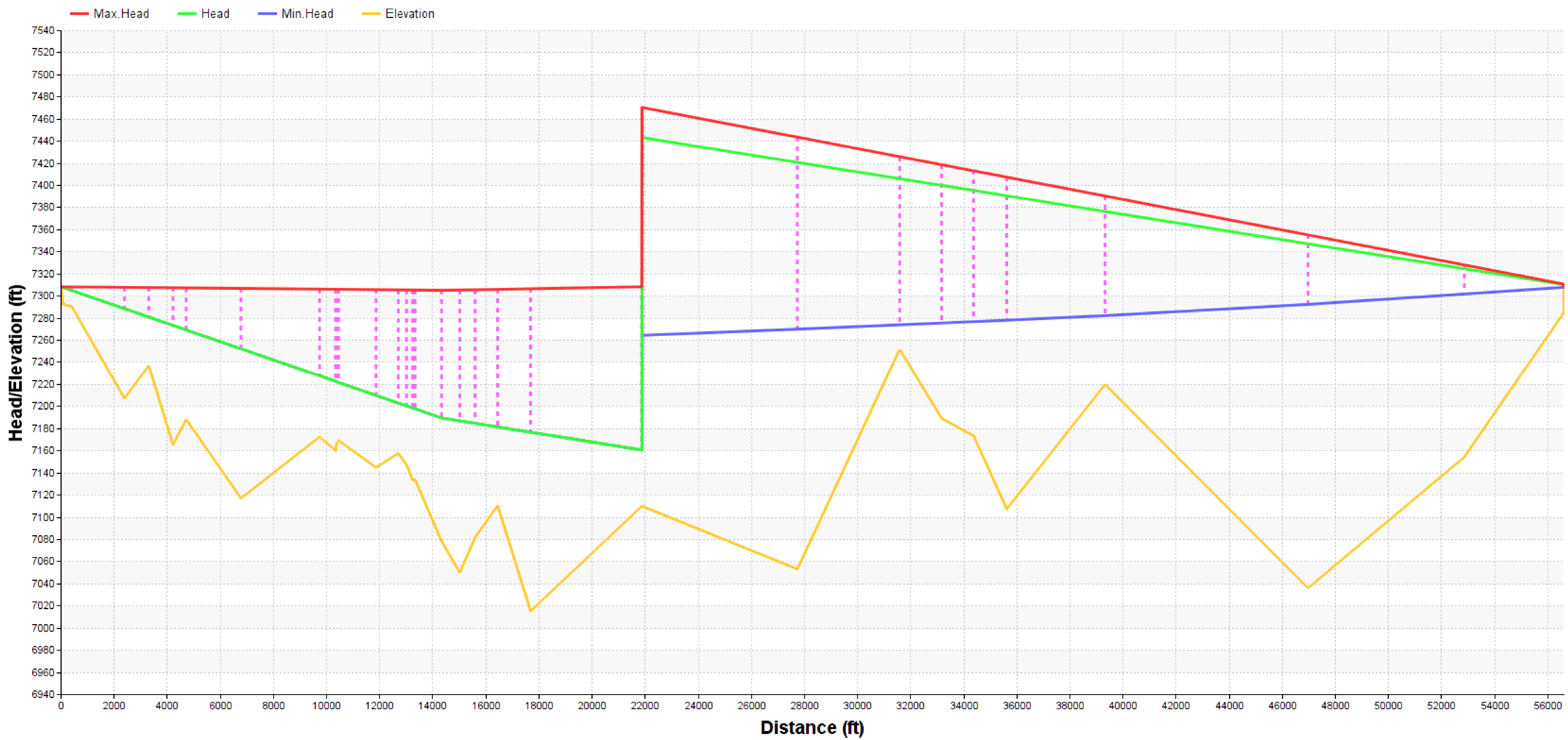


Exhibit 2.3b Surge Head Profile from Counselor Tank to JAN Tank (Protected Scenario: JAN altitude valve sudden open during pump ramp down)

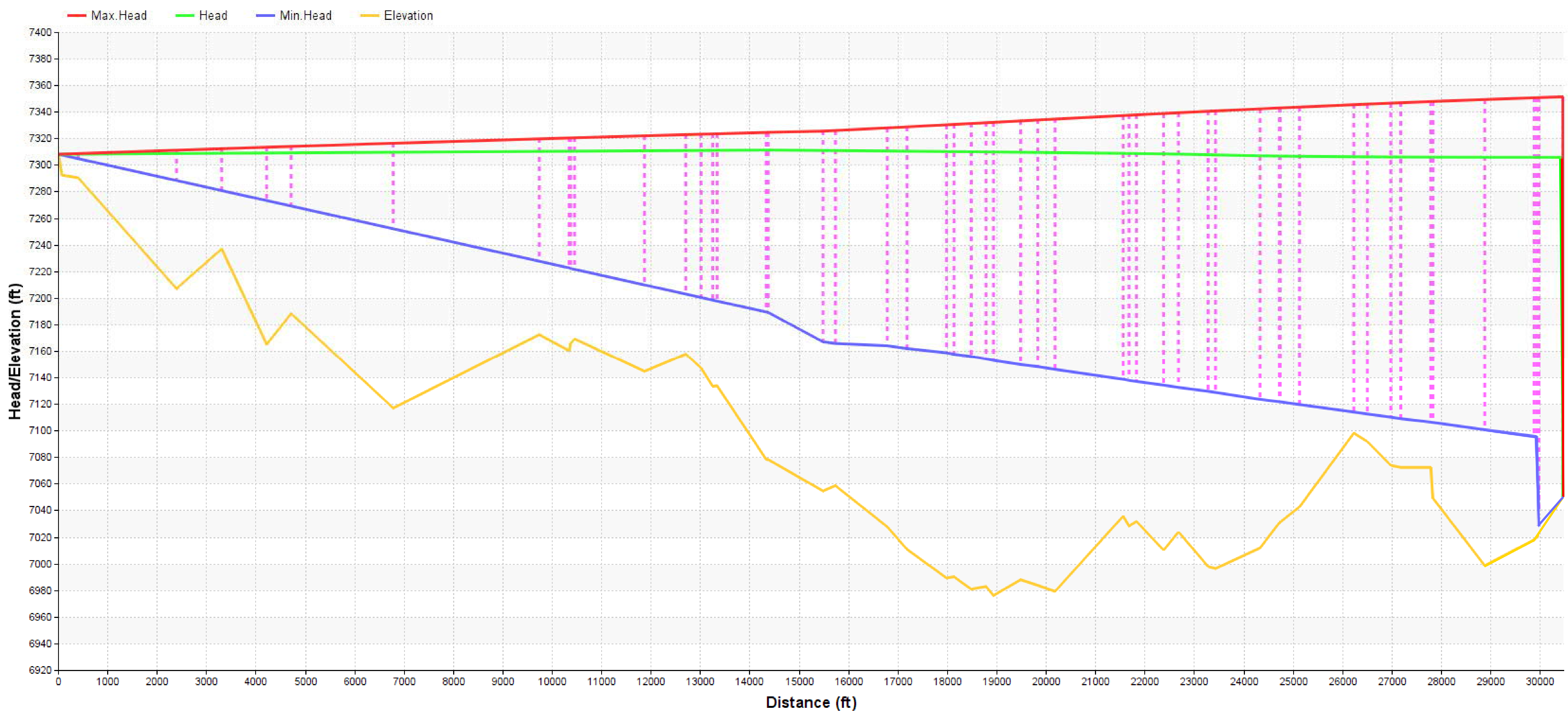


Exhibit 2.4a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Protected Scenario: JAN altitude valve sudden close during pump ramp up)

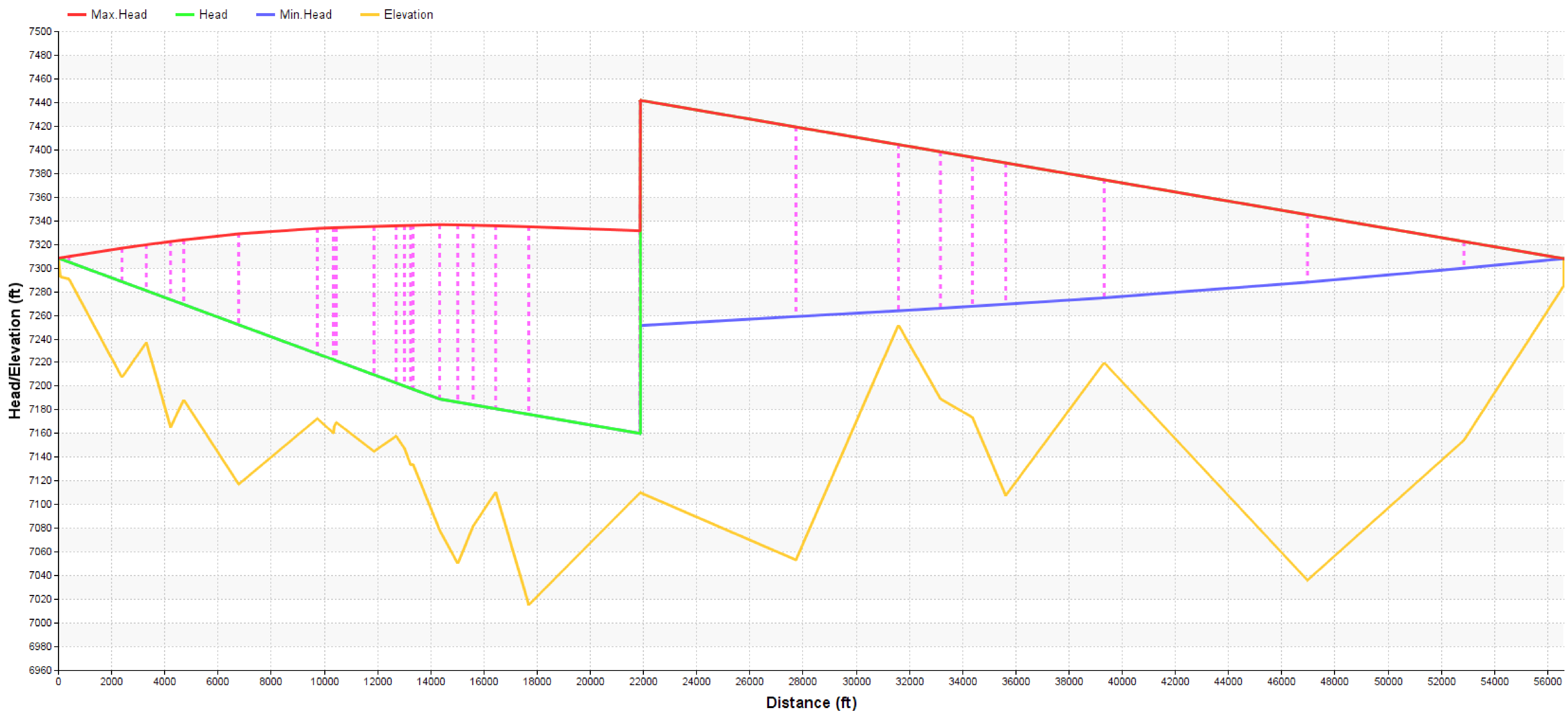


Exhibit 2.4b Surge Head Profile from Counselor Tank to JAN Tank (Protected Scenario: JAN altitude valve sudden close during pump ramp up)

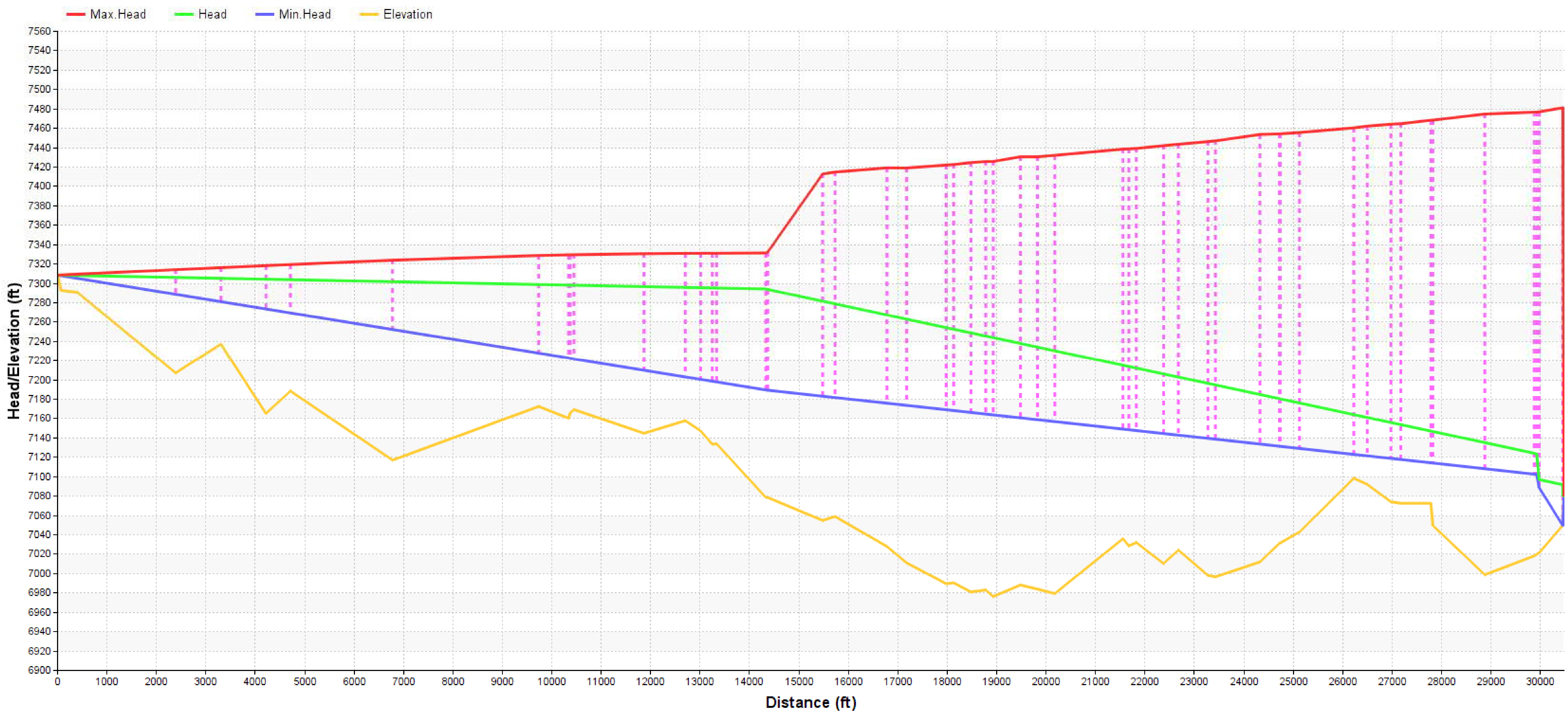


Exhibit 2.5a(Option 1)-a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Protected Scenario: JAN sudden open after pump sudden start; 650 cf surge tank at turnout)

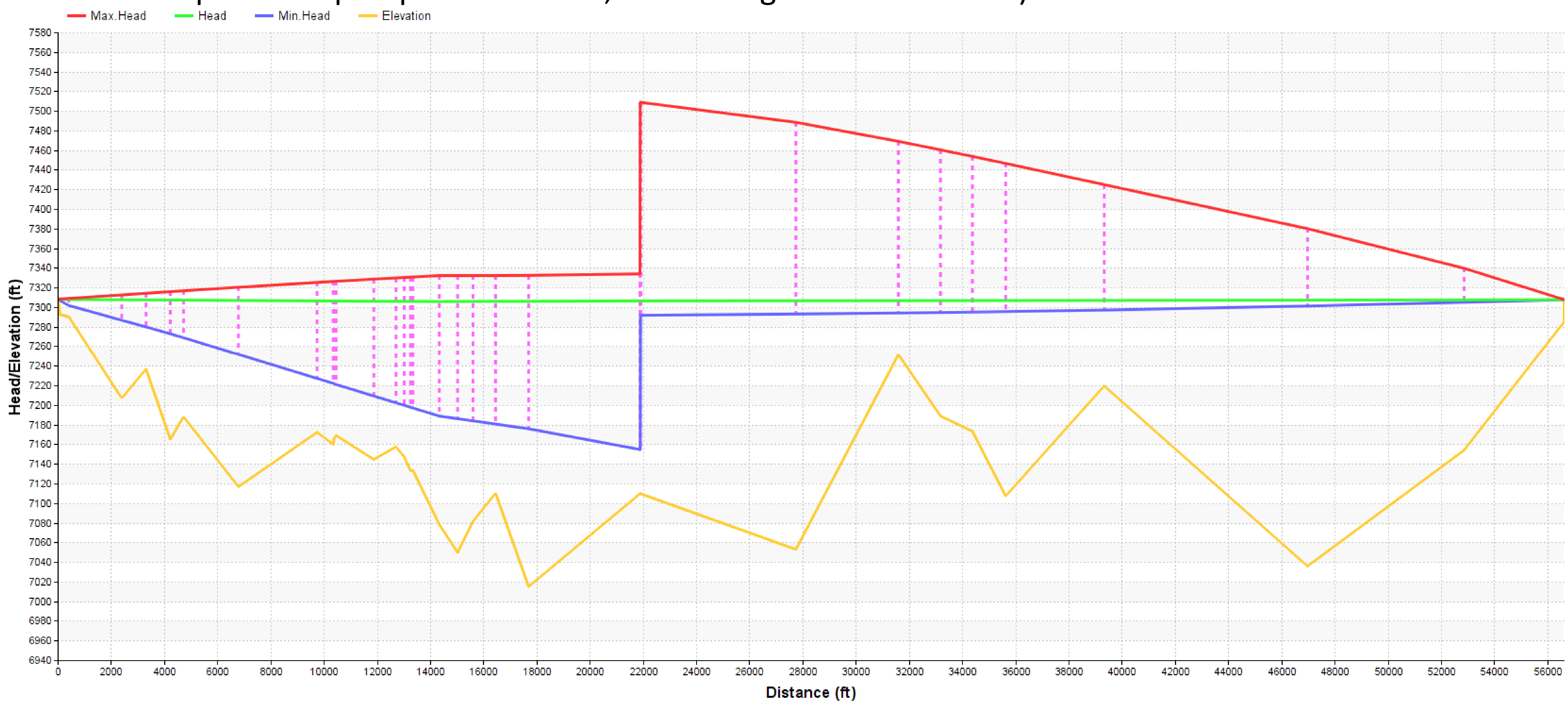


Exhibit 2.5a(Option1)-b Surge Head Profile from Counselor Tank to JAN Tank (Protected Scenario: JAN sudden open after pump sudden start; 650 cf surge tank at turnout)

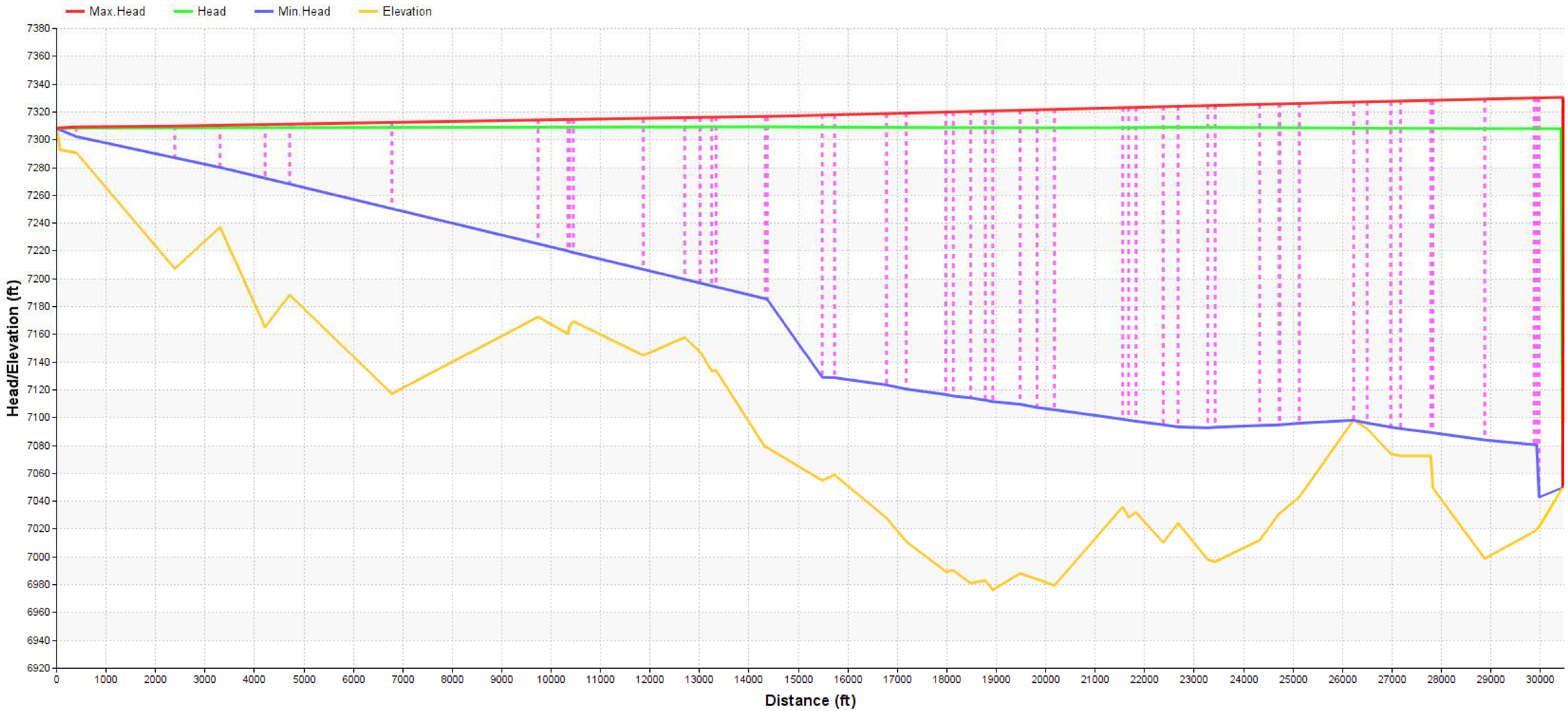


Exhibit 2.6a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Protected Scenario: JAN sudden close after pump sudden shutdown; 650 cf surge tank at turnout)

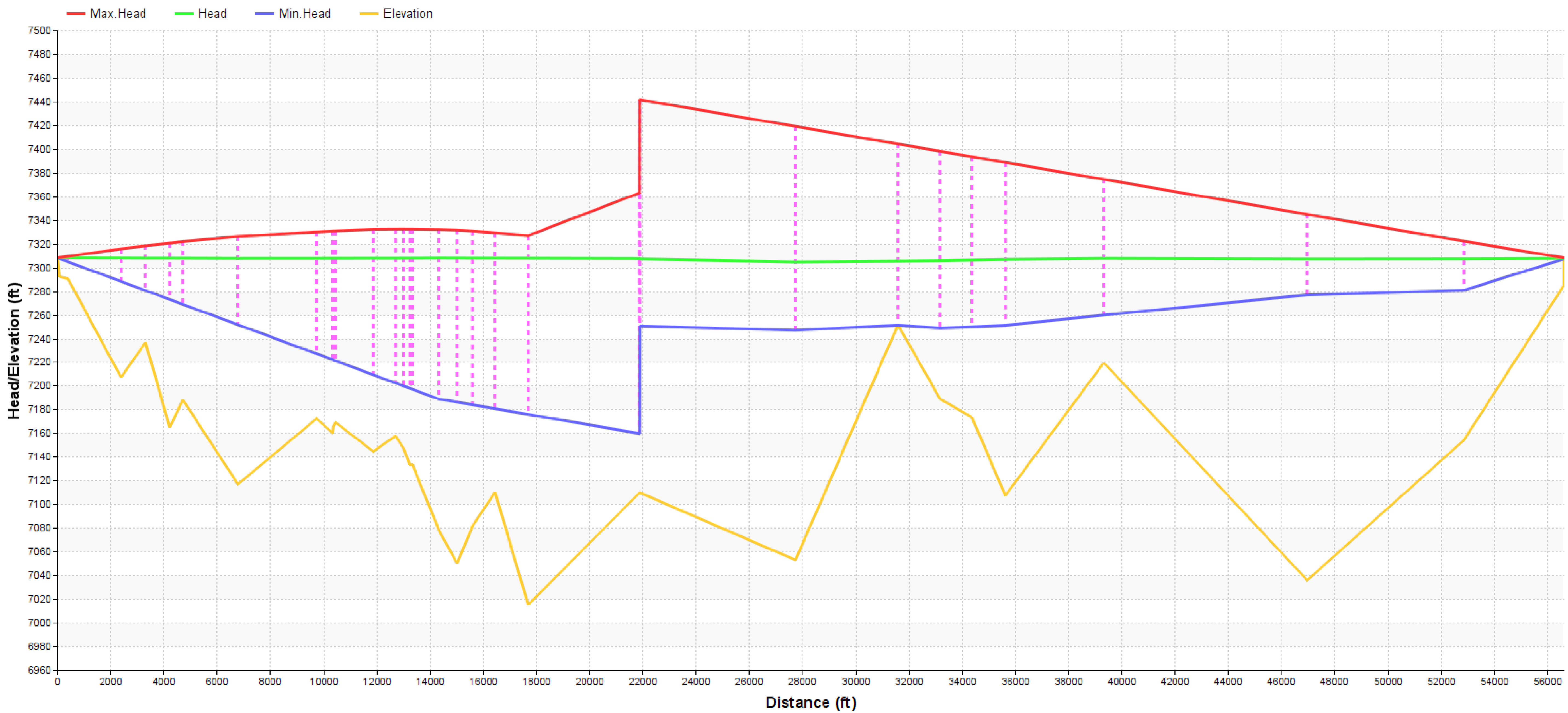


Exhibit 2.6b Surge Head Profile from Counselor Tank to JAN Tank (Protected Scenario: JAN sudden close after pump sudden shutdown; 650 cf surge tank at turnout)

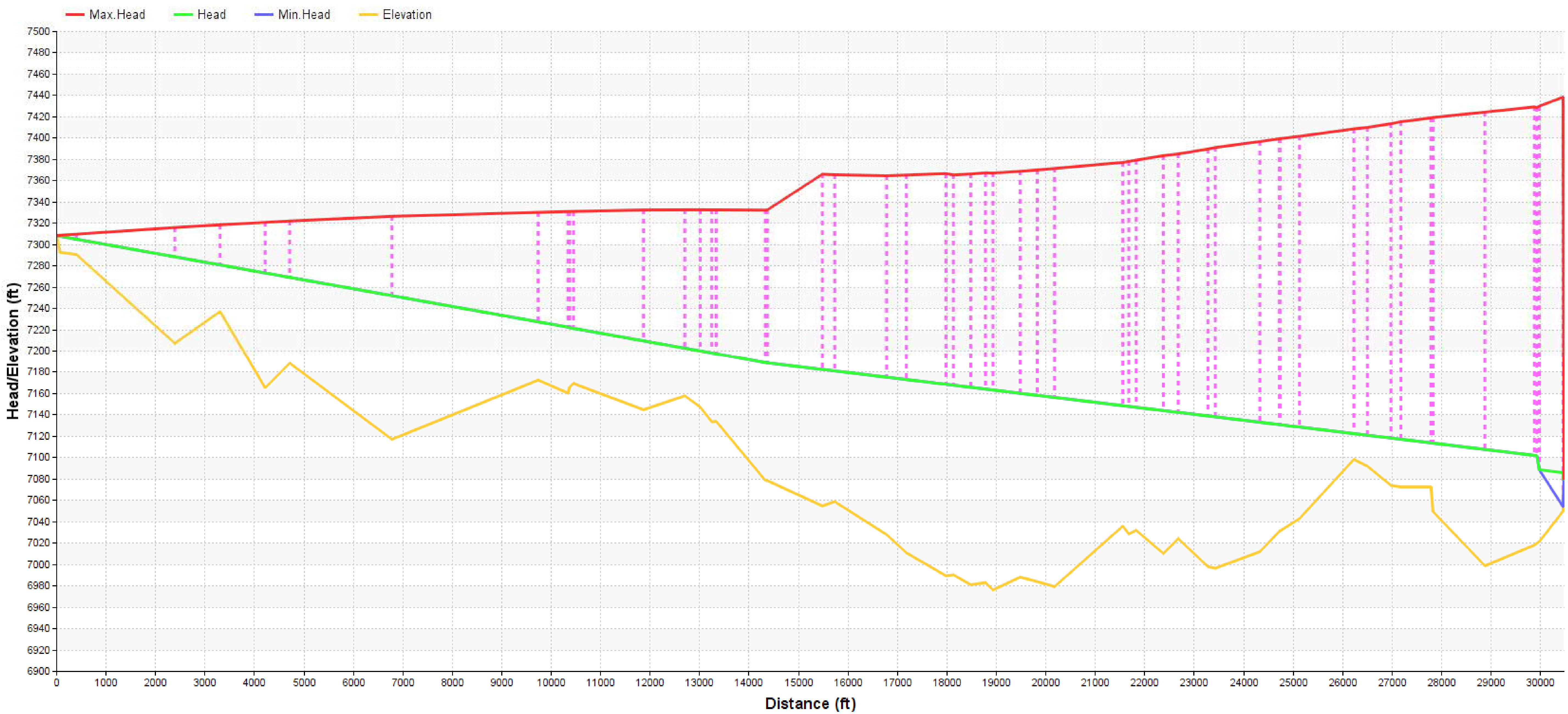


Exhibit 2.7a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Protected Scenario: JAN sudden open after sudden stop; 650 cf surge tank at turnout)

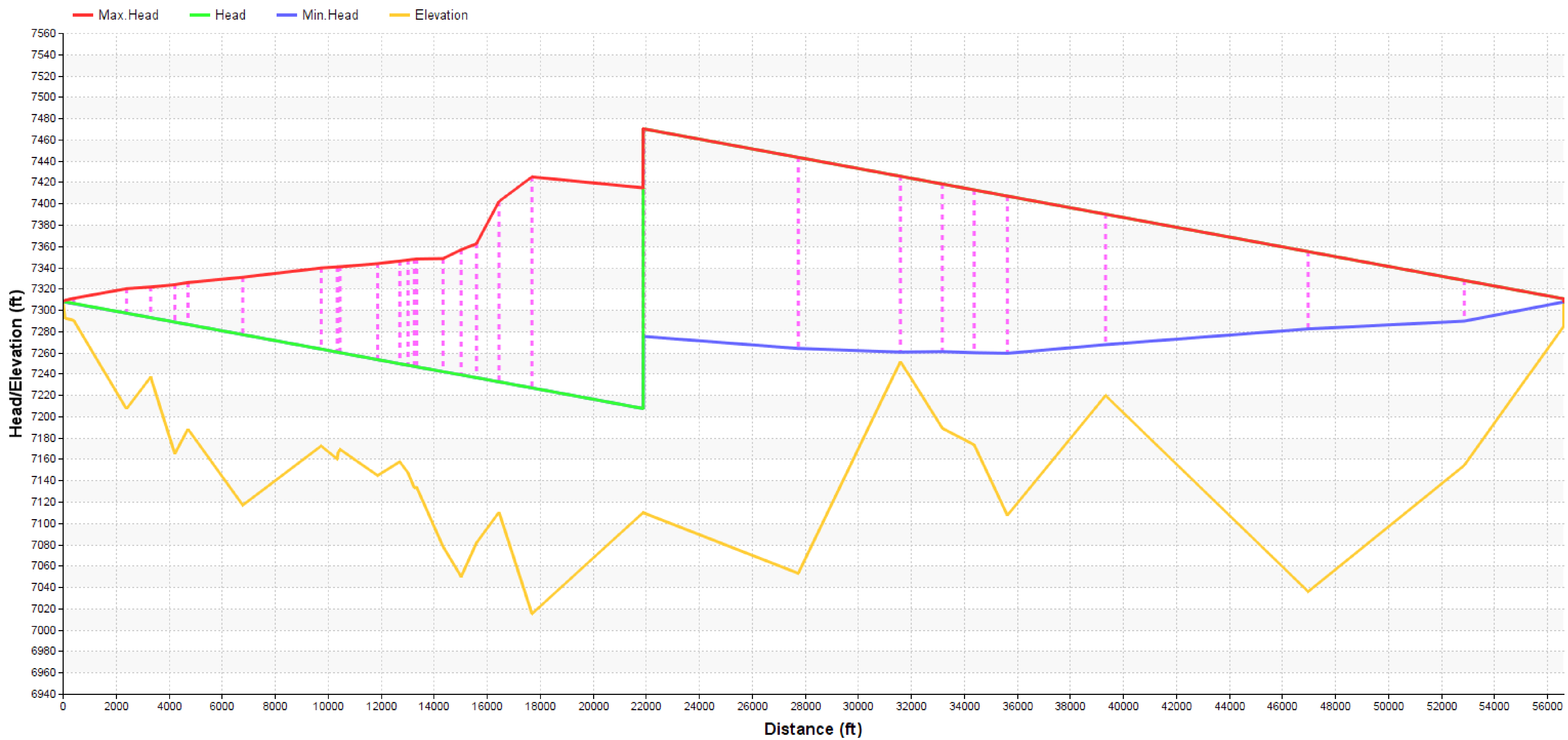


Exhibit 2.7b Surge Head Profile from Counselor Tank to JAN Tank (Protected Scenario: JAN sudden open after sudden stop; 650 cf surge tank at turnout))

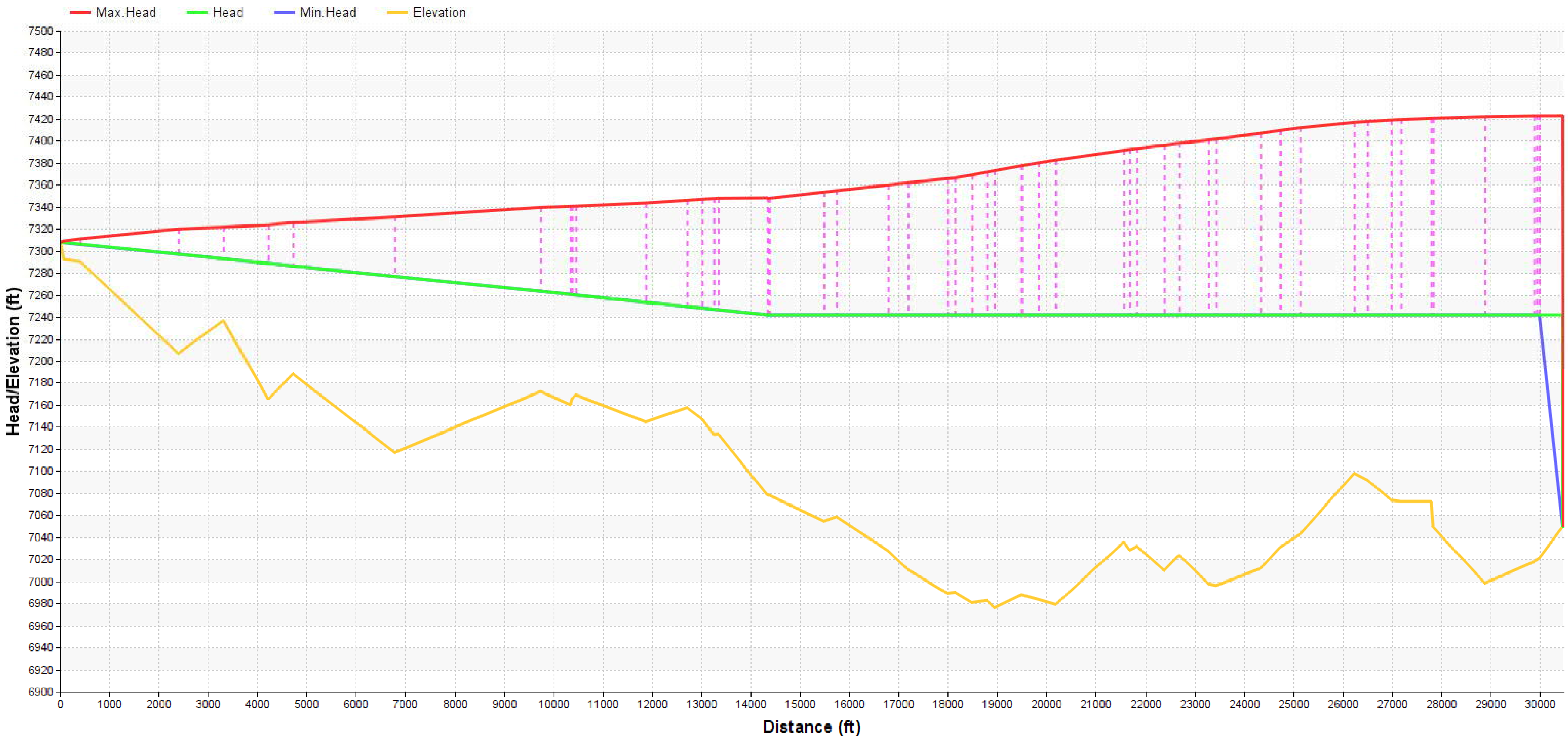


Exhibit 2.8a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Protected Scenario: JAN sudden close after pump sudden start; 650 cf surge tank at turnout)

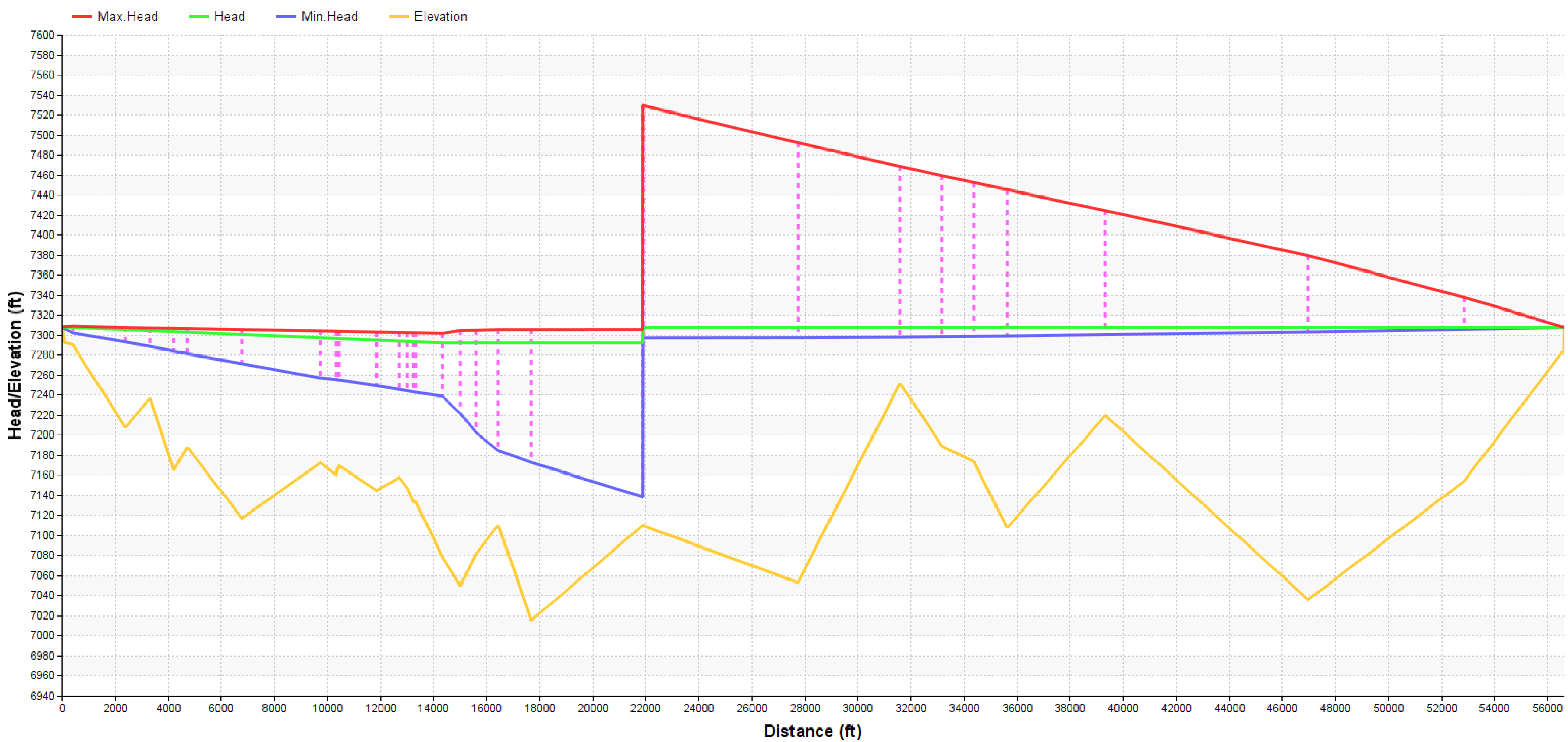


Exhibit 2.8b Surge Head Profile from Counselor Tank to JAN Tank (Protected Scenario: JAN sudden close after pump sudden start; 650 cf surge tank at turnout)

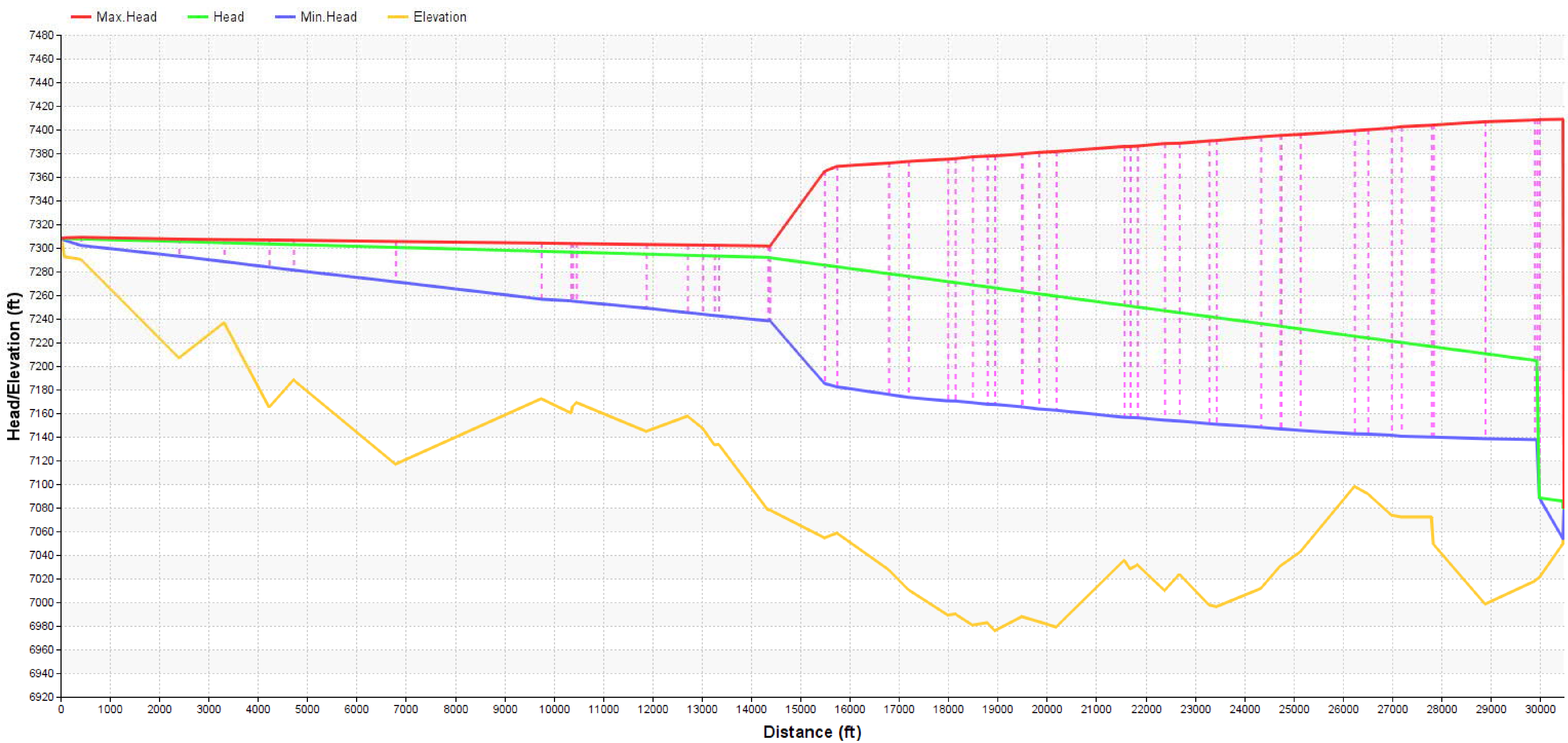


Exhibit 2.9a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Protected Scenario: JAN sudden open before pump sudden start; 650 cf surge tank at turnout)

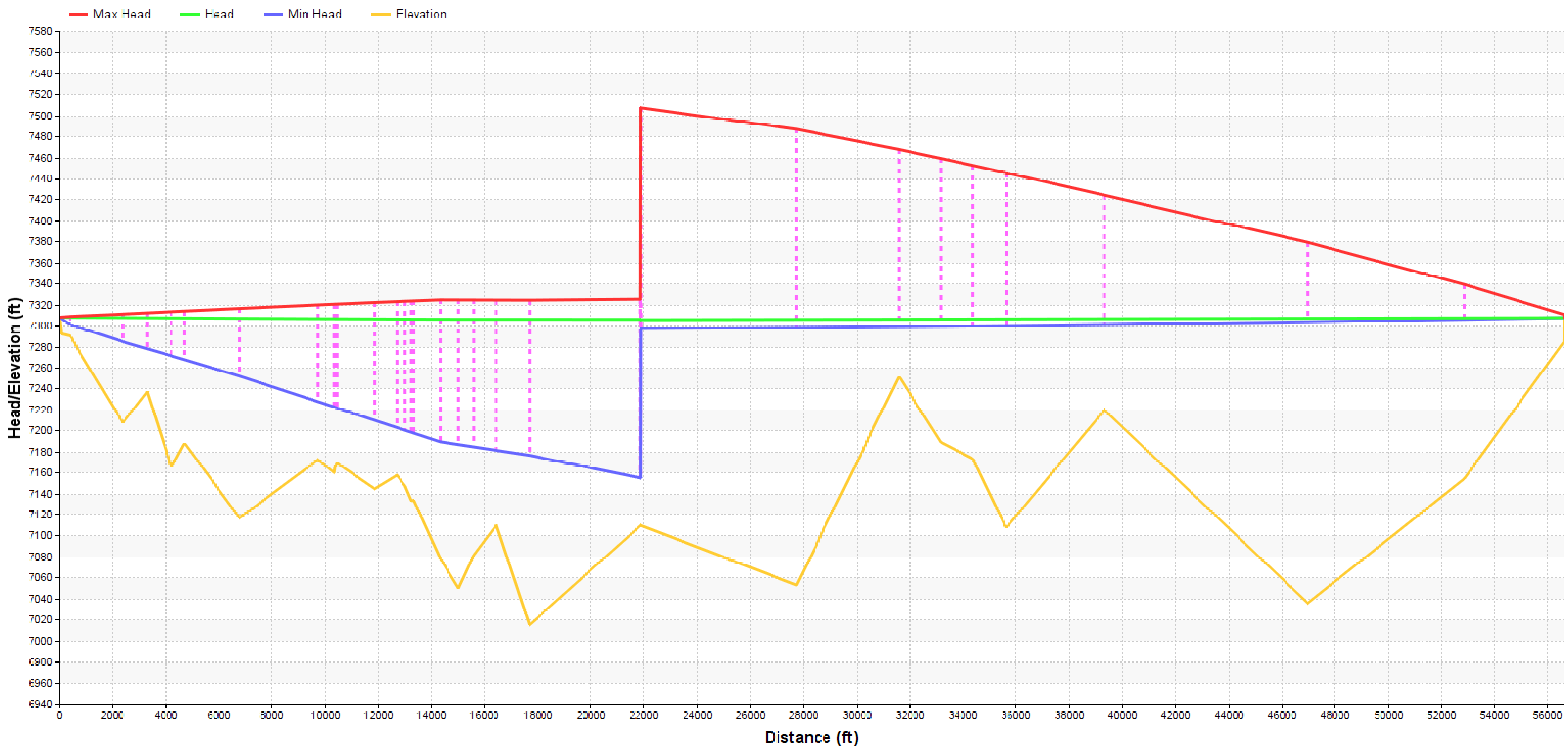


Exhibit 2.9b Surge Head Profile from Counselor Tank to JAN Tank (Protected Scenario: JAN sudden open before pump sudden start; 650 cf surge tank at turnout)

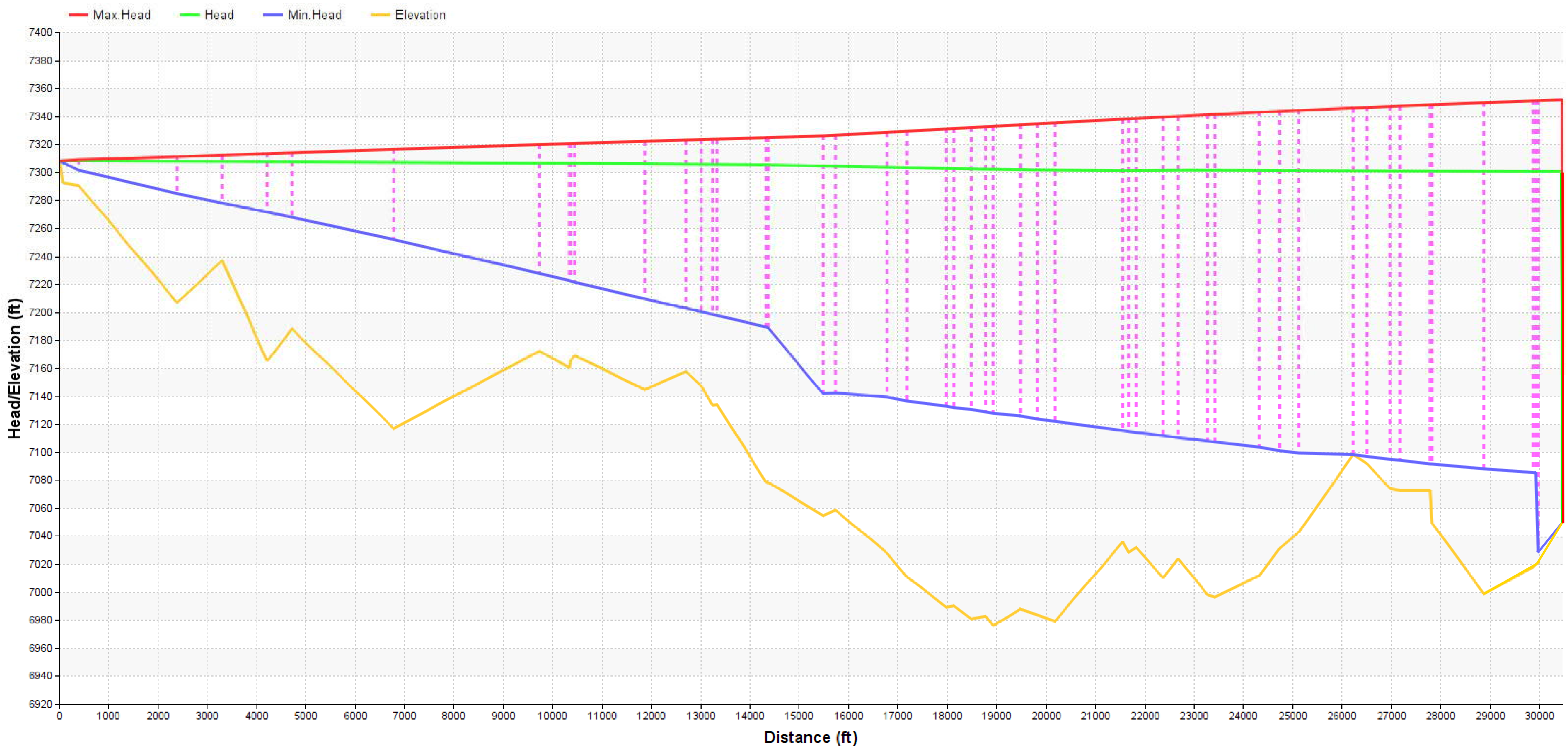


Exhibit 2.10a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Protected Scenario: JAN sudden close before pump sudden close; 650 cf surge tank at turnout)

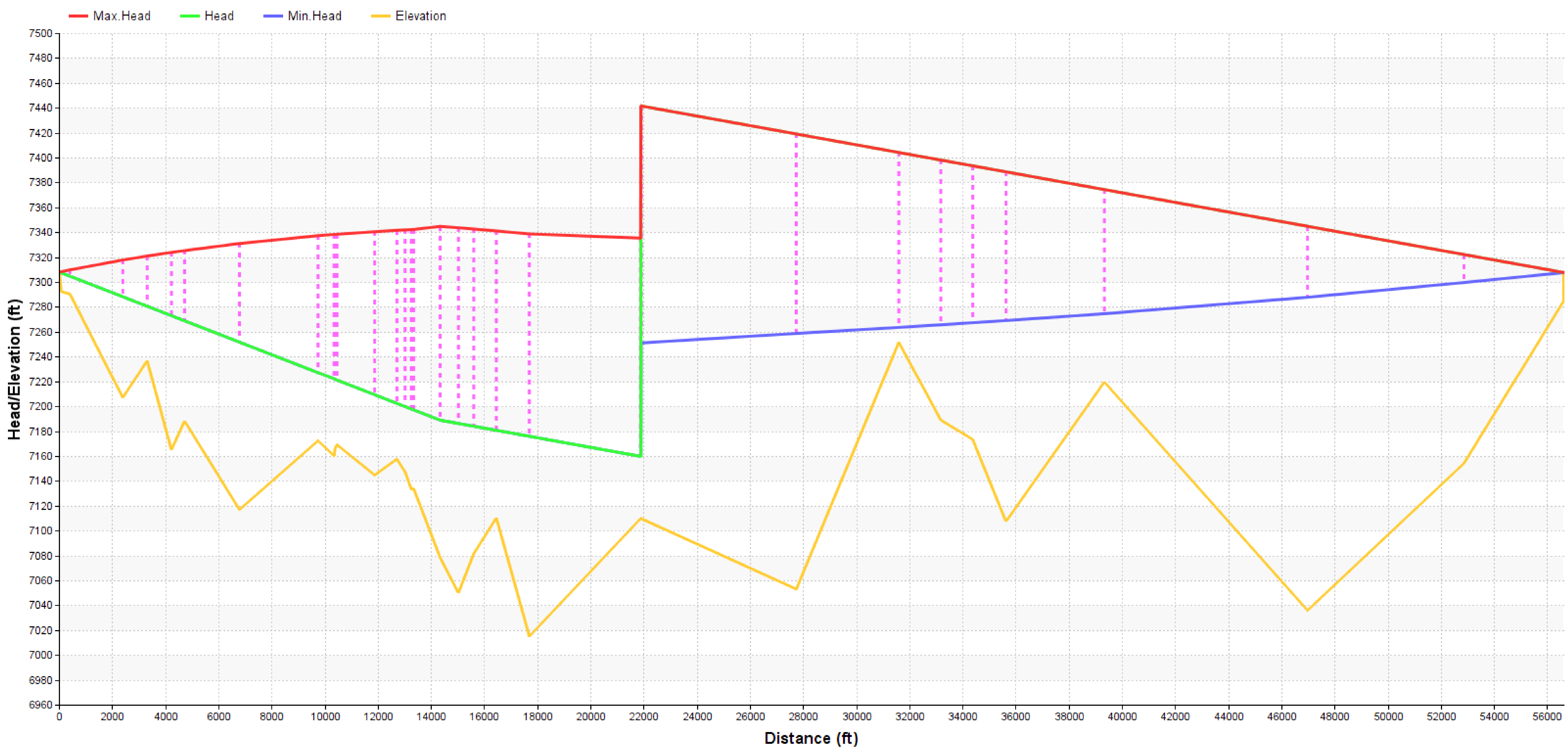


Exhibit 2.10b Surge Head Profile from Counselor Tank to JAN Tank (Protected Scenario: JAN sudden close before pump sudden close; 650 cf surge tank at turnout)

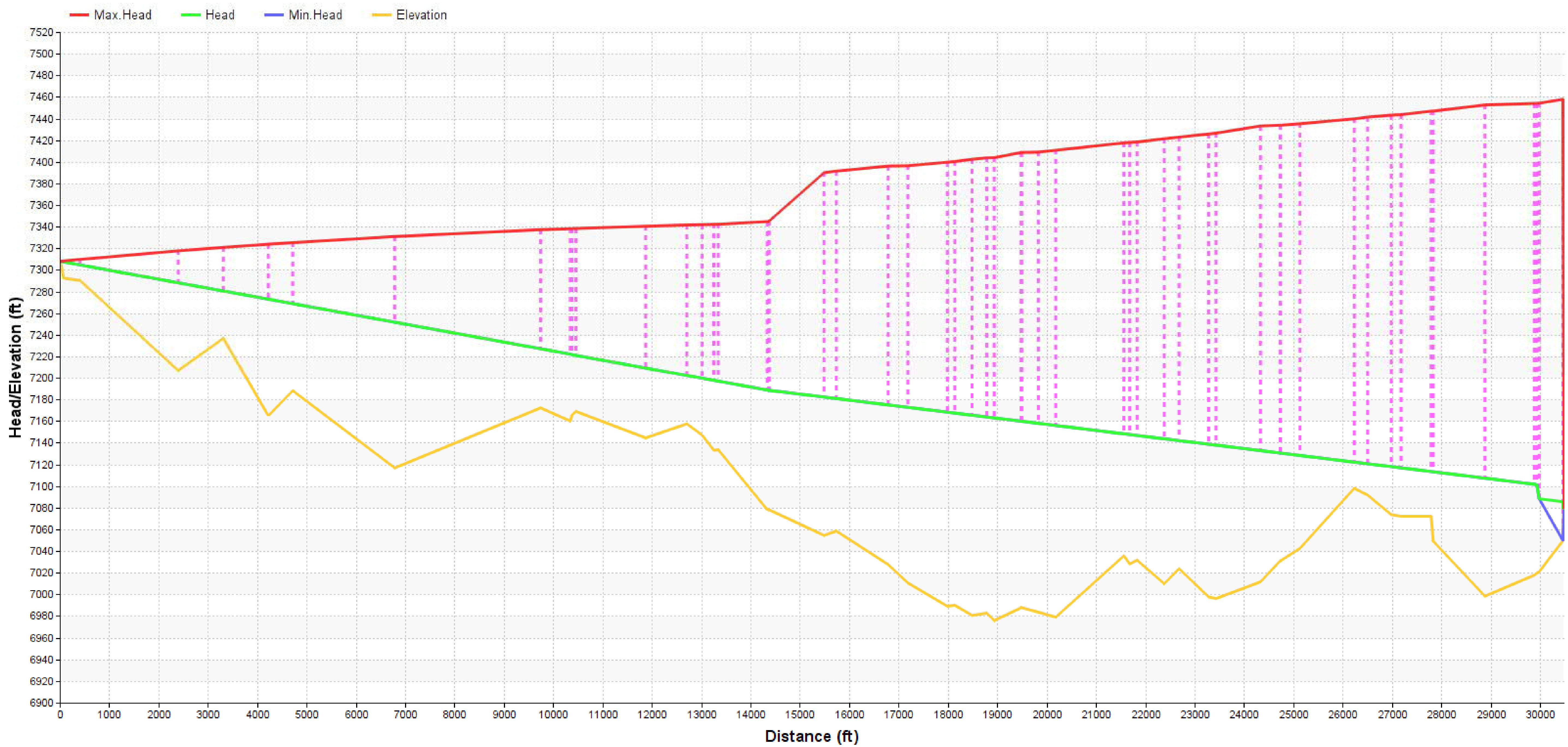


Exhibit 2.11a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Protected Scenario: JAN sudden open before pump sudden close; 650 cf surge tank at turnout)

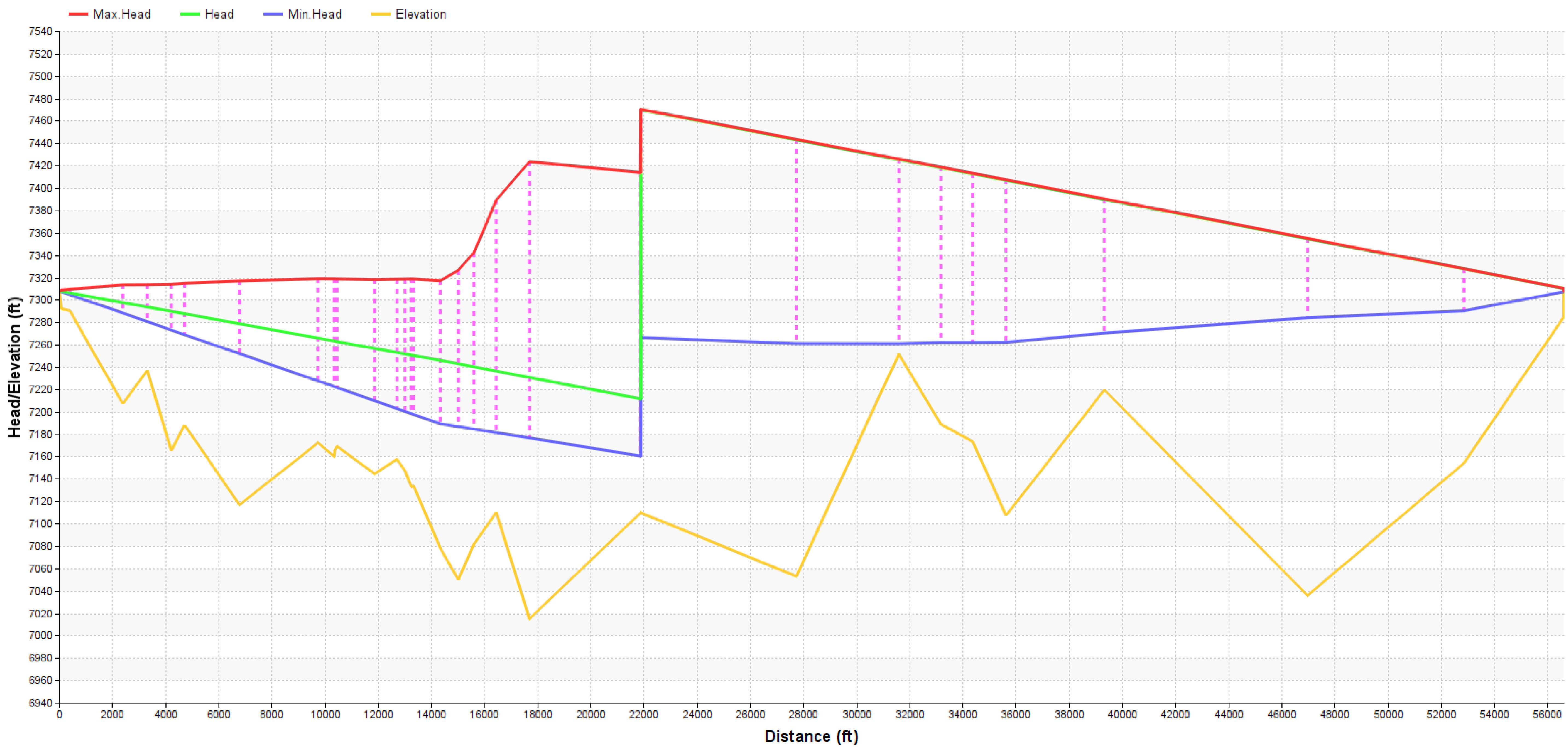


Exhibit 2.11b Surge Head Profile from Counselor Tank to JAN Tank (Protected Scenario: JAN sudden open before pump sudden close; 650 cf surge tank at turnout)

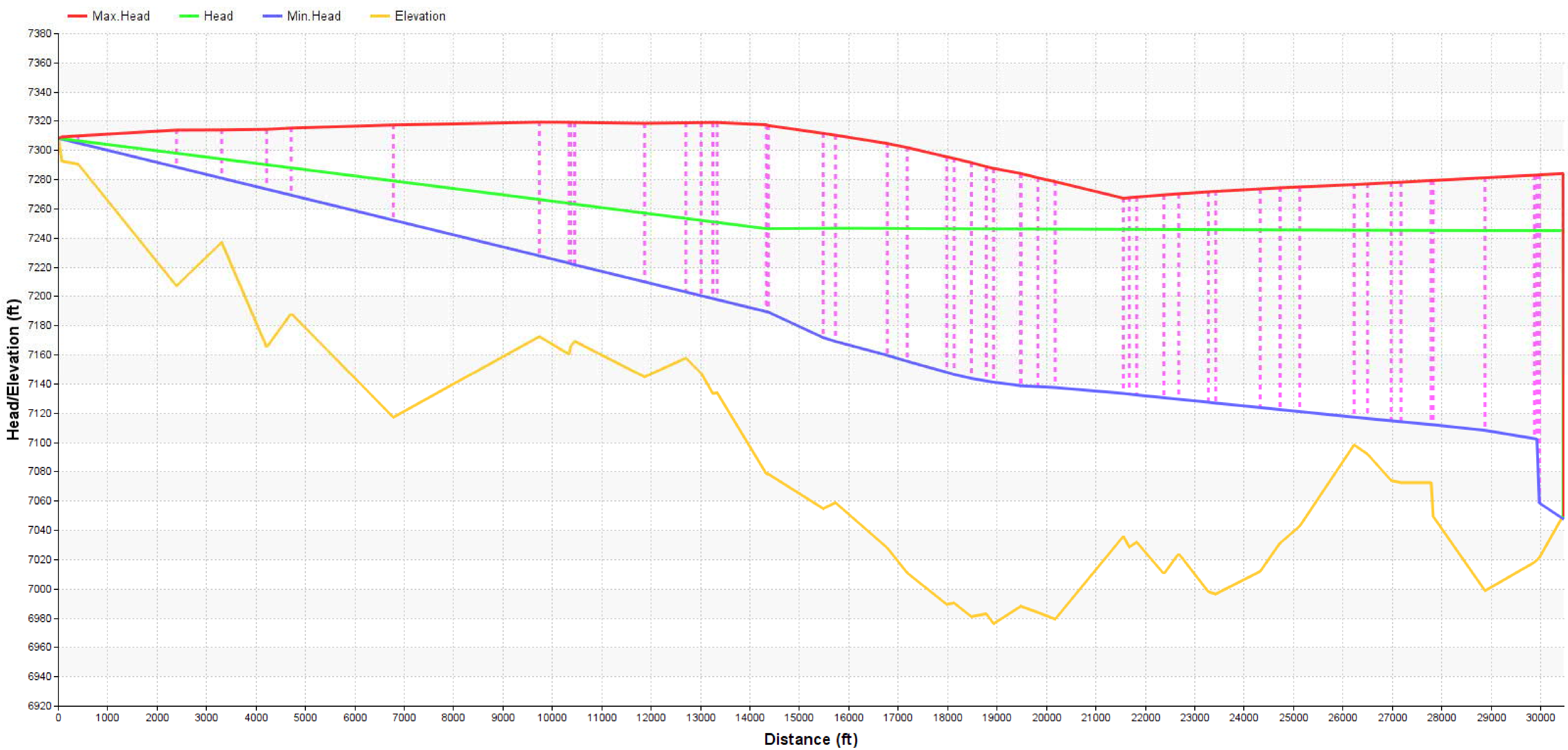


Exhibit 2.12a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Protected Scenario: JAN sudden close before pump sudden open;650 cf surge tank at turnout)

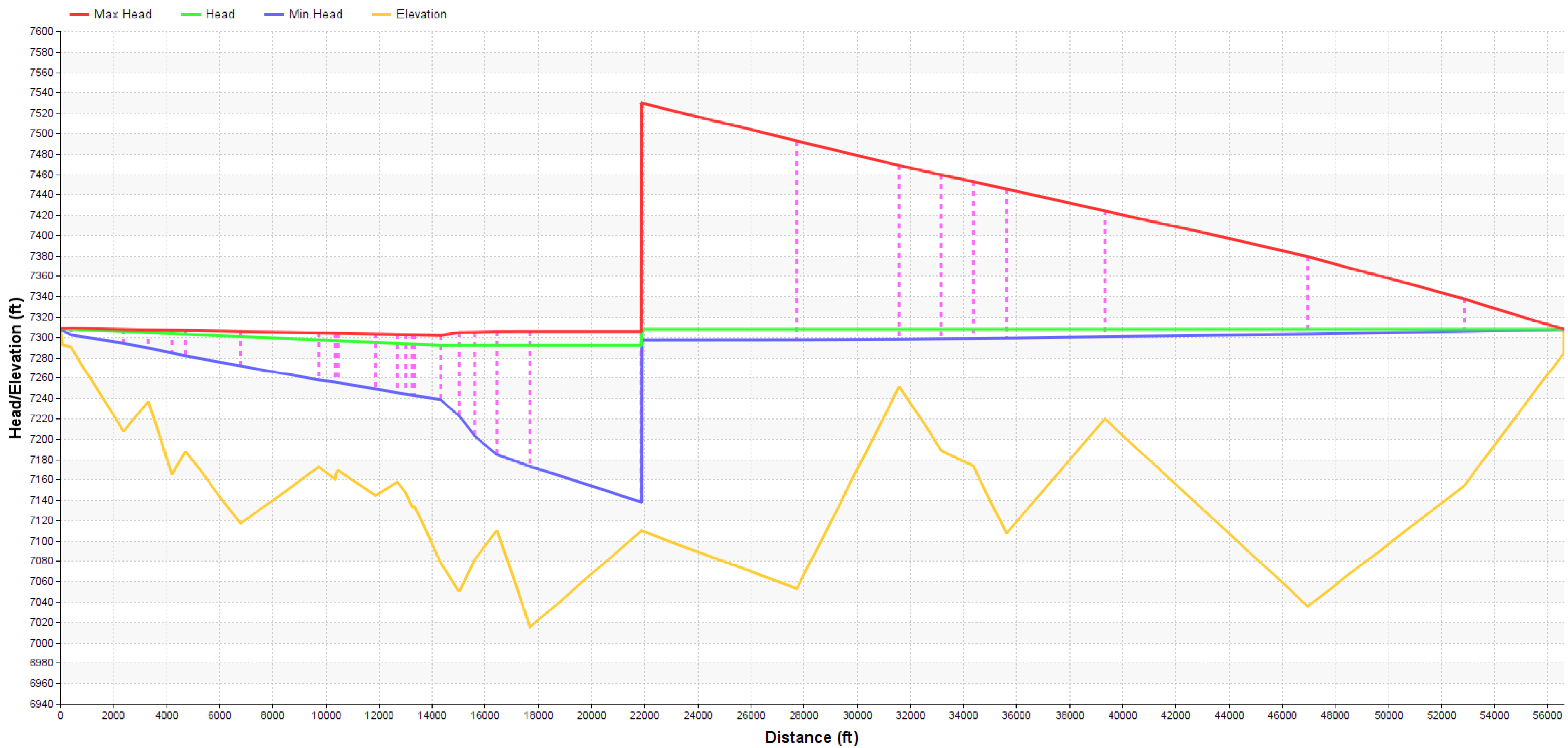


Exhibit 2.12b Surge Head Profile from Counselor Tank to JAN Tank (Protected Scenario: JAN sudden close before pump sudden open;650 cf surge tank at turnout)

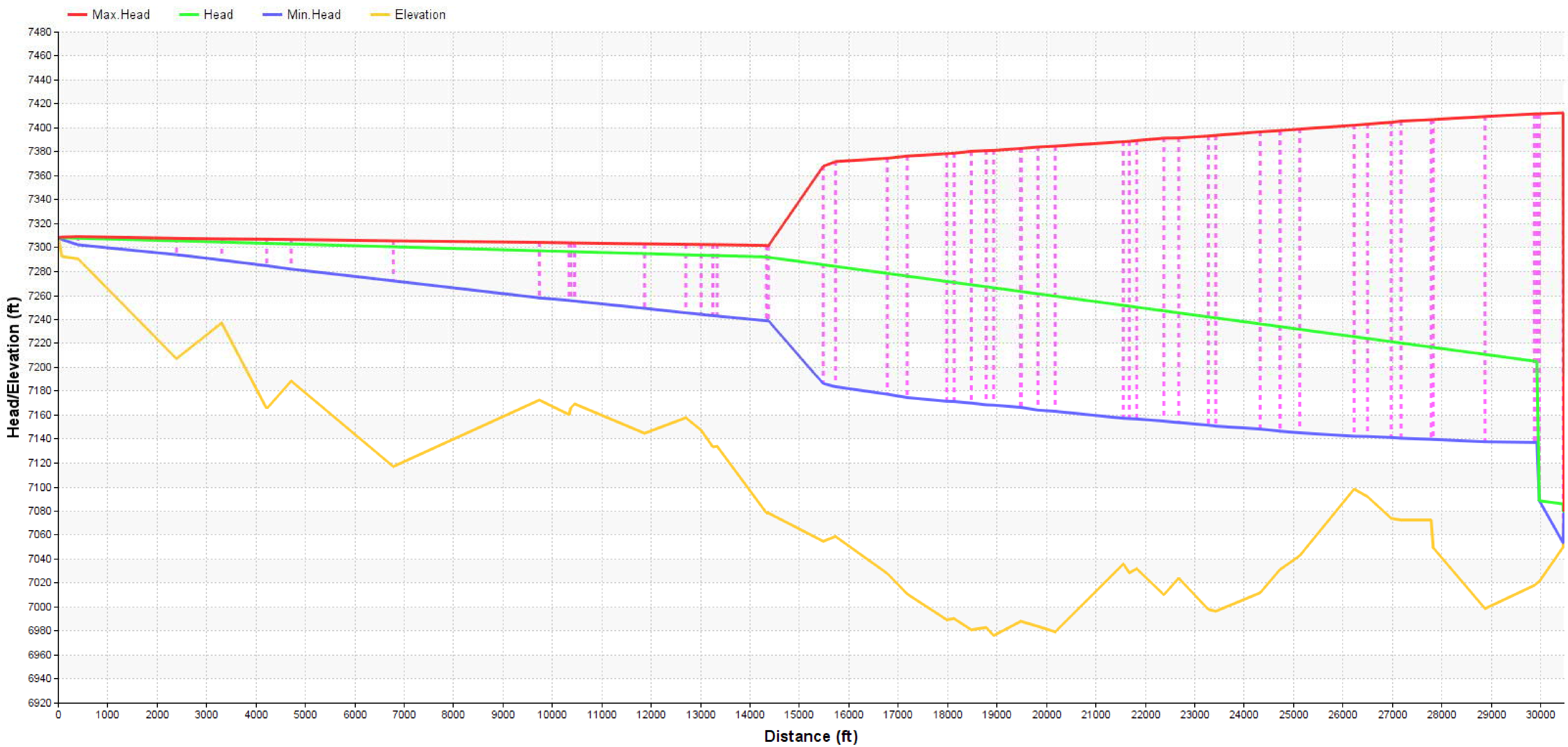


Exhibit 2.13a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Protected Scenario: Sudden Bypass Close Transition to Sudden Pump Start

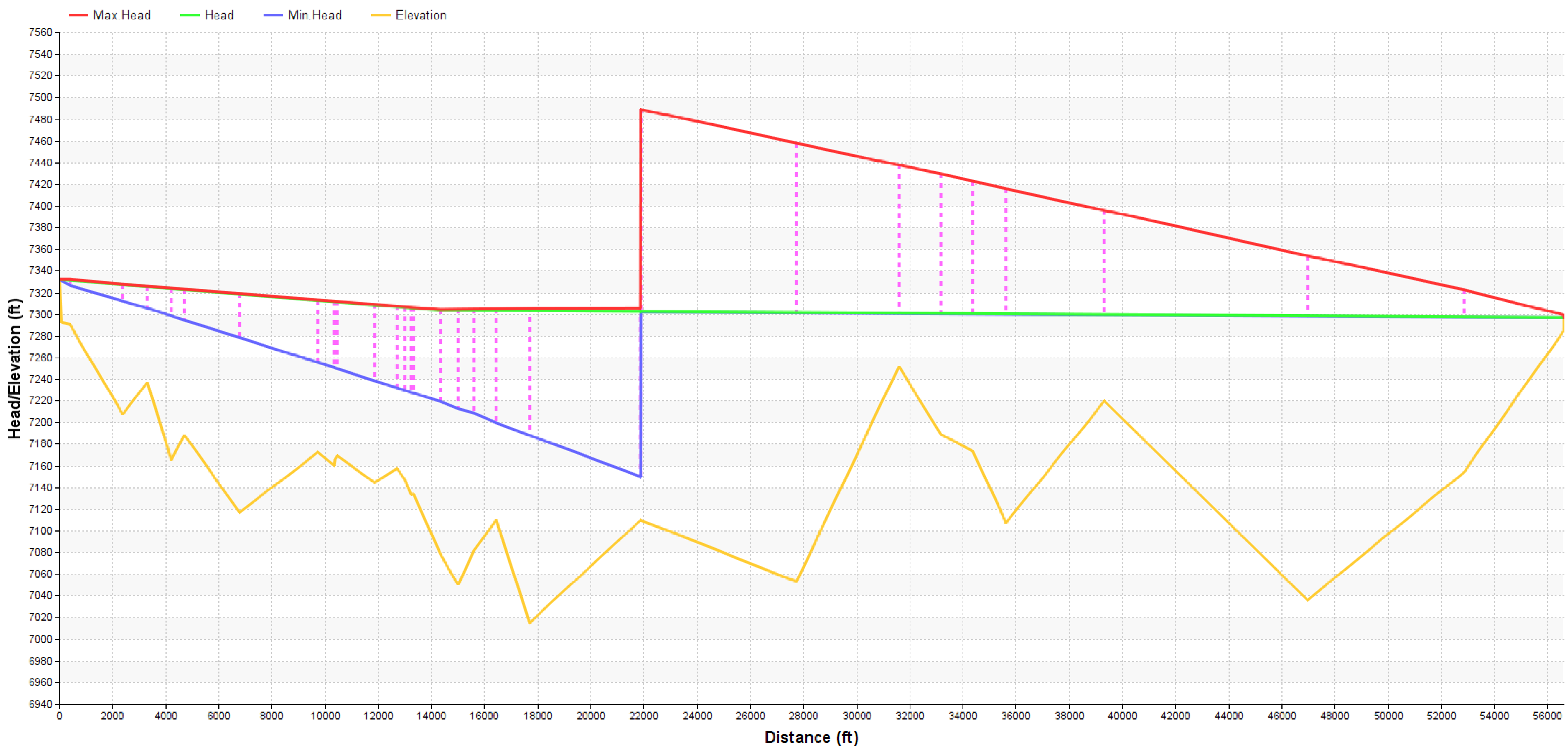


Exhibit 2.13b Surge Head Profile from Counselor Tank to JAN Tank (Protected Scenario: Sudden Bypass Close Transition to Sudden Pump Start)

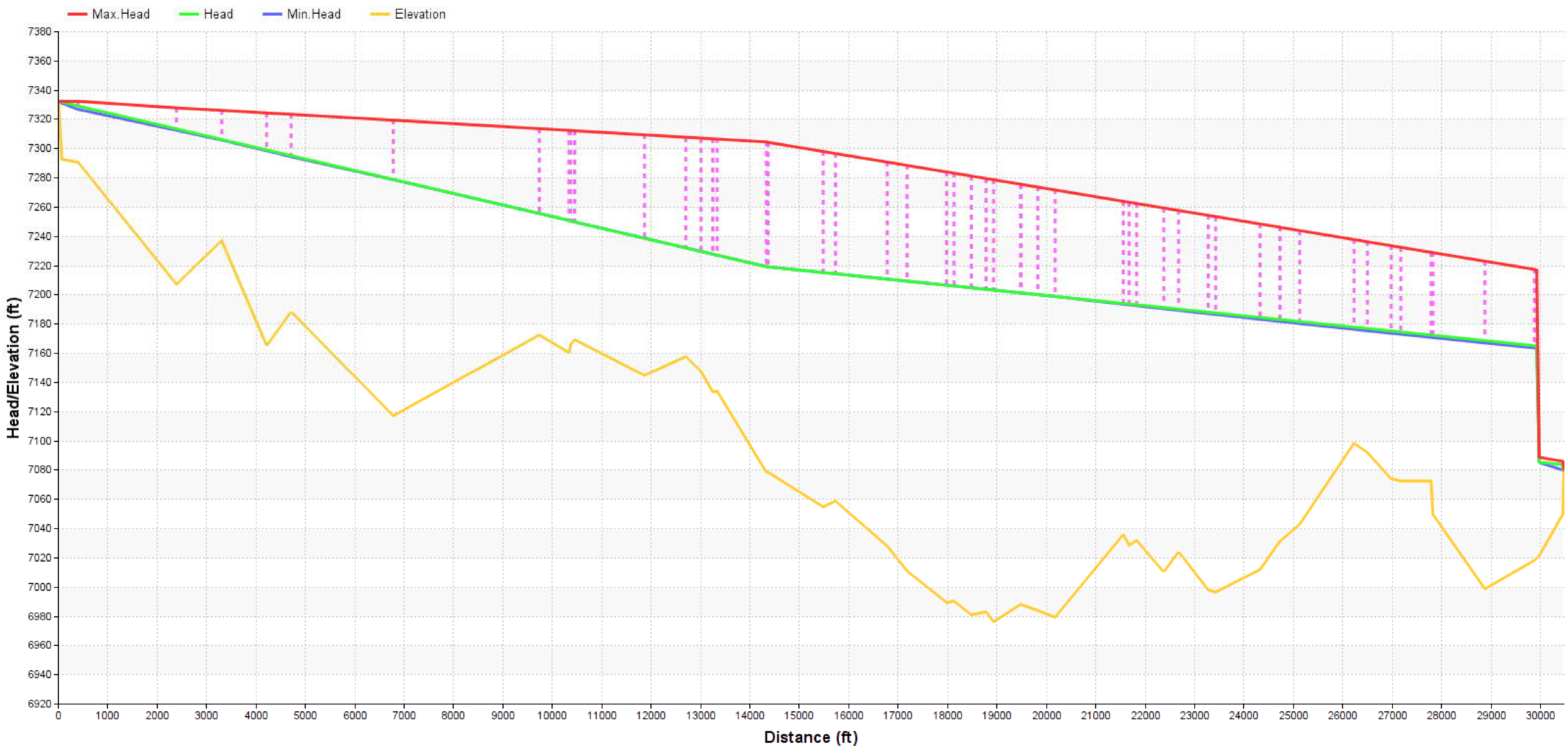


Exhibit 2.14a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Protected Scenario: Gravity Controlled Close to Controlled Pump Start)

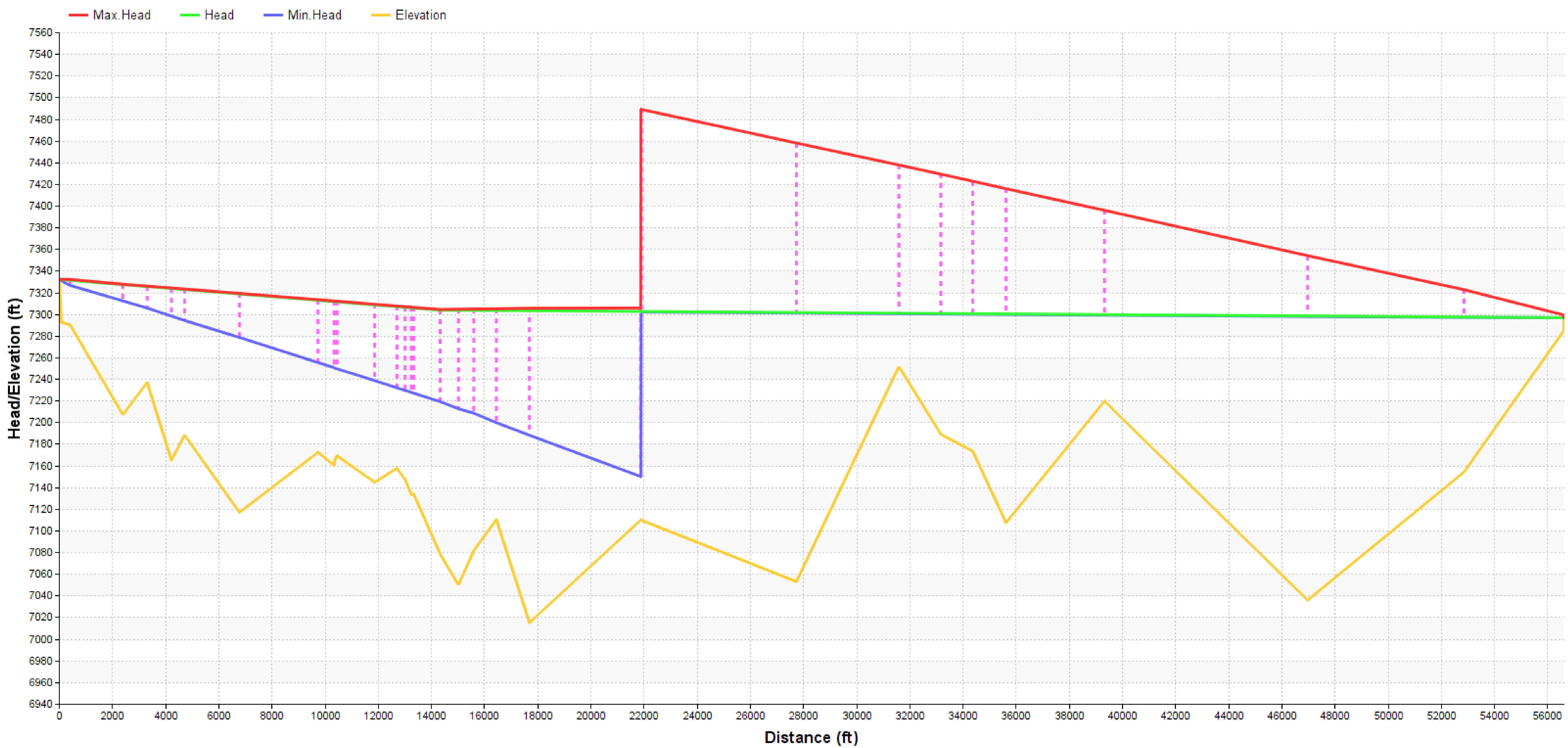


Exhibit 2.14b Surge Head Profile from Counselor Tank to JAN Tank (Protected Scenario: Protected Scenario: Gravity Controlled Close to Controlled Pump Start)

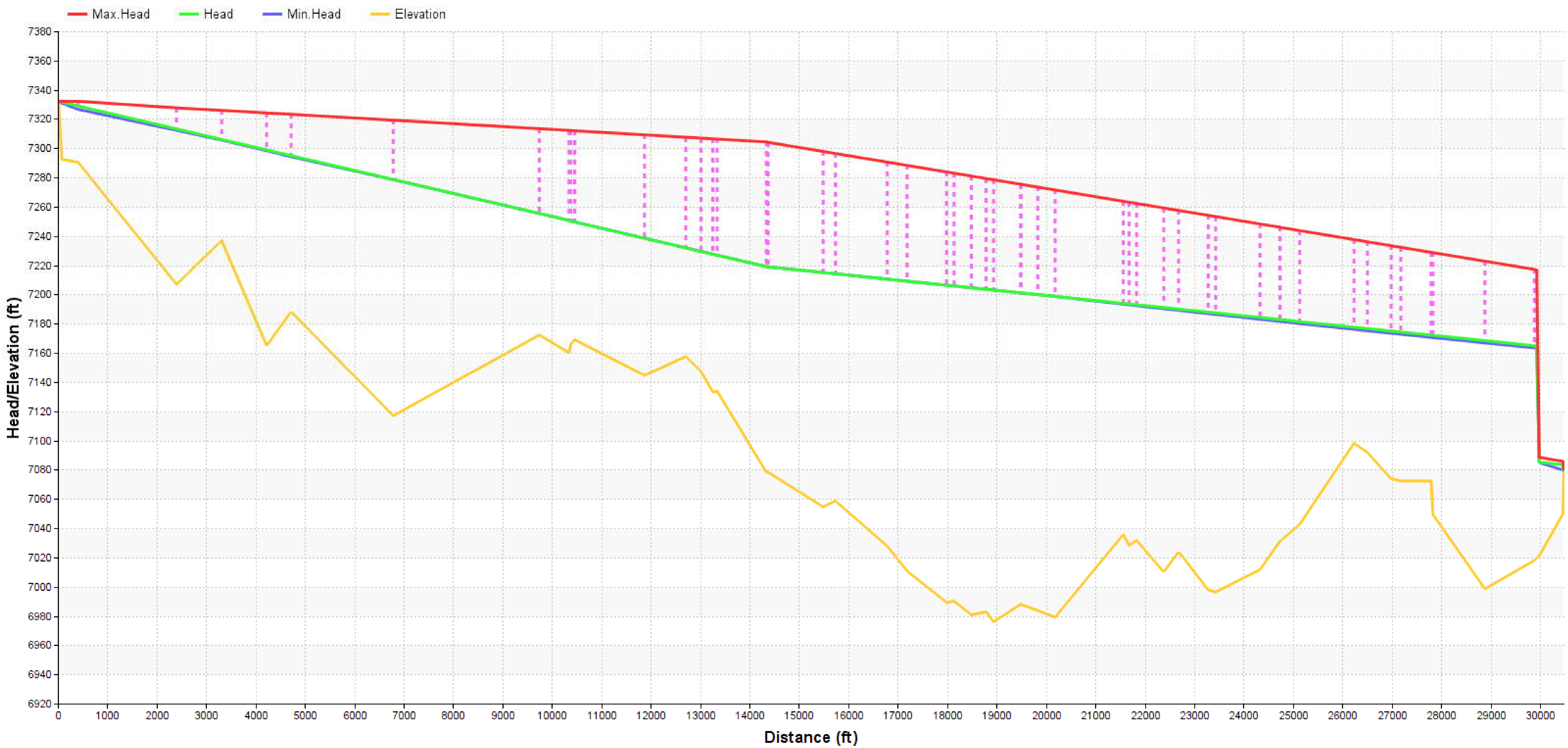


Exhibit 2.15a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Protected Scenario: Sudden Bypass Close Transition to Sudden Pump Start)

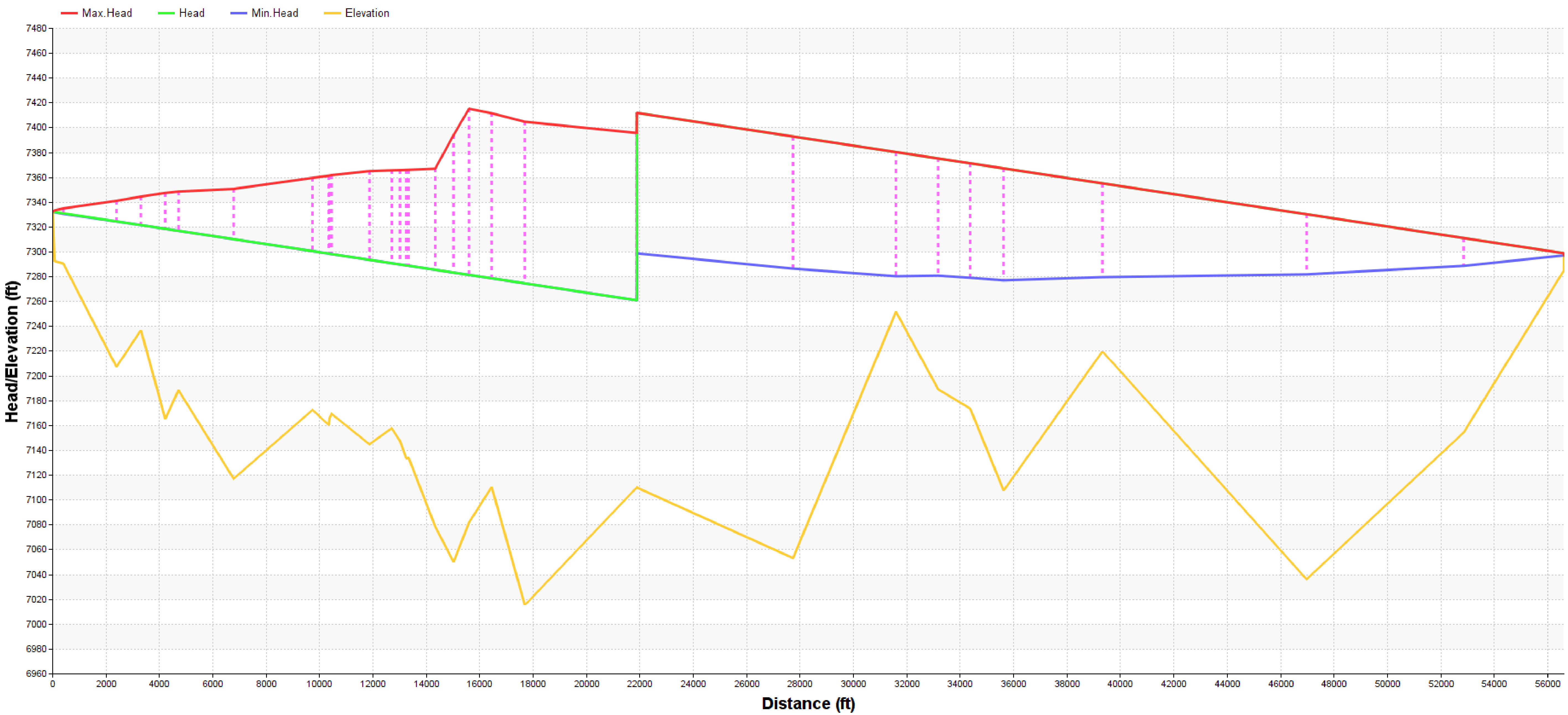


Exhibit 2.15b Surge Head Profile from Counselor Tank to JAN Tank (Protected Scenario: Sudden Bypass Close Transition to Sudden Pump Start)

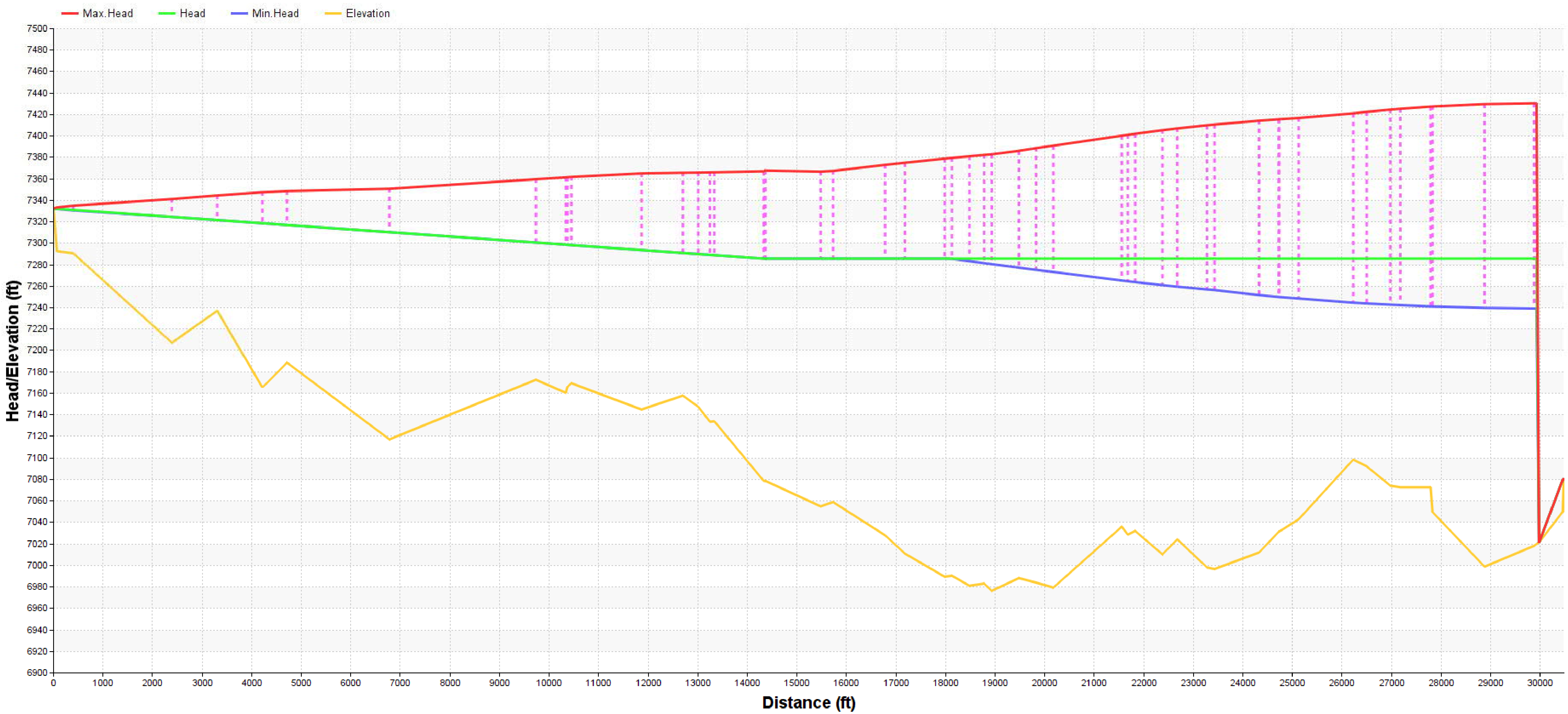


Exhibit 2.16a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Protected Scenario: Pump Controlled Stop to Gravity Controlled Open)

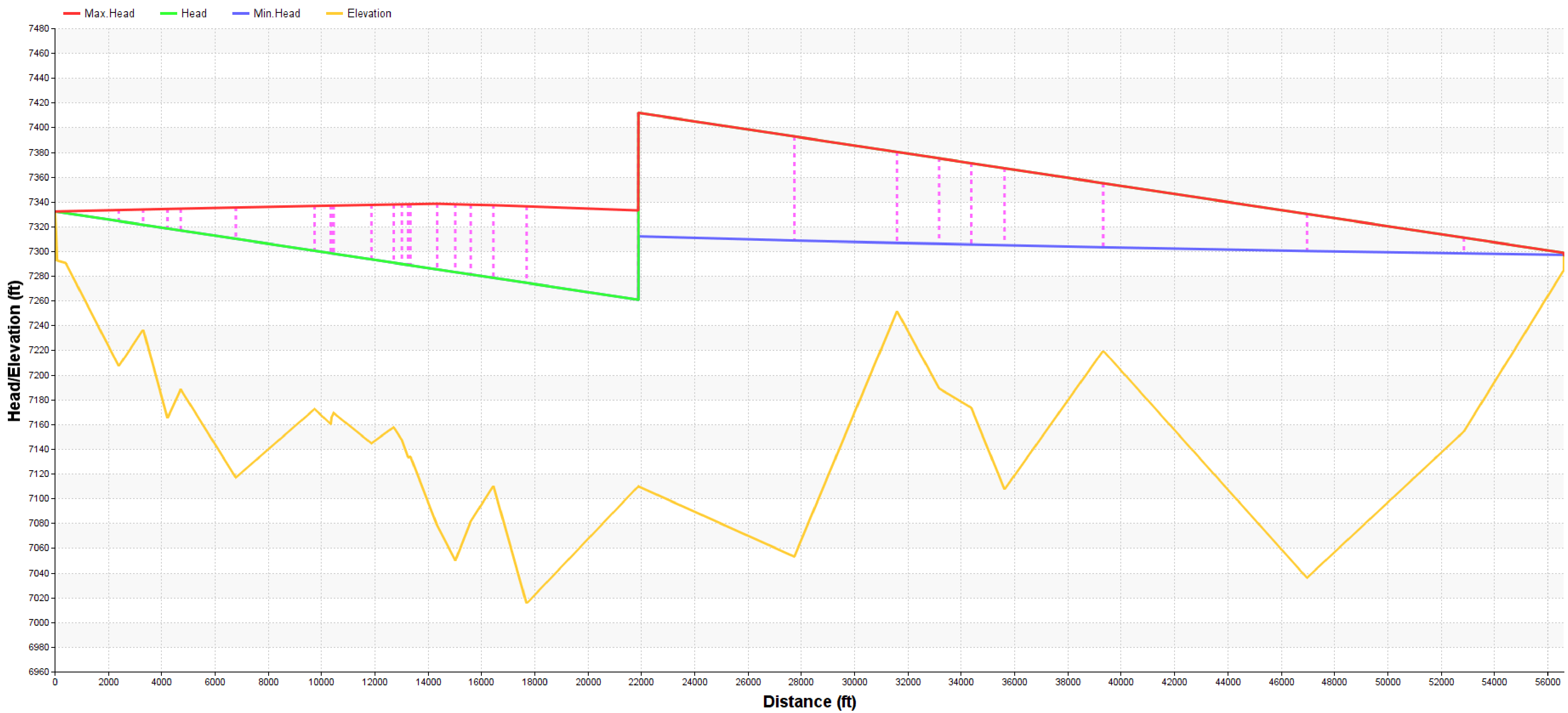


Exhibit 2.16b Surge Head Profile from Counselor Tank to JAN Tank (Protected Scenario: Pump Controlled Stop to Gravity Controlled Open)

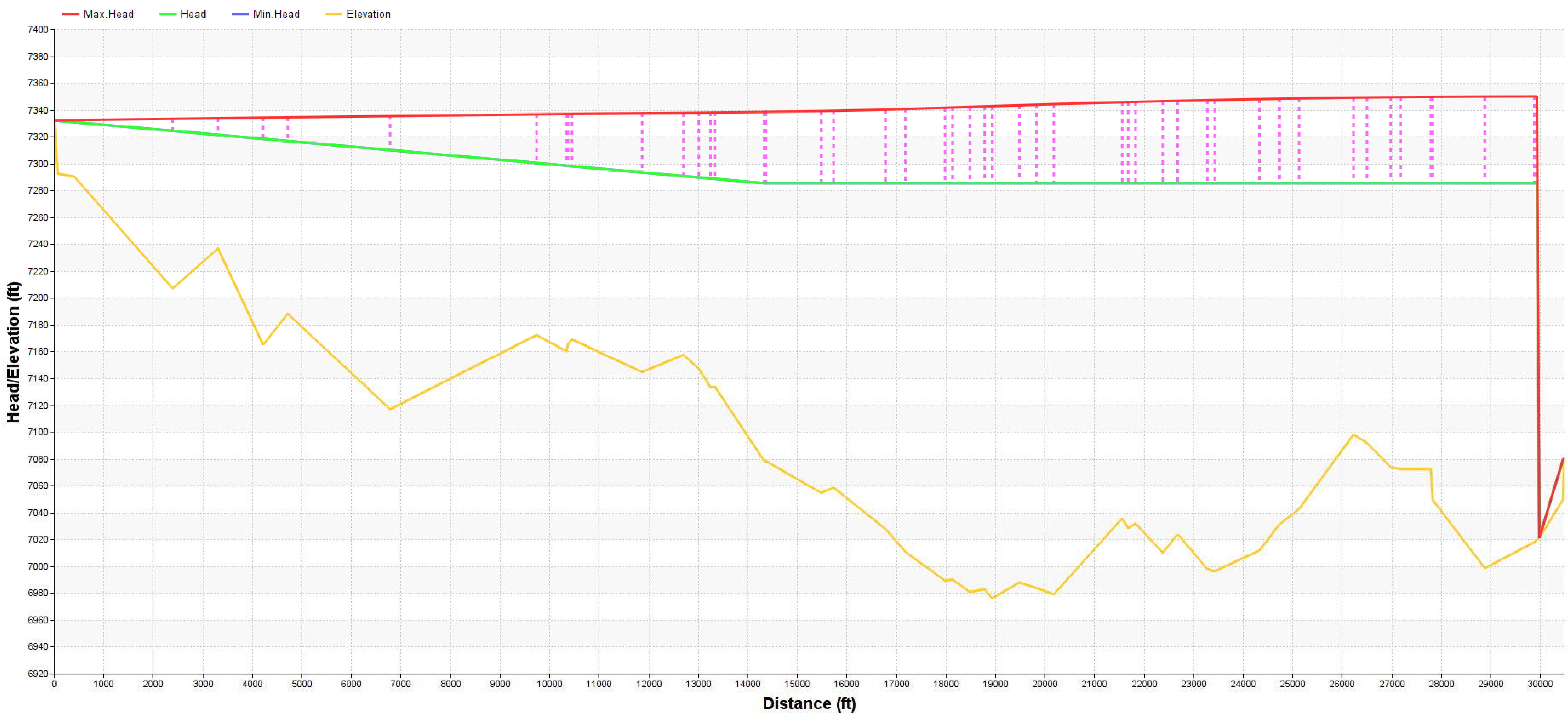


Exhibit 2.17a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Protected Scenario: JAN sudden open; Surge tank at turnout)

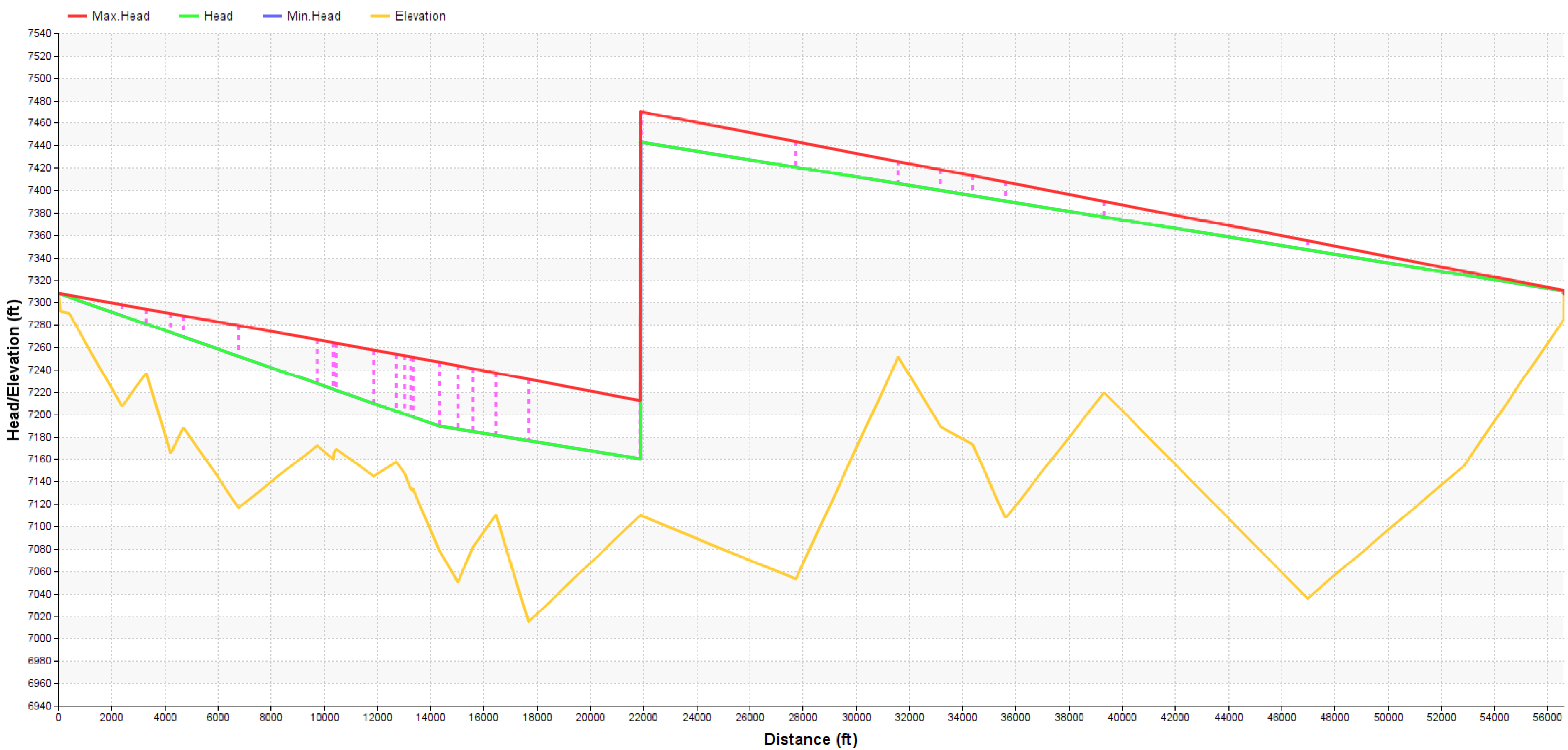


Exhibit 2.17b Surge Head Profile from Counselor Tank to JAN Tank (Protected Scenario: JAN sudden open; Surge tank at turnout)

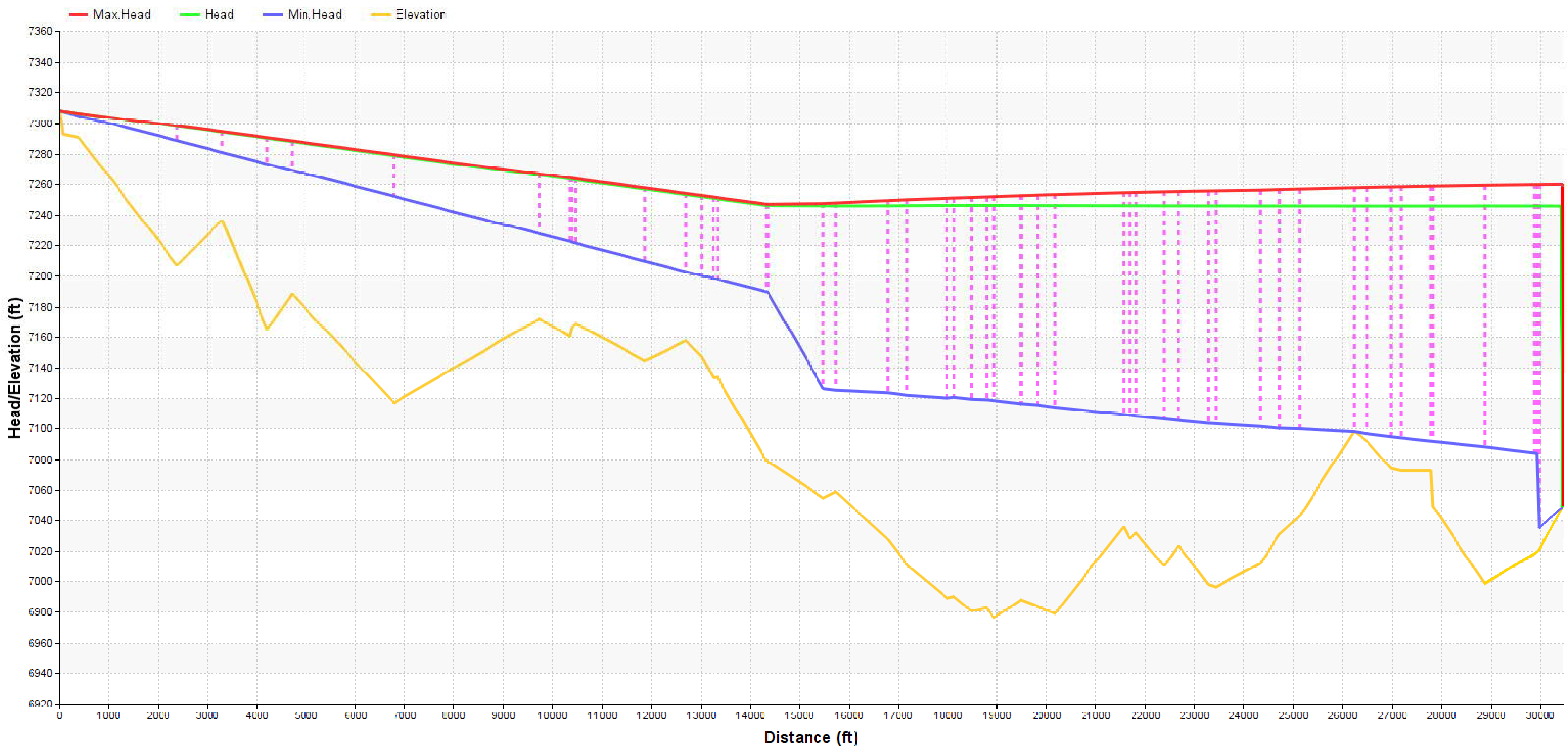


Exhibit 2.18a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Protected Scenario: JAN sudden close; Surge tank at turnout)

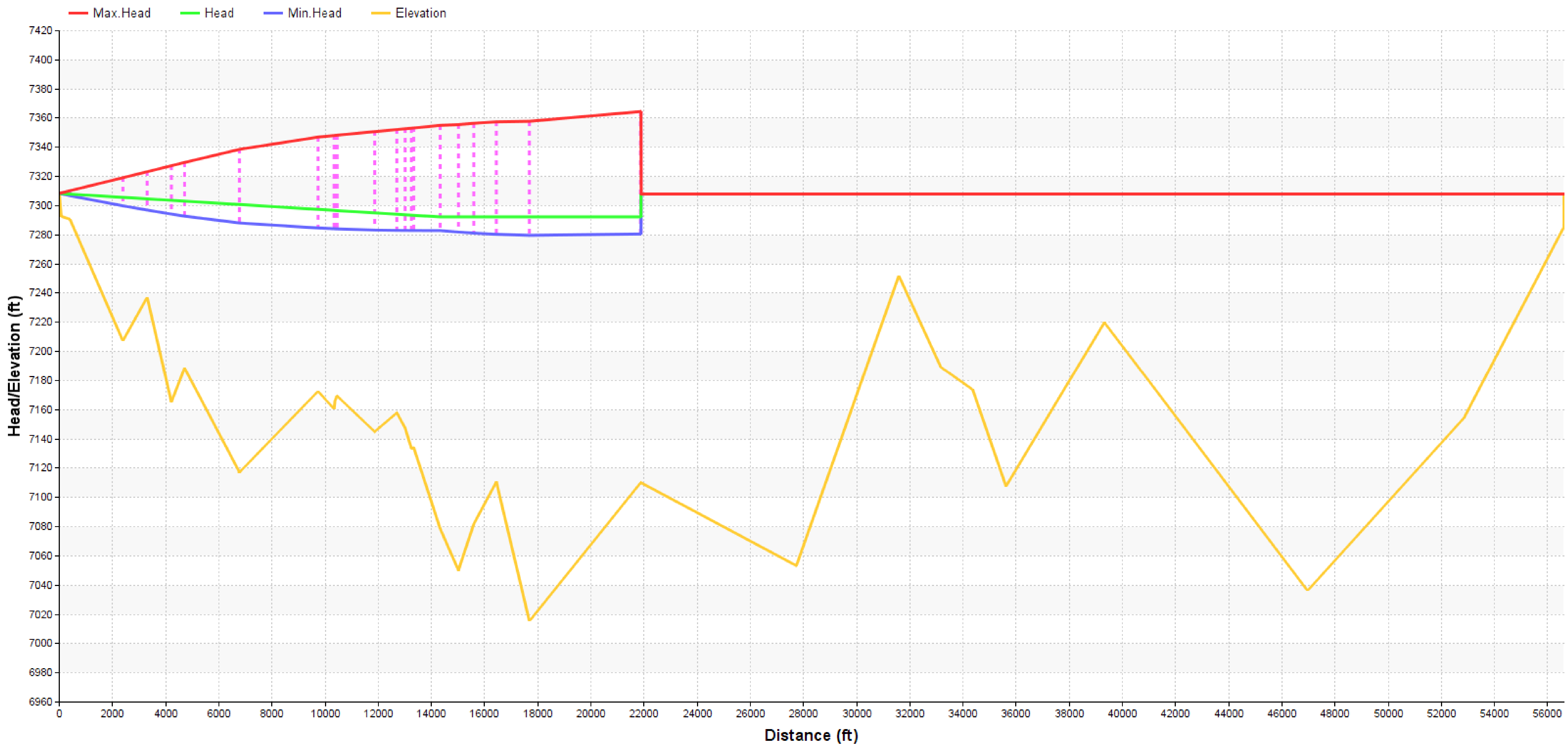


Exhibit 2.18b Surge Head Profile from Counselor Tank to JAN Tank (Protected Scenario: JAN sudden close; Surge tank at turnout)

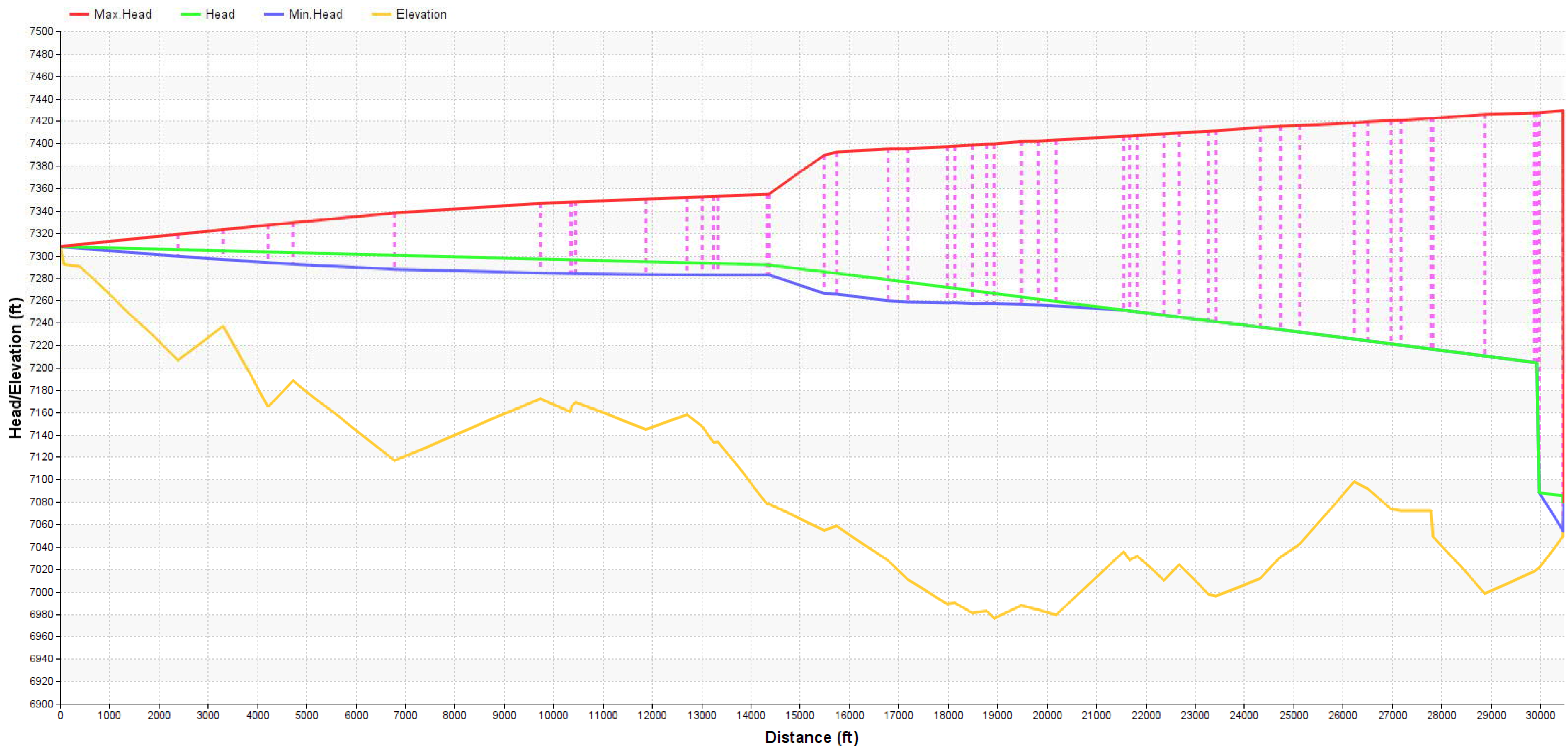


Exhibit 2.19a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Protected Scenario: Pump sudden start; Surge tank at turnout)

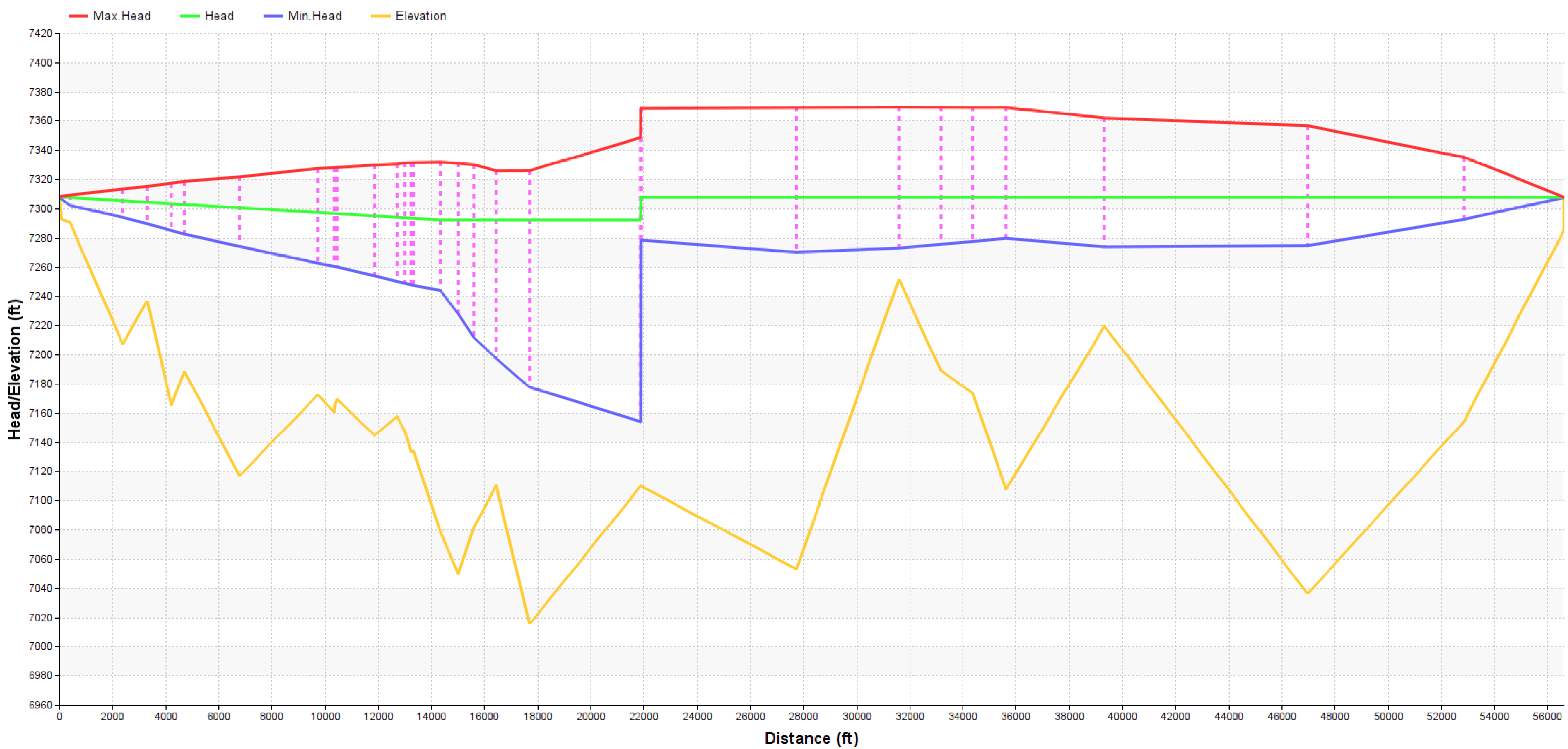


Exhibit 2.19b Surge Head Profile from Counselor Tank to JAN Tank (Protected Scenario: Pump sudden start; Surge tank at turnout)

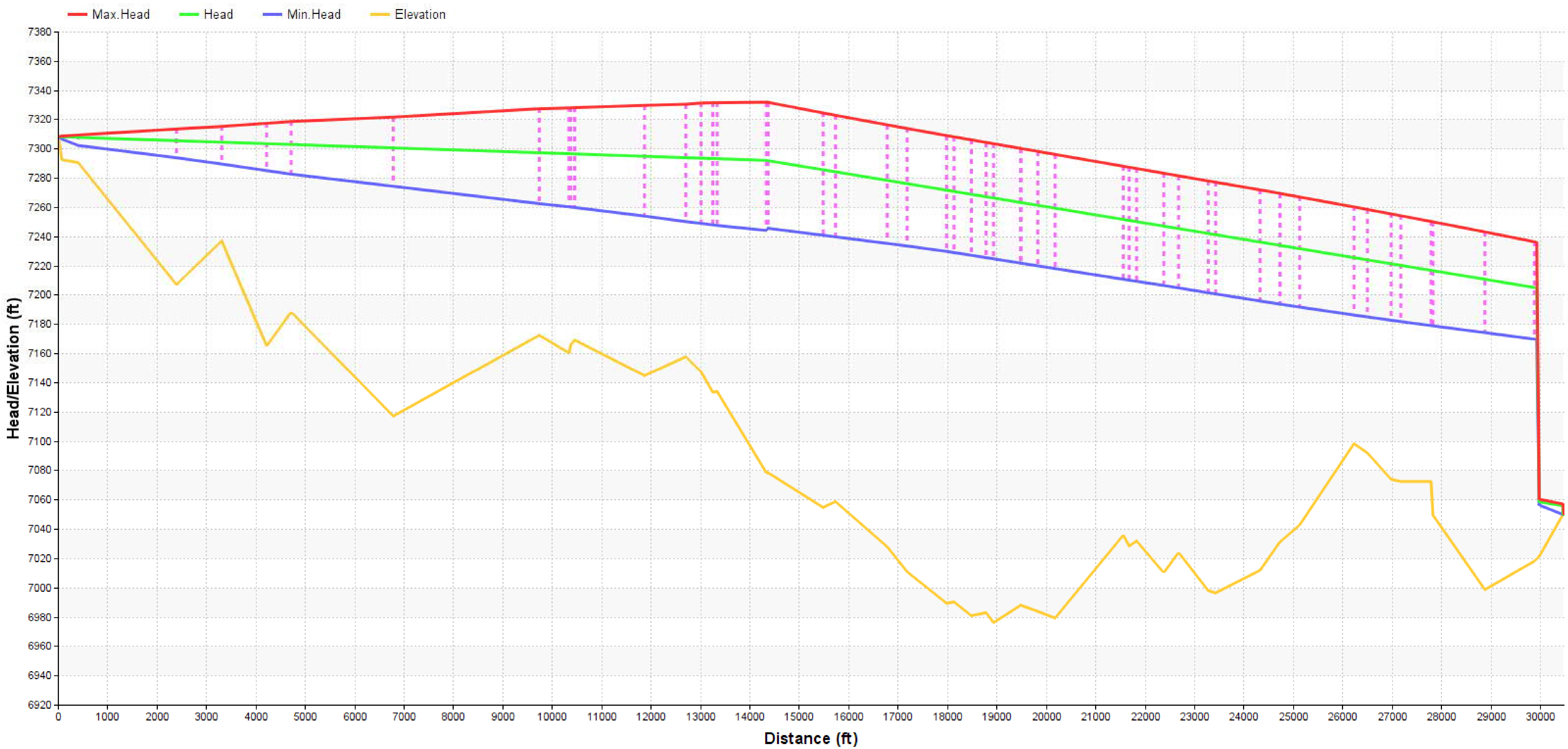


Exhibit 2.20a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Protected Scenario: Pump sudden stop; 650 cf surge tank at turnout)

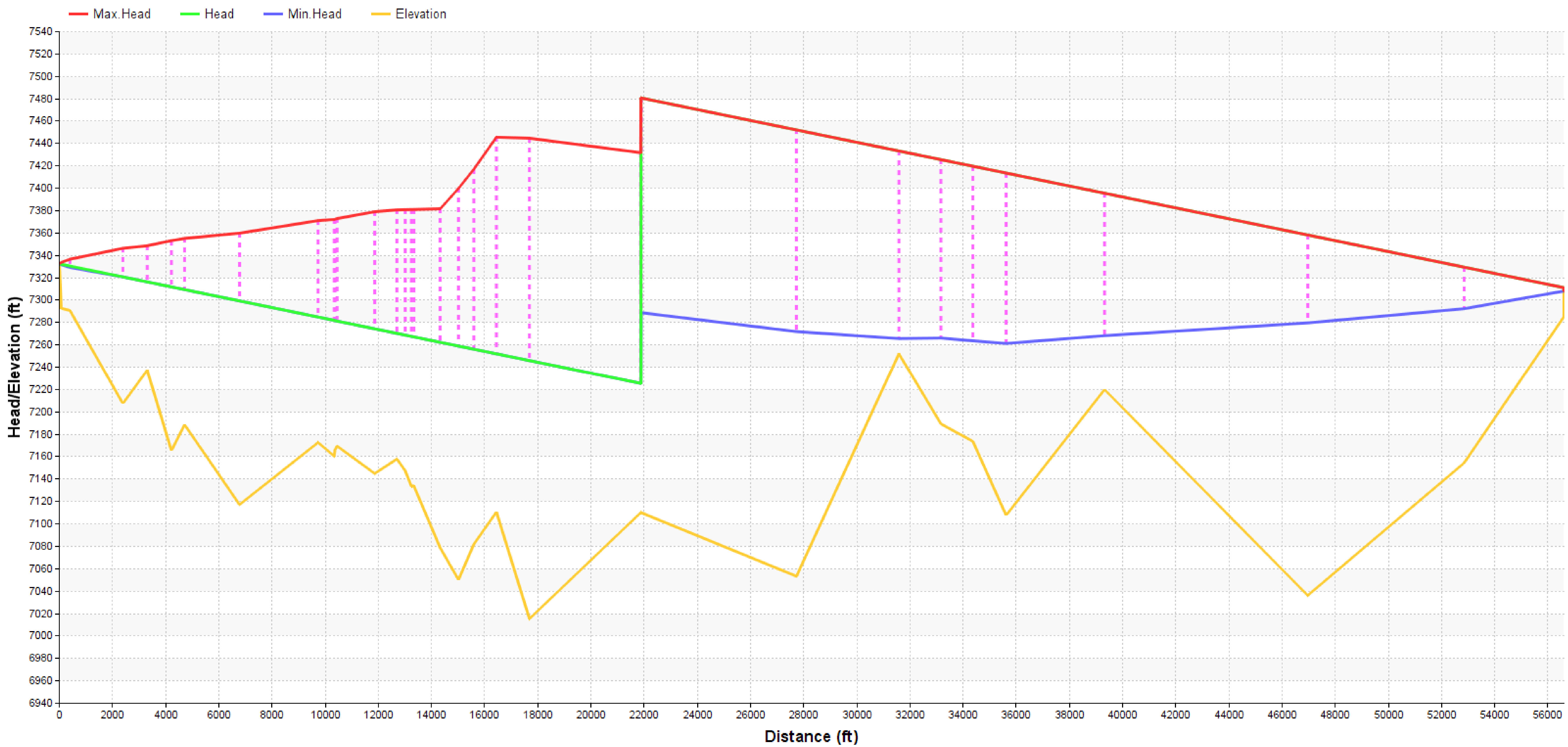


Exhibit 2.20b Surge Head Profile from Counselor Tank to JAN Tank (Protected Scenario: Pump sudden stop; 650 cf surge tank at turnout)

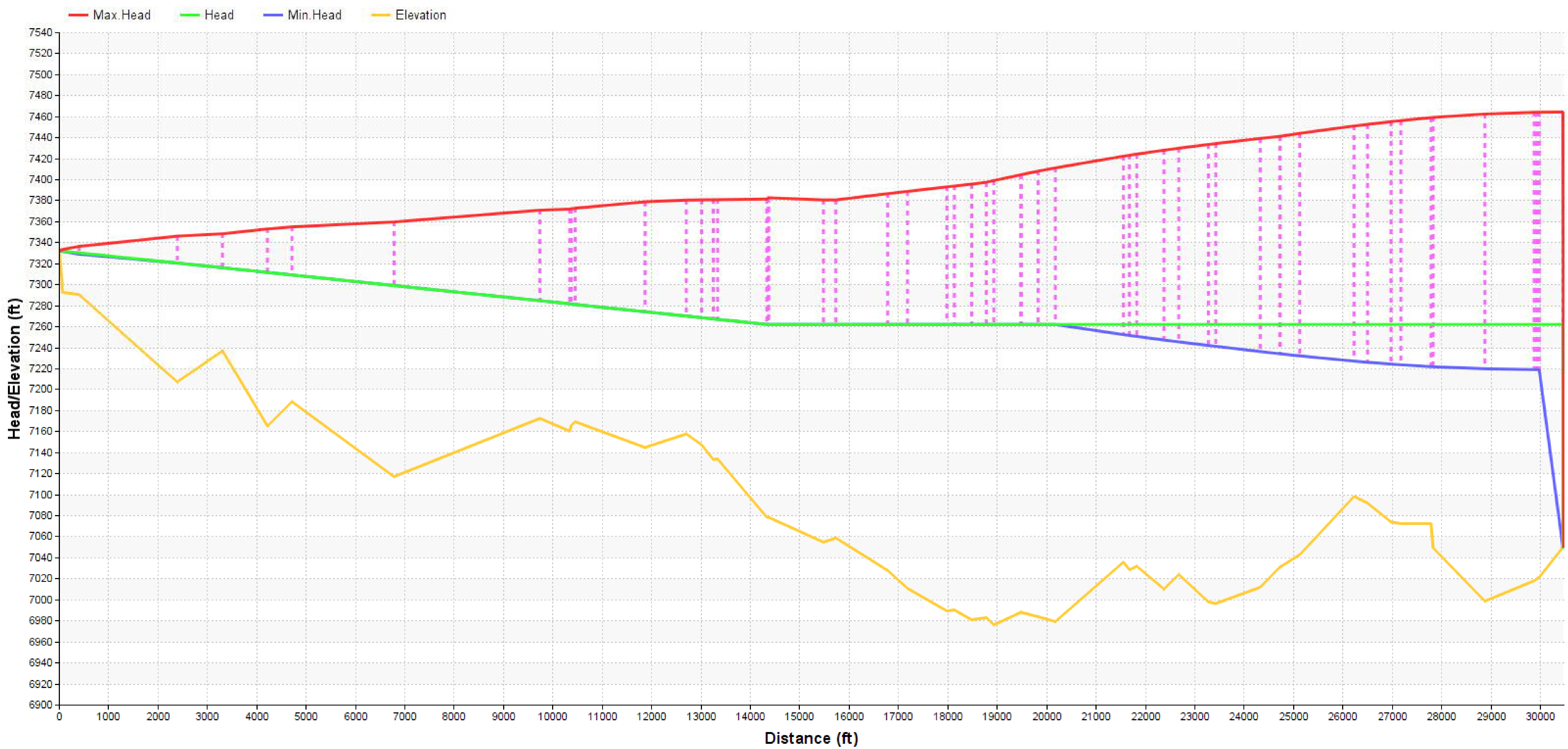


Exhibit 2.21a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Protected Scenario: Isolation valve closure at STA 143+30)

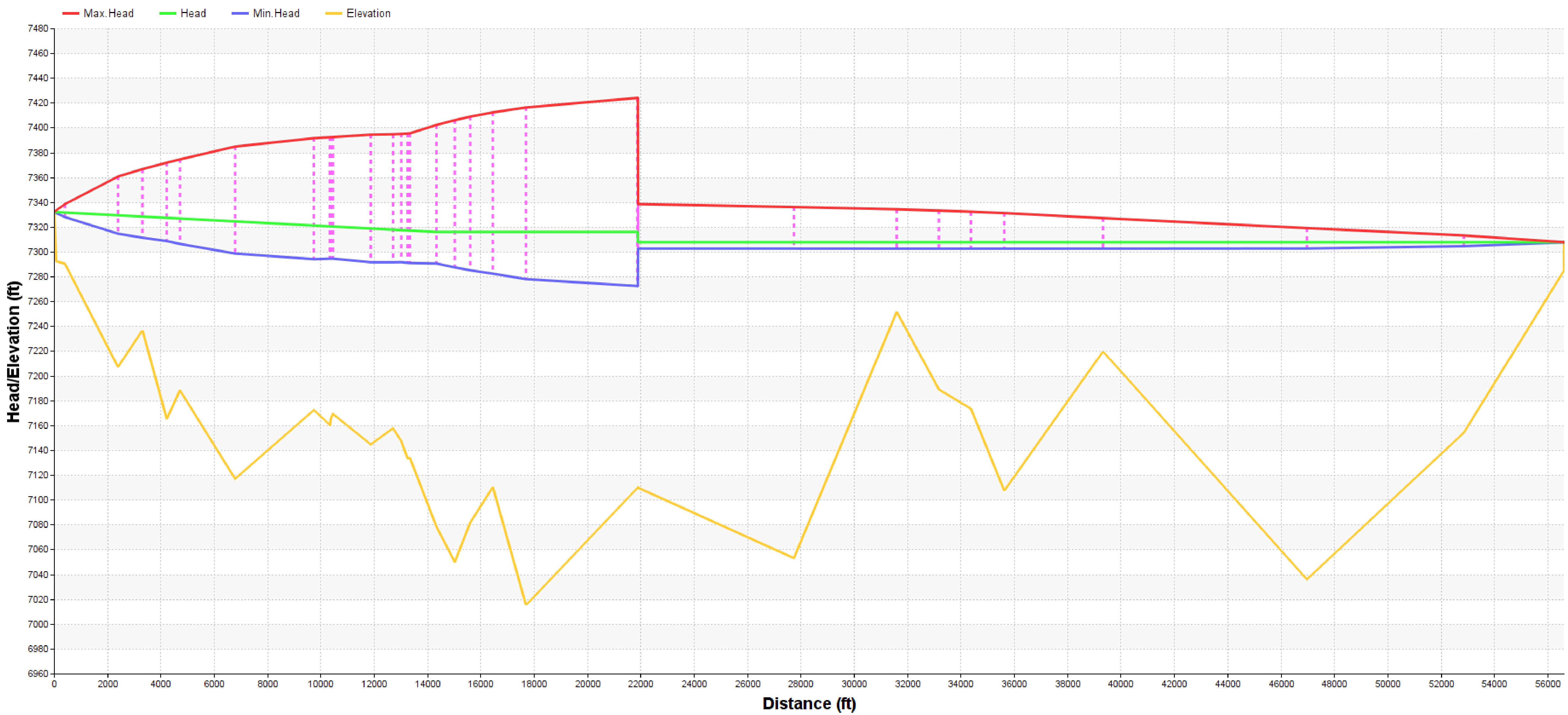


Exhibit 2.21b Surge Head Profile from Counselor Tank to JAN Tank (Protected Scenario: Isolation valve closure at STA 143+30)

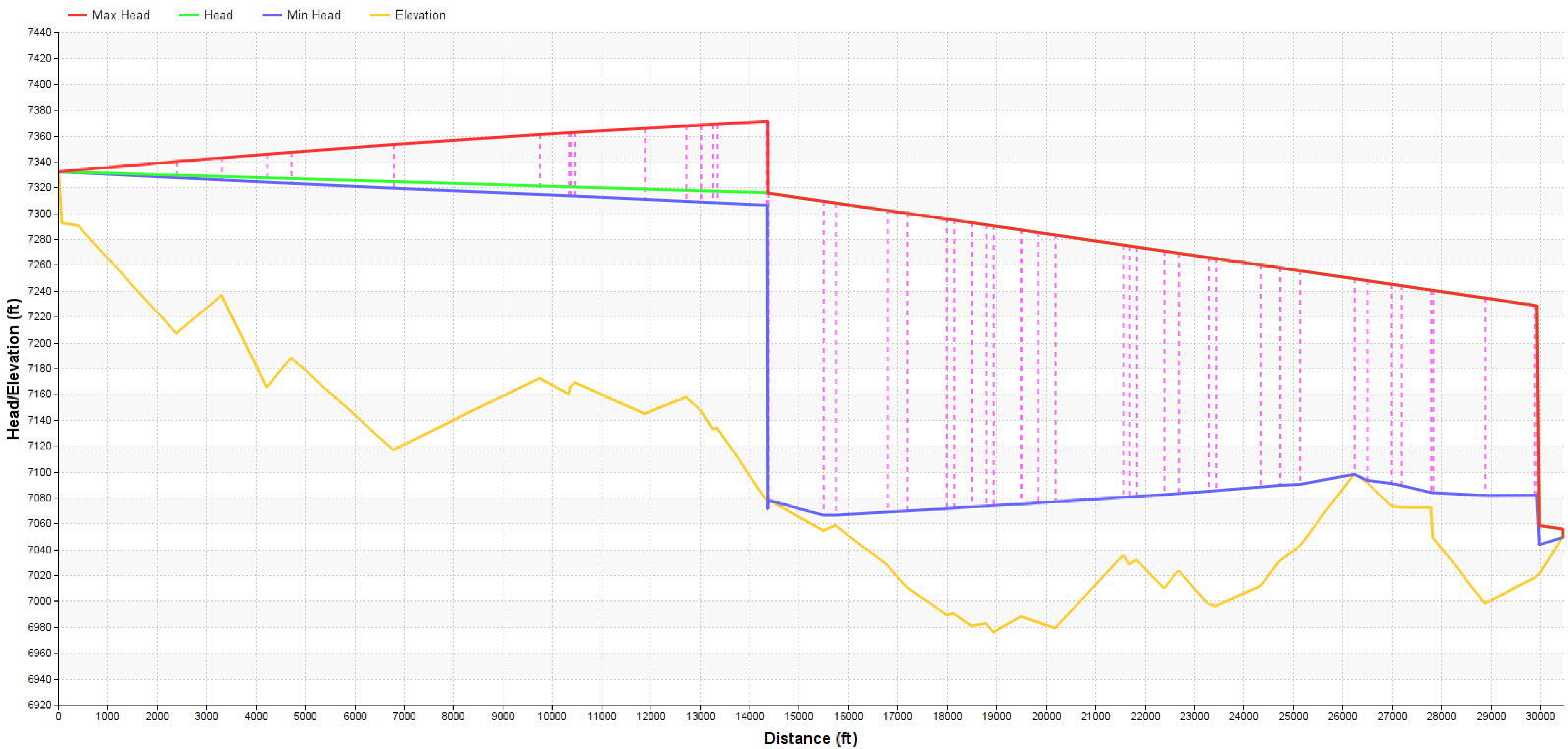


Exhibit 2.22a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Protected Scenario: Isolation valve closure at STA 194+80)

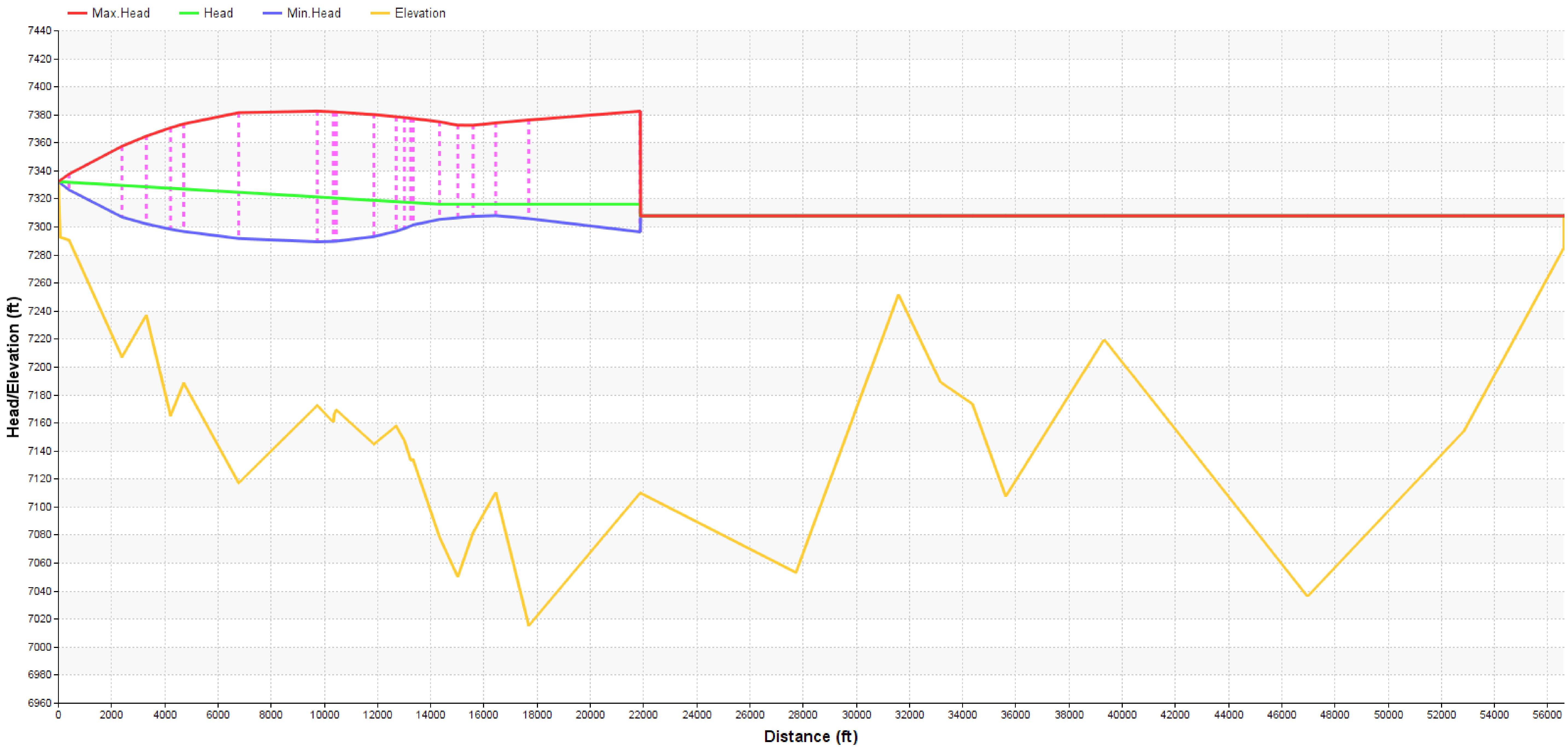


Exhibit 2.22b Surge Head Profile from Counselor Tank to JAN Tank (Protected Scenario: Isolation valve closure at STA 194+80)

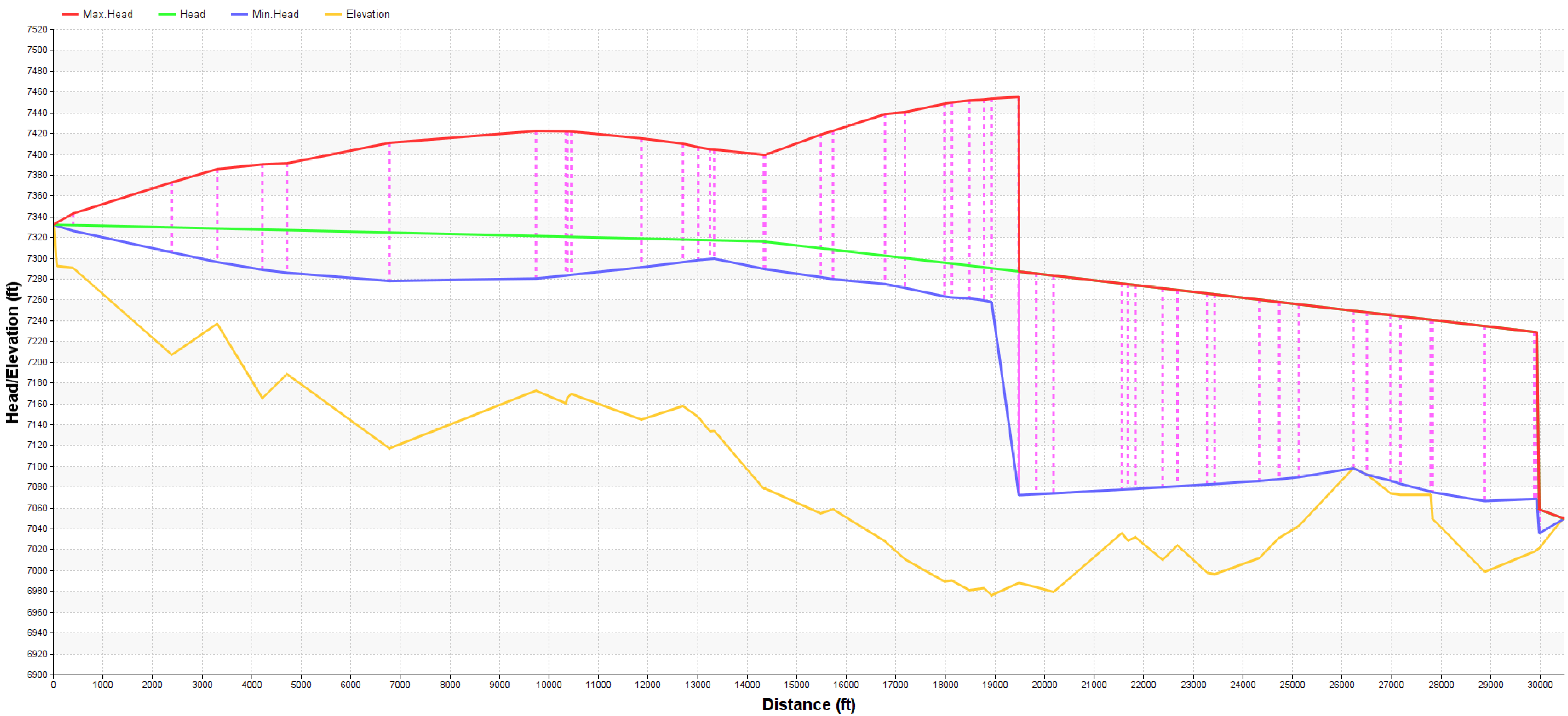


Exhibit 2.23a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Protected Scenario: Isolation valve closure at STA 247+30)

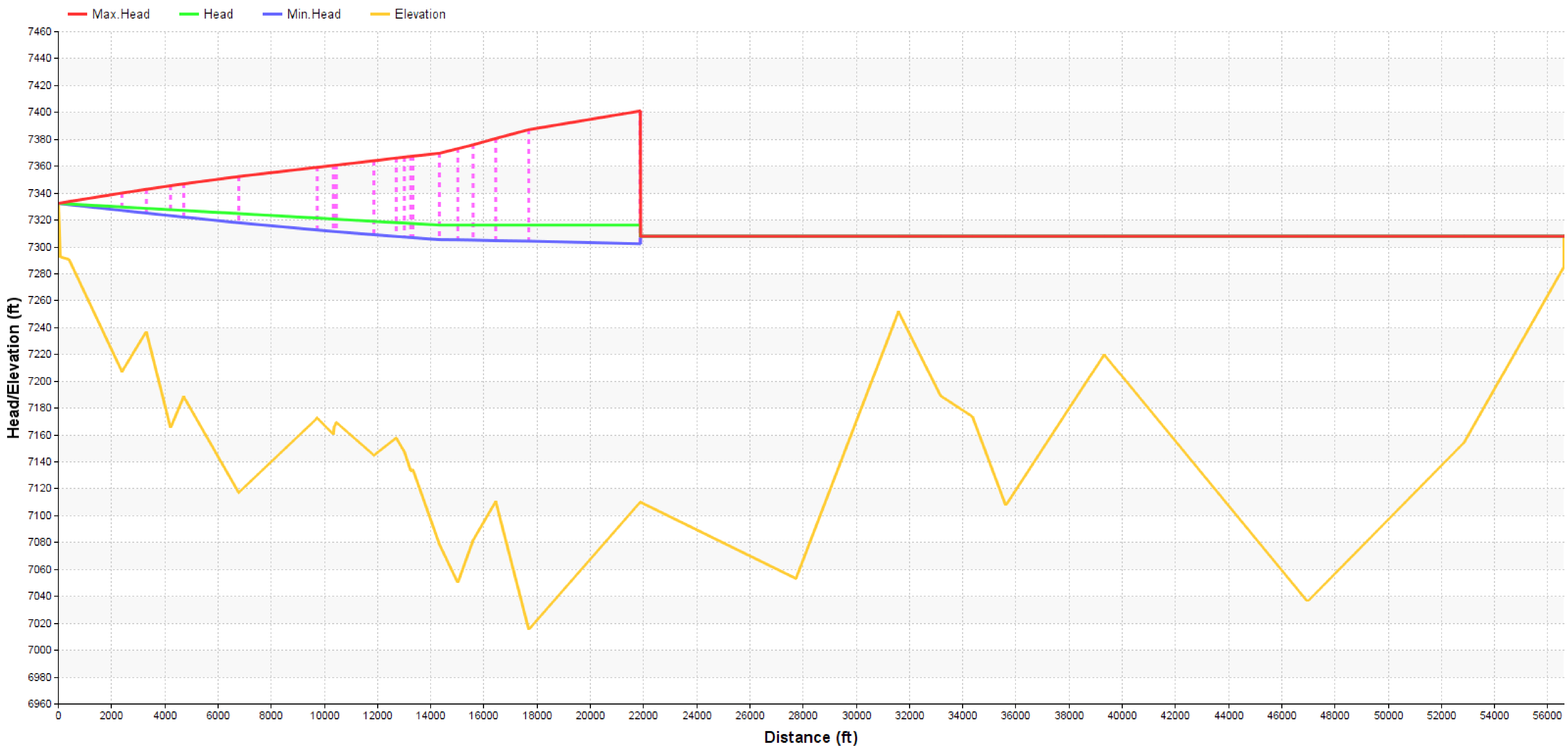


Exhibit 2.23b Surge Head Profile from Counselor Tank to JAN Tank (Protected Scenario: Isolation valve closure at STA 247+30)

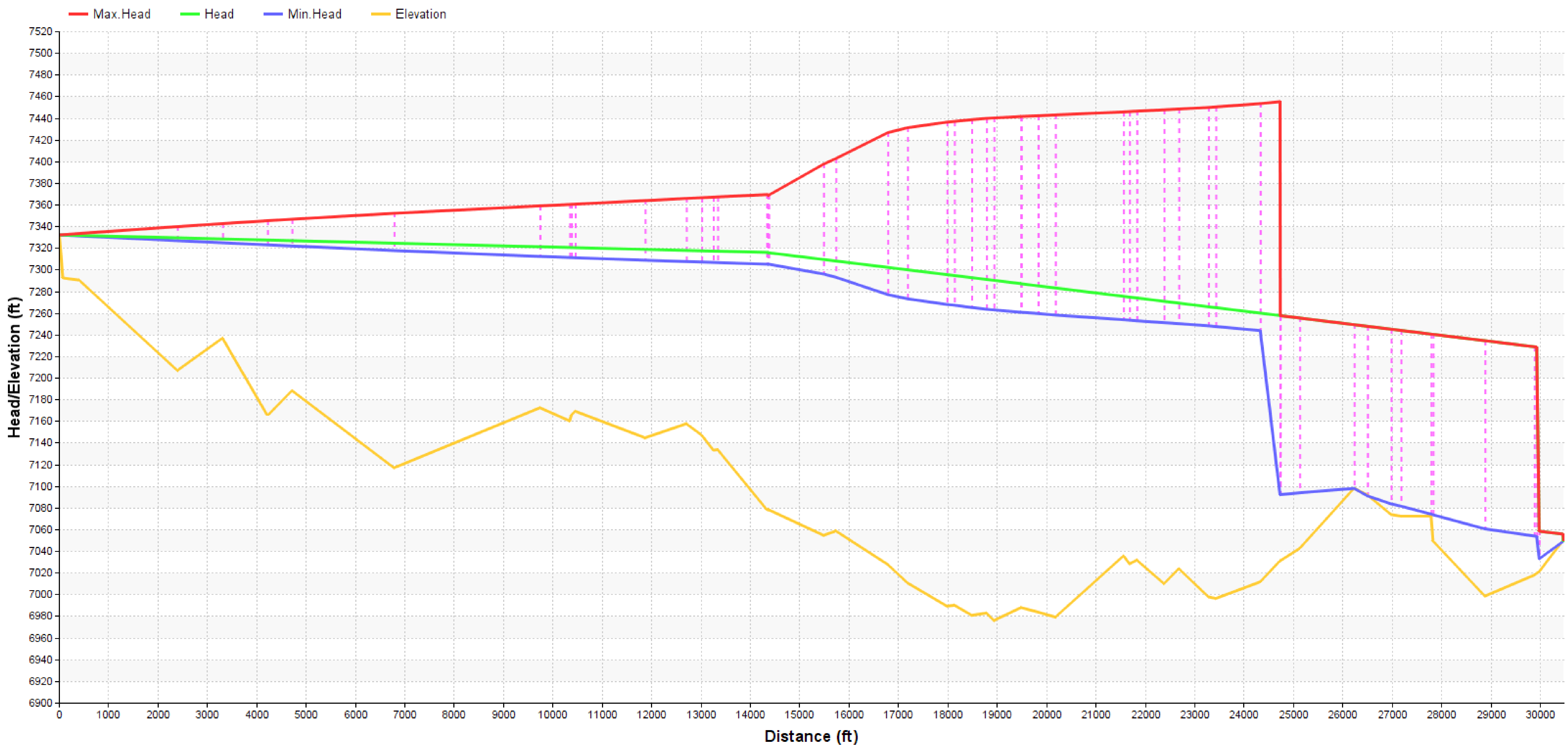


Exhibit 2.24a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Protected Scenario: Isolation valve closure at STA 299+80)

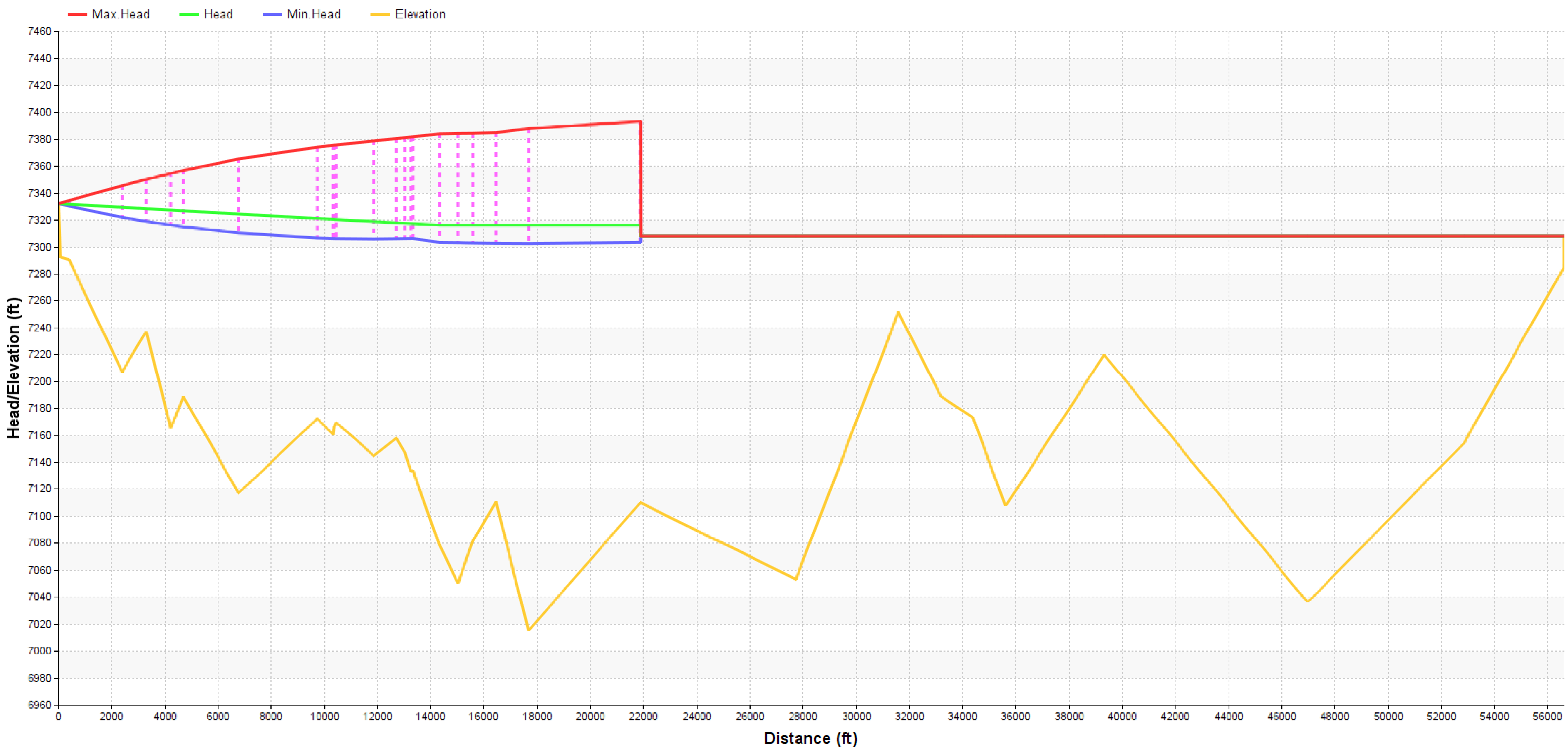


Exhibit 2.24b Surge Head Profile from Counselor Tank to JAN Tank (Protected Scenario: Isolation valve closure at STA 299+80)

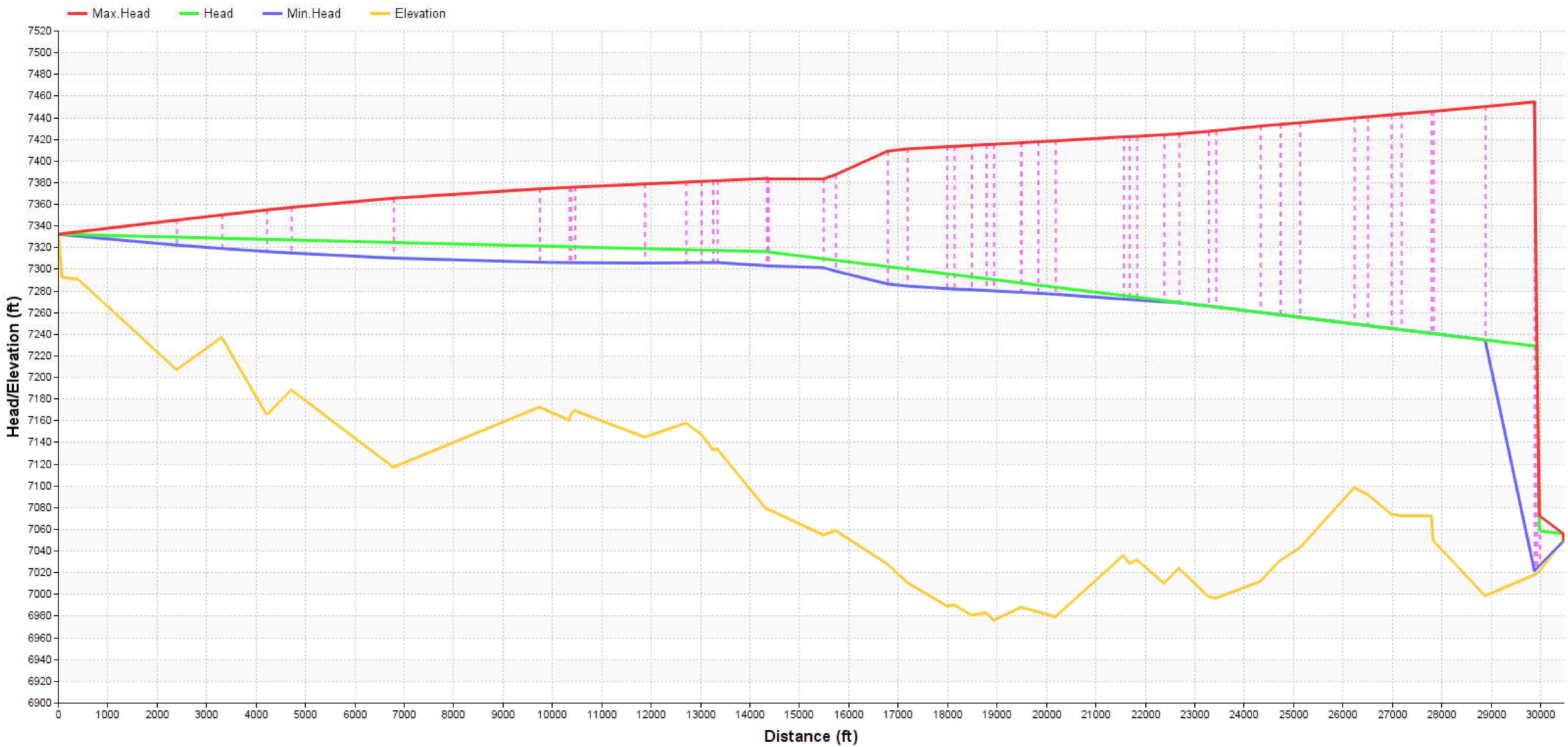


Exhibit 2.31a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Protected Scenario: Flush Valve at STA 276+80 close)

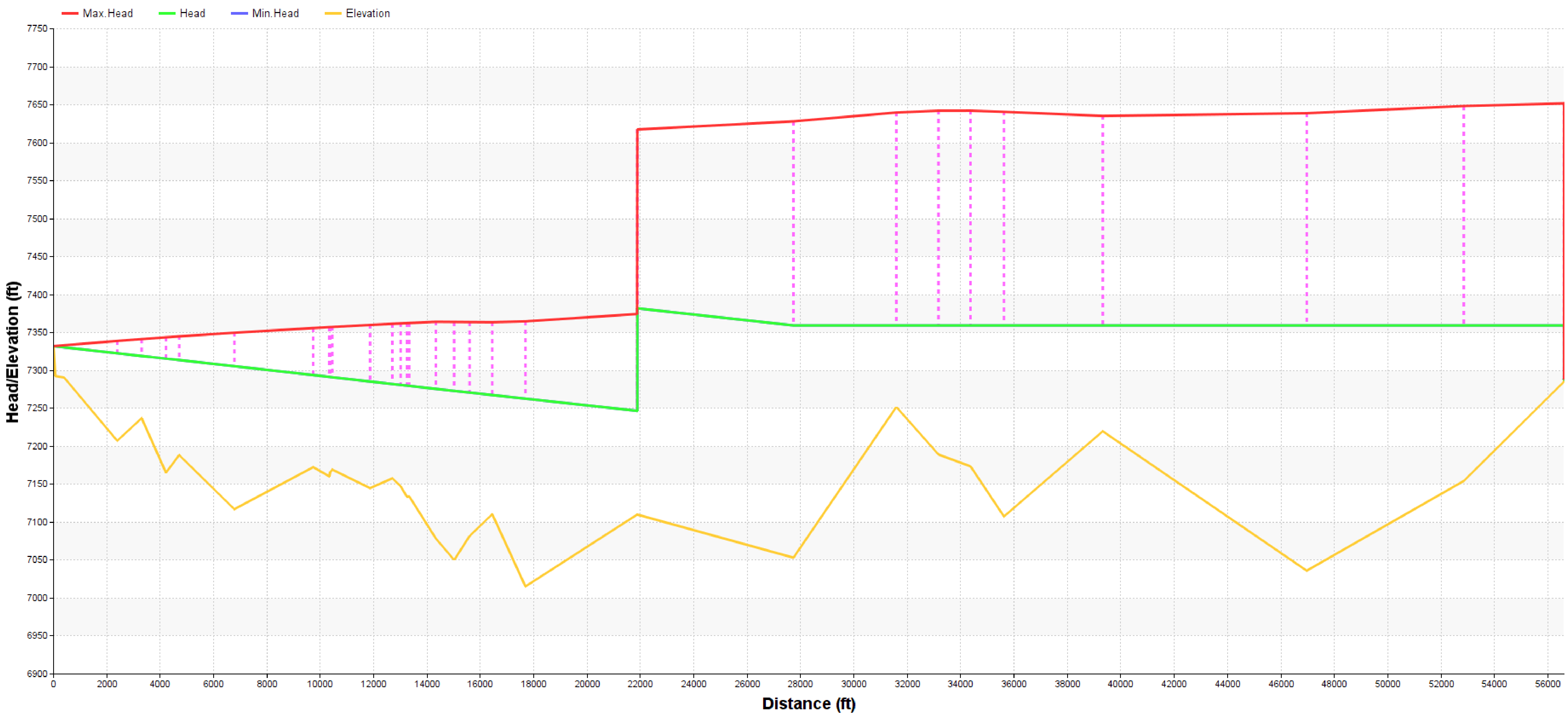


Exhibit 2.31b Surge Head Profile from Counselor Tank to JAN Tank (Protected Scenario: Flush Valve at STA 276+80 close)

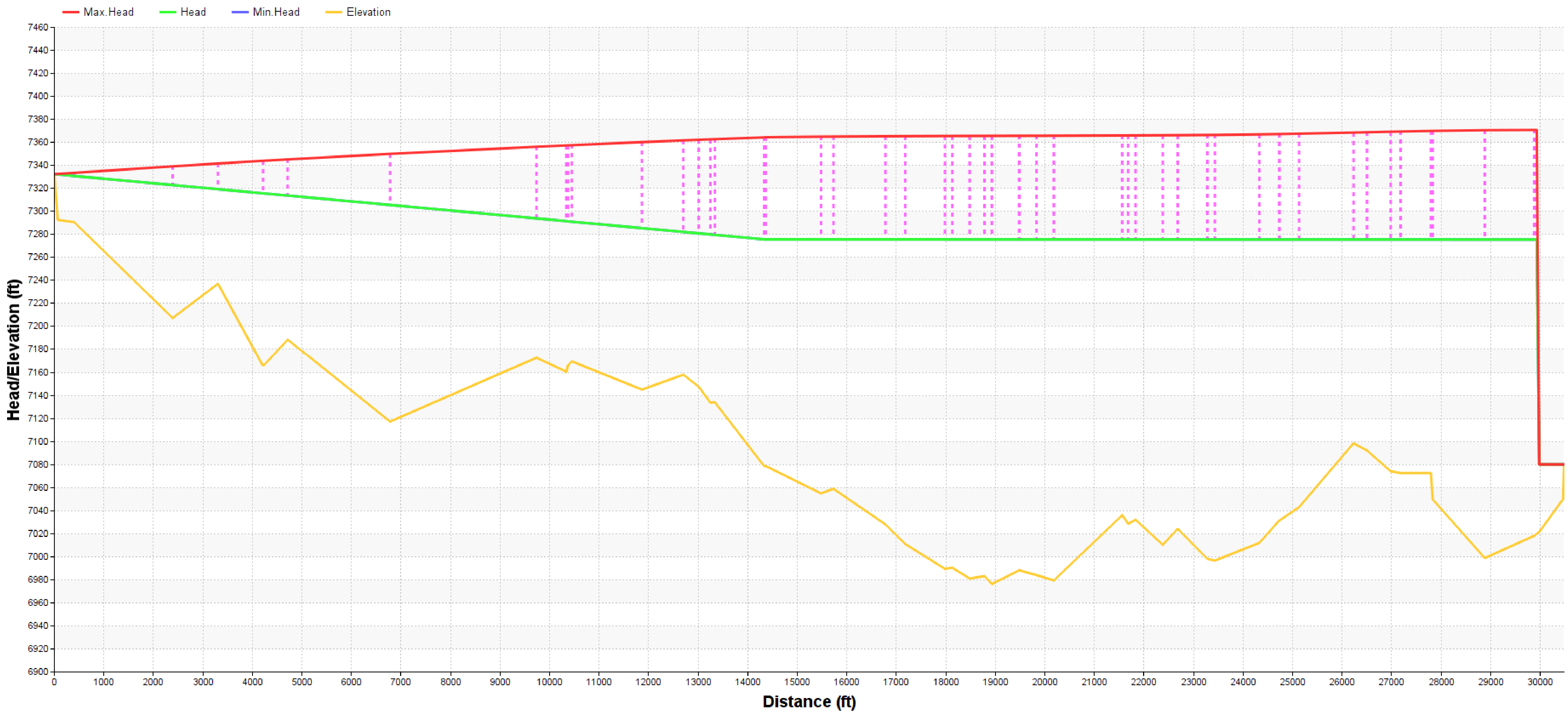


Exhibit 2.34a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Protected Scenario: Flush Valve at STA 190+30 close)

Exhibit 2.34b Surge Head Profile from Counselor Tank to JAN Tank (Protected Scenario: Flush Valve at STA 190+30 close)

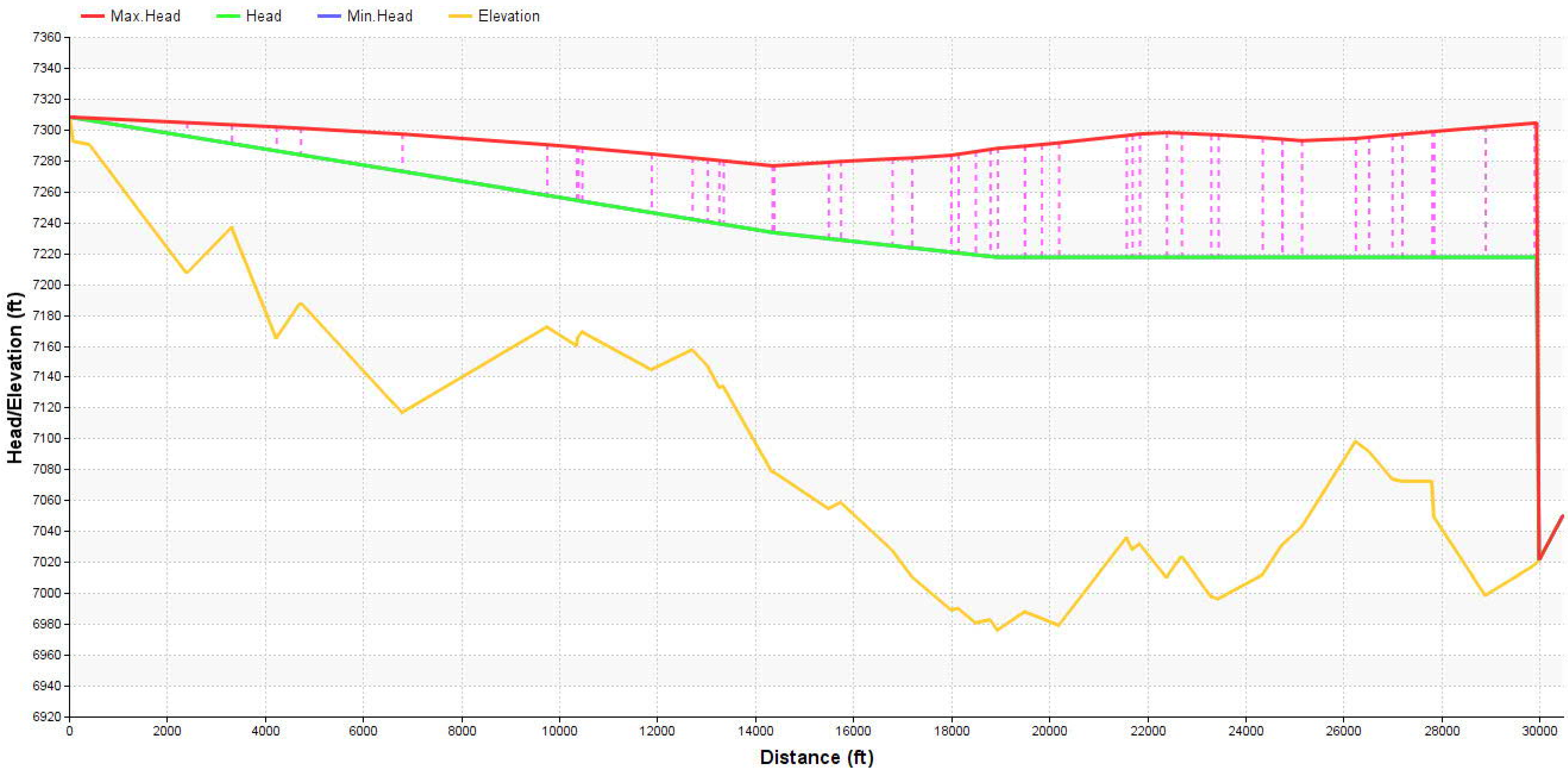


Exhibit 2.35a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Protected Scenario: Flush Valve at STA 234+80 close)

Exhibit 2.35b Surge Head Profile from Counselor Tank to JAN Tank (Protected Scenario: Flush Valve at STA 234+80 close)

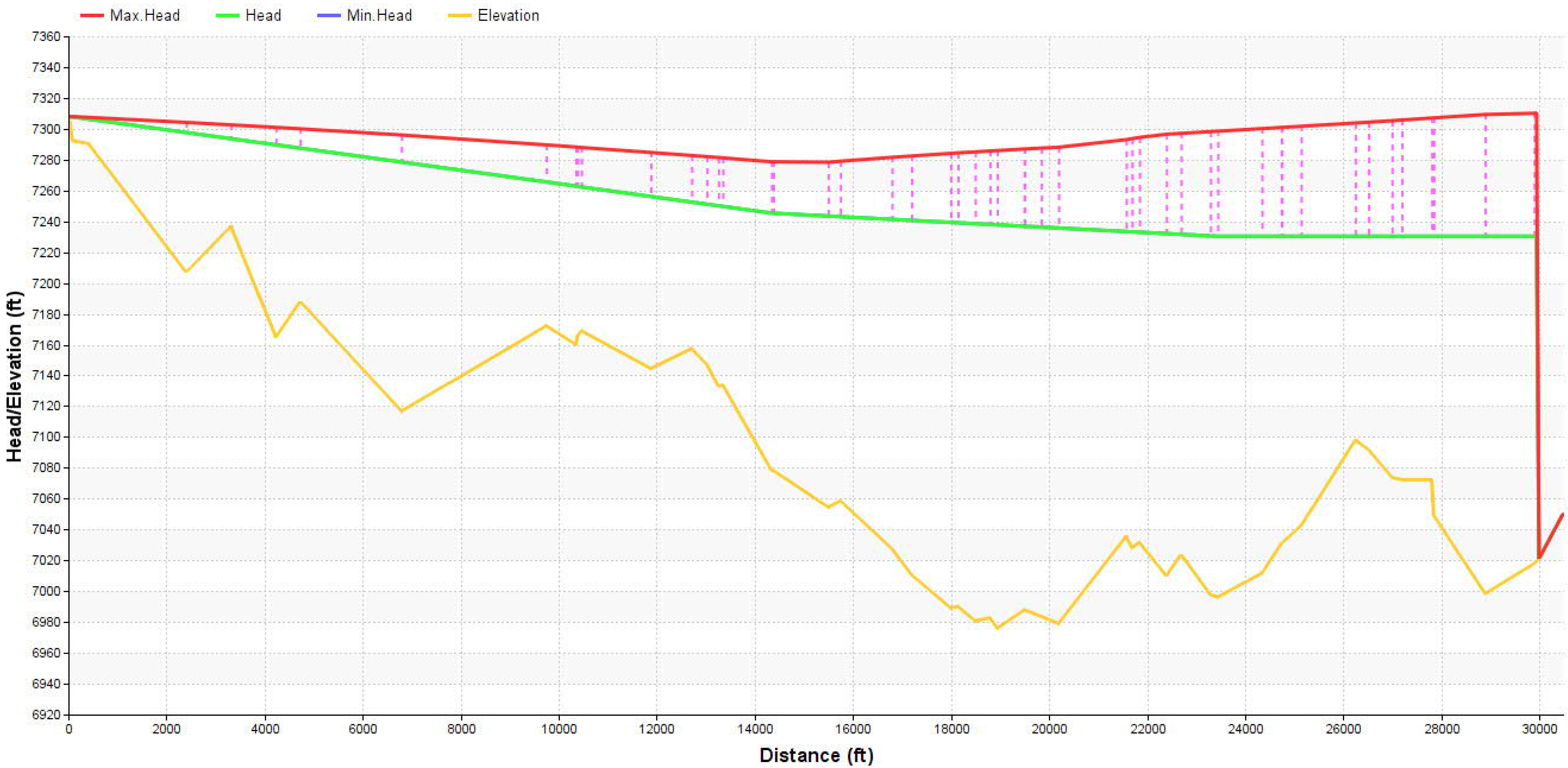


Exhibit 2.36a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Protected Scenario: Flush Valve at STA 289+80 close)

Exhibit 2.36b Surge Head Profile from Counselor Tank to JAN Tank (Protected Scenario: Flush Valve at STA 289+80 close)

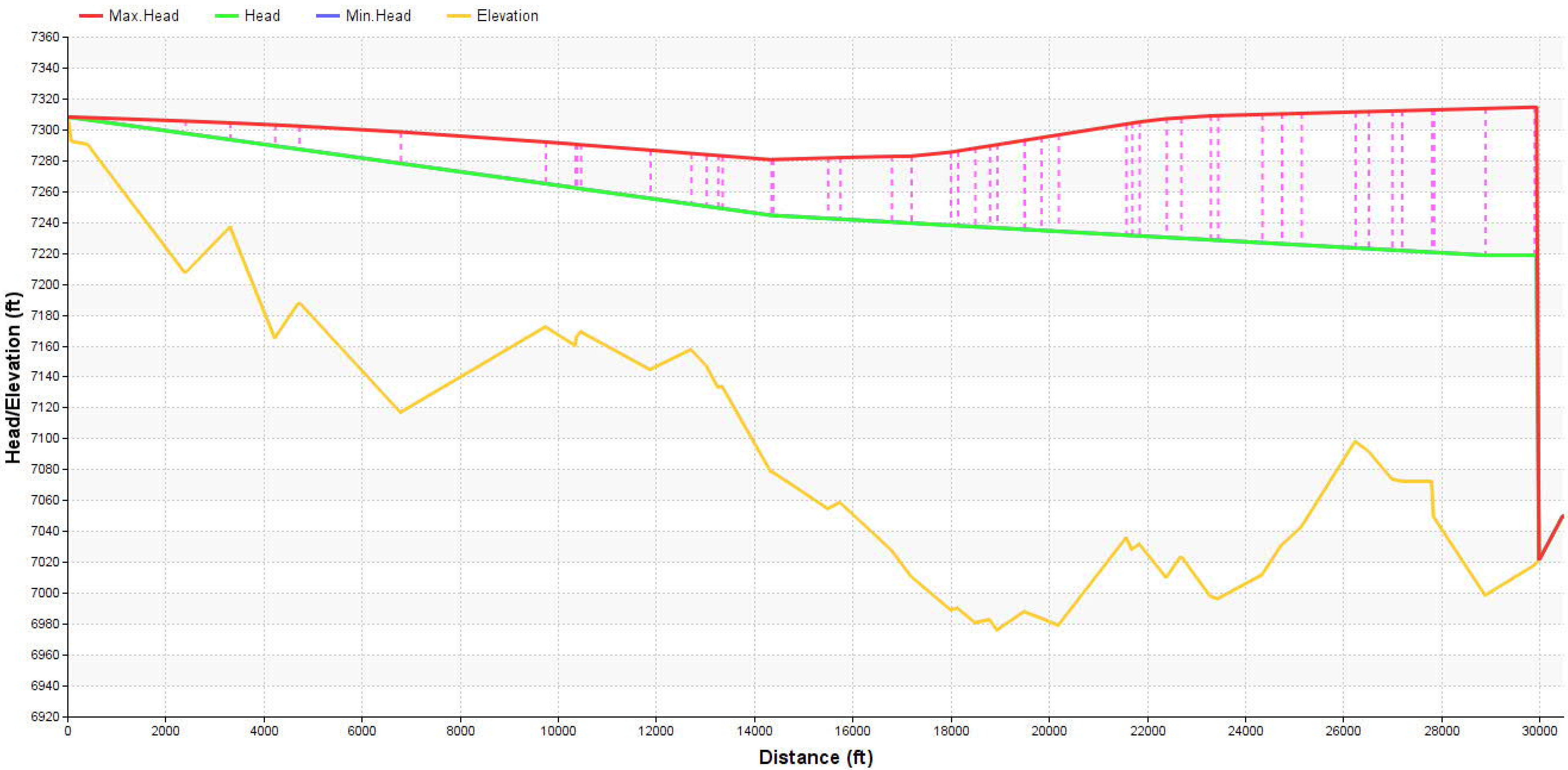


Exhibit 2.40a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Protected Scenario: Flush Valve at STA 176+00 open)

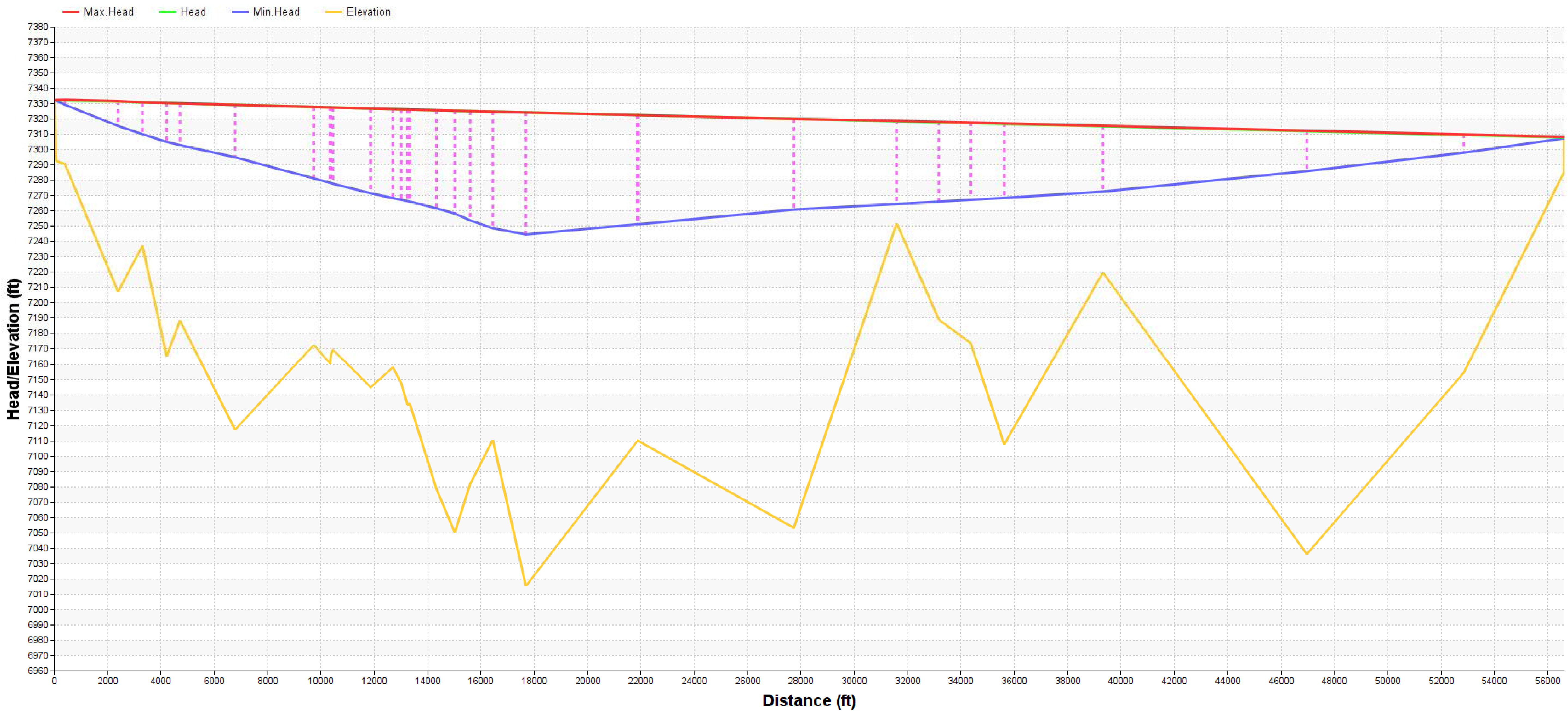


Exhibit 2.40b Surge Head Profile from Counselor Tank to JAN Tank (Protected Scenario: Flush Valve at STA 176+00 open)

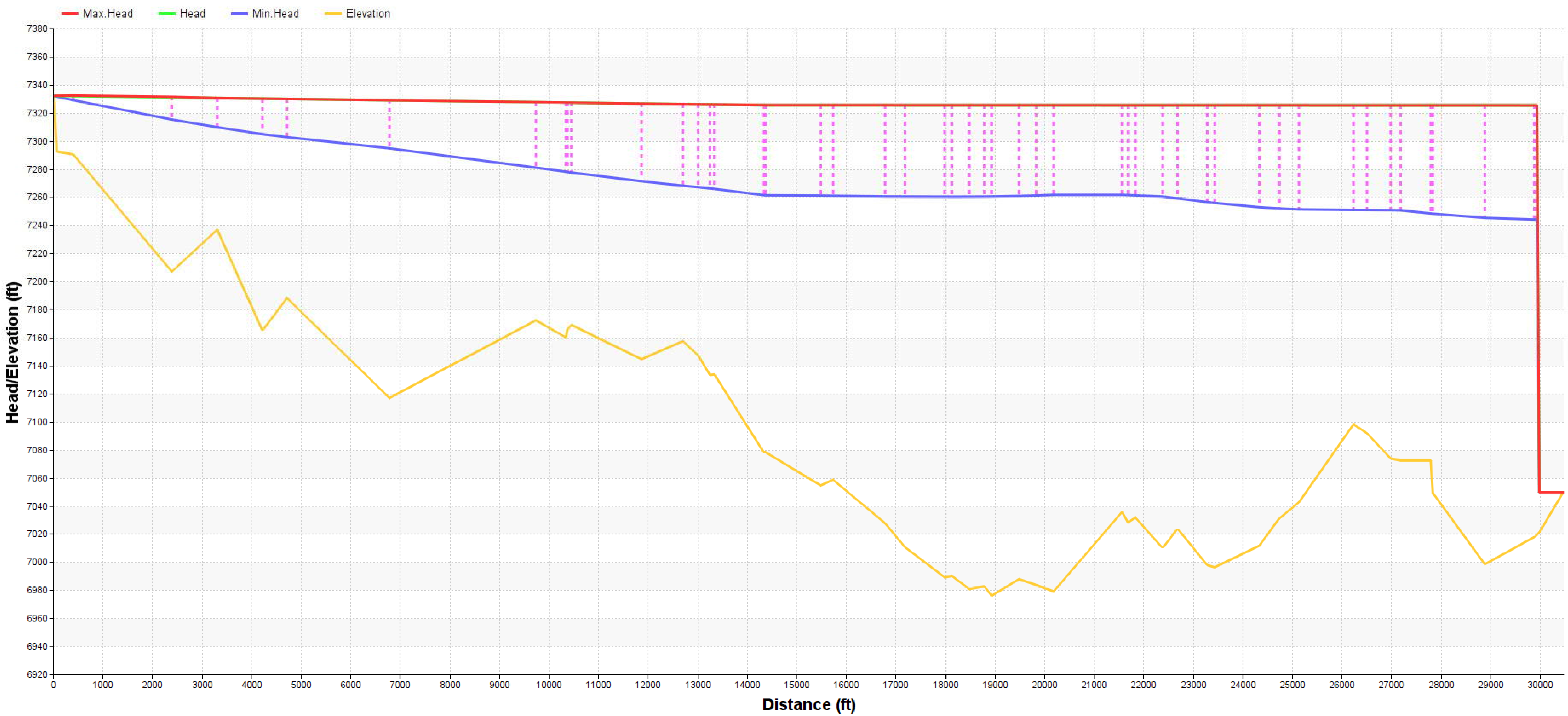


Exhibit 2.41a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Protected Scenario: Flush Valveat STA 218+08 open)

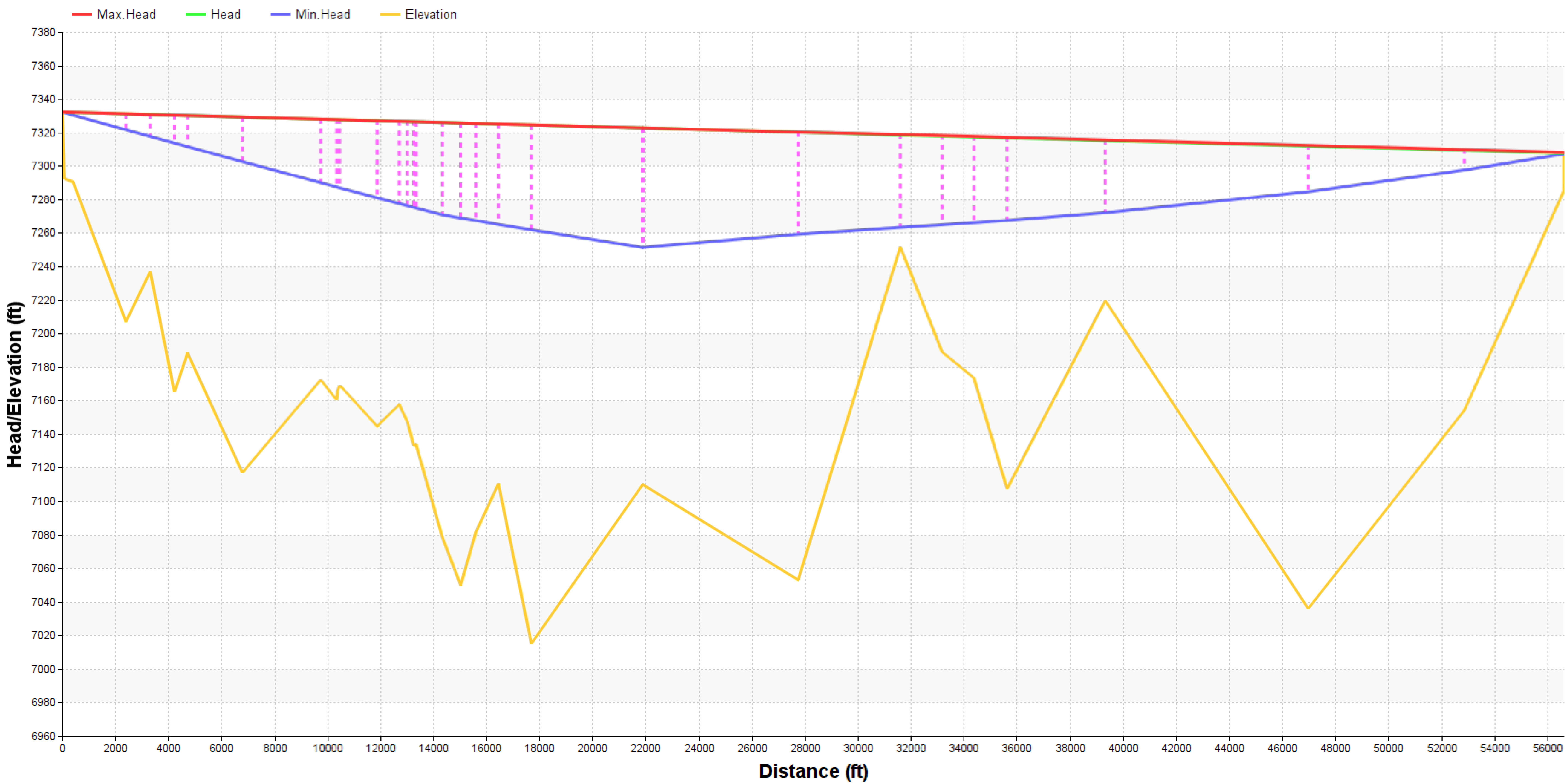


Exhibit 2.41b Surge Head Profile from Counselor Tank to JAN Tank (Protected Scenario: Flush Valve at STA 218+08 open)

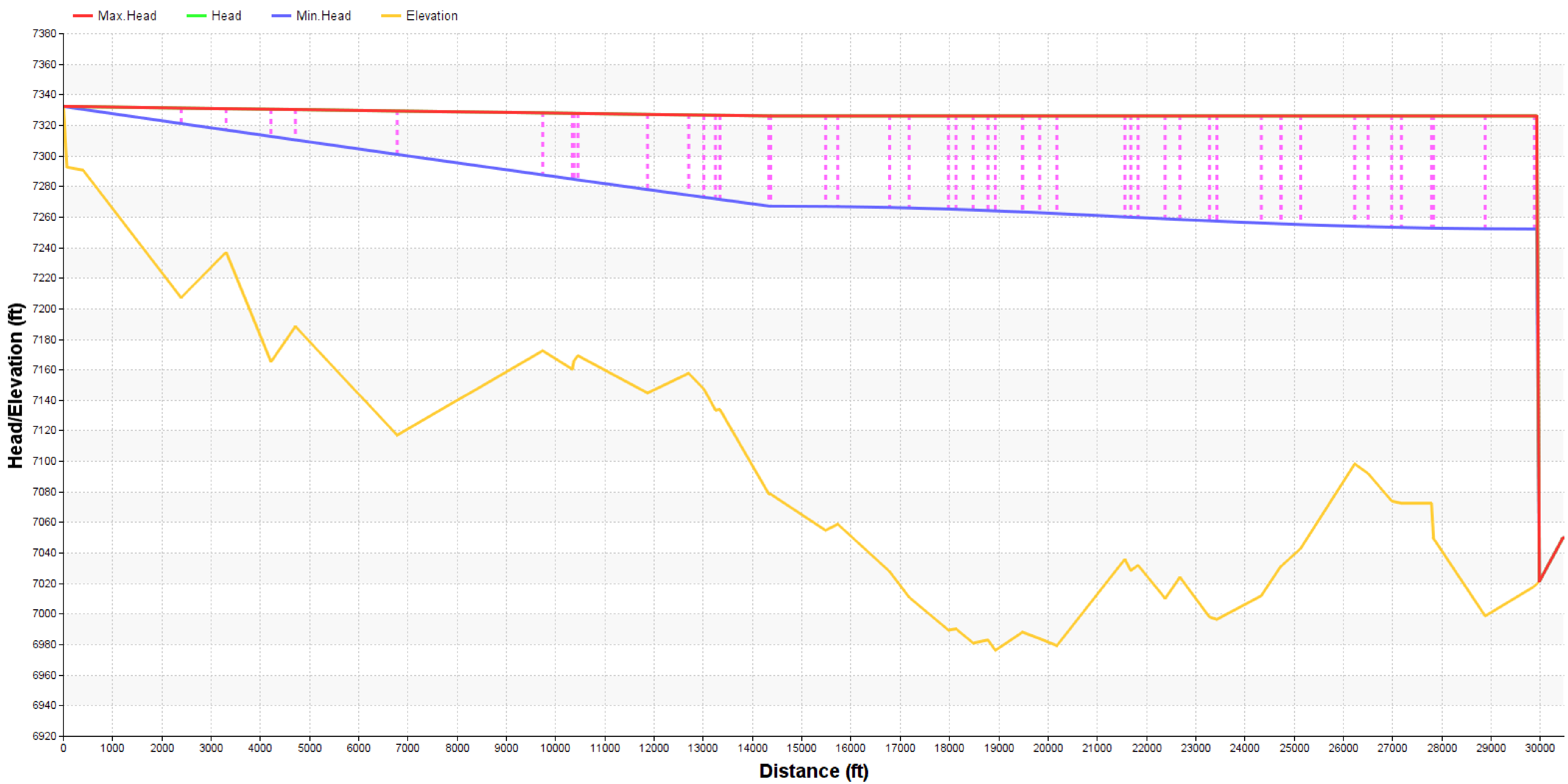


Exhibit 2.42a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Protected Scenario: Flush Valve at STA 218+90 open)

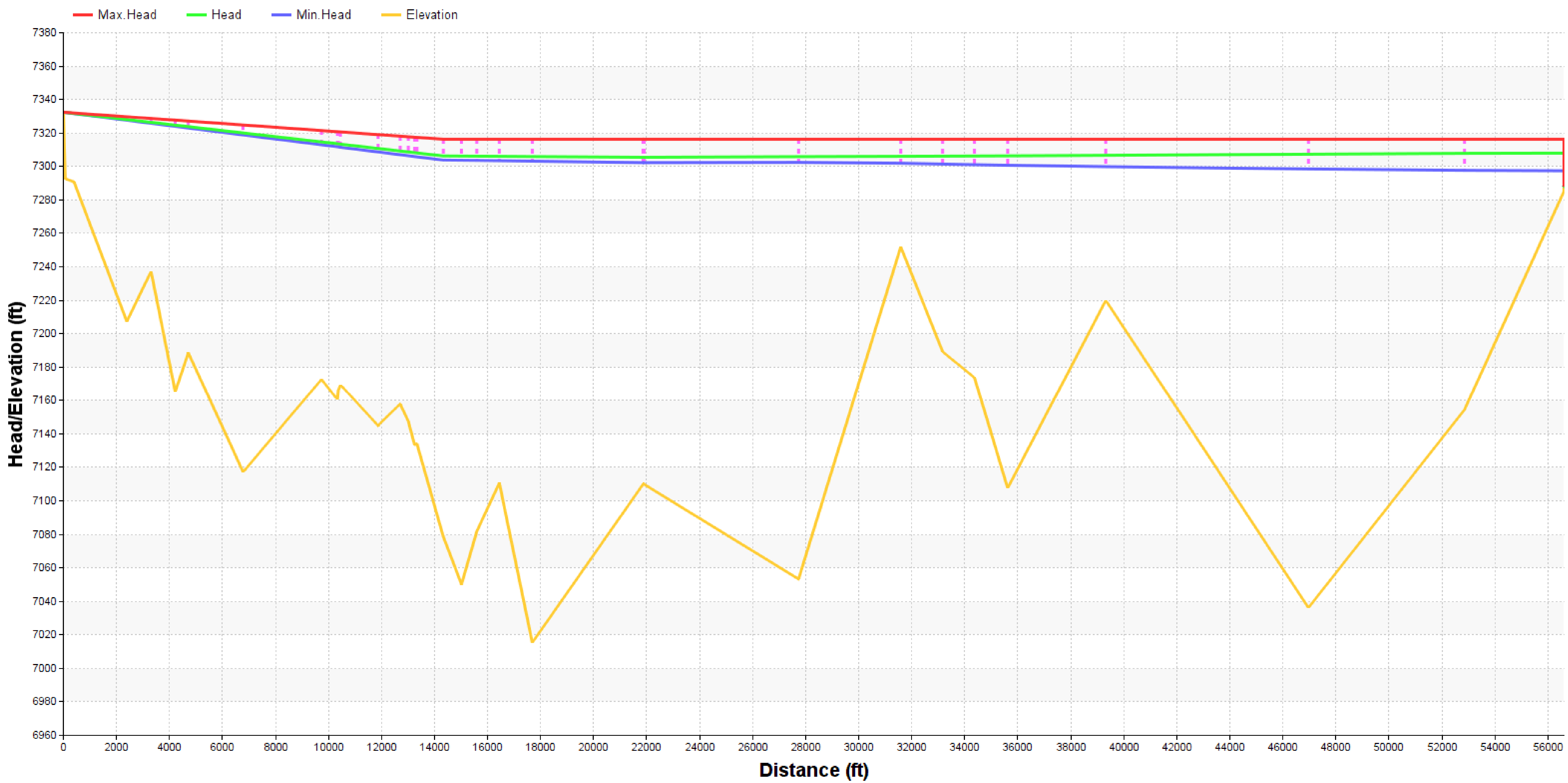


Exhibit 2.42b Surge Head Profile from Counselor Tank to JAN Tank (Protected Scenario: Flush Valve at STA 218+90 open)

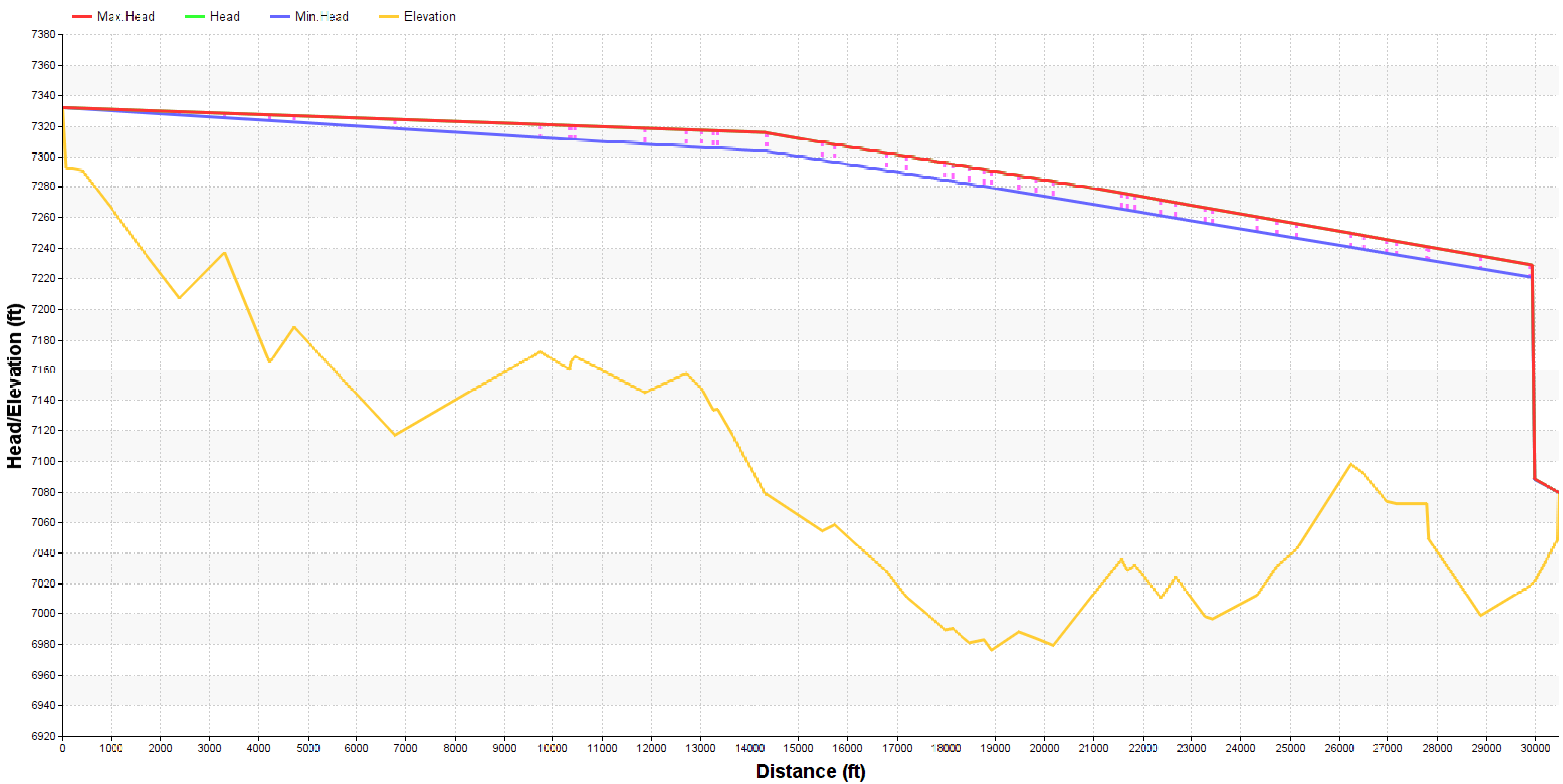


Exhibit 2.43a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Protected Scenario: Flush Valve at STA 276+80 open)

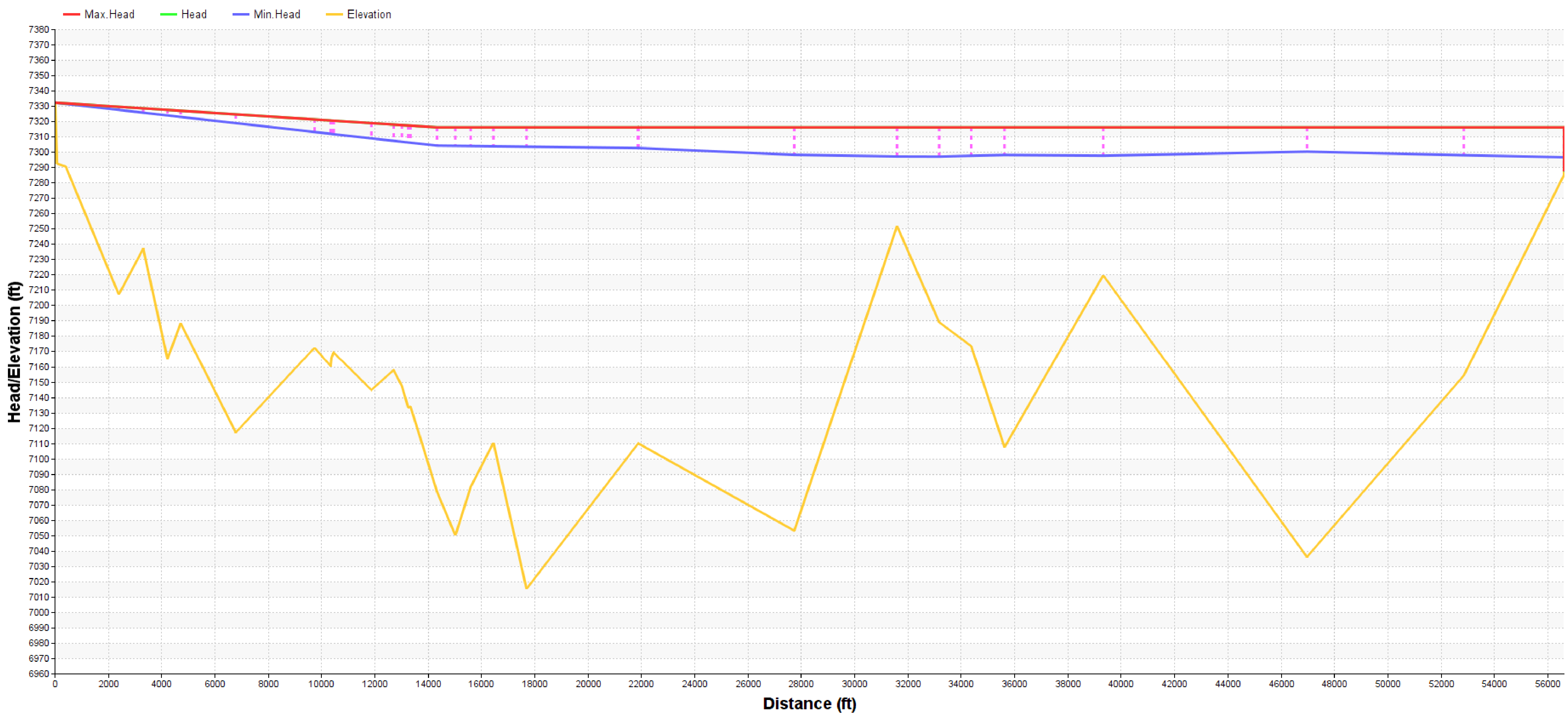


Exhibit 2.43b Surge Head Profile from Counselor Tank to JAN Tank (Protected Scenario: Flush Valve at STA 276+80 open)

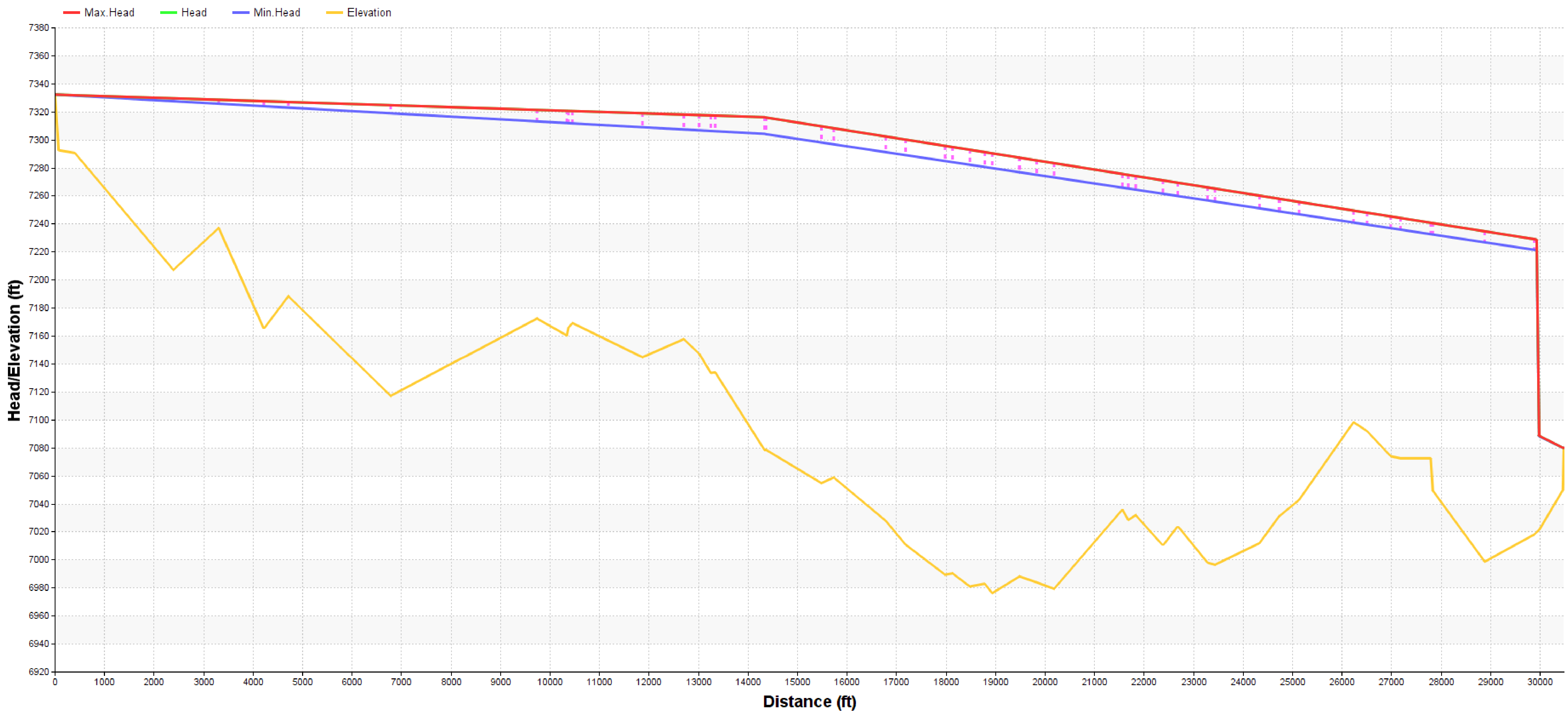


Exhibit 2.44a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Protected Scenario: Flush Valve at STA 357+50 open)

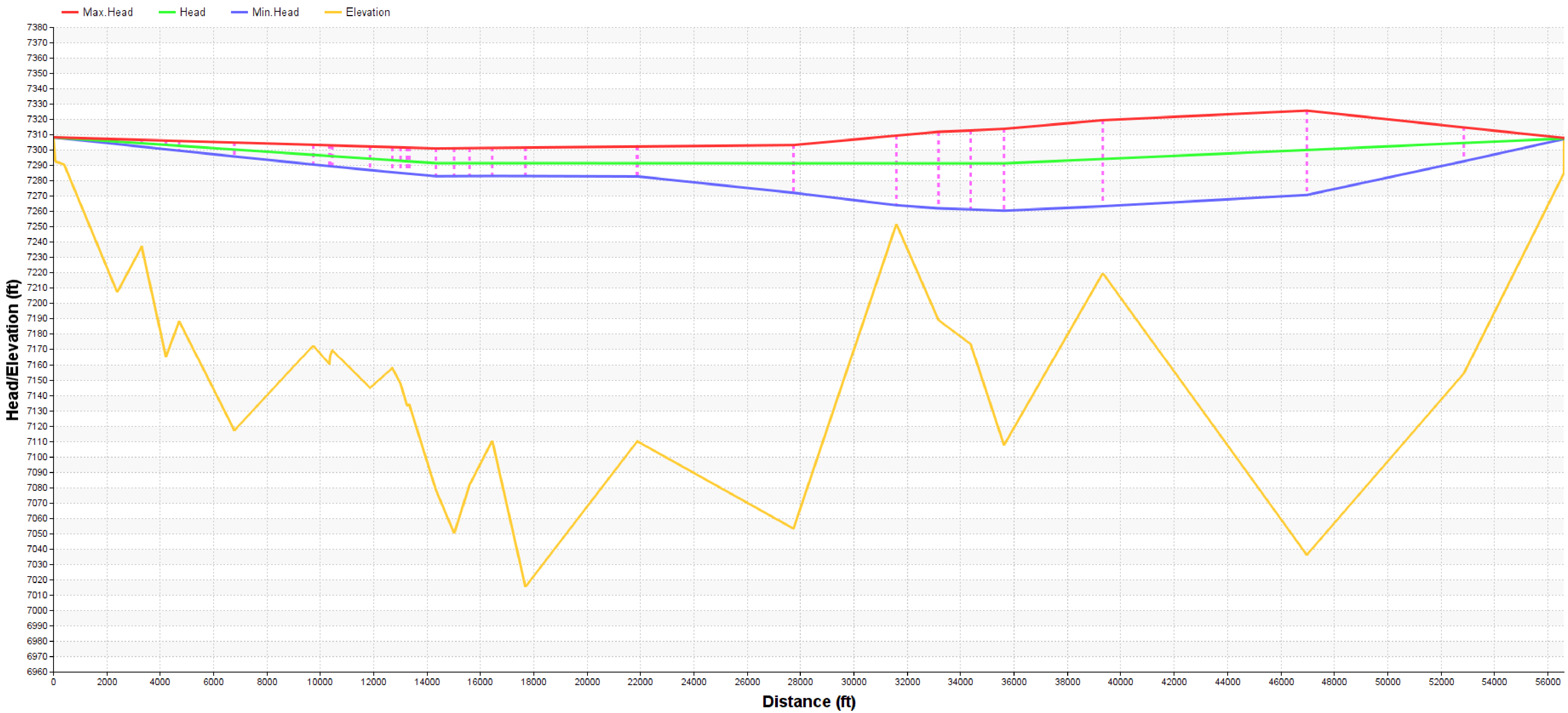


Exhibit 2.44b Surge Head Profile from Counselor Tank to JAN Tank (Protected Scenario: Flush Valve at STA 357+50 open)

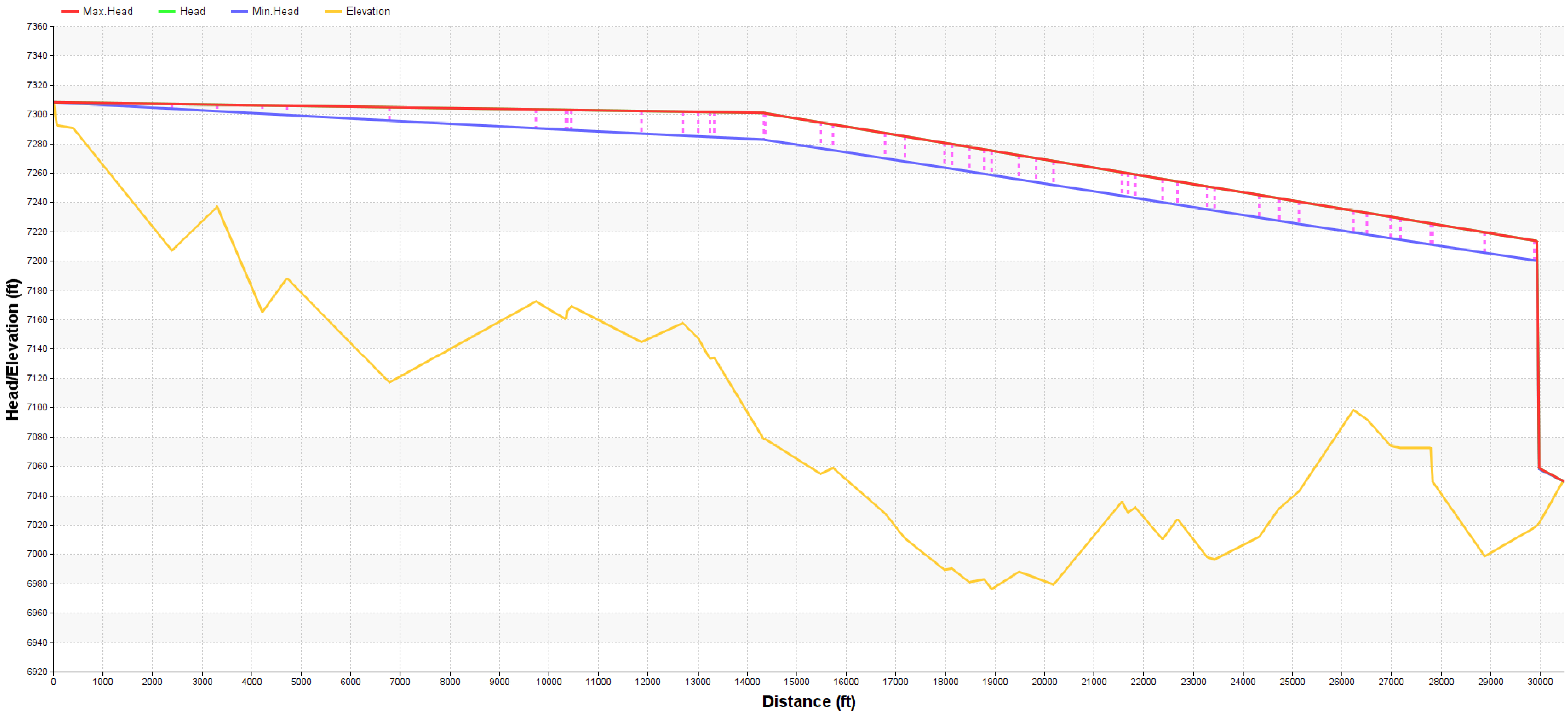


Exhibit 2.45a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Protected Scenario: Flush Valve at STA 469+30 open)

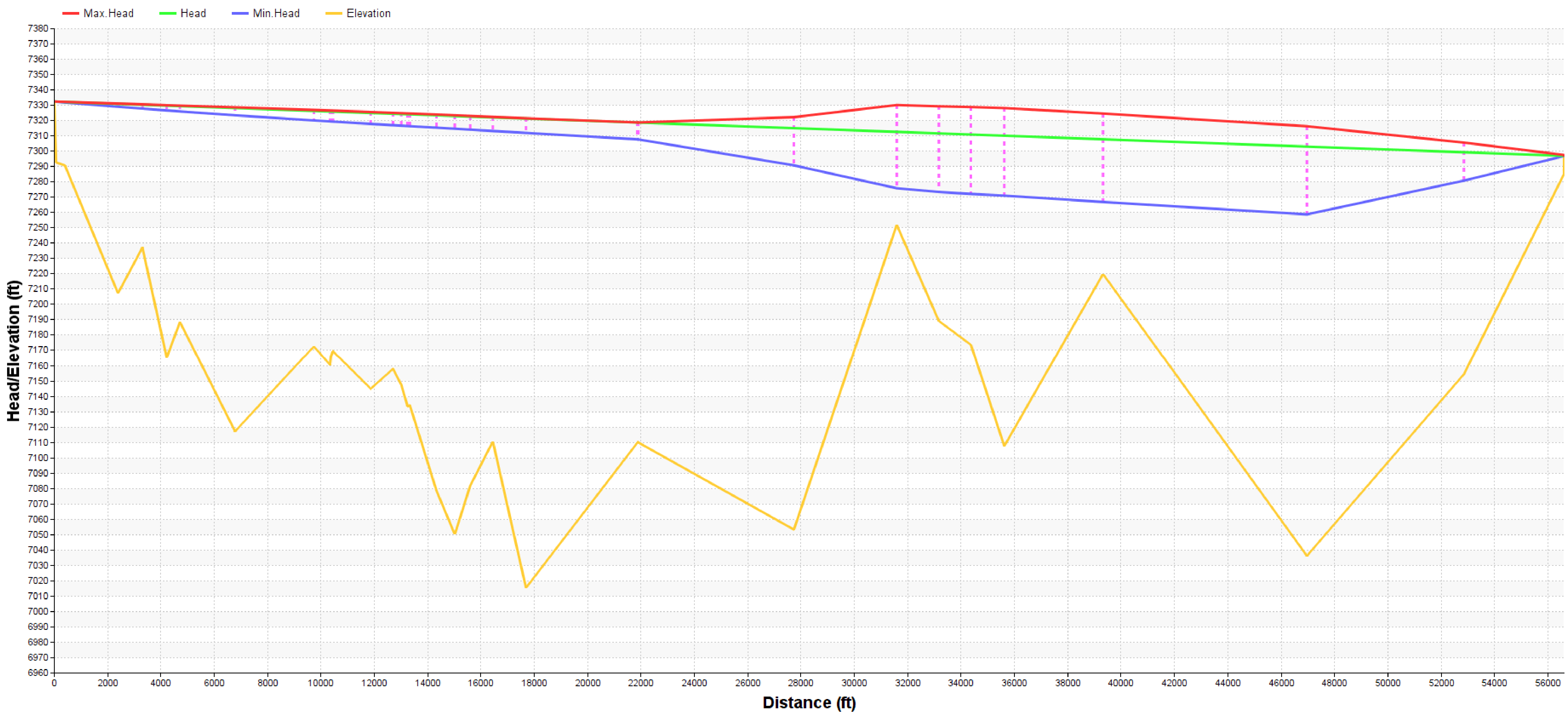


Exhibit 2.45b Surge Head Profile from Counselor Tank to JAN Tank (Protected Scenario: Flush Valve at STA 469+30 open)

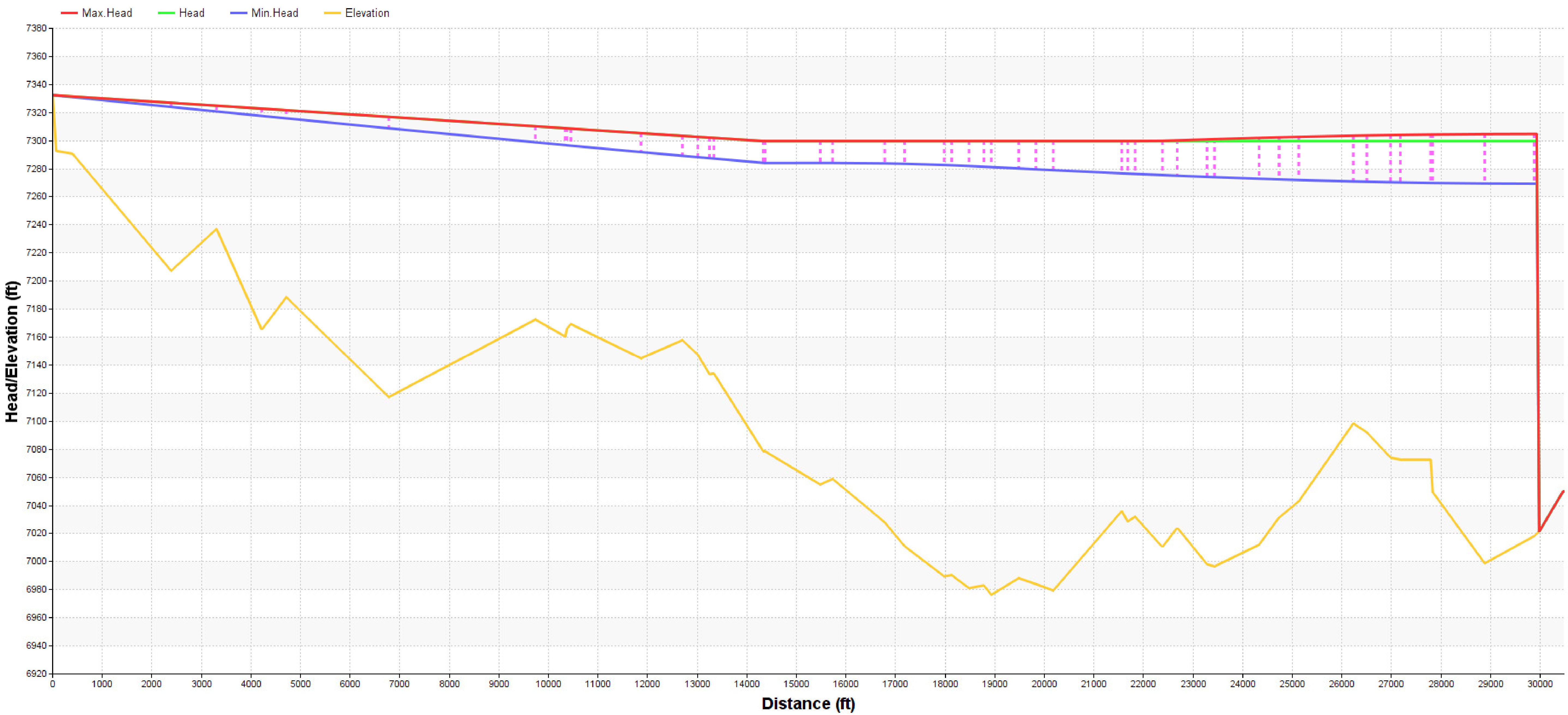


Exhibit 2.46a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Protected Scenario: Flush Valve at STA 190+30 open)

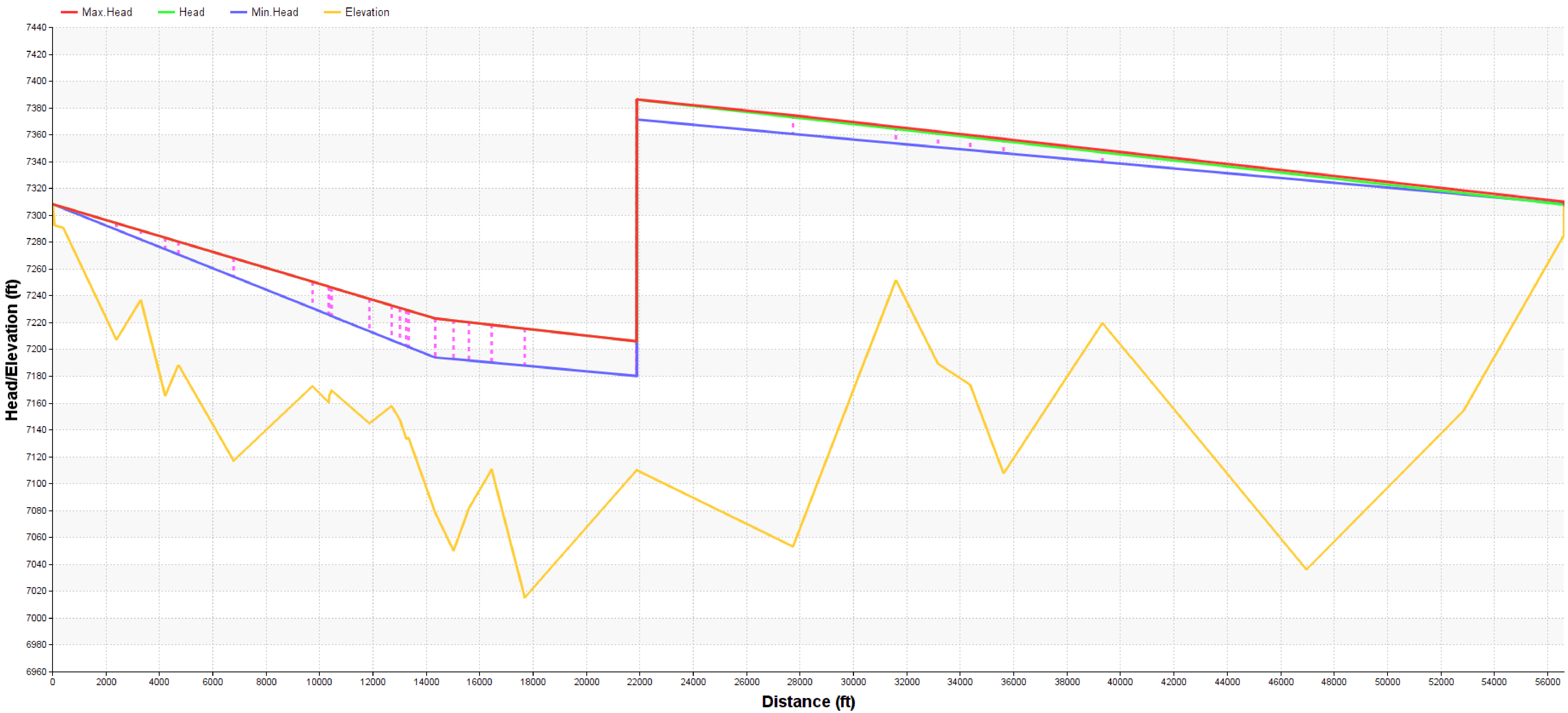


Exhibit 2.46b Surge Head Profile from Counselor Tank to JAN Tank (Protected Scenario: Flush Valve at STA 190+30 open)

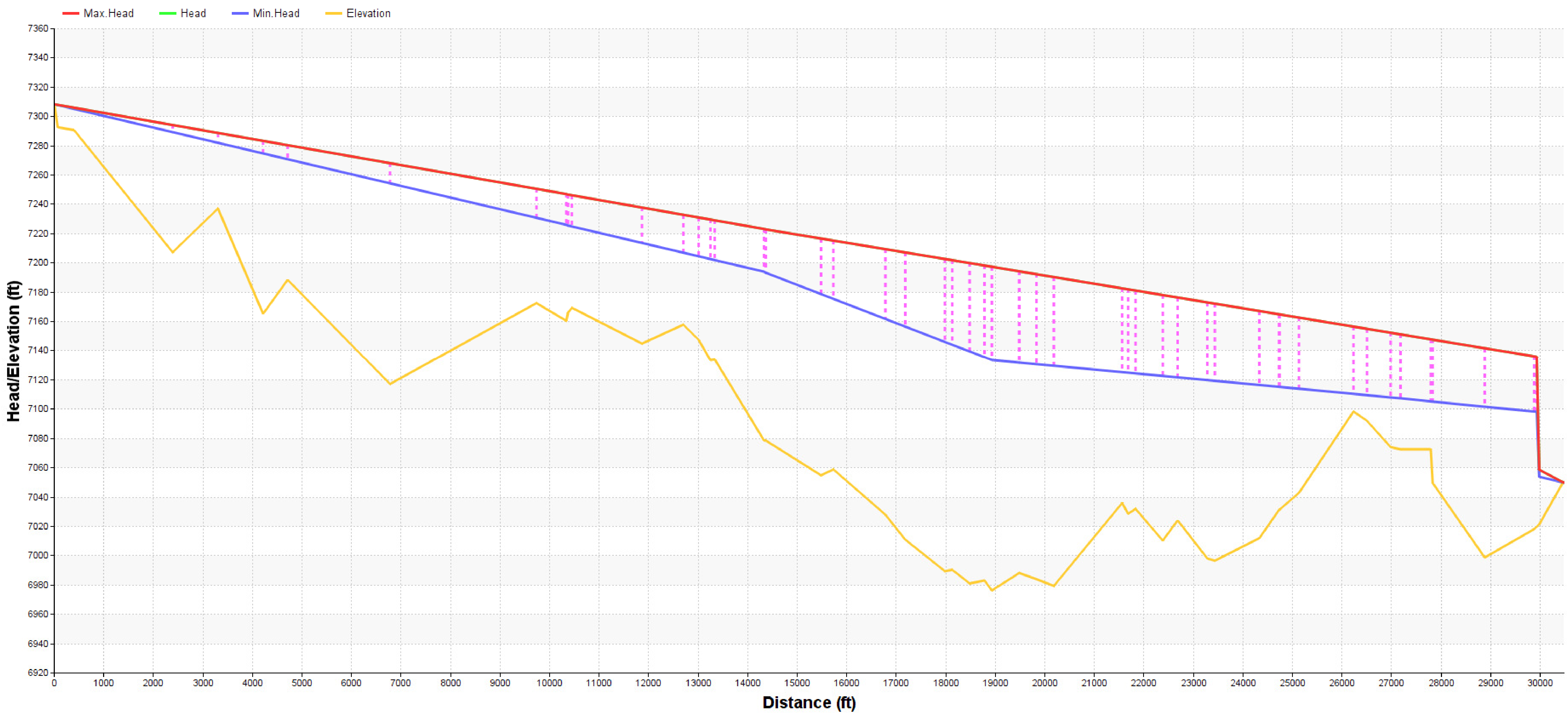


Exhibit 2.47a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Protected Scenario: Flush Valve at STA 234+80 open)

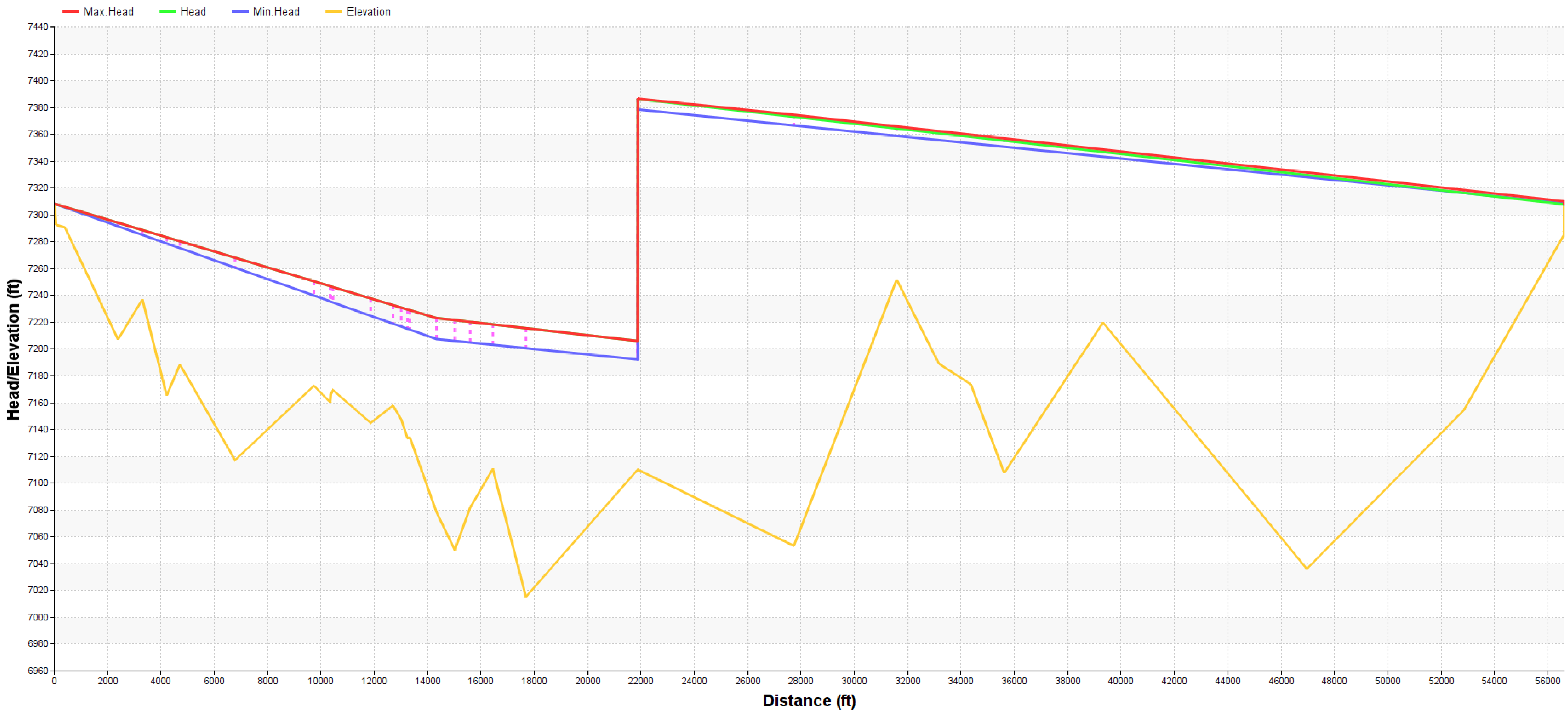


Exhibit 2.47b Surge Head Profile from Counselor Tank to JAN Tank (Protected Scenario: Flush Valve at STA 234+80 open)

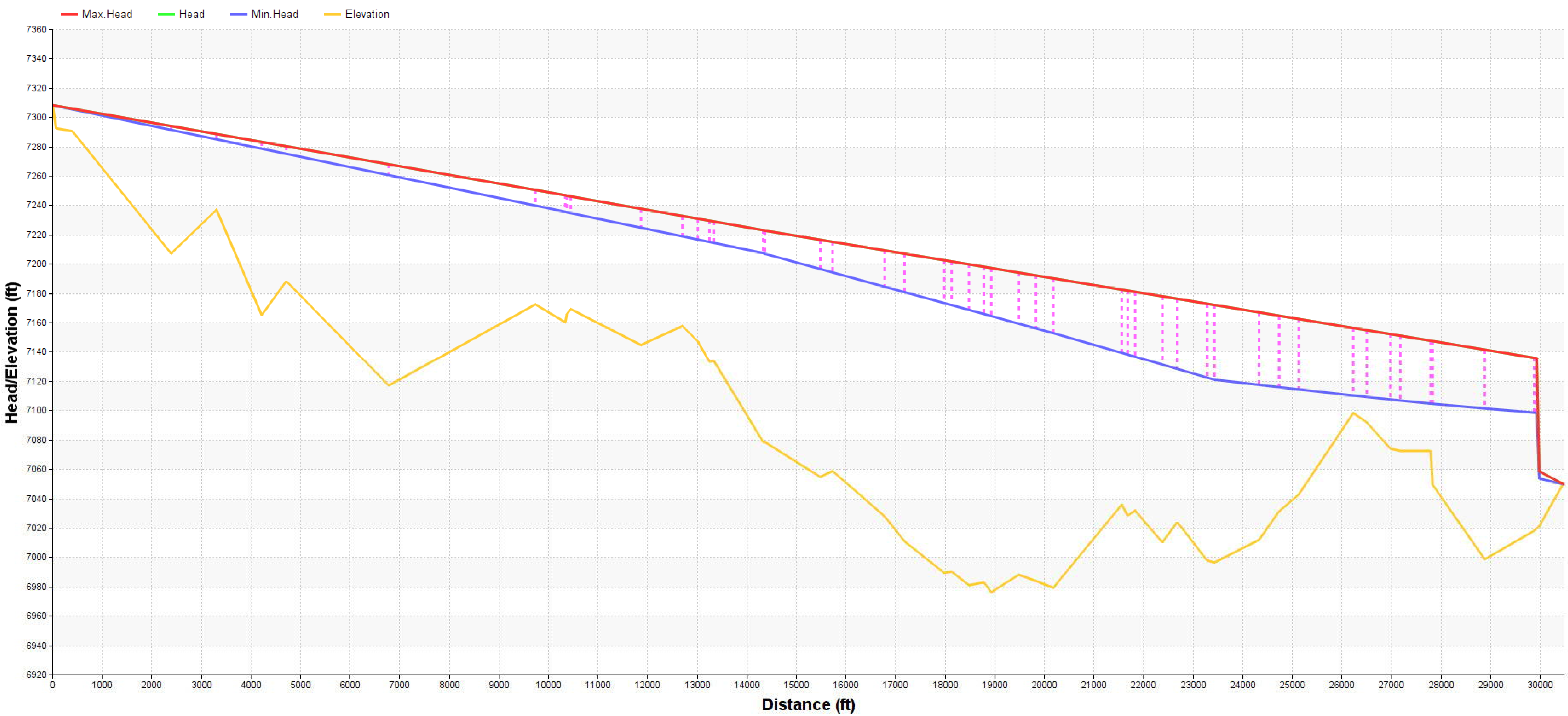


Exhibit 2.48a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Protected Scenario: Flush Valve at STA 289+80 open)

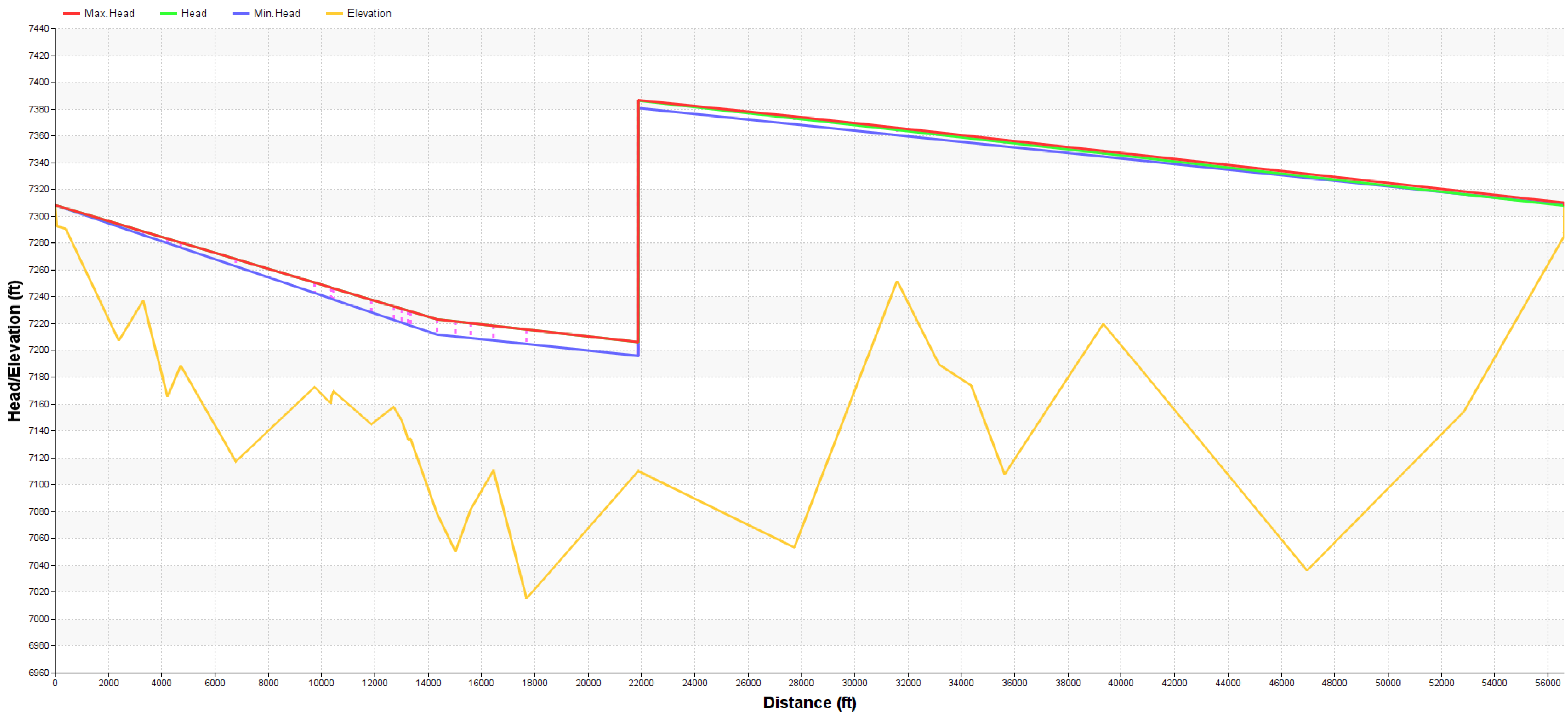


Exhibit 2.48b Surge Head Profile from Counselor Tank to JAN Tank (Protected Scenario: Flush Valve at STA 289+80 open)

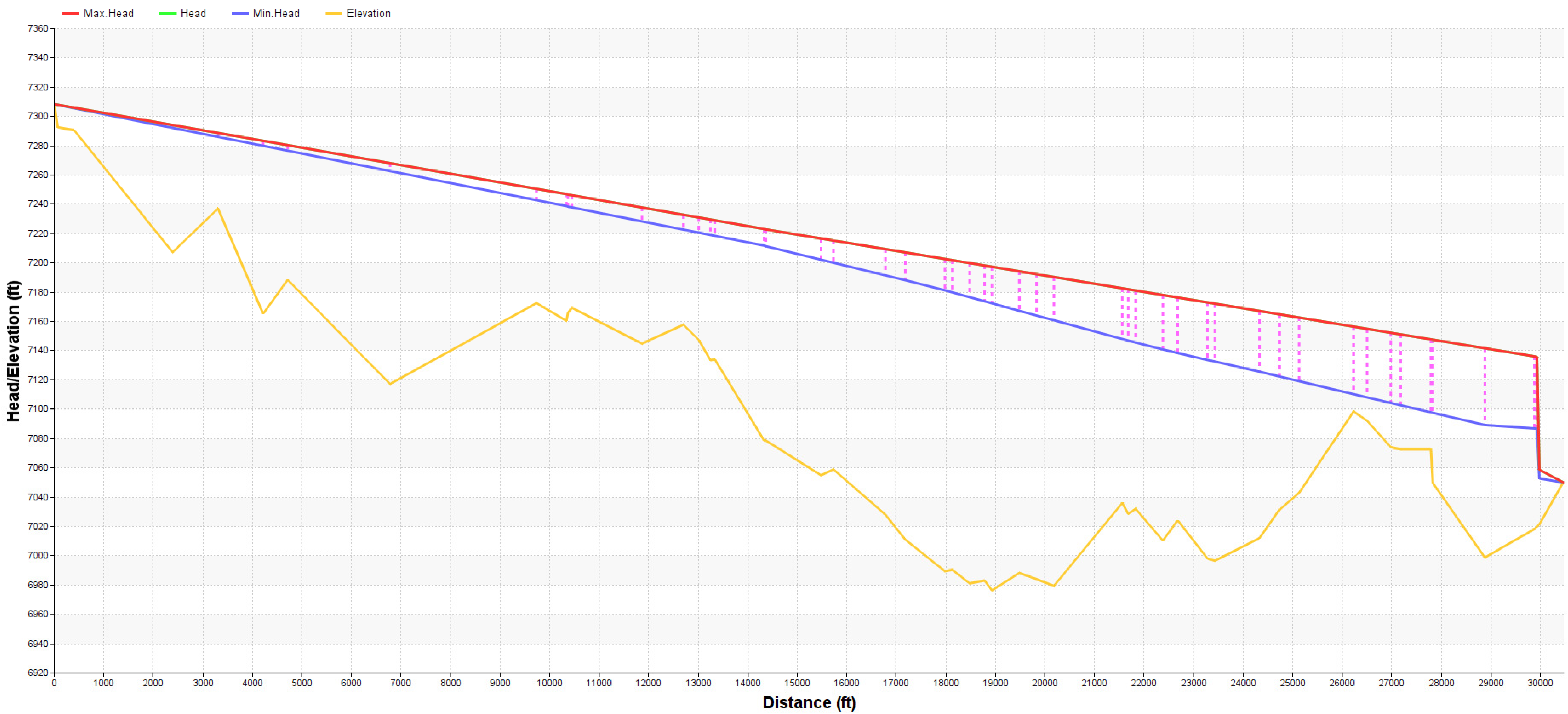


Exhibit 2.49a Surge Head Profile from Counselor Tank to Pumps (Protected Scenario: Pipe Break at STA 189+80)

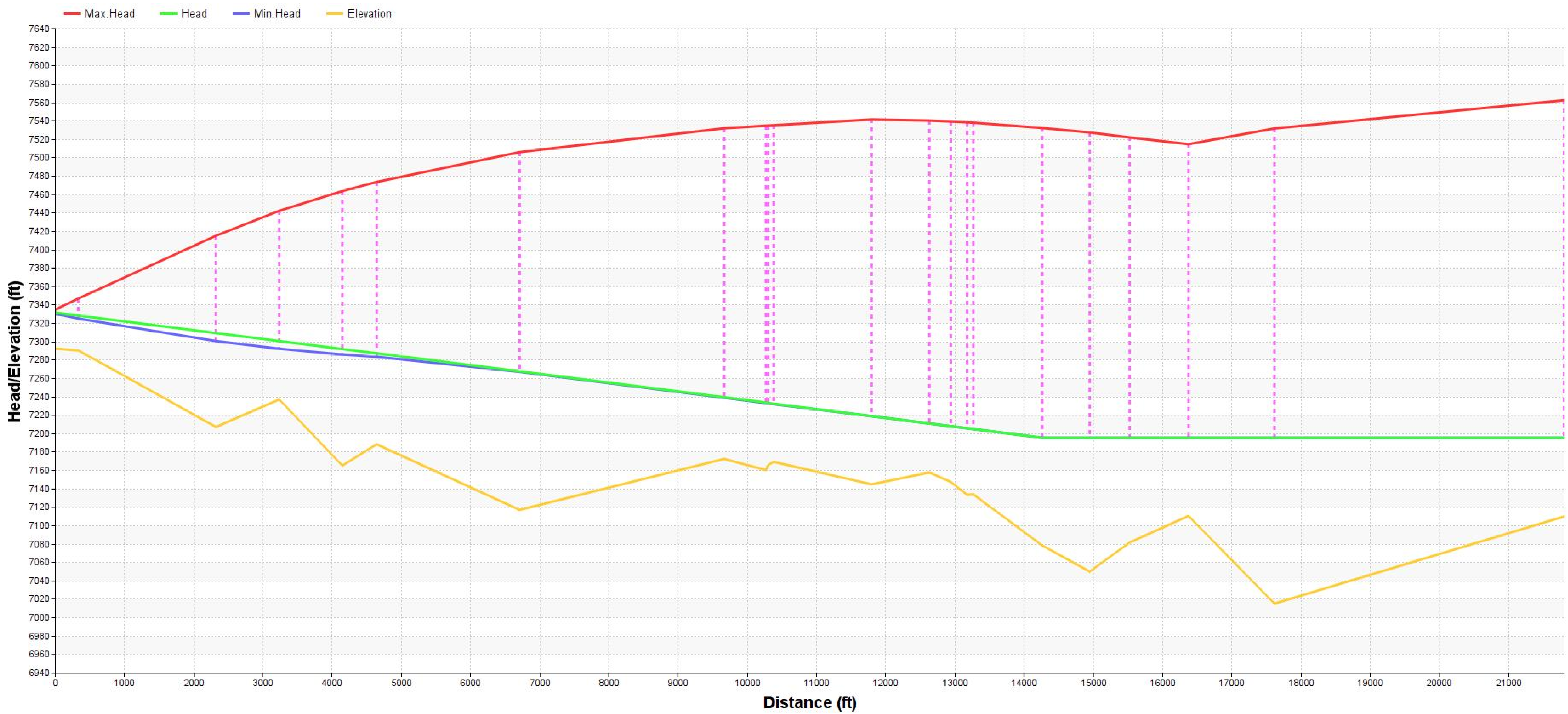


Exhibit 2.49b Surge Head Profile from Counselor Tank to Pipe Break at 189+30 (Reach 24.1 JAN) (Protected Scenario: Pipe Break at STA 189+80)

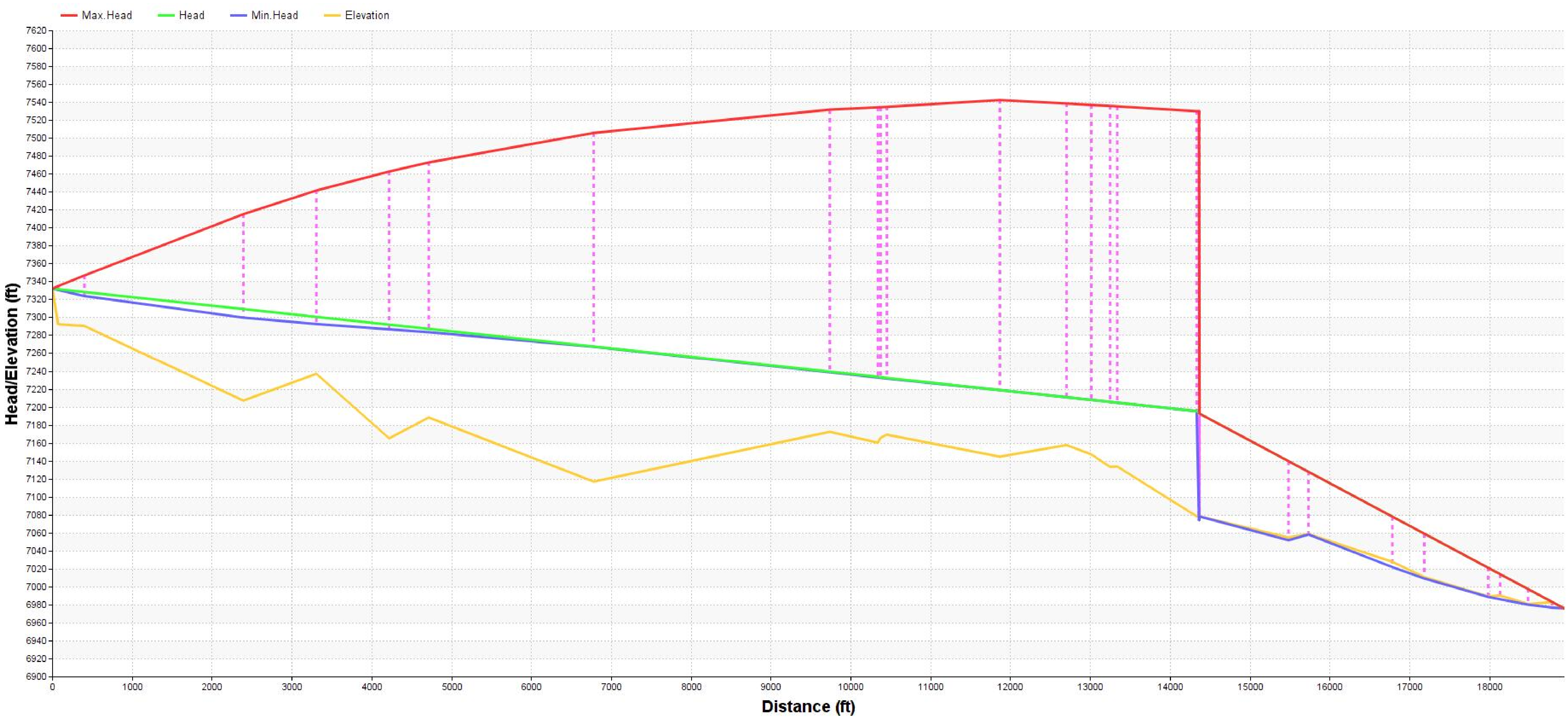


Exhibit 2.50a Surge Head Profile from Counselor Tank to Pumps (Protected Scenario: Pipe Break at STA 234+30)

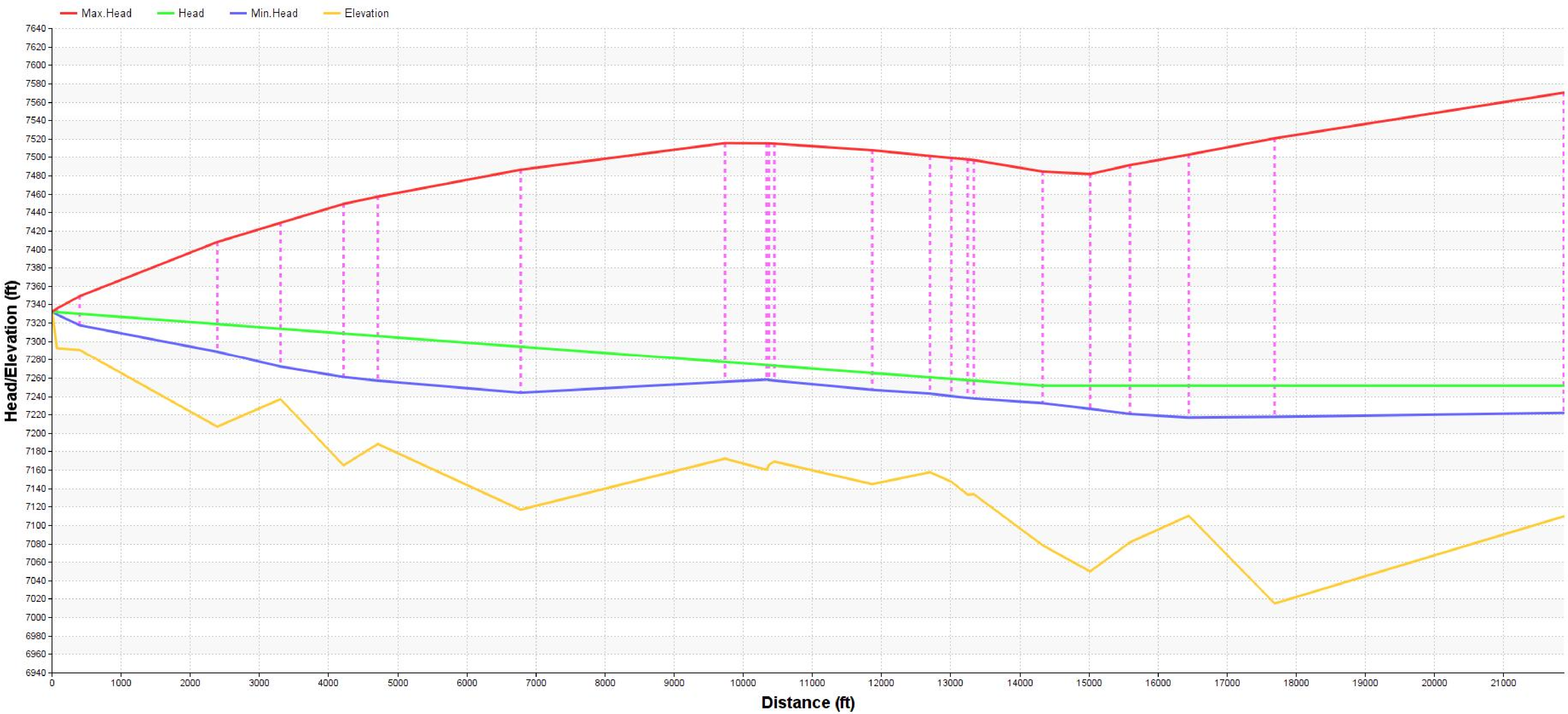


Exhibit 2.50b Surge Head Profile from Counselor Tank to Pipe Break at 234+30 (Reach 24.1 JAN) (Protected Scenario: Pipe Break at STA 234+30)

Exhibit 2.51a Surge Head Profile from Counselor Tank to Pumps (Protected Scenario: Pipe Break at STA 234+30)

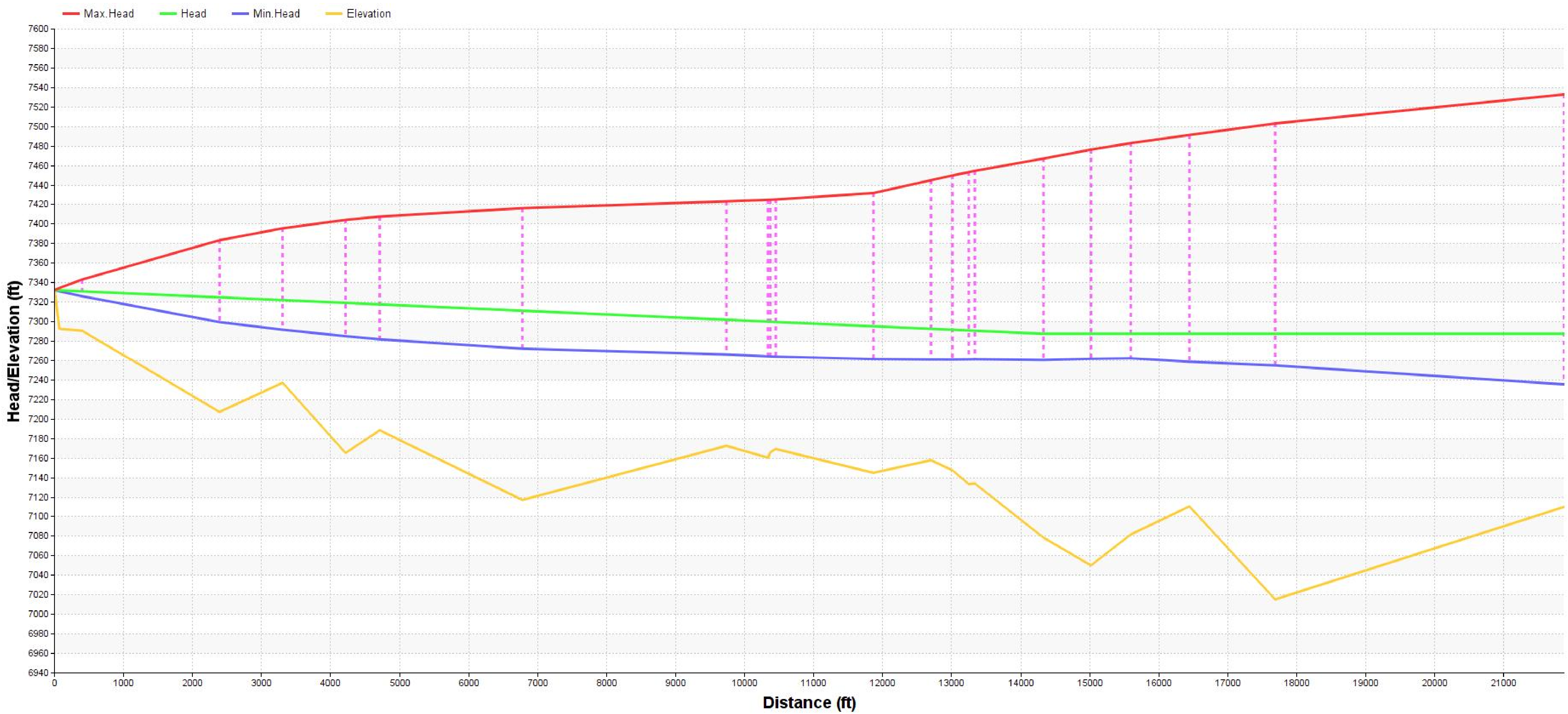


Exhibit 2.51b Surge Head Profile from Counselor Tank to Pipe Break at 289+80 (Reach 24.1 JAN) (Protected Scenario: Pipe Break at STA 289+80)

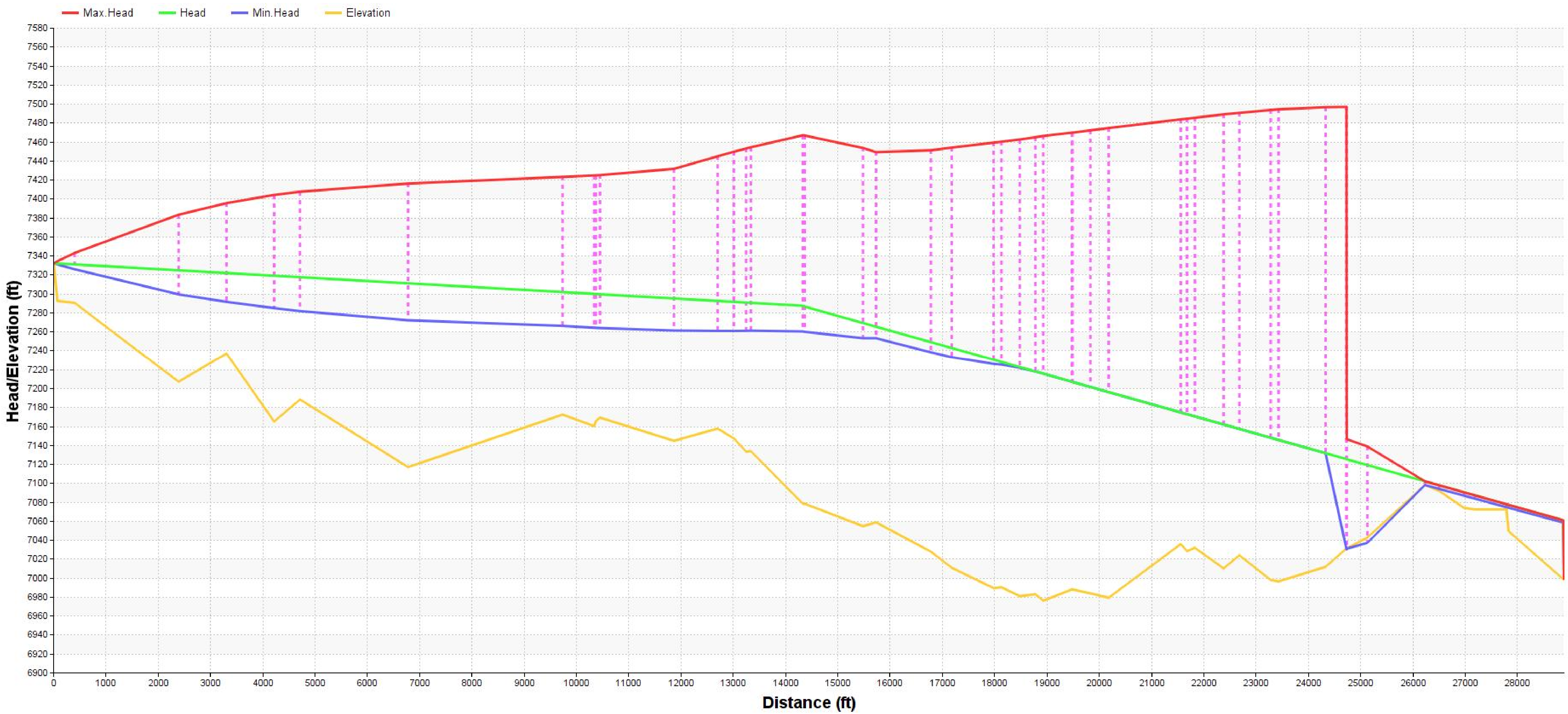


Exhibit 2.52a Surge Head Profile from Counselor Tank to Ojo Encino Tank (Protected Scenario: JAN FCV Fail Open)

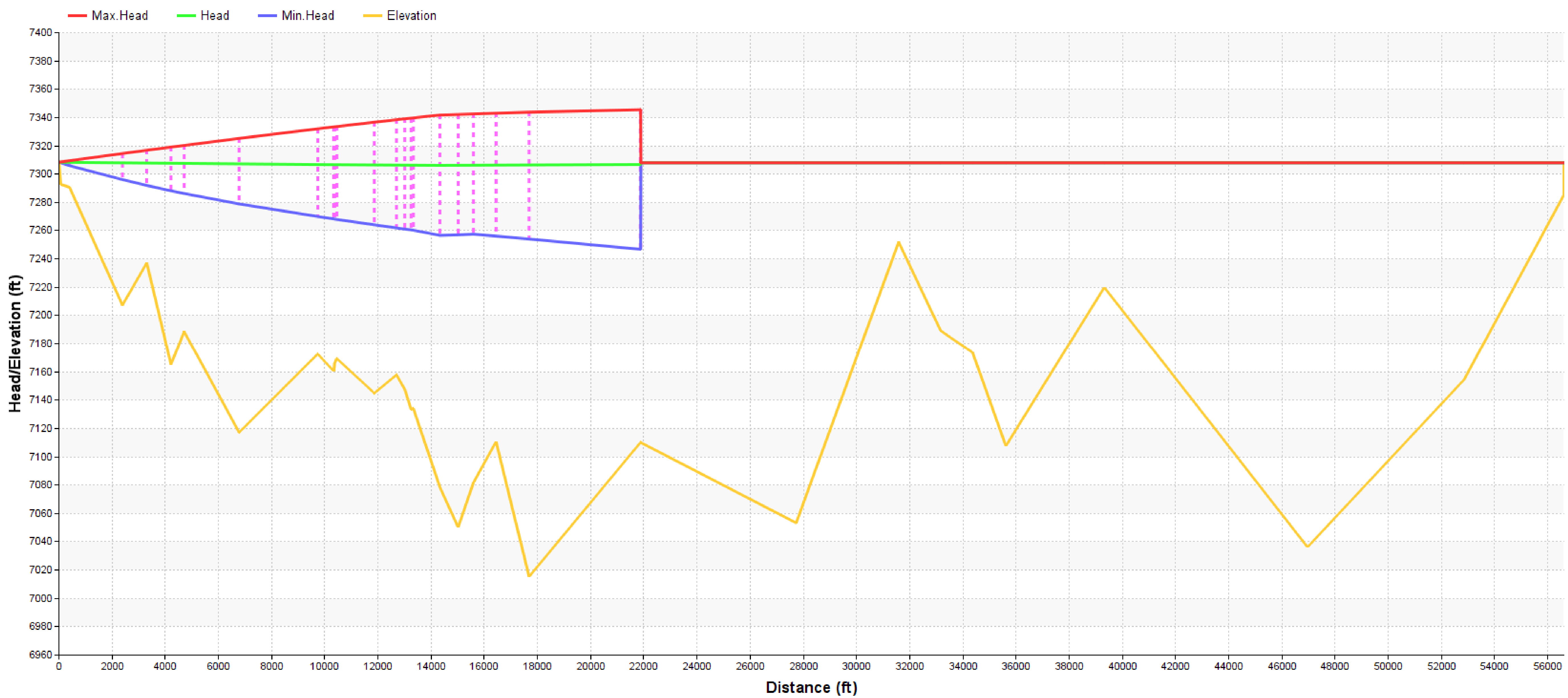
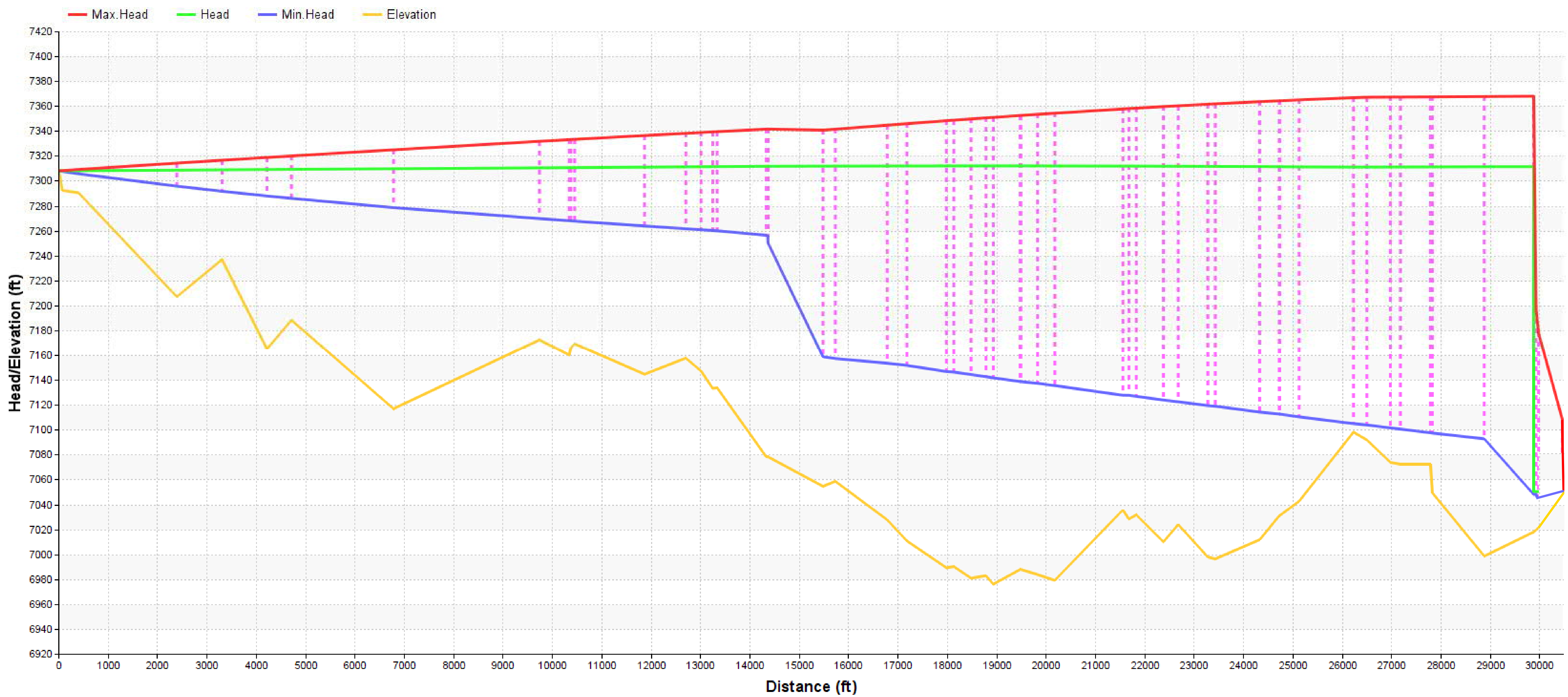


Exhibit 2.52b Surge Head Profile from Counselor Tank to JAN Tank (Protected Scenario: JAN FCV Fail Open)

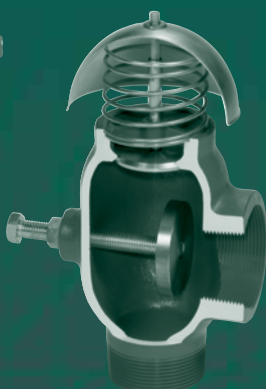


Attachment 4 – Sample Vacuum Breaker Valve, Altitude Valve, and Surge Tank Product Information

VAL-MATIC®

Protection
airValve
Efficiency
Bulletin 1500

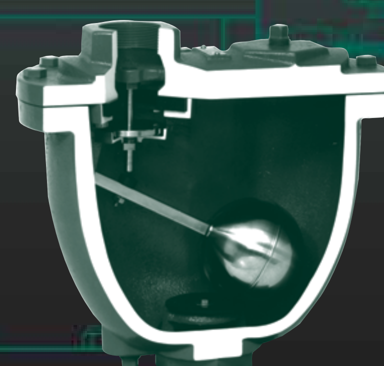
AIR VALVES



PROVIDING SYSTEM EFFICIENCY AND PROTECTION

CLASSIFIED UL® WATER QUALITY

NSF/ANSI 61 Certified



Surge-Suppression Air Valves

Operational Highlights:

- Provides full vacuum protection for the pipeline
- Provides slow closure suppressing surge in the pipeline
- Minimizes water blow-by during Air Valve closure
- Allows the use of smaller valve size by utilizing a maximum sizing differential pressure of 5 psig
- Releases entrained air while pipeline is operating to maintain pumping efficiency
- Fully complies with AWWA C512 and NSF 61

Clean Water*

Wastewater

Surge-Suppression Air Valve Features:

- Restrictor disc provides regulated exhaust to limit secondary surges during column separation
- Ability to adjust air exhaust for greater surge suppression
- Provides full vacuum flow port

Optional Accessories:

- Outlet hood with screen (prevents debris from entering valves)
- Ball and butterfly isolation valves (allows valve maintenance)
- Inflow Preventer on outlet (stops flood water and resulting contamination from entering pipeline)
- Backwash kit (for severe wastewater applications)

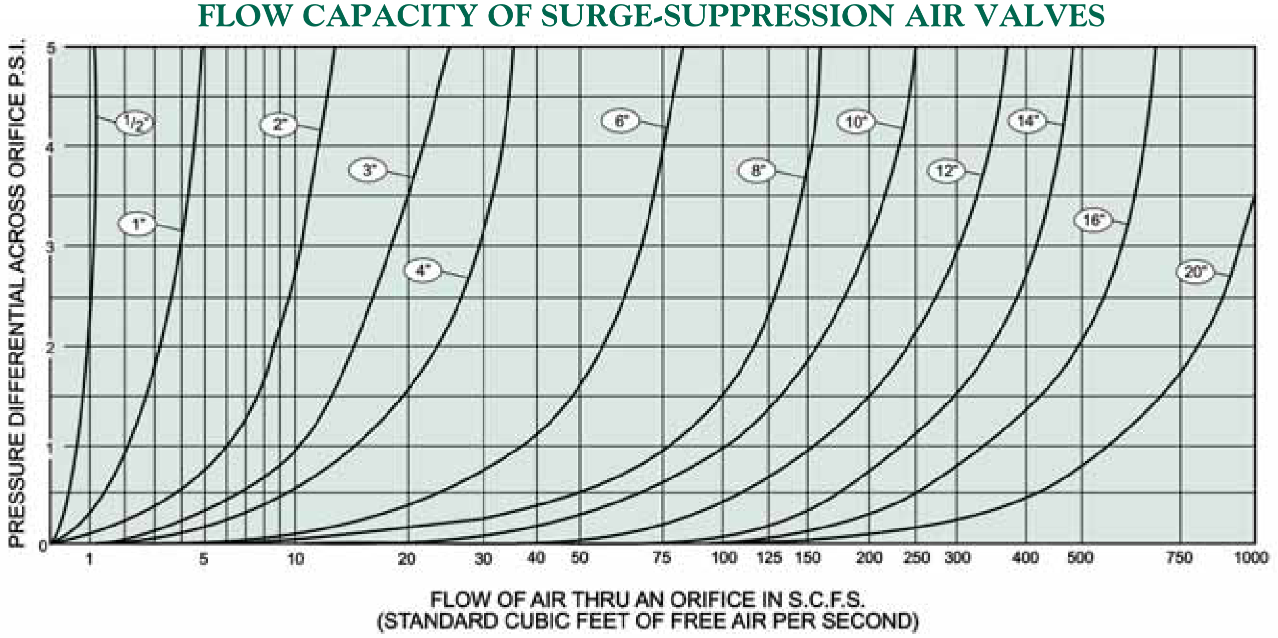
CLASSIFIED UL

*WATER QUALITY

MATERIALS OF CONSTRUCTION		
COMPONENT	**STANDARD**	**OPTIONAL**
Body	Cast Iron ASTM A126 Class B	Ductile Iron ASTM A536 Grade 65-45-12
Trim	Type 316 Stainless Steel (Air Valve) Bronze ASTM B584 C83600 (Reg. Exh. Dev.)*	Stainless Steel ASTM A351 Grade CF8M (Reg. Exh. Dev.)*
Exterior Coating	Universal Primer (external)	Non-Stick Fusion Bonded Epoxy (internal & external)

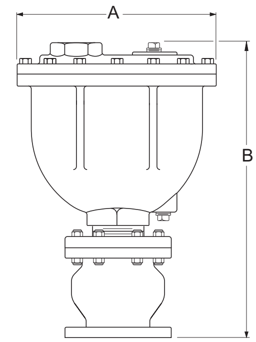
*(Reg. Exh. Dev.) = Regulated-Exhaust Device

FLOW CAPACITY OF SURGE-SUPPRESSION AIR VALVES



Surge-Suppression Air Valves
Installation Dimensions

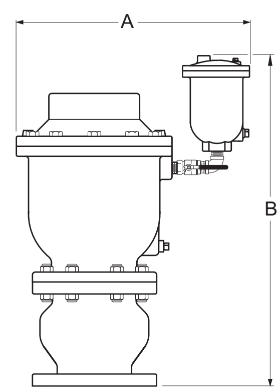
WATER SURGE-SUPPRESSION AIR VALVES (SINGLE BODY)						
Inlet Size	Outlet Size	Model Number	CWP PSI	Orifice Size	Dimensions	
					A	B
1” NPT	1” NPT	201CSS	250	5/64”	11 3/8”	13 5/8”
2” NPT	2” NPT	202CSS	250	3/32”	14”	17 1/4”
3” 125lb Flg	3” NPT	203CSS	300	3/32”	16”	22 3/4”
3” 250lb Flg	3” NPT	253CSS	300	3/32”	16”	22 3/4”
4” 125lb Flg	4” NPT	204CSS	300	3/32”	18 1/2”	27”
4” 250lb Flg	4” NPT	254CSS	300	3/32”	18 1/2”	27”
6” 125lb Flg	6” NPT	206CSS	150	3/8”	21”	30”
8” 250lb Flg	8” NPT	256CSS	300	7/32”	21”	30”
6” 125lb Flg	6” NPT	208CSS	150	3/8”	25”	36”
8” 250lb Flg	8” NPT	258CSS	300	7/32”	25”	36”



203CSS - 258CSS
Surge-Suppression Single Body Air Valves

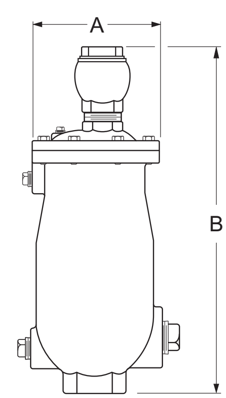
WATER SURGE-SUPPRESSION AIR VALVES (DUAL BODY)						
Inlet* Size	Outlet** Size	Model Number	CWP PSI	Orifice Size	Dimensions	
					A	B
4” 125lb Flg	4” NPT	104SS/38	150	3/16”	21”	29”
4” 250lb Flg	4” NPT	154SS/38.5	300	5/32”	21”	29”
6” 125lb Flg	6” NPT	106SS/38	150	3/16”	22 1/2”	33”
6” 250lb Flg	6” NPT	156SS/38.5	300	5/32”	22 1/2”	33”
8” 125lb Flg	8” NPT	108SS/38	150	3/16”	27”	38”
8” 250lb Flg	8” NPT	158SS/38.5	300	5/32”	27”	38”
10” 125lb Flg	10” Flg	110FSS/45	150	23/64”	33”	47”
10” 250lb Flg	10” Flg	160FSS/45.5	300	7/32”	33”	47”
12” 125lb Flg	12” Flg	112FSS/45	150	23/64”	37”	48 1/2”
12” 250lb Flg	12” Flg	162FSS/45.5	300	7/32”	37”	48 1/2”

* For sizes 14” - 20” Consult Factory
**All outlet flanges are class 125 lb.



104SS/38 - 162FSS/45.5
Surge-Suppression Dual Body Air Valves

WASTEWATER SURGE-SUPPRESSION AIR VALVES (SINGLE BODY)						
Inlet Size	Outlet Size	Model Number	CWP PSI	Orifice Size	Dimensions	
					A	B
2” NPT	1” NPT	801SS	150	1/8”	7”	18”
2” NPT	2” NPT	802SS	150	9/64”	9 1/2”	23”
3” NPT	3” NPT	803SS	150	11/64”	11”	33”
4” NPT	4” NPT	804SS	150	11/64”	11”	34”

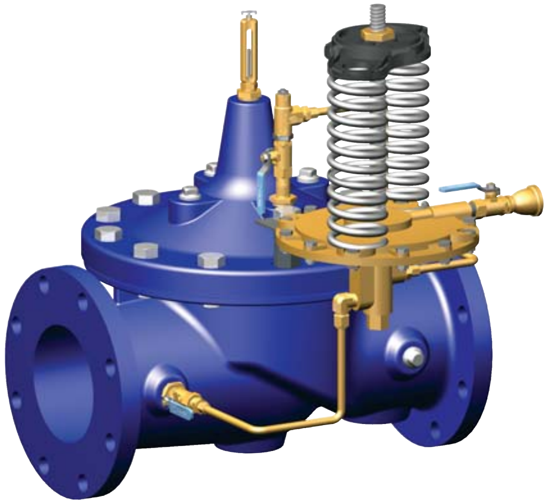


801SS - 804SS
Surge-Suppression Single Body Air Valves

CLA-VAL™

—MODEL— **210 Series** (Full Internal Port) **610 Series** (Reduced Internal Port)

Altitude Valve For One-Way Flow



Model 210-01/610-01

- **Accurate and Repeatable Level Control**
- **Drip-Tight, Positive Shut-Off**
- **Reliable Hydraulic Operation**
- **Easily Adjustable Control**
- **Completely Automatic Operation**

The Cla-Val Model 210-01/610-01 Altitude Valve controls the high water level in reservoirs without the need for floats or other devices. It is a non-throttling valve that remains fully open until the shut-off point is reached. This valve is designed for one-way flow only.

This valve is hydraulically operated and pilot controlled. The pilot control operates on the differential in forces between a spring load and the water level in the reservoir. The desired high water level is set by adjusting the spring force. The pilot control measures the reservoir head through a customer supplied sensing line* connected directly to the reservoir.

This valve can also be furnished with auxiliary controls to meet the need for multiple functions, such as: pressure sustaining, pressure reduction, rate of flow control, solenoid override, etc.

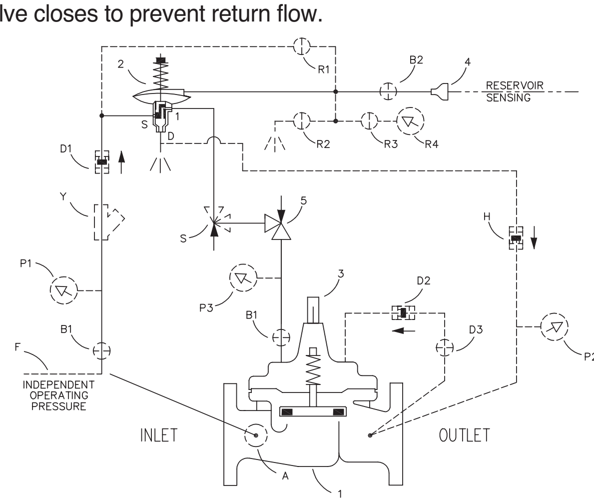
If the check feature option is added and a pressure reversal occurs, the reservoir pressure is admitted into the main valve cover chamber and the valve closes to prevent return flow.

Schematic Diagram

Item	Description
1	Hytrol (Main Valve)
2	CDS6A Altitude Control
3	X101 Valve Position Indicator
4	Bell Reducer
5	CV Flow Control (Closing)

Optional Features

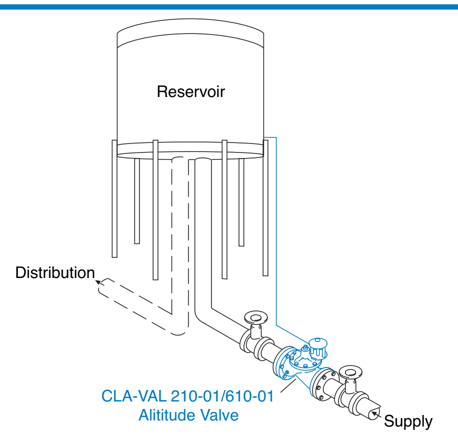
Item	Description
A	X46A Flow Clean Strainer
B	CK2 (Isolation Valve)
D	Check Valve with Isolation Valve
F	Independent Operating Pressure
H	Dry Drain
P	X141 Pressure Gauge
R	Reservoir Gauge with Tester
S	CV Flow Control (Opening)
Y	X43 "Y" Strainer



Typical Applications

Used on reservoirs where the water is withdrawn through a separate line or through a bypass equipped with a check valve. The valve opens to refill the reservoir when the water lowers aproximatly one foot below the shut-off level. For more information see data sheet E-CDS6A.

*Note: The reservoir pressure sensing line should be ¾" minimum I.D. installed with a 2° slope from the valve to the reservoir to avoid air pockets.



Model 210-02/610-02

Altitude Valve for Two-Way Flow with Delayed Opening

The Cla-Val Model 210-02/610-02 Altitude Valve controls the high water level in reservoirs without the need for floats or other devices. It is a non-throttling valve that remains fully open until the shut-off point is reached. This valve closes at the high water level, and for return flow, delays its opening until the pressure at the valve inlet lowers to a pre-set adjustable pressure of one to seven pounds.

This valve is hydraulically operated and pilot controlled. The pilot control operates on the differential in forces between a spring load and the water level in the reservoir. When the force of the spring is overcome by the force of the reservoir head, the pilot closes the main valve. The desired high water level is set by adjusting the spring force. The pilot control measures the reservoir head through a customer supplied sensing line* connected directly to the reservoir.

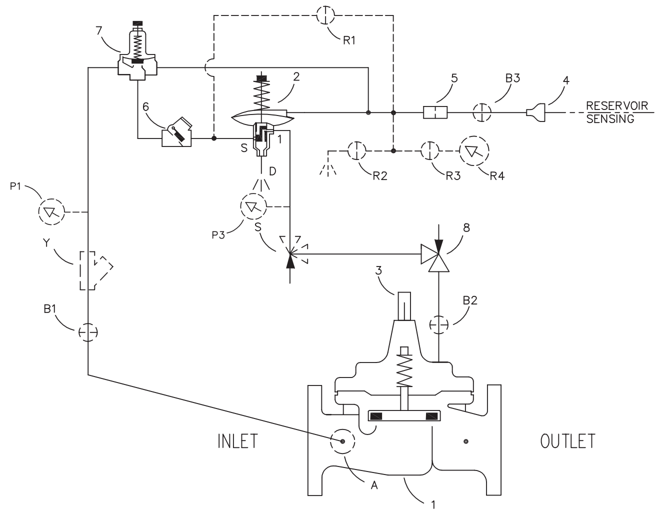
This valve can also be furnished with auxiliary controls to meet the need for multiple functions, such as: pressure sustaining, pressure reduction, rate of flow control, solenoid override, etc.

Schematic Diagram

Item	Description
1	Hytrol (Main Valve)
2	CDS6A Altitude Control
3	X101 Valve Position Indicator
4	Bell Reducer
5	X58A Restriction Assembly
6	CSC Swing Check Valve
7	CVC Flow Check Control
8	CV Flow Control (Closing)

Optional Features

Item	Description
A	X46A Flow Clean Strainer
B	CK2 (Isolation Valve)
P	X141 Pressure Gauge
R	Reservoir Gauge with Tester
S	CV Flow Control (Opening)
Y	X43 "Y" Strainer

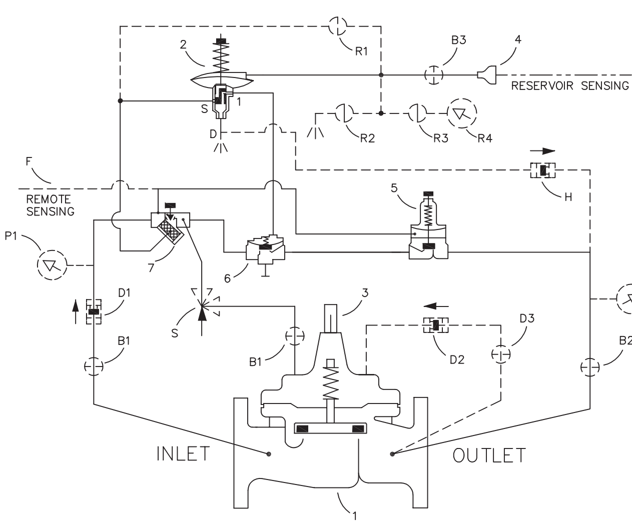


Schematic Diagram

Item	Description
1	Hytrol (Main Valve)
2	CDS6A Altitude Control
3	X101 Valve Position Indicator
4	Bell Reducer
5	CRL Pressure Relief Valve
6	100-01 Hytrol (Reverse Flow)
7	X42N-3 Strainer

Optional Features

Item	Description
B	CK2 (Isolation Valve)
D	Check Valves with Isolation Valve
F	Remote Pilot Sensing
P	X141 Pressure Gauge
R	Reservoir Gauge with Tester
S	CV Flow Control (Opening)



Model 210-09/610-09

Combination Altitude and Back Pressure Valve

The Cla-Val Model 210-09/610-09 Combination Altitude and Back Pressure Valve controls the high water level in reservoirs without the need for floats or other devices. The valve modulates to maintain upstream pressure within close limits to prevent over drawing system supply while filling reservoir. When the shut-off point of the hydraulic pilot control is reached, the valve closes smoothly without surges. This valve is designed for one-way flow only.

The 210-09/610-09 Valve is hydraulically-operated and pilot-controlled for optimum automatic level and pressure control. The level pilot control operates on a differential in forces between spring load and reservoir head level. When force of spring is overcome by force of reservoir head, the pilot shifts and closes main valve. Desired high water level is set by adjusting spring force. The level pilot control measures the reservoir head through a customer supplied separate sensing line* connected directly to reservoir. The pressure sustaining pilot control senses upstream system pressure and modulates the main valve more open on a rise in pressure to maintain a minimum inlet pressure when filling reservoir.

The valve can also be furnished with auxiliary controls to meet the need for additional functions, such as: rate of flow control, pressure reduction, solenoid override, etc. If the check feature option is added and a pressure reversal occurs, reservoir pressure is admitted into main valve cover chamber and valve closes to prevent return flow.

Model 210-16/610-16

Altitude Valve for Two-Way Flow

The Cla-Val Model 210-16/610-16 Altitude Valve controls the high water level in reservoirs without the need for floats or other devices. It is a non-throttling valve that remains fully open until the shut-off point is reached. This valve closes at a high water level, and opens for return flow when the pressure at the valve inlet is less than the reservoir pressure.

This valve is hydraulically operated and pilot controlled. The pilot control operates on the differential in forces between a spring load and the water level in the reservoir. When the force of the spring is overcome by the force of the reservoir head, the pilot closes the main valve. The desired high water level is set by adjusting the spring force. The pilot control measures the reservoir head through a customer supplied sensing line* connected directly to the reservoir.

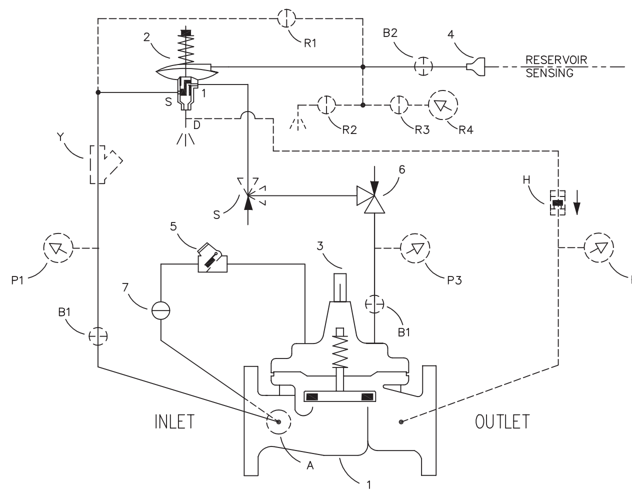
This valve can also be furnished with auxiliary controls to meet the need for multiple functions, such as: pressure sustaining, pressure reduction, rate of flow control, solenoid override, etc.

Schematic Diagram

Item	Description
1	Hytrol (Main Valve)
2	CDS6A Altitude Control
3	X101 Valve Position Indicator
4	Bell Reducer
5	Check Valve
6	CV Flow Control (Closing)
7	CK2 Isolation Valve

Optional Features

Item	Description
A	X46A Flow Clean Strainer
B	CK2 Isolation Valve
H	Dry Drain
P	X141 Pressure Gauge
R	Reservoir Gauge with Tester
S	CV Flow Control (Opening)
Y	X43 "Y" Strainer



Model 210-27/610-27

Altitude and Solenoid Shut-Off Valve with Return Flow Feature

The Cla-Val Model 210-27/610-27 Altitude Valve controls the high water level in reservoirs with out the need for floats or other devices. It is a non-throttling valve that remains fully open until the solenoid is activated or the shut-off point of the hydraulic pilot control is reached. The valve closes at high water level and opens for return flow when the pressure at the valve inlet is less than reservoir pressure.

This valve is hydraulically-operated and pilot-controlled. The level pilot control operates on the differential in forces between a spring load and reservoir head level. When force of the spring is overcome by the force of reservoir head, the pilot shifts and closes main valve. Desired high water level is set by adjusting the spring force. The pilot control measures the reservoir head through a customer supplied separate sensing line* connected directly to the reservoir. A three-way solenoid control and a high-capacity three-way pilot control valve provide override shut-off of valve from a remote location, such as a SCADA control system. It is furnished either normally open (de-energize solenoid to open) or normally closed (energize solenoid to open).

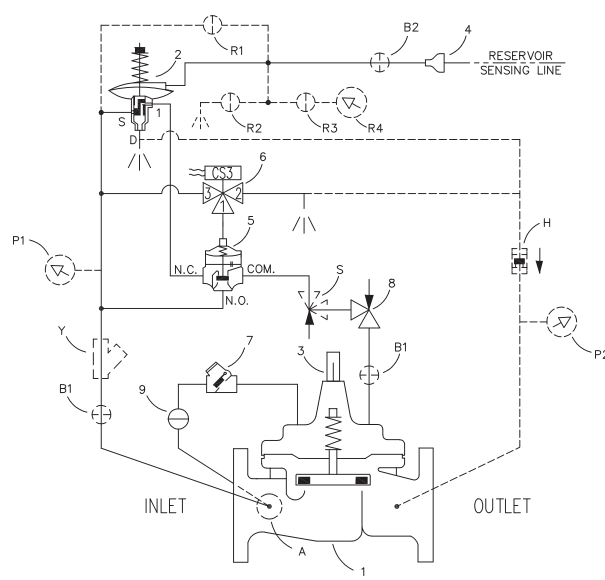
The valve can also be furnished with auxiliary controls to meet the need for additional functions, such as: pressure sustaining, rate of flow control, pressure reduction, etc.

Schematic Diagram

Item	Description
1	Hytrol (Main Valve)
2	CDS6A Altitude Control
3	X101 Valve Position Indicator
4	Bell Reducer
5	102C-3H Three Way Valve
6	CS3 Solenoid Control
7	CSC Swing Check
8	CV Flow Control (Closing)
9	CK2 (Isolation Valve)

Optional Features

Item	Description
A	X46A Flow Clean Strainer
B	CK2 (Isolation Valve)
H	CDC Check Valve
P	X141 Pressure Gauge
R	Reservoir Gauge with Tester
S	CV Flow Control (Opening)
Y	X43 "Y" Strainer



Pressure Ratings (Recommended Maximum Pressure - psi)

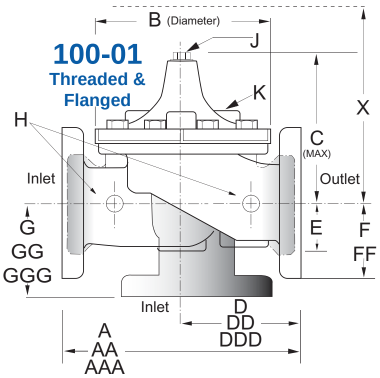
Valve Body & Cover		Pressure Class				
		Flanged			Grooved	Threaded
Grade	Material	ANSI Standards*	150 Class	300 Class	300 Class	End‡ Details
ASTM A536	Ductile Iron	B16.42	250	400	400	400
ASTM A216-WCB	Cast Steel	B16.5	285	400	400	400
ASTM B62	Bronze	B16.24	225	400	400	400

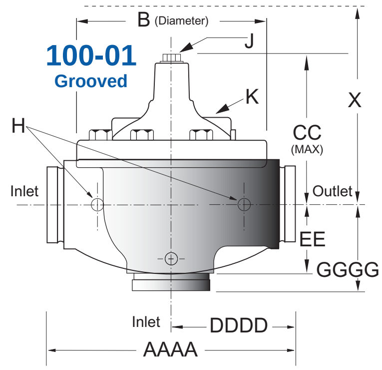
Note: * ANSI standards are for flange dimensions only.
Flanged valves are available faced but not drilled.
‡ End Details machined to ANSI B2.1 specifications.
Valves for higher pressure are available; consult factory for details

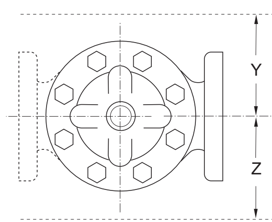
Materials

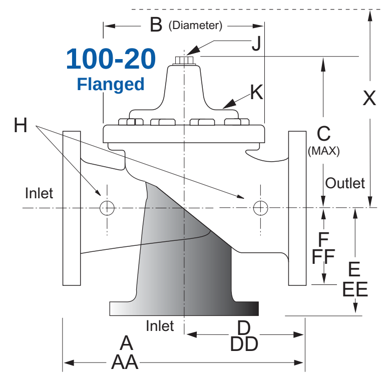
Component	Standard Material Combinations		
Body & Cover	Ductile Iron	Cast Steel	Bronze
100-01 Available Sizes	2" - 36"	2" - 16"	2" - 16"
100-20 Available Sizes	3" - 48"	3" - 16"	3" - 16"
Disc Retainer & Diaphragm Washer	Cast Iron	Cast Steel	Bronze
Trim: Disc Guide, Seat & Cover Bearing	Bronze is Standard Stainless Steel is Optional		
Disc	Buna-N® Rubber		
Diaphragm	Nylon Reinforced Buna-N® Rubber		
Stem, Nut & Spring	Stainless Steel		

For material options not listed, consult factory.
Cla-Val manufactures valves in more than 50 different alloys.









Model 100-01 Dimensions (Full Internal Port) (In Inches)

Note: The top two flange holes on valve size 36 are threaded to 1 1/2"-6 UNC.

Valve Size (Inches)	2	2 1/2	3	4	6	8	10	12	14	16	18	20	24	30	36
A Threaded	9.38	11.00	12.50	—	—	—	—	—	—	—	—	—	—	—	—
AA 150 ANSI	9.38	11.00	12.00	15.00	20.00	25.38	29.75	34.00	39.00	41.38	46.00	52.00	61.50	63.00	76.00
AAA 300 ANSI	10.00	11.62	13.25	15.62	21.00	26.38	31.12	35.50	40.50	43.50	47.64	53.62	63.24	64.50	76.00
AAAA Grooved End	9.00	11.00	12.50	15.00	20.00	25.38	—	—	—	—	—	—	—	—	—
B Dia.	6.62	8.00	9.12	11.50	15.75	20.00	23.62	28.00	32.75	35.50	41.50	45.00	53.16	56.00	66.00
C Max.	6.50	7.56	8.19	10.62	13.38	16.00	17.12	20.88	24.19	25.00	39.06	41.90	43.93	54.60	61.50
CC Max. Grooved End	5.75	6.88	7.25	9.31	12.12	14.62	—	—	—	—	—	—	—	—	—
D Threaded	4.75	5.50	6.25	—	—	—	—	—	—	—	—	—	—	—	—
DD 150 ANSI	4.75	5.50	6.00	7.50	10.00	12.69	14.88	17.00	19.50	20.81	—	—	30.75	—	—
DDD 300 ANSI	5.00	5.88	6.38	7.88	10.50	13.25	15.56	17.75	20.25	21.62	—	—	31.62	—	—
DDDD Grooved End	4.75	—	6.00	7.50	—	—	—	—	—	—	—	—	—	—	—
E	1.50	1.69	2.06	3.19	4.31	5.31	9.25	10.75	12.62	15.50	12.95	15.00	17.75	21.31	24.56
EE Grooved End	2.50	2.88	3.12	4.25	6.00	7.56	—	—	—	—	—	—	—	—	—
F 150 ANSI	3.00	3.50	3.75	4.50	5.50	6.75	8.00	9.50	10.50	11.75	15.00	16.50	19.25	22.50	25.60
FF 300 ANSI	3.25	3.75	4.13	5.00	6.25	7.50	8.75	10.25	11.50	12.75	15.00	16.50	19.25	24.00	25.60
G Threaded	3.25	4.00	4.50	—	—	—	—	—	—	—	—	—	—	—	—
GG 150 ANSI	3.25	4.00	4.00	5.00	6.00	8.00	8.62	13.75	14.88	15.69	—	—	22.06	—	—
GGG 300 ANSI	3.50	4.31	4.38	5.31	6.50	8.50	9.31	14.50	15.62	16.50	—	—	22.90	—	—
GGGG Grooved End	3.25	—	4.25	5.00	—	—	—	—	—	—	—	—	—	—	—
H NPT Body Tapping	.375	.50	.50	.75	.75	1	1	1	1	1	1	1	1	2	2
J NPT Cover Center Plug	.50	.50	.50	.75	.75	1	1	1.25	1.5	2	1.5	1.5	1.5	2	2
K NPT Cover Tapping	.375	.50	.50	.75	.75	1	1	1	1	1	1	1	1	2	2
Stem Travel	0.6	0.7	0.8	1.1	1.7	2.3	2.8	3.4	4.0	4.5	5.1	5.63	6.75	7.5	8.5
Approx. Ship Wt. Lbs.	35	50	70	140	285	500	780	1165	1600	2265	2982	3900	6200	7703	11720
X Pilot System	13	14	15	17	29	31	33	36	40	40	43	47	68	79	85
Y Pilot System	9	10	11	12	20	22	24	26	29	30	32	34	39	40	45
Z Pilot System	9	10	11	12	20	22	24	26	29	30	32	34	39	42	47

Model 100-20 Dimensions (Reduced Internal Port) (In Inches)

Note: The top two flange holes on valve sizes 36 thru 48 are threaded to 1 1/2"-6 UNC.

Valve Size (Inches)	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48
A 150 ANSI	10.25	13.88	17.75	21.38	26.00	30.00	34.25	35.00	42.12	48.00	48.00	63.25	65.00	76.00	94.50
AA 300 ANSI	11.00	14.50	18.62	22.38	27.38	31.50	35.75	36.62	43.63	49.62	49.75	63.75	67.00	76.00	94.50
B Dia.	6.62	9.12	11.50	15.75	20.00	23.62	27.47	28.00	35.44	35.44	35.44	53.19	56.00	66.00	66.00
C Max.	7.00	8.62	11.62	15.00	17.88	21.00	20.88	25.75	25.00	31.00	31.00	43.94	54.60	61.50	61.50
D 150 ANSI	—	6.94	8.88	10.69	CF*	CF*	CF*	CF*	CF*	CF*	CF*	—	—	—	—
DD 300 ANSI	—	7.25	9.38	11.19	CF*	CF*	CF*	CF*	CF*	CF*	CF*	—	—	—	—
E 150 ANSI	—	5.50	6.75	7.25	CF*	CF*	CF*	CF*	CF*	CF*	CF*	—	—	—	—
EE 300 ANSI	—	5.81	7.25	7.75	CF*	CF*	CF*	CF*	CF*	CF*	CF*	—	—	—	—
F 150 ANSI	3.75	4.50	5.50	6.75	8.00	9.50	11.00	11.75	15.88	14.56	17.00	19.88	25.50	28.00	31.50
FF 300 ANSI	4.12	5.00	6.25	7.50	8.75	10.25	11.50	12.75	15.88	16.06	19.00	22.00	27.50	28.00	31.50
H NPT Body Tapping	.375	.50	.75	.75	1	1	1	1	1	1	1	1	2	2	2
J NPT Cover Center Plug	.50	.50	.75	.75	1	1	1.25	1.25	2	2	2	2	2	2	2
K NPT Cover Tapping	.375	.50	.75	.75	1	1	1	1	1	1	1	1	2	2	2
Stem Travel	0.6	0.8	1.1	1.7	2.3	2.8	3.4	3.4	3.4	4.5	4.5	6.5	7.5	8.5	8.5
Approx. Ship Wt. Lbs.	45	85	195	330	625	900	1250	1380	1500	2551	2733	6500	8545	12450	13100
X Pilot System	13	15	27	30	33	36	36	41	40	46	55	68	79	85	86
Y Pilot System	10	11	18	20	22	24	26	26	30	30	30	39	40	45	47
Z Pilot System	10	11	18	20	22	24	26	26	30	30	30	39	42	47	49

The dark shaded portion of the chart illustrates the region where cavitation damage may occur. The lighter shaded portion is where significant cavitation noise and vibration may occur. Operating conditions inside the dark shaded area is permissible for infrequent periods of short duration. The guide is for modulating service valves. For on/off valves, consult factory.

The chart is based on cavitation index (sigma) values as defined by Utah State University Water Research Laboratory.

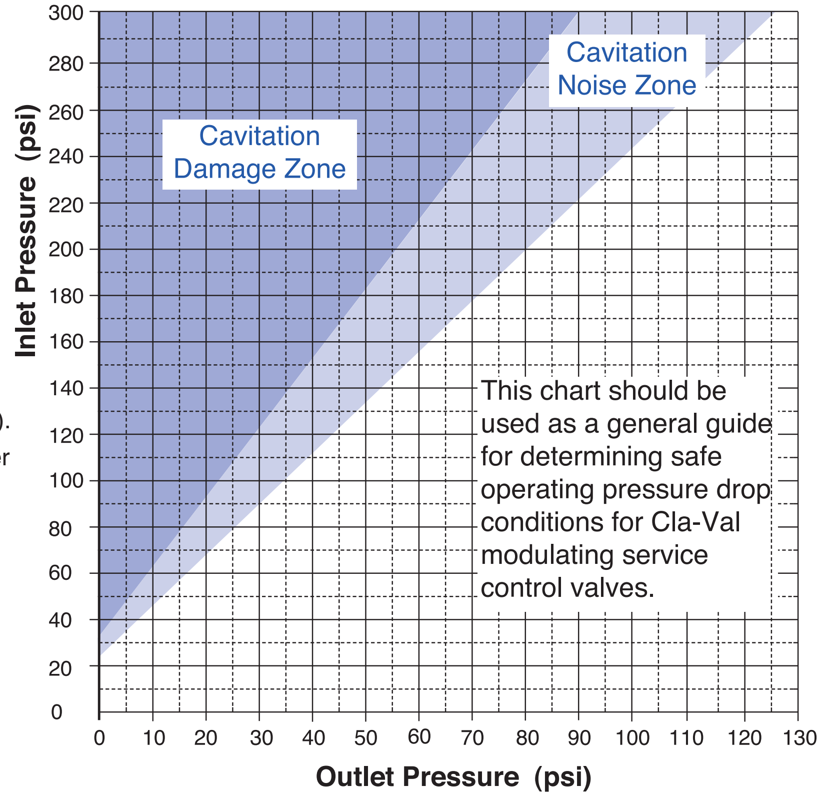
$$\sigma = \frac{(P_2 - P_v)}{(P_1 - P_2)} \quad \text{where}$$

σ = cavitation index, P_1 = inlet pressure (psi), P_2 = outlet pressure (psi), P_v = water vapor pressure (psia).

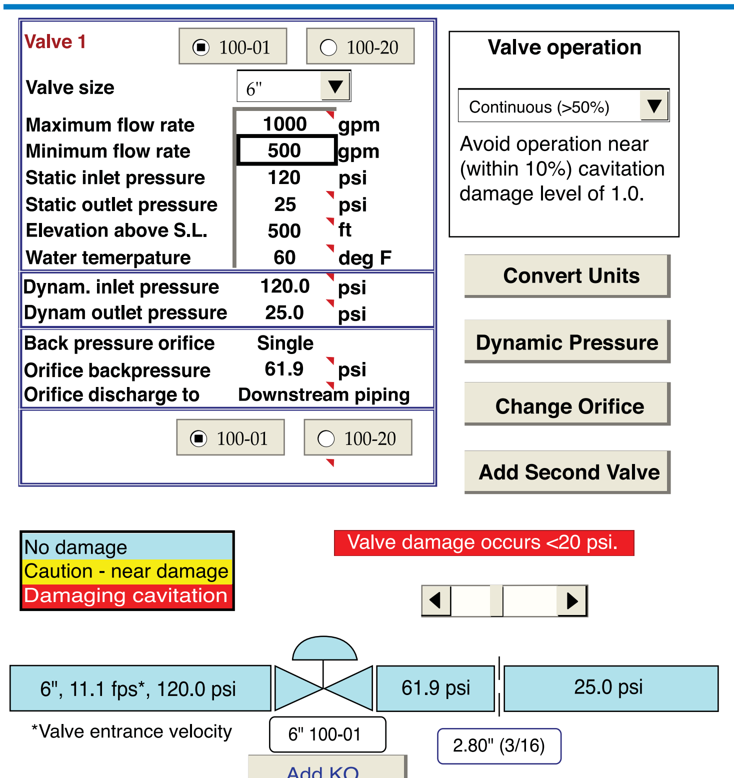
The dark shaded portion is below σ of 0.5 and the lighter shaded area is below σ of 0.8. The chart is to be used for typical valve operating conditions below 40% open at standard water temperature and elevation below 1000 feet.

More accurate cavitation conditions are determined from the **Cla-CAV** analysis program including static and dynamic inlet and outlet pressures, flow range, elevation, water temperature, and service conditions. If operation is inside the shaded areas, the **Cla-CAV** analysis can be used to determine whether added back pressure from an orifice plate, a second valve in series, or adding **KO** Anti-Cavitation trim (see 100-01KO data sheet) is necessary. Contact your Cla-Val representative for a free analysis.

Cavitation Zones 100-01/100-20

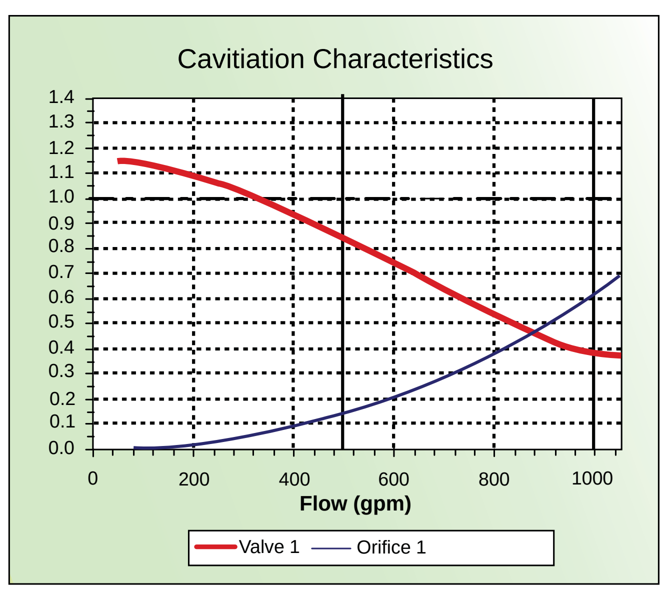


This chart should be used as a general guide for determining safe operating pressure drop conditions for Cla-Val modulating service control valves.



Valve 1	Flow Rate GPM	Inlet (psi)	Outlet (psi)	% Open	Pipe Vel. (ft/s)	Cav Damage
	50	120.0	25.1	9.1	0.6	Yes
	250	120.0	27.3	19.9	2.8	Yes
	500	120.0	34.2	24.9	5.6	No
	750	120.0	45.8	30.7	8.3	No
	1000	120.0	61.9	37.2	11.1	No

For a more detailed cavitation analysis or if operation will be outside of the above chart, request a **Cla-CAV** computer analysis. **Cla-CAV** can evaluate what options best solve any potential cavitation problem. In the example shown, a 6 inch 100-01 modulating service valve requires an orifice plate downstream to prevent damaging cavitation. For wider flow range service, either an extra valve in series or the addition of **KO** Anti-Cavitation trim to the valve may be necessary (see 100-01KO data sheet). Consult factory for a free analysis for wide open or modulating service valves.



If the lines go above 1.0 there will be cavitiation damage.

210 Series Valve Selection	100-01 Pattern: Globe (G), Angle (A), End Connections: Threaded (T), Grooved (GR), Flanged (F) Indicate Available Sizes															
	Inches	2	2½	3	4	6	8	10	12	14	16	18	20	24	30	36
	mm	50	65	80	100	150	200	250	300	350	400	450	500	600	750	900
Basic Valve 100-01	Pattern	G, A	G, A	G, A	G, A	G, A	G, A	G, A	G, A	G, A	G, A	G	G	G, A	G	G
	End Detail	T, F, Gr	T, F, Gr*	T, F, Gr	F, Gr	F, Gr*	F, Gr*	F	F	F	F	F	F	F	F	F
Suggested Flow (gpm)	Maximum	210	300	460	800	1800	3100	4900	7000	8400	11000	14000	17000	25000	42000	50000
	Maximum Intermittent	260	370	580	990	2250	3900	6150	8720	10540	13700	17500	21700	31300	48000	62500
Suggested Flow (Liters/Sec)	Maximum	13	19	29	50	113	195	309	442	530	694	883	1073	1577	2650	3150
	Maximum Intermittent	16	23	37	62	142	246	387	549	664	863	1104	1369	1972	3028	3940

100-01 Series is the full internal port Hytrol. *Globe Grooved Only

610 Series Valve Selection	100-20 Pattern: Globe (G), Angle (A), End Connections: Flanged (F) Indicate Available Sizes															
	Inches	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48
	mm	80	100	150	200	250	300	350	400	450	500	600	750	900	1000	1200
Basic Valve 100-20	Pattern	G	G, A	G, A	G, A	G	G	G	G	G	G	G	G	G	G	G
	End Detail	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Suggested Flow (gpm)	Maximum	260	580	1025	2300	4100	6400	9230	9230	16500	16500	16500	28000	33500	33500	33500
Suggested Flow (Liters/Sec)	Maximum	16	37	65	145	258	403	581	581	1040	1040	1040	1764	2115	2115	2115

100-20 Series is the reduced internal port size version of the 100-01 Series.

210 Series/610 Series Pilot System Specifications

Temperature Range, and Materials Apply to all 210 Series/610 Series

Notes:
If flowing line pressure is less than 10 psi, consult factory for full details.

Temperature Range

Water: to 180°F

Materials

Standard Pilot System Materials

Pilot Control: Bronze ASTM B62
Trim: Stainless Steel Type 303
Rubber: Buna-N® Synthetic Rubber

Optional Pilot System Materials

Pilot Systems are available with optional Aluminum, Stainless Steel, or Monel materials.

Valve position indicator is standard

Pilot System Adjustment Ranges

Model 210-01/610-01

CDS6A Pilot
5 to 40 ft.
30 to 80 ft.
70 to 120 ft.
110 to 160 ft.
150 to 200 ft.

Model 210-02/610-03

CDS6A Pilot
5 to 40 ft.
30 to 80 ft.
70 to 120 ft.
110 to 160 ft.
150 to 200 ft.

Model 210-03/610-03

CDS6A Pilot
5 to 40 ft.
30 to 80 ft.
70 to 120 ft.
110 to 160 ft.
150 to 200 ft.

Model 210-16/610-16

CDS6A Pilot
5 to 40 ft.
30 to 80 ft.
70 to 120 ft.
110 to 160 ft.
150 to 200 ft.

*Supplied unless otherwise specified Other ranges available, please consult factory

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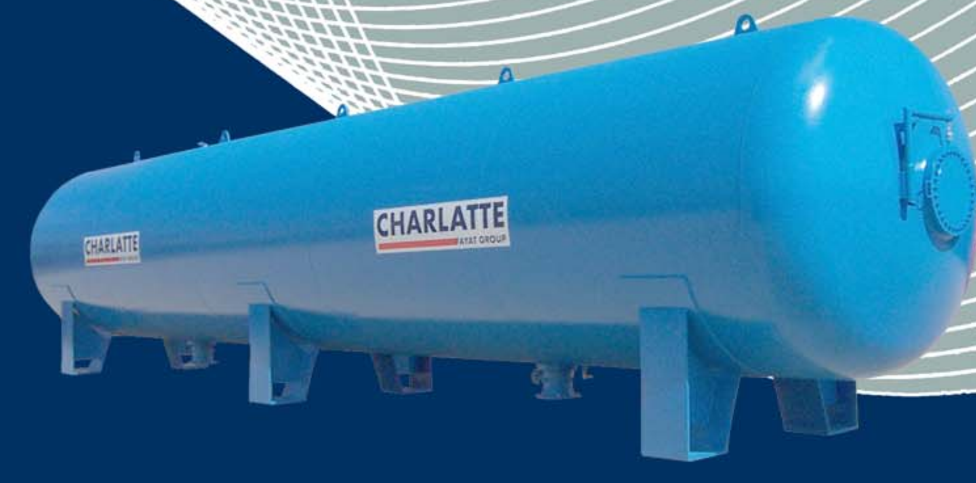

Hydraulic Vessels

CHARLATTE
AMERICA
FAYAT GROUP

Charlatte of America Hydraulic Vessel Division
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Tel: (276) 326-1510 - Fax: (276) 326-1602
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Visit our website: www.CharlatteTanks.com

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World Leader

For over 50 years, CHARLATTE has been a leader in the design and manufacturing of Hydropneumatic bladder-type vessels for use in RAW, WASTE and POTABLE water applications such as SURGE protection, PRESSURE regulation, PUMP cycle control and PRESSURIZED storage.

Charlatte is present in over 80 countries and five continents.

Experience

The sizing of CHARLATTE HYDRAULIC vessels is undertaken by specially trained hydraulic engineers equipped with advanced modeling software for optimizing and controlling pressures throughout pipe systems and networks.

To inquire about our HYDRAULIC studies, please see our contact information.

Quality

All CHARLATTE bladder vessels are manufactured to ASME section VIII with the “U” stamp, National Board Registered and can also carry UM Listing and ISO 9001 version 2000 certificate.

CHARLATTE potable water bladder vessels are completely NSF approved for all materials, components and model names. HYDROFORT/HYDROCHOC.

ASME SETTING THE STANDARD 1880 2005

NSF

NB

Technology

WASTE/RAW WATER bladder tanks (vertical only) from 50 to 20,000 gallons.

POTABLE WATER bladder tanks (vertical or horizontal) from 26 to 32,000 gallons.

Operating pressure to 1,400 psi.

Large Vessel

793 to 18492 Gallons

RANGE clear water

SURPRESSION ● REGULATION ● PROTECTION ANTI-BELIER

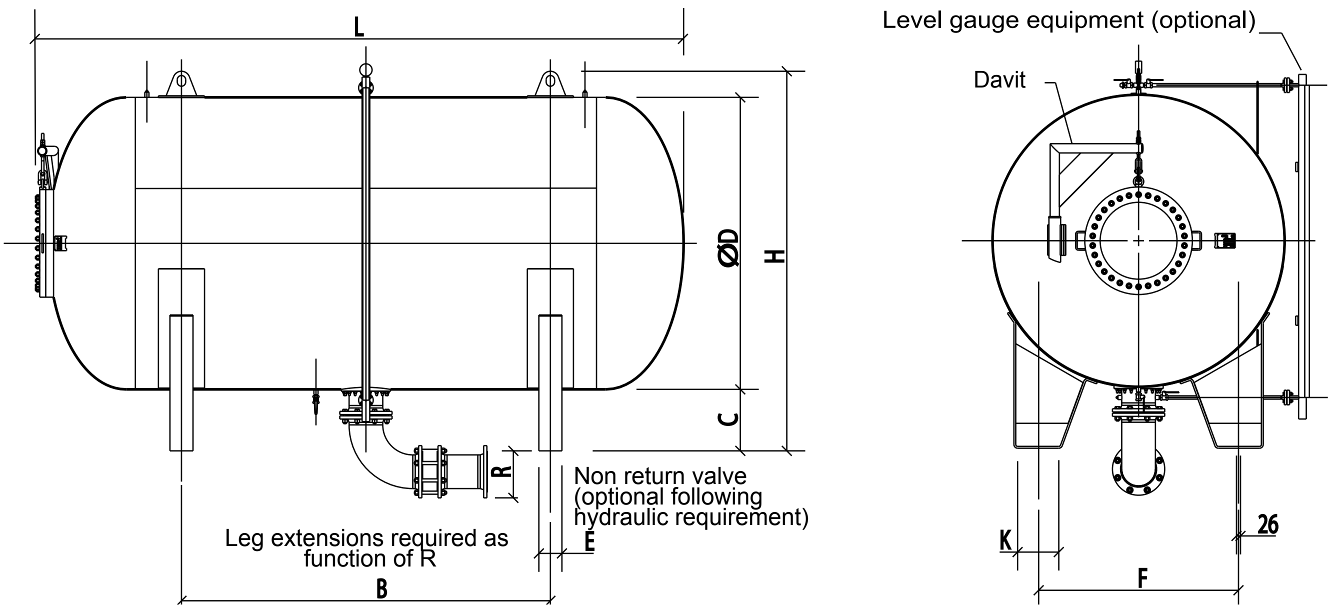
Large vessels with food quality butyl bladder

PAINT
Internal. NSF 61 approved epoxy paint, thickness upon request.
External. Anti corrosion polyurethane finishing, thickness upon request.

BLADDER
Interchangeable food quality butyl.

WARRANTY
Not including parts subject to wear and tear and subject to use under normal conditions.

PACKING
Without.



Capacity G	Diameter D	Length L	Height H	Size B	Size E	Size F	Size K	Size C	Davit
793	47	119	70	63	6	35	7	16	No
1057	47	150	70	94	6	35	7	16	No
1321	59	125	81	67	6	47	6	16	No
1585	59	158	81	87	6	47	6	16	No
1849	59	176	81	98	6	47	6	16	No
2113	59	196	81	126	6	47	6 6	616	No
2378	59	215	81	146	6	47	6	16	No
2642	75	167	97	87	6	51	11	16	Yes
2642	83	140	105	63	12	63	13	16	Yes
3170	75	189	97	118	6	51	11	16	Yes
3170	83	163	105	87	12	63	13	16	Yes
3963	75	233	97	146	6	51	11	16	Yes
3963	83	194	105	118	12	63	13	16	Yes
4755	75	283	97	205	6	51	11	16	Yes
4755	83	236	105	154	12	63	13	16	Yes
5283	75	305	97	217	6	51	11	16	Yes
5283	83	250	105	173	12	63	13	16	Yes
6604	75	374	97	224	6	51	11	16	Yes
6604	83	307	105	217	12	63	13	16	Yes
6604	98	219	130	124	20	75	20	23	Yes
7925	83	307	105	224	12	63	12	16	Yes
7925	98	269	130	165	20	75	20	23	Yes
9246	98	313	130	213	20	75	20	23	Yes
9246	118	230	150	118	20	75	20	23	Yes
10567	118	253	150	142	20	75	20	23	Yes
13209	118	308	150	197	20	75	20	23	Yes
15850	118	367	150	236	20	75	20	23	Yes
18492	118	426	150	295	20	75	20	23	Yes

Contact us for upper capacities.
The dimensions shown are indicative and can be modified without warning.

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