Cuyama Basin Monitoring Networks Chapter
Summary of Public Comments and Responses
January 25, 2019

Comment #	Section	Section Paragraph #	Paragraph's Sentence #	Sentence Starts with, "...	Comment	Response to Comment
163	General				Areas with known data gaps. Very few wells were selected for the Monitoring Network within the southeastern part of the basin (near and upstream of Ventucopa). Ventura County Watershed Protection District maintains 51 wells in the area (Table 4-11, Figure 4-12), and private landowners have indicated they provided data to WC for additional wells in this area. It may be useful to reconsider inclusion of some of these wells into the network, to obtain better representation in this area of the basin. A pre-existing well with known construction data and some measurements is preferable to nothing, as long as the well is in acceptable condition.	Additional wells have been added to the monitoring network in these region.
164	General				Field confirmation of selected Network wells. Anecdotally, some older historically gauged wells under consideration for inclusion within the network may have failed, allowing annular or aquifer materials into the casing, and altering their effective screened intervals. We recommend field-confirmation of total depths and general condition of wells selected for the network, particularly in areas of sparse well data density where each well represents large areas of the basin.	Comment noted. This can be addressed when the monitoring network is finalized during the GSP implementation phase.
165	General				Surface water monitoring. Discussion of interconnected surface water monitoring is deferred until after numerical modeling is complete.	Comment noted.
166	Pg. 4-14				Places where the relationships between sets of wells and databases is confusing: The distinction between California State Groundwater Elevation Monitoring (CASGEM) and other Department of Water Resources (DWR) wells is confusing. The text refers to Figure 4-3 as CASGEM wells, but the map labels say "DWR Database Wells." There appear to be 222 wells on the map, not 113. Terminology between text, table, and figure is inconsistent.	The text has been revised for clarity.
167	Pg. 4-28				Places where the relationships between sets of wells and databases is confusing: "IRLP [sic] water quality measurements are sampled from surface locations." Why are Irrigated Lands Regulatory Program (ILRP) sites included in the groundwater quality database (see label and caption for Figure 4-10)? It is unclear whether all the sites in Table 4-9 are groundwater sites.	ILRP stations were utlized in the quality monitoring because surface flows within the basin, except during signifincantly high flow events, percolate into the groundwater system. These water qulaity measurements may be useful to provide information to the GSA as to the quality of water that enters the groundwater system.
168	Pg. 4-29				Places where the relationships between sets of wells and databases is confusing: The relationship between databases from ILRP, California Environmental Data Exchange Network (CEDEN), U.S. Geological Survey (USGS), and National Water Quality Monitoring Council (NWQMC) is confusing. We suggest clarifying this point, perhaps using a Venn diagram or a similar graphic.	The text has been revised for clarity.
169	Pg. 4-40				Monitoring network selection issues: Proposed Monitoring Network tiers reflect priorities in the following order: (i) recent data, (ii) frequent data, (iii) known construction information. This is reasonable if monitoring is limited only to acquisition of data from existing programs. However, if the network is selected to meet SGMA requirements and monitor specifically for the GSA, then construction information and future well access is more important than frequency of past measurements and (to an extent) more important than the date of the most recent measurement. Additionally, no discussion was provided of data by which the wells were determined to be representative of the basin.	There is not adequate information on well construction and well access to base well selection on these criteria. These will need to be considered as the monitoring program is developed during the GSP implementation phase.
170	Pg. 4-35				Monitoring network selection issues: How were private landowner TDS values obtained? What was the context of the monitoring? Will landowners be enlisted to continue monitoring? How will this be accomplished if so?	Comment noted. This can be addressed when the monitoring network is finalized during the GSP implementation phase.
171	Pg. 4-45				Monitoring network selection issues: "Wells with multiple depths..." The vertical distribution of representative wells is not discussed. It appears here as a goal, but there is no indication of the depth distribution of the representative network.	Criteria Updated.
172	Pg. 4-53				Monitoring network selection issues: "...Established to monitor for salinity." What about other constituents from the groundwater conditions GSP chapter?	The text has been revised to describe the rationale for establishing the monitoring network only for salinity.

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173	Pg. 4-53				Monitoring network selection issues: "...Unlikely to be monitored again by that monitoring agency." Will the GSA rely on the agencies to continue monitoring? Will the GSA attempt to share monitoring activity with the agency, ensure the network is monitored through their own funding?	Comment noted. This can be addressed when the monitoring network is finalized during the GSP implementation phase.
174	Pg. 4-58				Monitoring network selection issues: "Well/measurement depths for three-dimensional constituent mapping." Was this considered in the section discussing groundwater level data gaps?	Not directly. We anticipate that the GSA will first need to focus on filling spatial data gaps in the monitoring network.
175	Pg. 4-37				Text issues: Section 4.3.4 discusses CGPS stations on Figure 2.2-22. The Monitoring Networks section needs its own figure showing subsidence monitoring stations, including CGPS stations. Also, on the same page an unreferenced "subsidence white paper" is attributed to Appendix Z, which likely is a placeholder. The paper needs a complete reference.	The figure in Chapter 2 is sufficient. The white paper is an appendix to the Groundwater Conditions chapter - the reference has been revised for clarity.
176	Pg. 4-39				Text issues: Section 4.5.1, discussing Management Areas, may be out of date. Several other sections discussing Management Areas also may no longer be accurate.	This section will be developed when the Board provides direction on management areas in the Basin.
177	Pg. 4-62				Text issues: The subsidence monitoring network section should at least mention critical or subcritical infrastructure likely to be affected by subsidence. If none exists, it may be helpful to state this and cite as the reason that limited subsidence monitoring will be required.	The data gaps section identifies areas that may be critically affected by subsidence.
178	Pg. 4-18				Table issues: Shouldn't "Number of SBCWA wells included in the Monitoring Network" be less than "Number of SBCWA wells"? The distinction between these categories is unclear. There is no discussion of why some are included, and others are not.	The text has been revised for clarity.
179	Pg. 4-24				Table issues: CCSD well table shows two wells with longest period of record 37 years and median 11 years. This is not possible given only two wells.	Table has been updated
180	Pg. 4-47 - 4-49				Table issues: Suggest adding a table number and identification on each page of the multi-page table.	The table format has been revised
181	General				Figure issues: When map figure discussions in the text name geographic features, those features should be shown and labeled on the map (e.g., Pages 4-14, 4-18).	The text has been revised for clarity.
182	Figure 4-2				Figure issues: Are all the hydrograph wells within this oval? Why focus on such a small part of the basin? This cannot be the extent of agriculture. Wells shown on hydrographs should be labeled on the map.	Yes. A single area was selected for presentation purposes as using all wells within the central basin would create a hydrograph that would not be useful or legible.
183	Figure 4-15				Figure issues: As discussed above, the selection scheme values a monthly monitoring record over knowledge of critical well construction data (screened or perforated interval). We rather suggest swapping the criteria for Tier 2 and Tier 3. Also, text explaining the criteria for each tier needs to be increased in size for readability.	Suggestion noted but not included. Every well with data from 2017-2018 was included in the montioring network regaurdless of well construciton information or frequency of measurement.
184	Figure 4-17				Figure issues: Faults should be included on this figure (and on most if not all water level monitoring network figures), especially since they were discussed in the monitoring well selection rationale.	Faults have been added to 4-16 and 4-17
185	Figure 4-19				Figure issues: What are "Non-Groundwater Quality Monitoring Network Wells"? This should be explained in the text.	Wells have been removed from figure.
186	Figure 4-20				Figure issues: This map distinguishes between Representative Wells and Active Groundwater Quality Monitoring Network Wells. The text says that all water quality network wells are representative wells.	Figurue and text has been updated.
187	Pg. 4-20				Misc/Minor: "East of Highway 33" should be "west of Highway 33."	This has been fixed.
188	Figure 4-2				Misc/Minor: Data series labels on the plot should be clearer or larger.	This has been fixed.
189	Pg. 4-26				Misc/Minor: "Landowners have provided data on 99 wells." Needs discussion of how the data were requested and obtained.	The text has been revised for clarity.
190	Pg. 4-28				Misc/Minor: Throughout the document, Irrigated Lands Regulatory Program is abbreviated as "IRLP" rather than "ILRP."	This has been fixed.
191	Pg. 4-44				Misc/Minor: "Proximity to other prominent features such as faults..." Based on this statement it is unclear - should monitoring wells be near or far from faults?	The text has been revised for clarity.

Cuyama Basin DMS
Summary of Public Comments and Responses
January 25, 2019

Comment #	Section	Section Paragraph #	Paragraph's Sentence #	Sentence Starts with, "...	Comment	Response to Comment
	Comments on DMS Section					
1	General				The GSP chapter and DMS appear to fulfill the basic requirements of GSP Regulation § 352.6 - Data Management System.	Comment noted. No change required in document.
2	Table 6-2				All data types within the DMS are listed in Table 6-2, but it is unclear which data are minimum required information (e.g., latitude and longitude) and which are optional parameters (e.g., casing perforations).	The table and text have been revised to indicate required fields.
3	6.3	3	2	In many cases ...	The chapter states "In many cases, there were discrepancies between ground surface elevation (GSE) of the well from different sources. In these cases, the ground surface elevation of the well was updated using the USGS digital elevation model." This might cause problems with calculation of water-level elevations, as the USGS DEM is less precise than surveyed GSE values, and based on a 30 meter by 30 meter horizontal resolution. DEM elevation values are interpolated and averaged within each model element. The use of DEM elevation data could affect assumed groundwater flow directions in areas with shallow groundwater gradients. More information should be provided to demonstrate the adequacy of this approach over evaluating and selecting the most likely of the elevations published in original data sources for the wells. At the least, wells with groundwater elevations calculated using DEM values should be flagged clearly in hydrographs, piezometric surface maps, and other interpretations.	Comment noted. The data used in the model can be re-evaulated in the future as the monitoring network is implemented and more data is available.
4	General				For "more detailed" instructions on DMS use, the user is referred to a sparse one-page user guide. Some pertinent details of user interaction and function limits could be provided, for example restrictions on data downloads for review of well construction details.	Comment noted. The Opti User Guide is a 17 page user manual for data managers and is provided separately from the 1 page Opti Quick Start Guide. The User Guide will be linked to the DMS Section upon finalization.
5	6.2.1 User and Data Access...			Private data is monitoring data...	Please clarify, it is unclear if private data can be edited by ANY private user. Also, how is this performed? For example, is the private data associated to the user type with parcel/well id	The text has been revised for clarity. Sites (wells, gages, etc.) and their associated data (whether private, shared, or published) may only be edited by Administrators and Power Users associated with the Managing Entity.
6	6.2.2 Data Entry and Validation	1	3	The data is validated using...	Please clarify -Who is performing and verifying the quality control checks?	The text has been revised for clarity. The system runs some validation checks to alert users to potential data quality issues. The data is validated by the Managing Entity's Administrators or Power Users.
7	6.2.2 Data Entry and Validation - Data Collection...	1	2	In the Data Entry tool, new sites may be added by...	Please explain who is verify the data entry? Is the data being flagged as new, so it can be reviewed later by the GSA Board?	The text has been revised for clarity to match the existing conditions. If process changes are required for GSA Board review, the DMS can be configured to meet those needs during the implementation phase.
8	6.2.2 Data Entry and Validation - Monitoring Data...			Quality Flag	Please explain the term "Quality Flag" and how is it used and by whom	The text has been revised for clarity. Quality flags are associated with individual measurements and include quality assurance descriptions (e.g., "Pumping", "Can't get tape in casing", etc.). The quality flags should be documented by the person taking the measurement.
9	6.2.2 Data Entry and Validation - Data Validation	3	2	Users may access partially completed...	Consider adding a note to the bottom of the page to reference that this is a partially completed import validation, in case of data discrepancies.	The text has been revised for clarity. Partially completed logs are currently identified as incomplete in the DMS import logs.
10	6.3 Data Included in the Data...	2		Groundwater Elevation (2 parameters)...	Please list these parameters. The GSA Board may need this information to resolve any data discrepancies. Can the list of parameters grow?	The text has been revised to list parameters. The list of parameters can grow as the needs of the GSA change over time.
11	6.2 Functionality of the Data...	2	3	For more detailed instructions on ...	Provide a hyperlink to the user's guide here	Comment noted. Hyperlink will be included upon finalizing and posting the User Guide.
12	6.2.2 Data Entry and Validation	1	1	To encourage agency and user participation...	This possibly helps maintain consistency but how do these tools improve data quality? Data quality is a function of training, following protocols, and equipment calibrations combined to create defensible data. It even mentions below in Data Validation that these data may not be accurate.	Comment noted. The text has been revised for clarity.
	Comments on topics separate from the DMS Section					
13	General				Clustering effects. The potential effect of data clustering on conclusions drawn from parts of the network with very high well densities also is not discussed. The well density discussion needs to consider the potential effects of data clustering on conclusions drawn from aggregation of water level data. For example, if Undesirable Results are defined as a certain percentage of monitoring network wells experiencing water levels below their Minimum Thresholds, clustering of wells through intentional "selection of additional wells in heavily pumped areas" may artificially magnify the apparent portion of the basin affected, increasing the likelihood of it being judged as out of compliance with sustainability criteria.	This was accounted for in the selection of wells included in the Representative Monitoring Network, and will be addressed in the Sustainability Thresholds GSP section.
14	General				A number of properties including well construction details and measuring-point (MP) and ground surface (GS) elevations cannot be queried in the public "Opti" interface. Some of the data can be viewed on a well-by-well basis, but the use of tables and queries is very limited. This lack of transparency makes quantitative evaluation by outside parties difficult.	Comment noted. No change required in document. Will evaluate as enhancements to Opti query tool during implementation phase.
15	General				Queries seem to hang without producing consistent results depending on the browser used to access the website. For example, the Opti system seems to produce better results using Google Chrome than Mozilla Firefox, and Microsoft Internet Explorer is stated as not compatible at all.	Comment noted. No change required in document. Will evaluate Opti query tool performance.

Cuyama Basin DMS
Summary of Public Comments and Responses
January 25, 2019

Comment #	Section	Section Paragraph #	Paragraph's Sentence #	Sentence Starts with, "...	Comment	Response to Comment
16	General				A few queries to test the site's functions revealed some potential structural problems with the DMS. In one example, a query for all wells with Managing Agency = Cuyama Basin GSA returns an extensive list of wells but when the data are downloaded to an Excel format file, only subsidence data for two sites (not wells, apparently) are produced. In another example, a query for Reference ET > 0 appears to be coded into the menu system but running the query produces no records.	Could not reproduce results described. A query for all wells with Managing Entity = "Cuyama Basin GSA" and subsequent Excel export produced expected results. More information is needed to try and identify the issue described. The system is coded for more data types (e.g., Reference ET) than are currently collected for future expansion of data efforts.
17	6.2 Functionality of the Data...				Please clarify - Does the GSA need agreements with well owner for the information they are supplying? For example, if someone is adding a new well to the DMS, can the board use the well data in their monitoring network? What is the GSA process to approve a new groundwater well for the DMS?	These issues will be addressed during the GSP implementation phase.
18	6.2.1 User and Data Access...				Please clarify - Does the DMS track what data was changed and by what user?	The data record and user associated with measurement data entry/modification is stored in the DMS but not currently viewable in the tabular data output.
19	6.2.1 User and Data Access...			System Administrator users manage,,,	Please clarify - Who is the system administrator? Does the GSA need to designate someone?	Currently, the Consultant team is the System Administrator. The GSA can designate a System Administrator as desired.
20	6.2.1 User and Data Access...			The Cuyama Basin GSA is...	Please clarify term "Cuyama Basin GSA" – Do you mean GSA Board members, Executive Director, or both? Do you need the Board to address this and list who is the managing entity(ies)?	It is currently the Executive Director and GSA consultants. The GSA Board will decide on the appropriate party for managing the DMS in the future.
21	Table 6-2			Data Collection Site Information	Is there a way to rank the groundwater well locations/elevations on accuracy? For example, rank (1) – accurate with little risk to location/ elevation to rank 3 – not as accurate, considering surveying the groundwater well to verify location/elevation	That ranking does not currently exist in the DMS, but can be added is needed during the implementation phase.
22	6.2.2 Data Entry and Validation - Monitoring Data...	1	1	Monitoring data including but not limited to...	Would Land Use data be included in this data set?	Land use is currently not included in this dataset. Additional data needs can be evaluated and potentially included during the implementation phase.
23	6.2.2 Data Entry and Validation - Data Validation				To help address data questions, is there a column to note who revised or entered the data?	The data record and user associated with measurement data entry/modification is stored in the DMS but not currently viewable in the tabular data output.
24	6.2.2 Data Entry and Validation - Data Validation	1	2	The entities that maintain the monitoring data...	Who will keep the DMS maintained and updated?	DMS maintenance and update will be determined by the Cuyama Subbasin GSA Board.
25	6.2.2 Data Entry and Validation - Data Validation	1	2	The entities that maintain the monitoring data...	Please list all assumptions made for the database, such as locations of each well and how they were verified, such as by a GPS survey, lats/logs, google maps, and etc. Consider approaching the GSA Board with a disclaimer on the DMS for data and accuracy.	Comment noted. A disclaimer window has been added upon logging into the DMS.
26	6.2.2 Data Entry and Validation - Data Validation	2	1	Upon saving the data in the data entry interface...	Can the GSA Board increase the list of data validation checks?	Comment noted. No change required in document. Will work with Cuyama Subbasin GSA to evaluate need for additional data validation checks during implementation phase.
27	6.2.3 Visualization and Analysis	1	1	Transparent visualization and analysis	Can it be incorporated into their own DMS system?	There are many options for integrating different DMS systems and functionalities. These options and the exact requirement would need to be identified and evaluated for inclusion during the implementation phase.
28	6.3 Data Included in the Data...	5	2	Using the DMS data viewing capabilities...	Consider asking the GSA Board, if they would like a list of recommendations to this chapter, such as below. 6.4 RECOMMENDATIONS Recommendation to survey each groundwater well, as discussed on Page 7 of the DWR BMP Groundwater Monitoring Protocols, Standards, and Sites Best Management Practice, December 2016. •The elevation of the Reference Point (RP) on the well casing of each well must be surveyed to the North American Vertical Datum of 1988 (NAVD88), or a local datum that can be converted to NAVD88. The elevation of the RP must be accurate to within 0.5 foot. It is preferable for the RP elevation to be accurate to 0.1 foot or less.	Comment noted. This can be addressed by the GSA Board during the implementation phase.
29	General				The Data Management System has been developing with steady improvements being made over time. However, several issues with functionality and the need for more complete data inputs still persist. The wells in the Monitoring Network are not in a viewable layer. And a search by State ID #s is not cross referenced with the Opti ID #s, challenging the users ability to find a particular well.	Comment noted. The DMS will be updated to display wells in the Monitoring Network once the Monitoring Network has been finalized. State Well Numbers and Opti IDs (Site Name) are cross referenced in the Site List. Consultant team will evaluate updating the Query tool to reflect the cross reference and update functionality as needed during the implementation phase.

Cuyama Basin DMS
Summary of Public Comments and Responses
January 25, 2019

Comment #	Section	Section Paragraph #	Paragraph's Sentence #	Sentence Starts with, "...	Comment	Response to Comment
30	6.2.2 Data Entry and Validation, page 6-2				Although some of the critically important data has be entered, many of the data parameters on table 6-2 are completely blank throughout the DMS. The fields that are most important to understanding the aquifer a particular well might represent is the depth and casing perforation intervals. None of this is available in Opti, yet. I'm told much of this data is in W&C's hands, but are not able to be input due to time & budget. Why can't the wells selected for the Groundwater Level Monitoring Network be viewed as a subset or a seperate layer? Same for any of the other sites in the Monitoring Network? Which wells are the representative Groundwater Quality Monitoring wells? If "The data is validated using a number of quality control checks prior to inclusion in the DMS." What are the QC/QA checks? As we move forward, in order to help promote user confidence in the data stored and published in the DMS, some ground truthing and well site canvassing will be required by a licensed hydrogeologist to verify and complete the understanding of the Monitoring Network wells and their data.	Comments noted. Additional data may be added during the implementation phase. The DMS will be updated to display wells in the Monitoring Network once the Monitoring Network has been finalized. The QC/QA checks performed by the DMS are listed in Section 6.2.2 and include: • Duplicate measurements: The database checks for duplicate entries based on the unique combination of site, data type, date, and measurement value. • Inaccurate measurements: The database compares data measurements against historical data for the site and flags entries that are outside the historical minimum and maximum values. • Incorrect data entry: Data field entries are checked for correct data type, e.g., number fields do not include text, date fields contain dates, etc.
31	6.2.4 Query and Reporting, page 6-5				The query tool does not allow a well to be searched by the various other ID#s like the State Well ID, USGS Code, or CASGEM ID, even when this data is present. This is unnecessarily cumbersome. A cross reference table should be made available if the DMS can't search for it. The Analysis Tools and the toolbox mentioned sounds very helpful but it is not part of the DMS. Will the DMS ever actually offer any of these analysis tools, including contouring, total water budget visualization, and management area tracking?	Enhancements to the Query tool will be evaluated and implemented as needed during the plan implementation phase. The tools discussed in the DMS section of the GSP are currently available for non-public users. Access will be granted for Monitoring Entities and their associated users to these tools. Additional tools will be made available as needed during the implementation phase.
32	6.1 Overview of the Cuyama Basin....	2	3	The site may be accessed here:	Where will this site ultimately reside? It shouldn't be in the system of W&C, nor should their name be part of this URL. Does the GSA own the DMS and will it have access once W&C's contract ends?	To be determined by the Cuyama Subbasin GSA Board. W&C can direct the DMS to a domain of the GSA's choosing.
33	6.2.2 Data Entry and Validation - Data Collection...	1	2	In the Data Entry tool, new sites may be added by...	May not want to provide access to create new sites to too many users. This could create issues with overlap.	Comment noted. Access will be determined by Cuyama Subbasin GSA Board.
34	6.2.2 Data Entry and Validation - Data Collection...	1	3	Existing sites may be updated using the Edit Site...	A feature should be added (similar to the CASGEM portal) which automatically tracks ALL edits to data and site information to include date/time/user/edit.	Comment noted. Will evaluate feasibility and address during implementation phase.
35	6.2.2 Data Entry and Validation - Data Collection...	2	1	The information that is collected for sites...	Many of these items could use additional clarification for the user and entity inputting these data. Examples include..... 1)-Lat/Long-accuracy and how was the information obtained. Cell phone, GPS, DGPS, etc. NAD27 or NAD83, or.....? 2)-Accuracy of GSE and how was the information obtained? NAVD29 or NAVD88 or....?	Comment noted. Will evaluate feasibility and address during implementation phase.
36	6.2.2 Data Entry and Validation - Monitoring Data...				Can we add a function to upload photos and measurement field notes? Storing this original data and viewing changes to the well head over many years will be useful. I can't tell if these are options, but additional things to add to this list are..... 1)-Time of measurement. 2)-Status (pumping, nearby pumping, dry, flowing, etc) 3)-Accuracy of measurement 4)-Equipment used to make the measurement (steel tape, electric tape, etc.) and was this equipment calibrated? Calibration paperwork should be loaded to this data portal for reference. 5)-Things noted in Supplemental Info are mentioned in Table 6.2 and linked to the well. These shouldn't be changed during measurements unless the reference point changed as a result of breaking or modification.	Comment noted. Will evaluate feasibility and address during implementation phase.
37	6.2.2 Data Entry and Validation - Data Validation	1	1	Quality control helps ensure the integrity....	Data validation is a huge issue in the basin, but we understand this section is strictly related to the DMS. Possibly a footnote explaining this issue with data quality should be provided to the user. Possibly verification/statement that certain protocols were followed when making the measurement? Additionally, data quality can be better verified by adding entries which..... 1)-indicate data accuracy (0.01 ft, 0.1 ft, 0.5 ft, to the nearest foot, etc). 2)-equipment calibration 3)-where two consecutive measurements completed? 4)-availability of field notes	Comment noted. Will evaluate feasibility and address during implementation phase.
38	6.2.2 Data Entry and Validation - Data Validation	2		Inaccurate measurements: The database...	Many of the historical data were collected by private entities with no QA/Q processes in place. In addition, in a declining basin, one would expect to continually see entries outside the historical minimum values.	Comment noted. No change required in document.
39	6.2.2 Data Entry and Validation - Data Validation	3	3	This allows a second person to also access the...	There should be confirmation that 2 individuals reviewed these data. Possibly an option for a second user to login and initial that the data have been visually confirmed.	Comment noted. Will evaluate feasibility and address during implementation phase.
40	General				Where there are multiple data sources for one site that the most negative data be assumed as the most accurate pending implementation of the monitoring system	Comment noted. Will evaluate feasibility and address during implementation phase.

Cuyama Basin Water Budget Section
Summary of Public Comments and Responses
April 22, 2019

Comment #	Section	Section Paragraph #	Paragraph's Sentence #	Sentence Starts with, "…	Comment	Response to Comment
1	2.3.4 Water Budget…Current and Projected	1		Because there is no basis to assume any changes in Cuyama Basin	Consider adding projects to the projected water budget.	The Water Budget section on sustainable yield now includes an analyses that incorporates potential projects.
2	General Comments				"As defined by the Groundwater Sustainability Plan (GSP) regulations promulgated by the California Department of Water Resources (DWR), the water budgets section is intended to quantify the following: (5) If overdraft conditions occur, a quantification of overdraft over a period of years during which water year and water supply conditions approximate average conditions." These are the only two times the word "overdraft" is used in this whole chapter, yet the data indicates that of the 60 TAF extracted every year from the Cuyama Groundwater Basin for agriculture, 23 to 26 TAF of it is in excess of available recharge, otherwise known as "overdraft". That's 44% overdraft, almost ½ the amount that is being extracted. That is before climate change or GDEs are factored into the budget. Yet there is not one mention of the word overdraft! Change in Storage is an unclear euphemism that must be qualified with another disassociating term, such as positive/negative or gain/loss. In a basin that is designated by DWR as critically overdrafted, the GSP should not be hiding the problem behind misleading terminology that downplays the issue. Call it by its real name; Overdraft.	A note has been added that reduction in storage is overdraft.
3	2.3.5 Water Budget Estimates				The terms used for the components of the surface and groundwater budgets should be clearly defined in a Useful Terms section. What is specifically meant by these terms and how are they calculated,estimated or measured; Evapotranspiration, Deep Percolation, Applied Water, Runoff, Stream Seepage, Subsurface inflow, Reduction in storage	A Useful Terms section has been added
4	2.3.6 Historical Water Budget			The Basin average annual historical groundwater budget has greater	This sounds like chronic overdraft. To accurately quantify it would be to compare it to the total pumping demand. 23 TAF/Y has no reference to the basin as a whole. 44% overdraft is a quantification. The decision makers who are charged with balancing this basin are not well served when the problem is not clearly stated.	Required pumping reductions to eliminate overdraft are now quantified in the sustainable yield section.
5	2.3.7 Current and Projected Water Budget				The water budget considers native vegetation within the surface water system of the water budget. Native vegetation evapotranspiration (174,000 AFY) is a significant portion (60%) of the average annual surface water budget. Because the section of the report related to Groundwater Dependent Ecosystems is not yet available for review, it is unknown if some portion of the native vegetation could be utilizing groundwater as its water source. It is also recognized that this is one of the many real data gaps, as this Basin's hydrologic connection to the native ecosystems is poorly understood. The Project of Rangeland Management fits in here with a possible win/win between ecological services and a water Budget. Fire, as a management strategy for maintaining a more mature natural ecosystem, can augment groundwater recharge in the main basin. Where is the Data Gap section to help refine this understanding to help improving these Thresholds into the future.	GDEs are now discussed in the Groundwater Conditions section. The rangeland management project is not included in the GSP per direction from the Board
6	2.3.7 Current and Projected Water Budget				The text incorrectly identifies Figure 2.3-9 and Figure 2.3-10 as historical when they are current and projected numbers. The text also fails to quantify the overdraft of 42% by only stating that the "budget has greater outflows than inflows, leading to an average annual decrease in groundwater storage of 25,000 AF" By presenting only the value of the imbalance, the degree of overdraft is not conveyed and the severity of the situation is avoided and misrepresented. This is an unacceptable disservice to contextual understanding, which misleads and decontextualized the situation to decision-makers and stakeholders.	The text has been corrected. Required pumping reductions to eliminate overdraft are now quantified in the sustainable yield section.
7	Table 2.3-4: Current and Projected				What is meant by these Water Year Types? How many inches of rain per type of water year? This table could be informative if it had more reference or context. What is the % of normal or average?	Water year types were developed for the Cuyama Basin based on historical Basin precipitation.
8	2.3.8 Sustainable Yield Estimate				DWR requires an estimate of sustainable yield for the basin. Why is this incomplete? This section can be developed without the projects and management actions modeling analysis. Why not estimate the Sustainable Yield for the baseline condition before projects and management actions? Some amount less than the sum of Deep Percolation + Stream Seepage + Subsurface Inflow would be a Sustainable Yield. That's < 35,000 AF or 56% of currant pumping. Quantify what we do already know.	Sustainable yield information is now included in the section.
9	General Comments				It is disingenuous to present alarming data without reference or context for the understanding of its severity. DWR requires the quantification of the overdraft. W&C has not only failed to clearly quantify the degree of overdraft, but they refrained from even using the term at all. For the sake of stakeholder understanding and effective decision making it is critical that all information is presented in full context. Complex issues need their significance and their implications explained clearly.	A note has been added that reduction in storage is overdraft.
10	2.3.1 Water Budget Information	3			It would be useful to be more specific which regulations are binding than the entire California Code of Regulations.	A footnote has been added as suggested below.
11	Figure 2.3-2				Please double-check the cumulative departure calculations. Based on visual inspection, the calculations appears to be off in places (e.g., 2003 received 12 inches below average precip, but the cumulative departure only drops about 8 inches)	The figure has been updated
12	2.3.4 Water Budget…Current and Projected	1		This baseline uses current land and water use	This is not accurate based on previously presented information in the Technical Forum. It was previously understood that you are varying assumed land use going forward to match historical changes in annual crops.	The text has been revised for clarity.
13	General Comments				There does not appear to be a placeholder for a projected groundwater budget considering climate change.	A section on climate change has been added.
14	2.3.1 Water Budget Information	3		In this document, consistent with the	Suggest citing in footnote: California Code of Regulations, Title 23. Waters, Division 2. Department of Water Resources, Chapter 1.5. Groundwater Management, Subchapter 2. Groundwater Sustainability Plans	This has been added.
15	Figure 2.3-2				Align and standardize vertical scales to allow direct comparison for a given year or set of years.	The figure has been updated

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Comment #	Section	Section Paragraph #	Paragraph's Sentence #	Sentence Starts with, "...	Comment	Response to Comment
16	General Comments				The IWFM was calibrated for the period 1995-2015. The historical budget is for the period 1998-2017. Presumably the 2016 and 2017 periods are predicted by the model. Where is the post audit of those results?	These can be made available to the Tech Forum members
17	2.3.4 Water Budget…Historical	1	2	The hydrologic period of 1998	This results in cumulative removal of 18 inches of water relative to the long-term average.	Comment noted. No change required in document.
18	2.3.5 Water Budget Estimates			The following components are included in the groundwater budget	Are spring flows negligible/ignored?	Spring flows are negligible compared to the overall water budget.
19	Table 2.3-2			Average Annual Land Surface Water Budget	Incorporate "20-yr" and "50-yr" in table title	These have been added as footnotes to the table
20	Table 2.3-3			Average Annual Land Surface Water Budget	Move tables closer to text where they are discussed.	The section has been re-formatted
21	Table 2.3-4			"Runoff" cell	Is this flow out of the basin?	Yes
22	Table 2.3-3			Cell with 25,000 value in 3rd column for Deep Percolation	Rounding error? Why not 26,000 AFY as with land surface deep percolation?	Yes, this difference is due to ronding.
23	Figure 2.3.4			Historical Land Surface Water Budget	Need to be rigorous about land surface and groundwater budgets; do not refer to basin budget components.	The text has been revised as recommended.
24	2.3.6 Historical Water Budget			The Basin experiences about 285,000 AF	"Basin" - The unsaturated soil zone, not the basin; groundwater is part of the basin water budget.	The text has been revised as recommended.
25	2.3.6 Historical Water Budget			The Basin experiences about 285,000 AF	"inflows" - Land surface inflows	The text has been revised as recommended.
26	2.3.6 Historical Water Budget			About 225,000 AFY is consumed as evapotranspiration	These amounts make sense?	Yes, the evapotranspiration estimates are reasonable given the available land use data. The stream seepage and deep percolation estimates are reasonable given the data that is available.

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Comment #	Section	Section Paragraph #	Paragraph's Sentence #	Sentence Starts with, "…	Comment	Response to Comment
1	5.1 Useful Terms			Sustainability Goals – The culmination	The definitions are almost verbatim from the regs but could use some translation for a general audience, esp Sustainability Goals	To make sure that we are consistent with the Regulations, we have kept the definitions as is.
2	5.2.1 Threshold Regions…Southeastern Threshold			The northern boundary of this region is the narrows at the Cuyama river,	"and the eastern boundary" - You mean western boundary?	Although correct, the intention was to say the "eastern" because to the west of the boundary of the Basin and to the west is the Badlands Management Area. The intention was to destinguish the boundary between the two management areas.
3	5.2.1 Threshold Regions…Eastern Threshold			The Eastern Threshold Region lies just east of the central part of the	…lies just southeast?	Text has been updated
4	5.2.1 Threshold Regions…Eastern Threshold			Hydrographs in this region indicate that groundwater	Mention other aspects of Eastern Region: More variability in water levels? Locally important shallow production wells?	Text has been updated to provide more clarity to destinguish this region from the Central Region by discussing differences in water level. Also mentioned in this section is the Santa Barabara Canyon Fault, which is discussed in more detail in the HCM.
5	5.2.1 Threshold Regions…Western Threshold			The eastern boundary is defined by the Russell Fault,	Brief explanation of which land uses are differentiated	Text has been updated
6	5.2.1 Threshold Regions…Northwestern Threshold			The southeastern border was drawn to differentiate between the	Suggest "southern border" or border with the western region"; also, which land uses differentiated?	Text has been updated
7	Figure 5-1: Cuyama GW Basin Level			Map	Suggest text callout labels on the map to make it easier to tell which region is which	The figure has been updated
8	Figure 5-1: Cuyama GW Basin Level			Map	Change Legend to say "Representative well with OPTI well ID number"	The figure is clear enough without this change.
9	5.2.2 Minimum Thresholds…Southeastern Threshold			Placeholder for IM calculation	Show and reference example hydrograph (use real one) with example of trend and MT & MO calculation	Since the document has been changed to make all IMs equal to MTs, this is not needed
10	5.2.2 Minimum Thresholds…Southeastern Threshold			Levels will be measured using	An embedded table to summarize monitoring frequency would be useful	Monitoring frequency is discussed in the Monitoring Networks chapter
11	5.2.2 Minimum Thresholds…Eastern Threshold			The MT for this region intends to protect	Suggest combined hydrograph with multiple wells to illustrate trend	Hydrographs with thresholds are provided in an appendix
12	5.2.2 Minimum Thresholds…Eastern Threshold			This 20% of the range was then added below	State period of historical range used (1995-2014, or entire range of data?)	Updated text for clarity
13	5.2.2 Minimum Thresholds…Eastern Threshold			The MT values calculated by the two methods were then compared, and	Update method of setting MT & MO per 3/6/2019 GSA Board Meeting	Text has been updated. Board provided final approval for update to MTs and MOs at the 4/5/2019 meeting
14	5.2.2 Minimum Thresholds…Central Threshold			If no measurement was taken during this 4-month period	State period used to evaluate range	Updated text for clarity
15	5.2.2 Minimum Thresholds…Western Threshold			The MT was calculated by taking the difference between the total well depth and the value closest to mid-February, 2018	2018 or 2015? Explain reason for change in assumed baseline	Updated text for clarity
16	5.2.2 Minimum Thresholds…Northwestern Threshold			This value was then set as the MT.	In other words, an allowable loss of 15% of the estimated saturated thickness of the aquifer was proposed.	This is correct.

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17	Table 5-1 - Representative Monitoring			2030 IM	IM???	IM = Interim Milestone
18	Table 5-1 - Representative Monitoring	OPTI well 77, Final MO 400			How do the MT's agree across the Basin? Table shows significant difference in parameter ranges in different Threshold Regions. Are we going to have some agreement across the Basin or will it bust? The Central Region has a range of 600 feet, Western 130 feet, and Eastern 70 feet.	Thresholds have been calculated to be protective of certain areas of the Basin and the conditions within those portions of the Basin while also considering beneficial uses of GW. In other regions, they have been calculated to achieve sustainability over the planning horizon. While threshold levels may differ across regions, these thresholds will 1) help move the
19	Table 5-1 - Representative Monitoring	OPTI well 324, Final MT 311			Suggest using a contour or symbolic post map to illustrate overall basin MTs and MOs. May show some discontinuities that you will want to address in the text.	Spatial density of wells may not be sufficient to provide a map that is accurate to represent the MOs across the entire basin. When more data is available, this may be an option.
20	5.3 Reduction in Groundwater	2	1	Reduction of groundwater storage is not a concern for the Basin	I kinda thought this was the main concern, actually. Might want to re-word this a little. Maybe something like "Separate monitoring of groundwater storage changes apart from groundwater levels is not proposed..."	Text has been updated for clarity
21	5.3 Reduction in Groundwater	3	1	Second, because the primary aquifer in the Basin is not confined	Storage also is linear with water levels in confined systems, you just have a much smaller storage coefficient.	Comment noted. No change needed.
22	5.5 Degraded Water Quality	3	1	Because the undesirable result for degraded water quality	Suggest clarifying this. Maybe "Because undesirable water quality results are defined under SGMA only as those chemical constituents which are influenced by SGMA-related groundwater management activities, not all chemicals of concern in Cuyama Basin groundwater will be monitored or regulated by the GSA. Total dissolved solids (TDS) will..."	Text has been updated for clarity
23	Table 5-2: MOs	Table		MO column	Suggest making a symbolic post map, color "heat map" or contours to illustrate the basin as a whole, or maybe by threshold region, even though you aren't using those for WQ. Still people have gotten used to them and now think along those lines.	Spatial density of wells may not be sufficient to provide a map that is accurate to represent the MOs across the entire basin. When more data is available, this may be an option.
24	5.6.3 Minimum Thresholds	1	1	Because current subsidence rates are not believed to be significant and	P521 is outside the basin. VCST is in the basin.	Updated text for clarity
25	5.6.3 Minimum Thresholds	2	2	Thus, the MO for subsidence is set for zero	Isn't CUHS subsidence ~11 inches? More than zero...	Text has been updated for clarity. Although approximatly 295 mm of subsidence has occurred in the last 14.5 years (estimated by taking -5mm around mid 2002 ti -300 around Jan 2017), the rate of subisdence has been about 0.8 inches per year.
26	5.7 Depletions of Interconnected	2	2	In January 1, 2015 surface flows infiltrated into the groundwater	Are you talking about a single 1-day flood event? This sentence is unclear if you are describing general conditions or a specific event.	Updated the text for clarity
27	5.7 Depletions of Interconnected	2		Conditions have not changed since January 1, 2015	How does this correspond to the water budget showing significant surface water outflows?	Updated the text for clarity
28	General Comment				No explanation is offered for the absence of Interim Milestones. How and when will these be calculated? Placeholders for these important sustainability goals represent a critical gap in this chapter and need some explanation as to the timing and process for their completion.	The updated draft sets all IMs for water levels and water qualities to equal MTs
29	General Comment				Minimum Thresholds for the Eastern Region are being reconsidered and adjusted by the GSA and are not accurately reflected in this draft for review.	Text has been updated. Board provided final approval for update to MTs and MOs at the 4/5/2019 meeting
30	General Comment				The sustainability criteria of subsidence, loss of storage, water quality and the depletion of interconnected surface waters are underemphasized to the point of misrepresenting the undesirable results that are currently being experienced by beneficial users and uses other than agriculture in the basin.	Comment noted. No change needed.
31	General Comment				There is a dismissive approach to addressing the undesirable results of the Sustainability Criteria and to the setting of MTs. All the available data indicates conditions of overdraft in the basin but many MTs allow for continued declines in groundwater elevations and groundwater quality. The perspective towards sustainability appears to be coming from the viewpoint of the commercial agricultural beneficial user and dismissive of the needs of others, such as domestic and environmental users. Many water quality issues are avoided, such as arsenic and nitrates and domestic supply needs. Subsidence is dismissed and increasingly tolerated. Interconnected surface waters and GDEs are assumed to be irrelevant without the responsibility for protection. This is unexceptable to this stakeholder and I would hope and expect that the DWR would agree	Comment noted. No change needed.
32	5.2 Chronic Lowering				Of the six Threshold Regions that were defined for specific MT/MO/IMs, only two specifically note protection of environmental uses: Southeastern Threshold Region, and Eastern Threshold Region. However, W&C has defined likely GDEs in the Northwestern region and parts of the Central region. Without the associated maps and GDE report, it was unclear if these wells with MTs and MOs are protective of these likely GDEs. Most MTs/MOs in these wells (Table 5-1) are really deep; a few wells have MTs < 100ft and MOs <50 ft. It would be important for be able see where those wells overlay with the potential GDEs (both original NC dataset potential GDEs and the W&C likely GDEs). How is it demonstrated that the lowering of groundwater levels with these thresholds won't adversely impact these beneficial uses?	Well locations relative to GDEs can be assessed when Monitoring Network data gaps are addressed during the GSP implementation phase.

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33	5.2.1 Threshold Regions				This subsection does not discuss the strategies used to calculate the MOs, MTs, and Milestones for each Threshold Region, as stated in the text, but only describe the characteristics and location of the regions. Strategies are presented in subsection 5.2.2.	Text has been updated for clarity
34	5.2.2 Minimum Thresholds…Southeastern Threshold				The MT is intended to be "protective of domestic, private, public, and environmental uses", yet for one of the only two monitoring wells in this region the MT is set only one foot above the bottom of the well (Opti well #2). How is that being protective?	MT is set at levels determined and approved by the GSA Board. If levels drop below MTs, the Board can take action in the future.
35	5.2.2 Minimum Thresholds…Eastern Threshold				It has been noted that these rationales do not work well for this region and that the monitoring wells are not representative of the wells in this region. The rationales for this region need to be reconsidered by the GSA and then this subsection rewritten before review.	Text has been updated. Board provided final approval for update to MTs and MOs at the 4/5/2019 meeting
36	5.2.2 Minimum Thresholds…Western Threshold				This sentence makes no sense; "This would allow users in this Threshold Region to utilize their groundwater supply without increasing the risk of running a dry well beyond acceptable limits, and this methodology is responsive to the variety of conditions and well depths in this region." A well running dry would surely constitute an Undesirable Result.	Text has been updated for clarity
37	5.2.2 Minimum Thresholds…Western Threshold				OPTI Well 474 is not in this region, why is it mentioned here?	Well 474 is in the western region
38	5.2.2 Minimum Thresholds…Northwestern Threshold				Very little publicly verified information is available for this region which until recently had never been developed for irrigation. Only two years of data exists from the new wells in the region. How was the "total average saturated thickness for the primary storage area of the region" determined with any validity? With such limited historical data available, how was 50 feet determined to be 5 years of storage? Local landowner input is suspect to be biased in the interest of their recent commercial development and is therefore questionable at best. In the case of such uncertainty it seems imprudent and risky to set MTs so far below current conditions in a critically overdrafted basin. Were the "Far-west Northwestern" wells put into a newly designated Threshold Region, moved into the "Western" region, or just "reclassified" because the rational is inappropriate? Is this an appropriate solution? This was never discussed by the SAC or GSA.	Information about this region was provided in two memorandums emailed to the Cuyama mailing list on 12/13/2018. The GSA Board was able to take this information into account when setting MTs for this region.
39	5.3 Reduction in Groundwater				Reduction of groundwater storage is certainly a concern for the Basin for obvious reasons. A lack of sufficient monitoring data in several areas of the Basin (western, northwestern, far west northwestern, eastern, and southeastern) inadequately represent conditions of groundwater storage. Chronic groundwater elevation declines in many areas of the Basin indicate significant reduction in storage. The historic and current condition of overdraft (-26 TAF/Y) has reduced groundwater storage in the basin by well over 1,000,000 AF, and is projected to continue until some substantial changes are made to the management of this resource. The reduction of groundwater storage caused by continued overdraft is an undesirable result experienced by every beneficial user in the basin	The text has been revised to just note that direct measurement of storage is not needed, while removing reference to storage not being a concern.
40	5.5 Degraded Water Quality				Because of the causal nexus between excessive groundwater extraction and degrading groundwater quality, the GSA is responsible for monitoring the changes in concentrations of any constituent that would represent an undesirable degradation of water quality due to groundwater extraction. These include Arsenic, Nitrates and TDS. Limiting the GSP to monitoring TDS alone is not sufficient and does not satisfy the requirements of SGMA with regards to monitoring groundwater quality.	Direction was provided by the GSA Board (through approval of the Monitoring Networks GSP section) to only include TDS for monitoring and sustainability in the GSP. As stated in the text, other contamination sites are regulated by the RWQC, nitrates are unde the jurisdiction of the ILRP, and the GSA does not possess land use authroity to incluence fertlizer use. Additionally, Arsenic occurs at specific depths in the Basin and is not managed a the GSA regional scale.
41	5.5.3 Minimum Thresholds				TDS levels in the groundwater detrimentally impact the agricultural economy of the Basin because crops like potatoes, beets and leafy greens, formerly a much larger part of local production, are no longer commercially viable. Carrots may tolerate the high TDS, but they suffer in quality, taste and sweetness. It should be noted that to defend poor water quality and tasteless produce does not serve the local agricultural economy well and the GSP should not include this sort of language. Further, there is no mention made of the undesirable effect experienced by domestic and livestock users due to the poor water quality. It should be noted that carrot production is not the only beneficial user of groundwater in the basin. Disadvantaged communities in the valley are not well resourced to treat drinking water sources or redrill domestic wells.	High TDS in the Basin, as stated in the text (Sustainability Thresholds Sectio nand Groundwater Conditions) is naturally occuring within the Basin. The GSA has voted to monitor TDS, but may only influece TDS concentrations through groundwater levels, through additional inputs. These inputs travel through highly saline rock, contributing to additional TDS in the groundwater. Per SGMA regulations, the GSA is also only required to maintain water quality conditions that exist as of January 1, 2015. The GSA may choose to refine these thresholds later as more data is collected.
42	Table 5-2: MOs				How is it that all the Interim Milestones set for TDS have progressively higher concentrations over time? For example Opti well 99, with a MT of 1562, has an IM of 1490 - 1508 mg/L for 2025, 1490 - 1526 mg/L for 2030, and 1490 - 1544 mg/L for 2035. This appears to be getting worse not better! Why is it that many wells in the table (all of the last 17) have MO the same as the MTs, with IMs that have no range or change? For example; Opti well 845 has an MO of 1250 and an MT of 1250, and all three IMs are 1250 - 1250 mg/L. This data table implies worsening TDS concentrations over time and needs further clarification.	Interim Milestone calculations have been updated such that IMs equal the MTs at all intervals.
43	5.6 Subsidence				With the current accelerating rate of subsidence of approximately 0.5 inches per year, what is the rationale of a MT of 2 inches per year? This is far too permissive and clearly allows for up to 10 inches of collapse in 5 years at four time the current rate. Ground surface instability and associated storage loss of this caliber is not achieving sustainability and would constitute a significant undesirable result. There needs to be a clearer explanation of why this undesirable result is allowable	No undesirable result has been identified for subsidence of up to 2 inches per year
44	5.7 Depletions of Interconnected				Riparian habitat and phreatophytes in the Cuyama River have been drying up and dying since long before January 1, 2015, as groundwater levels decline and the river bank storage is lost. Conditions continue to degrade with the depletion of interconnected surface water as less of the river experiences surface flows due to declining groundwater elevations. Deforestation and riparian habitat loss is an undesirable result due to the adverse effects of continued overdraft. Groundwater dependent ecosystems are similarly adversely impacted by this undesirable result. SGMA requires GSAs to identify, quantify and manage these beneficial uses to avoid any undesirable results. This GSP fails to recognize that requirement or manage for these undesirable results.	Comment noted. Please review the GDE report for additoinaly information.
45	5.7 Depletions of Interconnected				Without the baseline information in the Groundwater Conditions, especially in the newly developed Northwestern region, it is difficult to justify the decision to allow for the continued decline of groundwater levels with these MT/MO.	Comment noted. The MTs and MOs reflect the values approved by the Board.

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46	5.2.1 Threshold Region... Southeastern Threshold				I believe it is inaccurate to describe this Region as having groundwater levels that are "generally high in this area, with levels around 50 feet or less below the ground surface which indicates that this region is likely in a 'full' condition." If the GSP is going to characterize this region like that, then it needs to point out that it is based on limited history from two wells in the southern headlands half of the region, and that little or no data exists for the areas north toward the narrows. Data does, however, exist, and I think it should inform our understanding and description of the region. At the request of staff, I have twice sent 3rd party documentation in the form of various well drilling reports as well as additional information about the significant fluctuations in static water levels that have occurred historically within this region. Those documents , well videos and air-line measurements show that static water levels in this region have fluctuated significantly during drought periods to at least as low as 108' bgs. I believe there needs to be a recognition of the historical fluctuation of water levels in this region, and that this section should include something like the following wording: "Groundwater is generally high in this area with levels around 100 feet or less below ground surface. Groundwater levels in this region are subject to significant declines during drought periods but have typically recovered to within 50' or less of ground surface during historically wet periods."	Text has been updated to add additional language.
47	5.2.1 Threshold Region...Eastern Threshold				The Eastern Threshold Region description should include a little more information: It only mentions conditions during the past 20 years, whereas our understanding of the reliability and availability of water in this region relates to a much longer time horizon. Our historical modeling is informed by 50 years of data, and I think we should at least descriptively recognize what's happened in this region over a longer history. I think we should include wording to the effect that "Hydrographs in this region indicate that groundwater levels have ranged widely and repeatedly over the past 50 years. Hydrographs in the Ventucopa area indicate that groundwater levels have been, in general, declining for the past 20 years.	Example is OPTI Well 85. Text has been updated for clarity.
48	5.2.2 Minimum Thresholds…Southeastern Threshold				Although the charts and thresholds are all good, I believe the threshold description rationale is in error. It reverses the use of the terms MO and MT.	Text has been updated to correct this error.
49	5.2.2 Minimum Thresholds…Southeastern Threshold	2	1	The MT for the Southeastern Threshold Region…	It should read: "The MO for Southeastern Region…."	Text has been edited
50	5.2.2 Minimum Thresholds…Southeastern Threshold	3	1	To provide an operational flexibility range, the…	Sentence should read "To provide an operational flexibility range, the MT was calculated by adding 5-years of groundwater storage to the MO."	Text has been edited
51	5.5.3 Minimum Thresholds				The section seems to say that the TDS levels in the water need to be better measured and understood, and that we can't do much about them, and they're not necessarily impacting the economy that much, but then goes on to set Minimum Thresholds at very strict levels sometimes just above a recent historical level. At least some of the OPTI wells in the DMS have very limited data associated with the TDS, or even just two data points, sometimes with the same date (OPTI 83) and have a falsely narrow range of readings. Under the MT formula, this results in an exceptionally strict MT such as in OPTI 83 where the MT is set at just 6 ppm over the only reading on the well which was August of 2011. TDS levels vary broadly over short distances, and can vary significantly from year to year. My own sampling results show TDS results varying by as much as 800 ppm from one well to the next and by similar amounts on an individual well over time. If water quality readings that violate MTs will be an issue, then I believe the proposed MTs should be rethought and not expressed in terms of historical ranges, but rather as a percentage factor over recent values.	Comment noted. The Board can reassess the thresholds in the future as more data is collected.
52	5.1 Useful Terms	Final			Typo in use of MI instead of IM.	Text has been updated
53	5.2.1 Threshold Regions	1		These conditions are influenced by geographic…	This sentence is confusing and needs revision	Text has been updated
54	5.2.1 Threshold Regions…Southeastern Threshold				Typo "southeaster"	Text has been updated
55	5.2.1 Threshold Regions…Southeastern Threshold				Describing groundwater levels is sufficient, no need to editorialize about "full" condition", or at least state that it is currently in a full condition.	Text has been updated
56	5.2.1 Threshold Regions…Central Threshold			Hydrographs in this region indicate that groundwater levels have been…	Should note that the levels have been substantially declining, or give a sense of the average rate of decline.	Comment noted. This is shown in the Groundwater Conditions section.
57	5.2.1 Threshold Regions…Western Threshold				Mention types of land use to distinguish it from NW Region Also, describing groundwater levels is sufficient, no need to editorialize about "full" condition", or at least state that it is currently in a full condition.	Text has been updated

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58	5.2.1 Threshold Regions…Northwestern Threshold			The Northwestern Threshold Region is the bottom of the Cuyama…	Please be more specific and revise to something like: " The Northwestern Threshold Region is at the western edge of the Cuyama Basin and has undergone changes in land use from grazing to irrigated crops over the past 4 years." Also, describing groundwater levels is sufficient, no need to editorialize about "full" condition", or at least state that it is currently in a full condition.	Text has been updated
59	5.2.1 Threshold Regions…Badlands Threshold			There is no monitoring in this region, and this	Revise to "… and no sustainability criteria were developed for this region."	Text has been updated
60	5.2.2 Minimum Thresholds	General Comment			MTs were established for wells, not regions. So the text should state that MTs were calculated for wells in a given region.	Text has been updated
61	5.2.2 Minimum Thresholds	General Comment			Include additional reasoning why the various threshold rationales were chosen.	Comment noted. This will be included in the Undesirable Results Narrative.
62	5.2.2 Minimum Thresholds…Central Threshold			The MT for the Central Threshold Region	Typo "The MT for the Central Threshold Region was calculated by taking finding…"	Text has been updated
63	5.2.2 Minimum Thresholds…Central Threshold			OPTI Wells 74, 103, 114, 568, 609, and	Please explain the reason for this in the text (e.g., "Because OPTI Wells 74, 103, 114, 568, 609, and 615 did not have sufficient measurements…")	The text has been updated. These wells did not have measurements to within the specified time range to represent January 1, 2015 conditions and thus utlized a linear trendline to extroplate and estimated value.
64	5.2.2 Minimum Thresholds…Western Threshold			OPTI Well 474 utilizes a modified MO calculation	Please explain why in the text.	Text has been updated
65	5.3 Reduction in Groundwater	2		Reduction of groundwater storage is not a concern for the Basin for two reasons.	Reduction of groundwater storage may be able to measured using levels as a proxy, but it is inaccurate to say that it is not a concern. Even areas that may be currently "full" may suffer reductions in groundwater storage going forward. Suggest deleting this discussion.	The text has been revised to just note that direct measurement of storage is not needed, while removing reference to storage not being a concern.
66	5.5 Degraded Water Quality	3		Because the undesirable result for degraded	Explain in text why TDS will be monitored. Current discussion is only about constituents not to be monitored.	Text has been updated
67	5.5 Degraded Water Quality	3		Arsenic occurs at specific depths in the basin, but the location	If arsenic increases with depth, then managing declines in groundwater levels would manage arsenic concentrations.	Text has been updated
68	5.5.3 Minimum Thresholds	3	1	Due to these factors the MT for representative well sites are set	Please give an example of how this is calculated with an example well for clarity in the text. Also provide the calculations in Table 5.2 or in an appendix. Columns with the total range and the 90th percentile of measurements would be useful.	Text and Table has been updated
69	Table 5-2: MOs				Table should state that these concentrations are for TDS. Include units for MO and MT as they are for the IMs. For ease of table reading, could move units to the header.	Table has been updated
70	5.6.2 Representative Monitoring				It's not just water-related infrastructure that is impacted by land subsidence. It can be roads, bridges, etc.	Text has been updated
71	Figure 5-4				Needs to be referenced	Text has been updated
72	5.7 Depletions of Interconnected	2	2	In January 1, 2015 surface flows infiltrated into the groundwater	This statement, and this whole section is confusing and should be revised. I think that the intent is to say that there has been no change in surface water depletion since 2015, but the wording is quite awkward and would not be coherent to a reader without significant background knowledge.	Text has been updated
73	General Comment				In general, the Central Coast Water Board recommends that the number of chemical constituents included in the Minimum Thresholds (MT), Measurable Objectives (MO), and Interim Milestones (IM) be increased. The Central Coast Water Board agrees that MTs, MOs and IMs should be established for total dissolved solids (TDS), however, including only that single constituent is insufficient for determining whether a groundwater basin is being managed sustainably with respect to water quality or for determining if undesirable results are being addressed. Land use in the Cuyama Valley is dominated by commercial agriculture, an industry that utilizes a variety of chemicals and practices that pose threats to groundwater quality. Therefore, the Central Coast Water Board recommends expanding the list of chemical constituents in the MT, MO, and IM to include nitrate, arsenic, and major dissolved ions. The reasoning for this recommendation is described in detail below.	Direction was provided by the GSA Board (through approval of the Monitoring Networks GSP section) to only include TDS for monitoring and sustainability in the GSP. Therefore, this Section will only include water quality sustainability indicators for TDS, unless alternate direction is provided by the Board.

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74	General Comment				Nitrate: Nitrate contamination of groundwater from agricultural activities is widely documented in the Central Coast region, including within the Cuyama Valley. Approximately 9% of on-farm domestic wells in the Cuyama Valley exceed the human health standard for nitrate concentration in drinking water1. The draft chapter states that the Cuyama Valley groundwater sustainability agency (GSA) does not have the authority to influence fertilizer use, and we are not suggesting the GSA should undertake such a regulatory role. However, the GSPs are required to implement thresholds and monitoring that can identify when undesirable results are occurring. Given the current impairment from nitrate in the basin and ongoing agricultural activity, it is appropriate to require thresholds and monitoring for nitrate in the Cuyama Valley groundwater basin. Nitrate monitoring is not unusual in agriculturally-dominated basins; for example, the Salinas Valley GSA is recommending an expanded suite of chemical constituents for its thresholds and monitoring. The recommendation in their most recent draft includes up to 25 different chemical constituents, including nitrate and arsenic. Finally, we recommend that nitrate be reported as nitrogen (nitrate as N), because this convention allows for easy comparison and summation (e.g., calculation of total nitrogen).	Direction was provided by the GSA Board (through approval of the Monitoring Networks GSP section) to only include TDS for monitoring and sustainability in the GSP. Therefore, this Section will only include water quality sustainability indicators for TDS, unless alternate direction is provided by the Board.
75	General Comment				Arsenic: Arsenic is a toxic chemical compound that occurs naturally in relatively high concentrations in many of the sediments that form California groundwater basins, including those of the Central Coast. Groundwater data from the Water Board's GeoTracker GAMA website indicates that 12% of the wells in the Cuyama Valley groundwater basin exceed the maximum contaminant level (MCL) for arsenic in drinking water. The highest concentration recorded in the basin occurred in 2011 and was more than six times greater than the MCL. Furthermore, recent studies in the Central Valley of California and the Mekong Delta in Thailand have demonstrated that ground subsidence associated with groundwater over-pumping can mobilize arsenic by 'squeezing' it out of subsurface clay layers. The resulting mobilized arsenic can then enter groundwater and increase arsenic concentrations in nearby water supply wells. Because there is documented overdraft and subsidence in the Cuyama Valley, there is the potential risk of anthropogenically-induced arsenic contamination of groundwater due to arsenic mobilization from clay layers in the Cuyama Valley basin. Lastly, in addition to sediment related sources, arsenic is a component in many pesticides commonly used on various crops. These factors suggest that arsenic should be included in the MTs, MOs, and IMs for the Cuyama Valley basin.	Direction was provided by the GSA Board (through approval of the Monitoring Networks GSP section) to only include TDS for monitoring and sustainability in the GSP. Therefore, this Section will only include water quality sustainability indicators for TDS, unless alternate direction is provided by the Board.
76	General Comment				Major Dissolved Ions: Major dissolved cation and anion composition in groundwater reflects the source of recharge water, lithological and hydrological properties of the aquifer, groundwater residence time, and chemical processes within the aquifer. As such, major dissolved ions are valuable for identifying different groundwater types (via Piper or Stiff diagrams) and for "fingerprinting" source water from individual wells. In addition, ionic charge balance provides quality assurance that all the major ions are actually included in the analysis and that TDS concentrations are accurate. Finally, collection and analysis of major dissolved ion samples is easy and inexpensive, and the cost of the analysis is well worth the data provided, particularly if the well is already being sampled for other constituents.	Direction was provided by the GSA Board (through approval of the Monitoring Networks GSP section) to only include TDS for monitoring and sustainability in the GSP. Therefore, this Section will only include water quality sustainability indicators for TDS, unless alternate direction is provided by the Board.
77	5.1 Useful Terms				Suggest that the GSA Board is aware that the representative wells are theoretical until an agreement between the GSA and well owner is executed. Does the Consultant have a list of other potential representative wells in case a well is not operational, or an agreement cannot be executed?	All the wells that could be used as representatives wells are included, and thus no alternative list is available. The text has been updated for clarity
78	5.2.1 Threshold Regions…Southeastern Threshold	1	1	The Southeaster Threshold Region	Spelling	Text has been updated
79	5.2.1 Threshold Regions…Southeastern Threshold	1	2	Groundwater is generally high	Consider adding a timeframe or date to when this area was defined as full.	Text has been edited for clarity
80	5.2.1 Threshold Regions…Southeastern Threshold	1	3	The northern boundary of this region is the	Consider defining all four boundary directions for the Southeastern Threshold Region.	Text has been updated
81	5.2.1 Threshold Regions…Eastern Threshold	1	4	The northern boundary of this region	Consider defining all four boundary directions for the Eastern Threshold Region.	Text has been updated
82	5.2.1 Threshold Regions…Central Threshold	1	3	The south-eastern boundary is defined by	Consider defining all four boundary directions for the Central Threshold Region.	Text has been updated
83	5.2.1 Threshold Regions…Western Threshold	1	1	The Western Threshold Region is characterized	Consider adding a timeframe or date to when this area was defined as full.	The text has been updated.
84	5.2.1 Threshold Regions…Western Threshold	1	3	The eastern boundary is defined by	Consider defining all four boundary directions for the Western Threshold Region.	Text has been updated
85	5.2.1 Threshold Regions…Northwestern Threshold	1	2	Hydrographs in this portion of the	Consider adding a timeframe or date to when this area was defined as full.	The text has been updated.
86	5.2.1 Threshold Regions…Northwestern Threshold	1	3	The southeastern border was drawn to	Consider defining all four boundary directions for the Northwestern Threshold Region.	Text has been updated
87	5.2.1 Threshold Regions…Eastern Threshold	1	3	The northern boundary of this region is	Consider defining all four boundary directions for the Eastern Threshold Region.	Text has been updated

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88	5.2.1 Threshold Regions…Central Threshold	1	3	The south-eastern boundary	Consider defining all four boundary directions for the Central Threshold Region.	Text has been updated
89	5.2.1 Threshold Regions…Western Threshold			The Western Threshold Region is characterized	Consider adding a timeframe or date to when this area was defined as full.	The text has been updated.
90	5.2.1 Threshold Regions…Western Threshold			The eastern boundary is defined by the	Consider defining all four boundary directions for the Western Threshold Region.	Text has been updated
91	5.2.1 Threshold Regions…Northwestern Threshold	1	2	Hydrographs in this portion of the Basin	Consider adding a timeframe or date to when this area was defined as full.	The text has been updated.
92	5.2.1 Threshold Regions…Northwestern Threshold	1	3	The southeastern border	Consider defining all four boundary directions for the Northwestern Threshold Region.	Text has been updated
93	5.2.1 Threshold Regions…Badlands Threshold	1	2	There are few active wells and little	Consider removing the word little and adding an estimated value of groundwater from the groundwater model.	The text has been edited.
94	5.2.1 Threshold Regions…Badlands Threshold	1	3	There is no monitoring in this region	Consider defining the geology of the Badlands area, such as adding Ballinger, Quatal, and Apache Canyons. This will help explain why this area has few active wells	This is in the HCM section.
95	5.2.2 Minimum Threhsolds	1	1		Consider adding a summary of why each region may have a different MT and MO.	This information is provided in the text
96	5.2.2 Minimum Thresholds…Southeastern Threshold				Consider adding a hydrograph figure to help explain each threshold region for MO & MT.	Hydrographs with thresholds are provided in an appendix
97	5.2.2 Minimum Thresholds…Eastern Threshold				Consider adding a hydrograph figure to help explain each threshold region for MO & MT.	Hydrographs with thresholds are provided in an appendix
98	5.2.2 Minimum Thresholds…Central Threshold				Consider adding a hydrograph figure to help explain each threshold region for MO & MT.	Hydrographs with thresholds are provided in an appendix
99	5.2.2 Minimum Thresholds…Western Threshold				Consider adding a hydrograph figure to help explain each threshold region for MO & MT.	Hydrographs with thresholds are provided in an appendix
100	5.2.2 Minimum Thresholds…Northwestern Threshold				Consider adding a hydrograph figure to help explain each threshold region for MO & MT.	Hydrographs with thresholds are provided in an appendix
101	5.2.2 Minimum Thresholds…Badlands Threshold			The Badlands Threshold Region has no	Page 5-8 states that the area has few active wells, please clarify or correct.	Text has been updated
102	5.2.3 Selected Minimum Thresholds				Consider adding a summary table for MO / MT, such as the one shown in the GSA Board agenda packet on March 6th.	Summary table is provided - Table 5-1
103	5.5.3 Minimum Thresholds	2	3	Much of the crops grown	Consider referencing the crop types or adding a figure on crop types to support this statement.	This information would be inlcuded in the plan in the Basin Settings section
104	General Comment				Consider adding adaptive management as a section in this chapter to provide flexibility to the GSA Board for MO, MT, and interim milestones. Revisions to the MO, MT, and interim milestones could be based on the data collected and analyzed from the GSP monitoring and overall plan effectiveness.	Addaptive management will be included in the Projects and managmeent action section.
105	Refernces			California Department of Water Resources (DWR),	Wrong agency?	Text has been updated
106	Refernces			rrigated Land Regulatory Program (IRLP),	Correction - ILRP	Text has been updated

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1	1.2.8 Plan Elements from CWC Section 10727.4	1	1	The plan elements from...	Suggest revising language in 1.2.8 - first sentence	The text has been revised
2	2.2.4 Change in Groundwater Storage	1	5	The color of bar...	Consider revising the river name	The year type index has been clarified.
3	2.2.10 Data Gaps	1			Consider adding a table on all the data gaps mentioned below in 2.2.10, including data gaps required by DWR GSP regulations.	This is not needed
5	General				Overdraft continues to be hidden within confusing language. Clarity with this issue is paramount and should not be at all ambiguous.	The text has been revised to note that negative change in storage is overdraft
6	General				Some shake up in classifying GDEs has made two unrealistic elimination of either 56% or 82% potential GDEs.	Comment noted. A more detailed analysis of GDEs can be performed during implementation if the Board chooses to do so.
7	General				Additional Data Gaps for the Groundwater Conditions we noted.	The data gaps section has been edited.
8	General				Due to the absence of any stream gauges in the Cuyama in the basin the model is calculating all the amounts and the relationships between the surface and groundwater. This interpreted Interconnectivity of surface waters with the groundwater in not well reflected from the model onto the Figure. More inter-relativity in the presentation is needed.	Comment noted.
9	2.1.10 Hydrogeologic Conceptual Model Data Gaps				It has been recognized that the interconnectivity between Groundwater and surface water is poorly understood, and represents a significant Data Gap in the HCM and throughout this GSP. Many historic seeps, springs and wetlands indicate a complex cascading basin in the three main aquifers with perched groundwater elevations on top of clay layered aquitards. This affects the Groundwater Dependent Ecosystems across the basin and needs further understanding.	Comment noted. A more detailed analysis of GDEs can be performed during implementation if the Board chooses to do so.
10	2.2.4 Change in Groundwater Storage	1	4	Average annual use over the twenty-year period was...	The text does not express the degree or severity of the overdraft. The sentence is incorrect and misinforming. It does not even use the euphemism “change in storage”, the word “use” should read “overdraft”.	The text has been revised to note that negative change in storage is overdraft
11	2.2.4 Change in Groundwater Storage	1	1	Historical change in storage in the Cuyama Basin...	The text does not express the degree or severity of the overdraft. In this sentence, at least the first “change in storage” could be replaced for clarity with “overdraft”. At the very least quantify it as “negative change in storage”.	The text has been revised to note that negative change in storage is overdraft
12	2.2.4 Change in Groundwater Storage				The water year type should be correlated to a Cuyama Basin type of water year, not the central valley. Please define what is designated by the water year type as a percent of deviation from an average or normal year.	The year type index has been clarified.
13	2.2.8 Interconnected Surface Water Systems				Is this the same Appendix X as the GDE Report Appendix X?	The text has been revised to clarify that this is referring to the IWFM model appendix.
14	2.2.8 Interconnected Surface Water Systems				Presumably, the Cuyama Basin IWFM Model can be used to analyze groundwater interactions between all the surface water flows in the Basin. Figure 2.2 only represents the Cuyama River, and four of the creeks. Are these the only reaches being analyzed from the model? And can we get more analysis of this data? Show amounts and percentages of gain and loss by reach.	While runoff from all watersheds is simulated in the model, these are the only reaches explicitly simulated as creeks in the model.
15	2.2.8 Interconnected Surface Water Systems				As is noted in the Section 4-10 below, this modeling is being done without any stream gauge data points, because there are no stream gauges, yet.	Comment noted.
16	Table 2-1				This table needs a couple of additional rows on the bottom for Totals & Averages by Reach. This would illustrate the patterns better than the Total column does and it would be helpful to overlay on Figure 2-2 (which needs relabeling). Range of data and the % of Total would also be informative additional rows to this chart	An average annual row has been added.
17	2.2.9 Groundwater Dependent Ecosystems				How and why did we go from reducing to 497 acres from the 2700 acres of GDEs in the DWR’s Natural Communities Commonly Associated with Groundwater (NCCAG) dataset, to these 123 “probable GDEs” and 275 “probable non-GDEs”? What happened to acreage? It is not reasonable to eliminate such a large % (82% & 56% respectively) of possible GDE acres from a desktop analysis of aerial imagery and such little field study (1 & ½ days and only six discreet sites). All of the GDEs up Santa Barbara Canyon are on public land and are full of seeps, springs & wetlands. You just have to walk in to verify them, not drive. Why are they classified as non-GDEs? Figure 2-5 misspelled “Likely Wetlands” and shows no discernable wetlands at all. This report drastically underrepresents the remaining GDEs and risks the continued loss of this important beneficial use of the groundwater resources.	Comment noted. A more detailed analysis of GDEs can be performed during implementation if the Board chooses to do so.
18	2.2.9 Groundwater Dependent Ecosystems	2	2	The NCCAG dataset was compiled by the Nature Conservancy...	Is this true? I thought it was CWDR. The text and Figure 2-3 should credit DWR, not The Nature Conservancy. And that is all the more reason to ground truth verify the data before tossing it out	The text has been revised.
19	2.2.10 Data Gaps				Additional Data Gaps in the Groundwater Conditions include the following: All the major faults are not well understood with regard to the degree they represent a barrier to flow and at what depth below the surface.	The data gaps section has been edited.
20	2.2.10 Data Gaps				Additional Data Gaps in the Groundwater Conditions include the following: The wells in the database and in the Monitoring Network are not well known and must be canvassed to verify well depth, perforation interval and current status.	The data gaps section has been edited.
21	2.2.10 Data Gaps				Additional Data Gaps in the Groundwater Conditions include the following: The size of the Basin with regard to groundwater in storage is not well known and after 40 years of chronic overdraft and the loss of over 1 MAF, what remains in storage?	The data gaps section has been edited.

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22	4.10 Depletions of Interconnected Surface Water Monitoring Network			Monitoring Networks for depletions of surface water cannot ...	It is appreciated by this reviewer that the lack of any surface water gage stations on the Cuyama River in the Basin is recognized as an impediment to accurate modeling. No amount of numeric estimating can make up for the lack of real data points. When can we see these new stream gages installed?	Comment noted.
23	Appendix X				This Technical Memorandum could have been more informative with a brief Publication Review. Historical reference with field verification and local experience would have yielded different conclusions. With only six actual field sites visited, this was not a significant field verification and the aerial imagery analysis was inadequate to identify the many existing GDEs that were disqualified in this report.	Comment noted. A more detailed analysis of GDEs can be performed during implementation if the Board chooses to do so.

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1					Transparency of decision making during implementation of the Plan: The Draft Plan could be improved with a clear description of how, moving forward, there will be transparency in implementation and decision making.	The CBGSA Board of Directors holds responsibility for plan implementation. Decisions about implementation and funding will occur through publicly noticed board meetings. Groundwater monitoring data will be available publicly through the CBGSA data management system.
2					Develop a 20-year GSP implementation timeline, including individualized pumping management plans, detailed incentives for sustainable management, and enforcement measures to ensure compliance.	During the first five years of implementation, the CBGSA will develop and approve the groundwater pumping allocations and the enforcement measures, consistent with their authorities under SGMA.
3					Include soil health and soil conservation tools as Best Management Practices in the GSP, including cover cropping, mulch application, and other well document NRCS conservation practices.	Soil and water conservation measures are available from many sources to all water users in the Cuyama Basin. The GSP does not include these as required actions for water users. The water management tools included groundwater pumping allocations, which will be implemented over the next five years.
4					Include a reference list of State and Federal funding programs to assist land managers in adopting groundwater Best Management Practices, including the CA Healthy Soils Program (HSP), the State Water Efficiency and Enhancement Program (SWEEP), the NRCS Environmental Quality Incentives Program (EQIP) and the USDA Farm Bill Funding.	The CBGSA and the Cuyama Basin Water District may make this information available to water users during implementation to assist water users subject to pumping allocations.
5					SGMA, the GSP should include: Clarification that the development and implementation of the GSP is a government mandate under SGMA, but implementation will be paid for by landowners in the Cuyama Basin.	The development of the GSP has been funded by a grant from the Department of Water Resources and local matching funds from the 6 local organizations represented on the CBGSA board (counties, water district, and community services district). The CBGSA board continues to discuss costs funding approaches for implementing the GSP.
6					SGMA, the GSP should include: Clarification that SGMA was not enacted to improve water quality or increase water flows.	The SGMA requirements for achieving sustainability for the Cuyama Basin are described in the GSP, in the Checklist included as an Appendix to Chapter 1, which lists the requirements specified by DWR. Additional discussion of this topic could be held with the GSA Board
7					SGMA, the GSP should include: Explain what happens if the GSP fails -- what does state control look like?	While SGMA and the GSP resulations provide general information on what would happen if the GSP fails, there are many uncertainties regarding that outcome. Therefore, it would not be helpful to include this in the GSP document, but this topic can be discussed in future GSA meetings
8					Economic Analysis & Impacts, the GSP should include:Economic impact analysis.	An economic analysis will be performed and the results will be presented to the Board
9					Economic Analysis & Impacts, the GSP should include:Explanation of economic impacts from the groundwater cutbacks. The cutbacks could destroy the entire Valley's economy. The economic analysis needs to address the fact that the people who live in the Cuyama Basin work on the agricultural lands or support those that do.	An economic analysis will be performed and the results will be presented to the Board
10					Economic Analysis & Impacts, the GSP should include: Explanation of how the economic impacts will be addressed as an offer on a ranch was withdrawn after the need for an 80% reduction in pumping was announced.	An economic analysis will be performed and the results will be presented to the Board
11					Economic Analysis & Impacts, the GSP should include:Detailed plan for the cost for implementation taking into account that if the costs are put on the smaller landowners, they will go out of business. Protection for small landowners from unreasonable costs.	The CBGSA board continues to discuss costs and funding approaches for implementing the GSP.
12					Implementation Costs and Funding, the GSP should include: Define who is paying for what, what are the costs to residents.	The CBGSA board continues to discuss costs and funding approaches for implementing the GSP.
13					Implementation Costs and Funding, the GSP should include: Explanation of how the disadvantaged communities in the Cuyama Basin can afford to continue this effort, year after year at $1 million plus per year.	The CBGSA board continues to discuss costs and funding approaches for implementing the GSP.
14					Implementation Costs and Funding, the GSP should include: Consideration that when identifying funding for implementation, given that the Cuyama Basin is so severely overdrafted, decreasing water consumption will severely impact the finances of all those in the Basin whose livelihood depends on water use. Sacramento needs to find a way to pay for changes required by the GSP for the benefit all of California.	The CBGSA board continues to discuss costs and funding approaches for implementing the GSP, including potential state grants.
15					Implementation Costs and Funding, the GSP should include: Appropriate agencies should be seeking grant funding now for implementation.	The CBGSA board continues to discuss costs and funding approaches for implementing the GSP, including potential state grants.
16					Implementation Costs and Funding, the GSP should include: Information about how long grants will be available.	This information is not available as it is unknown what future grant opportunities will be available.
17					Implementation Costs and Funding, the GSP should include: Provide funding for houses that have to drill deeper for groundwater.	The groundwater monitoring and minimum thresholds for groundwater levels included in the GSP are intended to protect water users. During the first five years of implementation, additional monitoring and pumping information will improve understanding of what will be needed to maintain groundwater levels.
18					Model/Data, the GSP should include: Data gathering methods that are consistently updated so there is a consistent view provided.	Data collection methods will be developed during GSP implementation.
19					Model/Data, the GSP should include: Explanation of why long-term economic decisions are being made on uncertain groundwater modeling.	The groundwater model is the best available information on Basin groundwater conditions. Implementing the GSP will adapt to new information and updated modeling forecasts as pumping allocations are implemented.
20					Model/Data, the GSP should include: Explanation that decisions are being made based on model results without a clear understanding of how wrong the predictions might be. There are ways to quantitatively express the uncertainty in the model, and this should be included. Every model has uncertainty.	Uncertainty information has been added to Chapter 2 and to Appendix C.
21					Model/Data, the GSP should include: Clarification of the quantitative sensitivity analysis (of the model) to identify parameters that have an outsized effect on hydraulic heads and overdraft/water balance.	Uncertainty information has been added to Chapter 2 and to Appendix C.
22					Model/Data, the GSP should include: Clarification of uncertainty inputs (to the model) in terms of the range of probably outcomes.	Uncertainty information has been added to Chapter 2 and to Appendix C.

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23					Model/Data, the GSP should include: What the three biggest data gaps in the model are.	Model data gaps are described in Appendix C.
24					Model/Data, the GSP should include: More information that validates if new groundwater users are impacting Cuyama Basin groundwater or not.	The numerical modeling includes all current groundwater users.
25					Model/Data, the GSP should include: Account for domestic water use.	Domestic water use is included in the numerical model.
26					Russell Fault, the GSP should include: Clarification of whether the Russell fault restricts groundwater flow or if that is still “up in the air.”	The best available information on this issue is presented in Chapter 2. Understanding of the Russell Fault will improve as additional information is gathered during GSP implementation.
27					Russell Fault, the GSP should include: Additional studies to validate if the fault is in fact restricting groundwater movement.	The best available information on this issue is presented in Chapter 2. Understanding of the Russell Fault will improve as additional information is gathered during GSP implementation.
28					Minimum Thresholds/Interim Milestones, the GSP should include: Explanation as to why Minimum Thresholds are set too low to achieve sustainability before the groundwater is further severely depleted.	The groundwater monitoring and minimum thresholds for groundwater levels included in the GSP are intended to protect water users. During the first five years of implementation, additional monitoring and pumping information will improve understanding of what will be needed to maintain groundwater levels.
29					Minimum Thresholds/Interim Milestones, the GSP should include: Improved explanation of the interim milestones. They should be set higher than the minimum thresholds.	Interim Milestones have been adjusted per direction from the CBGSA Board
30					Minimum Thresholds/Interim Milestones, the GSP should include: Clarification of the Minimum Thresholds and Undesirable Results in Chapter 3 – setting the percentage of wells that fall below minimum threshold at 30% is a problem if all wells in a management area go below the minimum threshold yet do not exceed the 30% measure for determining undesirable results.	This issue was discussed at the CBGSA Board meeting on 6/5/2019, where the Board determined to maintein the 30% of wells criteria.
31					Minimum Thresholds/Interim Milestones, the GSP should include: Explanation of why the minimum thresholds do not protect for continual overdraft.	The minimum thresholds do limit future overdraft potential in the Basin.
32					Minimum Thresholds/Interim Milestones, the GSP should include: Explanation of why the interim milestones are set the same as the minimum thresholds. What happened to the MoOF (margin of operational flexibility), this GSP is looking to do nothing better than the very worst that is acceptable.	Interim Milestones have been adjusted per direction from the CBGSA Board
33					Glide Path, the GSP should include: Better clarification of the glide path.	The glide path describes the progressive implementation of pumping allocations to bring the Basin into balance. During the first five years of implementation, additional monitoring and pumping information will improve understanding of necessary pumping allocations and the glide path.
34					Glide Path, the GSP should include: Setting reasonable Undesirable Results that reflect the glide path.	The GSP reflects minimum thresholds and a glide path that were determined by the GSA Board
35					Glide Path, the GSP should include: Connection of Undesirable Results to the glide path.	The GSP reflects minimum thresholds and a glide path that were determined by the GSA Board
36					Glide Path, the GSP should include: Consideration of starting the pumping allocations/reductions sooner than 2023.	The schedule for pumping allocations in the plan was determined by the GSA Board, considering the time needed to establish allocation and pumping monitoring procedures.
37					Glide Path, the GSP should include: Implementation of the allocation plan by 2038.	The glide path relfects pumping allocations to achieve basin balance by 2038.
38					Monitoring Network, the GSP should include: Data gathering methods that are consistently updated so there is a consistent view provided.	GSP implementation includes five year updates of the GSP to incorporate improved monitoring and reporting.
39					Monitoring Network, the GSP should include: Agreement that the counties will play an active role in the monitoring network.	The counties are represented on the CBGSA board and have played an active role in monitoring and data collection.
40					Monitoring Network, the GSP should include: Validation that the monitoring network is truly representative.	The CBGSA will expand and review the monitoring network through the first five years of implementation.
41					Monitoring Network, the GSP should include: Water quality monitoring so it can be dealt with, include water quality planning.	The CBGSA will implement monitoring for total dissolved solids to identify if groundwater pumping is altering groundwater quality.
42					Monitoring Network, the GSP should include: Standardization of monitoring wells.	The CBGSA will expand and review the monitoring network through the first five years of implementation.
43					Monitoring Network, the GSP should include: Monitoring wells are not representative of local production.	The CBGSA will expand and review the monitoring network through the first five years of implementation.
44					Monitoring Network, the GSP should include: Better monitoring network and stream gauges.	The CBGSA will expand and review the monitoring network through the first five years of implementation.
45					Monitoring Network, the GSP should include: Who pays for the new groundwater monitoring wells?	Options for financing are included in Chapter 8. The CBGSA board continues to discuss costs and funding approaches for implementing the GSP.
46					Water Quality Monitoring, the GSP should include: Monitoring of other water quality constituents that are of great concern for human and animal consumption, such as nitrates, arsenic, etc. Explain why TDS (total dissolved solids) are the only constituent considered. To avoid the consequences of water quality getting worse as pumping continues, more than just TDS should be monitored.	The rationale for TDS monitoring for water quality is described in Chapter 4.
47					Water Quality Monitoring, the GSP should include: Track groundwater quality with age date of multiple constituents.	The monitoring plan does not include constituents related to age dating of water because this is not required by SGMA. This could be added if desired by the CBGSA Board.
48					Water Quality Monitoring, the GSP should include: Water quality data from other agencies; it already exists.	The GSA can utilize data collected by other agencies in decision making going forward.
49					Water Quality Monitoring, the GSP should include: Explanation of why all wells cannot be monitored.	Monitoring all wells is cost prohibitive
50					Environment, the GSP should include: Planning for potential for degradation of the environment, e.g., increased dust due to fallowing of land during implementation.	Additional monitoring of groundwater dependent ecosystems is included in the implementation plan.

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Comment #	Section	Section Paragraph #	Paragraph's Sentence #	Sentence Starts with, "...	Comment	Response to Comment
51					Environment, the GSP should include: Further analysis of the potential for destruction of native habitat, which is already occurring.	Additional monitoring of groundwater dependent ecosystems is included in the implementation plan.
52					Environment, the GSP should include: Increased effort to protect Groundwater Dependent Ecosystems (GDEs).	The analysis and discussion of GDEs in the GSP was developed to satisfy SGMA requirements as they relate to GDEs. The GSP recommends piezometers to monitor for groundwater levels in the vicinity of critical GDEs. Additional analysis of GDEs and actions for GDEs can potentially be added in the future at the direction of the CBGSA Board.
53					Environment, the GSP should include: Protection for GDEs -- The GSP does not recognize, quantify, or protect GDEs and it should. Basin overdraft has dried up most of the GDEs, the GSP must protect those that remain.	The analysis and discussion of GDEs in the GSP was developed to satisfy SGMA requirements as they relate to GDEs. The GSP recommends piezometers to monitor for groundwater levels in the vicinity of critical GDEs. Additional analysis of GDEs and actions for GDEs can potentially be added in the future at the direction of the CBGSA Board.
54					Water Conservation, the GSP should include: Information about conservation by all groundwater users in the Cuyama Basin. All water users in the Cuyama Basin need to be encouraged to change their water use practices. Growers need to be encouraged to change to crops that use less groundwater, change watering systems to conserve more groundwater, let some fields remain unplanted. Private citizens should be encouraged to greatly reduce their water waste, i.e. showering, hand washing dishes, watering gardens.	Water conservation measures can be considered by private landowners in response to pumping allocations. Water conservation measures are available from many sources to all water users in the Cuyama Basin.
55					Water Conservation, the GSP should include: Clarification that if residents conserve water use, their bills do not go down.	Residential water use is a very small proportion of groundwater pumping in the Basin. Mechanisms for GSP funding will be determined during GSP implementation.
56					Water Conservation, the GSP should include: Clarification about the GSA's role in recommending growers grow a different crop that uses less water.	Changes in crop mix can be considered by private landowners in response to pumping allocations.
57					Allocations, the GSP should include: Allocation methodology that provides equity among all groundwater users.	The CBGSA will develop the allocation methodology in the first three years of GSP implementation.
58					Allocations, the GSP should include: Allocation methodology that is basin-wide.	The CBGSA will develop the allocation methodology in the first three years of GSP implementation. Currently, per Board Direction areas outside of the management areas are not given allocations. However, allocations for other parts of the Basin could be implemented if desired by the Board.
59					Allocations, the GSP should include: Protections for residential groundwater users.	The specifics for how pumping allocations will be implemented will be determined during the first three years of GSP implementation.
60					Allocations, the GSP should include: Definition of and exclusion of "de minimus" groundwater users from being subject to GSP implementation.	The Board has not provided specific direction on de minimis users. This will be determined during GSP implementation. Under SGMA, the GSA can establish pumping allocations for de minimus users (pumping of less than 2 acre-feet per year for residential use), but cannot require monitoing of pumping.
61					Allocations, the GSP should include: Information/determination of how the CBGSA will treat a well that is used for irrigation and residential use.	The specifics for how pumping allocations will be implemented will be determined during GSP implementation.
62					Allocations, the GSP should include: Information/determination of how the CBGSA will treat new well water users.	Water Code section 10725.6 authorizes a GSA to require registration of a well within its management area. Additionally, section 10726.4(a)(2) authorizes a GSA to control pumping by regulating, limiting, or suspending extractions from individual wells or extractions from wells in the aggregate, construction of new groundwater wells, enlargement of existing wells, or reactivation of abandoned groundwater wells, or otherwise establishing groundwater extraction allocations. However, that same subsection provides that any limitation on pumping by a GSA shall not be construed to be a final determination of rights to pump groundwater. So whatever controls on pumping a GSA implements needs to address current and projected conditions, and be adaptive over the life of the GSP. The GSA will need to decide as data is developed and the model is refined which of these tools should be employed and for how long.
63					Allocations, the GSP should include: Address the vulnerability of areas to new wells and/or increased pumping where there is no allocation planned currently.	The CBGSA will develop the allocation methodology in the first three years of GSP implementation. Currently, per Board Direction areas outside of the management areas are not given allocations. However, allocations for other parts of the Basin could be implemented if desired by the Board.
64					Projects, the GSP should include: What are the impacts and risks associated with cloud seeding?	This is discussed in Chapter 7
65					Future Well Drilling, the GSP should include: Explanation of how future well drilling will be addressed.	Water Code section 10725.6 authorizes a GSA to require registration of a well within its management area. Additionally, section 10726.4(a)(2) authorizes a GSA to control pumping by regulating, limiting, or suspending extractions from individual wells or extractions from wells in the aggregate, construction of new groundwater wells, enlargement of existing wells, or reactivation of abandoned groundwater wells, or otherwise establishing groundwater extraction allocations. However, that same subsection provides that any limitation on pumping by a GSA shall not be construed to be a final determination of rights to pump groundwater. So whatever controls on pumping a GSA implements needs to address current and projected conditions, and be adaptive over the life of the GSP. The GSA will need to decide as data is developed and the model is refined which of these tools should be employed and for how long.

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66					Future Well Drilling, the GSP should include: Discussion of a possible moratorium on well drilling permits issued by the counties.	Water Code section 10725.6 authorizes a GSA to require registration of a well within its management area. Additionally, section 10726.4(a)(2) authorizes a GSA to control pumping by regulating, limiting, or suspending extractions from individual wells or extractions from wells in the aggregate, construction of new groundwater wells, enlargement of existing wells, or reactivation of abandoned groundwater wells, or otherwise establishing groundwater extraction allocations. However, that same subsection provides that any limitation on pumping by a GSA shall not be construed to be a final determination of rights to pump groundwater. So whatever controls on pumping a GSA implements needs to address current and projected conditions, and be adaptive over the life of the GSP. The GSA will need to decide as data is developed and the model is refined which of these tools should be employed and for how long.
67					Future Well Drilling, the GSP should include: Confirmation that it is a requirement for all new wells to be reported to the CBGSA.	Water Code section 10725.6 authorizes a GSA to require registration of a well within its management area. Additionally, section 10726.4(a)(2) authorizes a GSA to control pumping by regulating, limiting, or suspending extractions from individual wells or extractions from wells in the aggregate, construction of new groundwater wells, enlargement of existing wells, or reactivation of abandoned groundwater wells, or otherwise establishing groundwater extraction allocations. However, that same subsection provides that any limitation on pumping by a GSA shall not be construed to be a final determination of rights to pump groundwater. So whatever controls on pumping a GSA implements needs to address current and projected conditions, and be adaptive over the life of the GSP. The GSA will need to decide as data is developed and the model is refined which of these tools should be employed and for how long.
68					Process/Other: Fees set by the CBGSA will go toward the 5-year reporting requirements.	This can be considered during GSP implementation
69					Process/Other: “Analysis paralysis” could keep the CBGSA Board from taking action.	Comment noted.
70					Process/Other: There needs to be a commitment on the part of the CBGSA Board to implement the GSP instead of business as usual.	Comment noted.
71					Process/Other: We were told that the CBGSA Board members do not care – this is worrisome.	Comment noted.
72					Process/Other: During CBGSA Board meetings, the board members need to listen rather than being on their smartphones during the meetings.	Comment noted.
73					Process/Other: There needs to be transparency by all parties during GSP implementation.	The CBGSA Board of Directors holds responsibility for plan implementation. Decisions about implementation and funding will occur through publicly noticed board meetings. Groundwater monitoring data will be available publicly through the CBGSA data management system.
74					Process/Other: Long-term implementation should engage the upcoming generation.	Comment noted.
75					Process/Other: Ensure that the GSP works for (1) groundwater levels, (2) water quality, and (3) allows for an adequate environment in the Cuyama Basin.	Comment noted.
76					Process/Other: Better trust that the pumpers will cooperate, report and pay.	Comment noted.
77					Process/Other: This is the 8th groundwater report done in the Cuyama Basin. We have known about the overdraft problem for the last 50 years. This is nothing new. How are we going to change business as usual behavior? If this plan is not improved drastically, we will know SGMA to mean Same old Groundwater Mining Activities.	Comment noted.
78					This is now a single document, and should be better integrated. Along those lines, please include a cover page for the GSP. Please include be a glossary and acronym list for the GSP as a whole, rather than chapter by chapter. Finally, the chapter introductions declaring the chapter to be a part of the GSP are no longer necessary.	These changes have been made to the document.
79					Overall any statement or description that is about the Central Basin Area needs to be identified as such not the entire CBGSA, it is misleading and disingenuous to the reader of the report and plan.	The discussion of water budgets and groundwater in the GSP focuses on the entire basin because that is what is required by SGMA. Discussion of regional differences within the Basin are included in many sections of the GSP, which make clear that the primary issues are in the Central Basin.

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80					First, as mentioned in the last meeting, it is our hope that water allocation will be based on water/acre rather than historical usage. This not only se ems more fair but incentivises careful use while some are watering a lot in hopes it will be based on historical usage. Second, we want assurances that once water allocations are in place there would be a plan for redistribution of water if some ranches left or shut down. This is opposed to just adding this to further restriction of water in the Cuyama Valley. Our Story: We adopted twin boys who have special needs from SLO county 22 ye ars ago. We bought land and built a home 12 years ago here in the Valley. We planted 35 acres of Pastaccio trees 3 years ago. We are careful wi th our water irrigation. However, the demands for those trees will increase over the next few years. We have put all our funds and retirement into t his property and the trees were to be our support on retirement in the next few years as well as support for our kids. When we heard about the wat er restrictions we accepted an offer on our property that was below it's value. We would then have left California in order to financial suevive. The n the "80 percent" restriction was announced. The next day the offer was withdrawn. Now we are trying to find a way to survive, save our ranch, pl an for our future with all the controls and associated costs that are coming. Dave is a Civil Engineer, who worked for SB county, is is now working on Bakersfield. Karen is a Physical Therapist at Marian Reginal Medical Center in Santa Maria. We hire locals and teens when we need help. Thes e water restrictions may destroy our future finances and leave our two young men to be cared for by government sources. I was told that someone on the board said they do not care about the impact this plan may have on ranchers. Every family has a story. Most are not big money ranchers but hard working individual ranches. Please consider the best plan to help sustain the valley and not just the water reserves.	The specifics for how pumping allocations will be implemented will be determined during GSP implementation.
81					The Cuyama Basin is a relatively poor region financially. To cut back water usage and at the same time financially support an agency (the GSA) to implement the GSP will be a great financial strain. The GSP does not successfully address the problem of how it will financially implement the GSP over the next 20 years. In the interest of real change for the benefit of the Cuyama Region and California as a whole, I would suggest that the state offer financial assistance to the Cuyama Basin so that a refined GSP, when finally adopted, can be successfully implemented.	The CBGSA board continues to discuss costs and funding approaches for implementing the GSP, including potential state grants.
82					We the SMVWCD were formed under the “New” California Water Code, and specifically designed to investigate, identify, develop solutions and maintain a balanced conveyance to Recharge Groundwater and conducts the primary Flood Control component in concert with the other Sister Elements that manage the other Elements, that serve the water users of the Santa Maria basin (3-012). SMVWCD is the operator of record, paid the original loan off in 2007 making Twitchell Dam (TD) a transitional Facility, we have been the only operator of this facility and remain accountable and in communication within our chain of Command and Communication. Recent changes have been the Adjudication of Twitchell Yield making those waters a primary component and should be central to the foundation of your Project. Our District should have been considered and central to your Formation, Mission and Continuing Operation. Adding SMVWCD to your active mailing list will go a long way to keeping us informed. “Other Water Partners” should be added to your mailings as to keeping all parties informed and keep you in compliance with all “Necessary Parties” having ownership in the waters a.k.a of Twitchell Yield (TY). SMVWCD does not own or use water, it's our task to Operate the TD Facility, Manage Inflows, Cuyama and other inflows, report and take action to maintain “the Proper Function and Flow of the TY they only conveyance of water from TD is through the DWR Diversion under the “use of water”, the only acceptable extraction is from a water well. Water Users of the Santa Maria Basin (3-012 and interconnected sub-basins) have shared the surface and sub-surface flows from the Cuyama Basin (3-013) and beyond to and including the Watershed beyond 3-013 forever, the “Project Area” of the subject GSP is the Primary Water Supply for everyone up and downstream from your Project. It would be an understatement to say we collect just the benefits that come with the surface and sub-surface water flows that gravitate to the Pacific Ocean. We have accumulated many millions of yards of sediment from the Cuyama Valley and Federal Properties. The SMVWCD was formed after a long process that started in the 1920’s by a dedicated group of Community Members, Elected and Appointed Members that used 1928, 29 and 1930 Water Law that is the foundation to the now named California Water Code. to create an Agency A.K.A. SMVWCD in 1936, to help develop laws and processes to finance and bring under control the flows of the Cuyama River at Twitchell Reservoir (you call it Twitchell Lake) in 1954. Much the same path as any other water user. Our operation predates yours and the conditions of the Adjudication further alters water use of “Twitchell Yield” We at SMVWCD thank you for the great document and look forward its development and implementation. The SMVWCD along with the Water Users and Purveyors in our Basin along with the South Santa Barbara County Agencies support the “Weather Modification Process” to “supplement” Cuyama and Huasna River meteoric flow into Twitchell and all the other water storage Reservoirs. SMVWCD uses a Diversion Permit to directly recharge the groundwater in Basin 3-012 and beyond, this is the Primary water supply many water users that your document fails to recognize.	The discussion of stormwater capture in Chapter 7 notes the need to consider downstream water rights.
83					I haven't read the Draft GSP but I hope the water table in the Cuyama valley rises. One thing I notice when I ride my bike past the farms is that sometimes there are sprinklers blasting full water in the middle of a hot summer day and it seems that a lot of this water evaporates before it even touches the ground. Here's what I recommend: Hire a person or company that knows how to install efficient irrigation systems and make the farmers install these systems. The State of California would be wise to help farmers pay for these efficient irrigation systems. Also, if this hasn't already happened, put a meter on all wells in the Cuyama valley to measure the volume of water being pulled out of the ground by farmers, charge the farmers a nominal fee based upon usage, and give this money to Cuyama Community Services District to help pay for their water operation.	During the first five years of implementation, the CBGSA will develop and approve the groundwater pumping allocations and monitoring and enforcement measures, consistent with their authorities under SGMA.

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84					...I wanted to presence a number of shortcomings with the Draft GSP. I want to start by saying that I live in a place (Quail Springs) whose impact on our spring has been positive, as more and more water flows each year since our arrival and the banishment of the grazing operations that had deforested the spring and drained the wetland. This is an example of a human impact that has not been negative or neutral but rather positive. We as humans have the power to continue doing harm by being an extractive force or we can be regenerative and live with an ethic of fair share for all, including the voiceless. How can farming continue given this new water budget? This would seem to imply, to the industrial carrot farmers of this valley, a change that would be incompatible with their financial interests. This is far from the case. There are examples in this valley of dry farmed grapes and olives, whose sale is earning a high desert premium, and whose water usage per acre is little to nothing once the crops are established (the result of which is also carbon sink and healthier soils as opposed to the tilling operation that most ofthese farmers employ year after year). This feels like a win for all involved, it just requires that farmers turn away from crops with unsustainable irrigation requirements towards perennial crops like goji berries, grapes, olives, jujubes, pistachios etc that can earn more money per acre and will at the same time be in accordance with the 2040 plan for sustainability (of which little sustenance has been heard). Innovation is key - the ecosystem of people, plants, animals, and soil in this valley cannot afford more groundwater mining in this area. Their lives depend on a change toward a more regenerative usage of groundwater. As the rest of California looks to the Cuyama Valley as an example, we must keep in mind our grandchildren and the communities of flora and fauna 100 years from now and beyong that depend on our actions today.	The specifics for how pumping allocations will be implemented will be determined during GSP implementation. Changes in crop mix can be considered by private landowners in response to pumping allocations.
85					The GSP does not specify a plan or roadmap to achieve Sustainability with in the 20 year timeline; No Pumping Management plan, No plan to achieve the “Glide Path” approach to significant reductions, No Funding mechanism, No Incentives or Enforcements for compliance. No “nuts and bolts”...This Plan still needs the major components of a roadmap to achieving sustainability.	The specifics for how pumping allocations will be implemented will be determined during GSP implementation.
86					Filling the Data Gaps need urgent attention during the first few years: Better Representation in the Monitoring Wells, Understanding the major Faults in the basin , Installation of Stream flow gauges on the bridges, More than one Subsidence monitor, and there is no recognition or monitoring for the loss of wetlands, seeps, springs and surface flow.	Additional information will be developed during GSP implementation as the Monitoring Network is developed.
87					There is no plan to ever strive for the Measurable Objectives. No Interim Milestones were set above the Minimum Thresholds, some of which are below current conditions. This GSP appears to be tolerant of further dewatering with no achievable drought buffer and no recovery of the historic losses of groundwater from storage.	The Interim Milestones have been revised per direction by the GSA Board
88					Groundwater Quality is of enormous importance to the Cuyama community. It is widely known that the water quality is poor in the Cuyama Valley, and will only worsen with continued overdraft. Not enough is known about the sources and flow rates of groundwater in the basin. Arsenic, Boron, Nitrates and Ions should be studied to help inform the Hydrologic Model and protect from any further Undesirable Results.	Comment noted.
89					This Plan does not adequately address the desertification of the Basin as an Undesirable Result of groundwater overdraft. The declines of Interconnected Surface water with Groundwater and the resulting losses of Groundwater Dependent Ecosystems is a trend that must reverse. More data and protections are needed to ensure the vitality of the environmental beneficial users.	The analysis and discussion of GDEs in the GSP was developed to satisfy SGMA requirements as they relate to GDEs. The GSP recommends piezometers to monitor for groundwater levels in the vicinity of critical GDEs. Additional analysis of GDEs and actions for GDEs can potentially be added in the future at the direction of the CBGSA Board.
90					This GSP is a reasonable compilation of the many published reports on Cuyama Groundwater in the last 50 years. Analysis of the geology and available monitoring data is sufficiently addressed to present the current conditions of overdraft in the Basin. However, the lack of sufficient time and/or money has been repeatedly used to excuse the lack of sufficient policy development and implementation directives to achieve Sustainability. Very little new and revealing data was developed for this Plan, as little if any on-the-ground evaluations or investigations were involved. This Plan does not contain the ways and means to achieve the necessary reduction of groundwater use of 50 to 67%. No Allocations, restrictions, incentives or fee assessments are presented. No well canvassing or ground truthing, no field tests, no installation of monitoring facilities, no additional measurements were made. The Economic analysis, which was suggested would contain crop evaluations, employment analysis, land value considerations and other stakeholder impacts, is inexplicable omitted. No Sustainability Goal was ever discussed at the SAC or GSA level to help build consensus on the goal of this whole Plan. There was no discussion about Undesirable Results that were pre-existing in 2015. Data Gaps continue to drive up the Model uncertainty and hamper GSA decision making. No connection has been made between the setting of Minimum Thresholds and basin-wide Sustainability or the connection to the “glide slope” approach to pumping restrictions. As vice-chair of the Standing Advisory Committee, I am grateful for all the very hard and time consuming work that has been put into the document. We have come a long way, under acknowledged constraints, and limitations. This GSP clearly conveys the need for urgent action, but fails to provide a viable Implementation Plan to take that action. This is good work done, but the job is not yet done.	The specifics for how pumping allocations will be implemented will be determined during GSP implementation. An economic analysis will be performed and presented to the GSA Board. The SAC and CBGSA discussed and revised the sustainability goal at the May 30 and June 5 meetings. Other comments are addressed as specific comments in each chapter.

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91					In general, the Central Coast Water Board recommends that the number of chemical constituents included in the Minimum Thresholds (MT), Measurable Objectives (MO), and Interim Milestones (IM) be increased. The Central Coast Water Board agrees that MTs, MOs and IMs should be established for total dissolved solids (TDS), however, including only that single constituent is insufficient for determining whether a groundwater basin is being managed sustainably with respect to water quality or for determining if undesirable results are being addressed. Land use in the Cuyama Valley is dominated by commercial agriculture, an industry that utilizes a variety of chemicals and practices that pose threats to groundwater quality. Therefore, the Central Coast Water Board recommends expanding the list of chemical constituents in the MT, MO, and IM to include nitrate, arsenic, and major dissolved ions. The reasoning for this recommendation is described in detail below.	The rationale for why monitoring for just TDS in the Basin is provided in the Monitoring chapter. Based on this rationale, direction was provided by the GSA Board (through approval of the Monitoring Networks GSP section) to include only TDS for monitoring and sustainability in the GSP. Therefore, the Monitoring and sustainability chapters will only include water quality sustainability indicators for TDS, unless alternate direction is provided by the Board.
92					The Central Coast Water Board recommends expanding the list of chemical constituents in the MT, MO, and IM to include nitrate: Nitrate contamination of groundwater from agricultural activities is widely documented in the Central Coast region, including within the Cuyama Valley. Approximately 9% of on-farm domestic wells in the Cuyama Valley exceed the human health standard for nitrate concentration in drinking water1. The draft chapter states that the Cuyama Valley groundwater sustainability agency (GSA) does not have the authority to influence fertilizer use, and we are not suggesting the GSA should undertake such a regulatory role. However, the GSPs are required to implement thresholds and monitoring that can identify when undesirable results are occurring. Given the current impairment from nitrate in the basin and ongoing agricultural activity, it is appropriate to require thresholds and monitoring for nitrate in the Cuyama Valley groundwater basin. Nitrate monitoring is not unusual in agriculturally-dominated basins; for example, the Salinas Valley GSA is recommending an expanded suite of chemical constituents for its thresholds and monitoring. The recommendation in their most recent draft includes up to 25 different chemical constituents, including nitrate and arsenic2. Finally, we recommend that nitrate be reported as nitrogen (nitrate as N), because this convention allows for easy comparison and summation (e.g., calculation of total nitrogen).	The rationale for why monitoring for just TDS in the Basin is provided in the Monitoring chapter. Based on this rationale, direction was provided by the GSA Board (through approval of the Monitoring Networks GSP section) to include only TDS for monitoring and sustainability in the GSP. Therefore, the Monitoring and sustainability chapters will only include water quality sustainability indicators for TDS, unless alternate direction is provided by the Board.
93					The Central Coast Water Board recommends expanding the list of chemical constituents in the MT, MO, and IM to include arsenic: Arsenic is a toxic chemical compound that occurs naturally in relatively high concentrations in many of the sediments that form California groundwater basins, including those of the Central Coast. Groundwater data from the Water Board's GeoTracker GAMA3 website indicates that 12% of the wells in the Cuyama Valley groundwater basin exceed the maximum contaminant level (MCL) for arsenic in drinking water. The highest concentration recorded in the basin occurred in 2011 and was more than six times greater than the MCL. Furthermore, recent studies in the Central Valley of California4 and the Mekong Delta in Thailand5 have demonstrated that ground subsidence associated with groundwater over-pumping can mobilize arsenic by 'squeezing' it out of subsurface clay layers. The resulting mobilized arsenic can then enter groundwater and increase arsenic concentrations in nearby water supply wells. Because there is documented overdraft and subsidence in the Cuyama Valley, there is the potential risk of anthropogenically-induced arsenic contamination of groundwater due to arsenic mobilization from clay layers in the Cuyama Valley basin. Lastly, in addition to sediment-related sources, arsenic is a component in many pesticides commonly used on various crops. These factors suggest that arsenic should be included in the MTs, MOs, and IMs for the Cuyama Valley basin.	The rationale for why monitoring for just TDS in the Basin is provided in the Monitoring chapter. Based on this rationale, direction was provided by the GSA Board (through approval of the Monitoring Networks GSP section) to include only TDS for monitoring and sustainability in the GSP. Therefore, the Monitoring and sustainability chapters will only include water quality sustainability indicators for TDS, unless alternate direction is provided by the Board.
94					The Central Coast Water Board recommends expanding the list of chemical constituents in the MT, MO, and IM to include major dissolved ions: Major dissolved cation and anion composition in groundwater reflects the source of recharge water, lithological and hydrological properties of the aquifer, groundwater residence time, and chemical processes within the aquifer. As such, major dissolved ions are valuable for identifying different groundwater types (via Piper or Stiff diagrams) and for "fingerprinting" source water from individual wells. In addition, ionic charge balance provides quality assurance that all the major ions are actually included in the analysis and that TDS concentrations are accurate. Finally, collection and analysis of major dissolved ion samples is easy and inexpensive, and the cost of the analysis is well worth the data provided, particularly if the well is already being sampled for other constituents.	The rationale for why monitoring for just TDS in the Basin is provided in the Monitoring chapter. Based on this rationale, direction was provided by the GSA Board (through approval of the Monitoring Networks GSP section) to include only TDS for monitoring and sustainability in the GSP. Therefore, the Monitoring and sustainability chapters will only include water quality sustainability indicators for TDS, unless alternate direction is provided by the Board.
95	Ch 7 P. 69-70				In particular, these comments concern the proposal to enhance Cuyama Basin groundwater yield through the diversion and off-stream recharge of stormwater flows in the Cuyama River (Draft GSP, Ch. 7, pp. 69-70.) Any new use of Cuyama River flows will be subject to senior downstream water rights. The potential yield and benefits of any such project for the Cuyama Basin may be severely limited. Twitchell Reservoir is licensed by the State of California to capture Cuyama River stormwater flows for subsequent release and recharge of the Santa Maria Groundwater Basin (see attached License for Diversion and Use of Water #10416 issued by the State Water Resources Control Board). In most years, the entire stormwater flow of the Cuyama River is captured in Twitchell Reservoir. Any proposed new use of the flows of the Cuyama River will be conditioned to have no impact on the operation of Twitchell Reservoir. Given this constraint, it may be infeasible to develop any new off stream recharge program dependent upon Cuyama River flows. (attached: License for Diversion and Use of Water #10416)	The discussion of stormwater capture in Chapter 7 notes the need to consider downstream water rights.
97	General				The GSP proposes three funding mechanisms to fund planning efforts — fees based upon water usage, fees based upon acreage within the Basin, or a combination of the two. Fees based upon water use is the most defensible method for funding planning efforts given that current and historical water use patterns are the primary drivers of Cuyama Basin overdraft conditions.	The CBGSA board continues to discuss costs and funding approaches for implementing the GSP.
98					The GSP does not specify a plan or roadmap to achieve Sustainability with in the 20 year timeline; No Pumping Management plan, No plan to achieve the "Glide Path" approach to significant reductions, No Funding mechanism, No Incentives or Enforcements for compliance. No "nuts and bolts".	The specifics for how pumping allocations will be implemented will be determined during GSP implementation. The CBGSA board continues to discuss costs and funding approaches for implementing the GSP.
99					Filling the Data Gaps need urgent attention during the first few years: Better Representation in the Monitoring Wells, Understanding the major Faults in the basin , Installation of Stream flow gauges on the bridges, More than one Subsidence monitor, and there is no recognition or monitoring for the loss of wetlands, seeps, springs and surface flow.	Additional information will be developed during GSP implementation as the Monitoring Network is developed.
100					There is no plan to ever strive for the Measurable Objectives. No Interim Milestones were set above the Minimum Thresholds, some of which are below current conditions. This GSP appears to be tolerant of further dewatering with no achievable drought buffer and no recovery of the historic losses of groundwater from storage.	The Interim Milestones have been revised per direction by the GSA Board

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101					Groundwater Quality is of enormous importance to the Cuyama community. It is widely known that the water quality is poor in the Cuyama Valley, and will only worsen with continued overdraft. Not enough is known about the sources and flow rates of groundwater in the basin. Arsenic, Boron, Nitrates and Ions should be studied to help inform the Hydrologic Model and protect from any further Undesirable Results.	Direction was provided by the GSA Board (through approval of the Monitoring Networks GSP section) to only include TDS for monitoring and sustainability in the GSP. Therefore, this Section will only include water quality sustainability indicators for TDS, unless alternate direction is provided by the Board.
102					This Plan does not adequately address the desertification of the Basin as an Undesirable Result of groundwater overdraft. The declines of Interconnected Surface water with Groundwater and the resulting losses of Groundwater Dependent Ecosystems is a trend that must reverse. More data and protections are needed to ensure the vitality of the environmental beneficial users.	The analysis and discussion of GDEs in the GSP was developed to satisfy SGMA requirements as they relate to GDEs. The GSP recommends piezometers to monitor for groundwater levels in the vicinity of critical GDEs. Additional analysis of GDEs and actions for GDEs can potentially be added in the future at the direction of the CBGSA Board.
103					We ask your Board to ensure that any and all CBGSA funding would exclude any imposition of fees or assessments based on acreage or parcels. SGMA law regulates groundwater extraction, not land use. Non-irrigated rangeland acres do not contribute to Basin overdraft. Proposition 218 requires that assessments, fees or taxes levied on property must provide a direct and special benefit to that property. We urge your Board to prepare a simple GSP chapter with a self- monitoring area for the rangeland-level groundwater users that confirms they will continue to be permitted by right, including domestic wells for rural housing, stock water wells, and landscaping around rural housing. The property owners within the Self-Monitoring area would not need to sign any agreements, lending simplicity and cost- effectiveness to the Plan.	The CBGSA board continues to discuss costs and funding approaches for implementing the GSP.
104					Another critical issue of concern is the Draft Plan's proposal for cloud seeding to enhance rainfall. Cloud seeding within the proposed target area as shown in Figure ES-12 would create a rain shadow of drought for those of us Kern County landowners whose property lies directly north and east of the target area. The Los Padres National Forest is the significant property within the resulting rain shadow – after five years of drought the forest is a tinder box waiting to explode, without artificial rain manipulation making it worse. Cloud seeding also raises serious concerns about chemical residue and subsequent toxic exposure to humans and livestock as well as contamination of water. We believe that the many risks and costs associated with cloud seeding far outweigh any predicted benefit. We respectfully request that you remove the cloud seeding proposal from the plan. Capturing high stormwater flows in the Cuyama River and diverting it to recharge basins is the logical and less controversial alternative.	As noted in Chapter 7, additional study will be performed on cloud seeding prior to implementation
105					The California Legislature clearly states that SGMA is intended to "enhance local management of groundwater." Therefore, we recognize that the CBGSA is allowed the discretion and flexibility to craft its non-irrigated, non-districted portion of the SGMA plan to meet the needs of grazing properties, like ours, which many of us believe have been erroneously included.	The specifics for how pumping allocations will be implemented will be determined during GSP implementation.
106					Many comments made during the development of the CBGSPd were not recognized or adopted. The Cuyama "technical forum group" (TFG) met monthly by telephone, but it was made clear by WC representatives that the TFG would not serve as "advisory committee" during the process and development of the GSP and comments would only be selectively addressed.	Comment noted.
107					Previous water investigations of the CGB have indicated an overdraft or imbalance of between approximately 15,000 to 30,000 Acre Feet per Year. These studies have been completed by CDWR, the United States Geological Survey (USGS), the Santa Barbara County Water Agency (SBCWA) and the United States Department of Agriculture (USDA). The studies by the USGS and SBCWA have been peer reviewed and published and are available on-line. Based on the peer reviewed and published Studies the median imbalance is approximately 27,000 Acre Feet per Year. All recent and published studies indicate the imbalance to come from the Main or Central Zone, as denoted by both the USGS (2011) and Woodard and Curran Consultants (2019).	Comment noted.
108					Hydrographs, water level trends and analyses in the Ventucopa Area show a seasonal depression separated by the Santa Barbara Canyon Fault Barrier where static water levels quickly move from near 100 feet below ground surface (bgs) to near 650 feet bgs. In this regards, the Santa Barbara Canyon Fault Boundary needs to be more closely examined.	The best available information on this issue is presented in Chapter 2. Understanding of the Santa Barbara Canyon Fault will improve as additional information is gathered during GSP implementation.
109					Recent data from the far western area of the Cuyama Basin, otherwise denoted the Cottonwood Subarea indicate a shallow and non-recharged area since the Cuyama River became ephemeral in the 1960's and 1970's, when multiple yearly cuttings of Alfalfa were realized, and rejected recharge from the Cuyama Basin ceased. During development of the CBGSP, some overlying extractors in the Cottonwood Subarea have informally requested an "exclusion" from the Sustainable Groundwater Management Act (SGMA) to be able to further lower groundwater levels than they were in January 2015, outside the essence of SGMA.	Comment noted.
110					Saltwater intrusion in the Cuyama Valley/Basin is not an issue. Several Faults and Mountainous Barriers stretching from New Cuyama to near Twitchell Reservoir create a barrier to salt water intrusion. Water emanating from the Cuyama Basin is very hard, as most of the geological formations are marine in origin. Total Dissolved Solids by itself is not a good water quality indicator for the Basin, due to background concentrations, and periodic full schedule nutrient sampling needs to be addressed during the CBGSP implementation period.	Direction was provided by the GSA Board (through approval of the Monitoring Networks GSP section) to only include TDS for monitoring and sustainability in the GSP. Therefore, this Section will only include water quality sustainability indicators for TDS, unless alternate direction is provided by the Board.
111					The chronic lowing of groundwater levels, degradation of water quality due to "concentration" (over usage), and loss of GDE's is significant in the Cuyama Basin and needs to immediately be considered as any part of the CBGSP.	These issues are addressed in the GSP.
112					Recognized as one of the first developed Sustainable Groundwater Management Act (SGMA) Plans (GSP), the Cuyama Basin must be examined closely, as well as any objectives included in the plan to alleviate and address overdraft and imbalance. We see no dedicated resolve in the CBGSPd to alleviate imbalance. That would include pumping reductions or projects to augment recharge: Rainfall/Snowpack augmentation, off channel retention and/or percolation, Channel projects to increase direct percolation of stream seepage, or most importantly in the eyes of Yulalona Hydrology LLC Rangeland Management. Since the early 1990's the United States Forest Service (USFS) has neglected prescription burning in California, which has led to the most costly and destructive wildfires in California's history, including, but not limited to, the Zaca, La Brea, Thomas Fires and Camp Fires.	All of these actions were considered during CBGSA Board meetings. Pumping reductings, precipitation enhancement and stormwater capture have been included in the GSP in Chapter 7.
113					Previous studies and collected data indicate that the majority (near 75%) of the recharge to the CGB derive from the Ventucopa Corridor, from near the Santa Barbara Canyon Fault to Frazier Park, the uppermost part of the Watershed. Differing rainfall patterns and snow melt affect the runoff in the Cuyama River Watershed, sometimes combined, resulting in outlier peak flows such as in 1998 and 2005 when California Highway 166 washed out and lives were lost.	Additional analysis can be performed during GSP implementation.

Cuyama Basin Sustainability Section
Summary of Public Comments and Responses - General
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Comment #	Section	Section Paragraph #	Paragraph's Sentence #	Sentence Starts with, "...	Comment	Response to Comment
114					It is important to note that the Cuyama River Watershed and Drainage is very large; it drains 90 square miles in the upper watershed at Ozena, 866 square miles at USGS Gauging Station Cuyama River below Buckhorn Canyon 11136800 (NWIS Portal, 2019) and 1135 square miles to Twitchell Reservoir (USBR Portal, 2019). It is also important to note that the Cuyama River is not gauged between the inlet (Ozena) and the Outlet (USGS Gauging Station Cuyama River below Buckhorn Canyon 11136800) requiring losses or gains to the CGB to be estimated. This serves as a "data gap" that needs to be addressed during implementation of the CBGSP.	Discussion of the surface water stream gauges is included in Chapter 1.
115					The term "deep percolation" as part of the most recent study conducted by Woodard and Curran has been debated, but ignored in comments made during development of the CBGSP. Data from previous chemical analyses has indicated "ancient" (tens of thousand years old or older) water being produced out of the Main or Central Zone of the Basin (GAMA, 2007), with no traces of any anthropogenic tracers, such as, but not limited to, tritium. Certainly there is some stream seepage and direct percolation of rainfall as a part of "infiltration", but no recent evidence suggests any of this infiltration makes it through the vadose zone. This could be further examined utilizing piezometers and should be noted as another "data gap".	Additional analysis can be performed during GSP implementation.
116					During the 2007-2014 USGS-SBCWA collaborative study, hydrologic technicians and analysts were asked to no longer access Grimmway and Bolthouse properties (by Grimmway and Bolthouse representatives), including monitoring wells in in section 10N-25W sections 21 and 23 (based on the San Bernardino Baseline and Meridian). This study was initiated by Santa Barbara County Supervisor Joe Centeno, concerned about water usage in the Cuyama Valley, far pre dating SGMA. It is interesting that in 2017-18 "private" data (CBGSPd, figure 4-9) has been submitted from these large agricultural companies, with no oversight, quality assurance or control. It should also be noted that the USGS and SBCWA have recorded data from these areas during the 1970's to 2007, which are still helpful when calibrating simulations.	As discussed in Chapter 2, the reasonableness of private landowner data was assessed through comparison with USGS and DWR well data.
117					The 1997 Santa Maria Basin litigation, Santa Maria Valley Water Conservation District versus the City of Santa Maria, et al (consolidated for all legal purposes) (1-97-CV-770214) did not adequately address upstream (Cuyama River and Watershed) water rights, leaving the issue of Cascading Basins unresolved.	The discussion of stormwater capture in Chapter 7 notes the need to consider downstream water rights.
118					In the Cuyama Groundwater Basin (CBG), data gaps have been realized by analysts from multiple agencies working on water budgets. The fact that large agricultural entities have not acted in good faith since 2007 to produce adequate records of pumpage and static drawdown, combined with limited scientific peer reviewed data of the interactions between the Main or Central Zone with both the Ventucopa Uplands and Cottonwood Subarea, demonstrate the need for a "deep" (1200' bgs minimum) "depth dependent" monitoring well in Section 21 or 23 to adequately derive hydraulic properties of the deep older alluvium and Morales Formation.	The CBGSA will expand and review the monitoring network through the first five years of implementation.
119					Climatic Fluctuations are addressed as Appendix C of this memorandum to the Hallmark Group pertaining to Water Availability of the Cuyama Groundwater Basin. With the addition of Methane and Carbon from the melting permafrost (Sigmov, 2019), coupled with Carbon Dioxide being liberated from the Oceans (Goodridge, 2018) the CDWR tools for evaluating climate change are inadequate.	The GSP climate change analysis was prepared consistent with SGMA guidance from the Department of Water Resources. The GSA can consider additional climate change analyses during GSP implementation if desired.
120	General				Comment: As written, the CBGSP does not describe an actual Sustainability Goal for the Cuyama Basin and the steps to achieve that goal. Further, the Draft CBGSP does not explicit name a sustainable yield for the Basin, although the concept has been discussed at CBGSA meetings and mentioned in Chapter Two of the CBGSA. Essential elements of a concrete, achievable plan have not been established, as mandated by the Final GSP Emergency Regulations. Source: "354.24 Sustainability Goal: The Plan shall include a description of the sustainability goal, including information from the basin setting used to establish the sustainability goal, a discussion of the measures that will be implemented to ensure that the basin will be operated within its sustainable yield, and an explanation of how the sustainability goal is likely to be achieved within 20 years of Plan implementation and is likely to be maintained through the planning and implementation horizon." Source: "354.30. Measurable Objectives (e) Each Plan shall describe a reasonable path to achieve the sustainability goal for the basin within 20 years of Plan implementation, including a description of interim milestones for each relevant sustainability indicator, using the same metric as the measurable objective, in increments of five years. The description shall explain how the Plan is likely to maintain sustainable groundwater management over the planning and implementation horizon.	Chapter 3 includes a sustainability goal approved by the CBGSA Board. Undesirable results statements are also provided in Chapter 3, with minimim thresholds and measurable objectives provided in Chapter 5.
121	General				The Draft CBGSP was developed over nearly two years of meetings and chapter review. However, several essential elements of the Plan were developed by the plan development consultants out of the public view and without any review, input or vote from the CBGSA or the Standing Advisory Committee. These sections were first presented to the SBGSA, the SAC in the text of the Draft CBGSA. These include: Setting a 30% Threshold for all five Undesirable Results in the Basin, without scientific evidence or justification Setting all Interim Milestones for Groundwater Levels to be identical with all Minimum Thresholds. Setting Minimum Thresholds for: Groundwater Quality Subsidence Interconnected surface water Setting a Sustainability Goal for the Cuyama Basin and pre- existing Undesirable Results. This approach is unacceptable and runs counter to the claim that the process encouraged "input, discussion, and questions from both the CBGSA Board of Directors and SAC members as well as public audience members (Draft CBGSP, Chapter One, P. 58, 1.3.5). On what are arguably the most important elements of the Plan, no "input, discussion, and questions" were encourage or elicited from the CBGSA, the SAC or the public. Recommendation: These critical sections require further review by the CBGSA, the SAC and the public.	All of these issues have either been discussed in CBGSA Board meetings or included in draft Chapters that were previously reviewed and commented on.
122	General				The process that the CBGSA undertook to apply for a DWR Technical Support Services grant to fund the drilling of three much-needed new monitoring wells was discontinued halfway through the process, without notification to the CBGSA, the Standing Advisory Committee or the public. Apparently the initial grant application was submitted, the second portion of the grant application process was not completed and funding three essential wells to expand the Cuyama Basin's monitoring network and fill critical data gaps was not successfully secured. No public statement or explanation has been issued regarding this decision, with all decisions made behind closed doors.	Comment noted.

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Comment #	Section	Section Paragraph #	Paragraph's Sentence #	Sentence Starts with, "…	Comment	Response to Comment
1					This section is the most likely to be read by stakeholders and interested members of the public, and contains confusing wording and organization. It could use a thorough read-through by an editor for clarity.	Comment noted. It has been reviewed by a technical editor
2	P. ES-2				The basin setting map does not show most of the features described in the Basin Setting section, and does not have a legend for the various color GW basins. The name of the basin in the map (Cuyama Valley) is different than the name of the basin used in the document (Cuyama). Recommend revising.	The figure has been replaced
3	P. ES-3				The Existing Groundwater Conditions section of the ES should focus on more groundwater levels rather than water quality, as water quality is not the primary issue in the basin. The summary should discuss the various regions within the basin, rather than getting into the specific concentrations of water quality constituents. Also, Figure ES-4 is not illustrative of existing conditions in the basin and doesn't belong in the ES; a set of representative hydrographs may be more useful.	The section has been revised
4	P. ES-4	1	Final		Please revise the description of water quality as "not good". Possibilities include "poor", "degraded", or "impaired". Also, suggest splitting the sentence up for clarity.	The text has been revised
5	P. ES-4	Last			"The lowering of groundwater levels has corresponded with degradation of groundwater quality, and particularly levels of TDS." Add the word "elevated" or "increased" before TDS.	The text has been revised
6	P. ES-4	Last			Also, suggest removing the editorial word word "minor" from the second sentence. The specific amount of measures subsidence could be stated to make the sentence more clear.	The text has been revised
7	P. ES-7	3			"Since there are no projected changes in land use or population in the Basin, the projected annual decline in groundwater storage is estimated to be the same as under current conditions." Please revise to "Assuming no changes in land use or population in the Basin, the projected annual decline in groundwater storage is estimated to be the same as under current conditions."	The text has been revised
8	P. ES-7				Suggest moving the description of the modeling in the second to last paragraph further up in this section for clarity.	The text has been revised
9	P. ES-7	Last			Suggest changing "annual water budget of minus 25,000 acre-feet…" to "overdraft of 25,000 acre-feet".	The text has been revised
10	P. ES-9				The "summary of existing wells" table should be removed from the ES. It is not relevant to the plan going forward, and the numbers in it are misleading without explanation. The description of existing monitoring is also not particularly useful in the ES. Suggest replacing with a description of the proposed monitoring plan (number of wells, frequency of monitoring, etc.).	The table has been changed.
11	P. ES-11				Please edit the first paragraph for clarity. "Projects that increase water supply" are management actions, not some separate category.	The terminology used in the ES is consistent with Chapter 7
12	P. ES-11				There are three separate places where it is stated that the reductions will be reevaluated.	The current version of the ES only states this once.
13					TDS Section - This section needs to be rewritten for clarity and appropriate descriptions. This states that there is a California water quality standard the is exceeded but does not say for what? Drinking water? Most water is used for agriculture this comparison does not have merit. Overall using the TDS measurements and stating that there 'high' levels only has meaning if it is in relationship to a use of the water, without showing a use it is has no meaning and is ambiguous. Since TDS in any particular situation can not be fixed' why is this being used? How will it be defined as an Undesirable outcome?	Comment noted. The text has been revised to note that the MCL is for drinking water
14					Groundwater Graph is misleading, it seems to represent the Entire CBGSA area, but is really just for the central area.	The graph is showing data for the entire Basin (consistent with the scale of data reporting in Chapter 2). It is noted in the text that the central basin contains most of the overdraft in the Basin.
15					The subsidence statement needs clarification, this seems like speculation, do you know why this occurred and do you know if it has contributed in any way to any other 'undesirable' situations, this is stated as reality, also, the actual measurement is insignificant and could have occurred simply because the school put to much water on the ground and caused the soil to settle, ground squirrels, gophers...	The sentence has been revised
16		Last paragraph			Water Budget: Move last paragraph to the opening paragraph/statements, Add "Central Part" to all references to "Basin". This is written as if the entire CBGSA is in in crisis, very misleading.	The data reported is for the entire basin, not just for the central basin. This is consistent with the scale of data reporting in Chapter 2. The regional differences are noted in the last paragraph.
17					Projects and Management Actions: Should state Central Area Basin or in Proposed Central Area Basin	The text nodes that projects will be in the Central Basin where appropriate
18					Funding: Statement that the funding will be borne by the Landowners is an assumption that needs to be clarified, nothing has been established or determined.	The sentence has been revised
19	ES-3	Final			The San Emigdio Mountains lie along the eastern edge of the basin, the Calient Range lies along the northern edge (maybe northeastern edge), this is unclear	The figure has been replaced
20	ES-1			Although current analysis indicates groundwater pumping …	Acknowledges additional data and review of model are needed. What are the "additional efforts to confirm the level of pumping reduction required to achieve sustainability"… "as outlined"? What section & page?	This is noted in the Water Budget section of Chapter 2
21	ES-2 Figure ES-3				Fig. ES-3 could use an inset map to show location in California	The figure has been replaced
22	ES-4			Figure ES-5 is a graph showing …	Suggest "…showing **modeled** annual and cumulative long-term reduction…"	The text has been revised
23	ES-6				Summarize how "5-year drought buffer" was calculated or estimated	The sentence has been revised
24	ES-7			Analysis of the Basin as a whole shows that much…	The basin must be considered as a whole. The Central basin is downgradient of other areas of the basin. Groundwater flow from the western and southeastern areas into the Central basin is being intercepted, cutting off water that historically has helped to reduce drawdown effects of pumping in the Central basin.	Comment noted. While the ES mostly discusses conditions over the entire Basin, it is still appropriate to discuss regional differences.
25	ES-11			The exact amount of required…	Acknowledges the effects of uncertainty in predicted overdraft, but suggest a more explicit discussion of uncertainty.	Comment noted. Uncertainty discussion has been added to Chapter 2. The ES text notes that the amount of pumping reductions may be revised as additional evaluations are performed in the future.

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Comment #	Section	Section Paragraph #	Paragraph's Sentence #	Sentence Starts with, "…	Comment	Response to Comment
26	ES-13 Fig. ES-14				Add small well location symbols to the Management Area figure, so the reader can get an idea of the spatial basis of projected drawdown contours. Since no pumping reductions are required outside of the drawdown-defined Mgmt Areas, whether a well is in or out is a big deal for landowners in terms of their costs. Consider classifying wells as in or out within the OPTI system.	The OPTI well database contains monitoring wells, not production wells. Location data on many production wells is not available and therefore it would be misleading to put them on the map.
27	ES-15 Fig. ES-16				Suggest enlarging Fig. ES-16 for readability.	The text has been enlarged
28	General			Interim Milestone?	Question: What happened to Interim Milestones?	Interim Milestones are shown in Chapter 5 (and adjusted per Board direction), but are not needed in the ES
29	P. ES.3			Groundwater quality in the Basin is variable…	Comment: This Groundwater Quality section makes all the valid points for the need to monitor more than just TDS, and then it fails to mention that the Plan will only monitor TDS.	The text has been revised to be consistent with Board direction
30	P. ES.6 & P. ES.9			these representative wells and subsidence…	Comment: The text fails to mention that the Monitoring Network has significant Data Gaps. No Stream Gauges or Piezometers, only one Subsidence meter in the center, no Fault characterization. Addition: Mention Data Gaps, even if only just a little. How will this GSP measure for subsidence in the center of the cone of depression? How will this GSP evaluate stream flow/groundwater interactions? How will this GSP know if pumping is causing Arsenic or Boron laden waters to migrate into the cone of depression?	The text has been revised to note that there are data gaps in the monitoring network
31	P. ES.6			In general, measurable objectives were established…	Question: If there is no planed intention or Interim Milestones toward the Measurable Objective, how can they serve as a drought buffer? What part of this GSP aims to achieve the MO? Comment: It would be pure luck or maybe a freak coincidence to ever get back up to the Measurable Objective. The Sustainability Goal is simply to not exceed the Minimum Thresholds, which will be a big lift as it is.	Interim Milestones are shown in Chapter 5 (and adjusted per Board direction), but are not needed in the ES
32	P. ES.13 Figure ES-14			the yellow, orange and red areas indicating areas …	Correction: The red areas actually indicate groundwater elevation declines in excess of 7 feet of per year, not just 4. Without a legend on Fig. ES.14 this text is inaccurate and an underrepresentation of the significance of the problem areas.	The text has been revised
33		P. 2, 3rd paragraph		The Draft GSP outlines…	Addition of the clarification word “basinwide”: Although current analysis indicates groundwater pumping reductions on the order of 50 to 67 percent basinwide may be required to achieve sustainability, additional efforts are required to confirm the level of pumping reduction required to achieve sustainability	This has been added.
34		P. 2, 3rd paragraph		The Draft GSP outlines…	Comment: The “additional efforts … required to confirm level of pumping…” referred to in this sentence should include the approximately 30% of wells in the valley that have not been identified or from which data has been collected. Source, Draft CBGSP, Chapter One, P. 13, 1.2.2	Comment noted. This can be considered in GSP implementation, but this level of detail is not needed in the ES
35	P. 4	Existing groundwater conditions			Question: What is the source of the detailed water quality information, specifically the levels of constituents?	This is in the Groundwater Conditions section of Chapter 2
36	P. 8	Water budgets, 1st paragraph			Addition: To clarify the Basin’s condition historically, this sentence should be amended (with text in red) to read: “The Basin has been in an overdraft condition for many years. Overdraft conditions in the Basin were first documented in the 1950s, and the DWR has identified the Basin to be in “critical overdraft” since 1980.	It is noted in the first paragraph of the ES that the basin is in critical overdraft
37	P. 8	Water budgets, 3rd & 4th paragraphs			Addition: Please include a clear explanation of sustainable yield, a critical element of the CBGSP, in this section. While explained in Chapter Two, the Sustainable Yield belongs in the Executive Summary as well to illuminate the extent of the overdraft and the task ahead to reach sustainability.	The Basin sustainable yield is shown in Figure ES-8
38	P. 10	Monitoring Network, Summary of Existing Monitoring Wells			Question/Comment: This table is confusing. The Executive Summary indicates on P. 7 that that there are 61 representative wells. Yet this table (titled Summary of Existing Monitoring Wells) seems to indicate that there are 222 existing monitoring wells (222 Total number of DWR and CASGEM wells). Please clarify.	The table has been replaced
39	P. 13	Last Paragraph			Question/Comment: This paragraph refers to the very misleading inclusion of GSA projects that “these include installing new wells to secure reliability of water supply to residents of Ventucopa, Cuyama and New Cuyama.” What is the GSA's role in these projects? P. 12 of the Executive Summary, states that funding for three new community wells is the responsibility of the communities. In Chapter 8, (P. 6, 1.1, Fig 8-1), states that oversight, permitting, installation and operation of the wells is the responsibility of the communities. So if funding, installation and operation of these wells is the responsibility of the communities, why are they included in the GSP at all? They do not appear to be projects of the CBGSP. Please clarify.	Financing options for these projects are included in Chapter 8. Financing does not need to be provided directly by the GSA for the projects to be included in the GSP.
40	P. 15	3rd bullet point			Change: Basn is misspelled	This has been fixed.
41	P. 16	Figure ES-16			Change: In the footnote to the overall schedule of activities (*Represents Management Area Activities), please text to read: “Represents Activities that will take place in any currently identified management area, or area that may be identified in the future.”	The footnote text has been revised
42	P. 17	1st paragraph		For budgetary purposes, the …	Correction: Chapter 8 (P. 9, last paragraph) notes this figure as $1.3 million per year.	This has been corrected.
43	P. 17	General			Addition: As an Executive Summary document that will be more widely read than the full CBGSP, it seems prudent to include a brief summary of the consequences of not implementing this plan, and thereby not achieving sustainability.	While SGMA and the GSP resulations provide general information on what would happen if the GSP fails, there are many uncertainties regarding that outcome. Therefore, it would not be helpful to include this in the GSP document, but this topic can be discussed in future GSA meetings
44	ES-2 Public Meeting Figure			"Public Meeting" table	reference table in text + table caption, such Table ES-1 Number of Public Meetings	A reference has been added to the text
45	ES-2			The strategy incorporated monthly CBGSA…	Discuss table in text, such Table ES-1 Number of Public Meetings shows the number of....	A reference has been added to the text

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Comment #	Section	Section Paragraph #	Paragraph's Sentence #	Sentence Starts with, "…	Comment	Response to Comment
46	ES-3			The United States Geologocal	spelling - Geological	This has been fixed.
47	ES-3			Concentrations of boron at up to…	Consider adding the secondary MCLs for chloride and boron	References to these constituents have been removed as they are not discussed in detail in the main document.
48	ES-3			Consider adding the range of years instead of many years.	Consider adding the range of years instead of many years.	The sentence following this one notes that overdraft conditions have been documented since the 1950's
49	ES-3			These values exceed the California…	The statement needs clarification, please add the secondary MCL and define what a secondary MCL is. For example, secondary MCLs address aesthetic issues related to taste, odor, or appearance of the water and are not related to health effects, although elevated TDS concentrations in water can damage crops, affect plant growth, and damage municipal and industrial equipment.	The sentence has been revised to note that this is the secondary MCL.
50	ES-7			The Basin has been in overdraft…	Consider deleting this sentence since already mentioned earlier in report	The sentence has been removed.
51	ES-9			Figure ES-9: Groundwater	Consider removing the bullet point and increasing the figure size to read the legend	The figure has been enlarged.
52	ES-14			In 2023, monitoring in 2023…	Consider deleting "in 2023" (repeated)	This has been corrected.

Cuyama Basin Sustainability Section
Summary of Public Comments and Responses - Chapter 1
December 2019

Comment #	Section	Section Paragraph #	Paragraph's Sentence #	Sentence Starts with, "…	Comment	Response to Comment
1	1.2.4		2	"Local agencies such as the CCSD and"	CCSD does in fact test groundwater quality every six months and has for years according to employees and contractors involved.	The sentence has been removed
2	1.3.1		2nd bullet		Here you say CCSD does monitor and report groundwater elevations	The sentence in 1.2.4 has been removed
3	1.3.4			"The CBGSA Board appointed the"	Look at language RE: SAC. Not true. Delete "primary." During discussions there was never any intent that the SAC would be the "primary" body for providing advice. The GSA is equally interested in comments from the public no matter in what venue the comments are received. Advice and input primarily comes from Woodard & Curran.	The text has been revised
4	1.3.1				Benefits - Beneficial Users: The first statement is very broad. There has not been anything that describes the benefits to water users in the areas that are Not in the problem area of the Central Area, assuming that the area can be remedied, this has No benefit to any other area, especially the Western and North Western areas where the water comes from the water shed in the mountains to the south and Not from the water shed from the East (as per your presentations and data)	This section is intended to describe beneficial users of groundwater in the Basin, not just those that benefit from the GSP projects and actions.
5	P. 1.1 Sec. 1.1			Introduction and Agency Information: List of GSA members	Addition: Alternate Members and Affiliations should also be listed here.	These have been added
6	P. 1.2 Sec. 1.1.2			Management Structure: SAC members	Addition: As designated by the GSA, the SAC is a 9-member committee and a vacancy will hopefully be filled soon.	The text has been revised to note that the 9th SAC position is currently vacant.
7	P. 1.7 Sec. 1.2.2			Plan Area Setting: "However, some wells may not have been reported to DWR …	Question: How does the GSP plan to account for the 30% of total wells that were not reported to the DWR? Addition: These well should be investigated and considered for inclusion in the Monitoring Network as Representative wells.	This will be considered during GSP implementation.
8	P. 1.21 & 1.22 Figure 1-15 & Figure 1-16			Production Well Density & Domestic Well Density	Addition: These wells should be characterized as De minimis, domestic, industrial, rangeland or irrigation users and must also be identified and incorporated in density mapping. Question: How does this GSP define "de minimus"? Source: Final GSP Emergency Regulations, Section 354.8(a) " (5) The density of wells per square mile, by dasymetric or similar mapping techniques, showing the general distribution of agricultural, industrial, and domestic water supply wells in the basin, including de minimis extractors, and the location and extent of communities dependent upon groundwater, utilizing data provided by the Department, as specified in Section 353.2, or the best available information."	These figures depict data from DWR's Well Completion Report database, which is currently the best available information. This could be potentially updated during GSP implementation.
9	P. 1.26 Sec. 1.2.3 Table 1.1			Deactivated stream gages	Addition: Please provide a discussion of the challenge to long term monitoring of stream flow. How critical is this data gap. Suggestion: Install flow gauge on all brides over the Cuyama River (only 3) and major drainages, ASAP.	Text has been added.
10	P. 1.45 Sec. 1.3.1			Holders of overlying groundwater rights, including agricultural users ...	Question: Are there industrial users and industrial wells in the Cuyama Basin? Should they be identified here and in the DMS as such?	Industrial users are not included in the GSP because they do not have a net consumption of water.
11	P. 1.45 Sec, 1.3.1			Disadvantaged communities: There are two disadvantaged communities …	Correction: The communities of New Cuyama and Ventucopa have been designated as Disadvantaged Communities; the community of Cuyama has been designated as a Severely Disadvantaged Community. Source: https://gis.water.ca.gov/app/dacs/	The text has been revised to add Ventucopa
12	P. 1.45 Sec, 1.3.1			Potential interests that are not present in the Cuyama Basin…	Question: What is the definition of an "Environmental User of Groundwater"? Would this include GDEs? Would this include Wildlife habitat and its connectivity? Would this include the beneficial uses such as fishing, birding, swimming and living, all of which depend on groundwater?	Environmental users have been added to the list of users present in the Basin
13	P. 1.50 Sec. 1.3.4			On June 30, 2017, the CBGSA Board …	Addition: Please describe the proportional hybrid weighted voting by CBGSA members, including the criteria requiring a supermajority, as stipulated by the Joint Powers Agreement which governs the CBGSA's authorities.	This has been added
14	P. 56 Sec. 1.3.4			In March 2018, the CBGSA Board expanded the SAC membership …	Comment: The inclusion and active participation of the Hispanic community in the development and implementation of this GSP is critical. Action: Appoint and maintain a full 9 seat SAC with at least 2 Hispanic members	The text in section 1.1.2 has been revised to note that the 9th SAC position is currently vacant.
15	P. 1.51 Sec. 1.3.5			Community input was encouraged …	Comment: Community input was extremely limited at all CBGSA meetings. Time constraints and the need to "keep moving on" were often used to discourage community input at the public GSA meetings.	Comment noted. The text has been revised.
16	P. 1.52 Sec. 1.3.5			The input was also used to develop context and content for CBGSA meetings…	Change: The word, "contend" should be "content"	The text has been revised.

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Comment #	Section	Section Paragraph #	Paragraph's Sentence #	Sentence Starts with, "…	Comment	Response to Comment
17	P. 1.53 Sec. 1.3.5			The GSP's list of projects was revised …	Correction: The GSP only offers encouragement in support for, but not construction of any new wells. This appears responsive to the disadvantaged community public comment & real needs while doing and committing to nothing. This GSP only proposes to support the idea of grant funding to construct new wells.	Comment noted. No change needed as the sentence is accurate in that these projects are included in the GSP project list in Chapter 7.
18	P. 5			Acronyms list	Addition: GDE Groundwater Dependent Ecosystems SAC Standing Advisory Committee SBCWA Santa Barbara County Water Agency	These have been added.
19	P. 7			1.1 Introduction and Agency Information: List of GSA members	Addition: As alternates frequently attend meetings, they (and their affiliations) should also be listed here.	These have been added.
20	P. 7			1.1 Introduction and Agency Information	Addition: Section 354.6 of the Final GSP Emergency Regulations includes the following requirement: "(e) An estimate of the cost of implementing the Plan and a general description of how the Agency plans to meet those costs." This item is not included in the Appendix A Checklist, nor is it outlined in Chapter 1, Section 1.1. Question: Will the CBGSP be considered incomplete without this information? Should the Draft CBGSP have included a placeholder notation here? Source: Final GSP Emergency Regulations	This is discussed in Chapter 8
21	P. 8			1.1.2 Management Structure: SAC members	Addition: Please include the existence of one vacant seat in the 9-member committee.	The text has been revised to note that the 9th SAC position is currently vacant.
22	P. 9			Information presented in Figures 1-15…	Question: How does the CBGSP plan to account for the 30% of total wells that were not reported to the DWR?	These figures depict data from DWR's Well Completion Report database, which is currently the best available information. This could be potentially updated during GSP implementation.
23	P. 27 & 28			Figure 1-15: Production Well Density Figure 1-16: Domestic Well Density	Addition: De minimis users must also be identified and incorporated in density mapping. How does the CBGSP define "de minimis" user? Is it consistent with the State Water Board's definition? The State Water Board Fact Sheet issued in March 2017 "De minimis Extractors: SGMA defines a de minimis extractor as "a person who extracts, for domestic purposes, two-acre feet or less per year." A person who extracts two acre-feet or less per year for a non-domestic purpose is not considered a de minimis extractor. Domestic purposes do not include commercial activities. A person who extracts more than two acre-feet per year from a parcel is not a de minimis user. De minimis users are exempt from reporting in unmanaged areas. However, the State Water Board may require de minimis extractors to report in a probationary basin if necessary. The emergency regulation clarifies how the term "domestic purposes" will be interpreted when determining if an extractor is de minimis. The Final GSP Emergency Regulations, Section 354.8(a) indicate that the CBGSA must show "(5) The density of wells per square mile, by dasymetric or similar mapping techniques, showing the general distribution of agricultural, industrial, and domestic water supply wells in the basin, including de minimis extractors, and the location and extent of communities dependent upon groundwater, utilizing data provided by the Department, as specified in Section 353.2, or the best available information."	These figures depict data from DWR's Well Completion Report database, which is currently the best available information. De minimis users could be potentially be identified and included during GSP implementation.
24	P. 32, 1.2.3			Deactivated stream gages	Addition: Response to public comment #19 (P. 167) requesting explanation of the deactivation of 4 stream gages, was "The text will be modified to discuss the deactivated USGS gages." No discussion appears in the Draft CBGSA. Please provide discussion of the deactivated USGS gages.	Information on these gages is provided in Table 1-1
25	P. 50, 1.2.7			Element (1) (i) Efficient water management practices, as defined in Section 10902, for the delivery of water and water conservation methods to improve the efficiency of water use.	Change: Location: Cuyama Basin Irrigation District. Does this exist? Was this supposed to be the Cuyama Basin Water District? And if so, please explain the CBWD's role in " Efficient water management practices, as defined in Section 10902, for the delivery of water and water conservation methods to improve the efficiency of water use."	It was been corrected to say Cuyama Basin Water District. As the representative of many landowners in the Basin, it is expected that the CBWD would play a role in implementation of potential water conservation measures.
26	P. 51, 1.3.1			Beneficial Users and Users of Groundwater	Question: Are there industrial users and industrial wells in the Cuyama Basin and have those been included in the Draft CBGSP?	Industrial users are not included in the GSP because they do not have a net consumption of water.
27	P. 51, 1.3.1			Disadvantaged communities: There are two disadvantaged communities in ...	Correction: The communities of New Cuyama and Ventucopa have been designated as Disadvantaged Communities; the community of Cuyama has been designated as a Severely Disadvantaged Community. Source: https://gis.water.ca.gov/app/dacs/	The text has been revised to add Ventucopa
28	P. 56, 1.3.4			GSA Decision Making Process	Addition: Please add a discussion of the proportional voting by CBGSA members, including the criteria by which specific votes require a supermajority, as stipulated by the Joint Powers Agreement which governs the CBGSA's authorities.	This has been added

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29	P. 56, 1.3.4			In March 2018, the CBGSA Board expanded …	Comment: This change was made at the insistence of the public and at the unanimous request of the full Standing Advisory Committee, due the lack of representation of the Hispanic community, as required by the Final GSP Emergency Regulations. Since the resignation of one Hispanic SAC member in December 2018, the CBGSA has delayed replacing that committee member for five months, a critical omission during the final phase of development of the GSP. Reasons have included cost and timing. CBGSA staff quoted an estimate of $913 to initiate and complete the process of selecting a replacement. It can be accurately stated that the 11-member SBGSA and the original 7- member SAC, had no Hispanic representation at all. In the 23 months that the GSP has been in formal development, during 10 of those months, 2 members of the Hispanic community were included on the SAC, during 5 of those months 1 member of the Hispanic community has been included. In a community that is roughly 50% Hispanic, this cannot be even remotely considered to be appropriately representative of the demographics of the community. Section 354.10 (d)(3)of the Final GSP Emergency Regulations states that the GSP must provide "A description of how the Agency encourages the active involvement of diverse social, cultural and economic elements of the population within the basin." Aside from translation of meeting announcements, newsletters, and the Draft GSP Executive Summary into Spanish, and holding workshops in Spanish, the community engagement process has not actively engaged with the Hispanic or the disadvantaged community. In fact, for all SBGSA and SAC meetings, unpaid volunteer interpreters have provided live interpretation, utilizing equipment on loan from the local school district.	Comment noted. Actions taken to outreach to the Spanish community are described in Sections 1.3.6 and 1.3.7
30	P. 57, 1.3.5			Community input was encouraged and received …	Comment: Community input was extremely limited at all CBGSA meetings. The Board Chair and Vice Chair were extremely brusque with the public on multiple occasions and did not permit public comment, even when the public used the required comment process. On multiple occasions, requests for comment were rejected citing time restrictions, claimed irrelevancy, or that the process was "moving on". On several occasions, one comment or question may have been permitted from members of the public, but follow-up questions or comments were not permitted. Additionally, following the established board procedure, with public comment following board discussion, even after subsequent additional board discussion, with additional issues raised, public comment was not permitted on the additional issues raised. Further, on at least one occasion, the Board Chair and Vice Chair permitted a SBGSA Director to speak harshly to staff and a member of the public. This conduct is not consistent with the claim "Community input was encouraged and received at all CBGSA meetings."	Comment noted. The text has been revised.
31	P. 58, 1.3.5			How Public Comment Was Used….	Change: 1st paragraph, "contend" should be "content"	The text has been revised.
32	P. 58, 1.3.5			All CBGSA-hosted public meetings…	Comment: This statement is a misrepresentation of the actual circumstances. See Comments #13 & 14 above. Additionally, the public was NOT encouraged to provided input or discussion at CBGSA meetings. The public was permitted to ask one question, perhaps two, but NO discussion was permitted. However, at meetings of the Standing Advisory Committee and at Public Workshops, the public was encouraged to provide input, engage in discussion and ask questions.	Comment noted. The text has been revised.
33	P. 59, 1.3.5			The GSP's list of projects was revised to include	Correction: "The GSP's list of projects was revised to include support for construction of new wells for these communities." The GSP did not propose to construct or finance the construction of these wells. It proposes to help seek grant funding to construct new wells.	Comment noted. No change needed as the sentence is accurate that these projects are included in the GSP project list in Chapter 7.
34	P. 135			The SAC will determine the financial component...	Change: Should the highlighted text (SAC) read "GSA"?	The text has been revised.
35	1.3.1				Department believes that beneficial uses, such as fish and wildlife preservation and enhancement, GDEs and other plant and animal species that depend on interconnected surface waters occur within the Cuyama Basin [Water Code §10727.4(l), Title 23 California Code of Regulations §§ 666 and 354.26(b)(3)]. GDEs can rely on groundwater for some or all its requirements, relying on multiple water sources simultaneously and at different temporal/spatial scales (e.g., precipitation, river water, reservoir water, soil moisture in the vadose zone, groundwater, applied water, treated wastewater effluent, urban stormwater, irrigated return flow). Several sensitive species known to occur within the Basin that should be considered in the GSP as beneficial users and are vulnerable to groundwater pumping impacts include (but not limited to): California red-legged frog (Rana draytonii); tricolored blackbird (Agelaius tricolor); western spadefoot (Spea hammondii), southwestern pond turtle; (Actinemys pallida; yet\ow warbler (Setophaga petechia); Arroyo chub Gila orcuttii); least Bell's vireo (Vireo bellii pUSIIIus); and willow flycatcher (Empidonax traillii) [see Natural Communities Commonly Associated with Groundwater dataset (NC Dataset) located at https://gis.water.ca .qov/app/NCDatasetViewer/].	Environmental users have been added to the list of users present in the Basin
36				Prep. Checklist - Article 5 - 354.4 "List of references and..."	References are not in the executive summary, but listed in each chapter	The table has been revised
37				Prep. Checklist - Article 5 - 354.6 "Estimate of implementation…"	Consider adding Chapter 8, which list the estimated cost.	The table has been revised
38				Description of how those plans may limit....	Please check to see if this is mentioned in Chapter 4 (maybe Chapter 5).	The table has been revised
39				Summary of the process for…	Please verify that it is in Chapter 1.	A sentence has been added to Chapter 1 regarding the permitting process for new wells.
40				Prep. Checklist - Article 5 - 354.8(g)	Please verify that all of these item are in Chapter 8. It seems that some of these items are briefly mentioned in Chapter 1.	The table has been revised

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41				Prep. Checklist - Article 5 - 354.10	Please verify that the items are in Chapter 8. It seems that some of these items are briefly mentioned in Chapter 1.	The table has been revised
42				Prep. Checklist - Article 5 - 10727.2(d)(4)	Please verify, some of these items are in Ch 2.1 (reference to Ch 7 in 2.3)	The table has been revised
43				Prep. Checklist - Article 5 - 354.20	Please check to see if a few of these items are discussed in Chapter 7	The table has been revised
44	1.1.3			Per Section 10723.8(a) of the	Consider adding to whom the notice was given to.	This has been added
45	1.2.1			Consider defining water yielding capacity	Consider defining water yielding capacity	Don't need to provide a definition since this is a direct quote from a DWR document
46	1.2.4			Consider defining temporal frequencies	Consider defining temporal frequencies	A definition is not needed for this
47	P. 1-45 & 1-46				[Checklist item #1]: Significant science-based sources indicate that environmental users of groundwater, known as groundwater dependent ecosystems (GDEs), as well as other species that depend on interconnected surface waters, exist in Cuyama Basin and therefore should be identified and described. For any species that are no longer present in the basin, please provide scientific rationale and data to support this claim. The information on environmental users in the Cuyama basin is readily available and includes the data and data sources. Please refer to the following: • Natural Communities Commonly Associated with Groundwater dataset (NC Dataset), which is provided by the Department of Water Resources and identifies potential GDEs https://gis.water.ca.gov/app/NCDatasetViewer/ • In Fall 2018, The Nature Conservancy sent a list of freshwater species located in the Cuyama Basin, which is included as Attachment C of this letter. Please take particular note of the species with protected status. • In addition to identifying and describing environmental beneficial users, SGMA requires that beneficial users be considered throughout the plan. The Nature Conservancy has identified each part of the GSP with this requirement. That list is available here: https://groundwaterresourcehub.org/importance-of-gdes/provisions- related-to-groundwater-dependent-ecosystems-in-the-groundwater-s. Please ensure that environmental beneficial users are addressed accordingly throughout the plan.	Comment noted. Environmental users have been added to the list of users present in the Basin
48	P. 1.57 Appendix A GSP Regulations			Missing or only selected items	Question: Why do many items in this Appendix differ with GSP Regulations list? Some are edited, or omitted? Consistency here with the regulations seems critical. Source: Final GSP Emergency Regulations	The Table in the appendix is based on the Preparation Checklist provided by DWR. The only change is the addition of the column noting the relevant GSP Section for each row. Additional detail on the requirements is not needed.
49	P. 65, Appendix A GSP Regulations Section 352.2			Monitoring protocols that are designed to detect changes …	Question: Where does highlighted text ("and flow and quality of surface water that directly affect groundwater levels or quality or are caused by groundwater extraction in the basin") appear in the Final GSP Emergency regulations section 352.2? This highlighted text is not included in the regulations. Please provide the source for the highlighted text. 352.2 states: "Each Plan shall include monitoring protocols adopted by the Agency for data collection and management, as follows: Monitoring protocols shall be developed according to best management practices. The Agency may rely on monitoring protocols included as part of the best management practices developed by the Department, or may adopt similar monitoring protocols that will yield comparable data. Monitoring protocols shall be reviewed at least every five years as part of the periodic evaluation of the Plan, and modified as necessary. Note: Authority cited: Section 10733.2, Water Code. Reference: Sections 10727.2, 10728.2, 10729, and 10733.2, Water Code.	The Table in the appendix is based on the Preparation Checklist provided by DWR. The only change is the addition of the column noting the relevant GSP Section for each row. Additional detail on the requirements is not needed.
50	P. 65, Appendix A GSP Regulations Section 352.2			Missing text	Addition: Please include: (c) Monitoring protocols shall be reviewed at least every five years as part of the periodic evaluation of the Plan, and modified as necessary. Source: Final GSP Emergency Regulations	The Table in the appendix is based on the Preparation Checklist provided by DWR. The only change is the addition of the column noting the relevant GSP Section for each row. Additional detail on the requirements is not needed.
51	P. 65, Appendix A GSP Regulations Section 352.4			Missing text	Addition: Please include: 352.4. Data and Reporting Standards This section provides significant guidance on what must be included in the GSP and wholly missing from this appendix. Source: Final GSP Emergency Regulations	The Table in the appendix is based on the Preparation Checklist provided by DWR. The only change is the addition of the column noting the relevant GSP Section for each row. Additional detail on the requirements is not needed.
52	P. 65, Appendix A GSP Regulations Section 354.6			Estimate of implementation costs Chapter 1 Section 1.1 Introduction and Agency Information	Addition: Section 354.6 includes the following requirement: "(e) An estimate of the cost of implementing the Plan and a general description of how the Agency plans to meet those costs." This item is not included in the Appendix A Checklist, nor is it outlined in Chapter 1, Section 1.1. Will the plan be considered incomplete without this information? Should the Draft GSP have included a placeholder notation here? Source: Final GSP Emergency Regulations	The Table in the appendix is based on the Preparation Checklist provided by DWR. The only change is the addition of the column noting the relevant GSP Section for each row. Additional detail on the requirements is not needed.
53	P. 65, Appendix A GSP Regulations Section 354.8(a)			Bullet point #4: Existing land use designations	Should read: "Existing land use designations and the identification of water use sector and water source type." Source: Final GSP Emergency Regulations 354.8(a)(4)	The Table in the appendix is based on the Preparation Checklist provided by DWR. The only change is the addition of the column noting the relevant GSP Section for each row. Additional detail on the requirements is not needed.
54	P. 65, Appendix A GSP Regulations Section 354.8(a)			Bullet point # 5 "Density of wells per square mile….	Add: "including de minimis extractors"	The Table in the appendix is based on the Preparation Checklist provided by DWR. The only change is the addition of the column noting the relevant GSP Section for each row. Additional detail on the requirements is not needed.

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55	P. 67, Appendix A GSP Regulations Section 354.8(g) Water Code Section 10727.4			Bullet point #2: Wellhead protection	Should read: Wellhead protection areas *and recharge areas.* Source: CA Water Code §10727.4 (2017)	The Table in the appendix is based on the Preparation Checklist provided by DWR. The only change is the addition of the column noting the relevant GSP Section for each row. Additional detail on the requirements is not needed.
56	P. 67, Appendix A GSP Regulations Section 354.10			Bullet point #6 Encouraging active involvement	Should read: (d)(3): A description of how the Agency encourages the active involvement of diverse social, cultural, and economic elements of the population within the basin Source: Final GSP Emergency Regulations	The Table in the appendix is based on the Preparation Checklist provided by DWR. The only change is the addition of the column noting the relevant GSP Section for each row. Additional detail on the requirements is not needed.
57	P. 68, Appendix A GSP Regulations Section 354.14			Missing or only selected items	Change: Many items in the Final GSP Emergency Regulations Section 354.14 are missing from Appendix A. Please revise to include all items. Source: Final GSP Emergency Regulations	The Table in the appendix is based on the Preparation Checklist provided by DWR. The only change is the addition of the column noting the relevant GSP Section for each row. Additional detail on the requirements is not needed.
58	P. 71, Appendix A GSP Regulations Section 354.30			Bullet #3 "Description of a reasonable path to achieve and maintain the sustainability goal, including a description of interim milestones"	This is incomplete. Please include a more complete description of measureable objectives and interim milestones. 354.30 (a) Each Agency shall establish measurable objectives, including interim milestones in increments of five years, to achieve the sustainability goal for the basin within 20 years of Plan implementation and to continue to sustainably manage the groundwater basin over the planning and implementation horizon. 354.30 (e) Each Plan shall describe a reasonable path to achieve the sustainability goal for the basin within 20 years of Plan implementation, including a description of interim milestones for each relevant sustainability indicator, using the same metric as the measurable objective, in increments of five years. The description shall explain how the Plan is likely to maintain sustainable groundwater management over the planning and implementation horizon. Source: Final GSP Emergency Regulations	The Table in the appendix is based on the Preparation Checklist provided by DWR. The only change is the addition of the column noting the relevant GSP Section for each row. Additional detail on the requirements is not needed.

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Summary of Public Comments and Responses - Chapter 2
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Comment #	Section	Section Paragraph #	Paragraph's Sentence #	Sentence Starts with, "…	Comment	Response to Comment
1					Groundwater dependent ecosystems: The Plan has a gap concerning GDEs in the Basin that should be addressed in terms of impact and actions under the Plan.	Comment noted. Actions for GDEs can potentially be added in the future at the direction of the CBGSA Board.
2					This chapter would be a good place to introduce and make the case for the threshold regions and present conditions by region. Also, the groundwater level decline figures presented in Chapter 7 would be helpfully introduced here. The executive summary cites a water budget for the Central Management area of 25,000 acre-feet per year of overdraft, but that is not in this section at all. Overall, this chapter needs to be better tied in with the rest of the document.	Per expressed desire by the CBGSA Board, water budget numbers are only shown for the complete Basin, not for sub-regions. The reference to the Central Basin overdraft in the Executive Summary has been removed.
3	P. 2-38, Figure 2-10				Where are these two westernmost PGE wells? This doesn't look right. The one near the river looks like the Cal Trans well and the other looks like the Caliente Ranch well (private)	This data was pulled from the USGS report *Geology, Water-Quality, Hydrology, and Geomechanics of the Cuyama Valley Groundwater Basin* , California, 2008–12 < https://pubs.usgs.gov/sir/2013/5108/>. Based on the data provided in this report, these wells were sampled by PG&E.
4	P. 2-43			The majority of agricultural activity occurs"	Just delete "near the north fork." There is no "north fork." North Fork Cattle Co. was formed in 1970 in San Juan Capistrano and just happened to buy and own property west of the Russell Fault at one time	The text has been revised
5	P. 2-117				Reach 8-School House Cyn. Creek: On figure 2-61 Reach 8 is on the wrong place. You have labeled it School House Cyn Creek but it is actually Aliso Cyn. Should 8 be changed or should the map be changed?	The text has been revised to say Aliso Canyon Creek
6	2.2.8				Interconnected Surface Water Systems: This section seems incomplete. At least some mention should be made that these are only selected surface water systems. There are other creeks that run longer than those mentioned and surely Branch Creek and Salisbury Cyn are worth mentioning if only due to the frequency of their flooding	The text has been modified to note that these are the stream reaches that are explicitly simulated in the numerical model.
7	2.2.9			Groundwater occuring near the ground surface	GDEs: what is that supposed to mean? I object to 1) how this data was collected and 2) that a great deal of it is based on supposition and 3) your unwillingness to come out and state such. What exactly are "remote sending techniques"? Why on Figure 2-63 do you use TNC identified potential GDE wetlands and TNC identified potential GDE vegetation? Why not use the wetlands and vegetation areas identified in the NCD dataset which appears to be much more accurate and complete? Furthermore, I was unable to find any site that could identify the 123 probably GDE's on the 275 probable non-GDE's in the Basin. Additionally, it is never actually admitted the no one ever looked at the sites for this data. Your biologist came to California, came to the Cuyama Valley, but not much effort was made to access the most important ecosystems on the ground. Academic white wash. In your technical you state "the field study was conducted only on publicly accessible lands." Then you say "Field observations were ,ade pm MCCAG-mapped seeps springs..." inderring that these areas were observed which they weren't as most of them are on private ground or are inaccessible.	The analysis and discussion of GDEs in the GSP was developed to satisfy SGMA requirements as they relate to GDEs. The GSP recommends piezometers to monitor for groundwater levels in the vicinity of critical GDEs. Additional analysis of GDEs and actions for GDEs can potentially be added in the future at the direction of the CBGSA Board.
8	2.2.10			"The Cuyama River is not guaged"	DATA GAP. Third bullet point. That's not even possible. This is enough to invalidate this entire GSP. According to your Appendix C to Ch 2 P. C-7, "the USGS has two active gages that record flows in the Cuyama River watershed upstream of the Lake Twitchell. These include one gage on the Cuyama River downstream of the basin (ID 11136800) which is located just upstream of Lake Twitchell. "The other active gage is south of the city of Ventucopa..." The watershed for Twitchell Reservoir includes a much larger area than the Cuyama Basin. Any estimate from their stream guage would have to be modeled for areas of flow and results would only be an estimate.	The bullet has been revised to note that available precipitation data was used in addition to downstream surface flow records to estimate flows in the Basin
9					As regards Groundwater Dependent Ecosystems - GDE's: The Nature Conservancy recognized 2000 acres of GDE's in the Cuyama Basin. The GSP reduced that area to 500 acres, based on a biologist spending a day and a half on a computer, never visiting the sights. The GDE's are where the native plants, animals, birds and the pollinators still thrive because of the availability of nature springs and seeps. They provide a vision of how more of the land would look in its recovery. The GDE's need to be protected from further degradation. I feel that the present GSP does not recognize their importance.	The analysis and discussion of GDEs in the GSP was developed to satisfy SGMA requirements as they relate to GDEs. The GSP recommends piezometers to monitor for groundwater levels in the vicinity of critical GDEs. Additional analysis of GDEs and actions for GDEs can potentially be added in the future at the direction of the CBGSA Board.
10	P. 2-14 Figure 2-3				The Upper and Lower Morales are unconformable (Seismic Lines-Ellis 1994)-Figure does not convey this, and text does not reflect this. This unconformity is the basis for delineating these two units for most seismic work within the valley	We are unable to find the unconformity between the Upper and Lower Morales Formation in Seismic Lines-Ellis 1994. This section can be updated with more information during the 2025 GSP update.
11	P. 2-52 Figure 2-21				South Cuyama Oilfield does not reflect CA DOGGR oilfield shape/location	The figure has been revised.
12	P. 2-61 Figure 2-26				Russell fault is not continuous across the valley, published field maps (Dibblee, Nevins, Schwing, DeLong) show this fault to be continuous across valley.Fault has 18+ miles of lateral displacement and should be continuous	The representation of the fault in the figure has been revised.
13	P. 2-88 Figure 2-43				Russell fault is not continuous across the valley, published field maps (Dibblee, Nevins, Schwing, DeLong) show this fault to be continuous across valley.Fault has 18+ miles of lateral displacement and should be continuous	The representation of the fault in the figure has been revised.
14	P. 2-90 Figure 2-44				Russell fault is not continuous across the valley, published field maps (Dibblee, Nevins, Schwing, DeLong) show this fault to be continuous across valley.Fault has 18+ miles of lateral displacement and should be continuous	The representation of the fault in the figure has been revised.
15	P. 2-91 Figure 2-45				Russell fault is not continuous across the valley, published field maps (Dibblee, Nevins, Schwing, DeLong) show this fault to be continuous across valley.Fault has 18+ miles of lateral displacement and should be continuous	The representation of the fault in the figure has been revised.
16	P. 2-94 Figure 2-46				Russell fault is not continuous across the valley, published field maps (Dibblee, Nevins, Schwing, DeLong) show this fault to be continuous across valley.Fault has 18+ miles of lateral displacement and should be continuous	The representation of the fault in the figure has been revised.
17	P. 2-96 Figure 2-47				Russell fault is not continuous across the valley, published field maps (Dibblee, Nevins, Schwing, DeLong) show this fault to be continuous across valley.Fault has 18+ miles of lateral displacement and should be continuous	The representation of the fault in the figure has been revised.
18	P. 2-97 Figure 2-48				Russell fault is not continuous across the valley, published field maps (Dibblee, Nevins, Schwing, DeLong) show this fault to be continuous across valley.Fault has 18+ miles of lateral displacement and should be continuous	The representation of the fault in the figure has been revised.
19	P. 2-33			In general, conductivity is highest near the center of the Basin…	What is the basis for this conclusion? Show maps of data to confirm this conclusion and relate finding to previous work (e.g., USGS texture analysis). The distribution of aquifer properties influences the distribution of model-calculated water levels and groundwater storage declines, which are the basis for defining Management Areas and pumping allocations.	The center of the Basin near the streambed is made up primarlily of younger alluvium, which is generally associated with higher conductivity.
20	P. 2-125			The Cuyama River is not gaged …	What parameters are most influential on these flows and model-calculated recharge from river leakage?	Text has been added to Appendix C to discuss these parameters.

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21	P. 2-125			Faults are not well understood with regard to the …	What does model testing show regarding the sensitivity of model-calculated water level and storage changes to the conductivity of these faults?	The calibrated numerical model shows limited flows occuring across these faults. This can be re-evaluated in the future when more data is available.
22	P. 2-28			shows the outcrops of bedrock near the Russell Fault …	Beginning of sentence is missing something.	The text has been corrected
23	P. 2-51			Figure 2-22 shows major faults …	Should be Figure 2-21.	The text has been corrected
24	P. 2-52				Faults shown are not consistent with faults shown on Figure 2-8 and those represented in the model.	This figure is not intended to show all of the faults in the Basin
25	P. 2-125			The Cuyama River is not gaged …	What does model sensitivity testing show regarding these features?	Text has been added to Appendix C to discuss these parameters.
26	P. 2.8 to 2.9			Piper diagrams are useful for understanding…	Suggestion: Please list these terms alphabetically. Addition: This Plan should use Piper diagrams from a full schedule of constituents to better understand basis recharge dynamics. Not just TDS alone.	Comment noted. These have been re-ordered alphabetically
27	P. 2.32 Sec. 2.1.7			DWR's Groundwater Glossary defines an aquifer as…	Question: How does DWR define an Aquitard? Question: What "field tests" were performed as part of this study effort? Or is all this interpreted from the USGS and other published study? Was there any new ground truthing done in this study?	This has been added to the text.
28	P. , 2.45 Figure 2.17			Surface Water	Addition: Please include major drainages of Ballinger Canyon, Branch Wash & Cottonwood Canyon. Upper Cuyama is misnamed and should be "Reyes" Creek.	The figure has been revised.
29	P. 2.52 Figure 2.21			Cuyama Basin Landmarks	Corrections: Burges Canyon is misspelled and Bitter Creek is misnamed and should be Branch Wash	Burges Canyon label has been updated. The "Bitter Creek" label is what is utilizez in the National Hydrologic Data Set shapefile. According to USGS Topo maps, Branch Wash is actually just east of the Bitter Creek line and is therefore correctly labeled.
30	P. 2.53, Sec. 2.2.1			Useful Terms	Suggestion: Please list these terms in alphabetical order.	These have been re-ordered alphabetically
31	P. 2.74 Figure 2.36 thru 2.38			Vertical Gradients	Comment: These multiple depth compilation wells are of great importance in determining vertical gradients. However since 2014, CVKR, CVBR and CVFR are missing the high (winter) and low (summer) measurements making the interpretation of vertical gradients less accurate. Suggestion: Return to quarterly monitoring ASAP. Addition: Install several more of these types of well for monitoring the Vertical Gradient around the major Faults; SBCF & Russell Faults.	Comment noted. This can be considered during GSP implementation.

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32	P. 2.81 Sec. 2.2.3 Fig. 2.39			The gradient increases in the vicinity of the SBCF and flows to an area of …	Comment: This map actually shows that the groundwater under the bridge of 166 has reversed gradient and is flowing southeast, 180* opposite of streamflow and topographic gradient. Suggestion: Text should point this phenomenon out for the significances it represents. A 600' deep cone of depression is more than just an area of lowered elevations. Addition: The title of Figure 2.39 should include "Groundwater Flow Direction"	The text has been revised. No change needed to the Figure as Groundwater Flow Direction is noted in the legend.
33	P. 2.99 Sec. 2.2.4			Average annual use over the 20-year period was -23,076 acre-feet.	Correction: The word "use" is incorrect and should be "overdraft".	The text has been revised
34	P. 2.99 Sec. 2.2.4 Figure 2.49			Cuyama Groundwater Storage by Year, Water Year Type, and Cumulative Water Volume	Comment: This chart shows 1 million AF lost from storage over the last 20 years! What about the previous 20 years? Question: How much more storage will be lost before sustainability in 2040? What Undesirable Results does this GSP recognize because of this historic overdraft?	Comment noted. The undesirable results definitions in the GSP are tools to measure future Basin conditions, not past conditions.
35	P. 2.103 Sec 2.2.7			DWR GeoTracker California Groundwater Ambient …	Comment: This GAMA report is referenced for TDS, but does not discuss any of the other conclusive evidence by way of the age dating and "fingerprinting" water by source. The lack of any tritium indicates there is no recent recharge and groundwater production is sourcing fossil water, over 30 thousand years old. Addition: Fully utilize GAMA for groundwater quality understanding and protection. Continue to collect similar data moving forward.	Comment noted. This can be considered in the future if direction is provided by the GSA Board.
36	P. 2.117 Sec. 2.2.8 Fig. 2.61 Table 2.2			Stream Reaches Used in Cuyama Groundwater Model…	Comment: This attempt to depict the interconnectivity of surface water is much appreciated, yet it could be improved with some clarifications and additions. Question: How were the reaches determined? Why not Apache? Why Schoolhouse and not Cottonwood? Addition: Please add to Figure 2.61 the values of average annual gain or loss by Reach from Table 2.2.	The text has been modified to note that these are the stream reaches that are explicitly simulated in the numerical model.
37	P. 2.126 Sec. 2.3				Suggestion: Please list these terms in alphabetical order.	Comment noted. These have been re-ordered alphabetically
38	P. 2.132 Sec. 2.3 Table 2.4 & 2.5				Comment: The Model and the Budget do not take into consideration the effect of more than 500' of dewatered vadose zone. This can drastically affect the calculation for "Deep Percolation" from precipitation and applied water. Age dating shows no recent recharge. (See comment 23) Question: How is deep percolation through the vadose assumed and justified as recharge? What data disputes GAMA's lack of recharge?	Comment noted. The numerical model can potentially be revised in the future as additional data is available.
39	P. 2.146 Sec 2.3 Table 2.7				Comment: It is great to know a number for sustainable yield but this plan lacks a means of getting there! Question: If the sustainable yield for the basin is 20 TAF, what is the Plan for reducing pumping by 55 to 67%?	This is discussed in Chapter 7. Specifics can be determined during GSP implementation.
40	2.1.6				The GSP should provide more information on groundwater extraction well depths throughout the basin including how it compares with the depth of the Morales geologic formation. Wells that extend outside the vertical limits of the basin should be included within the SGMA regulations. Well depth should be included in the determination of the basin bottom to capture such occurrences.	Data was not available to perform these analyses in advance of the GSP. Additional detail can potentially be added as additional data is collected in the future.
41	2.1.7				The GSP identifies that the aquifer is unconfined and continuous, except for locally perched clay aquifers. These perched water resources can provide essential habitat and sustenance for various wildlife species including plants, aquatic animals and migratory refugia for avian species. To enhance the effectiveness and utility of the GSP, CDFW requests the following information be included: a) Identify where perched aquifers exist with in the basin and describe, by each aquifer, if they: 1) are being used by domestic shallow wells; 2) support GDEs; and, 3) have interactions with surface water. b) Document the characteristics of each perched aquifer, including thickness, porosity, hydraulic conductivity, and vertical gradients to more recent alluvium aquifers.	Data was not available to perform these analyses in advance of the GSP. Additional detail can potentially be added as additional data is collected in the future.
42	2.1.7				As described in Section 2.1.7, the GSP identifies that the aquifer is unconfined and continuous, except for locally perched clay aquifers. The model results appear to support that the entire river is an interconnected surface water system [23 CCR §351(o)]; therefore, GDEs that exist within the basin rely more on availability and health of the aquifer. The GSP should include additional information on annual average stream depletion by reach (see Table 2-2), including identifying losing and gaining segments.	The analysis and discussion of GDEs in the GSP was developed to satisfy SGMA requirements as they relate to GDEs. The GSP recommends piezometers to monitor for groundwater levels in the vicinity of critical GDEs. Additional analysis of GDEs and actions for GDEs can potentially be added in the future at the direction of the CBGSA Board.
43	2.2.9				Section 2.2.9 does not adequately identify GDEs within the Basin. Mapping GDEs and other beneficial uses/users is an essential component in the consideration, development and implementation of GSPs (Water Code §10723.2) and in assessing if conditions are having potential effects on beneficial uses and users of groundwater. GSAs must also include sustainable management criteria and monitoring to detect adverse impacts. CDFW believes the elimination of a large portion of the data pertaining to GDEs may have been premature. We recommend that best scientific data on depth to groundwater be included in the analysis of interconnected surface waters before any data is excluded. Other data should include (but not be limited to): USGS mapped springs/seep and comparing recent groundwater level contours to vegetation root zones. In addition, relying solely on soils information is not recommended. For example, the presence of sandy, dry, and friable soils, does not mean that existing plant species do not rely on groundwater for some portion of their life cycle. Capillary fringe associated with root networks from native plants could be accessing groundwater from deeper depths. In addition, restoration projects that provide direct benefits to sensitive riparian resources, such as slowing river velocities during high flow events which benefits the Cuyama Basin by allowing for increased surface water infiltration into the subsurface aquifer, should be identified as GDEs and mapped in the GSP. Beneficial use in the form of future riparian enhancement projects should be included in the GSP.	The analysis and discussion of GDEs in the GSP was developed to satisfy SGMA requirements as they relate to GDEs. The GSP recommends piezometers to monitor for groundwater levels in the vicinity of critical GDEs. Additional analysis of GDEs and actions for GDEs and other environmental benefits can potentially be added in the future at the direction of the CBGSA Board.

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44					The Department has documented populations of several sensitive species on the restoration site and these species should be listed as beneficial users of groundwater. They are all vulnerable to groundwater pumping impacts and include California red-legged frog (Rana draytonii), tricolored blackbird (Agelaius tricolor), western spadefoot (Spea hammondii), southwestern pond turtle (Actinemys pallida), yellow warbler (Setophaga petechia), Arroyo chub (Gila orcuttii), and California roach (Lavinia symmetricus). All of these species have benefitted from the restoration project which may eventually provide habitat for the state listed least Bell's vireo (Vireo bellii pusillus) and willow flycatcher (Empidonax traillii). The importance of the restoration site is reflected in Figure 2- 63 which shows a high density of GDE elements in the northwestern corner of the Basin. Beneficial use in the form of future riparian enhancement projects should be included in the GSP.	The analysis and discussion of GDEs in the GSP was developed to satisfy SGMA requirements as they relate to GDEs. The GSP recommends piezometers to monitor for groundwater levels in the vicinity of critical GDEs. Additional analysis of GDEs and actions for GDEs and other environmental benefits can potentially be added in the future at the direction of the CBGSA Board.
45	2.3			The change in the annual volume	Please elaborate on if you are also using drought and wet years?	This is described when water budget numbers are presented in subsequent sections.
46	2.3 P. 2-126			Figure 2-64 presents	Please verify if the right figure is in the text. The listed figure and text description are not matching for Figure 2-64.	The figure reference has been corrected
47	2.3 P. 2-126			Domestic water use is the volume	Please clarify what non-potable water is being used in Cuyama Basin for Domestic Water Use (such as is related to collecting rain water for irrigation)?	This information is not currently available.
48	P. 2-127			Figure 2-65:.	Please fix format (extras colon or period).	This has been corrected.
49	P. 2-128			The cumulative departure of the…	Consider revising sentence for clarity, " ...The cumulative departure of the spatially averaged of the rainfall..."	The text has been revised.
50	P. 2-132			The estimated average annual water budgets...	Please verify the right table numbers are in the text. The listed tables and text description are not matching for Tables 2-3 and 2-4.	The table references have been corrected.
51	Table 2-6			Water Year Type	Consider adding more information on water year type, maybe a note under the Table 2-6 to clarify.	The water year types are defined in a footnote on the previous page.
52	P. 2-31				[Checklist item #2]: It is currently unclear how existing well depths compare with the depth of the upper member of the Morales Formation. According to DWR's Hydrogeologic Conceptual Model BMP3, "the definable bottom of the basin should be at least as deep as the deepest groundwater extractions". Thus, groundwater extraction well depth data should also be included in the determination of the basin bottom. This will prevent the possibility of extractors with wells deeper than the basin boundary from claiming exemption of SGMA due to their well residing outside the vertical extent of the basin boundary.	Data was not available to perform these analyses in advance of the GSP. Additional detail can potentially be added as additional data is collected in the future.
53	P. 2-32				[Checklist item #3]: In paragraph 1, "The aquifer is considered to be continuous and unconfined with the exception of locally perched aquifers resulting from clays in the formation". Please provide more details on: • the location of perched aquifers • whether perched aquifers are being used by domestic shallow wells, GDEs and/or are potentially interacting with surface water • the vertical gradients between the perched aquifers and the recent and younger alluvium aquifers • other aquifer characteristics that may be known (e.g., perched aquifer thickness, porosity, hydraulic conductivity)	Comment noted. Additional detail can potentially be added in future versions of the GSP as additional data is collected in the future.
54	P. 2-117				[Checklist item #4]: The model results are demonstrating that the entire river is an interconnected surface water system ("surface water that is hydraulically connected at any point by a continuous saturated zone to the underlying aquifer and the overlying surface water is not completely depleted" 23 CCR §351(o)). Based on the annual average stream depletion by reach (Table 2-2), it appears that losing and gaining reaches of the Cuyama can be mapped. Please distinguish the gaining and losing reaches. The data provides seems to indicate: o Gaining: Reach 1, Reach 3, Reach 6, Reach 8, Reach 9. o Losing: Reach 2, Reach 4, Reach 5, Reach 7	Data was not available to perform these analyses in advance of the GSP. Additional detail can potentially be added as additional data is collected in the future.
55	P. 2-121				SGMA requires that all beneficial uses and users, including GDEs, be considered in the development and implementation of GSPs (Water Code §10723.2). The GSP Regulations include specific requirements to identify (map) GDEs and consider them when determining whether groundwater conditions are having potential effects on beneficial uses and users. SGMA also requires an assessment of whether sustainable management criteria (including minimum thresholds and measurable objectives) may cause adverse impacts to beneficial uses, including GDEs, and that monitoring networks are designed to detect such impacts. Therefore, mapping GDEs is a critical first step for incorporating environmental considerations into GSPs. [Checklist item #7]: • It appears that the preliminary desktop analysis, completed by Woodard & Curran and documented in Appendix D of the draft GSP, resulted an excessive elimination – totaling two-thirds – of the NC dataset polygons mapped in the Cuyama Basin. In particular, the methods and field verification approach described in the draft GSP failed take groundwater levels into consideration. SGMA defines GDEs as "ecological communities and species that depend on groundwater emerging from aquifers or on groundwater occurring near the ground surface". We recommend that depth to groundwater contour maps are used to verify whether a connection to groundwater exists for polygons in the NC Dataset. Please refer to Appendix D of this letter for best practices for using groundwater data to verify a connection to groundwater.	The analysis and discussion of GDEs in the GSP was developed to satisfy SGMA requirements as they relate to GDEs. The GSP recommends piezometers to monitor for groundwater levels in the vicinity of critical GDEs. Additional analysis of GDEs and actions for GDEs and other environmental benefits can potentially be added in the future at the direction of the CBGSA Board.
56	Figure 2-64				[Checklist items #8 & 9]: Decisions to remove, keep, or add polygons from the NC dataset into a basin GDE map should be based on best available science in a manner that promotes transparency and accountability with stakeholders. Any polygons that are removed, added, or kept should be inventoried in the submitted shapefile to DWR, and mapped in the plan. We recommend revising Figure 2-64 to reflect these requirements.	The analysis and discussion of GDEs in the GSP was developed to satisfy SGMA requirements as they relate to GDEs. The GSP recommends piezometers to monitor for groundwater levels in the vicinity of critical GDEs. Additional analysis of GDEs and actions for GDEs and other environmental benefits can potentially be added in the future at the direction of the CBGSA Board.

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57					[Checklist item #10]: Groundwater conditions within GDEs should be briefly described within the portion of the Basin Setting Section where GDEs are being identified. Please refer to Attachment E of this letter for details on a new, free online tool that enables groundwater sustainability agencies to assess historical and current trends of growth and moisture content in vegetation using 35 years of satellite imagery for all of the polygons in the NC dataset.	The analysis and discussion of GDEs in the GSP was developed to satisfy SGMA requirements as they relate to GDEs. The GSP recommends piezometers to monitor for groundwater levels in the vicinity of critical GDEs. Additional analysis of GDEs and actions for GDEs and other environmental benefits can potentially be added in the future at the direction of the CBGSA Board.
58					[Checklist item #16]: Not all GDEs are created equal. Some GDEs may contain legally protected species or ecologically rich communities, whereas other GDEs may be highly degraded with little conservation value. Including a description of the types of species (protected status, native versus non-native), habitat, and environmental beneficial uses (see Worksheet 2, p.74 of GDE Guidance Document) can be helpful in assigning an ecological value to the GDEs. Identifying an ecological value of each GDE can help prioritize limited resources when considering GDEs as well as prioritizing legally protected species or habitat that may need special consideration when setting sustainable management criteria.	The analysis and discussion of GDEs in the GSP was developed to satisfy SGMA requirements as they relate to GDEs. The GSP recommends piezometers to monitor for groundwater levels in the vicinity of critical GDEs. Additional analysis of GDEs and actions for GDEs and other environmental benefits can potentially be added in the future at the direction of the CBGSA Board.
59	Appendix D				Appendix D lists assessment of aerial photography as a means of assessing GDE, but does not document which datasets were used for this effort making it difficult to reproduce/assess this effort.	Section 2.2.9 notes that the biologist assessed the NCCAG dataset available through the SGMA data portal at https://gis.water.ca.gov/app/NCDatasetViewer/
60	P. 2.221 Sec. 2.2.9 Appendix D			Groundwater Dependent Ecosystems	Comment: The elimination of ⅔ of the proballe GDEs from the NCCAG dataset by using remote sensing techniques and very few in-field site inspections is inadequate to identify GDEs or determine whether sustainable management activities may cause adverse impacts to GDEs.	The analysis and discussion of GDEs in the GSP was developed to satisfy SGMA requirements as they relate to GDEs. The GSP recommends piezometers to monitor for groundwater levels in the vicinity of critical GDEs. Additional analysis of GDEs and actions for GDEs can potentially be added in the future at the direction of the CBGSA Board.
61	Appendix D				More specific comments related to the desktop analysis approach (as described in Appendix D of the GSP) include: • Inundation visible on aerial imagery – This method is inappropriate because it is not possible to know whether surface water is connected with groundwater by visually inspecting it with aerial imagery. For example, in some cases surface water can be completely disconnected from groundwater, so in this scenario this approach would falsely suggest that NC dataset polygons are connected to groundwater. Similarly, if surface water is not present, this method would also falsely suggest that NC dataset polygons are not connected to groundwater if plant communities and the species they support are accessing groundwater beneath the surface. This method also fails to account for the fact that GDEs can rely on groundwater for some or all its water requirements, which in California often vary by season, and depend on the availability of alternative water sources (e.g., precipitation, river water, reservoir water, soil moisture in the vadose zone, groundwater, applied water, treated wastewater effluent, urban stormwater, irrigated return flow). olf aerial imagery is to be used, a range of dates should be selected to reflect the California's Mediterranean climate, seasonal variations and water year types. oPhreatophytes (groundwater-dependent vegetation) often rely on groundwater that is occurring near the ground surface via their rooting network. Because these sources of groundwater are not detectable using aerial imagery, the images should be compared with contoured groundwater levels to determine whether groundwater levels are close enough to vegetation root zones. oWe suggest the methods be revised and clarified accordingly. • Saturation visible on aerial imagery could indicate many different conditions, including standing water or saturated soils that may be ephemeral, intermittent, or permanent in nature. To help verify what the images actually indicate, this method should be coupled with more advanced remote sensing methods. Please clarify if this was the case. • Dense riparian and/or wetland vegetation visible on aerial imagery can help identify potential GDEs but is not an appropriate method to screen for whether a polygon is supported by groundwater and in fact a GDE. The presence of sparse vegetation also does not preclude the possibility that vegetation are using groundwater. Many desert and semi-arid environments with sparse vegetation can still be groundwater dependent ecosystems.	The analysis and discussion of GDEs in the GSP was developed to satisfy SGMA requirements as they relate to GDEs. The GSP recommends piezometers to monitor for groundwater levels in the vicinity of critical GDEs. Additional analysis of GDEs and actions for GDEs can potentially be added in the future at the direction of the CBGSA Board.
62	Appendix D				More specific comments related to the GDE field validation approach (as described in Appendix D of the draft GSP): • The removal of Probable Non-GDE 1 and Probable Non-GDE 2 was based on the presence of sandy, dry, and friable soils was not scientifically justified. The presence of this soil type does not preclude the possibility that the dominant plant species observed are reliant on groundwater at depths below the earth surface. For example, a rooting depth of 13 feet has been observed for Ericameria nauseosa and >4 feet for Eriogonum fasiculatum, and the capillary fringe associated with those rooting networks could be accessing groundwater from deeper depths, depending on the hydraulic conductivity of the substratum. For more rooting depth data, please refer to TNC's global rooting depth database, available at: https://groundwaterresourcehub.org/gde-tools/gde-rooting-depths-database-for- gdes/	The analysis and discussion of GDEs in the GSP was developed to satisfy SGMA requirements as they relate to GDEs. The GSP recommends piezometers to monitor for groundwater levels in the vicinity of critical GDEs. Additional analysis of GDEs and actions for GDEs can potentially be added in the future at the direction of the CBGSA Board.
63	Item 4 Conclusions P.4			The Cuyama Valley Groundwater basin is…	Further comments on GDEs TM: delete "oil and gas exploration and production, ranching." Was this even written by Woodard & Curran? Shame on you. You have not been listening to all those hours of public comments. Ranching, i.e. grazing, is a de minimis user of water. Delete ranching. The oil and gas industry in the valley is a de mimimus user of water. Delete oil and gas industry.	The text has been revised
64	Figure 3				Further comments on GDEs TM: Including this area map and not including the other GDE NCCAG area maps is highly misleading. Your photos are so few as to be misleading.	Comment noted. Additional analysis can potentially be performed on GDEs in the future.
65	C-3			The Technical Forum held 14 monthly conference calls over …	Model files not provided for review until 2/18/19 - late in the process.	Comment noted.

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66	C-4			CBWRM Development	There should be a discussion of the range of aquifer parameters used in the model and how they compare to measured values. Include figures showing the distribution by layer. Hydraulic conductivity values used in the model are lower than those reported by the USGS for the Morales formation (layer 3). The calculated groundwater-storage decline within Management Areas is sensitive to the specified values of hydraulic conductivity. Hence, the recommended pumping allocations are sensitive to hydraulic conductivity.	Ranges of aquifer parameters have been added to the uncertainty section. Additional information can be added in the future as more data becomes available.
67	C-4			The CBWRM historical model simulates Basin hydrologic …	Why were daily time step selected? Does data support daily time steps? Version provided for review runs only through September 30, 2015.	A daily time step was selected to allow for simulation of the highly variable surface water hydrology in the Basin.
68	C-4			CBWRM Development	No discussion of aquifer properties, no map of aquifer properties, no comparison to measured values. Basin Setting indicates that subsidence has occurred in the basin. Should subsidence be included in the model, especially for future scenarios with continued WL decline?	Subsidence could be considered in future versions of the model.
69	C-7			The hydrologic conditions of these small watersheds used to estimate the subsurface and surface flows are...	Inflow from the small watersheds is an important component of the basin water budget. How were small watershed parameters determined? What data were used to constrain these parameters and calibrate/verify small watershed flow? More importantly, how did uncertainty in these parameters influence model-calculated water budgets and the calculated decline in groundwater storage? Was inflow from small watersheds only applied to layer 1? Why? Was the water budget and model-calculated decline in groundwater storage influenced by the lack of recharge to the deeper layers?	The text has been revised.
70	C-7			CBWRM Grid Cuyama Water District boundary	There are some areas where the element edges don't follow the CBWD boundary.	Comment noted.
71	C-7			...and to contain relatively finer resolution along rivers, which …	Mesh size doesn't appear to be finer along several stream reaches. Finer elements seem to be along faults more than some of the stream reaches.	Comment noted. Not all stream reaches are explicitly simulated in the model.
72	C-7			...and surface flows are represented using parameters…	How were these parameters determined? How was flow from the small watersheds calibrated/verified?	The text has been revised.
73	C-8			The average annual precipitation ….	Calibration period (1995-2017) was relatively wet compared to long-term average (1967-2017).	Comment noted.
74	C-8			Attachment 1 describes the…	Labeled as Attachment C-2 in document.	This has been corrected.
75	C-9 Figure C-2			Cuyama Valley Groundwater Basin IWFM …	Faults shown are not consistent with faults in the model.	The figure has been updated
76	C-11 Figure C-3				It would be helpful to show precipitation for small watersheds to illustrate the variability in precipitation in these watersheds and its influence on the water budgets.	A table of average annual precip for each watershed has been added to the figure
77	C-15			Spatial land use data were used to specify …	How was existing data used to interpolate land use for years with no data?	Private landowner data was provided and used for every year in the calibration period. This represented most of the irrigated land area in the Basin. In other parts of the Basin, data from the closest available year was used for years when data wasn't available.
78	C-15			2014 and 2016 data that were…	2016 LandIQ data not shown on cited DWR Land Use Viewer	Comment noted. LandIQ has completed 2016 land use data for DWR, but the data has not yet been posted to DWR's land use viewer. It is expectd to be posted by the end of 2019.
79	C-15			2000, 2003, 2006, 2009, 2012 data	Labeled as Attachment C-1 in document.	This has been corrected.
80	C-15			The projected annual land use	This needs more explanation.	Additional detail has been added.
81	C-17			The RSRZ Model is driven by the Landsat …	This is the only discussion of the RSRZ model. More explanation on the model and how crop coefficients were developed is needed. Crop coefficients are a key component in estimating crop demand and, therefore, pumping demand and ultimately groundwater storage decline.	An attachment has been added with additional information on how crop evapotranspiration was determined. The acronym RSRZ has been removed from the document.
82	C-17			The reference evapotranspiration	Labeled as Attachment C-1 in document.	This has been corrected.
83	C-17			In the CBWRM, ET represents the net	ET is flux from the land surface/root zone to the atmosphere.	Comment noted. This is consistent with the text currently in the document.
84	C-18			CBWRM Layering	The unsaturated zone not represented in the model, and the existing configuration assumes deep percolation from the root zone reaches the water table instantaneously. This is not reasonable given the substantial depth to the water table in substantial portions of the basin. Model results will be sensitive to the time lag between infiltration/deep percolation and interception by the water table. An explanation is needed to justify ignoring the time-lag effect of the unsaturated zone.	Inadequate information was available on unsaturated zone parameters to effectively calibrate the time-lag effect. This can be modified in future versions of the model when more data is available.

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Comment #	Section	Section Paragraph #	Paragraph's Sentence #	Sentence Starts with, "…	Comment	Response to Comment
85	C-18			CBWRM Layering - The CBWRM subsurface	Provide maps of layer extents and general statistics on layer thicknesses.	New figures have been included to show the layer extents and thicknesses
86	C-22			This assumption, however, results in the use of first …	Did uncertainty/errors in the transients represented by the “start-up” initial heads dissipate during the “first few years?” Did analysts confirm errors did not influence model calibration and the resulting calculation of groundwater storage declines?	Yes, comparison of simulated groundwater levels with observed values confirmed that initial heads did not affect the calculation of groundwater storage declines.
87	C-22			As discussed in the previous section	Was inflow from small watersheds only applied to layer 1 rather than the deeper layers? Why?	The text has been revised.
88	C-22			Therefore, the model calibration period	Calibration time period inconsistent with statement on page C-24.	The calibration period on page C-22 has been corrected.
89	C-23			Calibrate Water Demands estimates for agricultural…	What data were used for calibration of water demand? Water demand is a key factor influencing groundwater pumping and the magnitude of estimated pumping allocations required to achieve “sustainable” conditions.	An attachment has been added with additional information on how crop evapotranspiration was determined. The acronym RSRZ has been removed from the document.
90	C-24			Due to uncertainty in the initial conditions…	The calibration period reported here is inconsistent with a previous statement of calibration period (1998-2015) on page C-22.	The calibration period on page C-22 has been corrected.
91	C-24			The calibrated IDC was used to	Inconsistent with daily time steps in model.	Comment noted. The monthly time step was adequate for IDC calibration.
92	C-24			The flows from this gage were	How were stream flows adjusted to estimate flow at downstream end of basin?	Additional text has been added on the small watershed computations.
93	C-25			During this step of the calibration	What data was used to calibrate the water budget? What constraints were placed on the water budget calibration?	Water budget calibration was based on a general understanding of flows in the Cuyama Basin (as reflected in the HCM) and on ensuring internal consistency of CBWRM results, spatially and temporally.
94	C-26			Outflows: Groundwater pumping	GW budget shows there is outflow from GW to the streams (stream gains).	This has been corrected.
95	C-28			Within the CBWRM, 139 wells	Far fewer than 139 wells visible on the map.	The figure has been updated
96	C-29			The goal of groundwater level	How was the reasonable range determined? There is no discussion of the range of aquifer parameters and how they compare to measured values. Hydraulic conductivity values used in the model are lower than those reported by the USGS for the Morales formation (layer 3)	A comparison of CBWRM and USGS hydraulic conductivity values has been added to the uncertainty section. Other parameter values are based on measured values or values in the literature.
97	C-29 Figure/Table C-16 and C-17			Figures C-16 and C-17 show a	What do figures look like with reasonable changes to aquifer properties?	Versions of these figures with a range of aquifer parameters were presented at the June 5 Board meeting.
98	C-31			To incorporate the uncertainty that originates from various …	Describe the ensembles of perturbed simulations. More information is needed on uncertainty/sensitivity analysis. Which parameters (IDC, small watershed, and groundwater) were evaluated and which were the most/least sensitive? A thorough sensitivity evaluation will provide a range of plausible groundwater storage declines and provide flexibility in determining Management Actions need to reach sustainability.	Additional information has been provided in the Uncertainty Assessment section.
99	C-31			Uncertainty Assessment	Need more information on uncertainty/sensitivity analysis. Which parameters were most/least sensitive for both GW and IDC parameters.	Additional information has been provided in the Uncertainty Assessment section.
100	C-32			GSP stakeholder and Technical Forum have reviewed model development and ...	The Tech Forum did not receive the model files for review until 18 February 2019. The model development was essentially complete at this point. EKI’s brief review of the model identified potential issues of concern such as a lack of agreement between measured and modeled aquifer properties and a lack of sensitivity testing and reporting. Simple sensitivity tests performed by EKI showed that hydraulic conductivity values have a significant influence on groundwater storage changes in the Management Areas. As a member of the Tech Forum, EKI did not make the statement that the CBRWM is a “strong analytical tool,” nor do we recall hearing a consensus for this statement during any Tech Forum meeting. EKI’s position has been that it is a reasonable tool to use given substantial limitations in the data available and compressed schedule to develop the model. However, it is critical that results from model implementation (“using” the tool) include characterizing model uncertainty (in other words, quantify how wrong the result might be).	Comment noted. The text has been revised. Additional uncertainty results have been added to the uncertainty assessment section.
101	C-33			The following recommended actions would support …	Perform a post-audit on the model. A post- audit evaluates how model predictions using actual “future” climate and water availability conditions compare to measured conditions, and results from the comparisons provide insight into the strengths and weaknesses of the HCM and model parameter values.	The text has been revised.
102	C-33			These include eastern art of the basin	Misspelled word	This has been corrected.
103	Attachment C-1 ; 1			The most common land use in the Cuyama	Is native veg the most common land use?	The text has been revised.

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104	Attachment C-1 ; 2 Table 1			SUMMARY OF DATA SOURCES	Was Cropscape data considered when developing land use information?	Yes, Cropscape was found to be inadequate in the Cuyama Basin region.
105	Attachment C-1 ; 2			Since then, Land IQ has completed statewide	2016 LandIQ data not shown on DWR land use viewer.	Comment noted. LandIQ has completed 2016 land use data for DWR, but the data has not yet been posted to DWR's land use viewer. It is expectd to be posted by the end of 2019.
106	Attachment C-1 ; 5			SUMMARY OF CROP MAPPING RESULTS	How was land use estimated for years in which no data are available?	Private landowner data was provided and used for every year in the calibration period. In other parts of the Basin, data from the closest available year was used for years when data wasn't available.
107	Attachment C-1 ; 6			SURFACE ENERGY BALANCE	How does the RSRZ model described in the main text come into play here?	An attachment has been added with additional information on how crop evapotranspiration was determined. The acronym RSRZ has been removed from the document.
108	Attachment C-1 ; 10			Crop variety and irrigation methods	Figure C-12 shows that there may be declining ag water demand. That is contradictory to this statement. Is total crop acreage declining?	Crop acreage declined from 2012-2015 but increased in 2016.
109	Attachment C-2 ; C-1			…for the Eastern San Joaquin Groundwater Sustainability Plan.	Wrong GSP identified.	This has been corrected.
110	Attachment C-2 ; C-1			Guidance for Climate change…	Missing text?	This has been corrected.
111	Attachment C-3			Groundwater Level Hydrographs	Why are hydrographs included for wells with no data? These can't be used as a calibration well.	The attachment has been revised to remove wells without observed data
112	Attachment C-3			Groundwater Level Hydrographs	Include map showing wells with hydrographs.	This is shown on the updated Figure C-15.
113	Attachment C-3			Groundwater Level Hydrographs	Model layer is not identified on hydrographs. Does simulated WL differ by layer at these sites?	The model does not show significant deviation between different model layers in most areas of the Basin. Differences in results can be seen in the model data files provided to Technical Forum members.

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Comment #	Section	Section Paragraph #	Paragraph's Sentence #	Sentence Starts with, "…	Comment	Response to Comment
1	3.3				Overall, the statements at the end of each sub-section that the Basin is “not in an undesirable condition” does not mesh with the reality that the Basin has been designated as critically overdrafted and groundwater levels been in decline for decades. The statement at the end of each section should be revised to more clearly and specifically state that the Basin does not currently meet the specific technical criteria for having an undesirable result.	The text has been revised
2	p. 3-6	3rd from bottom			The percentage of wells would most usefully be applied by threshold region, rather than basin-wide.	The CBGSA Board determined to use a Basin-wide standard.
3	3.3.4				This section does not contain a description of the undesirable result for degraded water quality. It is a direct copy of the section on groundwater levels.	Text has been corrected.
4	3.3.5				It seems unnecessary to use the 30% number from previous sections if there are only two stations. It would be clearer to state that if one of the sites exceeds the threshold an undesirable result would occur. Also, the 2 inches per year threshold has not been discussed by the GSA Board.	The percentage is included so that it will still be valid if additional stations are added in the future. The 2 inches per year criteria can be adjusted if directed by the Board.
5	General			Undesirable Results	Comment: This Chapter was first previewed and public comments was made in August of 2018. Those comments, W&C’s responses and these revisions were not presented until now in this final public draft. There are substantial policy considerations in this chapter that have never come before the SAC or the GSA in the 10 months of developing this section. Given this timeline I find it very odd that it was never presented for public consideration. Question: What happened to public input?	Comment noted. A review of initial comments indicated that a revised draft would not be helpful until it could be released in combination with the chapter on sustainability thresholds.
6	General			Undesirable Results	Comment: My comment from last summer remains unaddressed; The data clearly indicates 50 years of chronic overdraft with a historic loss of over 1,000,000 AF of storage, more than 400’ of groundwater level declines, subsidence rates of approximately 0.8 inches per year, the total loss of the annual Cuyama River surface water base flow, and the desertification of the many GDEs across the basin. This Plan does not accurately present today's conditions. Question: How can this Plan justify not recognizing pre-existing, chronic & persistent Undesirable Results today if not back in 2015?	The chapter reflects undesirable results as defined by minimum threshold levels approved for each sustainability indicator by the GSA Board.
7	P. 3.5 Sec. 3.1			To maintain a viable groundwater resource for the beneficial …	Question: Is this Goal #1 of more items? What is a “viable groundwater resource” in reference to wells going dry, declining GDEs and Interconnected Surface waters, or domestic drinking water quality? Addition: The Sustainability Goal should include aims to achieve MOs and determine whether or not any historic conditions are recognized as Undesirable.	The Sustainability Goal has been updated per direction from the CBGSA Board.
8	P. 3-5, Sec. 3.2			Undesirable Results are defined for use in SGMA …	Comment: All of the Undesirable Results Statements describe current Cuyama conditions as of 2015. Suggestion: This plan must recognize the historic impact of chronic overdraft for the perspective of how very out of balance the situation has been and for how long. Cuyama has pre-existing Undesirable Conditions, why must this be overlooked in the GSP?	The chapter reflects undesirable results as defined by minimum threshold levels approved for each sustainability indicator by the GSA Board.
9	Sec. 3.3 Global			The Undesirable Result for the chronic lowering of groundwater levels is considered …	Comment: The decision to set the Identification Threshold at 30% was never discussed at the SAC or GSA or had public comments reviewed & responded to by W&C. Issues include: Monitoring wells are not adequately representative, nor do they have the spatial density to accurately reflect groundwater conditions in many parts of the basin. The Management Area in the Central part of the basin, where most of the overdraft is occurring, contains only 15 Representative wells. There are no Monitoring Wells in the Ventucopa Management Area. (In response to Brenton’s email below, I have created two quick maps. There are 15 GW Level Representative Wells within the Management Areas - 15 in the Central and 0 in the Ventucopa Area. Additionally, there are 15 GW Quality Representative Wells within the Management Areas - 15 in the Central and 0 in the Ventucopa Area. -Micah Micah Eggleton Environmental Planner and Scientist Woodard & Curran) Even if 100 percent the monitoring wells in all the currently overdrafted parts of the basin were to fall below their Minimum Thresholds, no Undesirable Results would be identified by this GSP. Question: What criteria was used to justify this critical decision? Or must we just assume that we can not call the current conditions a problem, due to statutory enforcement? Change: The Identification Threshold of 25% Basin wide or maybe 50% if by Region, is a more realistic criteria to define undesirable results for the Management Areas likely to be experiencing them.	The Basin-wide 30% criteria was confirmed by the CBGSA Board
10	Global			Potential Effects of Undesirable Results: All Indicators	Comment: The current Cuyama conditions represent all the potential Undesirable Results such as de-watering of existing groundwater infrastructure (Ventucopa townsite well is dry), adversely affected groundwater dependent ecosystems (mostly dead already), caused changes in irrigation practices, crops grown, and adversely affected property values. Additionally, these Undesirable Results have adversely affected domestic and municipal uses, including uses in disadvantaged communities, which rely on groundwater in the Basin. Suggestion: If the best SGMA and this GSP can do is to avoid any additional Undesirable Results (2015?) from occurring then the Plan must at least be honest about the current conditions to begin with.	The chapter reflects undesirable results as defined by minimum threshold levels approved for each sustainability indicator by the GSA Board. Historical changes in conditions are shown in Chapter 2.
11	P. 3-11, Sec. 3.3.4			The Undesirable Result for the chronic …	Correction: The text should read Degraded Water Quality, not chronic lowering of groundwater levels. Suggestion: This GSP must establishing minimum thresholds for groundwater levels that are protective of GDEs across the basin. Data Gaps must be filled to know this information.	Text has been corrected. The chapter reflects undesirable results as defined by minimum threshold levels approved for each sustainability indicator by the GSA Board.
12	P. 3.11 Sec. 3.3.5			Chapter 5 discussed how minimum thresholds were …	Delete: The word “is”. Comment: When and by what criteria were minimum thresholds set for anything other than groundwater levels?	Text has been corrected. Thresholds for sustainability indicators other than groundwater levels were included in a previous version of Chapter 5 that was reviewed and commented on.
13	P. 3-11 Sec. 3.3.6			Because measurements show that levels are not in …	Question: What proxy groundwater measurements show that River flow levels are not in an undesirable condition or that depletion of interconnected surface water is not in an undesirable condition? No such conclusive data exist to make that claim. No gauges, no wetland monitors, no shallow riverside monitoring. Facts on the ground are that the river does not flow like it did not long ago, and the dying Cottonwoods speak to the recent depletions of surface water and degraded Groundwater Dependent Ecosystems. Suggestion: State the data gap issues and try not to speculate that everything is fine when there is no evidence to support that claim, and plenty to refute it.. Historically, flowing springs were found along the trace of faults that parallel Graveyard and Turkey Trap Ridges in the main basin. (Singer and Swarzenski USGS 1970) It is not possible to define “significant and unreasonable adverse impacts” without knowing what is being impacted.	The current definition reflects the best understanding given currently available data. The undesirable results definitions for depletion of interconnected surface can be updated when better data is available.

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Comment #	Section	Section Paragraph #	Paragraph's Sentence #	Sentence Starts with, "…	Comment	Response to Comment
14	P. 6-9			Identification of Undesirable Results for Chronic Lowering of Groundwater Levels…	Comment: The decision to set the Identification Threshold at 30% for all five Sustainability Indicators was never discussed or had public comments reviewed and responded to by W&C. Issues include: Monitoring wells are not adequately representative, nor do they have the spatial density to accurately reflect groundwater conditions in many parts of the basin. The Management Area in the Central part of the basin, where most of the overdraft is occurring, contains only 15 Representative wells, and there are no Monitoring Wells in the Ventucopa Management Area. Even if all the monitoring wells in all the currently overdrafted parts of the basin were to fall below their Minimum Thresholds, no Undesirable Results would be identified by this GSP. Question: Who made this policy decision as it never came to the SAC or GSA? Or must we just assume that we cannot call the current conditions a problem, due to statutory enforcement?	The Basin-wide 30% criteria was confirmed by the CBGSA Board
15	P. 3-11 Section 3.3.4			The Undesirable Result for the chronic…	Change: The text should read Degraded Water Quality, not chronic lowering of groundwater levels.	Text has been corrected.
16	P. 3-11 Section 3.3.6			Because measurements show that levels …	Question: What proxy groundwater measurements show that River flow levels are not in an undesirable condition or that depletion of interconnected surface water is not in an undesirable condition? No such conclusive data exist to make that claim. No gauges, no wetland monitors, no shallow riverside monitoring. Facts on the ground are that the river does not flow like it did not long ago, and the dying Cottonwoods speak to the recent depletions of surface water and degraded Groundwater Dependent Ecosystems. Suggestion: Recognize the already-occurring depletion of surface water, state the current issue accurately, including issues with data gaps, and present an outline of how the CBGSA plans to remedy the gaps and reach Measureable Objectives for Depletions of Interconnected Surface Water.	The current definition reflects the best understanding given currently available data. The undesirable results definitions for depletion of interconnected surface can be updated when better data is available.
17	P. 3-11 Section 3.3.5			Chapter 5 discussed how minimum thresholds were selected is. The minimum…	Delete: The word “is”. Comment: When and how were minimum thresholds set for this Sustainability Indicator?	Text has been corrected. Thresholds for indicators other than groundwater levels were included in a previous version of Chapter 5 that was reviewed and commented on.
18	P. 3-26			The Russell fault offsets the top of bedrock by as much as 1,500 feet (Nevins, 1982), …	Comment: We concur. Our understanding is the Russell Fault has been inactive for millions of years and is most likely overlaying by permeable layers of older and more recent alluvium that are at least 1000 feet thick. Recommendation: Pump tests and water quality studies need to be done on both sides of the fault.	These recommendations can be considered during GSP implementation.
19	P. 3-30			A fault located southwest of the Russell fault runs southeast to northwest and is located…	Recommendation: Field study is needed as a test of the existence and importance of this “unnamed fault” to verify the existence of any Santa Margarita formation (e.g., by finding sandstone with marine fossils). Otherwise this is probably permeable Morales Formation.	These recommendations can be considered during GSP implementation.
20	P. 3-5			This chapter is a key component of the Cuyama Basin	Consider revising sentence for clarity - "This chapter is a key component of the Cuyama Basin Groundwater Sustainability Agency’s (CBGSA’s) Groundwater Sustainability Plan (GSP), as other GSP components must be developed to set quantitative thresholds on monitoring points that indicate where Undesirable Results might occur on the monitoring network, and to shape the monitoring network to detect Undesirable Results. "	Text has been revised for clarity.
21	P. 3-9			By setting minimum thresholds on shallow…	Please clarify sentence, slightly confusing - "By setting minimum thresholds on shallow groundwater wells near surface water, this gradient is managed, and in turn, depletions of interconnected surface water are managed."	Text has been revised for clarity.
22	P. 3-9			Increased depletions could result in…	Consider adding a figure to help explain and clarify this sentence - "Increased depletions could result in lowering of groundwater elevations in shallow aquifers near surface water courses, which changes the hydraulic gradient between the water surface elevation in the surface water course and the groundwater elevation, resulting in an increase in depletion."	Text has been revised for clarity.
23	P. 3-10			Using the method identified above…	Consider revising this section in this GSP or adding language as an option to be revisited in the DWR interim update in 2025 with an updated numerical model. This undesirable results should be modeled with different percentages (such as 20%, 25%, and 30%) in different basin areas and scenarios (such as drought) with projected groundwater recovery time.	Undesirable results determinations are made using monitoring data, not with the numerical model. The Basin-wide 30% criteria was confirmed by the CBGSA Board
24	P. 3-11			Chapter 5 discussed how minimum…	Please clarify sentence	Text has been revised for clarity.
25	P. 3-11			The Undesirable Result for land subsidence…	Consider adding how many sites are in the Basin.	This is already included.

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Comment #	Section	Section Paragraph #	Paragraph's Sentence #	Sentence Starts with, "…	Comment	Response to Comment
26	P. 3-6 and 3-10				[Checklist items #26-42]: • Identification of Undesirable Results – significant adverse impacts to GDEs can occur if 30% of representative monitoring wells fall below their minimum groundwater elevation thresholds for two consecutive years. The proposed approach could work if management areas were established to "identify different minimum thresholds, measurable objectives, monitoring, or projects and management actions based on differences in water use sector, water source type, geology, aquifer characteristics, or other factors" [23 CCR §351(r)]. But, as it is written now, significant and unreasonable adverse impacts to GDEs could occur if the exceedance of minimum thresholds disproportionately occurs in representative monitoring wells close to GDEs (e.g., 3 out of the 60 wells minimum thresholds are exceeded for 3 years are causing adverse impacts to GDEs, but because the definition of undesirable results (18 out of 60 wells) is not met, there is no formal recognition that undesirable results are occurring). We recommend that groundwater levels that are protective of GDEs be considered when establishing minimum thresholds for groundwater levels across the basin. Please refer to Step 2 of GDEs under SGMA: Guidance for Preparing GSPs1 for more details.	The chapter reflects undesirable results as defined by minimum threshold levels approved for each sustainability indicator by the GSA Board.
27	P. 3-9				[Checklist items #26-42]: •Under the Potential Effects of Undesirable Results subsection, "If depletions of interconnected surface water were to reach Undesirable Results, groundwater dependent ecosystems could be affected" should also include potential effects on environmental surface water users, land uses (e.g., fishing/hunting, hiking, boating), and property interests (e.g., privately and publicly protected conservation lands and open spaces, including wildlife refuges, parks, and natural preserves) [23 CCR §354.26(b)(3)]. Please also provide more details on how these various beneficial users could be adversely affected. SGMA also requires that depletions of interconnected surface water also consider adverse impacts on beneficial uses of surface water [23 CCR 354.28(6)].	The chapter reflects undesirable results as defined by minimum threshold levels approved for each sustainability indicator by the GSA Board using the information that is currently available. They can be revised in the future if additional information is developed.
28	P. 3-9				• In addition to identifying GDEs in the basin, The Nature Conservancy recommends identifying beneficial users of surface water, which include environmental users. This is a critical step, as it is impossible to define "significant and unreasonable adverse impacts" without knowing what is being impacted, nor is possible to monitor ISWs in a way that can "identify adverse impacts on beneficial uses of surface water" [23 CCR §354.34(c)(6)(D)]. For your convenience, we've provided a list of freshwater species within the boundary of the Cuyama Basin in Attachment C. Our hope is that this information will help your GSA better evaluate and monitor the impacts of groundwater management on environmental beneficial users of surface water. We recommend that after identifying which freshwater species exist in your basin, especially federal and state listed species, that you contact staff at the Department of Fish and Wildlife (DFW), United States Fish and Wildlife Service (USFWS) and/or National Marine Fisheries Services (NMFS) to obtain their input on the groundwater and surface water needs of the organisms on the freshwater species list, and how best to monitor them. Because effects to plants and animals are difficult and sometimes impossible to reverse, we recommend erring on the side of caution to preserve sufficient groundwater conditions to sustain GDEs and ISWs.	The chapter reflects undesirable results as defined by minimum threshold levels approved for each sustainability indicator by the GSA Board using the information that is currently available. They can be revised in the future if additional information is developed.
29	P. 3-9				• Please also provide more details on when, where, and how groundwater changes can adversely affect these various beneficial users. Are there particular species, with legal protection, that already have known thresholds that need special consideration? The more specific the definition of what an adverse impact to beneficial users of groundwater and surface water looks like, the easier it is to quantify minimum thresholds, measurable objectives, and interim milestones that are protective of that definition.	The chapter reflects undesirable results as defined by minimum threshold levels approved for each sustainability indicator by the GSA Board using the information that is currently available. They can be revised in the future if additional information is developed.
30	P. 3-11				[Checklist items #26-42]: • There is a typo, Section 3.1.6 is actually intended to reference Section 3.2.6.	The text has been corrected.
31	P. 3-11				• Please be more specific on what measurements were used to show that groundwater gradients along interconnected surface water bodies in the Cuyama basin are not in an undesirable condition. How were these gradients determined?	The current definition reflects the best understanding given currently available data. The undesirable results definitions for depletion of interconnected surface can be updated when better data is available.
32	P. 3-11				• Analysis of Interconnected Surface Waters in Section 2.2.8, particularly Table 2.2, demonstrate that depletions of interconnected surface water are occurring, meaning that adverse impacts to beneficial uses and users could be occurring. Thus, it is inadequate to state that "depletion of interconnected surface water is not identified to be in an undesirable condition" without evaluating potential effects to beneficial users.	The chapter reflects undesirable results as defined by minimum threshold levels approved for each sustainability indicator by the GSA Board using the information that is currently available. They can be revised in the future if additional information is developed.
33	Appendix A	TABLE: Cuyama Basin Groundwater Sustainability			The first Undesirable Result listed in the first row of the first column of the table Framework for Developing Sustainable Management Criteria, is adverse impacts to the viability of agriculture and the agricultural economy. If that is Undesirable Result #1 as indicated, then pumping reduction recommendations must be conservative with respect to their potential impact to the agricultural economy, especially in the first few years, until enough data can be collected and analyzed to determine whether or not modeled water level declines are overpredicted, underpredicted, or something in between. The potential effects of uncertainty on predicted groundwater elevations and storage depletion should be acknowledged and clearly presented, and predicted values of water levels and groundwater storage volumes should be presented as ranges of likely outcomes rather than single values, or time series.	The pumping reduction schedule was determined by the CBGSA Board. Uncertainty information is presented in Chapter 2 and in the modeling appendix.
34	Appendix A	Framework for Developing Sustainable Management Criteria			The framework seems to suggest that the conditions in 2015 were considered the in setting of thresholds, yet most MT are below that and some MO are lower than 2015. Question: How were the conditions in 2015 considered? And is it acceptable to not plan on ever recovering to those conditions?	The MTs developed by the CBGSA Board were defined relative to 2015 groundwater elevations. SGMA does not require that groundwater elevations are returned to 2015 levels.
35	P. 3-9, Section 3.2.6	Potential causes of undesirable results for depletions of interconnected surface water…			What leads you to believe this? For the most part groundwater production has not occurred in the shallowest zones. Furthermore, you imply the connection of surface water and groundwater occurs only in shallow zones which I would question.	The text has been revised.

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Comment #	Section	Section Paragraph #	Paragraph's Sentence #	Sentence Starts with, "…	Comment	Response to Comment
1					Monitoring system: The Plan could be improved by recognizing that the wells selected for the monitoring system are not necessarily representative. Over time, and with more data, hopefully the Plan will improve the selection of wells that are truly representative. Moreover, it is more logical to have a monitoring system specifically for the Central Basin, separate from the other management areas, since this is the most critical part of the whole Basin.	The monitoring network will be reviewed during GSP implementation to confirm the inclusion of wells recommended in the plan and to add additional wells to close data gaps.
2	4.8				This section should better explain for the reader what is meant by the term “causal nexus” and why there is causal nexus between salinity and GSA actions. If arsenic is primarily found at depth, and maintaining water levels is the primary management responsibility of the GSA, it would appear that there is a causal nexus between arsenic and GSA actions.	The text has been revised.
3	P. 4-13, 4-15, 4-17, etc.			Headers describing agencies contributing data	Suggest spell out headers for general public readability such as done for header on p. 4-6: (“DWR, Statewide Dataset/California Statewide Groundwater Elevation Monitoring (CASGEM)”).	This correction has been made.
4	General				Suggestion: All water wells designated as “monitoring wells” should be thoroughly canvassed and characterized and that data should be in the DMS.	This can be considered as an augmentation to the DMS in the future.
5	P. V.			Acronyms	Addition: OPTI DMS	DMS has been added.
6	P. 4.2 and 4.3			4.1.1 Well-Related Terms…	Suggestion: It would be helpful to list the terms in alphabetical order	This correction has been made.
7	P. 4.21 Sec. 4.3			Private landowners in the Basin…	Question: Who measures the “private” wells and what methods and QC/QA protocols are used?	This data was provided by private landowners in the Basin. While QA/QC protocols were not provided for past monitoring, they will be specified for future monitoring during GSP implementation.
8	P. 4.23 Sec. 4.3.2			Many of the data sources used to compile and create the Cuyama...	Addition: There should be a OPTI – State Well Number (SWN) searchable cross reference in the DMS	This can be considered as an augmentation to the DMS in the future.
9	P. 4.24 and 4.25, P. 4.30 and 4.31 Sec. 4.3.3			Groundwater Quality Monitoring:	Addition: The VCWPD Groundwater Quality Monitoring sites should be distinguished between “active” and “historical”	Specific information about which sites are active is not available.
10	P. 4.44 to 4.47 Table 4.5			Wells included in the Groundwater Levels and Storage Monitoring Network	Addition: This table should have SWN’s and should distinguish if it is “representative” or “supplemental”.	This is not necessary as the representative wells are identified in Chapter 5.
11	P. 4.49 Sec. 4.5.7 & Sec. 4.5.8			As of Draft GSP publication…	Comment: Along with proper canvassing, no thorough effort was made to acquire and input construction information on all representative wells, which can be obtained from owners, permitting agency, CDWR, the driller – or manual sounding for depth. Suggestion: This investigative canvassing and data entry needs to be completed early on during implementation. Question: What happened to the TSS grant for new depth dependent monitoring wells & Stream gauge flow meters and down hole video logging? This was supposed to have happened over a year ago.	This can be considered during GSP implementation.
12	P. 4.52 Sec. 4.8			Furthermore, unlike with salinity, there is no evidence …	Comment: I disagree with this statement about arsenic. Overpumping the aquifer can induce arsenic laden “ancient” water to migrate into the cone of depression. Change: The second instance of the word “salinity”, in this sentence should be changed to “nitrates” or “Boron” or almost anything else that is being ignored.	The sentence has been corrected.
13	P. 4.52 Sec. 4.8			Degraded Groundwater Quality Monitoring Network:	Addition: The GSP should define a “schedule” of constituents to be sampled annually or periodically.	This will be developed during GSP implementation.
14	P. 4.52 Sec. 4.8			Degraded Groundwater Quality Monitoring Network:	Comment: The “background” TDS in the Cuyama drainage is very high, thus on its own does not serve as an ample signal for Groundwater Quality trends. Addition: In order to monitor Groundwater Quality this GSP must sample more than just TDS.	Comment noted.
15	P. 4.55 to 4.57 Table 4-7			Wells Included in the Groundwater Quality Monitoring Network:	Addition: This Table should cross reference OPTI to SWN	This cannot be easily accomplished with the table format. The SWN numbers can be easily found in OPTI
16	P. 4.60 Sec. 4.8.8			Well construction for existing salinity sampling efforts …	Question: What good is it to pull Water Quality samples from unknown depths? Addition: Collect and input this data into the DMS and Model early on in Implementation.	This can be considered during GSP implementation.
17	P. 4.62 Sec. 4.8.9			Plan to Fill Data Gaps:	Addition: For the sake of greater Basin understanding this GSP needs to monitor for more than just TDS.	Comment noted.

Cuyama Basin Sustainability Section
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Comment #	Section	Section Paragraph #	Paragraph's Sentence #	Sentence Starts with, "…	Comment	Response to Comment
18	P. 4.68 Sec. 4.10			The minimum threshold established for depletions of interconnected…	Comment: There are no stream gauges on the Cuyama inside the basin, no shallow wells near the river or piezometers to monitor GDEs. This GSP does not adequately identify or quantify the depletions of interconnected surface waters. Question: How can you quantify what you have not located and have no way to measure? Addition: This GSP needs a description of whether hydrological data are spatially and temporally sufficient to monitor groundwater conditions for each GDE unit.Also needed is a description of how impacts to GDEs and environmental surface water users, will be monitored and which monitoring methods will be used in conjunction with hydrologic data to evaluate cause-and-effect relationships with groundwater conditions.	The section on GDEs in Chapter 2 has been updated to note that piezometers are needed to monitor GDEs.
19	P. 4-15			SLOCFC&WCD also reports theses	Grammar	The text has been corrected.
20	P. 4-42 & 4-43				[Checklist items #43-45]: •Please identify which representative monitoring wells are capable of monitoring groundwater level conditions that can impact environmental beneficial users of groundwater (i.e., GDEs) and of surface water (e.g., freshwater aquatic species). Refer to Best Practice #4 in Attachment D to this letter for technical guidance.	This can be considered during GSP implementation.
21	P. 4-10				•The improvement of numerical model accuracy for the estimation of interconnected surface waters should also include the installation of clustered or nested wells and the installation of shallow monitoring wells around GDEs and the Cuyama River to resolve data gaps that were identified in Section 2.2.10: oThe Cuyama River is not gaged inside the Cuyama Basin, so flows of the river in the Basin have been estimated based on measurements at downstream gages. oVertical gradients in the majority of the Basin are not understood due to the lack of wells with completions of different depths located near each other. oGDEs could be evaluated in greater detail oInformation about many of the wells in the Basin is incomplete, and additional information is needed regarding well depths, perforation intervals and current status. oDue to sporadic monitoring by a variety of monitoring entities, a long period of record of monitoring groundwater levels does not exist in many areas in the Basin.	Additional information will be developed as the monitoring network is developed during GSP implementation.
22	P. 4-10				•Please identify appropriate biological indicators that can be used to monitor potential impacts to environmental beneficial users due to groundwater conditions. Refer to Appendix E of this letter for an overview of a free, new online tool for monitoring the health of GDEs over time.	This can be considered during GSP implementation.
23	Figure 4-3				This map shows certain wells monitored for which DWR has no access. Interesting. Is data from other agencies sent to DWR for this dataset?	Yes, the DWR database includes data provided to DWR from other agencies and private landowners.
24	Page 4-28			Number of measurement sites	This # refers to CCSD water quality data measurements. At 1.2.4 you state that "local agencies sucas CCSD … do not conduct routine monitoring" yet you can see they test every 6 months it would seem.	The sentence in 1.2.4 has been removed.
25	4.3.5			Surface water monitoring	P. 2-125 states flows of the river have been based on measurements at downstream gagues, then at Appendix C-7 gauge ID 11136800 is cited. Gere 4.3.5 admits this gauge receives non-basin water in addition to basin water.	It is noted in Appendix C that the flows on this gage were adjusted to estimate flows at the downstream boundary of the basin.
26	4.8				For whatever reason, the water quality in the Cuyama Basin is poor. Perhaps connected with the years of severe overdraft. The GSP is only required to deal with the problem of salinity. I would like to suggest that the GSA be required to coordinate with the agency responsible for other issues of water quality to help solve the real problem of water quality for the local residents. State support for this would be very beneficial.	Comment noted.

Cuyama Basin Sustainability Section
Summary of Public Comments and Responses - Chapter 5
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Comment #	Section	Section Paragraph #	Paragraph's Sentence #	Sentence Starts with, "…	Comment	Response to Comment
1	5.2.2 (p. 5-8)			"Monitoring in this threshold region indicates"	We agree with establishing the Western Region as separate from the Northwest Region and establishing a Minimum Threshold for representative wells "to protect the water levels from declining significantly, while allowing beneficial and surface uses of the groundwater and protection of current well infrastructure." We especially appreciate the concern shown to monitor and protect our wells in relation to the major change in water use over the past three years in what is identified as the Northwest Region.	Comment noted.
2	Figure 5.1				This map shows that 10 representative wells have been selected for the Western Region. We are concerned that only 3 if the 10 representative wells are in Cottonwood Canyon, especially since the GSP says "levels varied significantly depending on where representative wells were in the region" (p. 5-8). Cottonwood Canyon is where most of the domestic dwellings and full-time residents live in this region. Of the 3 wells in Cottonwood Canyon, 2 are directly on Cottonwood Creek. These two wells will be impacted by the year-round flow. We suggest that one of the two more wells from Cottonwood Canyon be added to the representative wells that can represent the variation of groundwater flow in the Western Region. Santa Barbara County has been monitoring several more wells in Cottonwood Canyon that could be added to the database.	Additional wells can be considered during GSP implementation.
3	Table 5-1 (p. 5-13)				Shows the Minimum Thresholds, Measurable Objectives, and Interim Milestones for each of the wells in the Monitoring Network. The 3 wells identified in the Cottonwood Canyon area, all have Minimum Thresholds (MT) that are lower than the current groundwater level by 10-60 feet. (#117 MT is 10 feet below the current groundwater level; #118 is over 60 feet below current groundwater level; #571 is over 20 below current groundwater level).Our wells have held steady through over five years of drought. We don't think that by having a MT that will allow water levels to decrease will protect our wells. We are especially concerned that the Interim Milestones are set over the next 15 years at the level of the MT> This means the goal for the representative wells in the Western Region and specifically Cottonwood Canyon is to have our well levels go down. We suggest instead, the Measurable Objective, which is set at actual current groundwater levels, be used for the Interim Milestones in our region.	Interim Milestones have been revised per Board direction.
4					The minimum threshold established by the GSP: The minimum thresholds as established by the GSP are based on the groundwater levels as existed in 2015. Over more than 50 years before 2015, various studies have shown that the groundwater usage had exceeded the amount recovered each year. So the groundwater level in 2015 was already extremely over-drafted. I understand that the various studies did not include data from a number of properties because some property owners or leasers would not share that information. Nevertheless, basing the minimum thresholds on 2015 data means that by 2020, "sustainability" would be groundwater levels no better than in the year 2015--extremely over-drafted.	The minimum thresholds reflect those approved by the GSA Board.
5	P. 5-7			Eastern Threshold Region: “The MT	Explain rationale why MTs in the Eastern TR were set 35% below 2015 water levels, but MTs in the Central TR were set 20% below 2015 water levels.	A sentence has been added to the Eastern Region section
6	P. 5-7, 5-8			Central TR: “For Opti Wells 74, 103, 114, 568, 609, and 615, a modified… Western TR: “Opti Well 474 ...and include Opti Wells 830, 831, 832, 833, 834, 835, and 836.	Explain rationale for why the method of sustainability criteria calculation was modified for these particular wells.	The text has been updated to probide additional clarification on these wells.
7	P. 5-9				Suggest compiling a summary table of MO, MT, and IM methods and rationales by Threshold Region for comparison and discussion.	This was presented during the GSA Board meeting where the rationales were discussed.
8	P. 5-11 Table 5-1				Screen bottom for Opti well 72 not consistent with information in other tables.	The table has been corrected.
9	P. 5-18			…the MT [for TDS] for representative	Using a threshold value for TDS at the 90th percentile of the historical range could quickly become problematic, especially in wells with increasing TDS trend. Most wells are >90% of their threshold (MT) value, and almost all wells are above their MO. Suggest using a method similar to that used for water level MTs, where generally a constant was subtracted (added in the case of WQ MTs) from the minimum (or the 2015 data). Do the WL and TDS values correlate? Are WLs a potential proxy for TDS in certain Threshold Regions?	The Board can consider adjusting MT levels in the future if conditions warrant it.
10	P. 5-23			Subsidence is expected to be	Subsidence in most cases is permanent and irreversible. Setting the MO to zero overly constrains the basin. Some subsidence can be tolerated without noticeable effects - a few inches over 20 years should not be considered significant and unreasonable. There are many faults in the basin, and tectonic forces are very active in the region. How will the GSA separate measured changes in ground surface into SGMA-related subsidence versus movement due to faulting?	The Board can consider adjusting MT levels in the future if conditions warrant it.
11	General Comment			the Basin’s representative sites will also have IMs...	Comment: No IM calculations were made for any representative wells. All IM are simply set the same as the MT. As a result, IMs will in no way help to measure progress toward sustainability over the GSP’s planning horizon. The MOs & IMs have no actionable significance in this Plan? The SAC and GSA never discussed this being the goal. Question: Who decided the goal was only to minimizing the exceedance of MTs between now and 2040, and who chose not to move toward the MOs or any Sustainability Goal greater than the MTs? Addition: Set IM at 33% intervals in the MoOF for a goal of the MO. That would seem to be DWRs intent.	The IMs have been adjusted based on Board direction.
12	P. 5.1 Sec. 5.1			Useful Terms	Comment: Please list these terms alphabetically	This change has been made.
13	P. 5-6 Sec. 5.2.2			The MT was calculated by taking…	Comment: Conditions in 2015 may have somehow been considered but in the case of the Central Region and the Eastern Region they were overlooked and forgotten. 20 to 35% of range below 2015 for MTs. The Western and Northwestern did not use 2015 for calculating any thresholds at all. Question: How did DWR expect 2015 conditions to be considered, as a baseline for sustainability or just a benchmark to measure down from?	The document reflects direction provided by the GSA Board.

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Comment #	Section	Section Paragraph #	Paragraph's Sentence #	Sentence Starts with, "…	Comment	Response to Comment
14	P. 5-8			Monitoring in this threshold region indicates levels …	Comment: Groundwater level declines were noted with in two years of establishing the new agriculture in the area (North Fork Vineyard), yet the MT was set to allow the water levels to continue declining significantly. The criteria for the MTs in this region was suggested by property owner's unproven science for determining the region's total average saturated thickness for the primary storage area. That is speculation not science. QC/QA Question: Given the unproven geology of this region, how was this done? By who? And why would that be a defensible justification for lowering groundwater levels in a critically overdrafted basin? By what QC/QA was this determination established?	The document reflects direction provided by the GSA Board.
15	P. 5-15 Sec. 5.5			degraded water quality is a result stemming …	Comment: There are several undesirable results stemming from a causal nexus between groundwater pumping & water quality. Not just TDS. Suggestion: Monitor & track changes in other constituents like Arsenic , Nitrites, Boron and Ions to better understand recharge rates and sources. Question: Can the GSP monitor various constituents without having to set MTs?	The document reflects direction provided by the GSA Board.
16	P. 5-16			In the case of arsenic, all of the high concentration measurements …	Comment: This is within the range of pumping and the recharge is horizontal flow coming in from adjacent ancient water high in these constituents of concern. More than 30% of the MN wells pump from below 700'. (See Table 5.2 on P. 5.19) Suggestion: Monitor for a wider spectrum of constituents including arsenic, for Water Quality such as was used in CDWRs GAMA program for improving our understanding of recharge rates and sources.	The document reflects direction provided by the GSA Board.
17	P. 5-18 Sec. 5.5.3			It should be noted however, that TDS levels in…	Comment: Many of the crops grown in the Basin, including carrots, are adversely affected by the kinds of salts in the Cuyama Basin, resulting in lower yields of lower quality carrots and other row crops, or else acidification inputs are necessary. Undrinkable water adversely affects domestic and livestock uses. The agricultural economy is not the only factor to consider. Delete: This editorializing is not factual or necessary and should be deleted.	The sentence has been revised to be less definitive.
18	P. 5-22 Sec. 5.6.3			Because current subsidence rates (approximately …	Comment: With only one monitoring site on the edge of the central problem area, very little is known about basin wide subsidence issues or their effect on ground water storage. Suggestion: Please justify the 2 inches MT better and prioritize filling the data gap.	The Board can consider adjusting MT levels in the future if conditions warrant it. The data gap is identified in Chapter 4.
19	P. 5.23 Sec. 5.6.2			storage losses are small enough they may be considered superficial.	Comment: Compressed clays and collapsed aluvium may in fact significantly decrease "deep percolation" through the 600' of dry vadose zone. Question: Please justify how you can consider these consequences are superficial?	Text has been revised.
20	P. 5-26			Conditions have not changed since January 1, 2015, and surface flows	Comment: It may be true that the Cuyama River is as dry as it was in 2015, but infiltration into a 600' thick vadose zone is questionably available for use by local phreatophytes. Suggestion: Address the effects of that much dry alluvium on recharge and deep percolation. The GSP can not overlook the vadose zone in this basin of complex cascading hydrogeology.	This can potentially be evaluated further in the future.
21	P. 9			Recent historical data and hydrographs in this portion	Comment: This statement appears to be based on data provided by the landowner of this parcel. This data has not been peer reviewed or verified by any other source. Without qualified, third-party review by an entity that does not have a conflict of interest in the production of this data, the "recent historical data and hydrographs" cited cannot be considered unprejudiced scientific evidence and should not be the basis of the statement that this portion of the Basin is "likely currently in a full condition". Recommendation: Delete this statement, or amend to read "Recent historical data and hydrographs in this portion of the Basin indicate suggest that this portion is may currently be in a full condition. The CBGSA will conduct a third-party review of this data to verify this assumption."	A comparison of private landowner and DWR/USGS data is shown in Chapter 2 that demonstrates consistency between them.
22	P. 10, 11, 12, 13			IMs were set to equal the MT in all incremental years between 2020 and 2040. This reflects a policy goal of minimizing the exceedance of MTs between now and 2040. As a result, IMs will be a way to measure progress toward sustainability over the GSP's planning horizon.	Comment: This paragraph appears in 5 of the 6 descriptions of Threshold Regions, as rationales for setting MTs, MOs and IMs. This policy was not discussed or vetted by the CBGSA and no logical or scientific support for this policy was presented to the CBGSA, nor is such evidence included in the Draft CBGSP. As described in this text and as seen in table 5- 1, the IMs set for every monitoring well make no attempt to approach the MO previously set for each well and appear to dismiss the notion of Measurable Objectives completely. If this policy is adopted, why were Measurable Objectives set for any region at all? Per SGMA regulations, this policy is unacceptable and must be changed or substantiated with verifiable science. The Final GSP Emergency Regulations state: "355.4 When evaluating whether a Plan is likely to achieve the sustainability goal for the basin, the Department shall consider the following: (1) Whether the assumptions, criteria, findings, and objectives, including the sustainability goal, undesirable results, minimum thresholds, measurable objectives, and interim milestones are reasonable and supported by the best available information and best available science." Source: Final GSP Emergency Regulations, Section 355.4 (1) Recommendation: Present a review of this policy decision, supported by science, to the CBGSA, as well as an analysis of the impact this policy will have on reaching Measurable Objectives and the sustainability goal for the Basin. Change: Missing word in last sentence: "be"	Interim Milestones have been revised per Board direction.
23	P. 18-19 Table 5-1				Correction: The identification of a "Far-West Northwestern region" has not been adopted by a vote of the CBGSA and does not appear on any maps. The locations of these wells is not indicated anywhere else in the GSP. Please correct.	They are described as such in the text on page 5-8 and were discussed in this way at the Board meeting.

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Comment #	Section	Section Paragraph #	Paragraph's Sentence #	Sentence Starts with, "…	Comment	Response to Comment
24	P. 19 Section 5.3	2		Direct measurement of the reduction of groundwater storage in the Basin is not needed because monitoring in several areas of the Basin (i.e., the western, eastern, and portions of the north facing slope of the Cuyama Valley near the center of the Basin) indicate that those regions are likely near, or at full conditions	Question: Please clarify the location of the highlighted section (portions of the north facing slope of the Cuyama Valley near the center of the Basin) referred to as “portions of the north facing slope of the Cuyama Valley near the center of the Basin”. This seems to contradict the data that indicates that the center of the Basin is not “likely near, or at full conditions.”	The text says areas "near the center of the Basin", not in the center of the Basin
25	P. 19 Section 5.5	1		The undesirable result for degraded water quality is a result stemming from a causal …	Comment: This is not an accurate statement. The CBGSA did not vote to only consider “the undesirable result for degraded water quality is a result stemming from a causal nexus between SGMA-related groundwater quantity management activities.” No such vote was proposed or taken. This is an assumption made by the plan consultant. SGMA regulations do not stipulate a “causal nexus” argument for establishing undesirable results for degraded water quality. Further, the Final GSP Emergency Regulations state: “354.28. Minimum Thresholds (c)(4) In setting minimum thresholds for degraded water quality, the Agency shall consider local, state, and federal water quality standards applicable to the basin.” Nowhere in the 354.28 subsection are GSAs permitted to determine and solely address water quality conditions that the CBGSA deems to have a so-called “causal nexus” with groundwater pumping. Further, a recent Stanford University study recently established a causal nexus between overpumping and arsenic levels in groundwater, which refutes the opposite claim in the Draft CBGSP. Recommendation: Without further data, monitoring, and a basis in scientific evidence, the CBGSA should not rule out setting undesirable results, MTs, MOs and IMs for all constituents that impact water quality in the Basin, in particular arsenic. Further, per the Final GSP Emergency Regulations, the CBGSA must “consider local, state, and federal water quality standards applicable to the basin” when determining the Undesirable Results, MOs, MTs and IMs relative to water quality throughout the Basin. Please provide proof that “local, state, and federal water quality standards” have been considered in the CBGSP’s plan to prevent Undesirable Results for the Sustainability Indicator Degraded Water Quality. Please provide scientific, peer-reviewed evidence for the inclusion or exclusion of any constituent in the CBGSP’s plan to prevent Undesirable Results for the Sustainability Indicator Degraded Water Quality.	The current plan for water quality in the GSP satisfies DWR requirements. This can be changed if direction is provided by the GSA Board.
26	P. 19-20 Section 5.5			The SGMA regulations specify that, "minimum thresholds for degraded...	Comment: This section offers an incomplete quotation of the relevant statute. The full subsection reads: “354.28 (c)(4) Degraded Water Quality. The minimum threshold for degraded water quality shall be the degradation of water quality, including the migration of contaminant plumes that impair water supplies or other indicator of water quality as determined by the Agency that may lead to undesirable results. The minimum threshold shall be based on the number of supply wells, a volume of water, or a location of an isocontour that exceeds concentrations of constituents determined by the Agency to be of concern for the basin. *In setting minimum thresholds for degraded water quality, the Agency shall consider local, state, and federal water quality standards applicable to the basin.”* (highlight added) In the Cuyama Basin, arsenic has long been an issue, so much so that the CCSD maintains an arsenic treatment plant to reach safe levels for arsenic for drinking water. The argument that there is no “causal nexus” between groundwater pumping and arsenic levels in the aquifer is not grounded in data or science. The Central Coast Regional Water Quality Control Board recommended that the GSP monitor for TDS, nitrates, arsenic and major dissolved ions, the latter to facilitate accurate readings. Recommendation: Follow the Central Coast Regional Water Quality Control Board’s recommendations for constituents that should be included in determining and preventing undesirable results for the Cuyama Basin.	The current plan for water quality in the GSP satisfies DWR requirements. This can be changed if direction is provided by the GSA Board.
27	P. 19 Section 5.5.3			It should be noted however, that TDS levels in groundwater do not…	Comment: The GSP will govern groundwater use in the Cuyama Basin for the next 20 years, and possibly beyond. Due to water allocations and the potential for changes in crop patterns, this sentence may not be relevant in future years. Additionally, as SGMA requires that all beneficial users and uses are considered in determining and preventing undesirable results, the effect that TDS levels have on current crops and agricultural interests is not the only impact that should be considered. TDS levels affect domestic wells, drinking water and Groundwater Dependent Ecosystems. Recommendation: Strike this sentence or include a scientific analysis that observes the impact of TDS levels on all beneficial users and uses.	The sentence has been revised to be less definitive.

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Comment #	Section	Section Paragraph #	Paragraph's Sentence #	Sentence Starts with, "…	Comment	Response to Comment
28	P. 22, 5.5.3			GSP regulations require GSAs to avoid undesirable results by 2040…	Comment: This statement is misleading and suggests that "meeting or exceeding the MT is required by SGMA" but that reaching a Measureable Objective is not also required by SGMA. This is not the case. The regulations state the following: "Measurable objectives shall be established for each sustainability indicator, based on quantitative values using the same metrics and monitoring sites as are used to define the minimum thresholds." (Source: Final GSP Emergency Regulations 354.30) Therefore, by definition, measurable objectives are distinct from minimum thresholds; minimum thresholds are to be avoided and measurable objectives are to be reached, through the application of interim milestones. Nowhere in the regulations does it state that interim milestones can be set as the same value as minimum thresholds. In fact, interim milestones must be set to demonstrate that a GSP includes a plan to achieve measurable objectives. Further, the Final GSP Emergency Regulations state that monitoring networks must "Demonstrate progress toward achieving measurable objectives described in the Plan."(354.34 (b)(1) How can the CBGSP demonstrate "progress toward achieving measurable objectives" if minimum thresholds and interim milestones to reach measurable objectives are considered one in the same? The regulations also state that the DWR will consider the following in evaluating the GSP: "(1) Whether the assumptions, criteria, findings, and objectives, including the sustainability goal, undesirable results, minimum thresholds, measurable objectives, and interim milestones are reasonable and supported by the best available information and best available science." It seems unlikely that the DWR will conclude that completely ignoring measurable objectives and equating minimum thresholds with interim milestones is supported by "the best available information and best available science." (Final GSP Emergency Regulations 355.4. Criteria for Plan Evaluation)	The IMs have been adjusted based on Board direction.
29	P. 27 & 28			Because current subsidence rates (approximately 0.8 inches per year)…	Comment: By setting the minimum threshold for subsidence across the Basin at 2 inches per year, and by not setting interim milestones to reach a measurable objective of zero, the CBGSP is not complying with SGMA regulations. No plan is identified that will actually bring the subsidence level to zero. Further, by setting the MT at 2 inches per year, as written, the CBGSP could potentially allow 40 inches of land subsidence by 2040, without consequence. Recommendation: Reduce the MT for subsidence to one inch per year, and set interim milestones to reach zero subsidence by 2040 as required by SGMA.	The Board can consider adjusting MT levels in the future if conditions warrant it.
30	General Comment			Interim Milestones	SGMA regulations state as follows: § 354.30. Measurable Objectives (e) Each Plan shall describe a reasonable path to achieve the sustainability goal for the basin within 20 years of Plan implementation, *including a description of interim milestones for each relevant sustainability indicator, using the same metric as the measurable objective* , in increments of five years. The description shall explain how the Plan is likely to maintain sustainable groundwater management over the planning and implementation horizon. Comment: Throughout Chapter 5 Minimum Threshold is used for Interim Milestones. Measurable Objectives are not incorporated at all for any of the sustainability goals even when the MT brings the indicator lower than its current status. The goal is not just to stop lowering the water levels, but to bring them back up to the measurable objective. Furthermore, if the IMs are set to the MTs, the plan does not provide a safety net for the Basin in times of drought. Recommendation: Set interim milestones to incorporate Measurable Objectives.	The IMs have been adjusted based on Board direction.
31	General Comment			Sustainability Goals, Sustainable Yield	§ 354.24 Sustainability Goal: The Plan shall include a description of the sustainability goal, including information from the basin setting used to establish the sustainability goal, *a discussion of the measures that will be implemented to ensure that the basin will be operated within its sustainable yield* , and an explanation of how the sustainability goal is likely to be achieved within 20 years of Plan implementation and is likely to be maintained through the planning and implementation horizon. Comment: There is no correlation made in Chapter 5 between Minimum Thresholds, Measureable Objectives, Interim Milestones and how the Basin will reach it sustainable yield.	Projects and actions to achieve the Sustainability Goal are described in Chapter 7.
32	P. 5-8 Section 5.2			map of representative wells by Threshold Region	Comment: Western Region: Of the 10 representative wells identified in the Western Region, only 3 are in the main rural residential area, Cottonwood Canyon. Of the 3 in Cottonwood Canyon, 2 are located on Cottonwood Creek which benefit from year-round subsurface flow and seasonal surface flow. There are more wells in this area being monitored by Santa Barbara County that would more fully represent this area. Recommendation: Refer to Santa Barbara County Water Agency for their recommendation on wells to be monitored.	Additional wells can be considered during GSP implementation.
33	P. 5-3			The northern boundary of this region is the narrows at the Cuyama River…	Recommendation: Since this boundary borders on federal lands, recommend this be mentioned in the description.	Text has been revised.
34	P. 5-5			This part of the Basin has agricultural pumping	Comment: During summertime when there is the greatest agricultural pumping in this region, domestic wells go dry and water has to be trucked in. Recommendation: The above should be incorporated in the description.	This is discussed in section 5.2.2
35	P. 5-9			Recent historical data and hydrographs …	Comment: The Northwestern Region was in a full condition prior to intensive pumping began in 2016. It is now not only no longer in "full condition," but is also dropping. Recommendation: This should be clarified in the description.	Insufficient data is available to know if recent changes in groundwater elevations are tempory or reflect a long-term change.
36	P. 10 Section 5.2.2			IMs were set to equal the MT in all incremental years between 2020…	Comment: This is the same IMs used throughout the chapter. For the Eastern Region this sets the Milestones at staying near the bottom of some of the representative wells. This is not an acceptable goal for an area that includes an identified Management Area in the Basin. Recommendation: Set IMs for this region that aims to reach the Measurable Objective.	The IMs have been adjusted based on Board direction.
37	P. 11 Section 5.2.2			"IMs were set to equal the MT …	Comment: Same IM statement was used as above. The IM here should at least be set to the glide path and include the cutbacks to start in early 2023.	The IMs have been adjusted based on Board direction.
38	P. 12 Section 5.2.2			"The MT was calculated by taking the difference between the …	Comment: Why should this region's MT go below Feb 2018 when these wells have held steady on groundwater through 6 years of drought? The MT could be set at the 2015 levels, which was the 4th year of drought.	The document reflects direction provided by the GSA Board.

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Comment #	Section	Section Paragraph #	Paragraph's Sentence #	Sentence Starts with, "…	Comment	Response to Comment
39	P. 12 Section 5.2.2			IMs were set to equal the MT in…	Comment: Interim Milestones are set over the next 15 years at the level of the MT. This means the goal for the representative wells in the Western Region is for them to go down. Recommendation: Instead we recommend using the Measurable Objective, which is set at actual current groundwater levels, be used for the Interim Milestones in this region.	The IMs have been adjusted based on Board direction.
40	P. 12 Section 5.2.2			Due to these hydrologic conditions, the MT was set to protect	Comments: in the NW region, the MT in this region allows many wells to draw down an additional 20 feet, in some cases more than an additional 100 feet. Does that mean the IM for the Northwest region is to have a target of lowering the ground level every 5 years? Recommendation: to use the Measurable Objectives for the IMs in the Northwest Region.	The document reflects direction provided by the GSA Board.
41	P. 19 Section 5.3			Direct measurement of the reduction of	Comment: This provides an inappropriate description of the Basin. The eastern area, specifically the Ventucopa area, as described in other areas of Chapter 5, has shown consistent trends toward depletion over the last 20 years. If these areas are full, then it is very likely that GDE's would be negatively impacted if the MT is set at the lower levels than they are now.	The text has been revised for clarity.
42	P. 19 Section 5.5			Salinity (measured as total dissolved solids	Comment: It is not sufficient to measure only TDS. There are multiple agencies monitoring various constituents and there is pumping taking place at greater than 700 feet. Recommendation: Incorporate and continue groundwater quality measurements from other agencies (eg. CCSD, the Counties, Central Coast Water Board) into the GSP including so that an overall assessment of groundwater quality can be done at regular intervals.	This can be considered during GSP implementation.
43	P. 5-22 Section 5.5.3			TDS does not have a primary maximum	Comment: This section proposes that the only constituent being measured be TDS and in all cases, due to its natural occurrence in the groundwater, it be allowed to exceed California Division of Drinking Water and USEPA secondary standard. Thus, since TDS is not being held to conventional standards and since no other constituents are being monitored, there is virtually no water quality sustainability goals being set in the GSP. Question: Are any of the identified wells used for drinking water or located near drinking water wells? If so, what standards should these wells be monitored for? Recommendation: Identify wells near drinking water wells and separate them out for specific monitoring.	This can be considered during GSP implementation.
44	Table 5-2. p. 5.23				Comment: Of the 63 wells listed only 4 are below the 500 mg/L for the Maximum Measurement Value. 32 (more than 50%) are above 1500 mg/L for the Maximum Measurement Value. In all cases except 1 the MT is set higher or equal to that well's Maximum Measurement Value. The 1 exception is well #703 which has the highest reading for MMV: 4500mg/L and a MT of 4096.8 Would you want your child to drink this water?	This can be changed if direction is provided by the GSA Board.
45	5.6.3			the primary influence within the Basin	Comment: Why if it's 0.8 inches now are we giving latitude to go to 2 inches? How does this translate to loss in storage? Loss of groundwater storage is not even mentioned. Yet wasn't there a significant decrease at the CVHS site? This is not mentioned in the narrative, but the graph p. 5.29 shows a drop of 300 mm (apx 1 foot) between August 99 and 2017. At earlier SAC meetings it was proposed that more monitoring sites would be installed. Recommendation: Have the MT be at the current level of 0.8 inches and install additional monitoring sites in the Basin to establish a representative reading. Provide an estimate of storage loss that occurs with a subsidence of 0.8 inches.	This can be changed if direction is provided by the GSA Board.
46	5.7			Because current Basin conditions have	Comment: The Northwest region of the Basin has shown depletion since 1/1/15 when it was at a surface groundwater level. Thus depletion in this area could impact GDEs. As represented in the groundwater level section of this chapter, the MTs for many of the representative wells in this area are set at a level that would impact GDEs thus these MTs will not "act to maintain depletions of interconnected surface water…" In addition, it was proposed during SAC and GSA meetings that peziometers would be set up to monitor GDEs, but there is no mention of this in the plan. Recommendation: If the objective is to use groundwater levels to monitor, use the Measurable Objectives for the NW region which are either at current groundwater level or below.	The section on GDEs in Chapter 2 has been updated to note that piezometers are needed to monitor GDEs.
47	P. 5.6			This reflects a policy goal of minimizing the exceedance of MTs between now and 2040	Consider verifying this approach (Minimum Thresholds = Interim Milestones) with DWR.	The IMs have been adjusted based on Board direction.
48	P. 5.7			This reflects a policy goal of minimizing the exceedance of MTs	Consider verifying this approach with DWR.	The IMs have been adjusted based on Board direction.
49	P. 5.7			As a result, IMs will a way	Consider verifying this approach with DWR.	The IMs have been adjusted based on Board direction.
50	P. 5.7			This reflects a policy goal of minimizing the exeedance	Consider verifying this approach with DWR.	The IMs have been adjusted based on Board direction.
51	P. 5.8			Monitoring in this threshold region indicates levels …	As similar to the other regions text, please verify and add language if this is protective for domestic pumpers.	Text has been revised..
52	P. 5.8			These wellls have total depths that is shallower	These wells were reclassified into the Western Threshold Region MOs and MTs, but located within the Northwestern Threshold Regions; please discuss why these wells (Opti Wells 830, 831, 832, 833, 834, 835, and 836) will not be impacted by the Northwestern Threshold Region MTs and MOs.	As discussed in the monitoring networks chapter, potential impacts will be detected by the Monitoring Network so they can be addressed by the CBGSA Board
53	P. 5.9			This relfects a policy goal of minimizing	Consider verifying this approach with DWR.	The IMs have been adjusted based on Board direction.

Cuyama Basin Sustainability Section
Summary of Public Comments and Responses - Chapter 5
December 2019

Comment #	Section	Section Paragraph #	Paragraph's Sentence #	Sentence Starts with, "…	Comment	Response to Comment
54	P. 5.18			For this reason, the IMs for 2025...	Consider verifying this approach with DWR.	The IMs have been adjusted based on Board direction.
55	P. 5.24			Subsidence rates will be measured…	Please remove extra period	This has been corrected.
56	P. 5-6 thru 5-9				· Selecting thresholds by using groundwater elevation measurements closest to (but not before) January 1, 2015 is inadequate for identifying minimum thresholds or measurable objectives. Relying solely on the SGMA benchmark date (January 1, 2015) or any other single point in time to characterize groundwater conditions fails to capture the seasonal and interannual variability typical of California's climate. Hydrology is not static. Measurable objectives are intended to be set with enough operational flexibility to permit seasonal and interannual fluctuations that occur in California. We recommend that you consider using a baseline approach to better capture seasonality and water year types.	Using January 1, 2015 as a reference point is acceptable for development of the GSP MOs and IMs.
57	P. 5-6 thru 5-9				• January 1, 2015 was at the height of California's historic drought, a period of time that was characterized by adverse impacts to domestic well owners (e.g., dry wells), GDEs (e.g., water stress impacts on growth, reproduction, and even mortality due to lack of groundwater), and surface water users (e.g., lower streamflows). The onus is on the GSAs to determine whether groundwater conditions (due to groundwater pumping) exacerbated impacts to these beneficial users. And if so, to recognize these impacts and establish thresholds and measurable objectives that can avoid adverse impacts to beneficial users caused by groundwater in all water year types.	Using January 1, 2015 as a reference point is acceptable for development of the GSP MOs and IMs.
58	P. 5-6 thru 5-9				· While total well depth information is helpful in considering adverse impacts to beneficial users of groundwater (e.g., domestic, irrigation, and municipal wells), it fails to consider adverse impacts to GDEs and environmental beneficial users of surface water in interconnected surface waters. Environmental beneficial users of groundwater need to be considered when establishing measurable thresholds, measurable objectives, and interim milestones. Please refer to Step 2 of GDEs under SGMA: Guidance for Preparing GSPs1 for how this can be accomplished.	Comment noted.
59	P. 5-6 thru 5-9				· Please describe any differences between the selected minimum threshold and state, federal, or local standards relevant to the species or habitats residing in GDEs, as required [23 CCR §354.28 (b)(5)].	No differences have been identified.
60	P. 5-27				· It is highly doubtful that January 1, 2015 surface water conditions can be considered "normal" (2nd sentence in 2nd paragraph), please provide data to back this claim. January 1, 2015 was at the height of California's historic drought, a period of time that was characterized by adverse impacts to domestic well owners (e.g., dry wells), GDEs (e.g., water stress impacts on growth, reproduction, and even mortality due to lack of groundwater), and surface water users (e.g., lower streamflows).	Using January 1, 2015 as a reference point is acceptable for development of the GSP MOs and IMs.
61	P. 5-27				· Please provide more data and an elaborated description on how current basin conditions have not varied from January 1, 2015 conditions.	This can potentially be added as more data is available in the future.
62	P. 5-27				· Even if current basin conditions may not have varied from January 1, 2015, the onus is on the GSAs to determine whether groundwater conditions are causing any adverse impacts to beneficial users. And if so, to recognize these impacts and establish thresholds and measurable objectives that can avoid adverse impacts to beneficial users caused by groundwater in all water year types.	This will be performed through monitoring during GSP implementation.
63	P. 5-27				• According to Table 2-2 in the Draft GSP, 5994 AF of surface water was depleted in 2017. Please investigate whether these depletions in surface water are adversely impacting instream flow conditions and groundwater levels in riparian areas for environmental beneficial users, especially legally protected species.	Data does not currently exist to assess this, but it could potentially be assessed in the future.
64	P. 5-27				• Please describe any differences between the selected minimum threshold and state, federal, or local standards relevant to the species or habitats residing in GDEs or aquatic ecosystems dependent on interconnected surface waters [23 CCR §354.28 (b)(5)].	Data does not currently exist to assess this, but it could potentially be assessed in the future.
65	5.19 Appendix A			Hydrographs of Representative Wells	Comment: It is helpful to group the wells by threshold region to get a better understanding of the impact of MTs in each region. The region-based analysis of the compilation of hydrographs shows the following: There are no wells in the entire Basin where the MT is set to bring the GWL above current GWL. The identified management area of the Central Region, where the most critical overdraft is and almost all of the wells have a downward trend, has most of its wells' MTs set with a goal of keeping them at the GWL where they are now. Most of the Western region wells, which are characterized as domestic or rangeland wells (i.e. shallow), have MTs 20 feet below current GWL. While the map of representative wells (p.5.8) does not separate a NW and FarNW region, Table 5.1 (p.5.17) does. Looking at the map, it appears that the wells located in the Far NW region would generally be ranch and rangeland wells while the Northwestern wells are the recently drilled wells used for irrigating the newly planted vineyard. Almost all of the wells in the Western, Northwest and Far Northwest regions have MTs set at least 20 feet below current GWL.	The wells are organized by OPTI Well number to make them easy to find.

Cuyama Basin Sustainability Section
Summary of Public Comments and Responses - Chapter 6
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Comment #	Section	Section Paragraph #	Paragraph's Sentence #	Sentence Starts with, "…	Comment	Response to Comment
1	Entire Document				Very little information in this document specific to Cuyama DMS. Most of this document could apply to any basin where the Opti system has been used.	Comment noted.
2	P. 6-3			As the needs of the Cuyama Basin	Can the GSA re-configure/maintain the DMS in the future or does W-C have to do it?	The CBGSA will have the ability to choose how to update the DMS in the future.
3	P. 6-8			6.3 Data Included in the DMS	Provide some statistics on data in the DMS. Number of wells, average depth, number of wells having perforation data, WL data, WQ data, etc.	The text has been revised to report the number of wells and the number of those that have historical GWL and TDS measurements.
4	P. 6-10			In many cases, there were discrepancies	Was it automatically assumed that DEM is more accurate than GSE identified in the other sources?	No, the DEM was used just so that all well measurements could be compared by the same benchmark.
5	General			OPTI	Comment: Well identification and locations are hard to correlate with other standardized ID system like the State Well ID. Suggestion: A searchable cross reference table with State Well ID # would be very helpful. Correction: All the depth to groundwater charts in OPTI DMS are upside down compared to the groundwater elevation chart. It now looks like the depth to water is improving while groundwater levels are declining. Is this the way this GSP will fix everything?	The depth to groundwater charts have been corrected. Other DMS updates can be considered during GSP implementation.
6	P. 6.4 Sec. 6.2.2 Table 6.2			Table 6-2 lists the information that is collected …	Comment: Of the almost 40 fields of information on this table, less than 10 are entered for any well site. Of concern are the construction info, well depth and perforation Intervals and the status or classification(abandoned, domestic, agricultural,etc.). Addition: This investigative Data collection and entry must be prioritized early in Implementation and loaded into the OPTI DMS.	Additional data entry can be considered during GSP implementation.

Cuyama Basin Sustainability Section
Summary of Public Comments and Responses - Chapter 7
December 2019

Comment #	Section	Section Paragraph #	Paragraph's Sentence #	Sentence Starts with, "…	Comment	Response to Comment
1					Management areas: The Plan notes that the Central Basin and part of Ventucopa are critically overdrafted, and are a major focus for sustainability. I am concerned that the other areas of the basin may therefore continue to use water in a less than sustainable fashion. The Plan should be clear about the need for all parts of the basin to be closely monitored to ensure sustainable use practices are effected.	This is addressed in the Monitoring Networks Chapter.
2					Projects: While the scale of the problem in the Basin is staggering, the Plan should explore practices and technologies that can help improve efficiencies of water use.	The GSA cannot regulate water use efficiency practices under SGMA
3					The cloud seeding project appears to have inconsistent numbers in terms of number of AF (pg 16 has 1500 AF annually over 50 yrs, while pg 17 has 4200 AF), so please explain the difference.	The text has been corrected.
4					Pumping Allocations: The Plan should indicate how diminimus users in the basin will be defined, and if they will have allocations. Also, the Plan does not address how additional acres brought into irrigation will affect allocations. It may also be important to consider more strict considerations by CBGSA counties for approving new ag wells in this highly deficit basin.	The specifics for pumping allocations will be determined during GSP implementation.
5	P. 7-5	2			Please clarify what happens to areas with more than 2 feet of overdraft over a given timeframe going forward. For example if an area is shown to have a decrease >2ft/year over X number of years, it would be designated as a management area.	The text has been clarified that the 2 feet of overdraft standard is based on numerical modeling, not monitoring levels. While this approach has been used to develop the current management area boundaries, it has not been determined whether the same method would be used in a future update.
6	P. 7-5	2			"While the Cuyama Community Service District (CCSD) service area also has modeled overdraft exceeding 2 feet, it is not included in the management area." Please briefly explain why it was not included for the reader.	The text has been modified.
7	P. 7-9	Table 7-2			please define what would constitute "groundwater levels decrease sufficiently". This is an item that should be discussed by the GSA Board.	The text has been revised to reflect Board direction on adaptive management
8	7.5				A figure showing cumulative change in storage with and without pumping reductions as implemented along the proposed glide path (similar to Figure 7-3) would be useful for the reader.	Since we did not do a model simulation of the glide path, model results are not available to develop a similar figure.
9	7.5.2				Please change "is intending to implement pumping allocations" to "will implement pumping allocations".	The text has been changed.
10	P. 7-28				"Native sustainable yield". This would be good to include in a master glossary of key terms.	The text has been changed.
11	P. 7-31				Adaptive Management Triggers should be discussed by the GSA Board. This section would also be a good place to include policy about areas demonstrating >2 feet/year decline over a given period.	The text has been revised to reflect Board direction on adaptive management
12	P. 7-5			The CBGSA has designated two areas in the Basin as …	On what basis was the criteria of 2 feet selected? For example, why would 1 foot or 3 feet not be equally acceptable? Why is the Management Area based on a model-calculated water level decline rather than something like land and/or water use conditions (well density, crop density, high water demand crops, etc.) which have much less uncertainty and are not influenced by model errors. For example, the area where model-calculated water level decline is > 2 feet is sensitive to modeled aquifer property values. For example, using the historical run and considering the entire model domain, the area where drawdown is > 2 ft increased from 17,300 acres to 18,100 acres after increasing the modeled hydraulic conductivity in layer 3 by a factor of 10. This increases the total area outside the Water District with a modeled drawdown greater than 2 ft, so it has the effect of shifting the boundary of the Management Area.	This crteria was set by the GSA Board, but could be changed if the Board provides different direction.
13	P. 7-27 Section 7.5.2				Was the relationship between pumping changes in areas outside the Central Basin and the benefit of Central Basin Management Area pumping allocations assessed? Specifically, was it verified that pumping increases in any of the areas outside the Central Basin have no effect on management actions implemented in the Central Basin? A more conservative approach would employ pumping allocations Was the relationship between pumping changes in areas outside the Central Basin and the benefit of Central Basin Management Area pumping allocations assessed? Specifically, was it verified that pumping increases in any of the areas outside the Central Basin have no effect on management actions implemented in the Central Basin? A more conservative approach would employ pumping allocations in the Central Basin and specify no further pumping increases allowed in areas outside the Central Basin MA unless it can be verified the additional pumping will not negatively impact the benefits from Central Basin allocations.	Pumping allocations outside the management areas can be considered in a future update of the GSP.
14	P. 7-28			Because pumping allocations would only be imposed on users …	This does not account for recharge to the Central Basin that originates outside the Central Basin. Subsurface flow from areas outside the CBWD is sensitive to changes in aquifer parameters.	This could be evaluated in greater detail when morer data is available in the future.
15	P. 7-28			To the extent feasible, the CBGSA would determine …	Is a groundwater user that has been pumping for 1 year given the same priority as a user that has been pumping for 20-years or longer?	The text has been revised to be less definitive. The exact method to determine historical use will be determined during GSP implementation.
16	P. 7-30			CBGSA has the authority to develop a pumping allocation …	What about the impact of CBGSA enforced pumping allocations on groundwater rights?	Pumping allocations do not affect groundwater rights, just the quantity of water that water rights holders are able to pump.
17	P. 7-28			The CBGSA anticipates that…	Shouldn't the new supplies be added to the available supply for those users who paid for the new supply?	The text has been revised
18	P. 7-7 Table 7-1			Adaptive Management	Adaptive Management should be done routinely with the aim of verifying the expected benefit from pumpage reductions and adjusting the glide path accordingly.	The adaptive management section reflects direction provided by the Board. This is not included in the adaptive management policies specified by the Board. The Board can choose to adjust the glide path as additional data is available in the future.
19	P. 7-29 Figure 7-4				The glide path does not account for uncertainty or provide flexibility to manage the basin adaptively.	The GSA Board can choose to adjust the glide path as additional data is available in the future.
20	P. 7-31				What happens if the benefit to groundwater storage exceeds the expected benefit for the actual pumpage reduction? Will the pumping allocations be increased accordingly?	Adaptive management language has been revised per direction from the GSA Board.

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Comment #	Section	Section Paragraph #	Paragraph's Sentence #	Sentence Starts with, "…	Comment	Response to Comment
21	P. 7-5			The CBGSA has designated two areas	Why was 2 feet selected? Why not 3, 4, etc? Why base it on an area of water level decline rather than an area of defined land use (for example, well density, crop density, high water demand crops, etc.)	This crteria was set by the GSA Board, but could be changed if the Board provides different direction.
22	P. 7-5			The remaining areas in the Basin are	What scenario was used to come to this conclusion?	This was concluded from results of the 50-year Baseline simulation.
23	P. 7-7 Table 7-1			Adaptive Management	Adaptive Management should be done routinely with the aim of verifying the expected benefit from pumpage reductions and adjusting the glide path accordingly.	This is not included in the adaptive management policies specified in the GSP. The Board can choose to adjust the glide path as additional data is available in the future.
24	P. 7-28			Because pumping allocations would	Does not account for recharge to the Central Basin that originates outside the Central Basin.	This is accounted for in the model simulation used to estimate required pumping reductions.
25	P. 7-28			To the extent feasible, the CBGSA	This may be inconsistent with SGMA's intent to have no effect on existing water rights, including overlying rights.	The text has been revised to be less definitive. The exact method to determine historical use will be determined during GSP implementation.
26	P. 7-31			Adaptive Management	What happens if the benefit to groundwater storage exceeds expectations for the actual pumpage reduction (i.e., what if water levels recover faster, or to a higher elevation than expected)?	The GSA Board can choose to adjust the glide path as additional data is available in the future.
27	P. 7.6 Sec. 7.2			Figure 7-1 - Cuyama GW Basin CBGSA Management Areas	Addition: Please show the Foothill and Bell Roads as an background layer for "proximity"	The figure has been updated.
28	P. 7.6			Figure 7-1 - Cuyama GW Basin CBGSA Management Areas	Addition: The Santa Barbara Canyon Fault needs to be examined more definitively to fill data gaps.	No change needed in document.
29	P. 7.16 Sec. 7.4.2			"This project would target cloud …	Addition: Text needs a citation for the statement of 10% increase in precipitation	This is the average of the 5-15% range cited in the paragraph above.
30	P. 7.22 Sec. 7.4.4			This management action would include…	Comment: It is agreed that the disadvantaged communities of Cuyama Valley need resilience and reliability for their domestic supply. It is good to consider the opportunities, like it's good to wish for luck. Question: What would this look like? Grant writing or well wishing?	Potential financing options are discussed in Chapter 8.
31	P. 7.28 Sec. 7.5.2			A specific approach for allocation of pumping volumes among…	Question: So if groundwater users must decrease pumping by approximately 67 percent, and we have not determined a way to do that, what is the Plan?	This will be determined during GSP implementation.
32	P. 7.29 Sec. 7.5.2 Figure 7-4			Glide Path for Central Basin Management Area Groundwater Pumping Reductions	Comment: The Timeline for Implementation or "glide slope" is a big expectation. Question: How are we going to accomplish this logistically or financially? What is the Plan?	This will be determined during GSP implementation.
33	Global Comment				Recommendation: Due to the overdraft determined by the model, and the need to reduce it, it is recommended that a moratorium on new wells be instituted in the Cuyama Valley until a proper allocation system is developed and implemented. Otherwise, the overdraft will only worsen.	Water Code section 10725.6 authorizes a GSA to require registration of a well within its management area. Additionally, section 10726.4(a)(2) authorizes a GSA to control pumping by regulating, limiting, or suspending extractions from individual wells or extractions from wells in the aggregate, construction of new groundwater wells, enlargement of existing wells, or reactivation of abandoned groundwater wells, or otherwise establishing groundwater extraction allocations. However, that same subsection provides that any limitation on pumping by a GSA shall not be construed to be a final determination of rights to pump groundwater. So whatever controls on pumping a GSA implements needs to address current and projected conditions, and be adaptive over the life of the GSP. The GSA will need to decide as data is developed and the model is refined which of these tools should be employed and for how long.
34	7.5.1 P.7.25			The small population of…	Comment: This statement does not make sense since it seems to focus only on the population that lives in the valley, not the agricultural firms that own or lease the land that is farmed, and definitely have the economic resources to fund projects – especially when their operations stand to gain the most from management actions that are designed to increase recharge	No change needed in document.

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Comment #	Section	Section Paragraph #	Paragraph's Sentence #	Sentence Starts with, "…	Comment	Response to Comment
35	7.5.1 P.7.25			management actions "could affect the economic health of the region and on local agricultural industry. It would also consider the projected changes to the region's land uses and population and whether implementation of these projects would support projected and planned growth,"	Comment: No studies have been done on what the actual drivers are of economic health in the valley, especially for the resident population, and how connected they are to groundwater conditions. All groundwater studies done leading up to this GSP have focused on water use by the big agricultural interests, who obviously stand to suffer economic impact when groundwater use is reduced, but nothing is known regarding impacts on residents in the valley, especially disadvantaged communities. Part of the issue is related to impacts on jobs in the valley, and part is related to impacts of domestic wells and water supplies of "de minimis users (which have not yet been defined). Recommendation: The economic analysis must go beyond the large agricultural interests and include impact on local residents as well as the impact on industry and residents in the Basin if water use continues without change during the next 5-20 years.	An economic analysis of the effects of GSP actions on the Basin will be conducted soon.
36	7.5.2 P. 7.27			Comment is on this whole section	Comment: This section supposedly addresses setting limits on pumping, however the only real comment that says reduction is needed is in the first paragraph that says "pumping must be reduced 67% if the basin in to come into balance" (where pumping equals recharge). From there on the focus is on allocation, and without any actual pumpage data, there currently is no way to determine if pumpage reduction takes place. Even the use of the term "allocation" seems to be incorrect, since the reduction in overdraft is not about how much water users should get, but really about how much they should cut back. Pumping "reductions" would be the more proper terminology. Recommendation: Data is needed regarding recharge by aging the water to determine if recharge is happening and, if so, the rate of recharge. Then a more accurate rate of pumping reduction can occur.	This will be determined during GSP implementation.
37	7.5.2 P. 7.27			Outlined here is a framework for how CBGSA would develop and implement …	Comment: The issue comes up again as well as to why only the Central Basin Management Area is going to receive "allocations" – aka. pumping reductions, when the entire Basin is considered in critical overdraft. Is the <2ft drop in groundwater levels an enforceable limit to groundwater drop? Will MT's be enforceable limits to how low water levels can go? Should the rest of the Basin be allowed to continue to pump without limits? Recommendation: Develop a framework that shows the interconnectivity in the Basin between the different parts of the Basin as a whole watershed so that impacts of pumping in one part of the Basin can be connected to other parts of the Basin.	The GSA Board has not specified pumping allocations for areas outside of the management areas.
38	7.5.2 P. 7.28			The required decreases in pumping volumes…	Comment: This entire section seems like it is just pushing off the inevitable need to reduce pumping. Implementation of reductions will not take place before 2023, and the process for setting up "allocations" and pumping reductions seems vague and uncertain at this time, that it is really not a Plan. Meanwhile, groundwater levels will continue to drop since pumpage will not change. In fact, despite the fact that SGMA and DWR require a Plan to be submitted for how sustainability of groundwater in the Cuyama Basin will be achieved, this section basically says work will begin on some kind of plan after this GSP is submitted. Other than the Glide Path for % reductions over 20 years, there are no elements of what the plan will be, how it will be funded, and who will enforce it. Recommendation: This is an incomplete plan. It needs to have these components added before 2022. Recommend the GSA have as a priority developing these components and submitting the to DWR for review.	This will be determined during GSP implementation.
39	7.2			While the Cuyama Community…	Consider discussing why the CCSD is not included in the management area.	Additional text has been added.
40	7.4				Consider adding a new project for updating the numerical modeling to help address the uncertainties in the current model. The update to the numerical model should include new monitoring data prior to the DWR interim GSP milestone in 2025 or 2030. This project would need to be discussed in the Chapter 7 Management Actions and Chapter 8 Implementations with associated cost and description.	This can be considered by the GSA Board in the future.
41	7.4			Projects included in this GSP	Consider adding on a volunteer basis to member agencies - "... member agencies on a volunteer basis...."	A note that member agencies would participate on a voluntary basis has been added to the introduction to section 7.4
42	P. 7-13			If pursued, the CBGSA anticipates…	Consider adding on a volunteer basis to member agencies - "...one of its member agencies on a volunteer basis."	A note that member agencies would participate on a voluntary basis has been added to the introduction to section 7.4
43	P. 7-13			Once a preferred alternative	Consider adding on a volunteer basis to member agencies- "...one of its member agencies on a volunteer basis."	A note that member agencies would participate on a voluntary basis has been added to the introduction to section 7.4
44	P. 7-13			As public water supply agencies, any	Consider text revisions text - "As a public agency, any CBGSA members (on a volunteer basis) has authority to implement the project once land is acquired and applicable permits are secured."	A note that member agencies would participate on a voluntary basis has been added to the introduction to section 7.4
45	P. 7-16			If a precipitation enhancement…	Consider verifying with Santa Barbara on the the existing permits/EIR, and expanding on the existing SBCWA program (vague language).	This would be determined during GSP implementation
46	P. 7-18			The project would be implemented	Consider adding "one of the member agencies of the CBGSA on a volunteer basis."	A note that member agencies would participate on a voluntary basis has been added to the introduction to section 7.4
47	P. 7-20				Consider adding the following language, if the project is not removed by the GSA Board: "…The current assumption is that any project using direct recharge through recharge basins will be initiated and owned by the County or GSA Board. This assumption results prevents private ownership of recharged groundwater from these projects, allowing all recharged groundwater to be available to all groundwater pumpers…"	This limitation has not been approved by the CBGSA Board

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Comment #	Section	Section Paragraph #	Paragraph's Sentence #	Sentence Starts with, "…	Comment	Response to Comment
48	P. 7-20 - 7-23				Cross out all of section 7.4.3	This is contrary to Board direction. As noted, this action would only be taken in combination with flood/stormwater capture.
49	P. 7-22			Changes to stormwater capture	Pending GSA Board action on this item, please clarify this sentence if the project is not removed - "Changes to stormwater capture and recharge facilities that may result from this feasibility study would receive CEQA and NEPA coverage under those facilities' environmental documentation. " Also, would permit revisions be required by the other facilities, such as Twitchell Reservoir?	As noted, additional study would be required prior to implementation of this action.
50	P. 7-23			In addition to a well drilling permit…	Consider adding the name of the County	This has been added.
51	P. 7-25			In total, these improvements	Consider adding "....approximately $1,175,000. Projects are funded by the CCSD and VWSC."	Financing options are discussed in Chapter 8.
52	7.5 P. 7-25				Please add a discussion (if direct by the GSA Board) or option on De Minimis Groundwater Users, such as below. De minimis groundwater users are not currently regulated under this GSP. Growth of de minimis groundwater extractors could warrant regulated use in this GSP in the future. Growth will be monitored and reevaluated periodically.	The Board has not provided specific direction on de minimis users. This will be determined during GSP implementation.
53	7.5 P. 7-25			Water management actions are generally	Consider adding on a volunteer basis to member agencies - "... member agencies on a volunteer basis..."	A note that member agencies would participate on a voluntary basis has been added to the introduction to section 7.4
54	7.5.2 P. 7-27			No pumping allocations would	Please discuss why Ventucopa Management Area is not performing the reduction in pumping.	The text has been revised
55	7.5.2 P. 7-27			CCSD would be provided allocations	Please define the historical use for CCSD and why the CCSD is not performing the reduction in pumping.	The rationale for not including the CCSD in a management area has been added to section 7.2
56	P. 7-28			Develop Allocations	Considering creating a list of potential plans/studies for the GSA Board to take future action on, such as remote sensing, pumping allocation plan, calculating native sustainable yield for only the Central Basin Management Area, Rate assessment, and etc.	This will be determined during GSP implementation.
57	P. 7-30			Successful implementation would…	Consider adding on a volunteer basis to member agencies - "...member agencies on a volunteer basis."	A note that member agencies would participate on a voluntary basis has been added to the introduction to section 7.4
58	P. 7-30			Mechanisms for enforcement	Consider adding - "...CBGSA or member agencies on a volunteer basis."	A note that member agencies would participate on a voluntary basis has been added to the introduction to section 7.4
59	7-6 P. 7-31			Adaptive Management	Consider defining and expanding Adaptive Management for the GSA Board, such as the purpose of the Adaptive Management is to provide the final "check and balance" for the GSP to ensure that the overall objectives of the groundwater basin are being met. Adaptive Management is also used to provide guidance on the overall effectiveness of the GSP and to provide a tool with which to modify the programs to better meet the overall Basin objectives.	Adaptive management language has been revised per direction from the GSA Board.
60	7-6 P. 7-31			Pumping reductions are more than 5…	Consider defining how the 5% is being calculated, such as from the numerical model	This will be determined during GSP implementation.
61	7-6 P. 7-31			If the Basin is within the Margin of	Consider defining how the 10% is being calculated, such as from the numerical model	This will be determined during GSP implementation.
62	P. 7-18			Implementation of this project would…	Automated High Output Ground Seeding System (AHOGS)	This has been added.
63	P. 7-19			This studied evaluated…	Change "studied" to "study"	The text has been revised
64	P. 7-19			"Cloud seeding has been conducted…	Change to "…in portions of Santa Barbara County…"	The text has been revised
65					The glide path to sustainability: Because the minimum thresholds are based on 2015 data, they allow continued high usage of water with only a gradual decrease of usage over each five year period until 2020, when groundwater levelswould have become "sustainable" at the 2015 level. This would mean that groundwater will continue to be depleted as has been the case now for years--until 2020. This seems to be almost business as usual. I recognize that the profits of agriculture in the area and therefore the tax profits of the state from agriculture are a real consideration; but the future of 'life' in the Cuyama Basin-- for native plants, animals, birds, and pollinators and for ordinary people and small farmers requires change that does not allow further depletion of the groundwater for the next 21 years.	The glide path reflects the direction of the CBGSA Board. The Board can consider revising the glide path in the future.
66	7.1				•Please describe how the projects described in this chapter and their benefits will help "maintain a viable groundwater resource for the beneficial use of people and the environment" as stated in the sustainability goal for the Cuyama Basin.	This is reflected in the project descriptions.
67	7.4.1			Flood and stormwater capture	Spefics should be included about how Twitchell Reservoir makes this project infeasible or why wou will be able to overcoe that. Twitchell Reservoir holds less than 200,000 AF and water is used to replenish downstream basin.	As noted in the chapter, this will be determined through additional study during GSP implementation.
68	7.4.2			Precipitation enhancement	This analysis does not address the concernts of organic producers that were raised at GSP meetings nor has it ever addressed the issue of rain shadow where enhancing rain in one area creates drought in another. This should be addressed.	As noted in the chapter, these will be addressed additional study during GSP implementation.
69					The plan should consider logical, affordable and easily implemented projectes such as removing certain trees in the river bottom which are invasive species and which use (reportedly) up to 250 gallons of water per day.	Additional actions can be considered and studied during GSP implementation.

Cuyama Basin Sustainability Section
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December 2019

Comment #	Section	Section Paragraph #	Paragraph's Sentence #	Sentence Starts with, "…	Comment	Response to Comment
1					Cost of Plan implementation: The proposed Projects and Management Actions are extremely costly, particularly when you consider the very sparsely populated basin, the disadvantaged status of the community, and the scale of the problem. The economic analysis should highlight this in more detail, but it begs the question of how realistic are any of the proposed projects that at first analysis, provide only minimal increases in water availability and stability.	All projects would be evaluated in greater detail prior to implementation.
2	P. 8.9, Section 8.4.9				Coordination regarding Twitchell would most likely be with the Twitchell Management Authority and Santa Maria Valley Water Conservation District. The Santa Maria basin is in the process of DWR reprioritization to "Very Low" priority, removing SGMA requirements, and the Santa Maria Fringe GSA in Santa Barbara County is likely to be dissolved.	No change needed to document as the existing paragraph is accurate.
3	P. 8.4 Sec. 8.2.1			the CBGSA will develop a financing plan that will include one or more of the following financing approaches….	Comment: Pumping Fee or Assessments, Allocations or Restrictions. There may be plenty of ways to approach this difficult policy implementation, but this GSP make no determination how it will be done. Question: Does the Implementation Plan simply intend to come up with a plan of how to implement pumping reductions goals? A Plan to make a plan!	As noted, this will be determined during GSP implementation.
4	P. 5, 1.1			Adaptive management	Addition: Please define the term "adaptive management"	This is discussed in Chapter 7.
5	P. 6, 1.1, Fig 8-1			Implementation Schedule	Change: Figure 8-1 is not adequately labeled. The section spanning years is not labeled at all and the items in the column Task Name do not correspond to any of the items in the timeline. Please present this timeline in a more understandable format.	The figure is using a standard Microsoft Project schedule format. Task descriptions for local communities projects have been updated to more closely match the descriptions in Chapter 2.
6	P. 6, 1.1, Fig 8-1			Implementation Schedule	Question: It appears that under Project Implementation, Task 4, drilling new wells for CCSD and for Ventucopa is suggested. These processes are described in Chapter 7, with estimated costs. However, verbally in SAC and GSA meetings, this task is not suggesting that the GSA pay for the drilling of these wells, but instead would support writing grants to obtain the funds for these wells. The 2019-20 Budget Draft, as presented in the GSA packet on May 1, 2019, includes $40,000 for Grant Proposals and $15,000 for Grant Administration. Yet it is unclear if those items will be allocated for seeking grants to pay for these two wells, or seeking grants to fund the GSA and GSP implementation. Please add language to this task and to Chapter 7 that clarifies the GSA's actual involvement in these two projects. From the Implementation Schedule and in Chapter 7, the language is very misleading and does not accurately reflect what has been said verbally in public meetings.	Financing options for these projects are included in Table 8-2. Financing does not need to be provided directly by the GSA for the projects to be included in the GSP.
7	P. 7, 1.1, Fig 8-1			Implementation Schedule	Question: It appears that under Management Action Implementation, Task 2, "Determine Sustainable Yield" will be completed by January 2021. However the Final GSP Emergency Regulations indicate that Sustainable Yield is required to be included in the GSP, which must be finalized by January 2020. Source: Final GSP Emergency Regulations, Section 354.8 (b)(7)	This line has been removed from the schedule. Sustainable yield is described in Chapter 2.
8	P. 9, 8.2.1			2nd bullet point: Stakeholder/Board engagement: *Quarterly* Stakeholder Advisory Committee (SAC) meetings, bimonthly CBGSA Board meetings, bi-monthly calls with the CBGSA Board ad-hoc committees, and semi-annual public workshops	Change: Change Quarterly Stakeholder Advisory Committee (SAC) meetings to Bi- Monthly to reflect the schedule proposed in the May 1 meeting of the CBGSA.	This has been changed.
9	P. 11, Table 8-2			Project 4: Improve reliability of Water Supplies for Local Communities	Delete: Given the current lack of financial resources at the CCSD and VWSC, it is highly unlikely that CCSD and VWSC Operating Costs could be used to finance the drilling of these wells. These two potential funding sources should be removed from this list. It should be clearly noted that the CBGSA has no intention of paying for these wells and proposing them as a project of the CBGSA and including them in the Draft GSP is extremely misleading.	This is listed as one potential financing source. Table 8-2 shows the potential financing options for these projects. Financing does not need to be provided directly by the GSA for the projects to be included in the GSP.
10	P. 11, Table 8-2			Mention of "Member Agencies" as Responsible Entity or Potential Funding Source	Delete: Including any mention of "Member Agencies" is extremely misleading and runs counter to the vote taken by the SBGSA on April 3, 2019 that did not approve Member Agencies, namely the CBWD, to be the responsible Entity or Potential Funding Source for implementation of the plan. To be consistent with the CBGSA's vote, please remove all instances of "Member Agencies" from Table 8-2. Source: 2019-05-01-CBGSA-Board-Packet-public-1.pdf, P. 11	Since the financing mechanisms for these projects and actions have not been determined, CBGSA member agencies continue to be a potential financing option
11	P. 12, 8.3.2			Basin Conditions	Addition: Unless specified as part of the identified monitoring network, groundwater levels should also be reported on the 20 piezometers proposed to be installed to monitor GDEs across the valley. Please add Groundwater Elevation Data from piezometer network as a separate bullet point.	The section on GDEs in Chapter 2 has been revised to note the need for piezometers to monitor levels for GDEs.
12	8.1.1 P. 8-1			Adaptive management would only be	Consider defining and expanding Adaptive Management, such as the purpose of the Adaptive Management is to provide the final "check and balance" for the GSP to ensure that the overall objectives of the groundwater basin are being met. Adaptive Management is also used to provide guidance on the overall effectiveness of the GSP and to provide a tool with which to modify the programs to better meet the overall Basin objectives.	Adaptive management is described in Chapter 7 and reflects direction from the GSA Board.

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Comment #	Section	Section Paragraph #	Paragraph's Sentence #	Sentence Starts with, "…	Comment	Response to Comment
13	Table 8-1			Project 3 cost	Correction $600 - $2,800 (missing hyphen)	This has been corrected.
14	Table 8-1			Project 4: Basin-Wide Economic…	Does this include data for the rate assessment?	No. As described in Chapter 7, this will be an economic analysis of the projects and management actions included in the GSP.
15	Table 8-1			$75,000 annually for fiscal years…	Please clarify activity/estimated cost to justify the cost. This seems like the same work effort as the annual report and Five-Year GSP updates.	Activities associated with this item are described in the text following the table. These are all distinct work efforts. A more detailed scope and cost estimate will be developed when the GSA issues a task order for completion of these tasks.
16	Table 8-1			$155,000 annually for FYs...	Please clarify activity/estimated cost to justify the cost. This seems like the same data and work effort as above.	Activities associated with this item are described in the text following the table. These are all distinct work efforts. A more detailed scope and cost estimate will be developed when the GSA issues a task order for completion of these tasks.
17	Table 8-1			Additional costs during initial years…	Please clarify activity/estimated cost to justify the cost. This seems like the same data and work effort as above.	Activities associated with this item are described in the text following the table. These are all distinct work efforts. A more detailed scope and cost estimate will be developed when the GSA issues a task order for completion of these tasks.
18	Table 8-1			$800,000 every five years …	Please clarify activity/estimated cost to justify the cost. This seems like the same data and work effort as above.	Activities associated with this item are described in the text following the table. These are all distinct work efforts. A more detailed scope and cost estimate will be developed when the GSA issues a task order for completion of these tasks.
19	8.2.1 P. 8-4			Stakeholder and Board Engagement	Update per direction by the GSA Board, May 1st meeting	This has been corrected.
20	8.2.1 P. 8-4			CBGSA operations are partially	Consider adding "...member agencies volunteer funding.	The text has been revised.
21	8.2.1 P. 8-4			Although ongoing operation of	Consider revising the sentence and adding something similar to the CBGSA member agencies to fund the start-up CBGSA administrative cost on a volunteer basis until the CBGSA funding is in place.	The text has been revised.
22	P. 8-5			During development of a financing plan, the	Consider adding a discussion on a option to exclude De Minimis Groundwater Users from the GSP. If excluded by the GSA Board then maybe stating De minimis groundwater users are not currently regulated under this GSP. Growth of de minimis groundwater extractors could warrant regulated use in this GSP in the future. Growth will be monitored and reevaluated periodically.	The Board has not provided specific direction on de minimis users. This will be determined during GSP implementation.
23	P. 8-5			Combination of fees and assessments	Consider adding a sentence on a option to exclude De Minimis Groundwater Users from the GSP.	The Board has not provided specific direction on de minimis users. This will be determined during GSP implementation.
24	P. 8-5			Pumping fees: Pumping fees would	Consider adding a sentence on a option to exclude De Minimis Groundwater Users from the GSP.	The Board has not provided specific direction on de minimis users. This will be determined during GSP implementation.
25	P. 8-5			Assessments: Assessments would charge a	Consider adding a sentence on a option to exclude De Minimis Groundwater Users from the GSP.	The Board has not provided specific direction on de minimis users. This will be determined during GSP implementation.
26	Table 8-2			Potential Financing column, Project 1 Feasibility Study	Consider adding CBGSA Member Agencies (Volunteer)	A note that member agencies would participate on a voluntary basis has been added to the introduction to section 7.4
27	Table 8-2			Responsible Entity column, Project 1 Project Implementation	Consider adding CBGSA Member Agencies (Volunteer)	A note that member agencies would participate on a voluntary basis has been added to the introduction to section 7.4
28	Table 8-2			Potential Financing column, Project 1 Project Implementation	Consider adding CBGSA Member Agencies (Volunteer)	A note that member agencies would participate on a voluntary basis has been added to the introduction to section 7.4
29	Table 8-2			Potential Financing column, Project 2 Feasability Study	Consider adding CBGSA Member Agencies (Volunteer)	A note that member agencies would participate on a voluntary basis has been added to the introduction to section 7.4
30	Table 8-2			Responsible Entity column, Project 2 Project Implementation	Consider adding CBGSA Member Agencies (Volunteer)	A note that member agencies would participate on a voluntary basis has been added to the introduction to section 7.4
31	Table 8-2			Potential Financing column, Project 2 Project Implenentation	Consider adding CBGSA Member Agencies (Volunteer)	A note that member agencies would participate on a voluntary basis has been added to the introduction to section 7.4
32	Table 8-2			Responsible Entity column, Management Action 2 - Enforcement	Consider adding CBGSA Member Agencies (Volunteer)	A note that member agencies would participate on a voluntary basis has been added to the introduction to section 7.4

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Comment #	Section	Section Paragraph #	Paragraph's Sentence #	Sentence Starts with, "…	Comment	Response to Comment
33	Table 8-2			Potential Financing column, Management Action 2 - Enforcement	Consider adding CBGSA Member Agencies (Volunteer)	A note that member agencies would participate on a voluntary basis has been added to the introduction to section 7.4
34	8.4.1 P. 8-8			If any of the adaptive…	Please expand and clarify adaptive management triggers, see comment in Section 7.6	Adaptive management is described in Chapter 7 and has been updated per direction from the GSA Board.
35	8.4.1 P. 8-8			If any of the adaptive…	Please add what chapter/section the adaptive management process is described. If this section is not included please add the discussion or options.	Adaptive management is described in Chapter 7. A reference is not needed here.
36	Table 8-1			Implementation costs	The Cuyama Valley does not have the resources to pay these costs. Many of these costs were never discussed with the GSA. $46 million for flood and stormwater capture? Board engagement $195,000 annually? $40,000 for an annual financial statement? These items and many others are totally unreasonable and came from the consultants who wrote the plan and not from the GSA.	Some adjustments to the cost estimates have been made following discussion with the CBGSA budget ad-hoc committee. The costs currently in the document are a reasonable estimate of what is required to meet SGMA requirements.
37	P. 8-5			Assessments	The Board (GSA) decided that amounts "$5-$8 per acre per year" would be removed from the plan. Also when this was presented to the board (GSA) it said de minimis users would not be charged and grazing would be used as an example of a de minimis user.	References to cost ranges have been reemoved.
38	General				When it comes to costs and assessments much of this chapter has been written by Woodard & Curran before any consultation with the Board. Decisions have not been made and it is premature to include them as part of the plan at this point.	Because the Board has not determined a policy, Section 8.2.1 notes that a financing plan will be developed by the CBGSA going forward. The section on costs has been revised to note that the cost estimates may be revised as more information is available during GSP implementation.
39					The GSP proposes three funding mechanisms to fund planning efforts: 1) fees based upon water usage; 2) fees based upon acreage within the Basin; or 3) a combination approach. CDFW believes that fees based upon water use is the most reasonable considering that current and historical water use patterns appear to be the main cause of overdraft conditions. The historic use and growth of agriculture, including wineries and legal cannabis cultivation, will continue to place demand on groundwater within the Cuyama Basin.	Comment noted.

Chapter 2 Appendices

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Chapter 2
Appendix A

Cuyama Valley Groundwater Basin Hydrographs

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OPTI Well 2 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 3659 ft.
WSE Max = 3692 ft.
Well Depth = 73 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
3730
3710
3690
3670
3650
3630
3610
3590
3570
3550
3530
3510
3490
3470
3450
3430
3410
3390
3370
3350
3330
3310
3290
3270
3250
3230
3210
3190
3170
3150
3130
3110
3090
3070
3050
3030
3010
2990
2970
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
320
340
360
380
400
420
440
460
480
500
520
540
560
580
600
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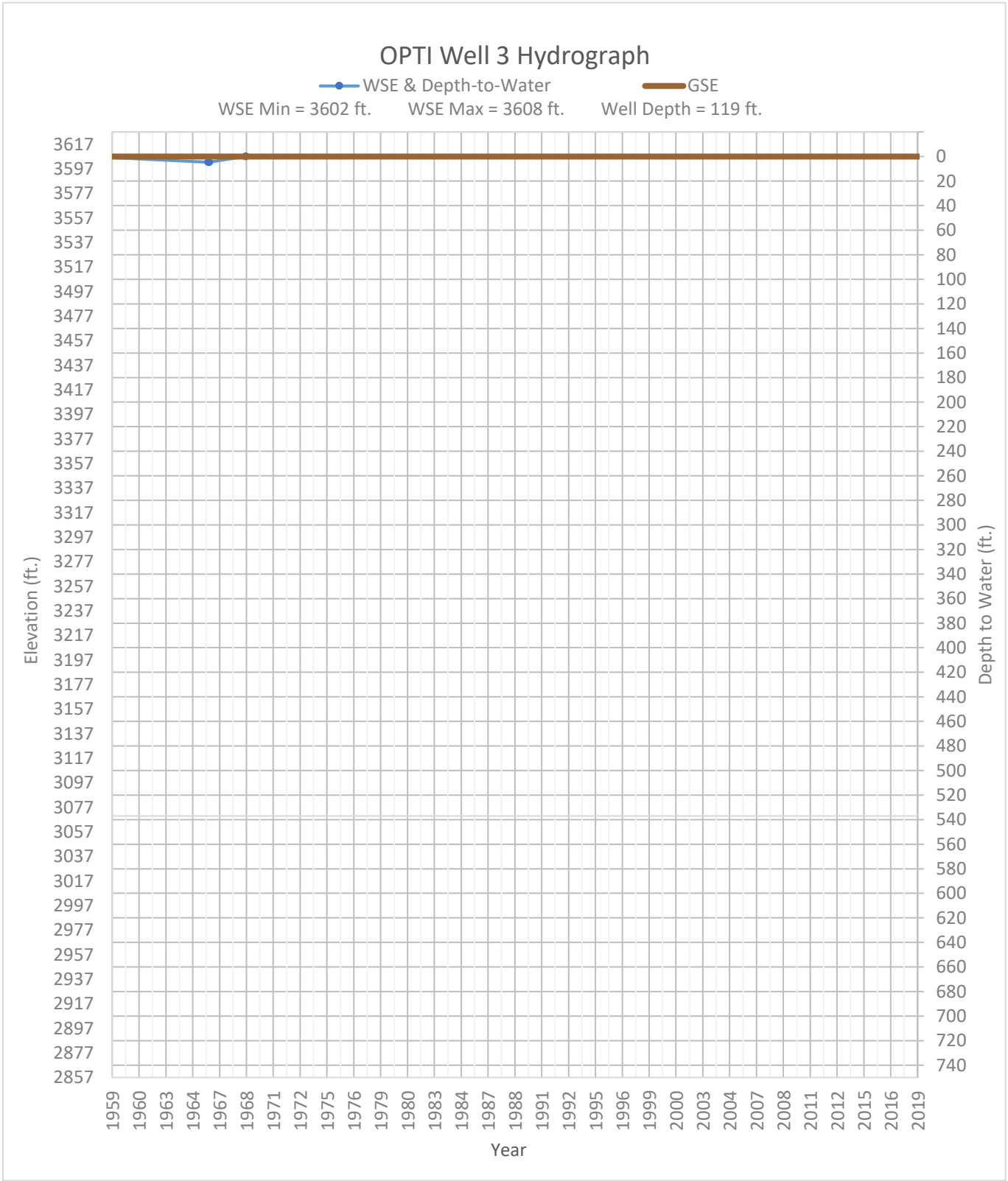
2016
2019


OPTI Well 3 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 3602 ft.
WSE Max = 3608 ft.
Well Depth = 119 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
3617
3597
3577
3557
3537
3517
3497
3477
3457
3437
3417
3397
3377
3357
3337
3317
3297
3277
3257
3237
3217
3197
3177
3157
3137
3117
3097
3077
3057
3037
3017
2997
2977
2957
2937
2917
2897
2877
2857
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
320
340
360
380
400
420
440
460
480
500
520
540
560
580
600
620
640
660
680
700
720
740
1959
1960
1963
1964
1967
1968
1971
1972
1975
1976
1979
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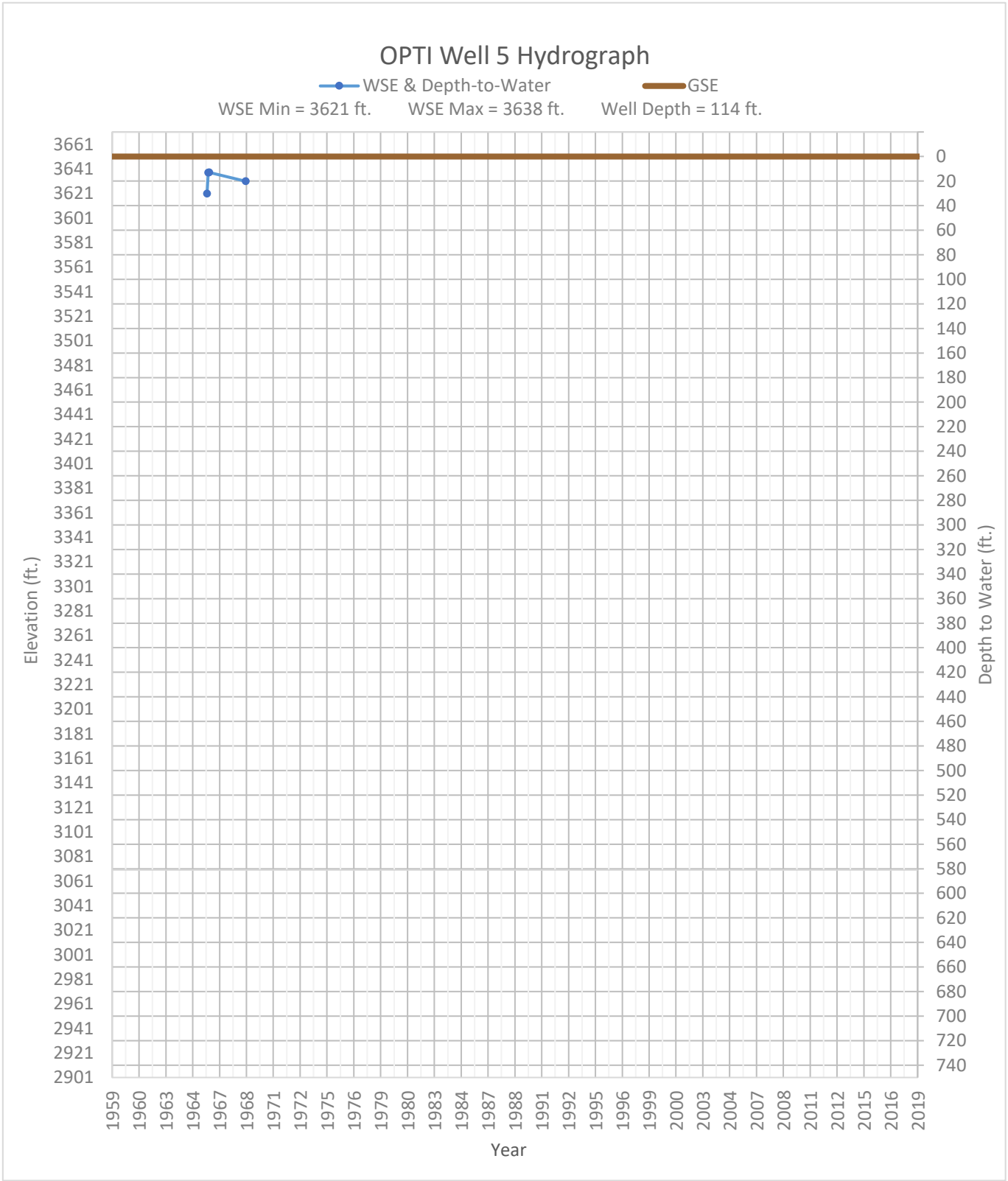
2004
2007
2008
2011
2012
2015
2016
2019


OPTI Well 5 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 3621 ft.
WSE Max = 3638 ft.
Well Depth = 114 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
3661
3641
3621
3601
3581
3561
3541
3521
3501
3481
3461
3441
3421
3401
3381
3361
3341
3321
3301
3281
3261
3241
3221
3201
3181
3161
3141
3121
3101
3081
3061
3041
3021
3001
2981
2961
2941
2921
2901
0
20
40
60
80
100
120
140
160
180
200
220
240
260
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300
320
340
360
380
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420
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460
480
500
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560
580
600
620
640
660
680
700
720
740
1959
1960
1963
1964
1967
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1971
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1983
1984
1987
1988
1991
1992
1995
1996
1999
2000
2003
2004
2007
2008
2011
2012
2015
2016
2019


OPTI Well 6 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 3778 ft.
WSE Max = 3808 ft.
Well Depth = 96 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
3852
3832
3812
3792
3772
3752
3732
3712
3692
3672
3652
3632
3612
3592
3572
3552
3532
3512
3492
3472
3452
3432
3412
3392
3372
3352
3332
3312
3292
3272
3252
3232
3212
3192
3172
3152
3132
3112
3092
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
320
340
360
380
400
420
440
460
480
500
520
540
560
580
600
620
640
660
680
700
720
740
1959
1960
1963
1964
1967
1968
1971
1972
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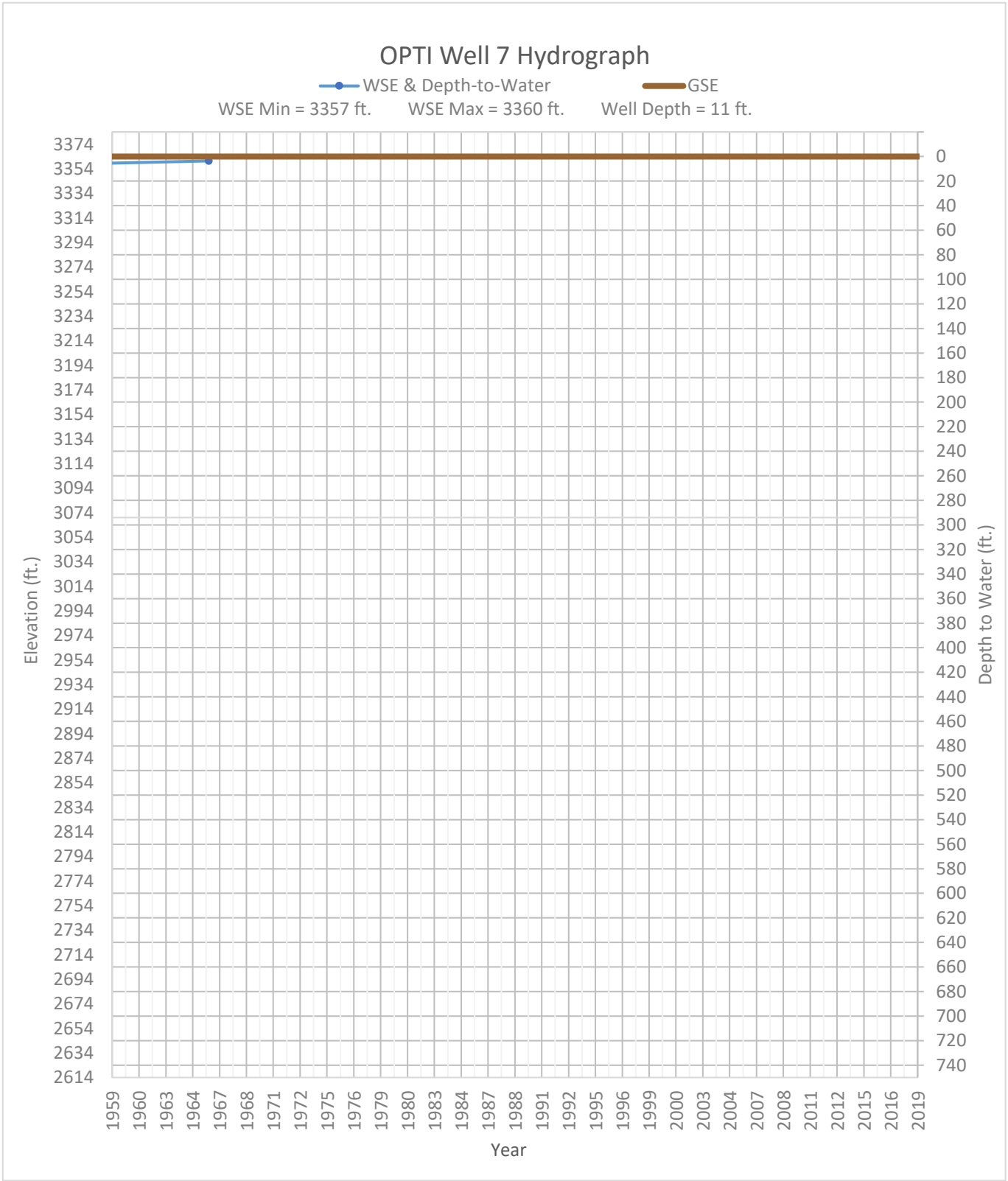
2019


OPTI Well 7 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 3357 ft.
WSE Max = 3360 ft.
Well Depth = 11 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
3374
3354
3334
3314
3294
3274
3254
3234
3214
3194
3174
3154
3134
3114
3094
3074
3054
3034
3014
2994
2974
2954
2934
2914
2894
2874
2854
2834
2814
2794
2774
2754
2734
2714
2694
2674
2654
2634
2614
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
320
340
360
380
400
420
440
460
480
500
520
540
560
580
600
620
640
660
680
700
720
740
1959
1960
1963
1964
1967
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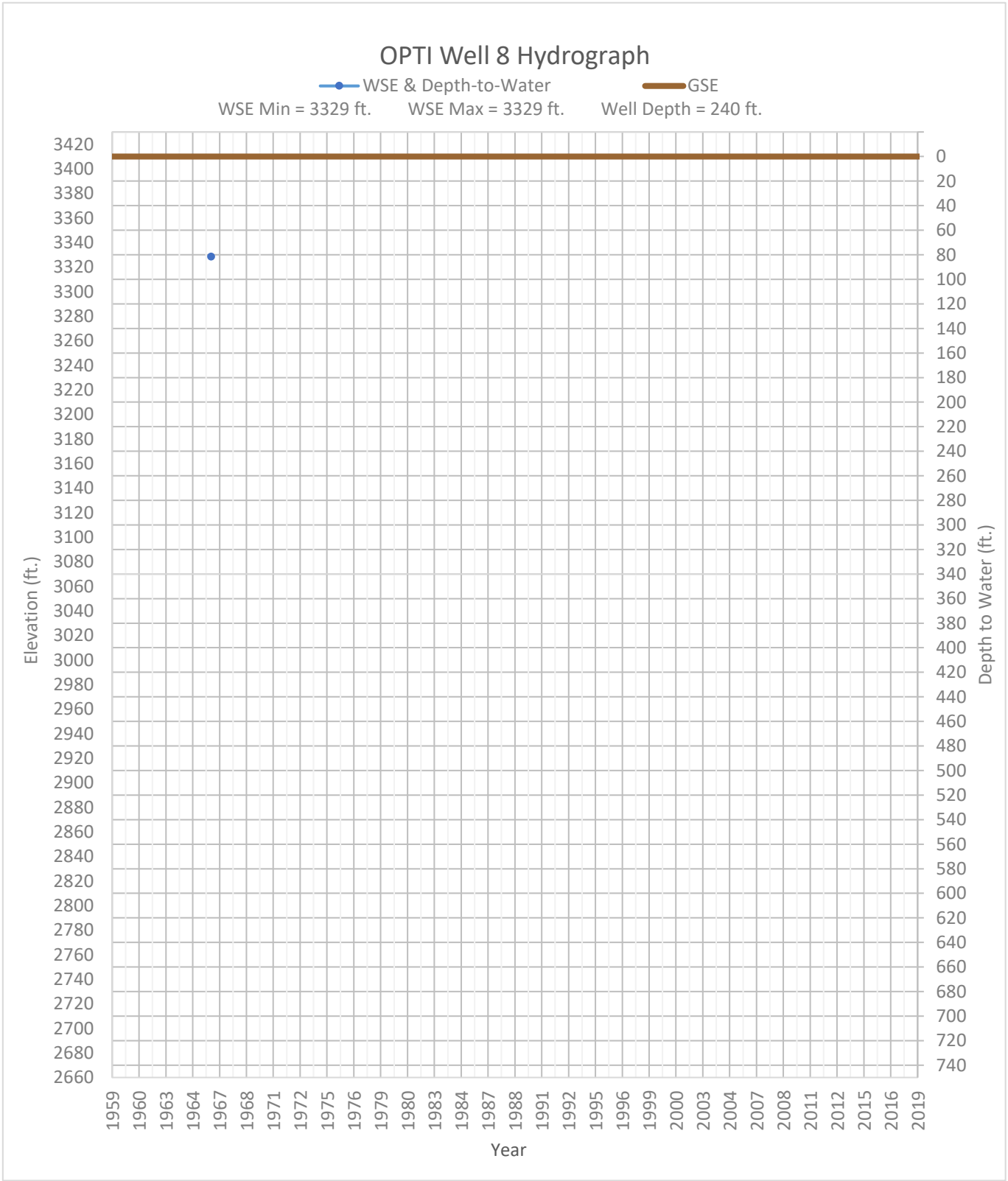
OPTI Well 8 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 3329 ft.
WSE Max = 3329 ft.
Well Depth = 240 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
3420
3400
3380
3360
3340
3320
3300
3280
3260
3240
3220
3200
3180
3160
3140
3120
3100
3080
3060
3040
3020
3000
2980
2960
2940
2920
2900
2880
2860
2840
2820
2800
2780
2760
2740
2720
2700
2680
2660
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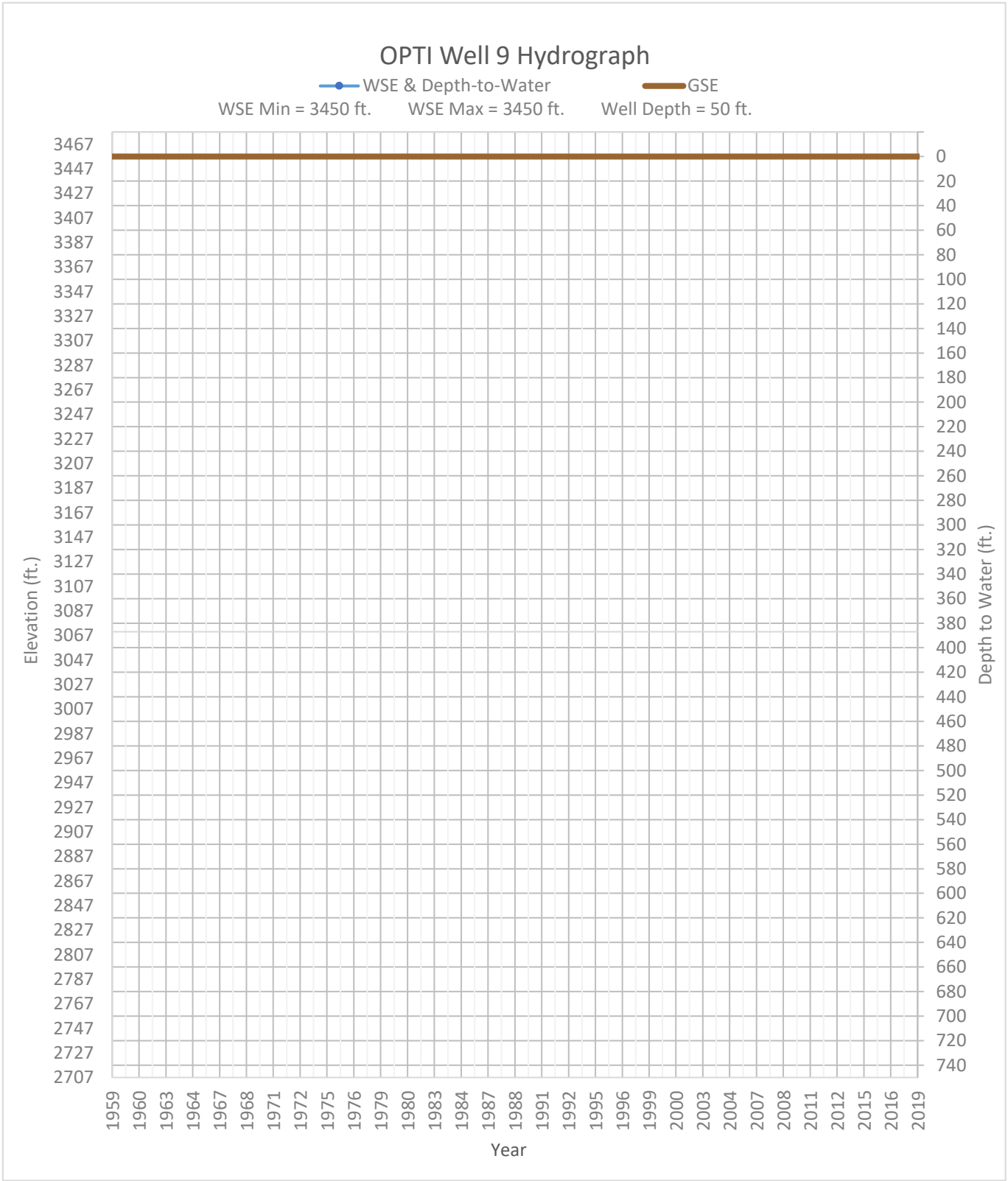
OPTI Well 9 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 3450 ft.
WSE Max = 3450 ft.
Well Depth = 50 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
3467
3447
3427
3407
3387
3367
3347
3327
3307
3287
3267
3247
3227
3207
3187
3167
3147
3127
3107
3087
3067
3047
3027
3007
2987
2967
2947
2927
2907
2887
2867
2847
2827
2807
2787
2767
2747
2727
2707
0
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1959
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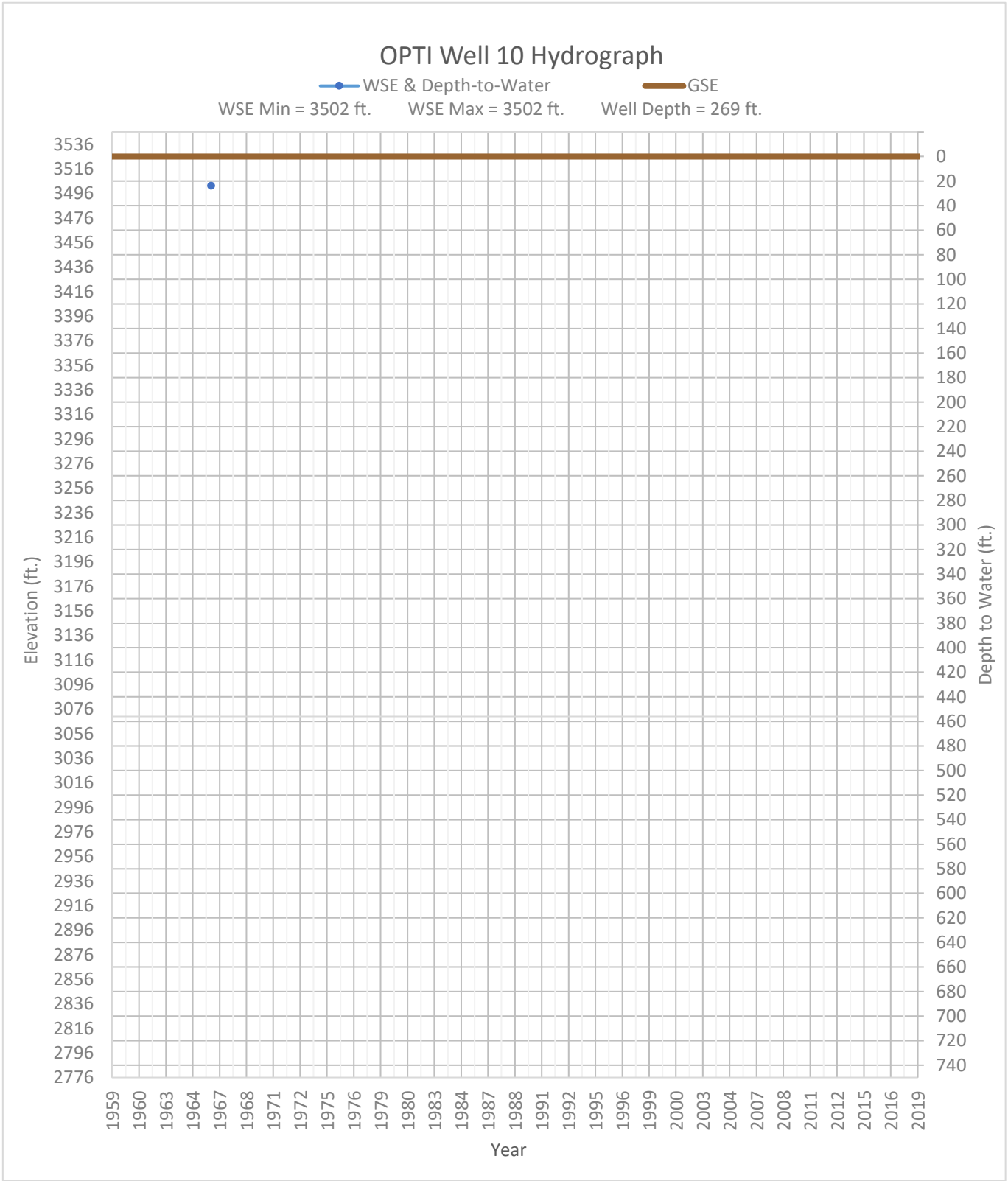
OPTI Well 10 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 3502 ft.
WSE Max = 3502 ft.
Well Depth = 269 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
3536
3516
3496
3476
3456
3436
3416
3396
3376
3356
3336
3316
3296
3276
3256
3236
3216
3196
3176
3156
3136
3116
3096
3076
3056
3036
3016
2996
2976
2956
2936
2916
2896
2876
2856
2836
2816
2796
2776
0
20
40
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80
100
120
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260
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1959
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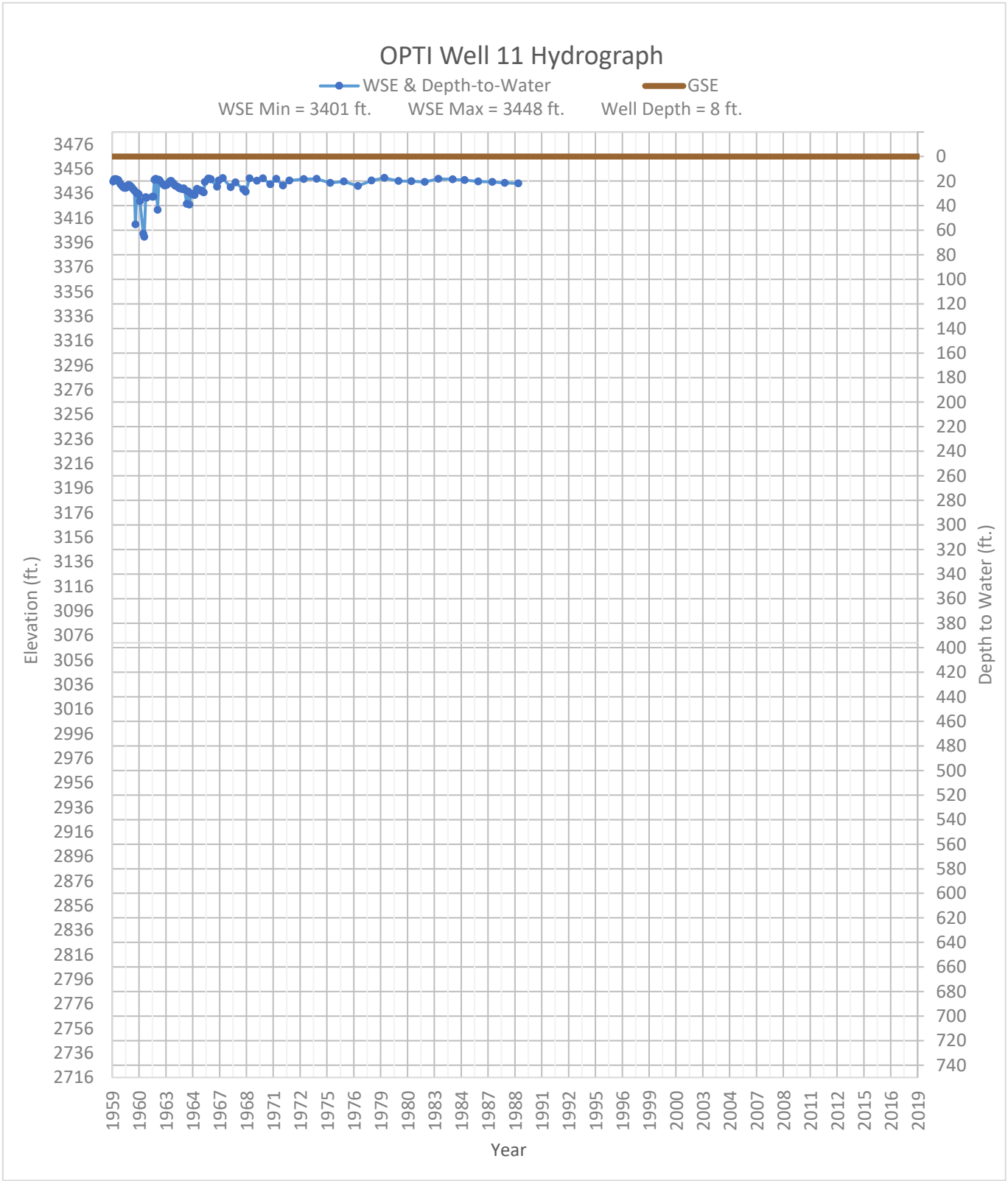
OPTI Well 11 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 3401 ft.
WSE Max = 3448 ft.
Well Depth = 8 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
3476
3456
3436
3416
3396
3376
3356
3336
3316
3296
3276
3256
3236
3216
3196
3176
3156
3136
3116
3096
3076
3056
3036
3016
2996
2976
2956
2936
2916
2896
2876
2856
2836
2816
2796
2776
2756
2736
2716
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380
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420
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660
680
700
720
740
1959
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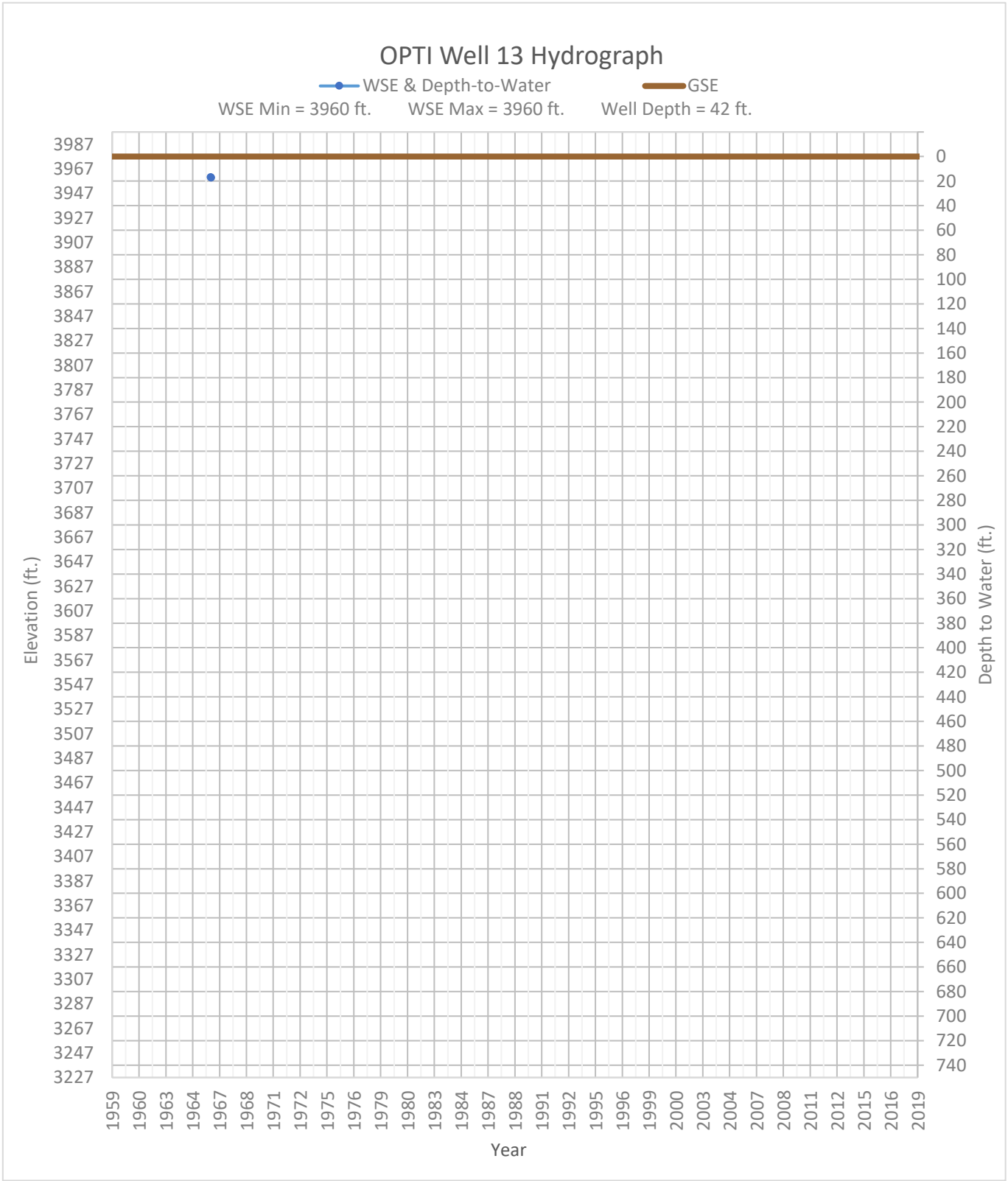
OPTI Well 13 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 3960 ft.
WSE Max = 3960 ft.
Well Depth = 42 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
3987
3967
3947
3927
3907
3887
3867
3847
3827
3807
3787
3767
3747
3727
3707
3687
3667
3647
3627
3607
3587
3567
3547
3527
3507
3487
3467
3447
3427
3407
3387
3367
3347
3327
3307
3287
3267
3247
3227
0
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180
200
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540
560
580
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680
700
720
740
1959
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2012
2015
2016
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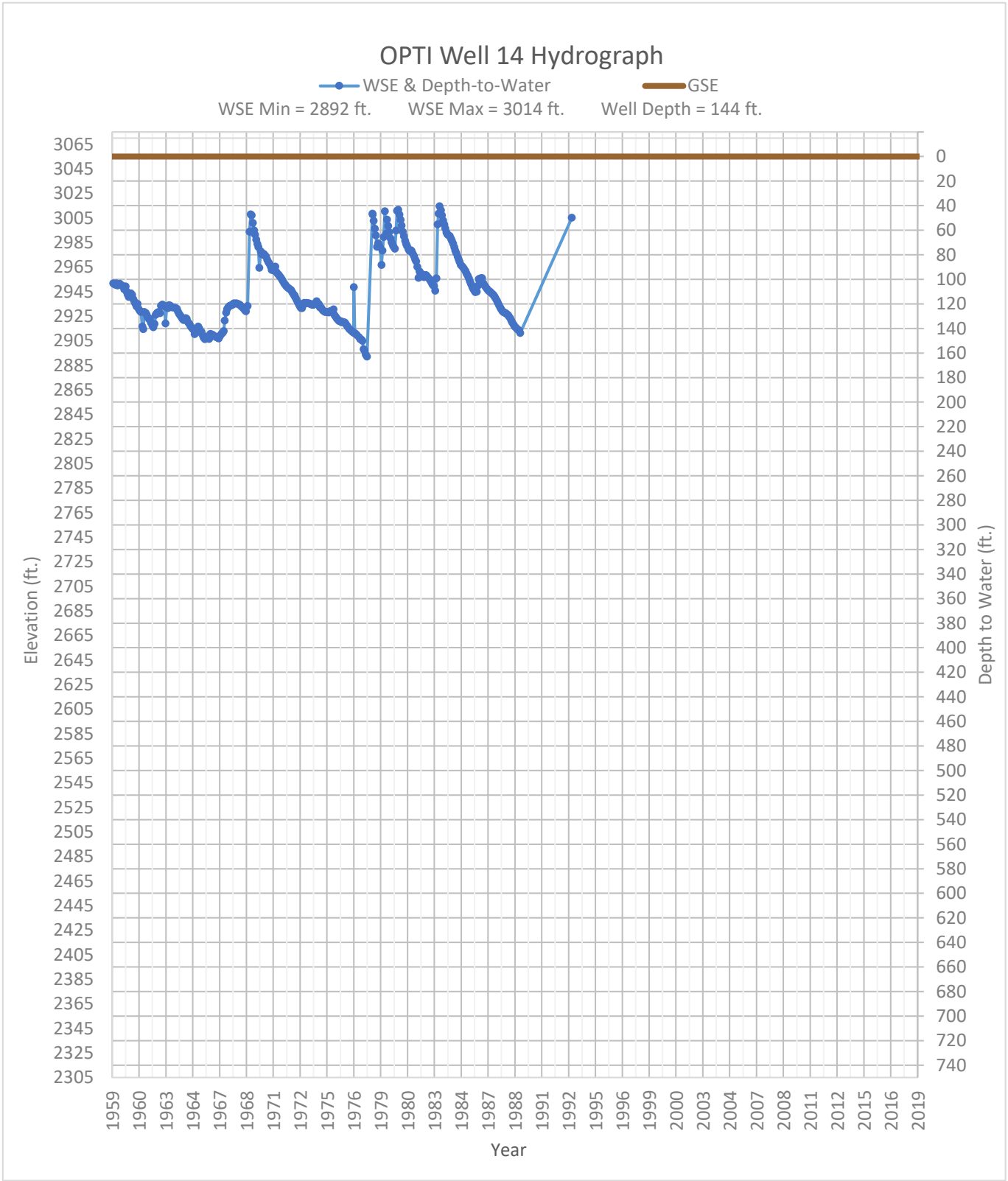
OPTI Well 14 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2892 ft.
WSE Max = 3014 ft.
Well Depth = 144 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
3065
3045
3025
3005
2985
2965
2945
2925
2905
2885
2865
2845
2825
2805
2785
2765
2745
2725
2705
2685
2665
2645
2625
2605
2585
2565
2545
2525
2505
2485
2465
2445
2425
2405
2385
2365
2345
2325
2305
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
320
340
360
380
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420
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460
480
500
520
540
560
580
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640
660
680
700
720
740
1959
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1963
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1967
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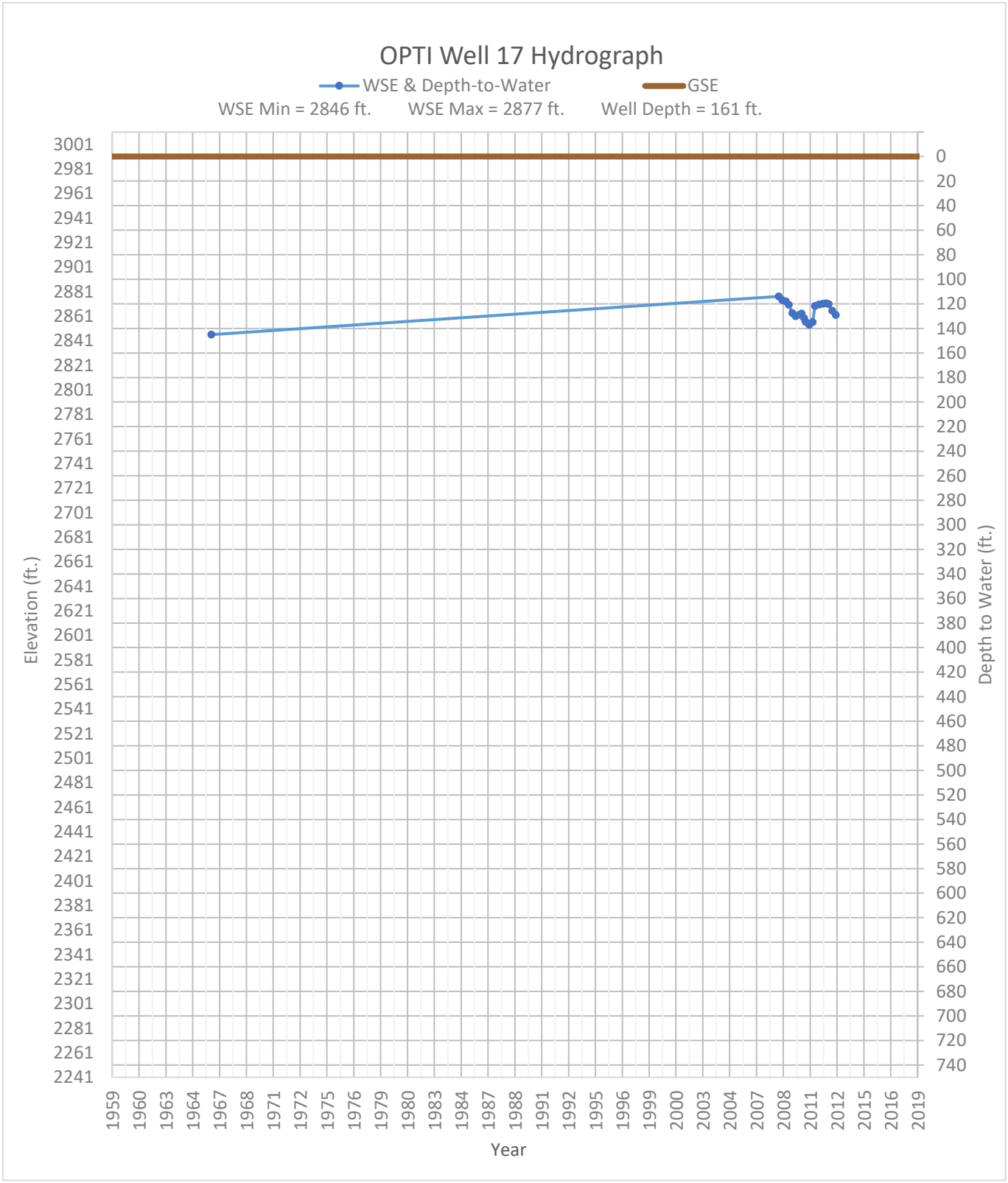
OPTI Well 17 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2846 ft.
WSE Max = 2877 ft.
Well Depth = 161 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
3001
2981
2961
2941
2921
2901
2881
2861
2841
2821
2801
2781
2761
2741
2721
2701
2681
2661
2641
2621
2601
2581
2561
2541
2521
2501
2481
2461
2441
2421
2401
2381
2361
2341
2321
2301
2281
2261
2241
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
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1959
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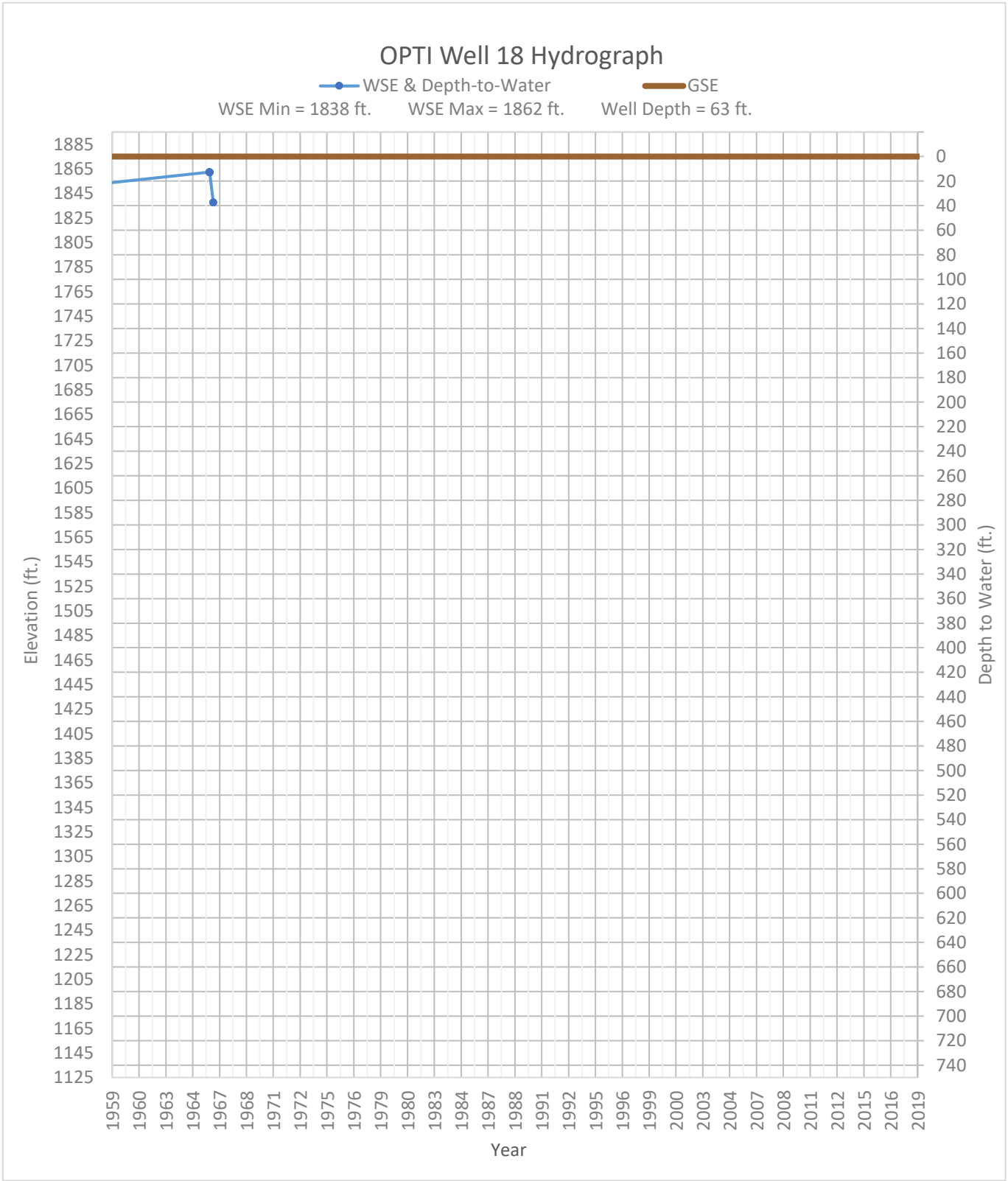
OPTI Well 18 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 1838 ft.
WSE Max = 1862 ft.
Well Depth = 63 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
1885
1865
1845
1825
1805
1785
1765
1745
1725
1705
1685
1665
1645
1625
1605
1585
1565
1545
1525
1505
1485
1465
1445
1425
1405
1385
1365
1345
1325
1305
1285
1265
1245
1225
1205
1185
1165
1145
1125
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
320
340
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1959
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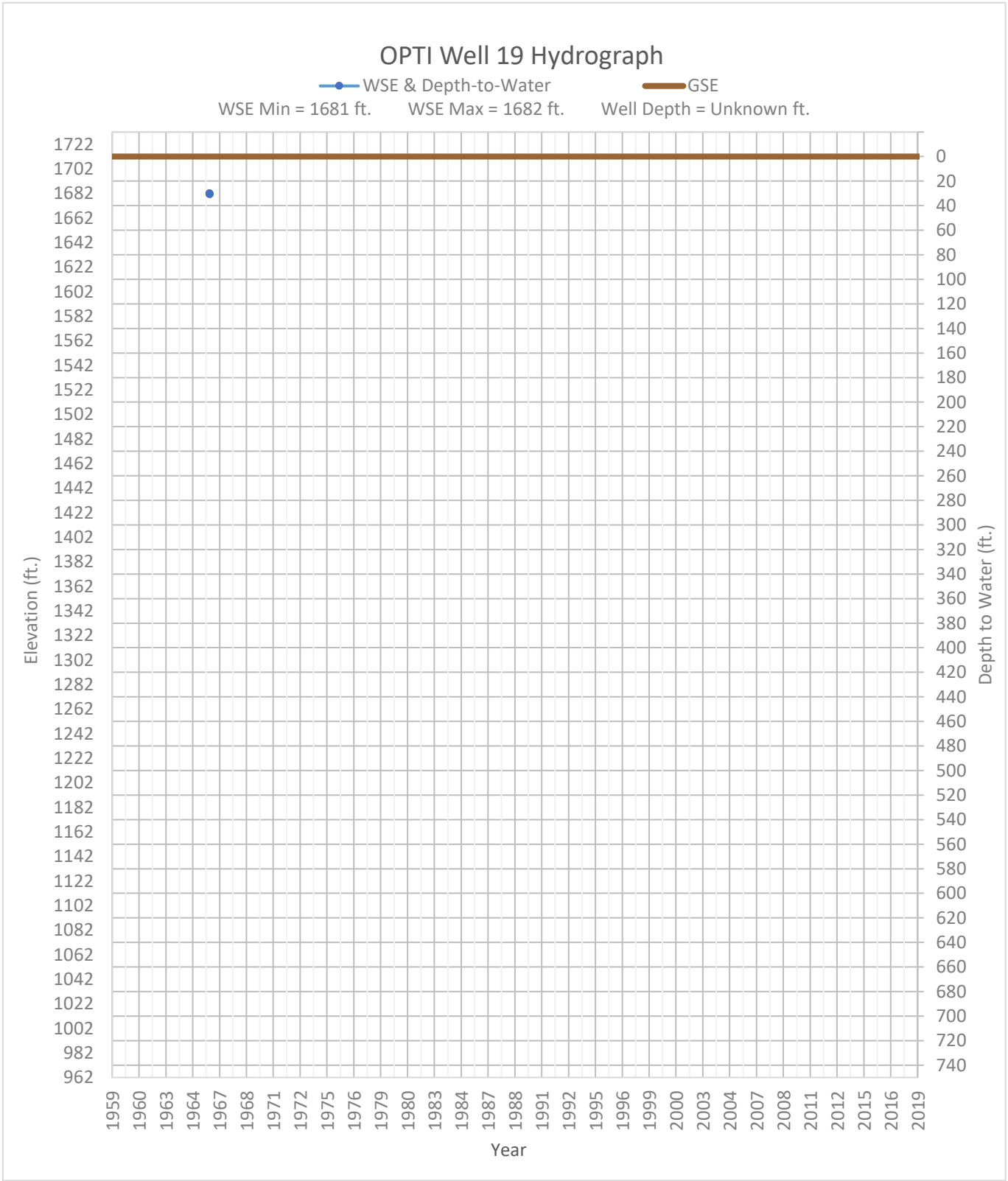
OPTI Well 19 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 1681 ft.
WSE Max = 1682 ft.
Well Depth = Unknown ft.
Elevation (ft.)
Depth to Water (ft.)
Year
1722
1702
1682
1662
1642
1622
1602
1582
1562
1542
1522
1502
1482
1462
1442
1422
1402
1382
1362
1342
1322
1302
1282
1262
1242
1222
1202
1182
1162
1142
1122
1102
1082
1062
1042
1022
1002
982
962
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
320
340
360
380
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420
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460
480
500
520
540
560
580
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620
640
660
680
700
720
740
1959
1960
1963
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1967
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2007
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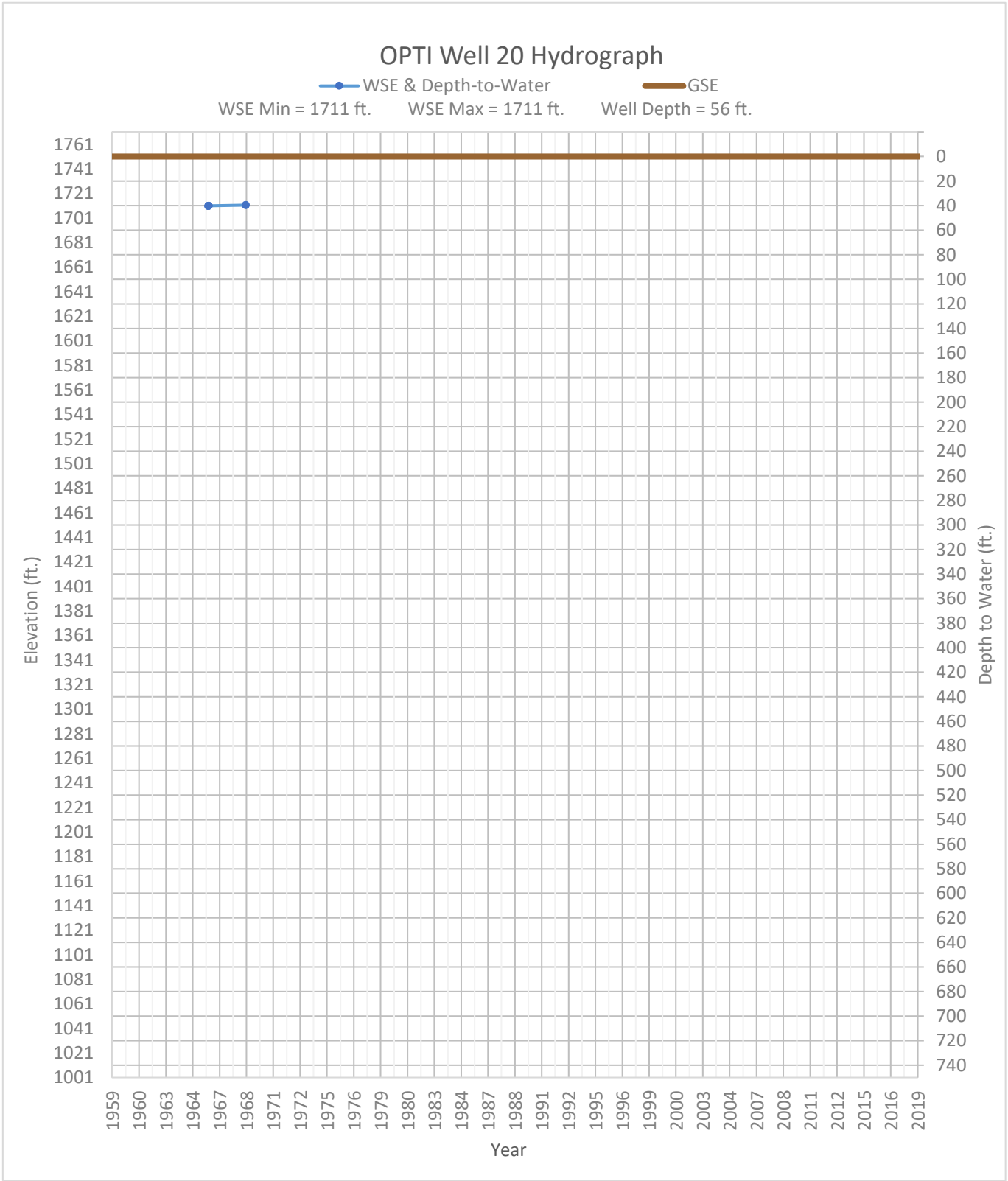
2011
2012
2015
2016
2019


OPTI Well 20 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 1711 ft.
WSE Max = 1711 ft.
Well Depth = 56 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
1761
1741
1721
1701
1681
1661
1641
1621
1601
1581
1561
1541
1521
1501
1481
1461
1441
1421
1401
1381
1361
1341
1321
1301
1281
1261
1241
1221
1201
1181
1161
1141
1121
1101
1081
1061
1041
1021
1001
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
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340
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420
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1959
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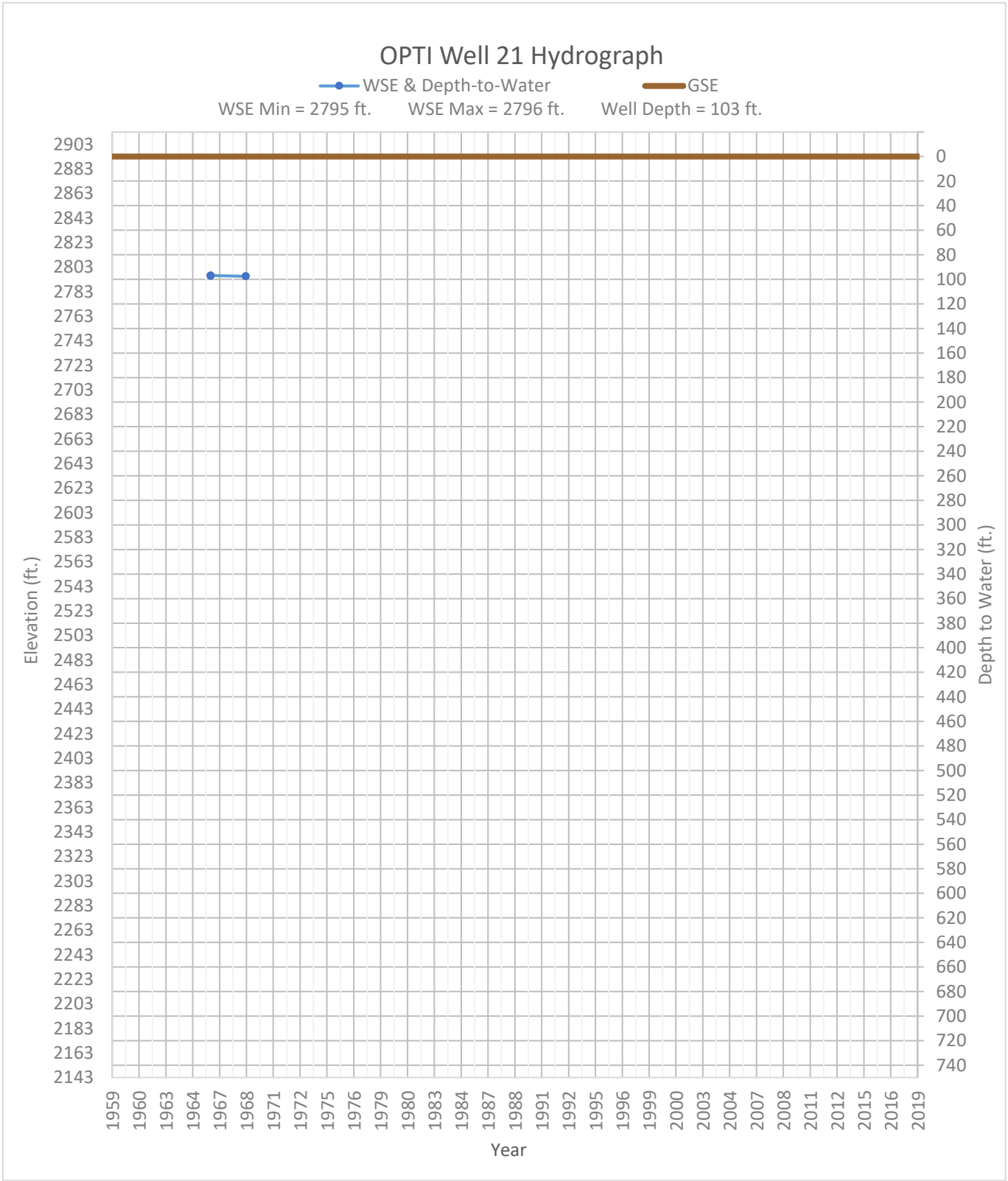
OPTI Well 21 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2795 ft.
WSE Max = 2796 ft.
Well Depth = 103 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2903
2883
2863
2843
2823
2803
2783
2763
2743
2723
2703
2683
2663
2643
2623
2603
2583
2563
2543
2523
2503
2483
2463
2443
2423
2403
2383
2363
2343
2323
2303
2283
2263
2243
2223
2203
2183
2163
2143
0
20
40
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120
140
160
180
200
220
240
260
280
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560
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660
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1959
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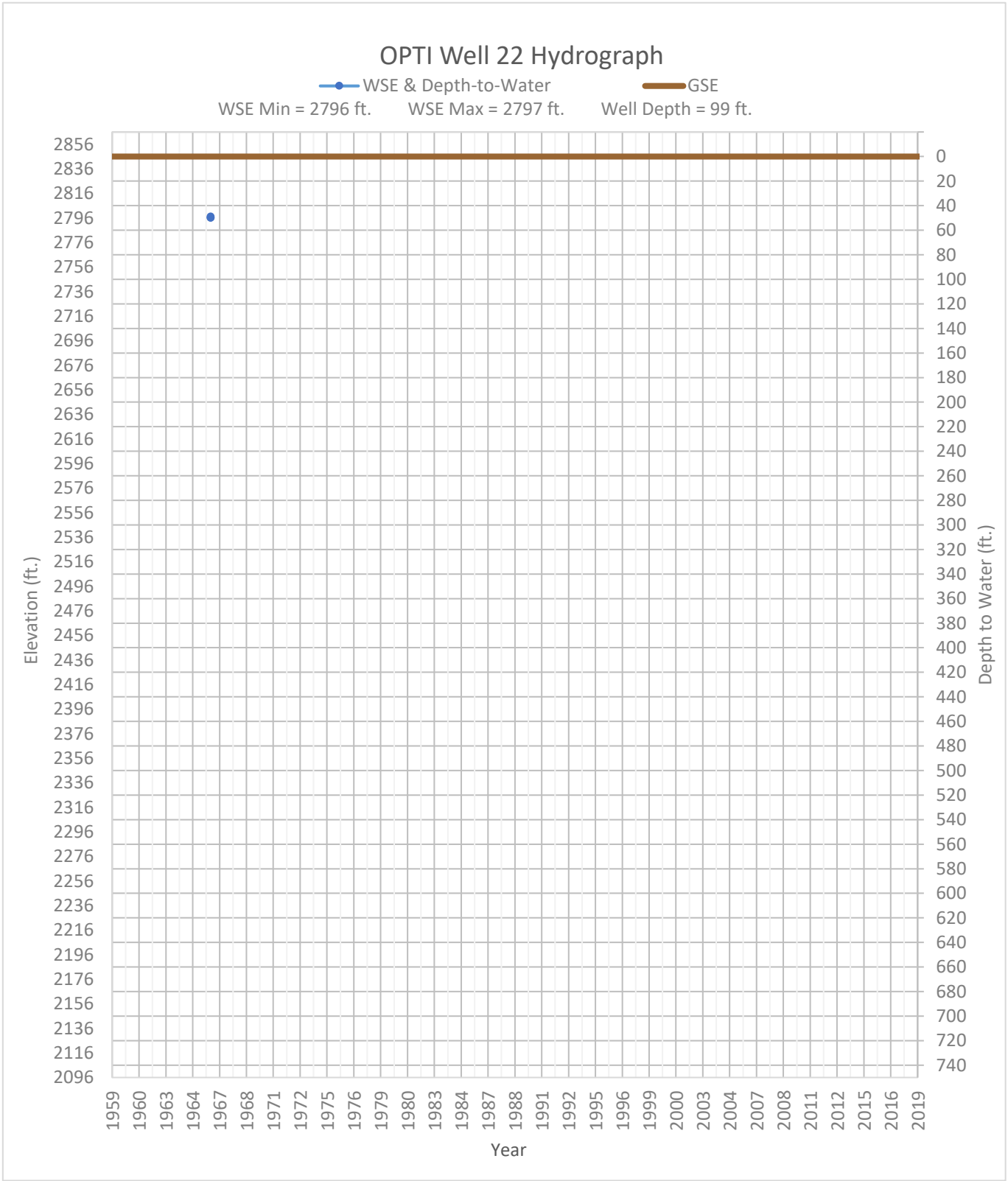
OPTI Well 22 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2796 ft.
WSE Max = 2797 ft.
Well Depth = 99 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2856
2836
2816
2796
2776
2756
2736
2716
2696
2676
2656
2636
2616
2596
2576
2556
2536
2516
2496
2476
2456
2436
2416
2396
2376
2356
2336
2316
2296
2276
2256
2236
2216
2196
2176
2156
2136
2116
2096
0
20
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160
180
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280
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320
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660
680
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1959
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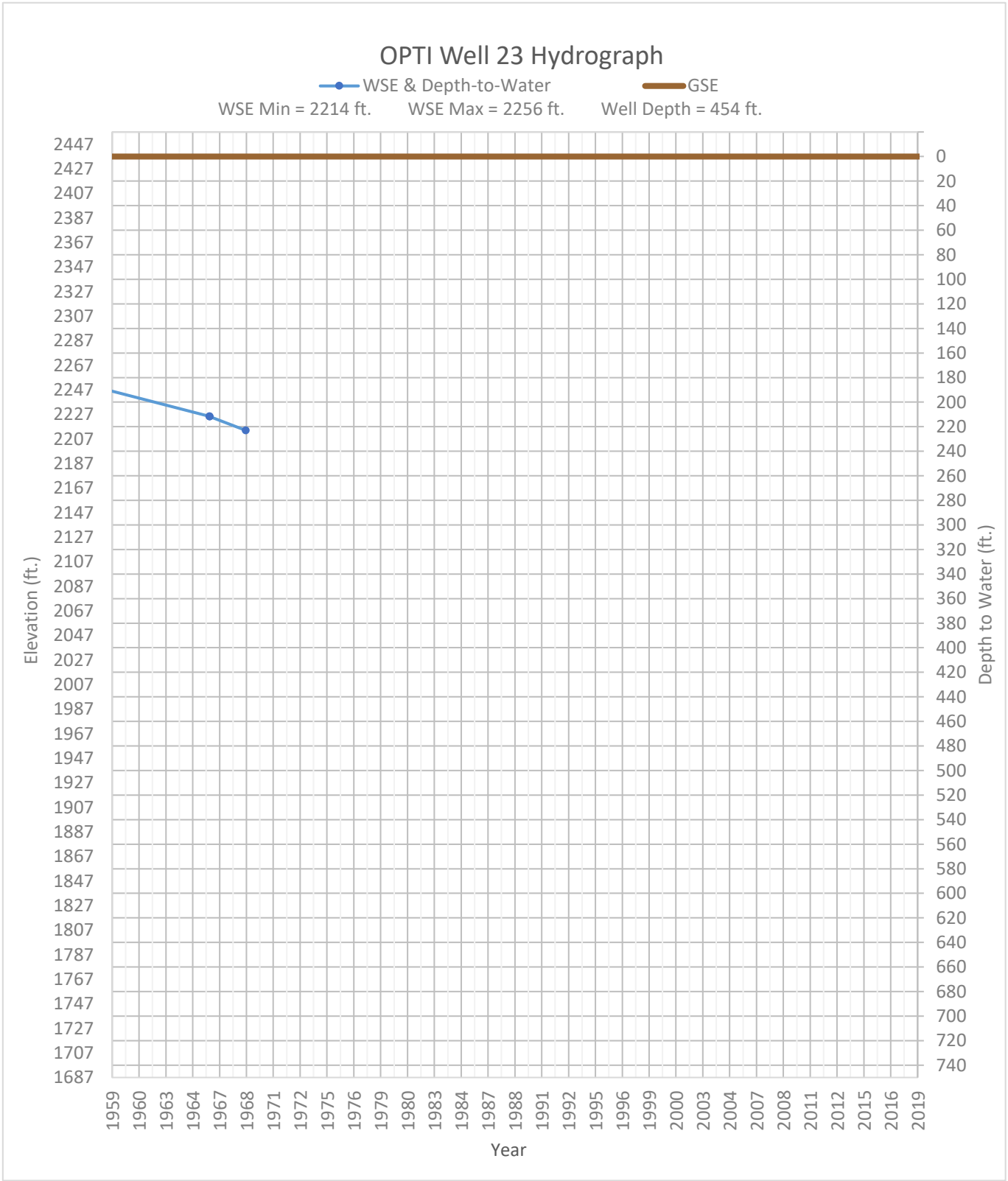
OPTI Well 23 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2214 ft.
WSE Max = 2256 ft.
Well Depth = 454 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2447
2427
2407
2387
2367
2347
2327
2307
2287
2267
2247
2227
2207
2187
2167
2147
2127
2107
2087
2067
2047
2027
2007
1987
1967
1947
1927
1907
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1807
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1747
1727
1707
1687
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680
700
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740
1959
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1963
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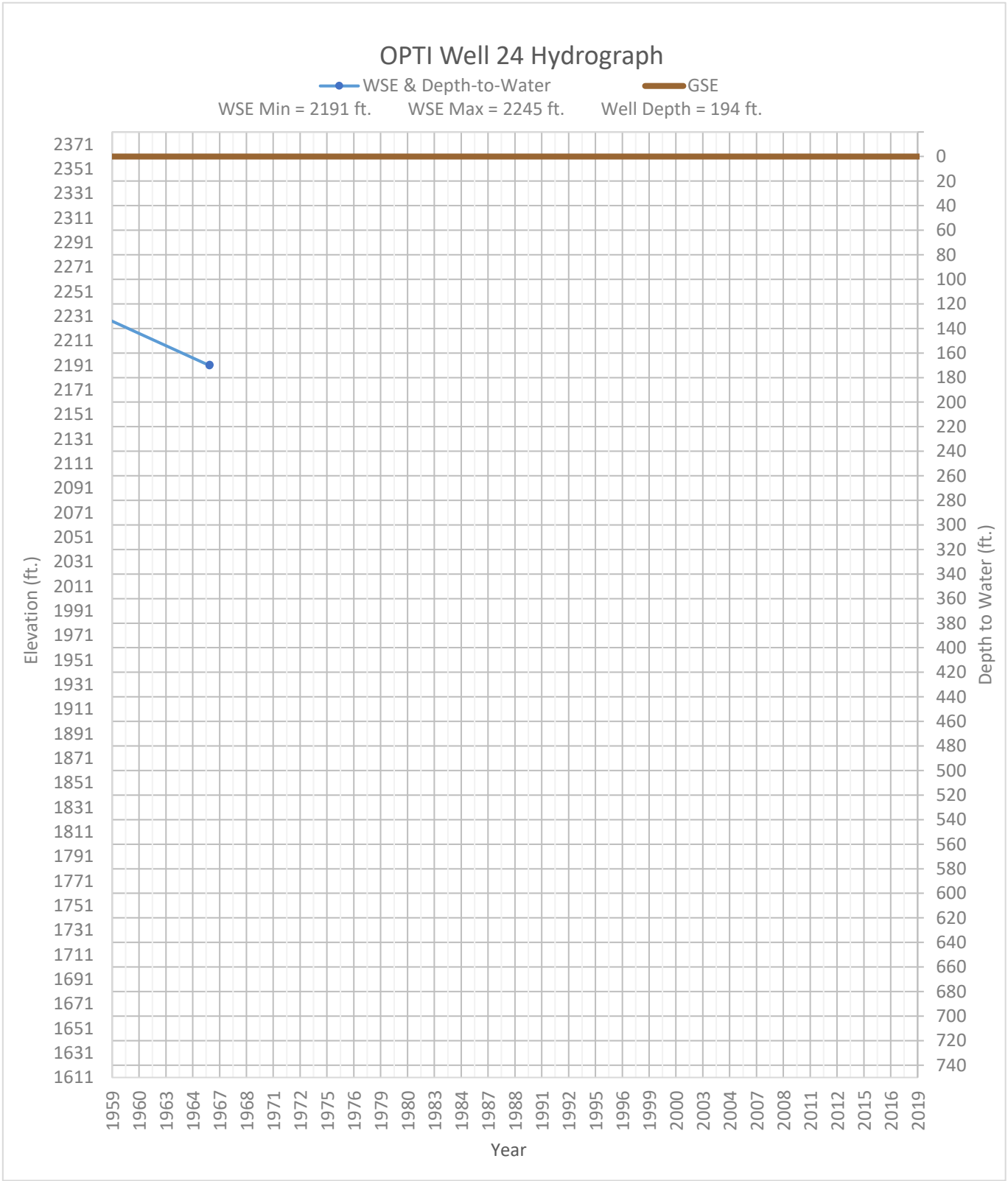
OPTI Well 24 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2191 ft.
WSE Max = 2245 ft.
Well Depth = 194 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2371
2351
2331
2311
2291
2271
2251
2231
2211
2191
2171
2151
2131
2111
2091
2071
2051
2031
2011
1991
1971
1951
1931
1911
1891
1871
1851
1831
1811
1791
1771
1751
1731
1711
1691
1671
1651
1631
1611
0
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340
360
380
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460
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720
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1959
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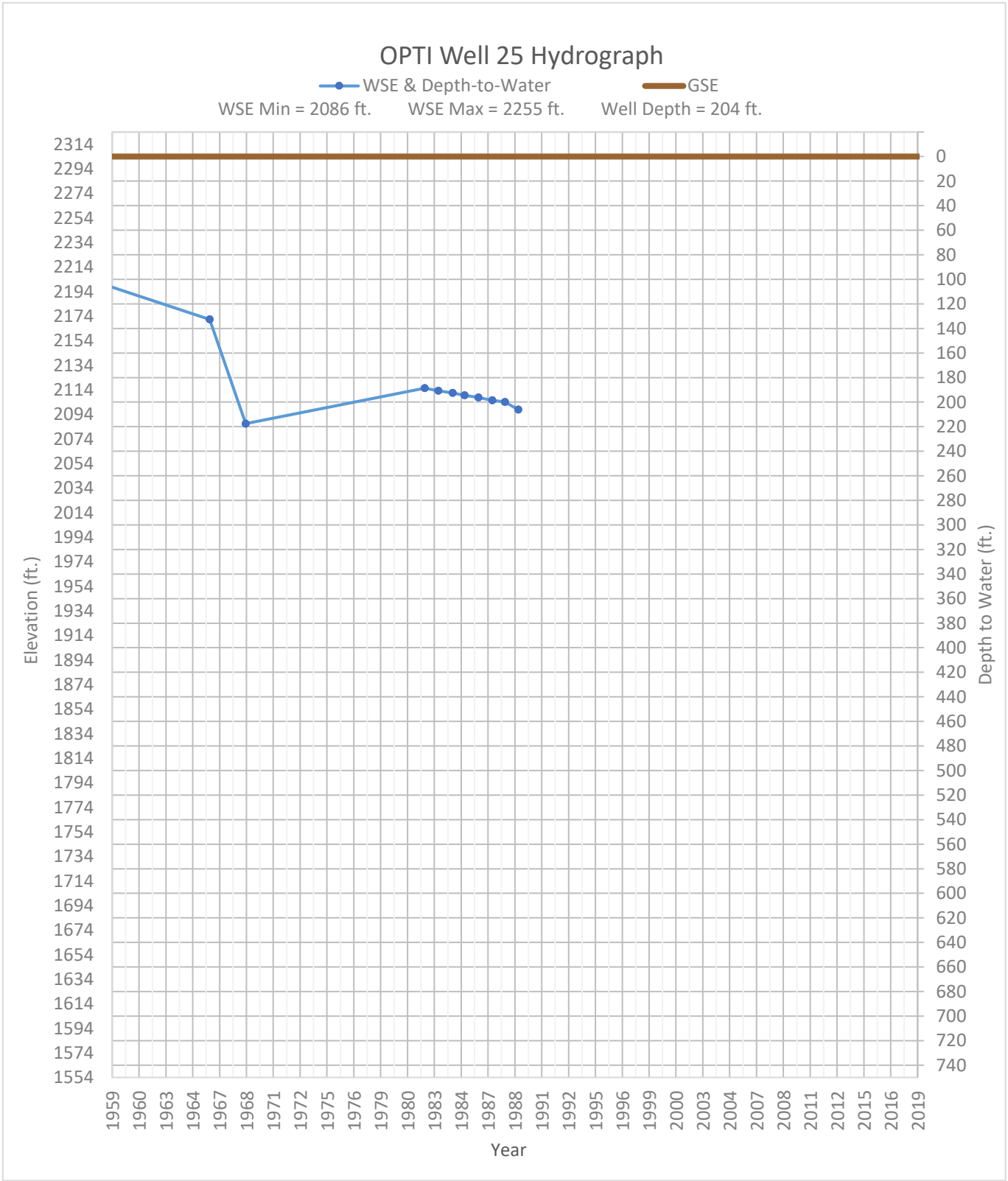
OPTI Well 25 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2086 ft.
WSE Max = 2255 ft.
Well Depth = 204 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2314
2294
2274
2254
2234
2214
2194
2174
2154
2134
2114
2094
2074
2054
2034
2014
1994
1974
1954
1934
1914
1894
1874
1854
1834
1814
1794
1774
1754
1734
1714
1694
1674
1654
1634
1614
1594
1574
1554
0
20
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640
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1959
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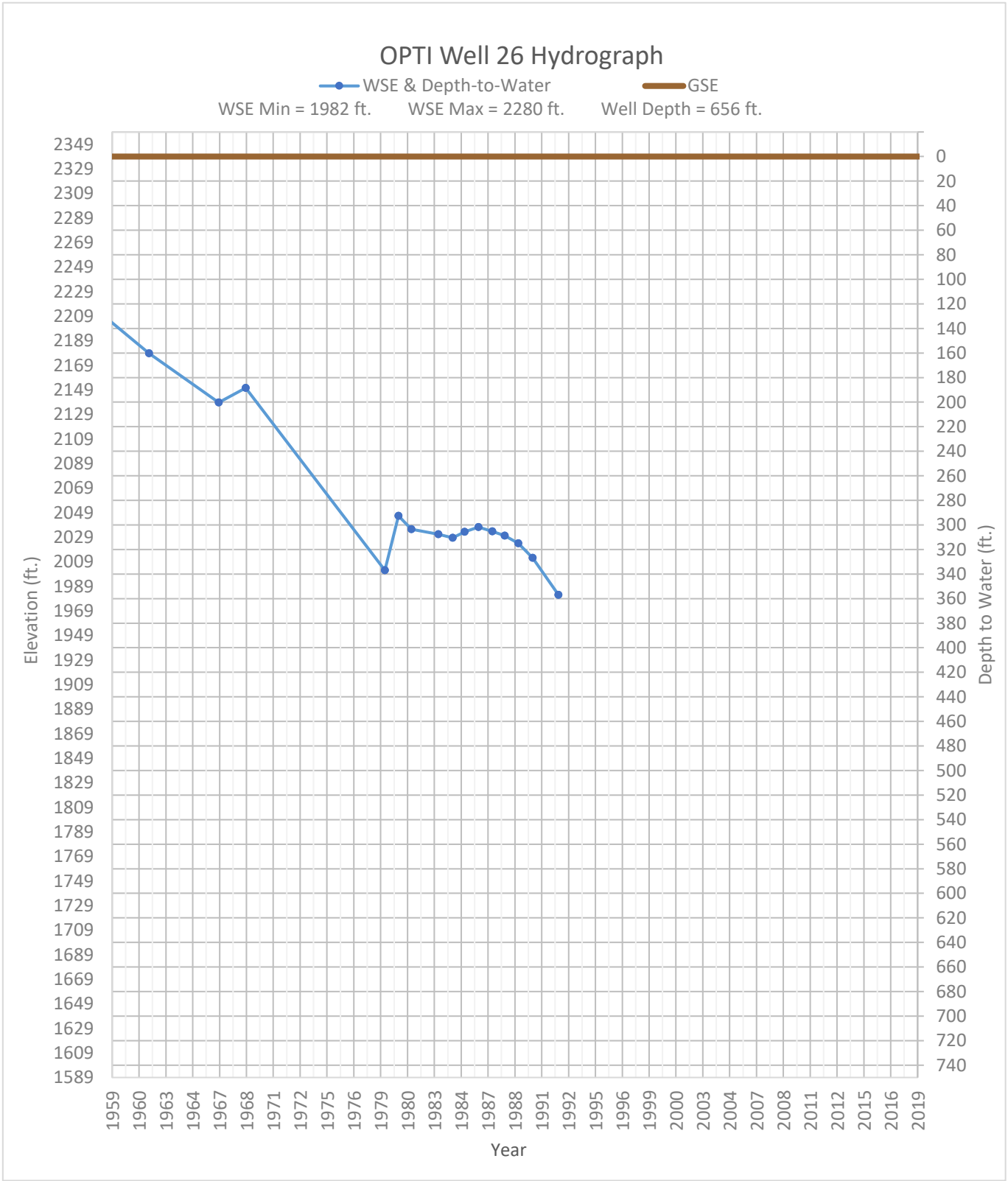
OPTI Well 26 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 1982 ft.
WSE Max = 2280 ft.
Well Depth = 656 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2349
2329
2309
2289
2269
2249
2229
2209
2189
2169
2149
2129
2109
2089
2069
2049
2029
2009
1989
1969
1949
1929
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1809
1789
1769
1749
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1709
1689
1669
1649
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1589
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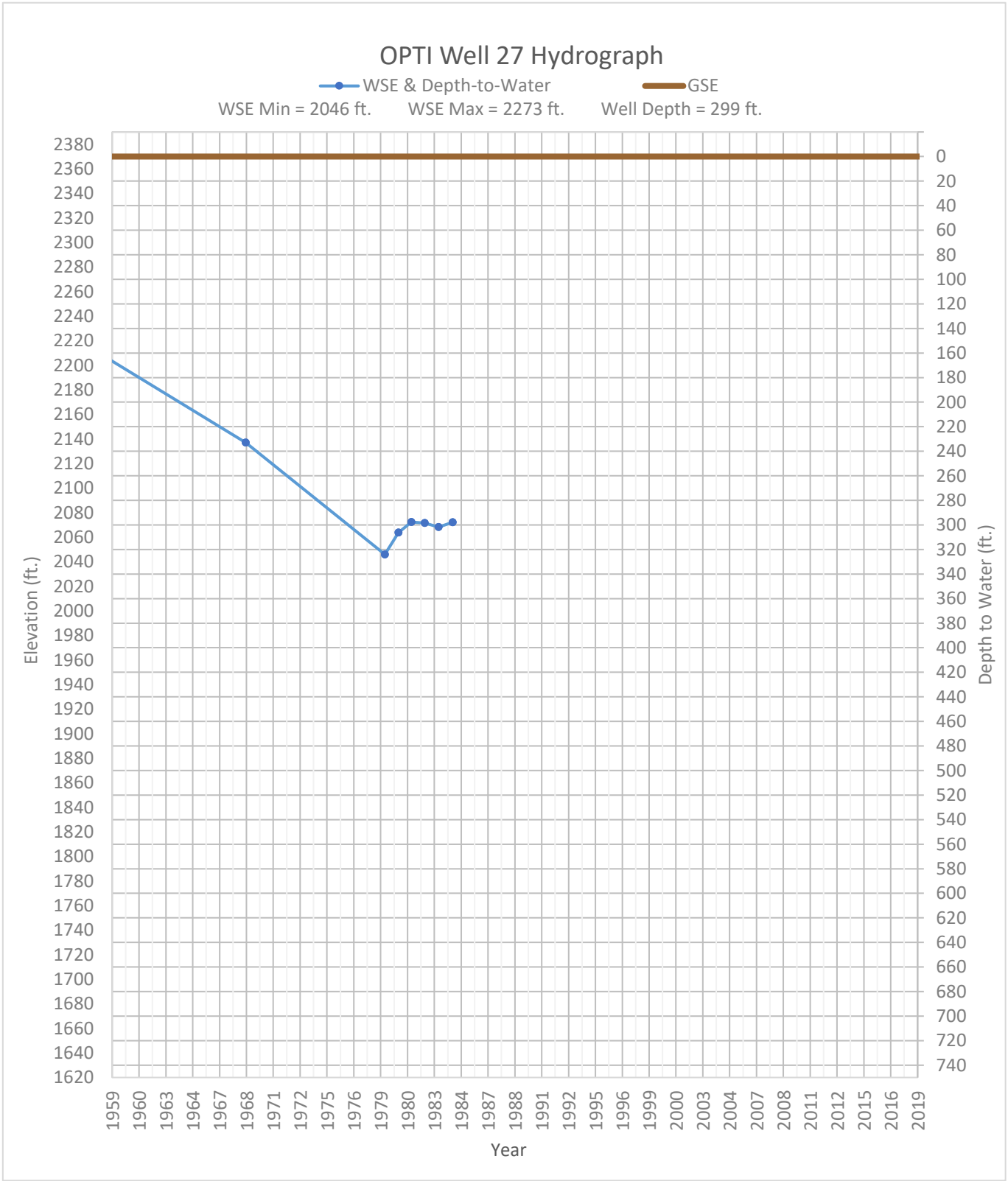
OPTI Well 27 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2046 ft.
WSE Max = 2273 ft.
Well Depth = 299 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2380
2360
2340
2320
2300
2280
2260
2240
2220
2200
2180
2160
2140
2120
2100
2080
2060
2040
2020
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1700
1680
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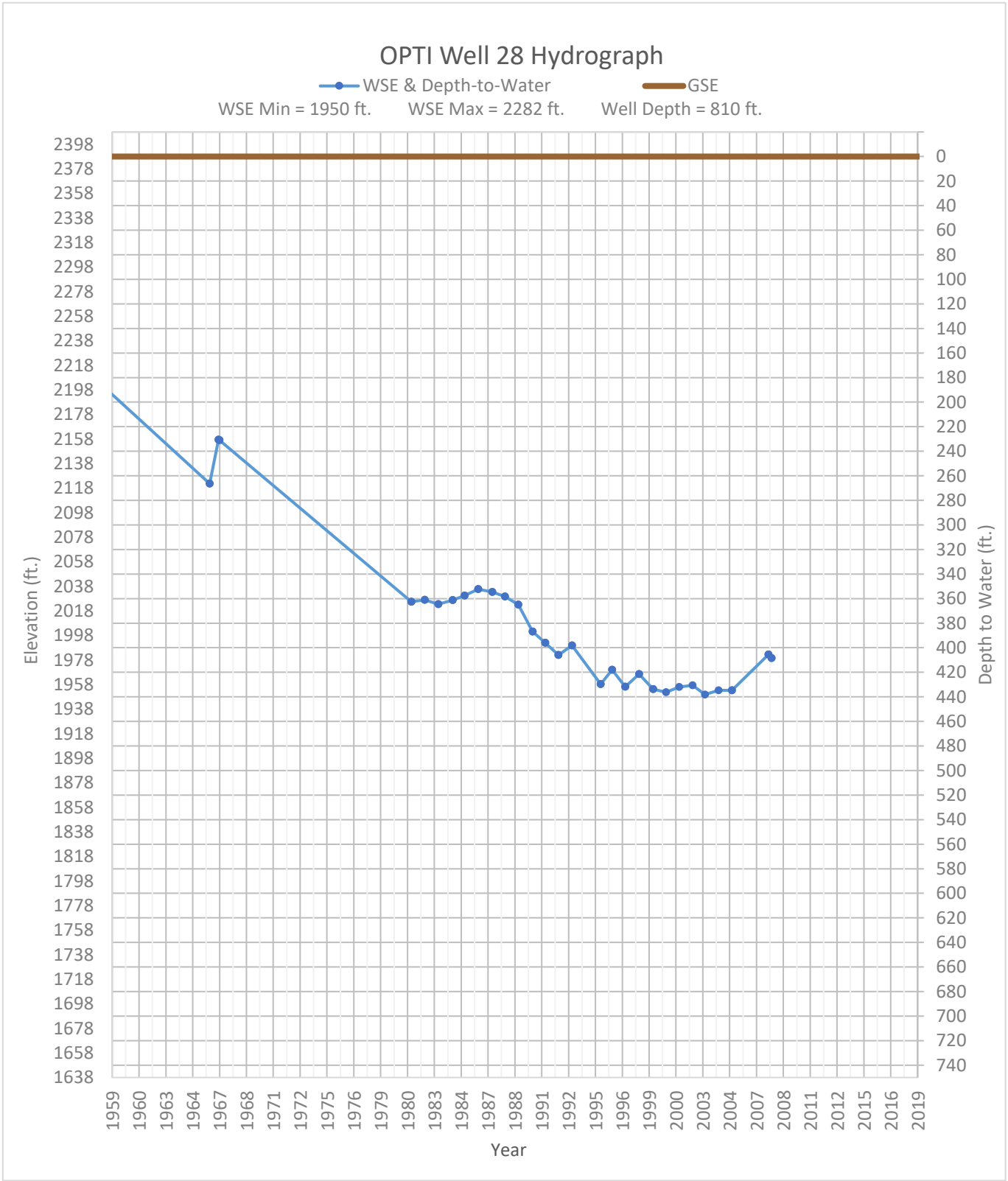
OPTI Well 28 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 1950 ft.
WSE Max = 2282 ft.
Well Depth = 810 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2398
2378
2358
2338
2318
2298
2278
2258
2238
2218
2198
2178
2158
2138
2118
2098
2078
2058
2038
2018
1998
1978
1958
1938
1918
1898
1878
1858
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1818
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1738
1718
1698
1678
1658
1638
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640
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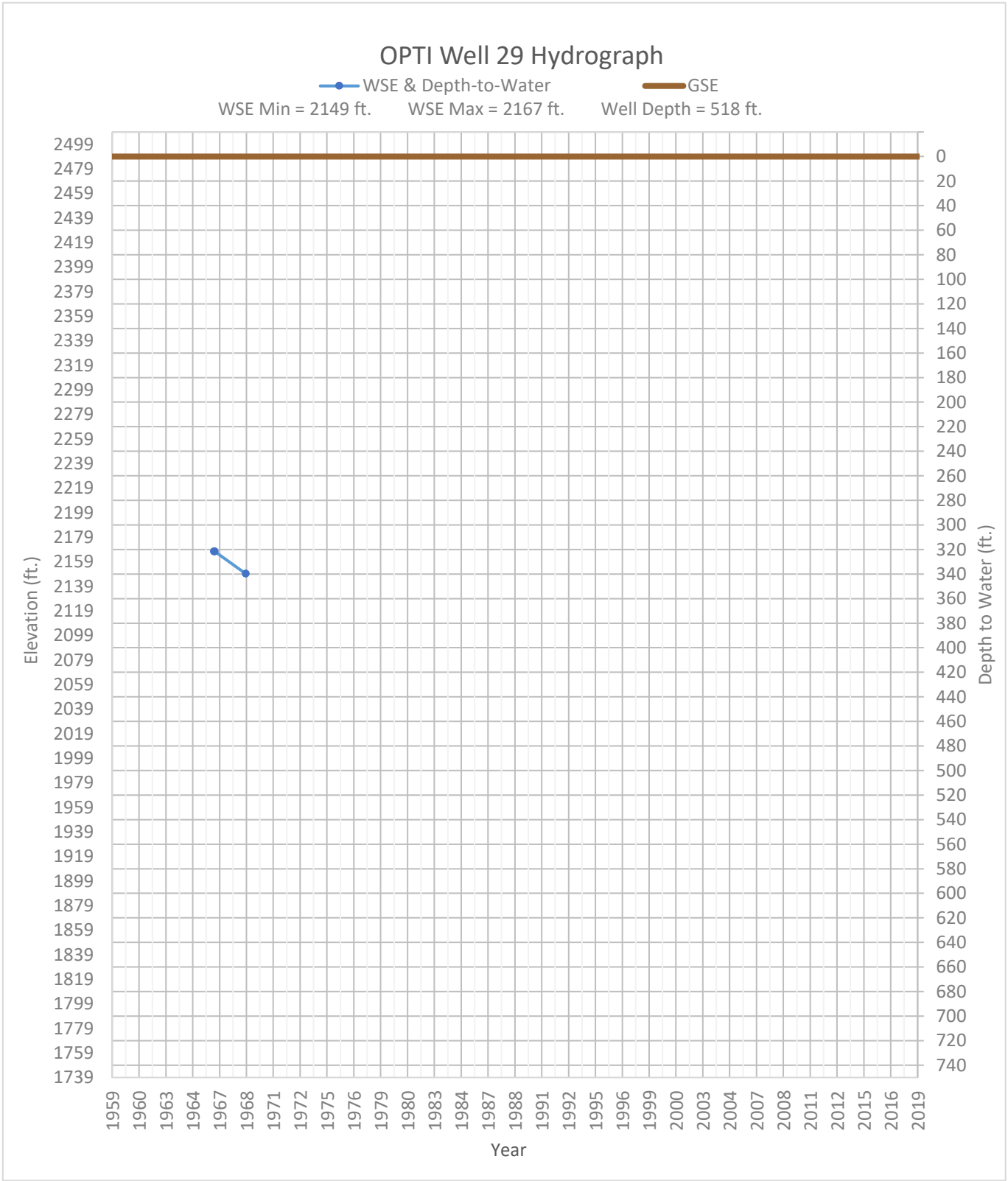
OPTI Well 29 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2149 ft.
WSE Max = 2167 ft.
Well Depth = 518 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2499
2479
2459
2439
2419
2399
2379
2359
2339
2319
2299
2279
2259
2239
2219
2199
2179
2159
2139
2119
2099
2079
2059
2039
2019
1999
1979
1959
1939
1919
1899
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1859
1839
1819
1799
1779
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560
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620
640
660
680
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720
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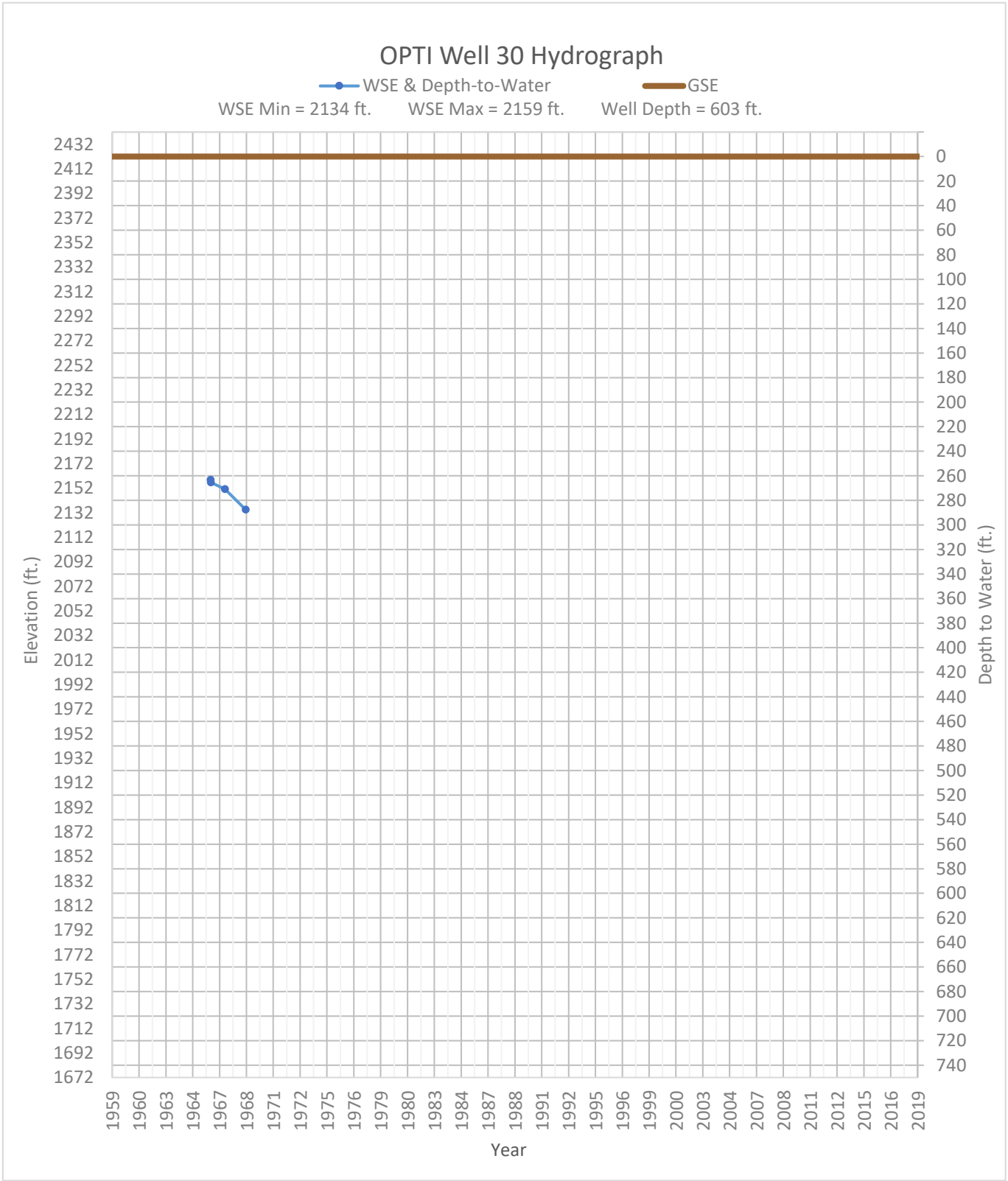
OPTI Well 30 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2134 ft.
WSE Max = 2159 ft.
Well Depth = 603 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2432
2412
2392
2372
2352
2332
2312
2292
2272
2252
2232
2212
2192
2172
2152
2132
2112
2092
2072
2052
2032
2012
1992
1972
1952
1932
1912
1892
1872
1852
1832
1812
1792
1772
1752
1732
1712
1692
1672
0
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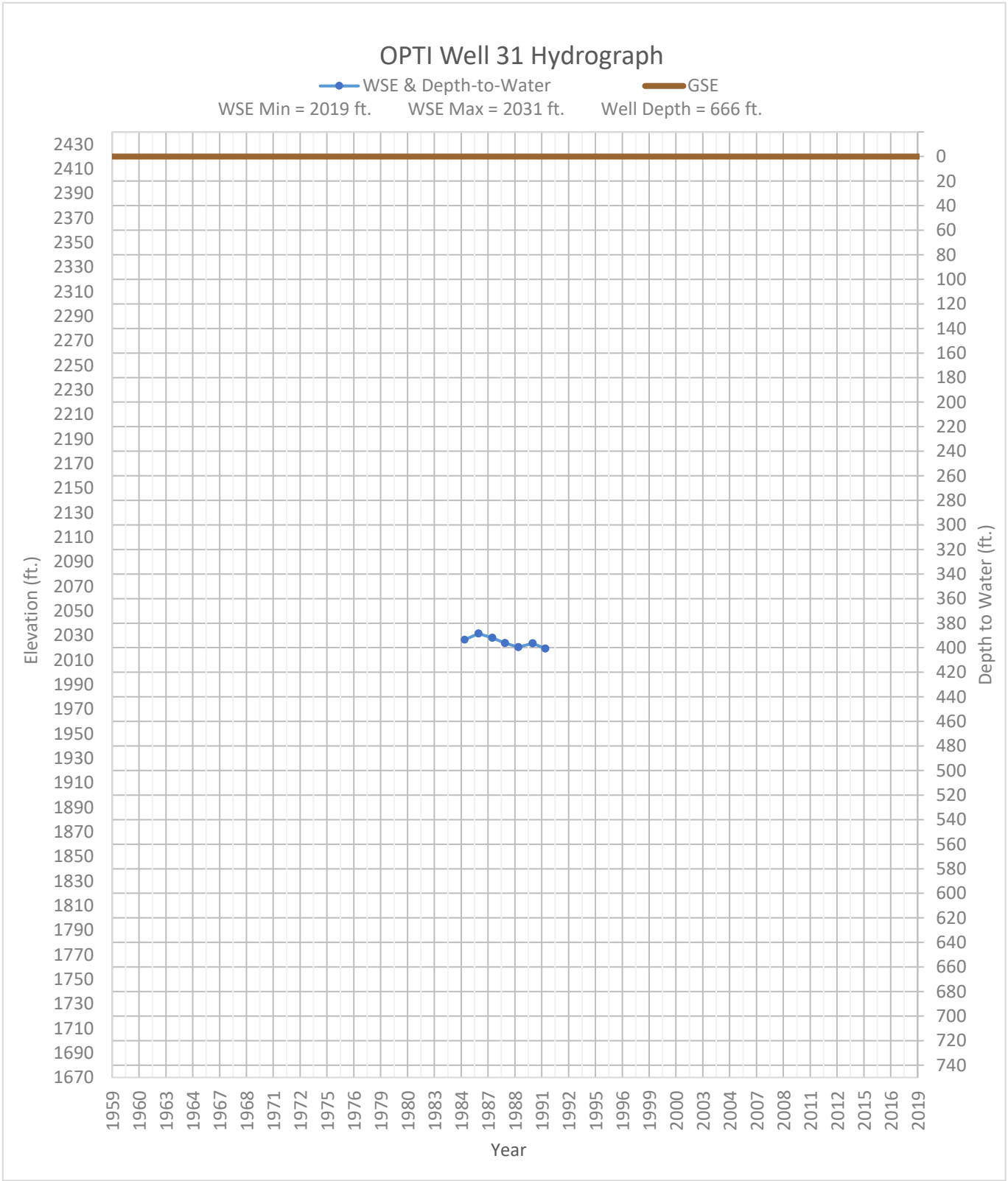
OPTI Well 31 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2019 ft.
WSE Max = 2031 ft.
Well Depth = 666 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2430
2410
2390
2370
2350
2330
2310
2290
2270
2250
2230
2210
2190
2170
2150
2130
2110
2090
2070
2050
2030
2010
1990
1970
1950
1930
1910
1890
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1850
1830
1810
1790
1770
1750
1730
1710
1690
1670
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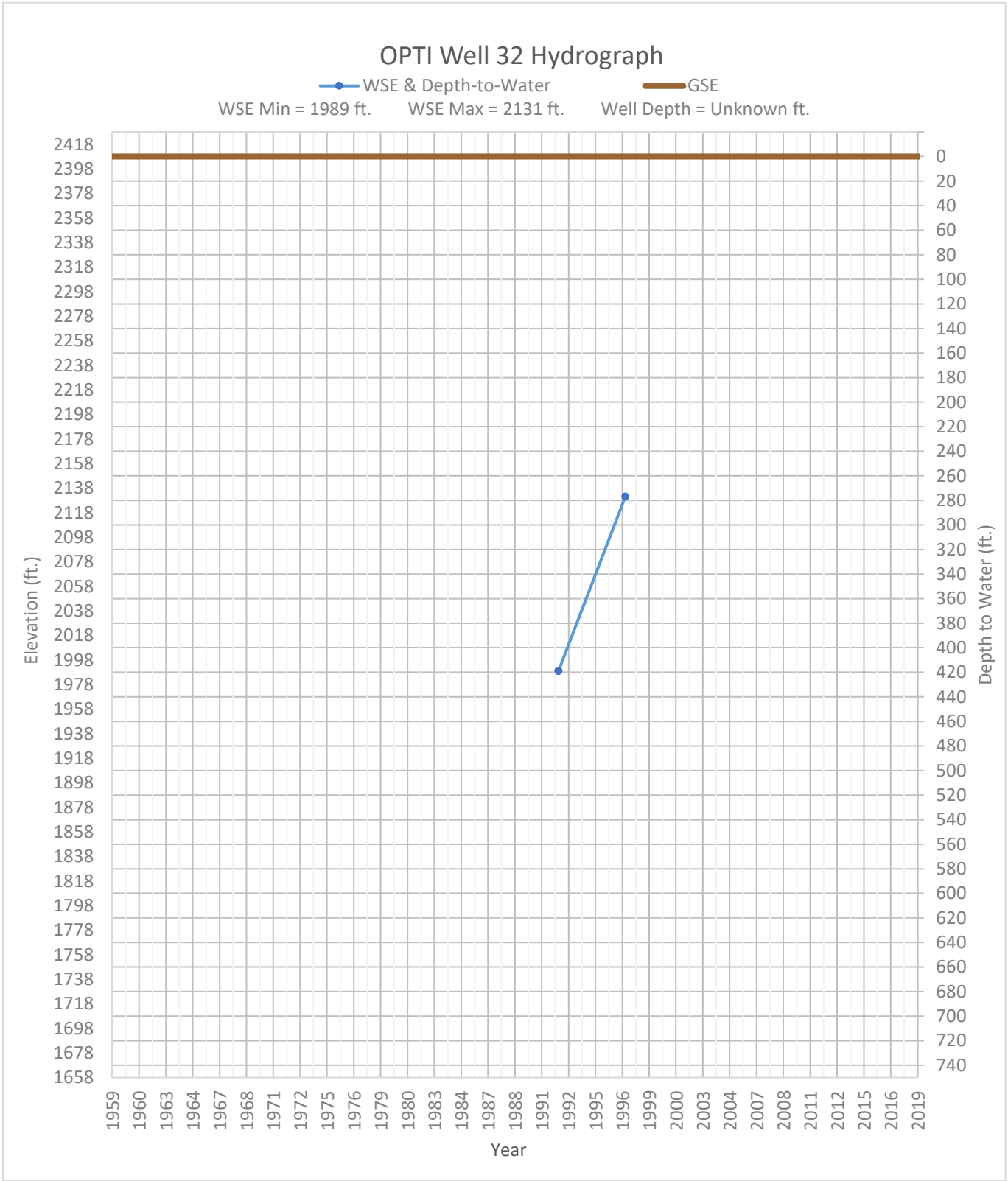
OPTI Well 32 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 1989 ft.
WSE Max = 2131 ft.
Well Depth = Unknown ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2418
2398
2378
2358
2338
2318
2298
2278
2258
2238
2218
2198
2178
2158
2138
2118
2098
2078
2058
2038
2018
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1938
1918
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1658
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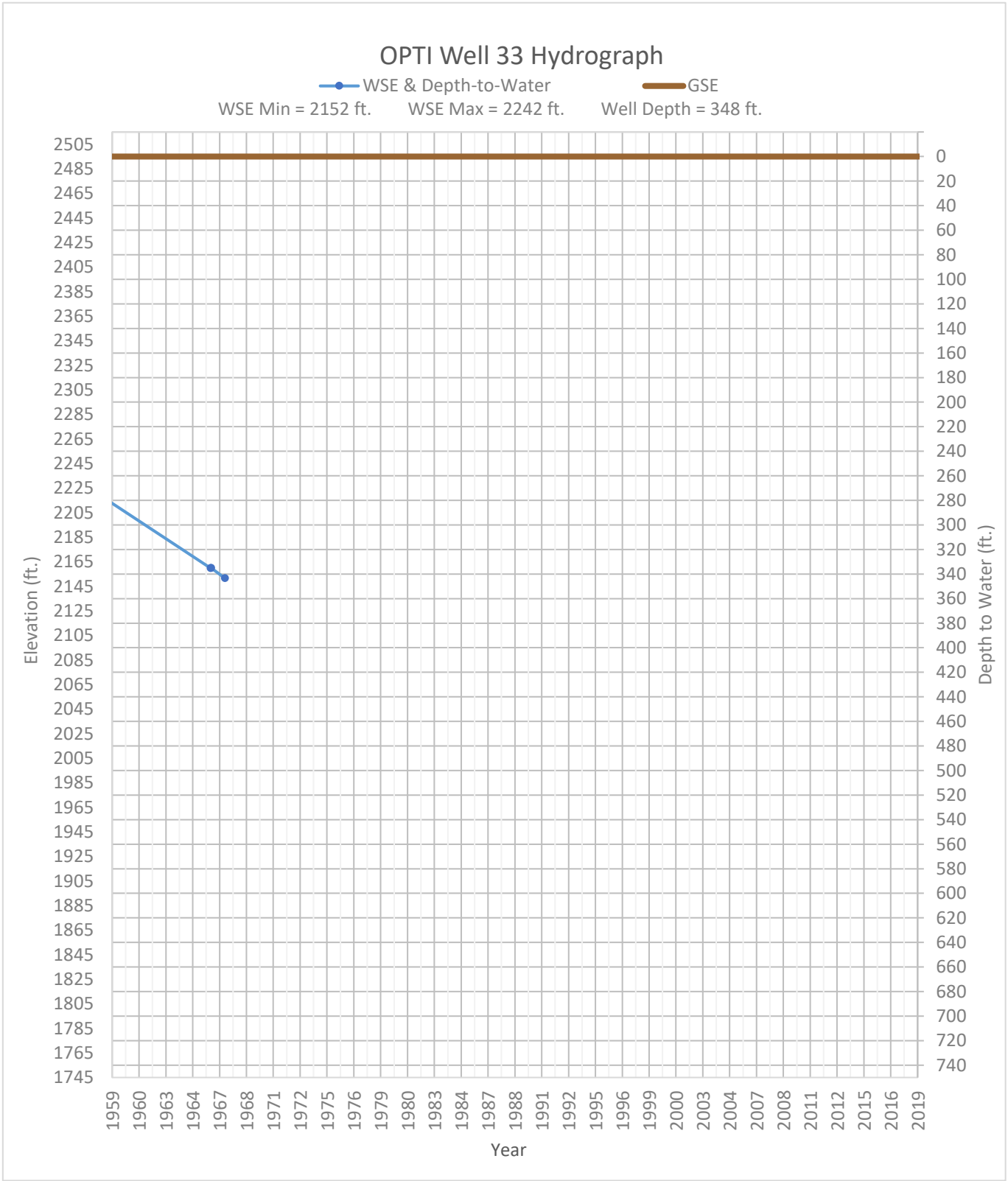
OPTI Well 33 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2152 ft.
WSE Max = 2242 ft.
Well Depth = 348 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2505
2485
2465
2445
2425
2405
2385
2365
2345
2325
2305
2285
2265
2245
2225
2205
2185
2165
2145
2125
2105
2085
2065
2045
2025
2005
1985
1965
1945
1925
1905
1885
1865
1845
1825
1805
1785
1765
1745
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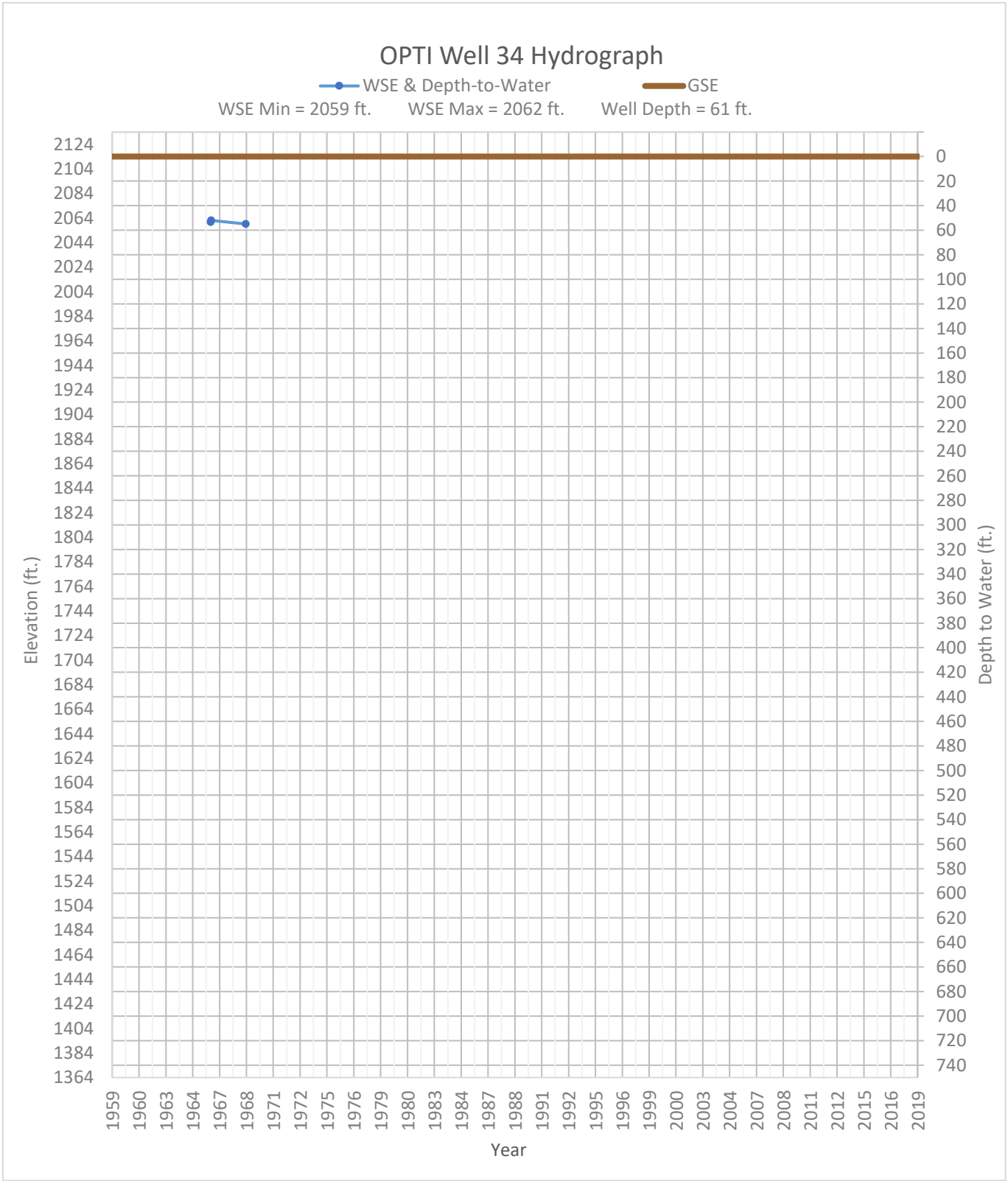
OPTI Well 34 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2059 ft.
WSE Max = 2062 ft.
Well Depth = 61 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2124
2104
2084
2064
2044
2024
2004
1984
1964
1944
1924
1904
1884
1864
1844
1824
1804
1784
1764
1744
1724
1704
1684
1664
1644
1624
1604
1584
1564
1544
1524
1504
1484
1464
1444
1424
1404
1384
1364
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20
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160
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220
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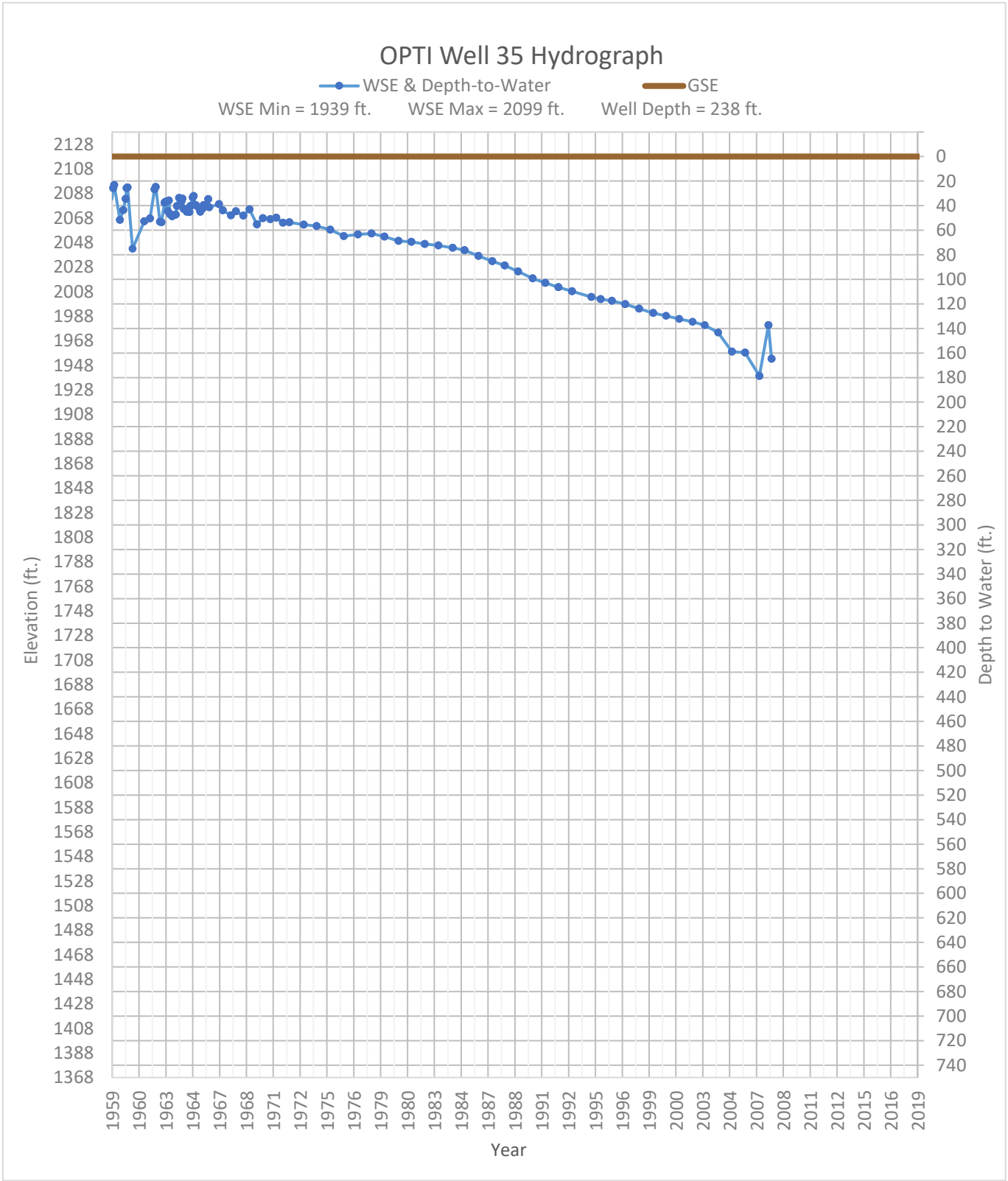
OPTI Well 35 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 1939 ft.
WSE Max = 2099 ft.
Well Depth = 238 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2128
2108
2088
2068
2048
2028
2008
1988
1968
1948
1928
1908
1888
1868
1848
1828
1808
1788
1768
1748
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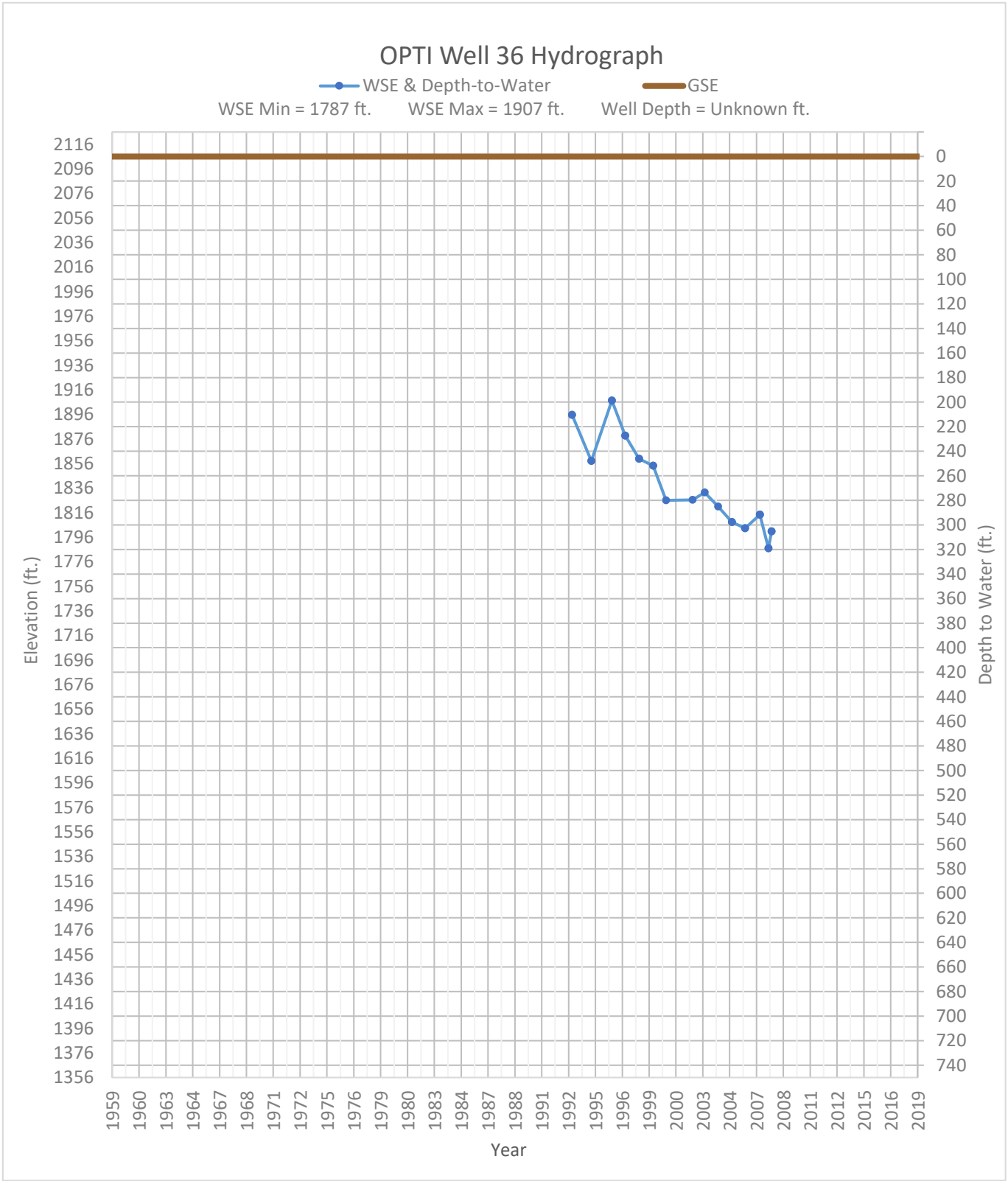
OPTI Well 36 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 1787 ft.
WSE Max = 1907 ft.
Well Depth = Unknown ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2116
2096
2076
2056
2036
2016
1996
1976
1956
1936
1916
1896
1876
1856
1836
1816
1796
1776
1756
1736
1716
1696
1676
1656
1636
1616
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1576
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1516
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1476
1456
1436
1416
1396
1376
1356
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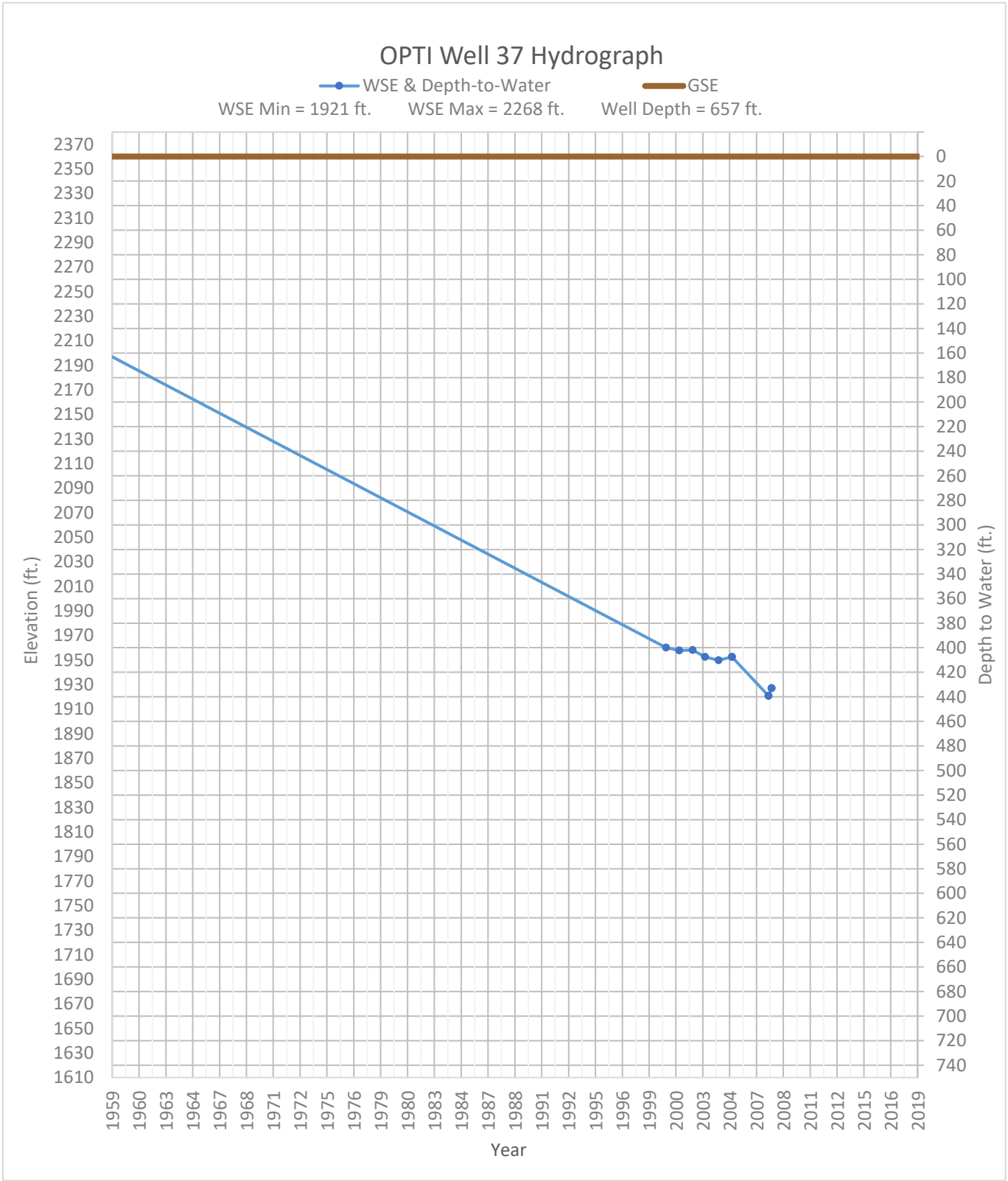
OPTI Well 37 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 1921 ft.
WSE Max = 2268 ft.
Well Depth = 657 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2370
2350
2330
2310
2290
2270
2250
2230
2210
2190
2170
2150
2130
2110
2090
2070
2050
2030
2010
1990
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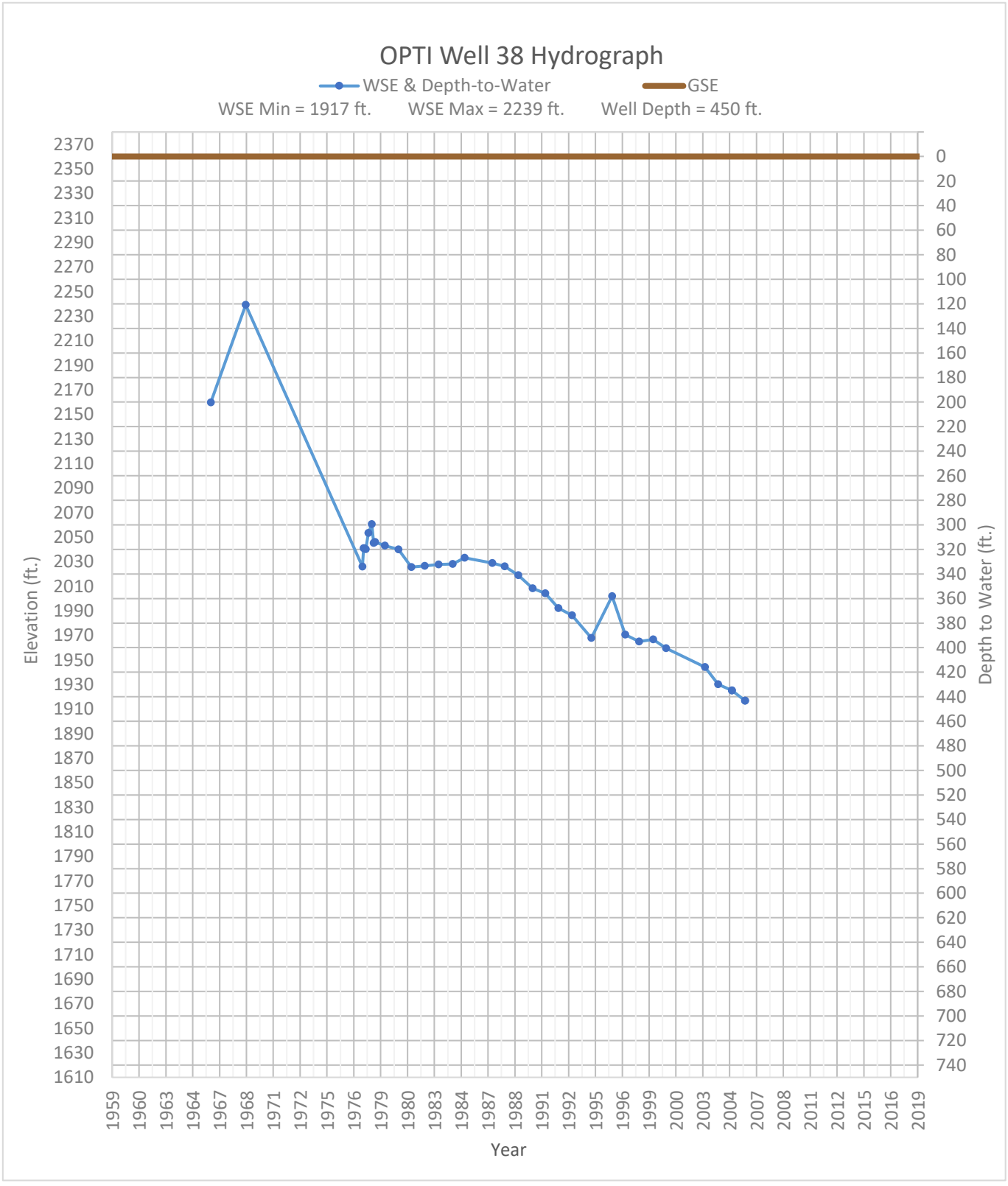
OPTI Well 38 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 1917 ft.
WSE Max = 2239 ft.
Well Depth = 450 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2370
2350
2330
2310
2290
2270
2250
2230
2210
2190
2170
2150
2130
2110
2090
2070
2050
2030
2010
1990
1970
1950
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1910
1890
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1690
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1610
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1959
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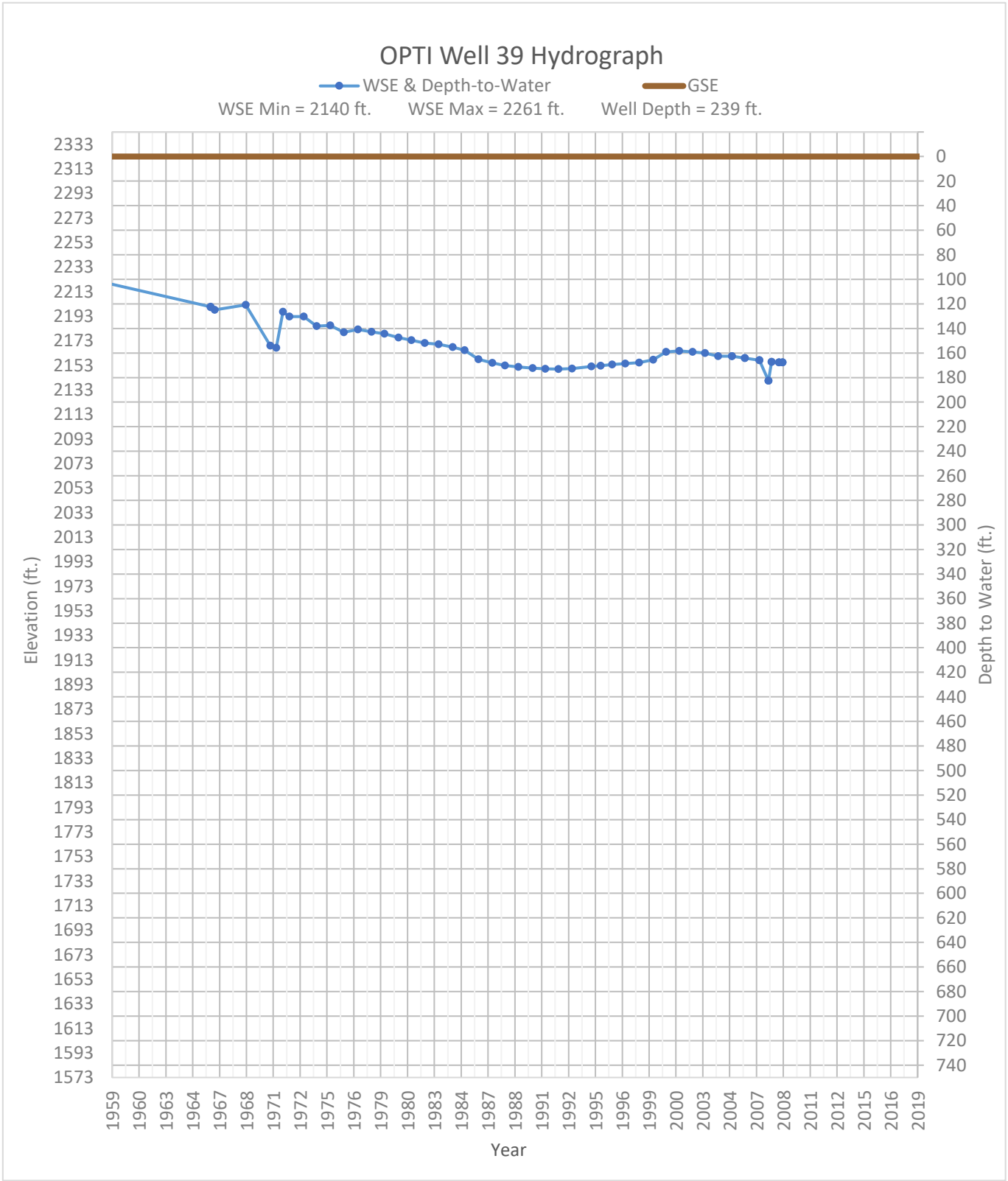
2019


OPTI Well 39 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2140 ft.
WSE Max = 2261 ft.
Well Depth = 239 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2333
2313
2293
2273
2253
2233
2213
2193
2173
2153
2133
2113
2093
2073
2053
2033
2013
1993
1973
1953
1933
1913
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1873
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1673
1653
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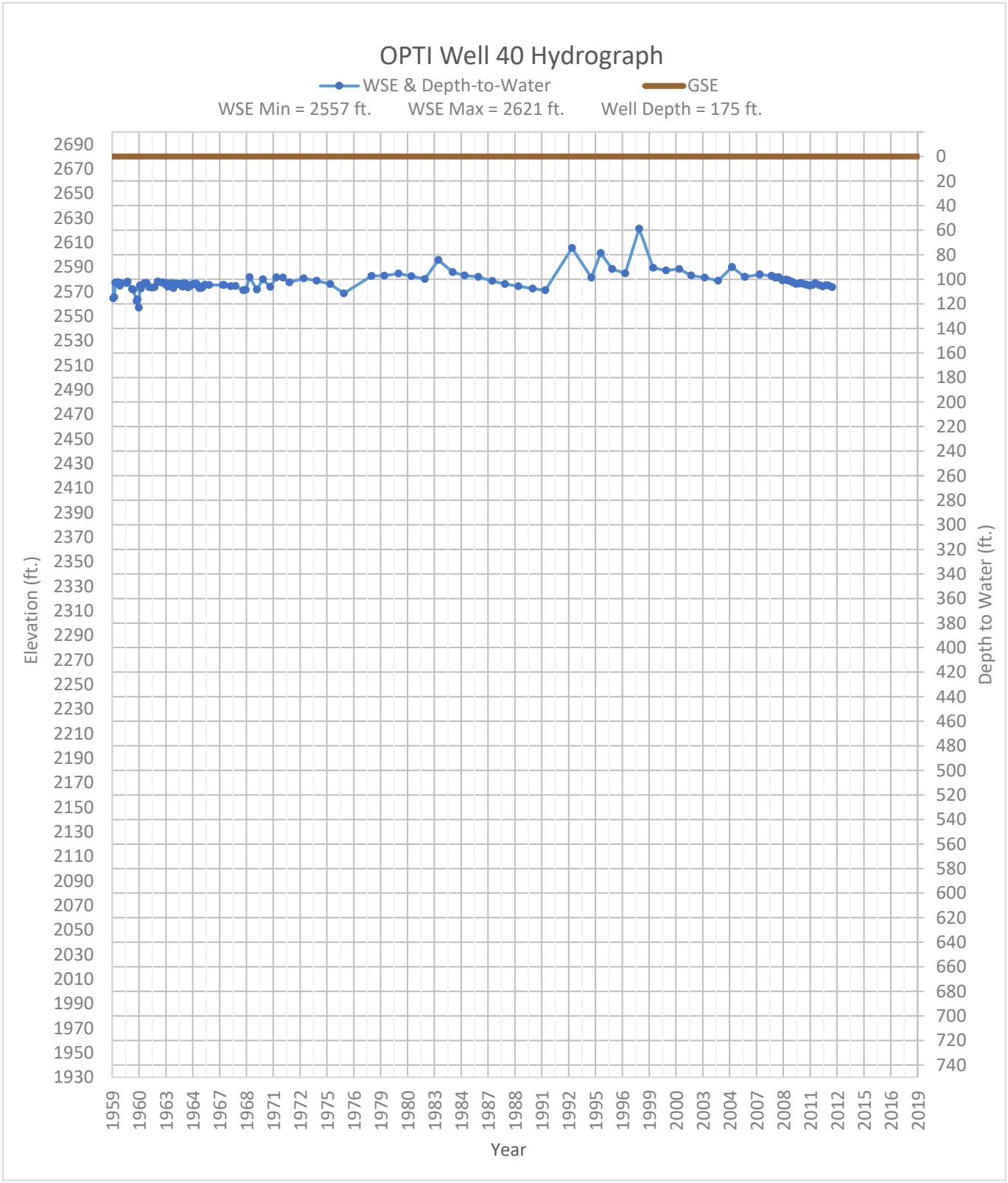
2019


OPTI Well 40 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2557 ft.
WSE Max = 2621 ft.
Well Depth = 175 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2690
2670
2650
2630
2610
2590
2570
2550
2530
2510
2490
2470
2450
2430
2410
2390
2370
2350
2330
2310
2290
2270
2250
2230
2210
2190
2170
2150
2130
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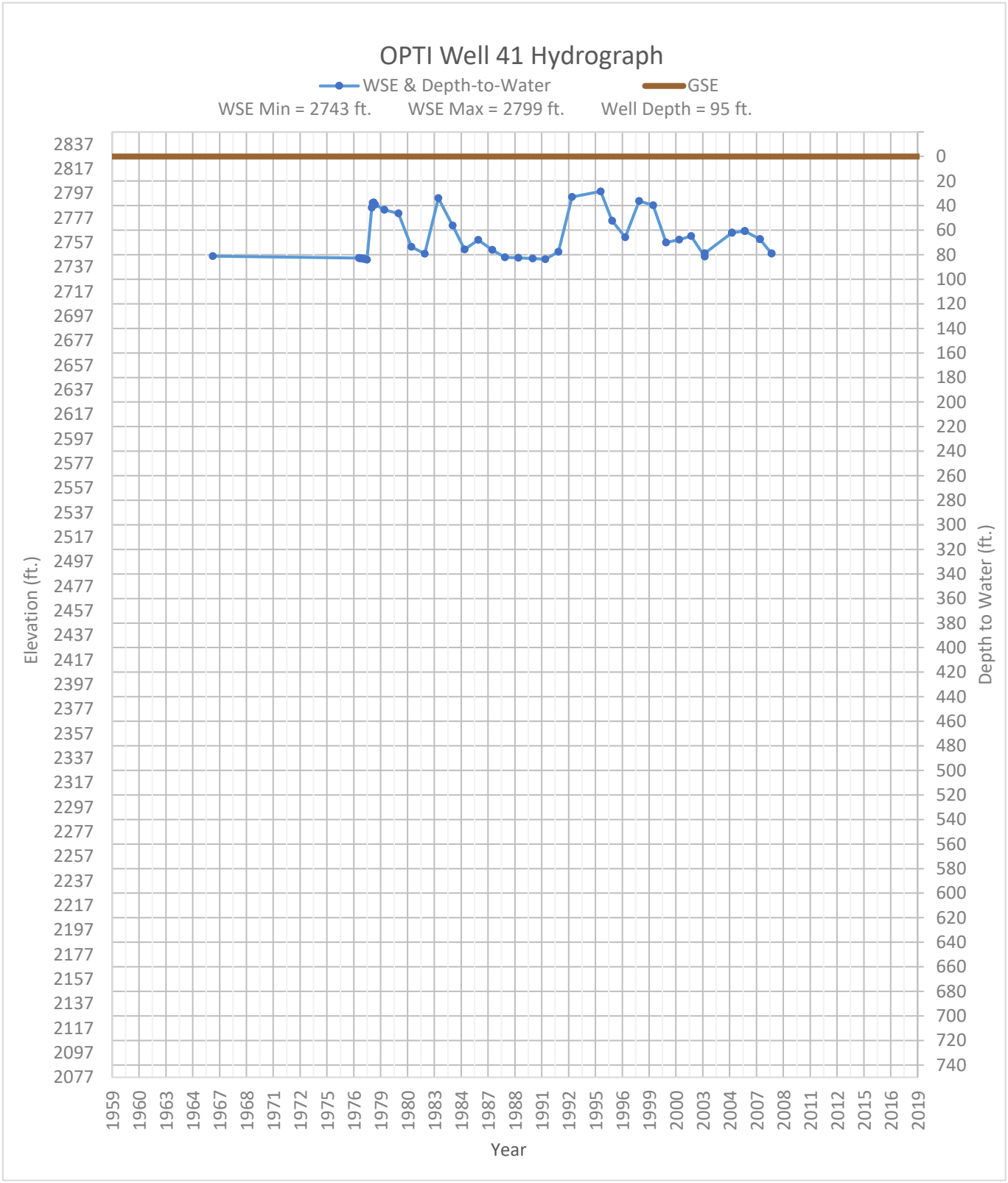
2016
2019


OPTI Well 41 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2743 ft.
WSE Max = 2799 ft.
Well Depth = 95 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2837
2817
2797
2777
2757
2737
2717
2697
2677
2657
2637
2617
2597
2577
2557
2537
2517
2497
2477
2457
2437
2417
2397
2377
2357
2337
2317
2297
2277
2257
2237
2217
2197
2177
2157
2137
2117
2097
2077
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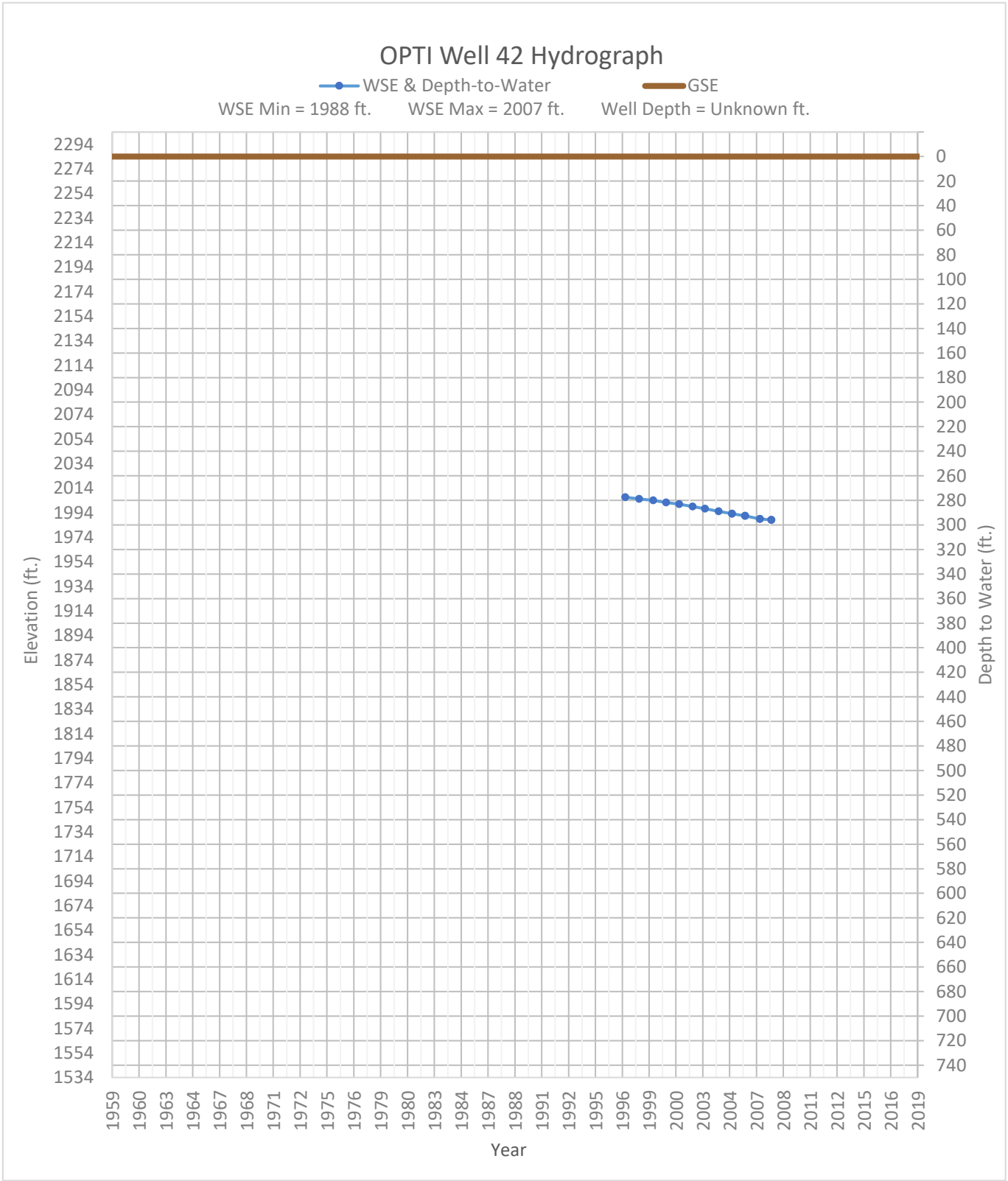
OPTI Well 42 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 1988 ft.
WSE Max = 2007 ft.
Well Depth = Unknown ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2294
2274
2254
2234
2214
2194
2174
2154
2134
2114
2094
2074
2054
2034
2014
1994
1974
1954
1934
1914
1894
1874
1854
1834
1814
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1774
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1714
1694
1674
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1634
1614
1594
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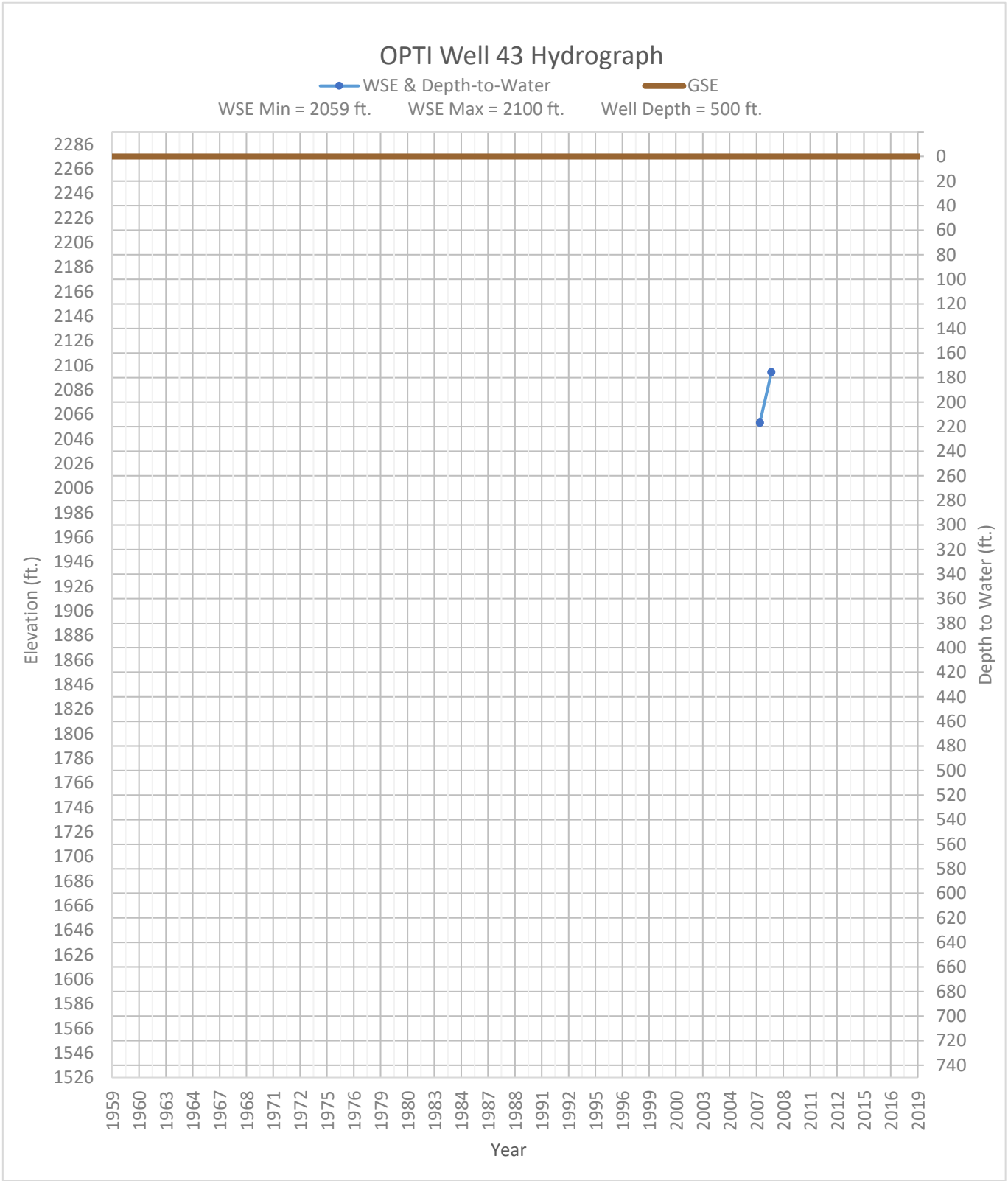
OPTI Well 43 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2059 ft.
WSE Max = 2100 ft.
Well Depth = 500 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2286
2266
2246
2226
2206
2186
2166
2146
2126
2106
2086
2066
2046
2026
2006
1986
1966
1946
1926
1906
1886
1866
1846
1826
1806
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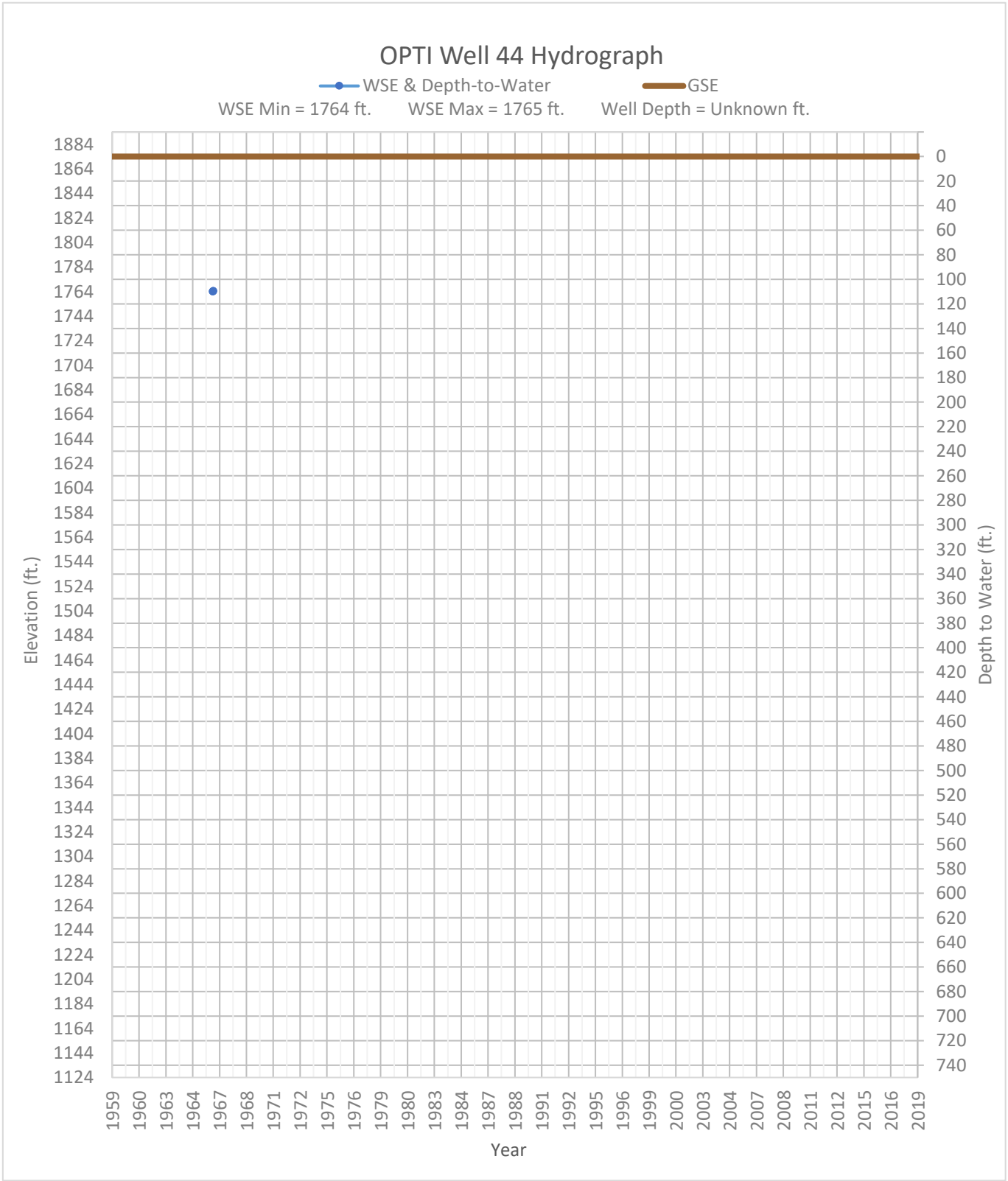
OPTI Well 44 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 1764 ft.
WSE Max = 1765 ft.
Well Depth = Unknown ft.
Elevation (ft.)
Depth to Water (ft.)
Year
1884
1864
1844
1824
1804
1784
1764
1744
1724
1704
1684
1664
1644
1624
1604
1584
1564
1544
1524
1504
1484
1464
1444
1424
1404
1384
1364
1344
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1304
1284
1264
1244
1224
1204
1184
1164
1144
1124
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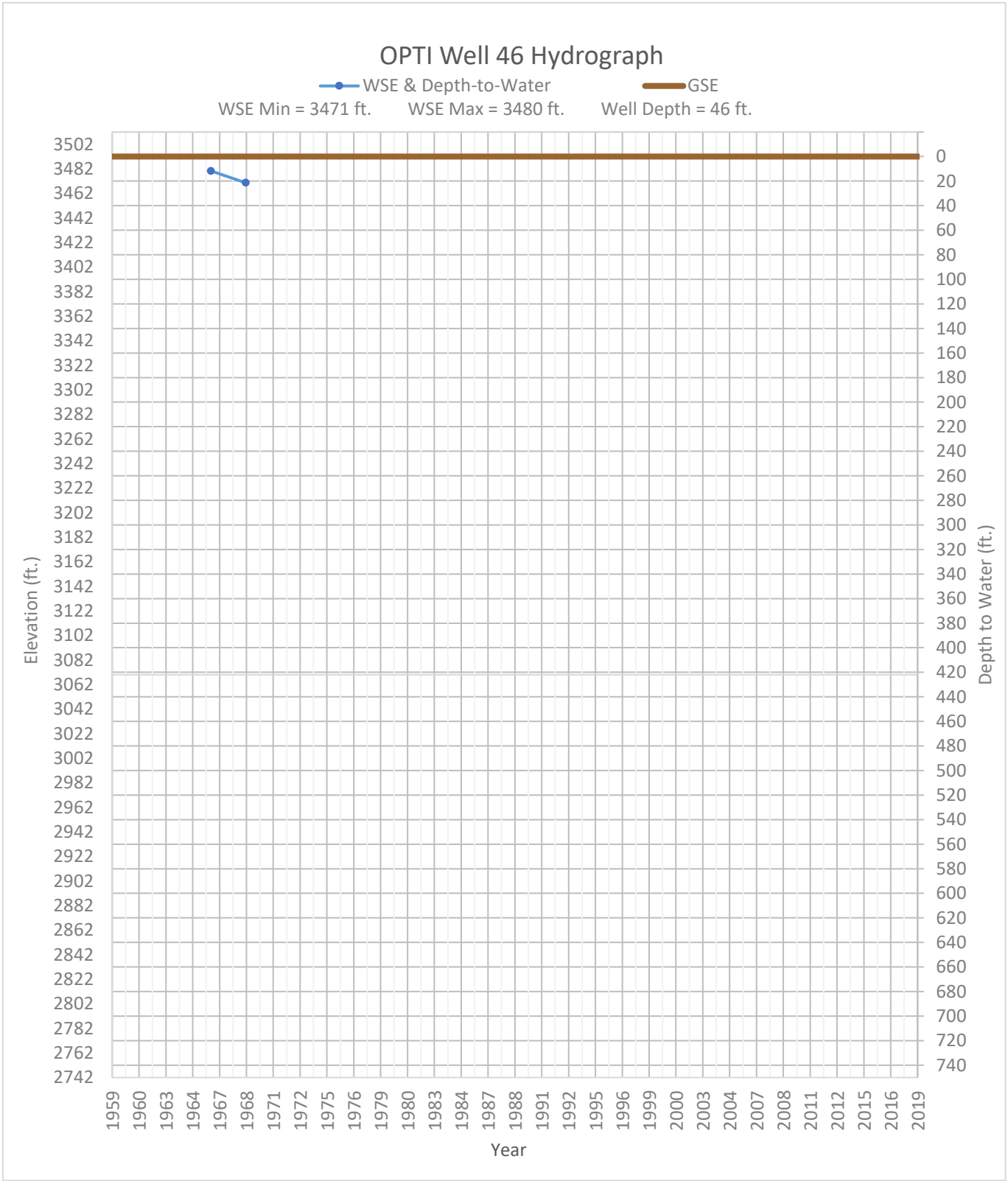
OPTI Well 46 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 3471 ft.
WSE Max = 3480 ft.
Well Depth = 46 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
3502
3482
3462
3442
3422
3402
3382
3362
3342
3322
3302
3282
3262
3242
3222
3202
3182
3162
3142
3122
3102
3082
3062
3042
3022
3002
2982
2962
2942
2922
2902
2882
2862
2842
2822
2802
2782
2762
2742
0
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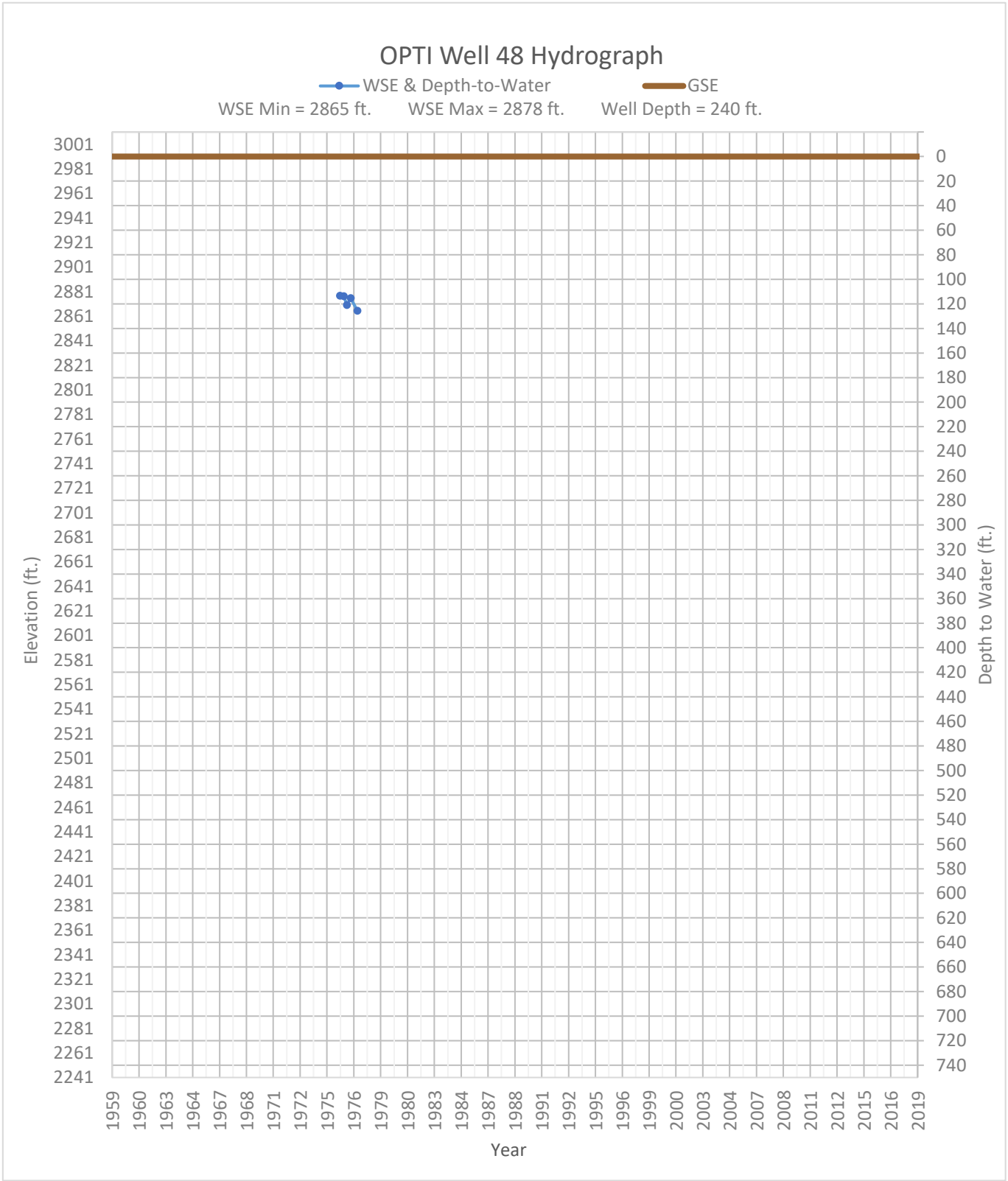
OPTI Well 48 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2865 ft.
WSE Max = 2878 ft.
Well Depth = 240 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
3001
2981
2961
2941
2921
2901
2881
2861
2841
2821
2801
2781
2761
2741
2721
2701
2681
2661
2641
2621
2601
2581
2561
2541
2521
2501
2481
2461
2441
2421
2401
2381
2361
2341
2321
2301
2281
2261
2241
0
20
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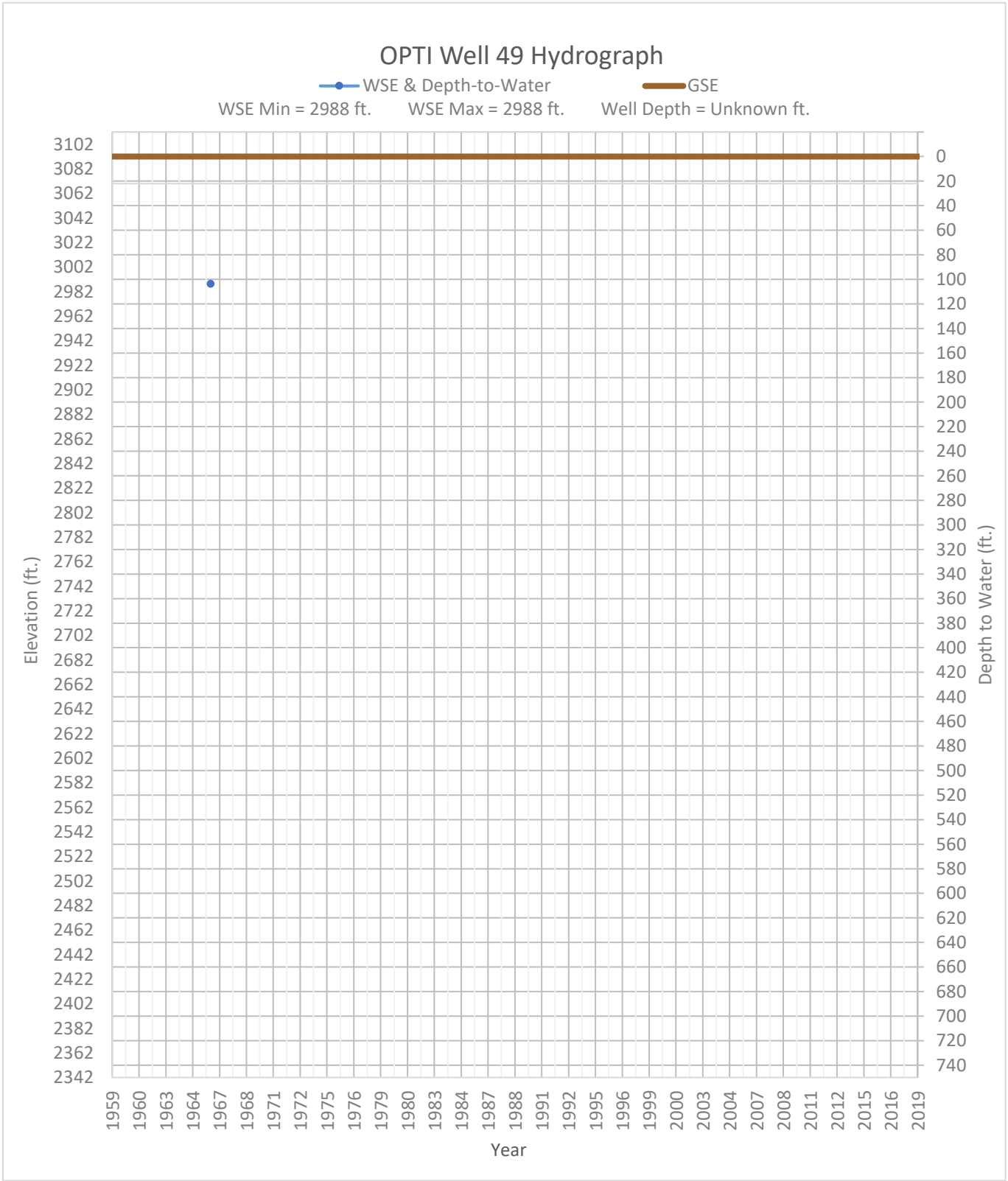
OPTI Well 49 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2988 ft.
WSE Max = 2988 ft.
Well Depth = Unknown ft.
Elevation (ft.)
Depth to Water (ft.)
Year
3102
3082
3062
3042
3022
3002
2982
2962
2942
2922
2902
2882
2862
2842
2822
2802
2782
2762
2742
2722
2702
2682
2662
2642
2622
2602
2582
2562
2542
2522
2502
2482
2462
2442
2422
2402
2382
2362
2342
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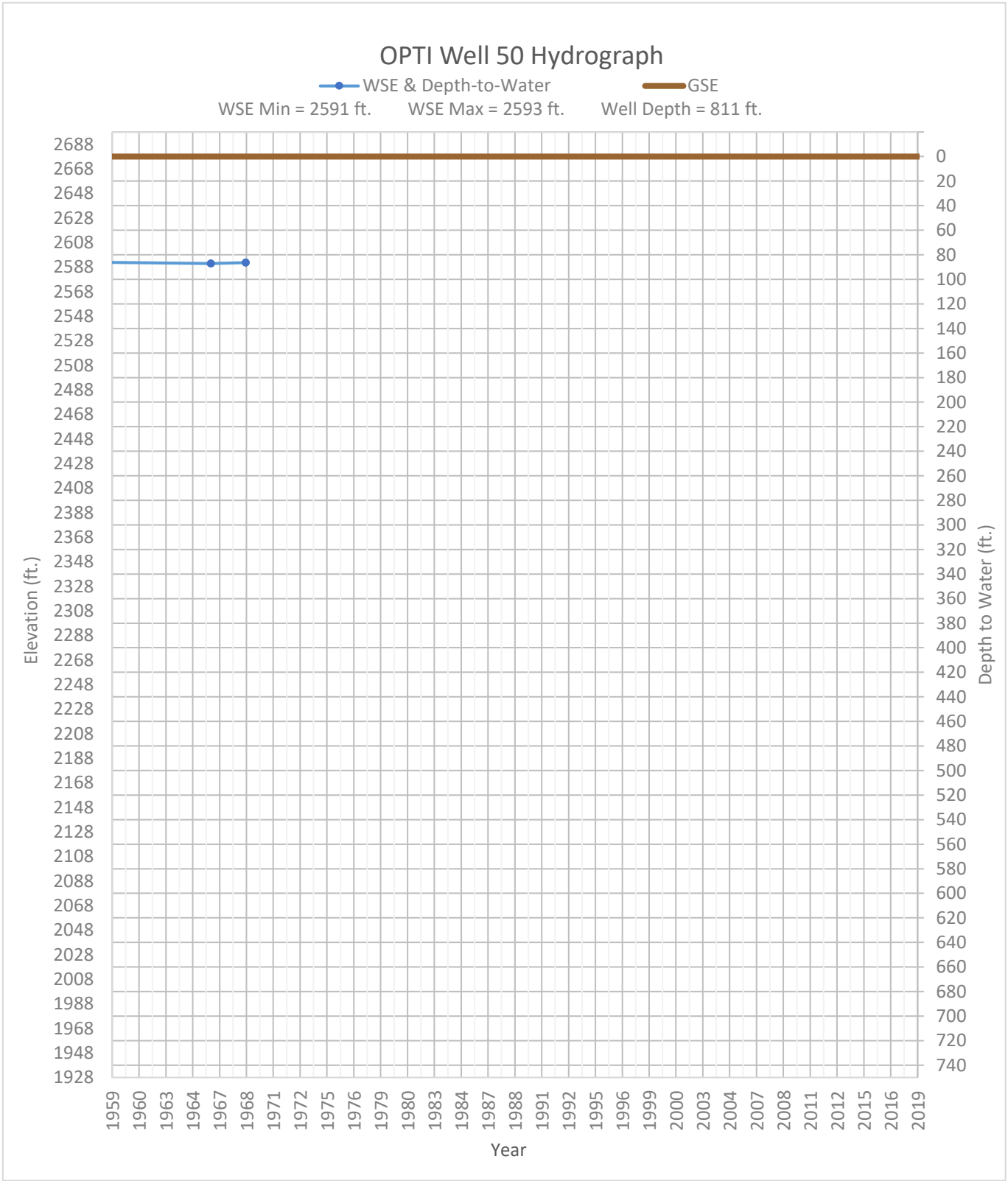
OPTI Well 50 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2591 ft.
WSE Max = 2593 ft.
Well Depth = 811 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2688
2668
2648
2628
2608
2588
2568
2548
2528
2508
2488
2468
2448
2428
2408
2388
2368
2348
2328
2308
2288
2268
2248
2228
2208
2188
2168
2148
2128
2108
2088
2068
2048
2028
2008
1988
1968
1948
1928
0
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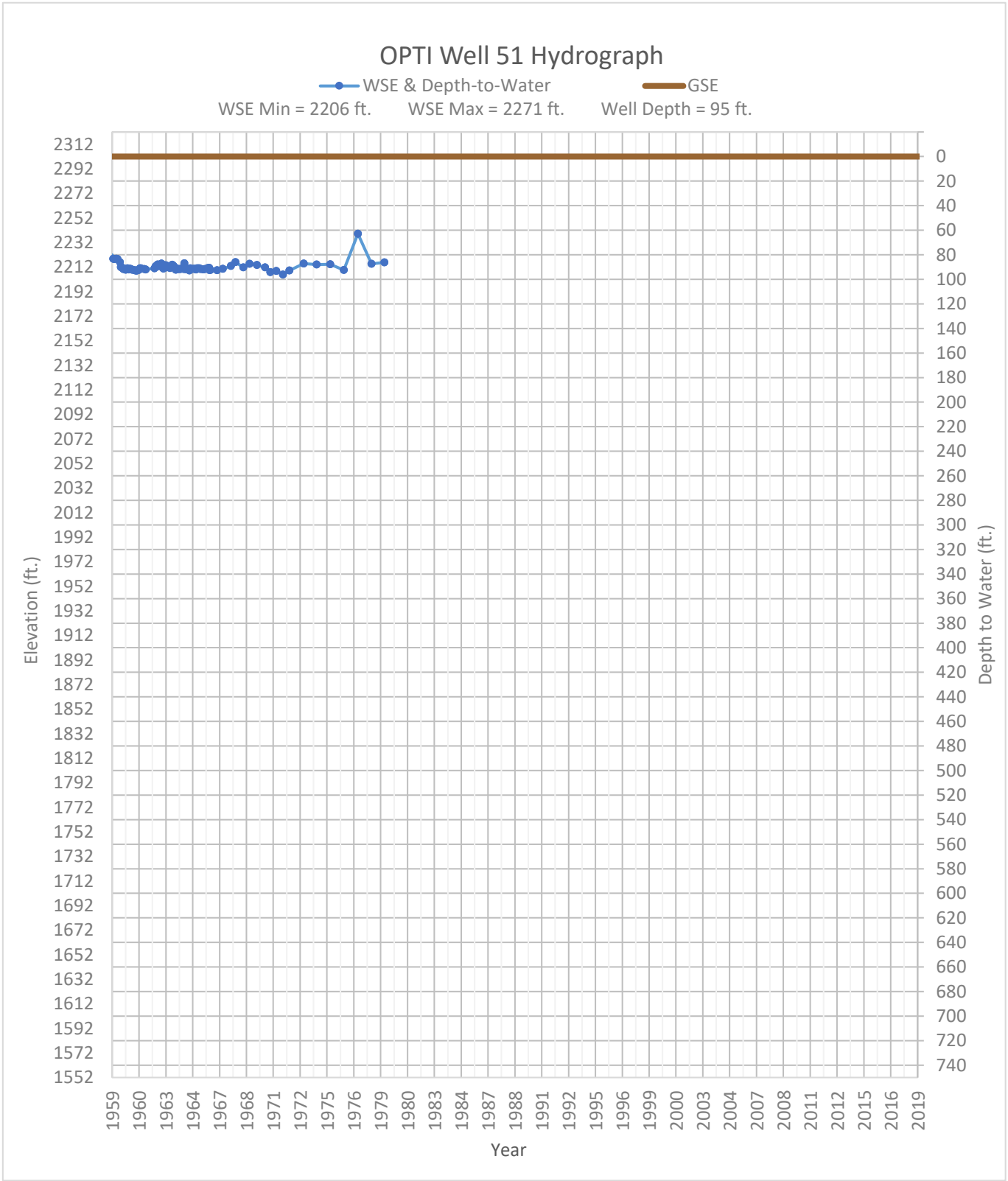
OPTI Well 51 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2206 ft.
WSE Max = 2271 ft.
Well Depth = 95 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2312
2292
2272
2252
2232
2212
2192
2172
2152
2132
2112
2092
2072
2052
2032
2012
1992
1972
1952
1932
1912
1892
1872
1852
1832
1812
1792
1772
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1692
1672
1652
1632
1612
1592
1572
1552
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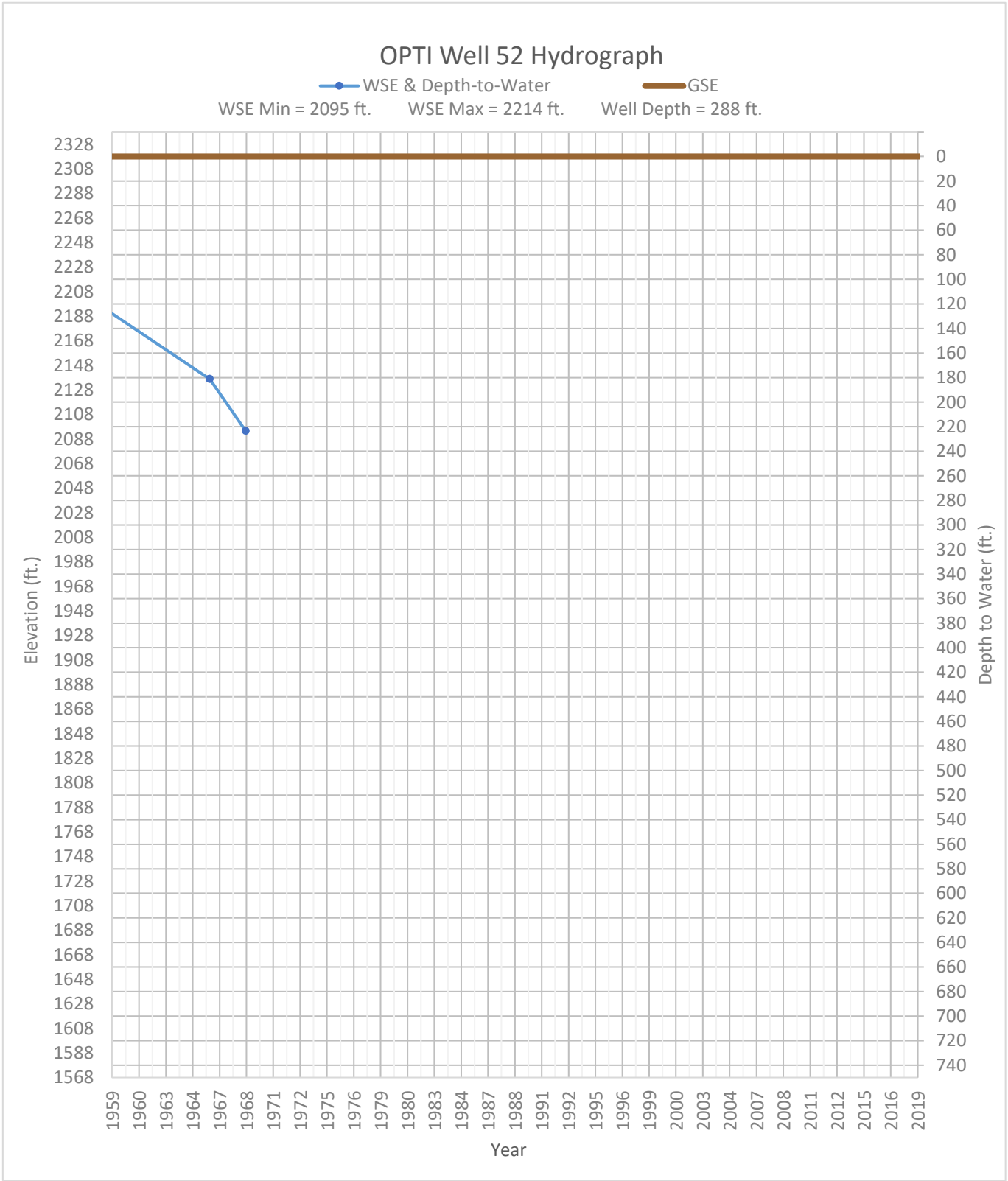
OPTI Well 52 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2095 ft.
WSE Max = 2214 ft.
Well Depth = 288 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2328
2308
2288
2268
2248
2228
2208
2188
2168
2148
2128
2108
2088
2068
2048
2028
2008
1988
1968
1948
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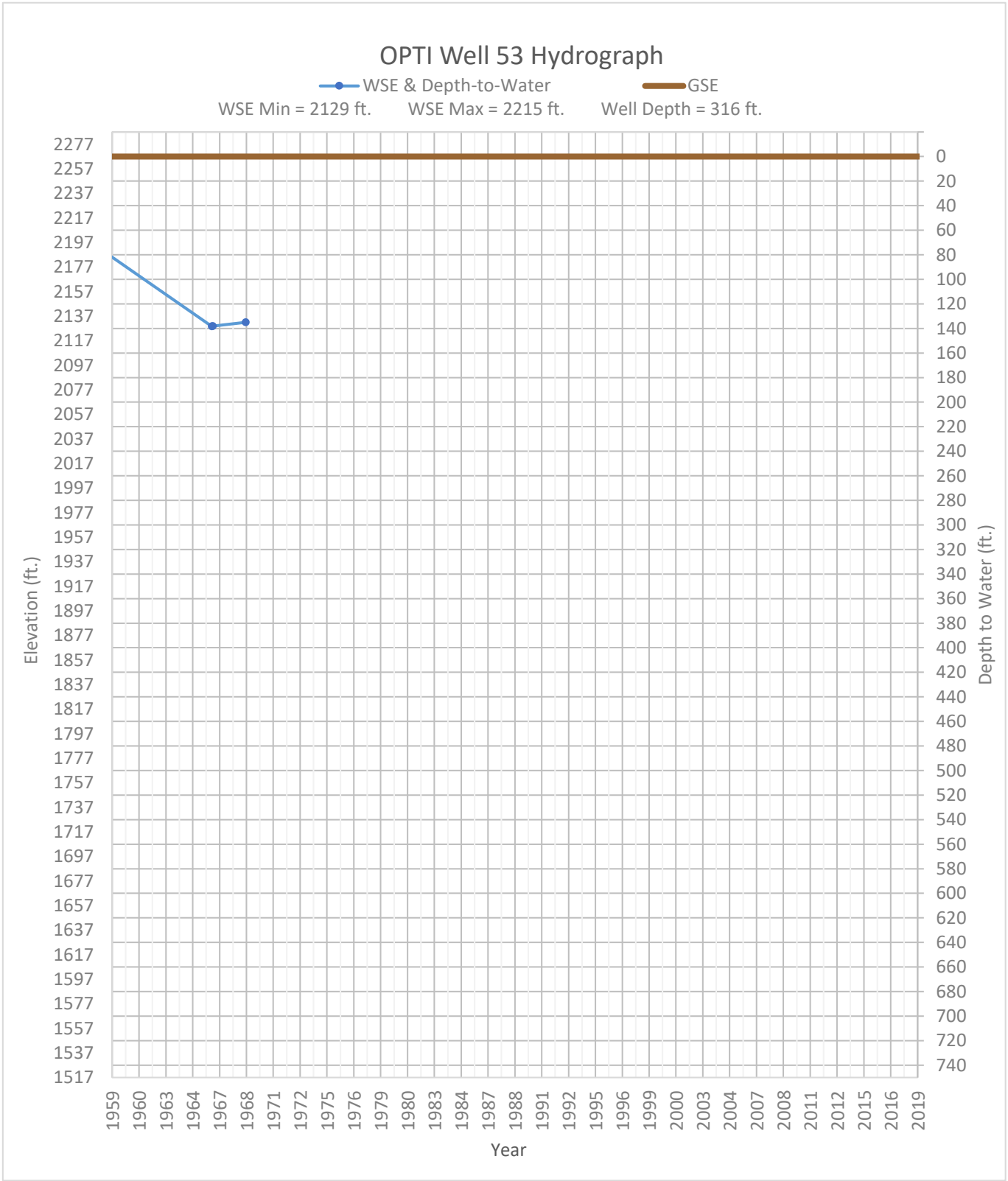
OPTI Well 53 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2129 ft.
WSE Max = 2215 ft.
Well Depth = 316 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2277
2257
2237
2217
2197
2177
2157
2137
2117
2097
2077
2057
2037
2017
1997
1977
1957
1937
1917
1897
1877
1857
1837
1817
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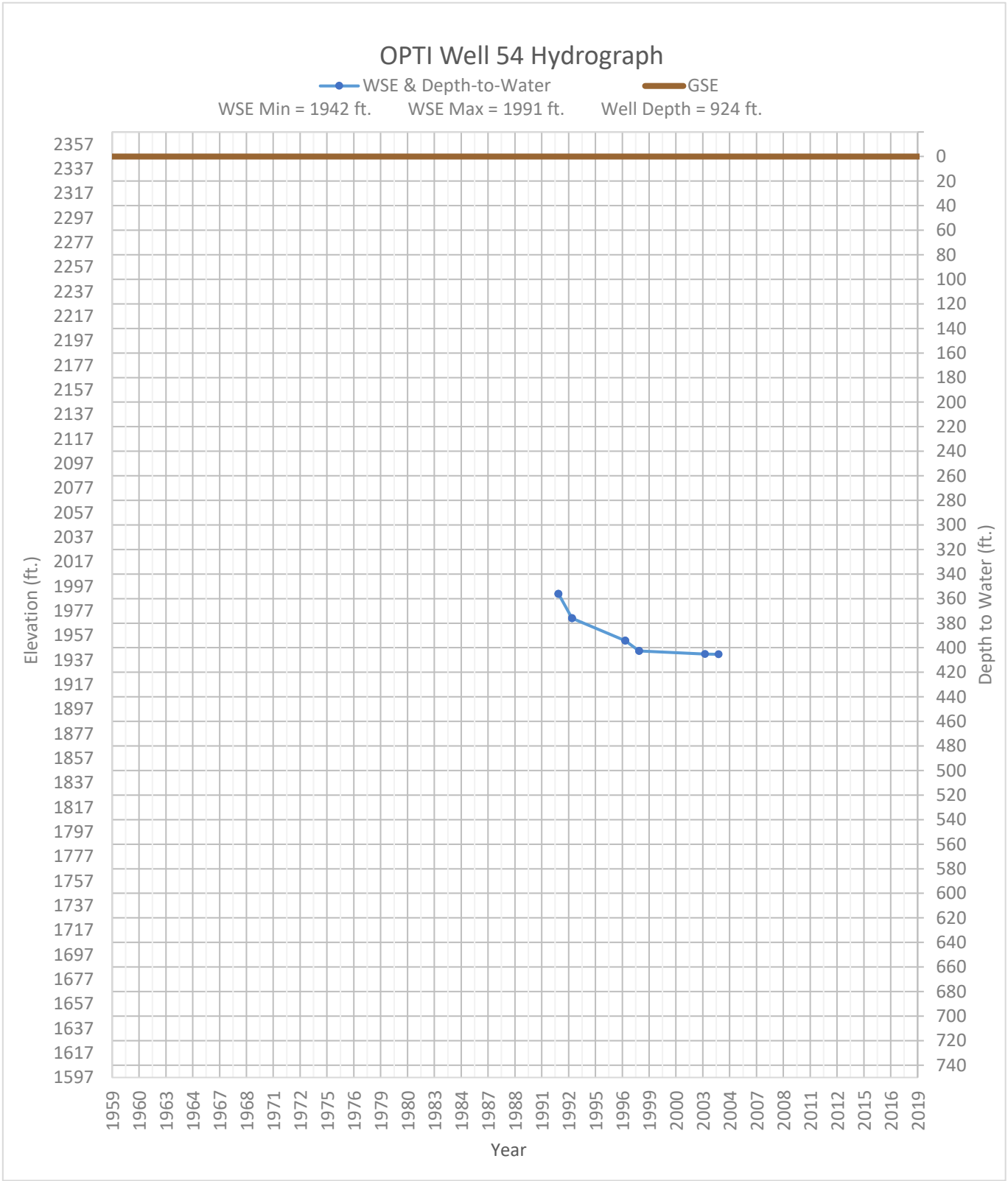
OPTI Well 54 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 1942 ft.
WSE Max = 1991 ft.
Well Depth = 924 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2357
2337
2317
2297
2277
2257
2237
2217
2197
2177
2157
2137
2117
2097
2077
2057
2037
2017
1997
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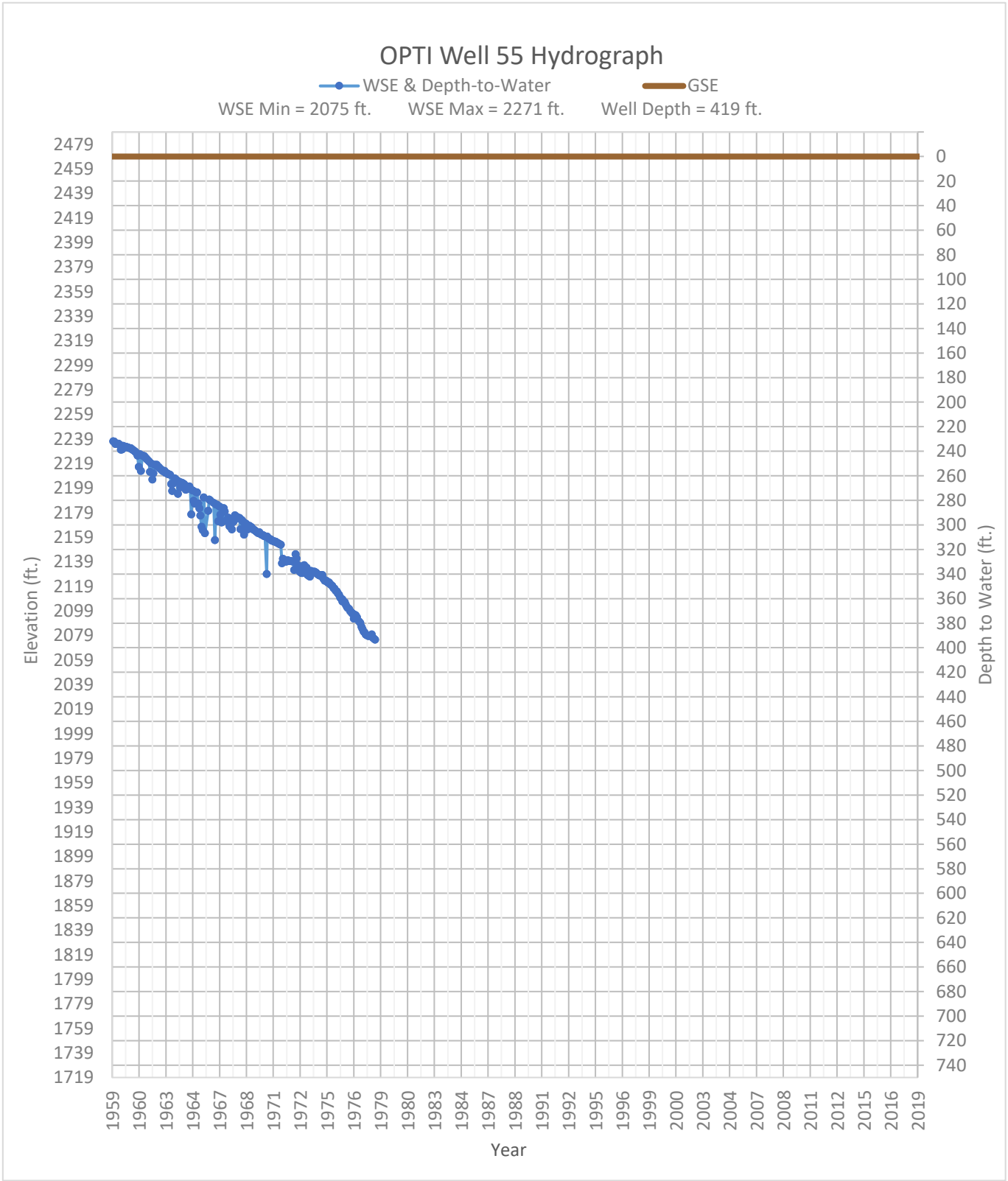
OPTI Well 55 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2075 ft.
WSE Max = 2271 ft.
Well Depth = 419 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2479
2459
2439
2419
2399
2379
2359
2339
2319
2299
2279
2259
2239
2219
2199
2179
2159
2139
2119
2099
2079
2059
2039
2019
1999
1979
1959
1939
1919
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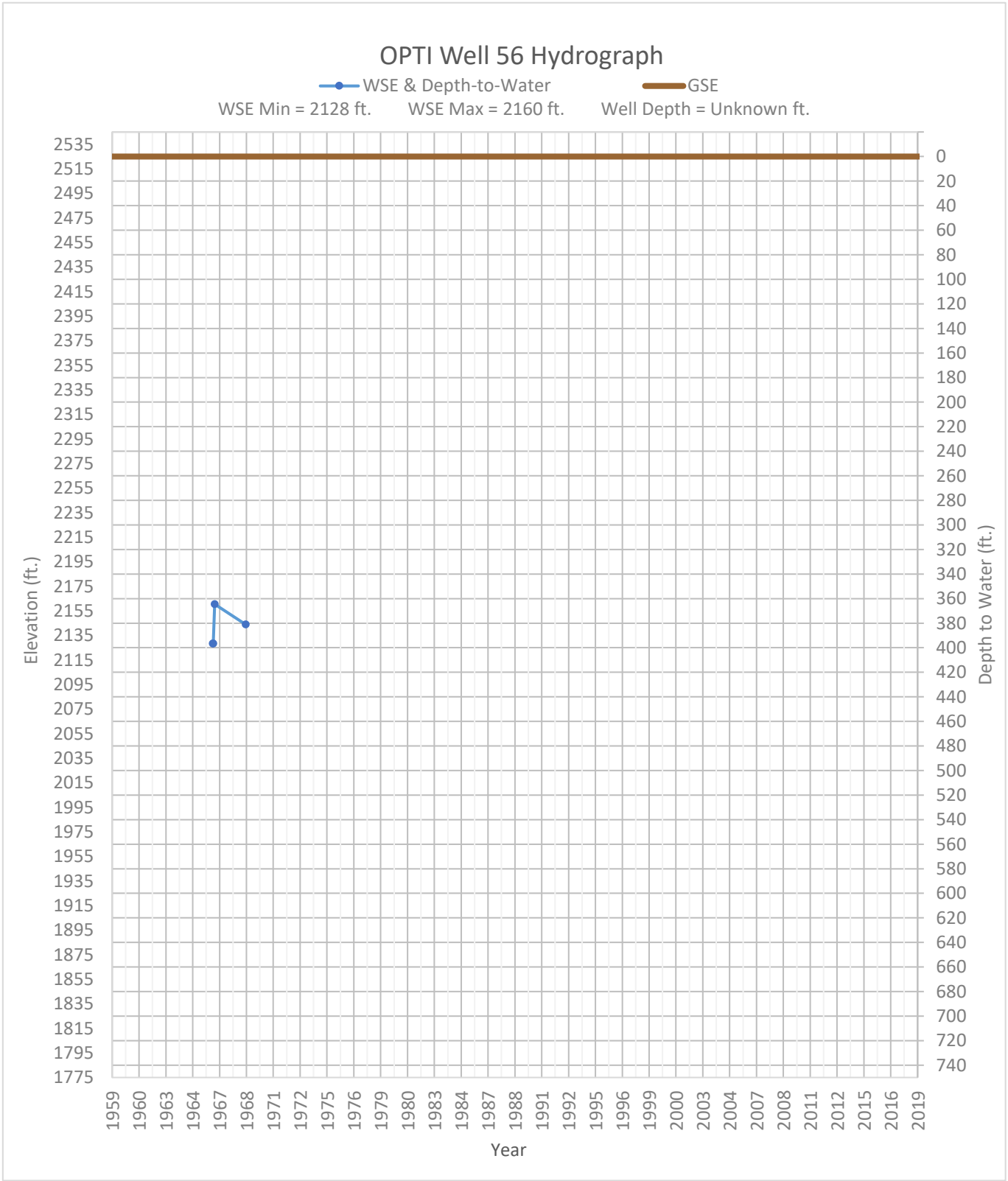
OPTI Well 56 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2128 ft.
WSE Max = 2160 ft.
Well Depth = Unknown ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2535
2515
2495
2475
2455
2435
2415
2395
2375
2355
2335
2315
2295
2275
2255
2235
2215
2195
2175
2155
2135
2115
2095
2075
2055
2035
2015
1995
1975
1955
1935
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1895
1875
1855
1835
1815
1795
1775
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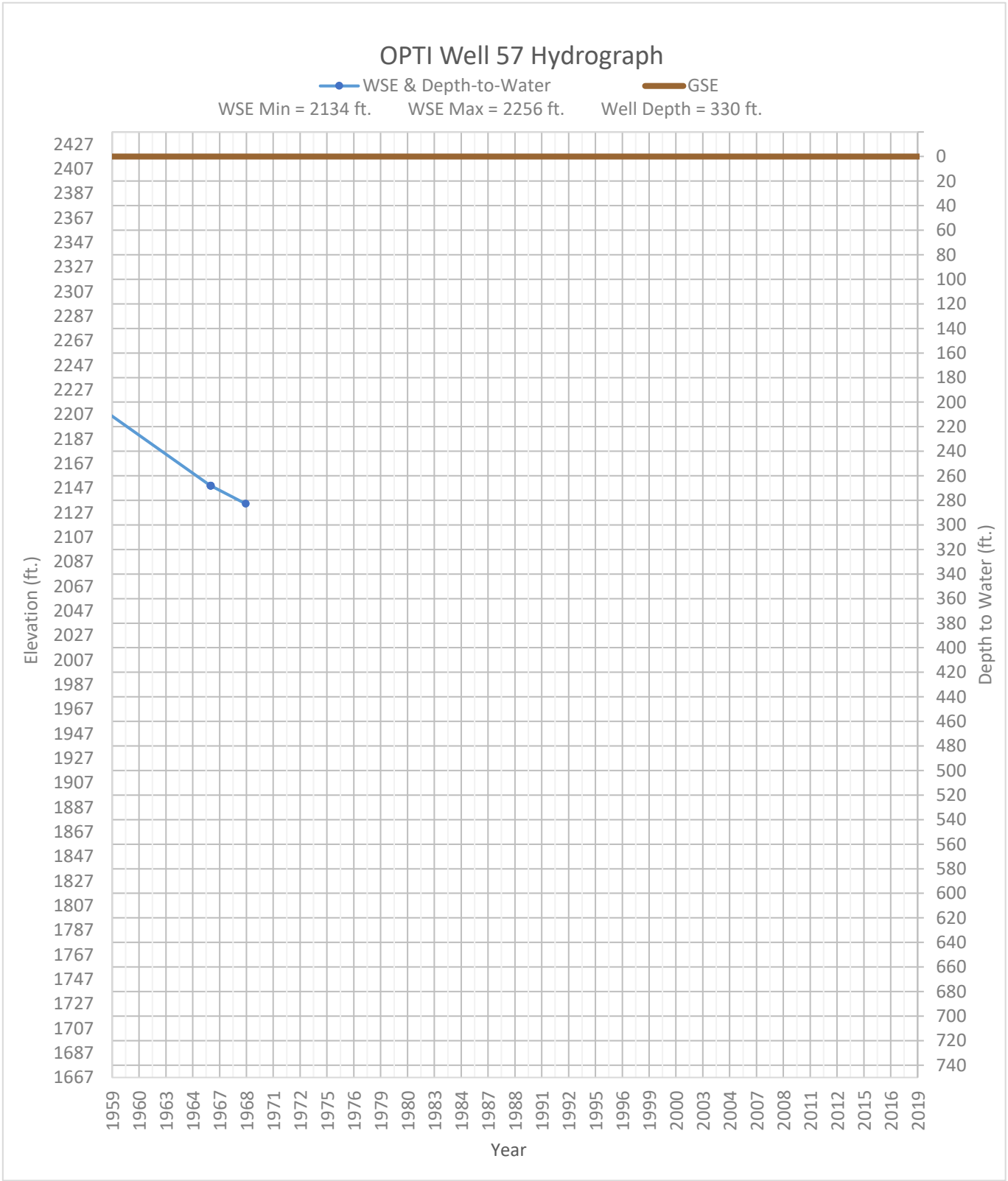
OPTI Well 57 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2134 ft.
WSE Max = 2256 ft.
Well Depth = 330 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2427
2407
2387
2367
2347
2327
2307
2287
2267
2247
2227
2207
2187
2167
2147
2127
2107
2087
2067
2047
2027
2007
1987
1967
1947
1927
1907
1887
1867
1847
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1807
1787
1767
1747
1727
1707
1687
1667
0
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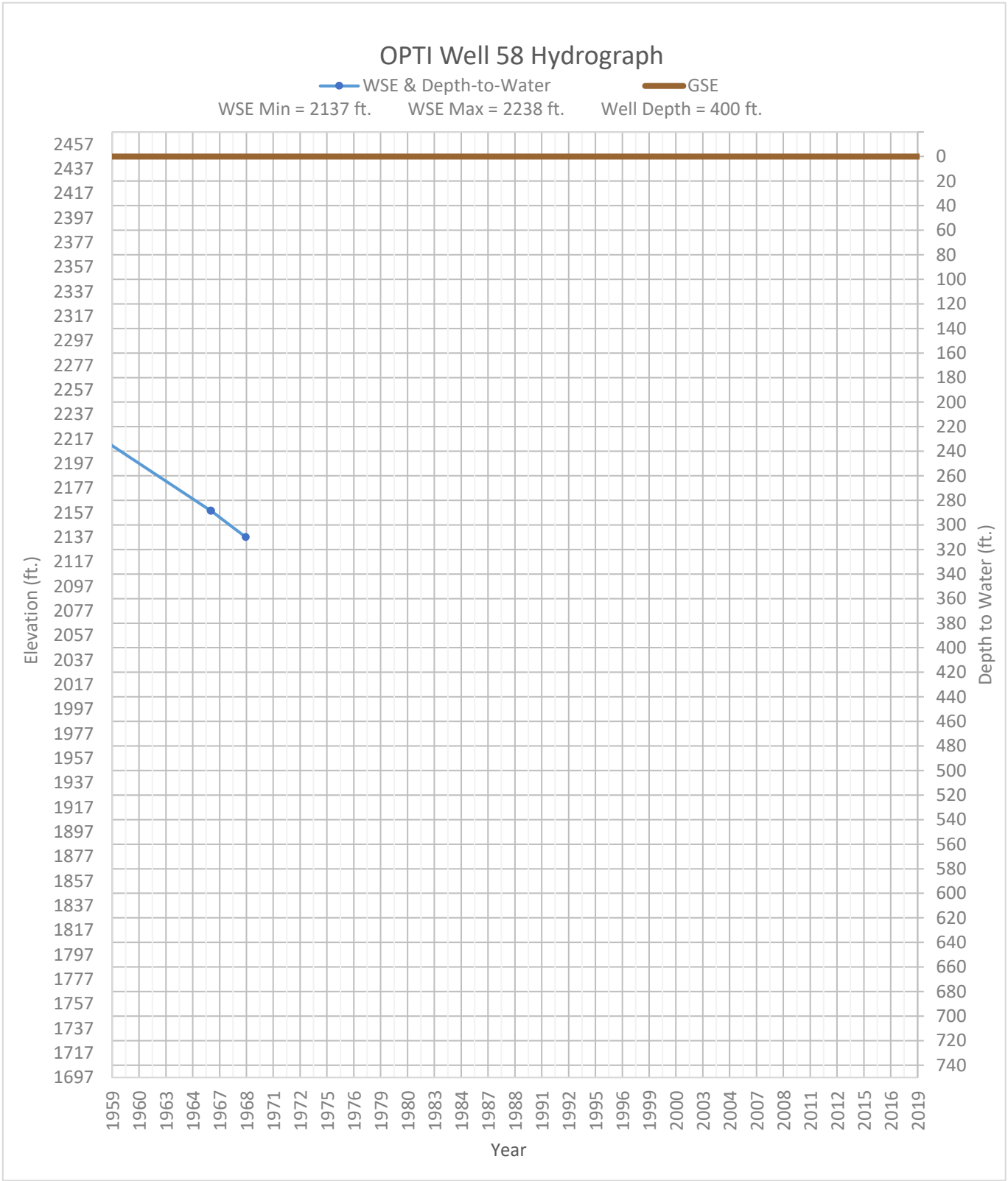
OPTI Well 58 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2137 ft.
WSE Max = 2238 ft.
Well Depth = 400 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2457
2437
2417
2397
2377
2357
2337
2317
2297
2277
2257
2237
2217
2197
2177
2157
2137
2117
2097
2077
2057
2037
2017
1997
1977
1957
1937
1917
1897
1877
1857
1837
1817
1797
1777
1757
1737
1717
1697
0
20
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80
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2016
2019


OPTI Well 59 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2087 ft.
WSE Max = 2095 ft.
Well Depth = 65 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2151
2131
2111
2091
2071
2051
2031
2011
1991
1971
1951
1931
1911
1891
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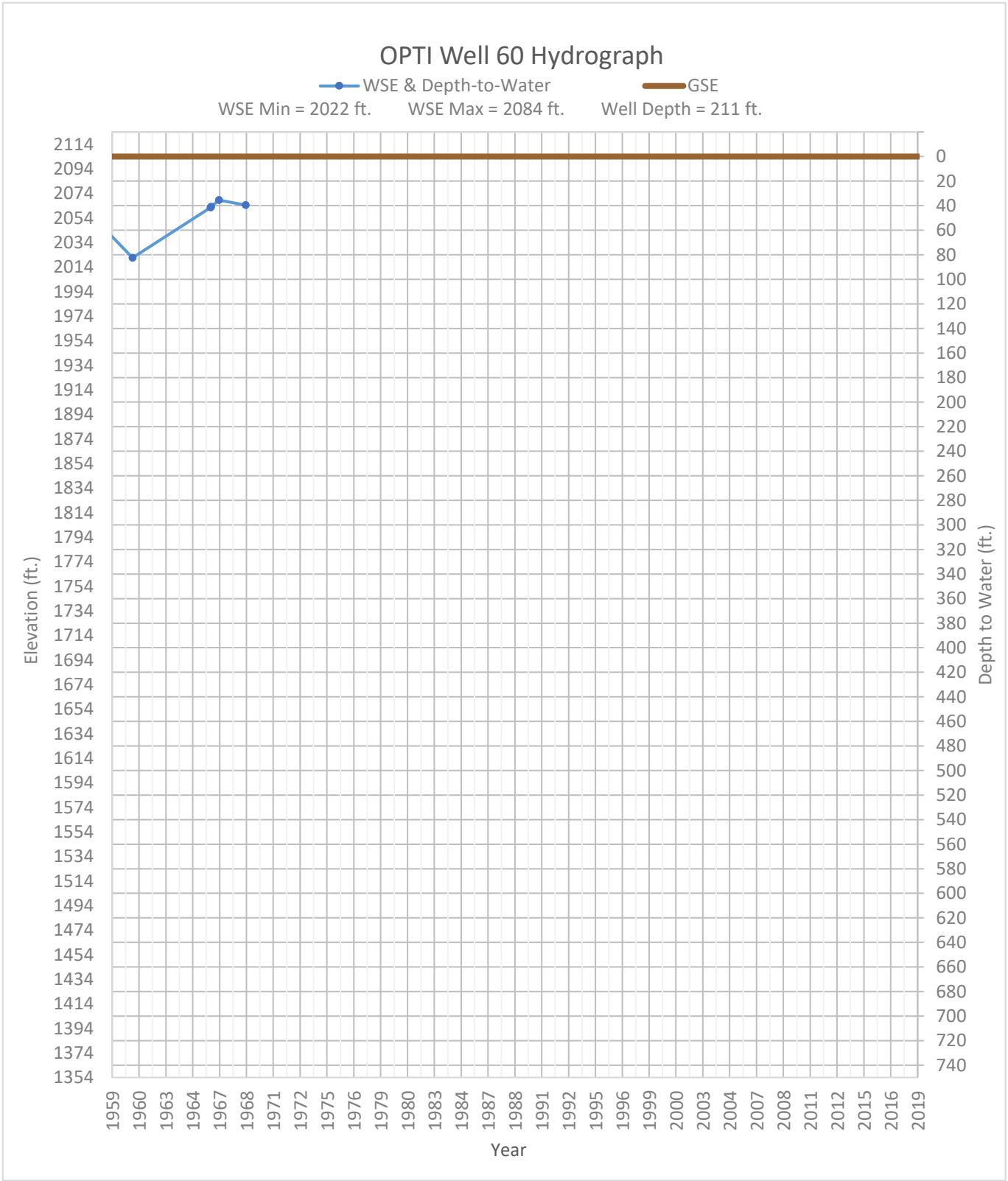
OPTI Well 60 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2022 ft.
WSE Max = 2084 ft.
Well Depth = 211 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2114
2094
2074
2054
2034
2014
1994
1974
1954
1934
1914
1894
1874
1854
1834
1814
1794
1774
1754
1734
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1674
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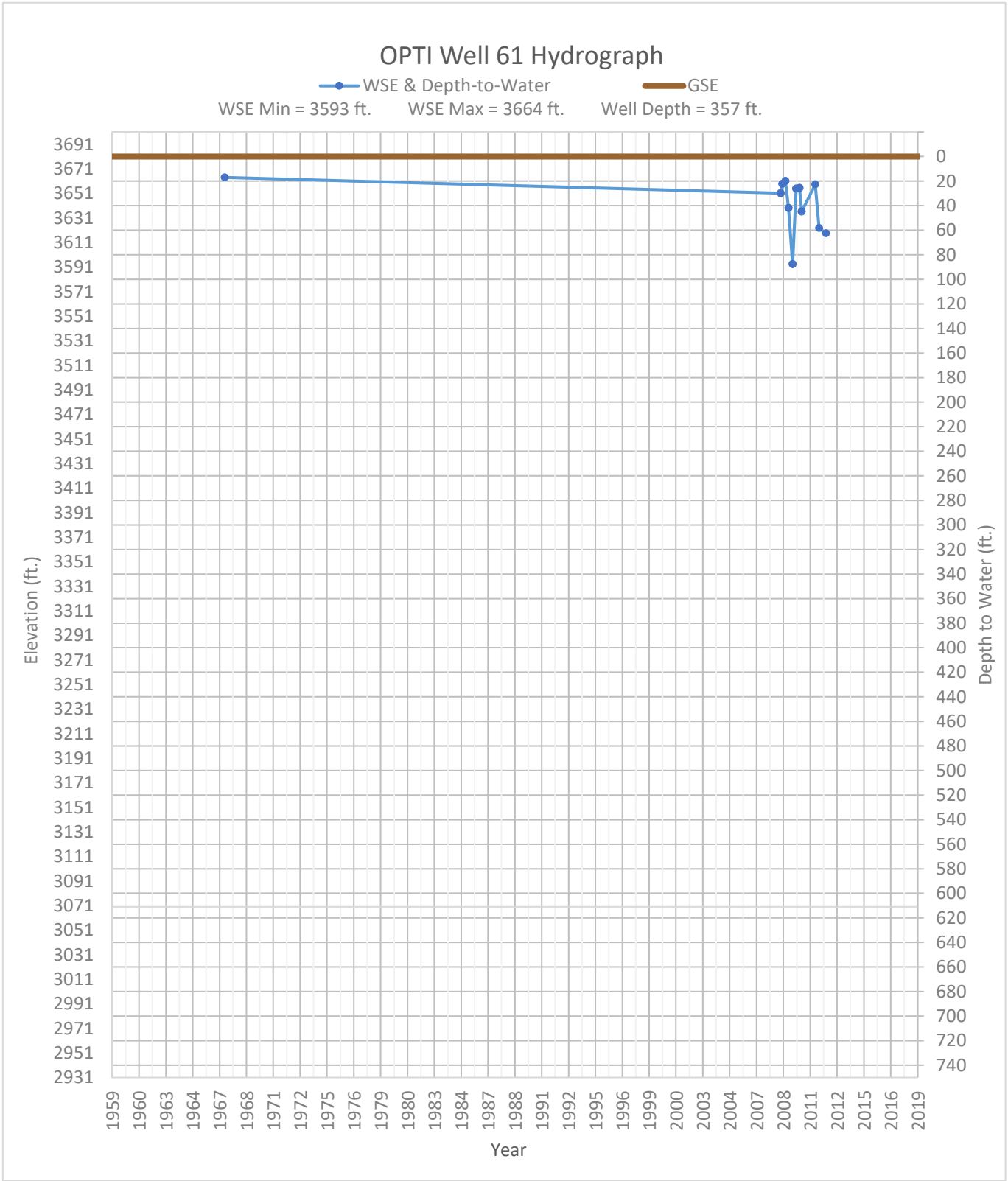
OPTI Well 61 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 3593 ft.
WSE Max = 3664 ft.
Well Depth = 357 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
3691
3671
3651
3631
3611
3591
3571
3551
3531
3511
3491
3471
3451
3431
3411
3391
3371
3351
3331
3311
3291
3271
3251
3231
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3191
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3131
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2991
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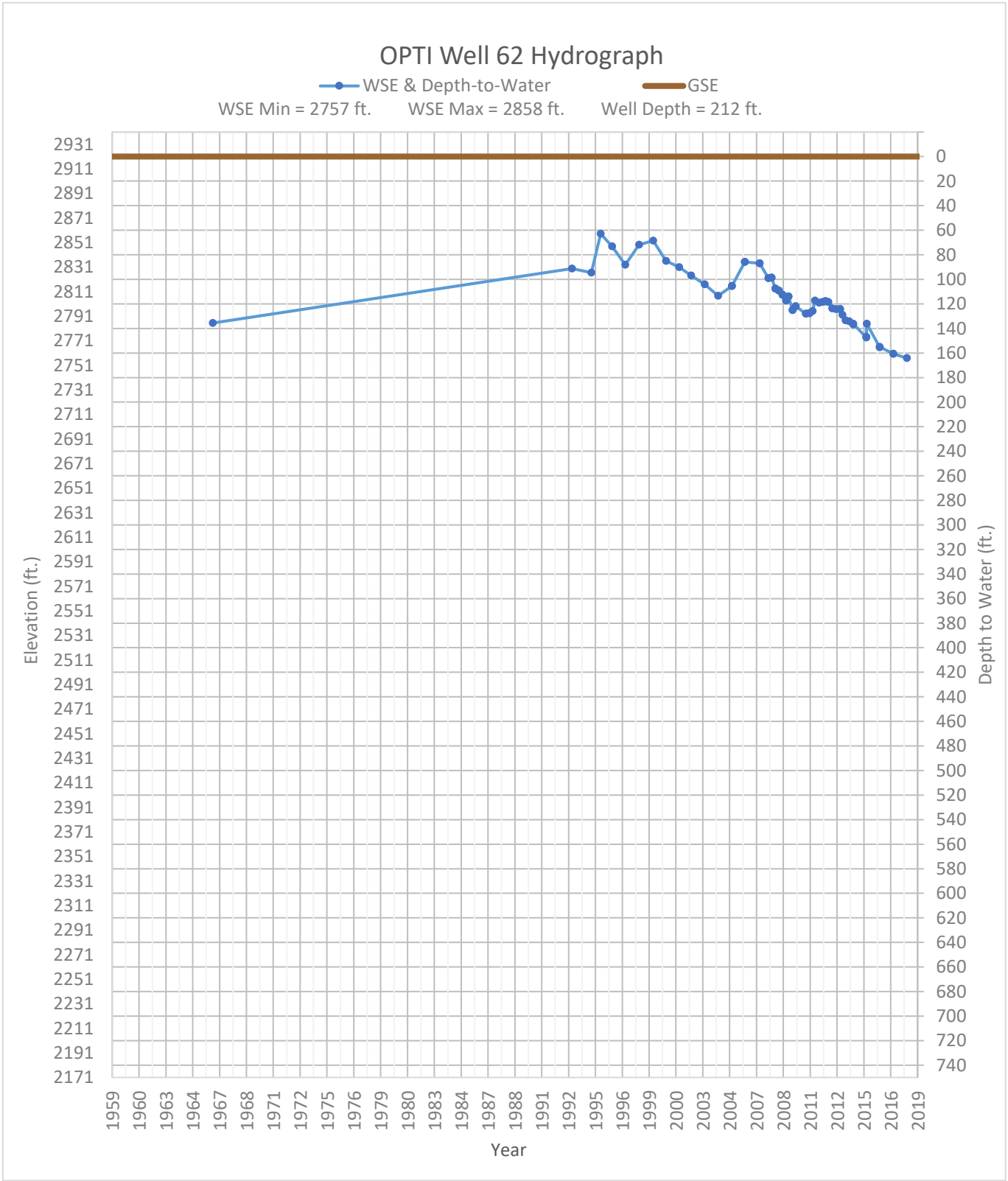
OPTI Well 62 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2757 ft.
WSE Max = 2858 ft.
Well Depth = 212 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2931
2911
2891
2871
2851
2831
2811
2791
2771
2751
2731
2711
2691
2671
2651
2631
2611
2591
2571
2551
2531
2511
2491
2471
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2331
2311
2291
2271
2251
2231
2211
2191
2171
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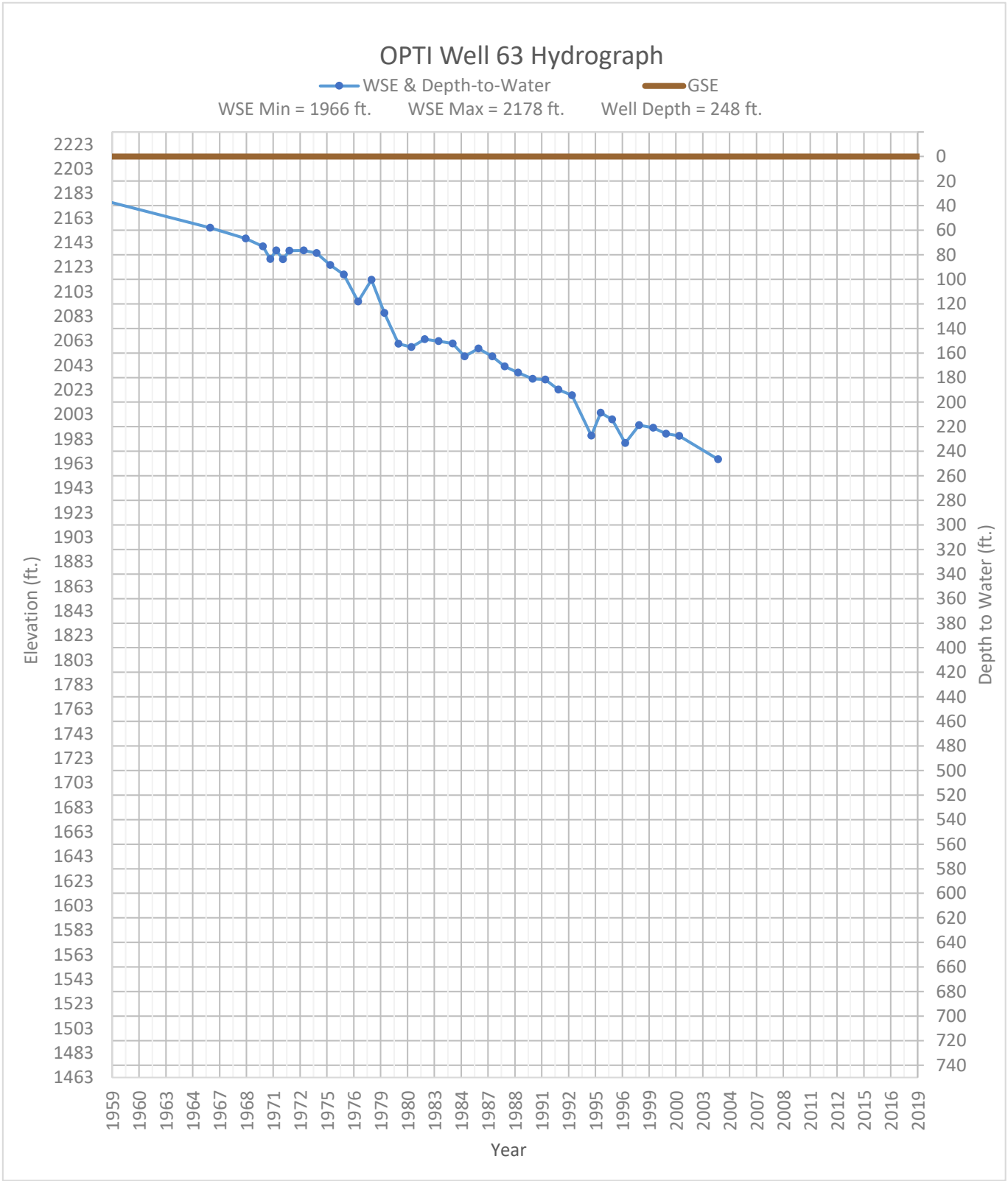
OPTI Well 63 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 1966 ft.
WSE Max = 2178 ft.
Well Depth = 248 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2223
2203
2183
2163
2143
2123
2103
2083
2063
2043
2023
2003
1983
1963
1943
1923
1903
1883
1863
1843
1823
1803
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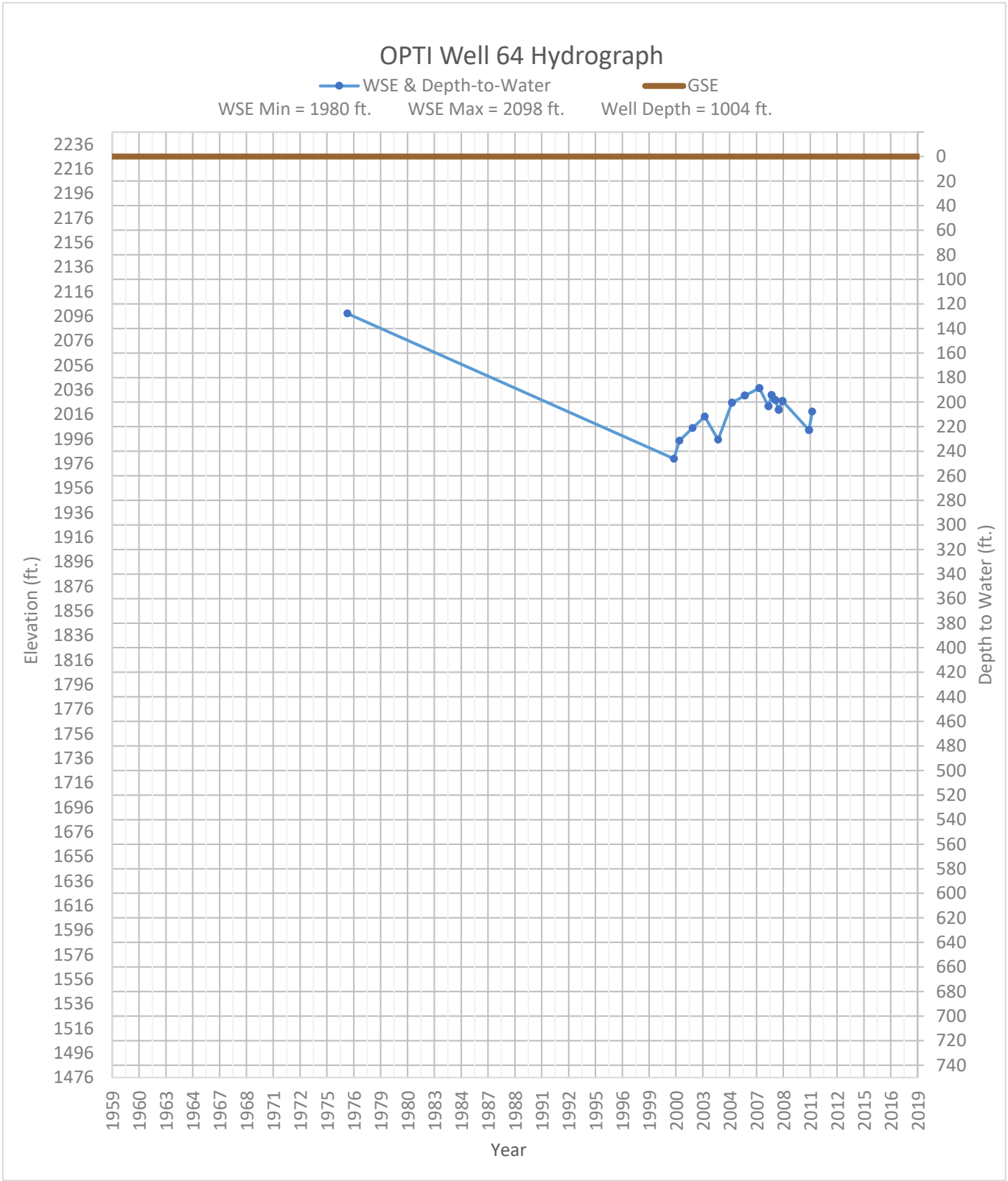
OPTI Well 64 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 1980 ft.
WSE Max = 2098 ft.
Well Depth = 1004 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2236
2216
2196
2176
2156
2136
2116
2096
2076
2056
2036
2016
1996
1976
1956
1936
1916
1896
1876
1856
1836
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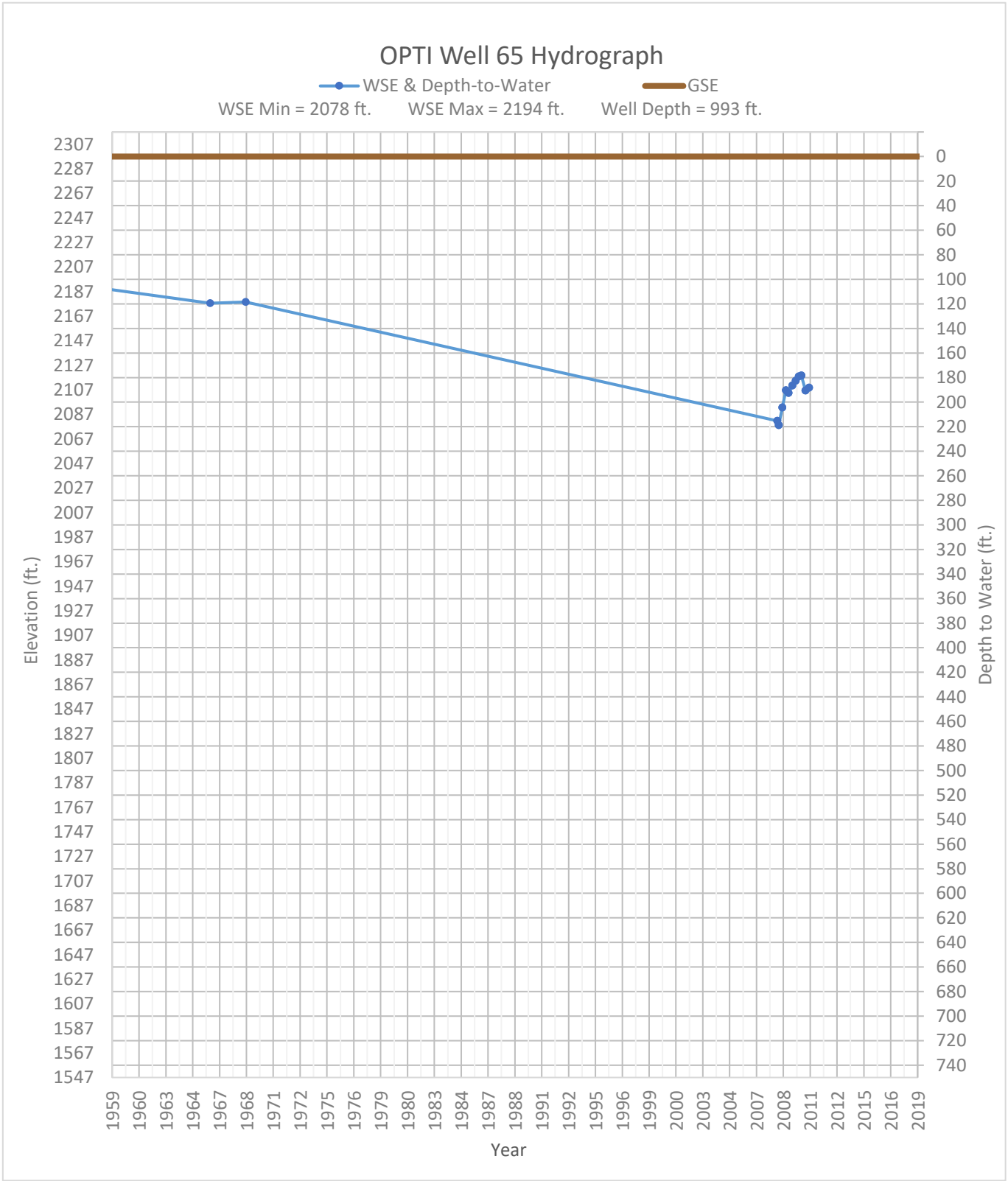
OPTI Well 65 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2078 ft.
WSE Max = 2194 ft.
Well Depth = 993 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2307
2287
2267
2247
2227
2207
2187
2167
2147
2127
2107
2087
2067
2047
2027
2007
1987
1967
1947
1927
1907
1887
1867
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1627
1607
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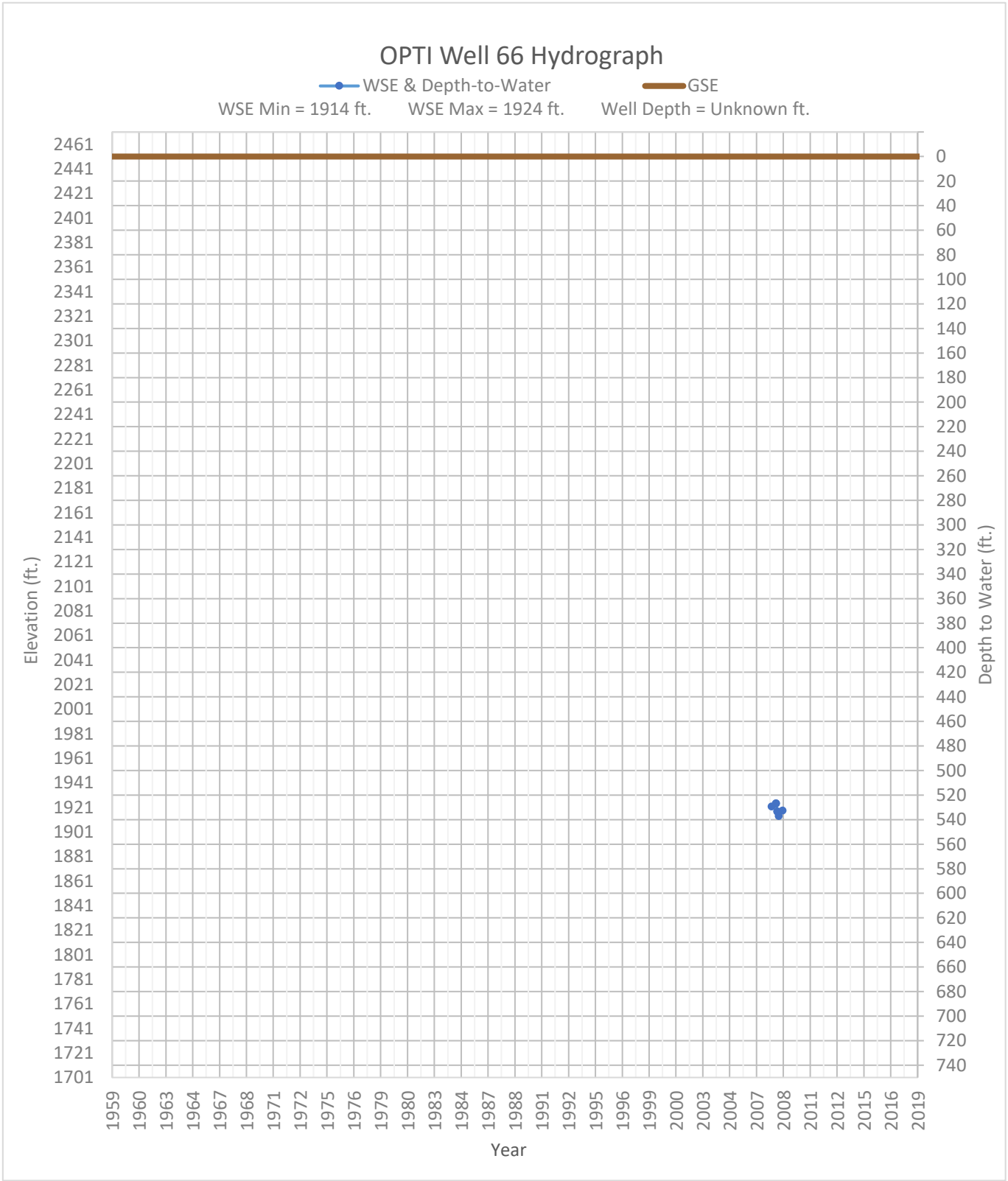
OPTI Well 66 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 1914 ft.
WSE Max = 1924 ft.
Well Depth = Unknown ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2461
2441
2421
2401
2381
2361
2341
2321
2301
2281
2261
2241
2221
2201
2181
2161
2141
2121
2101
2081
2061
2041
2021
2001
1981
1961
1941
1921
1901
1881
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1801
1781
1761
1741
1721
1701
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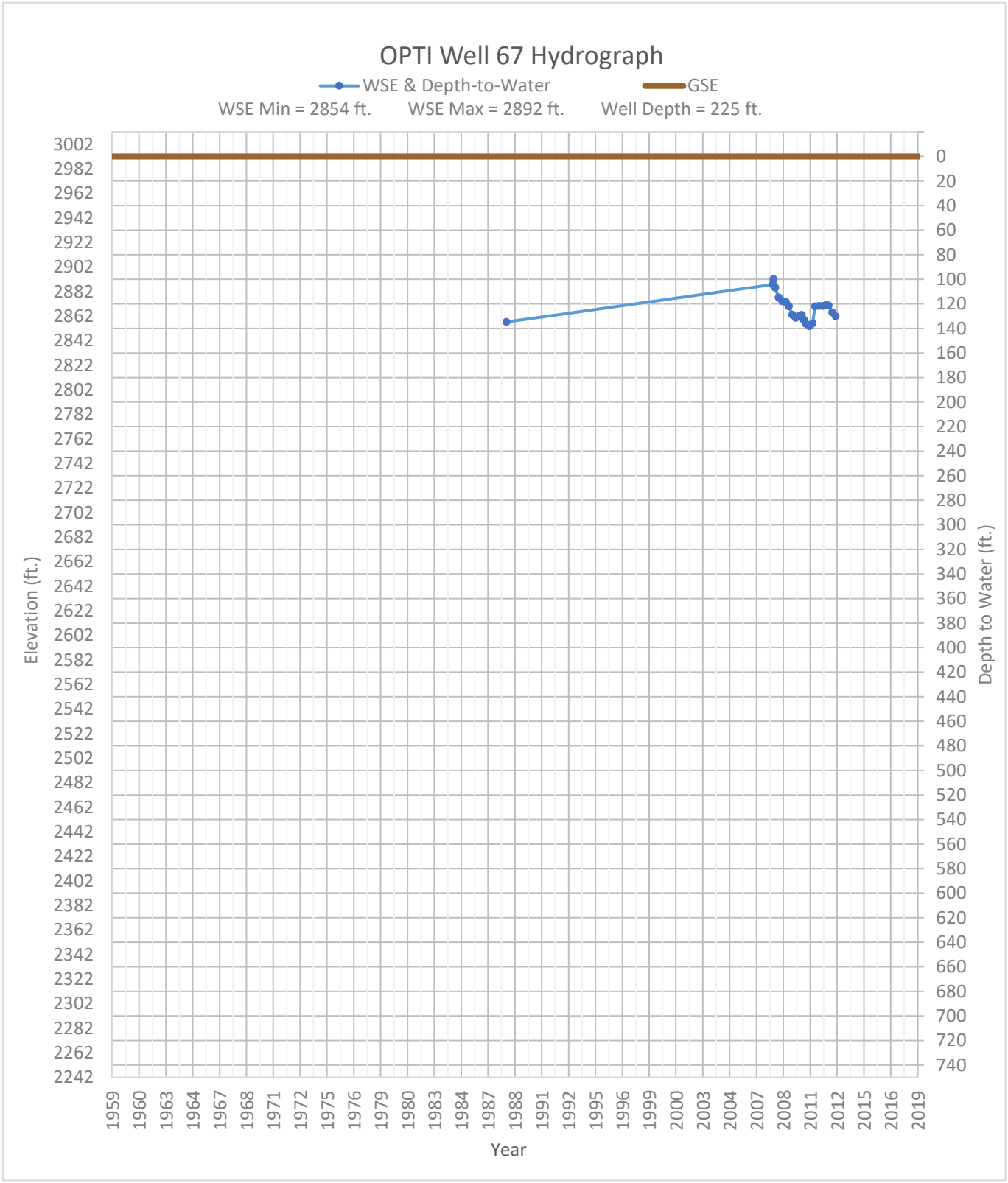
OPTI Well 67 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2854 ft.
WSE Max = 2892 ft.
Well Depth = 225 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
3002
2982
2962
2942
2922
2902
2882
2862
2842
2822
2802
2782
2762
2742
2722
2702
2682
2662
2642
2622
2602
2582
2562
2542
2522
2502
2482
2462
2442
2422
2402
2382
2362
2342
2322
2302
2282
2262
2242
0
20
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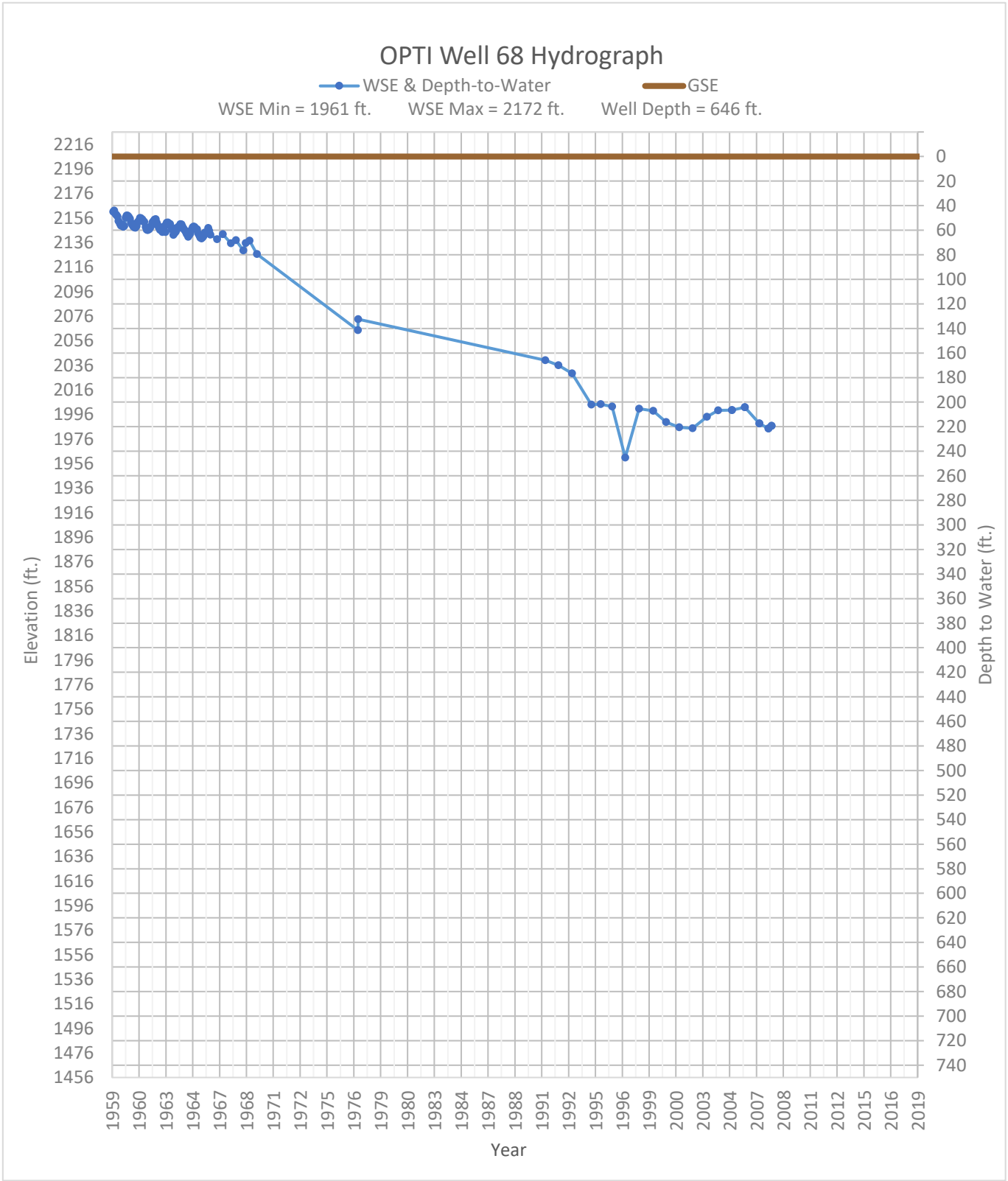
OPTI Well 68 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 1961 ft.
WSE Max = 2172 ft.
Well Depth = 646 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2216
2196
2176
2156
2136
2116
2096
2076
2056
2036
2016
1996
1976
1956
1936
1916
1896
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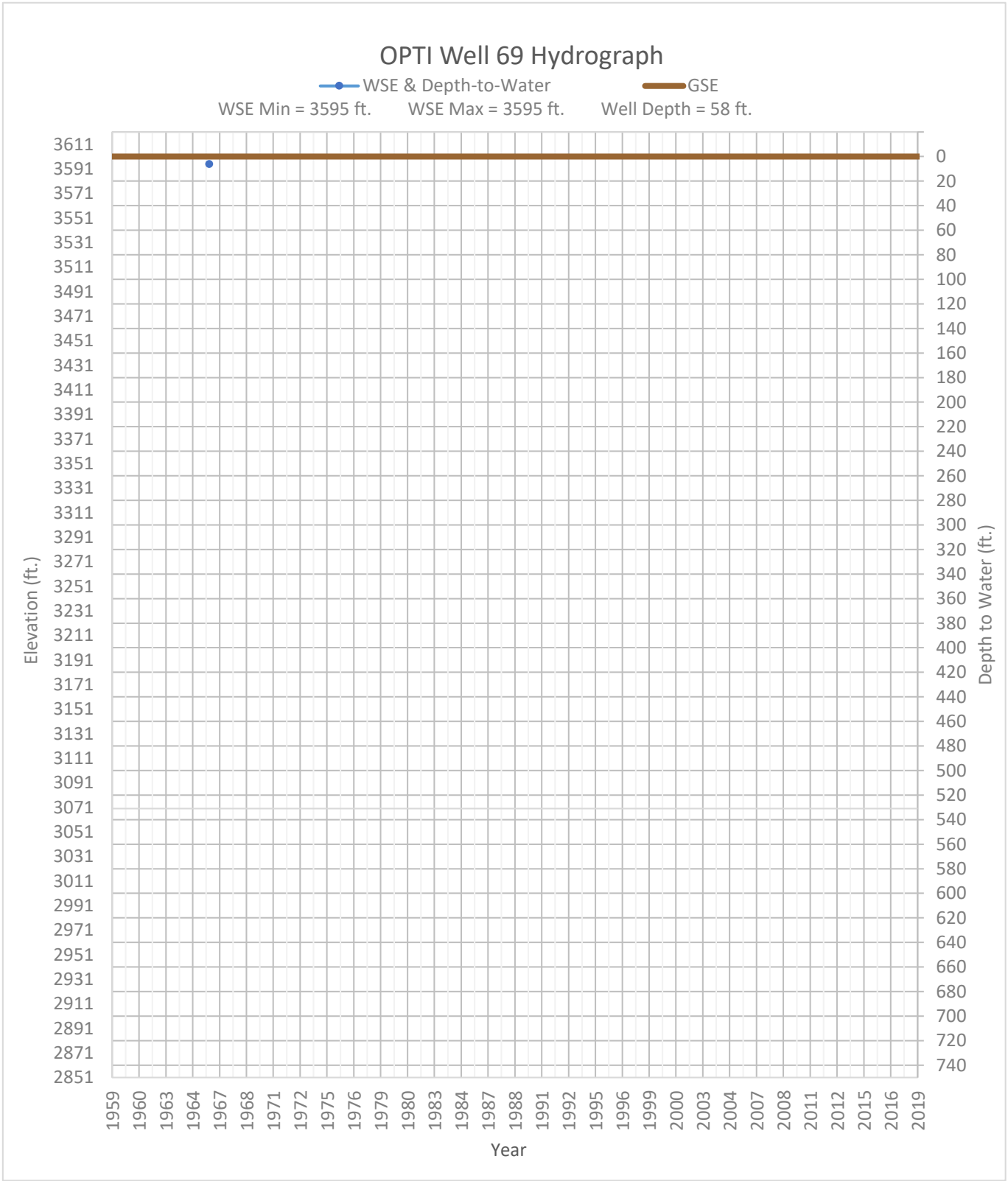
OPTI Well 69 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 3595 ft.
WSE Max = 3595 ft.
Well Depth = 58 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
3611
3591
3571
3551
3531
3511
3491
3471
3451
3431
3411
3391
3371
3351
3331
3311
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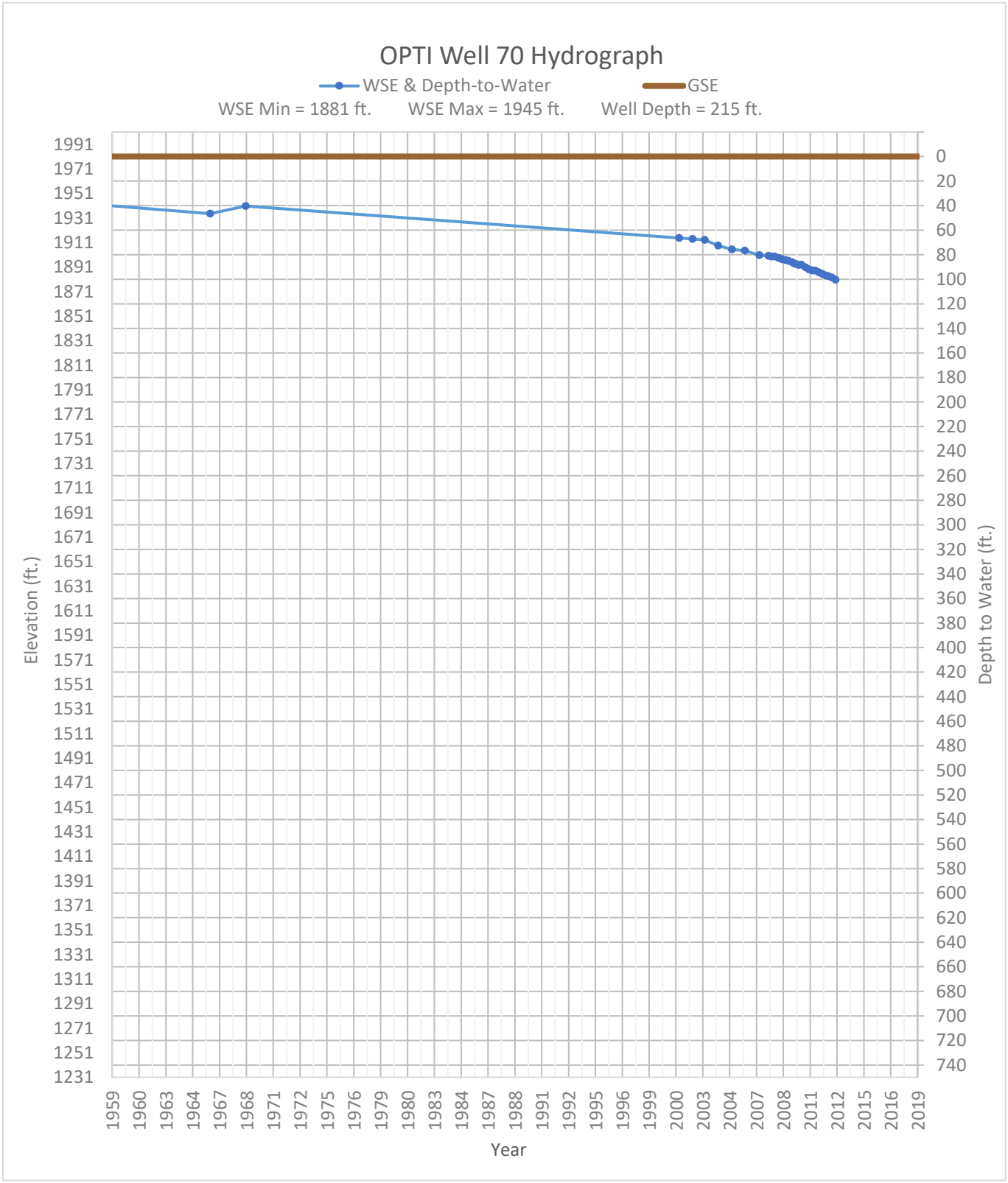
OPTI Well 70 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 1881 ft.
WSE Max = 1945 ft.
Well Depth = 215 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
1991
1971
1951
1931
1911
1891
1871
1851
1831
1811
1791
1771
1751
1731
1711
1691
1671
1651
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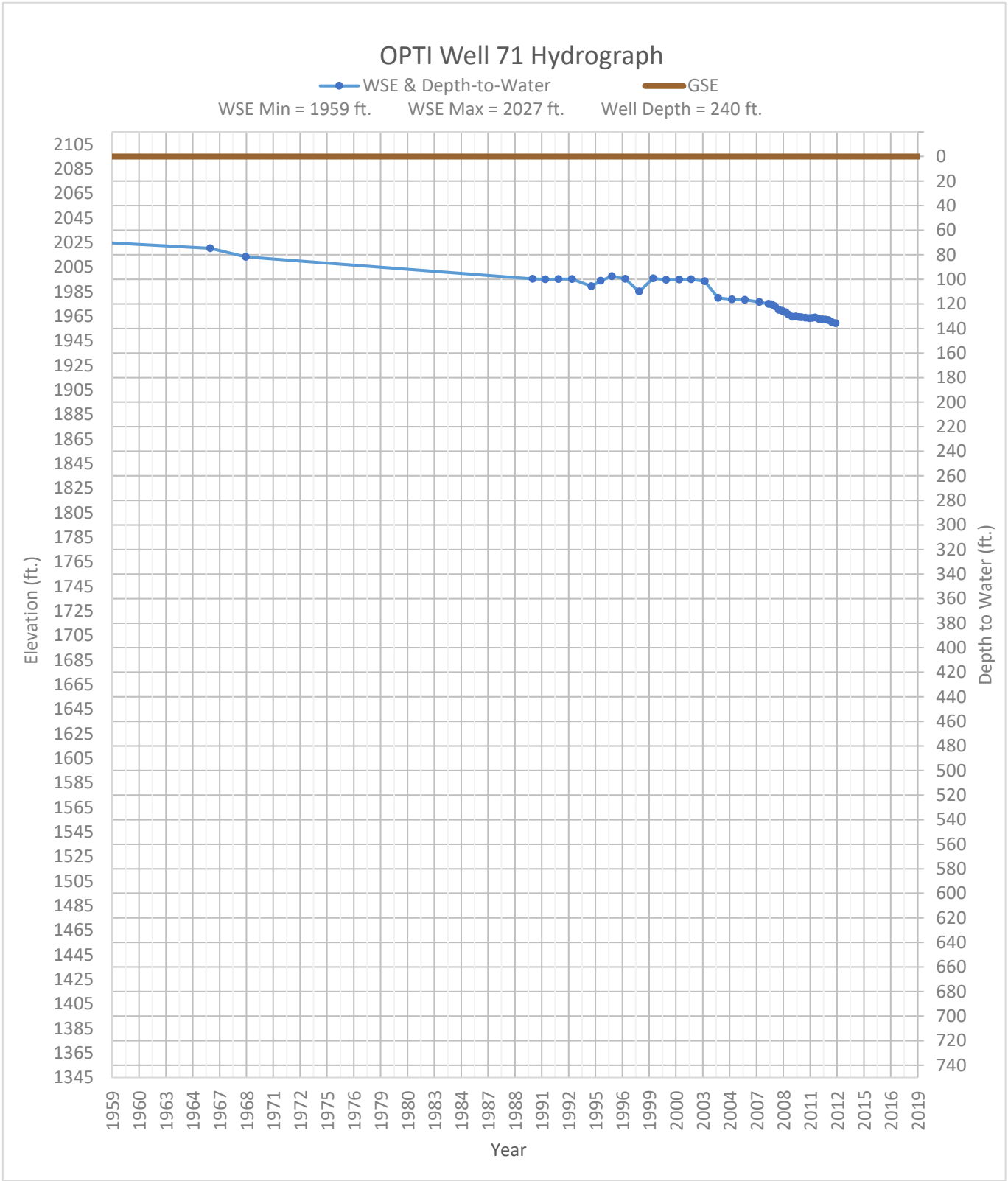
OPTI Well 71 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 1959 ft.
WSE Max = 2027 ft.
Well Depth = 240 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2105
2085
2065
2045
2025
2005
1985
1965
1945
1925
1905
1885
1865
1845
1825
1805
1785
1765
1745
1725
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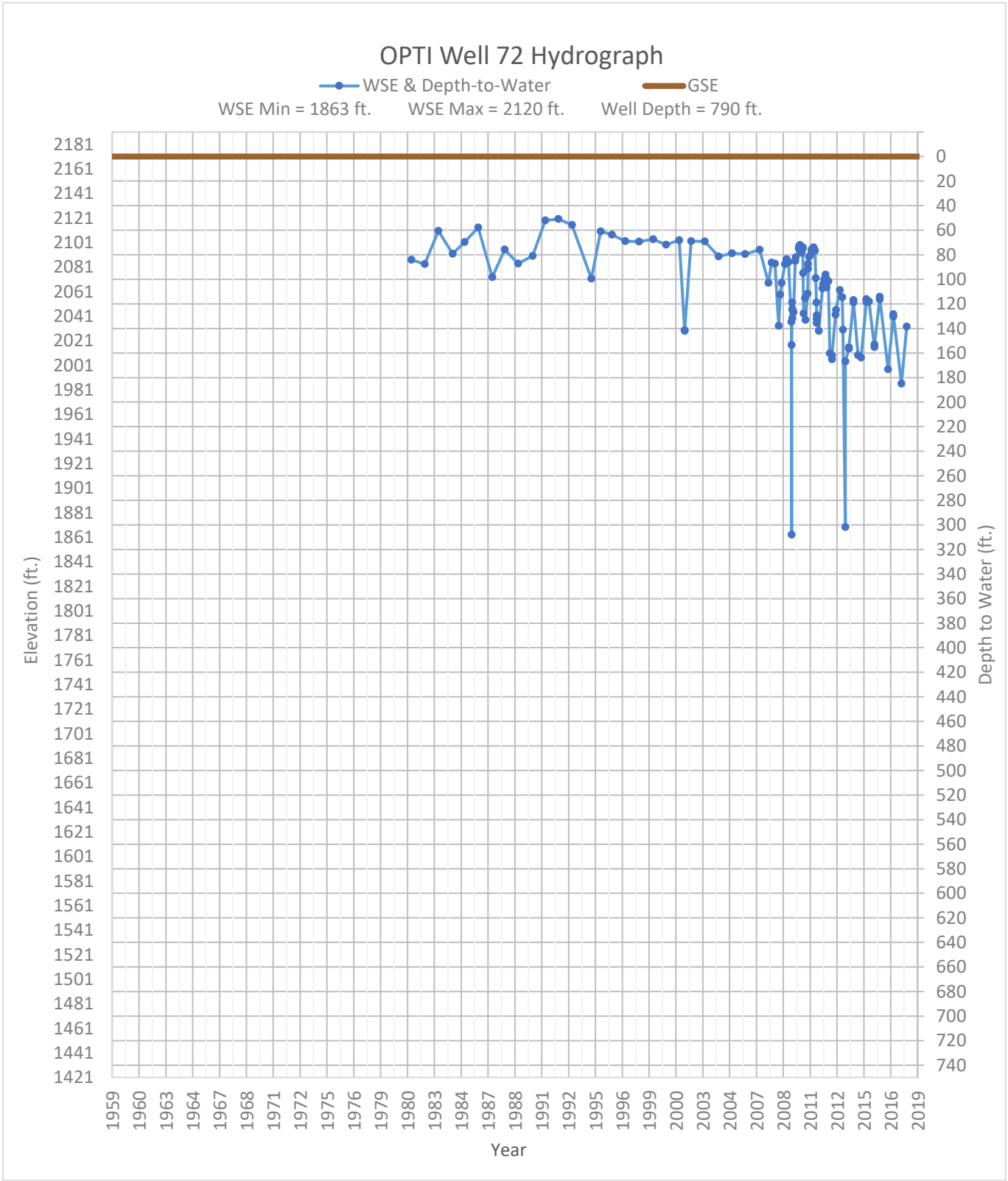
OPTI Well 72 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 1863 ft.
WSE Max = 2120 ft.
Well Depth = 790 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2181
2161
2141
2121
2101
2081
2061
2041
2021
2001
1981
1961
1941
1921
1901
1881
1861
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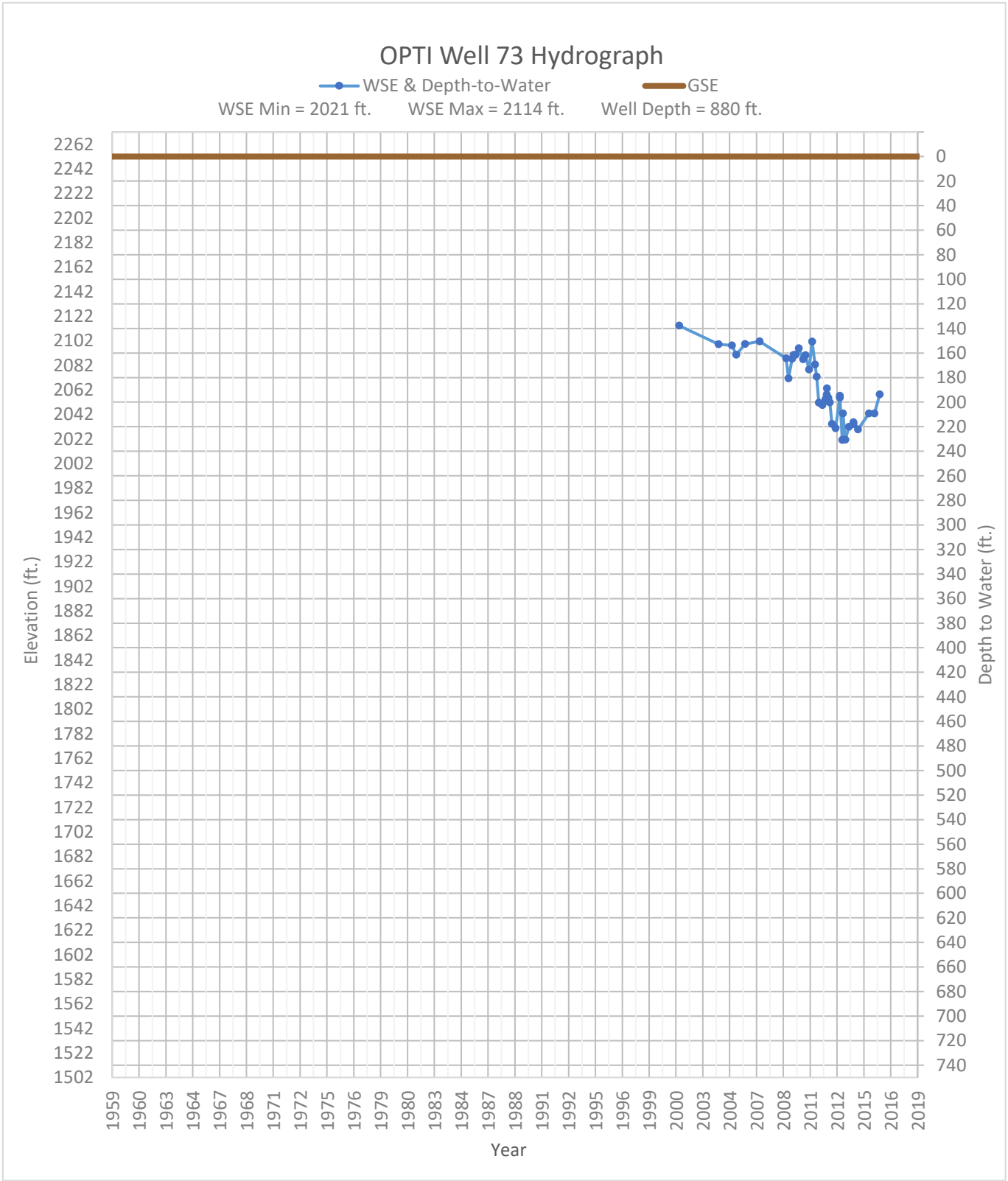
OPTI Well 73 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2021 ft.
WSE Max = 2114 ft.
Well Depth = 880 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2262
2242
2222
2202
2182
2162
2142
2122
2102
2082
2062
2042
2022
2002
1982
1962
1942
1922
1902
1882
1862
1842
1822
1802
1782
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1742
1722
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1682
1662
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1602
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OPTI Well 74 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 1882 ft.
WSE Max = 1986 ft.
Well Depth = Unknown ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2203
2183
2163
2143
2123
2103
2083
2063
2043
2023
2003
1983
1963
1943
1923
1903
1883
1863
1843
1823
1803
1783
1763
1743
1723
1703
1683
1663
1643
1623
1603
1583
1563
1543
1523
1503
1483
1463
1443
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OPTI Well 75 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 1912 ft.
WSE Max = 2089 ft.
Well Depth = Unknown ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2305
2285
2265
2245
2225
2205
2185
2165
2145
2125
2105
2085
2065
2045
2025
2005
1985
1965
1945
1925
1905
1885
1865
1845
1825
1805
1785
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1745
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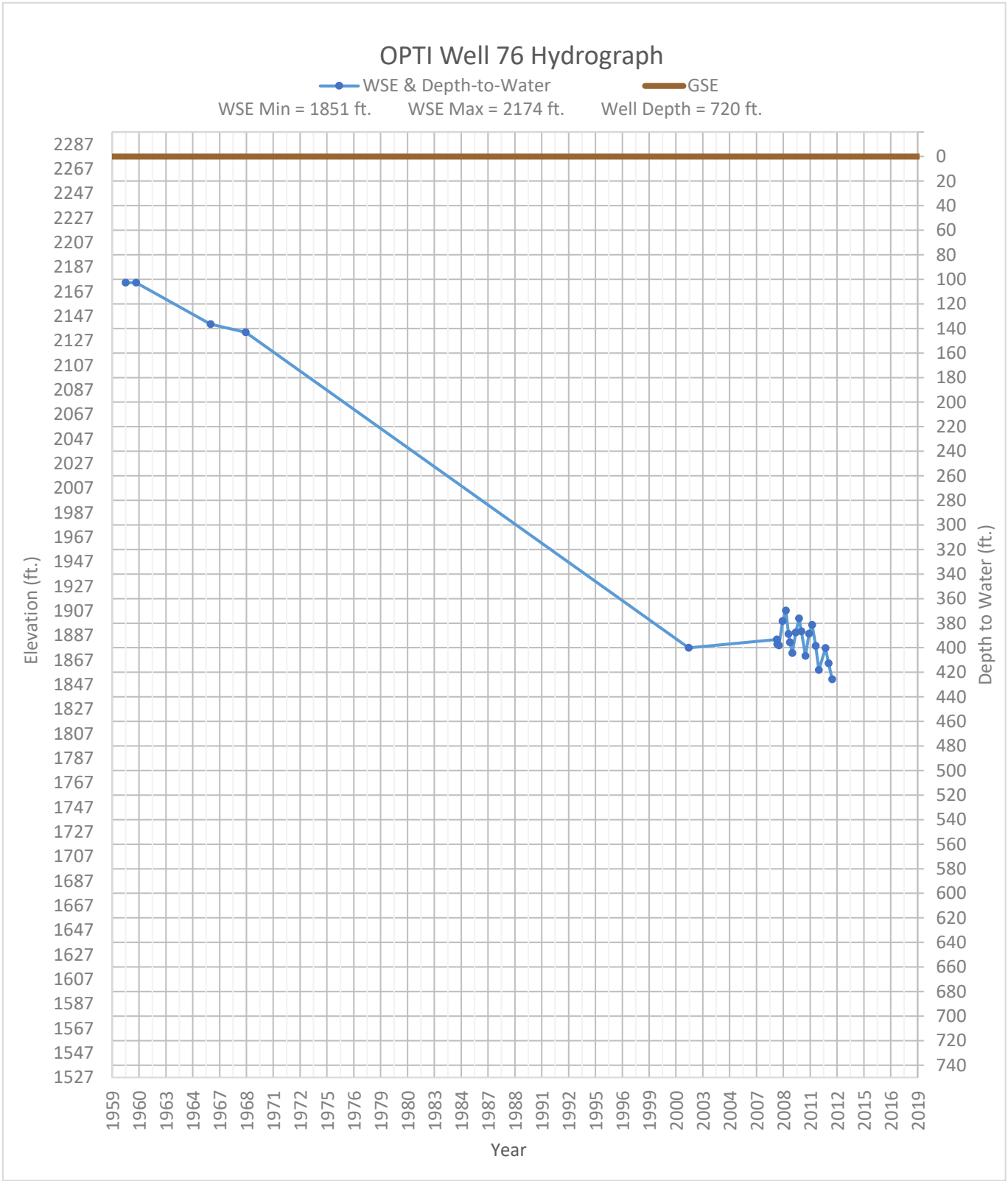
OPTI Well 76 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 1851 ft.
WSE Max = 2174 ft.
Well Depth = 720 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2287
2267
2247
2227
2207
2187
2167
2147
2127
2107
2087
2067
2047
2027
2007
1987
1967
1947
1927
1907
1887
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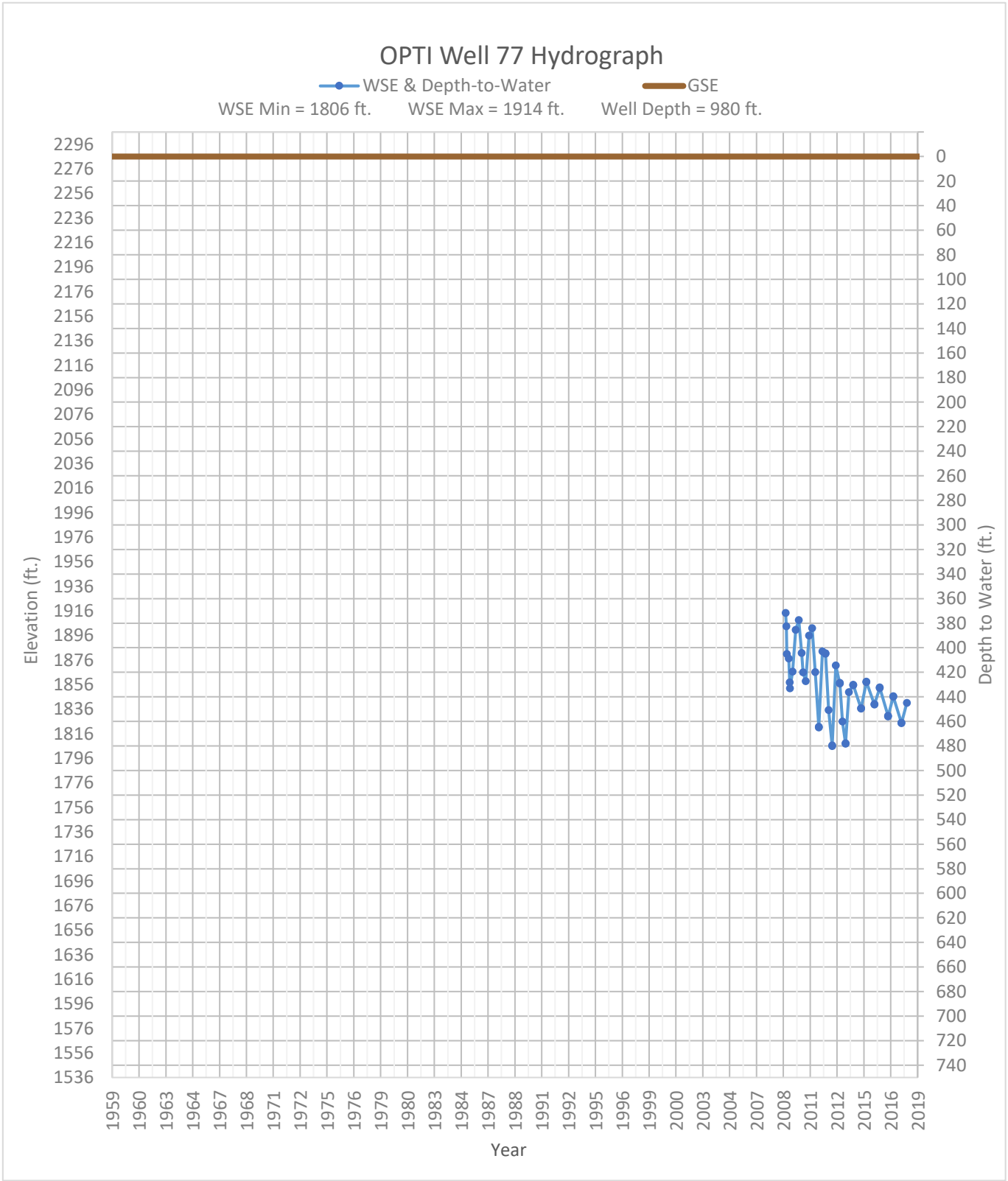
OPTI Well 77 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 1806 ft.
WSE Max = 1914 ft.
Well Depth = 980 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2296
2276
2256
2236
2216
2196
2176
2156
2136
2116
2096
2076
2056
2036
2016
1996
1976
1956
1936
1916
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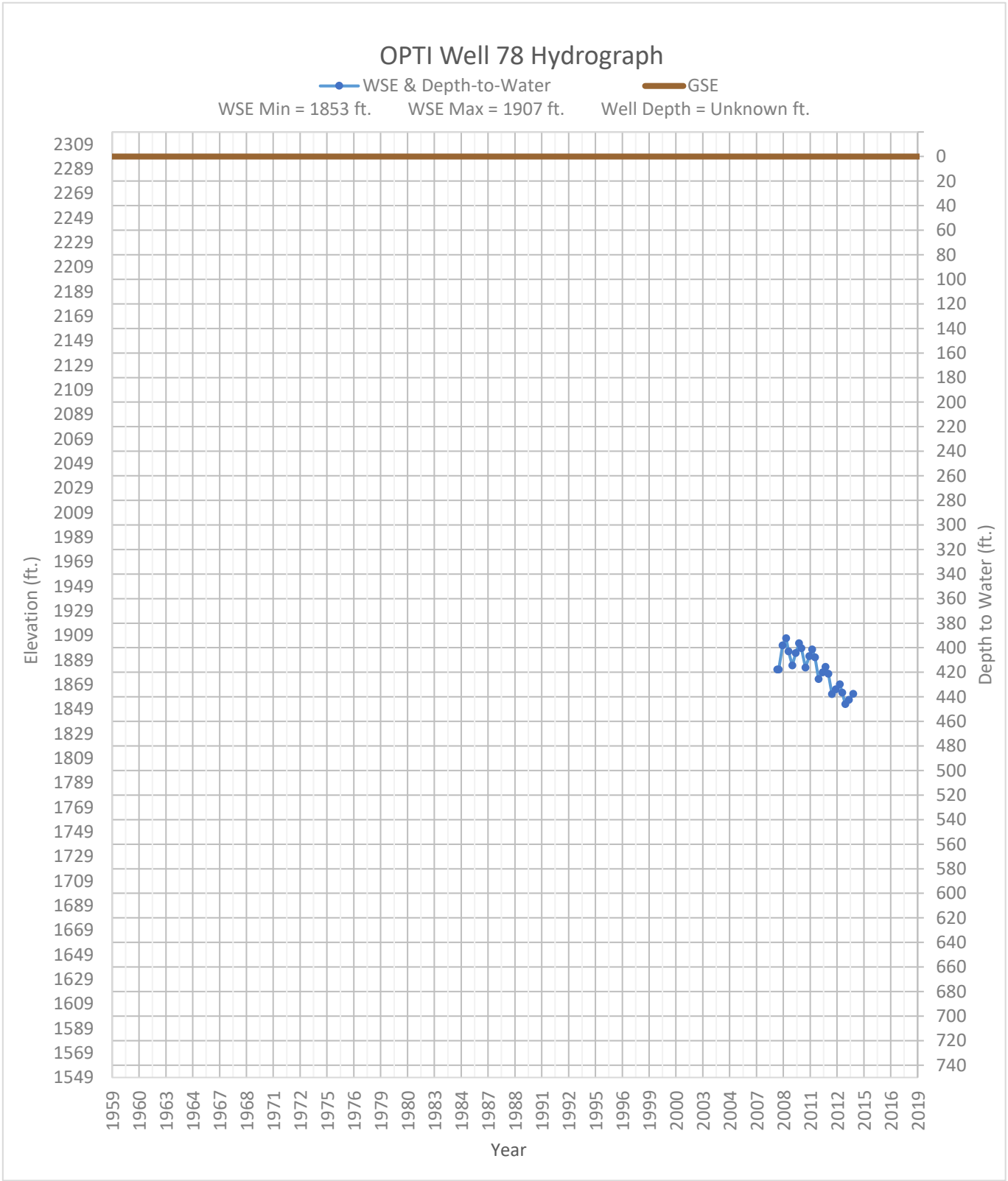
OPTI Well 78 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 1853 ft.
WSE Max = 1907 ft.
Well Depth = Unknown ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2309
2289
2269
2249
2229
2209
2189
2169
2149
2129
2109
2089
2069
2049
2029
2009
1989
1969
1949
1929
1909
1889
1869
1849
1829
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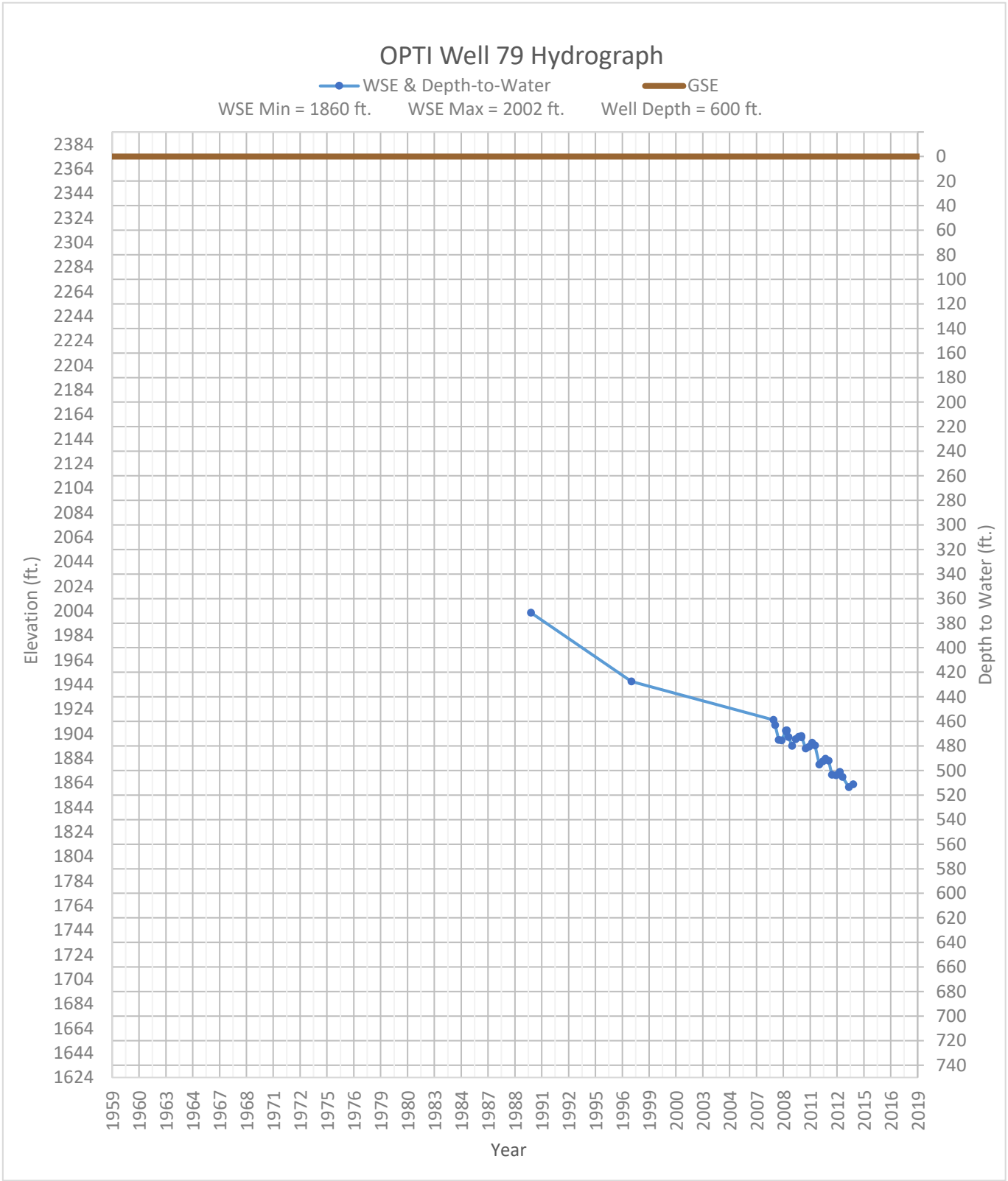
OPTI Well 79 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 1860 ft.
WSE Max = 2002 ft.
Well Depth = 600 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2384
2364
2344
2324
2304
2284
2264
2244
2224
2204
2184
2164
2144
2124
2104
2084
2064
2044
2024
2004
1984
1964
1944
1924
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1704
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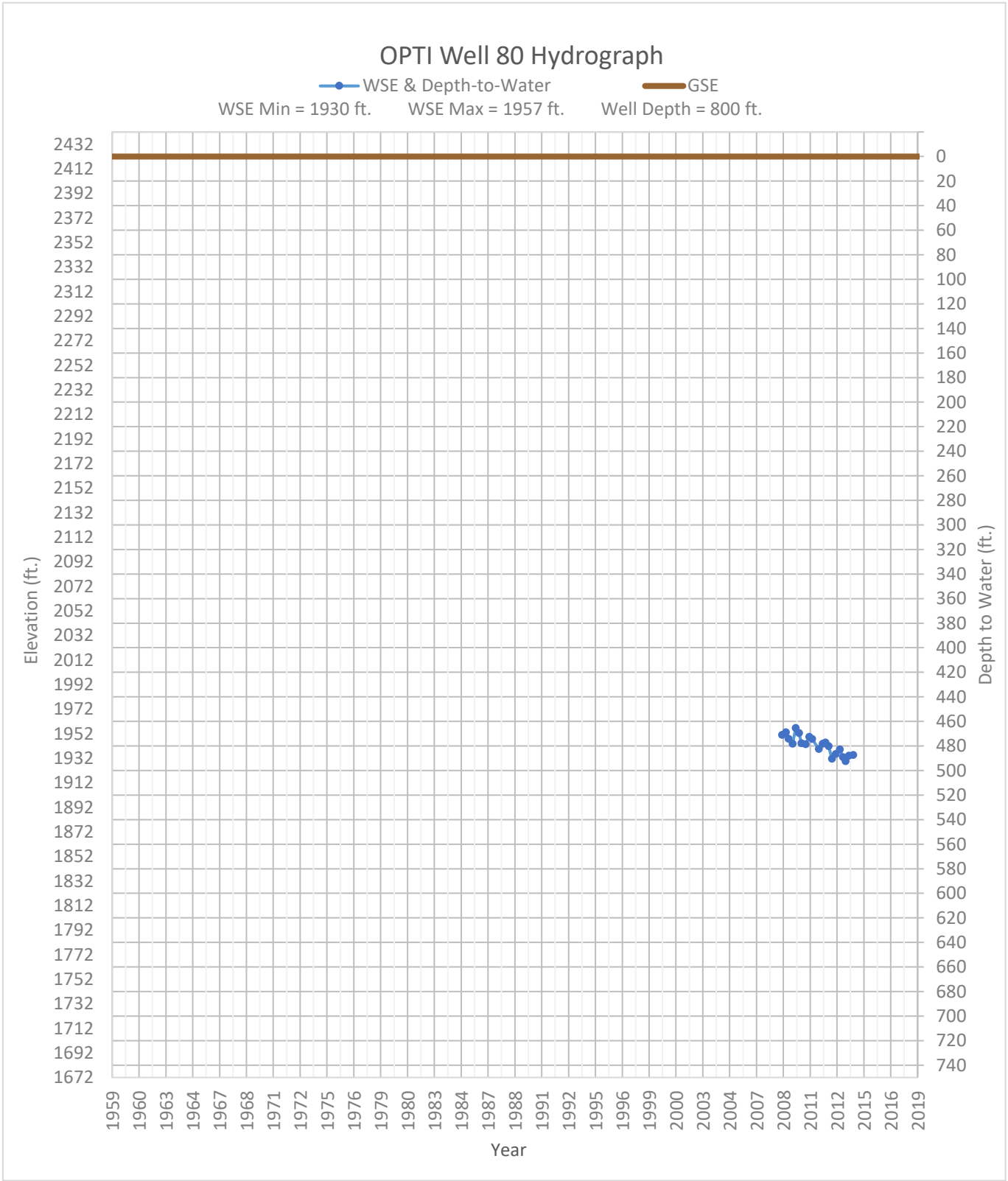
OPTI Well 80 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 1930 ft.
WSE Max = 1957 ft.
Well Depth = 800 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2432
2412
2392
2372
2352
2332
2312
2292
2272
2252
2232
2212
2192
2172
2152
2132
2112
2092
2072
2052
2032
2012
1992
1972
1952
1932
1912
1892
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1772
1752
1732
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1692
1672
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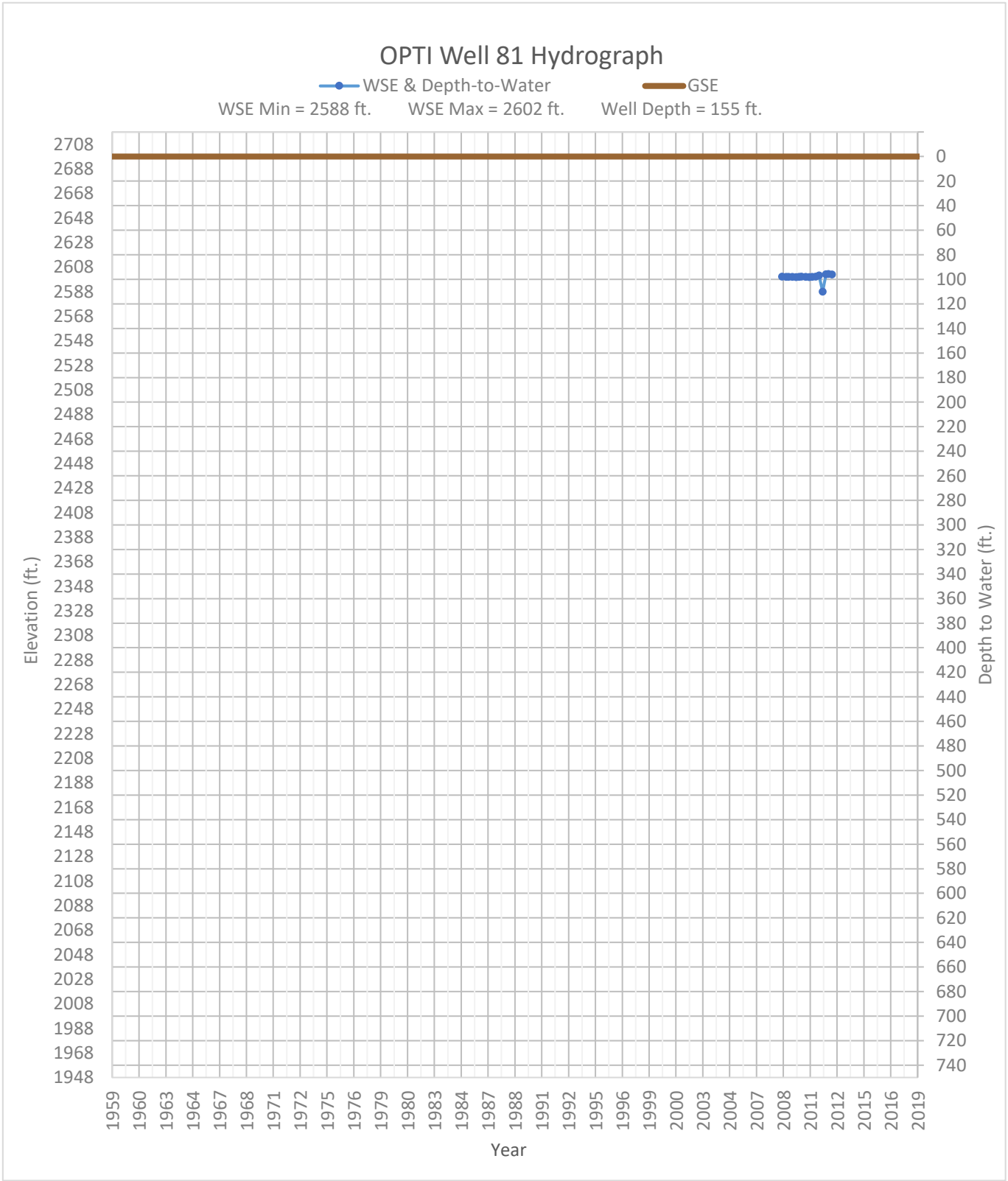
OPTI Well 81 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2588 ft.
WSE Max = 2602 ft.
Well Depth = 155 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2708
2688
2668
2648
2628
2608
2588
2568
2548
2528
2508
2488
2468
2448
2428
2408
2388
2368
2348
2328
2308
2288
2268
2248
2228
2208
2188
2168
2148
2128
2108
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1948
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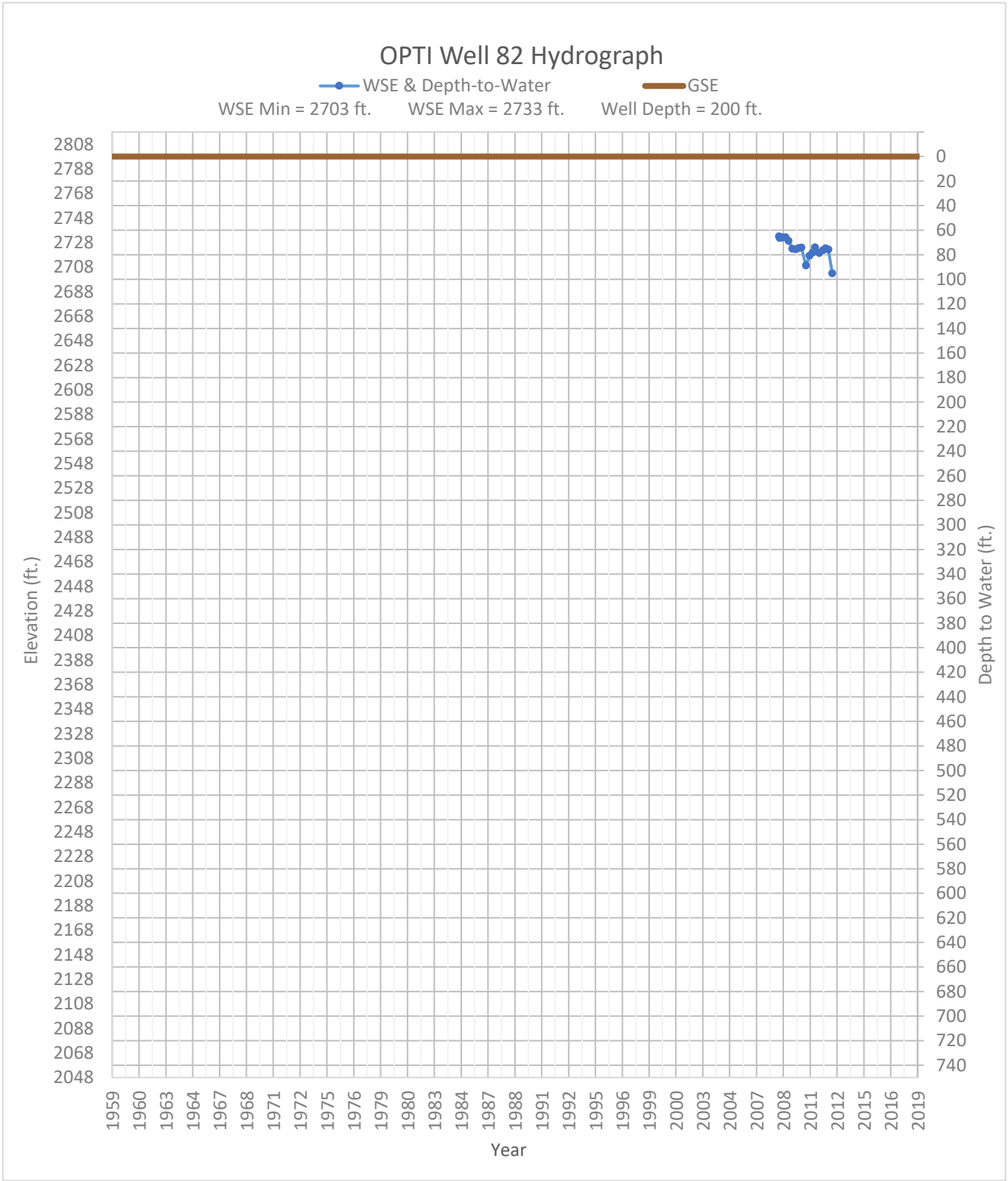
OPTI Well 82 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2703 ft.
WSE Max = 2733 ft.
Well Depth = 200 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2808
2788
2768
2748
2728
2708
2688
2668
2648
2628
2608
2588
2568
2548
2528
2508
2488
2468
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2348
2328
2308
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2248
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2208
2188
2168
2148
2128
2108
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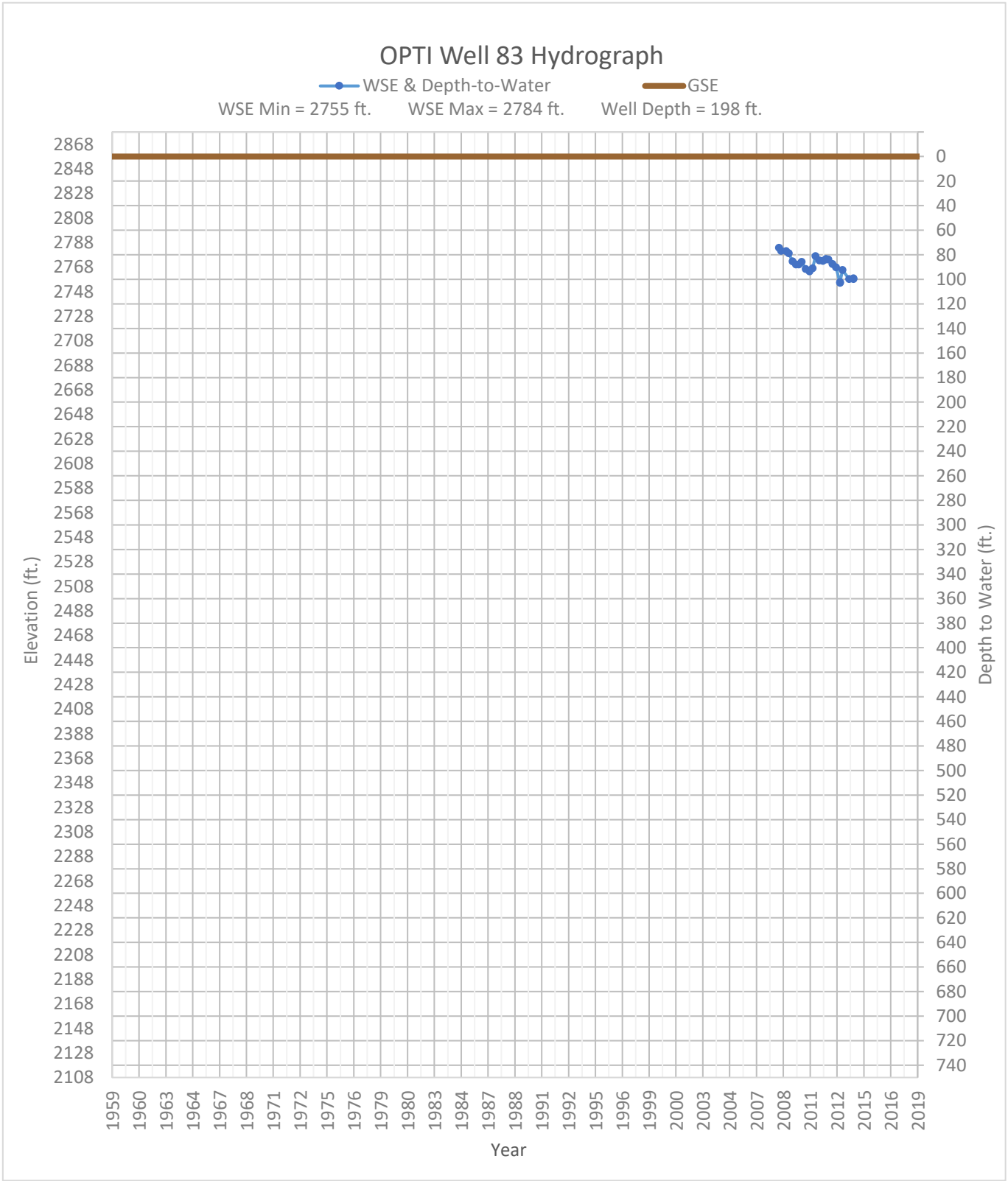
OPTI Well 83 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2755 ft.
WSE Max = 2784 ft.
Well Depth = 198 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2868
2848
2828
2808
2788
2768
2748
2728
2708
2688
2668
2648
2628
2608
2588
2568
2548
2528
2508
2488
2468
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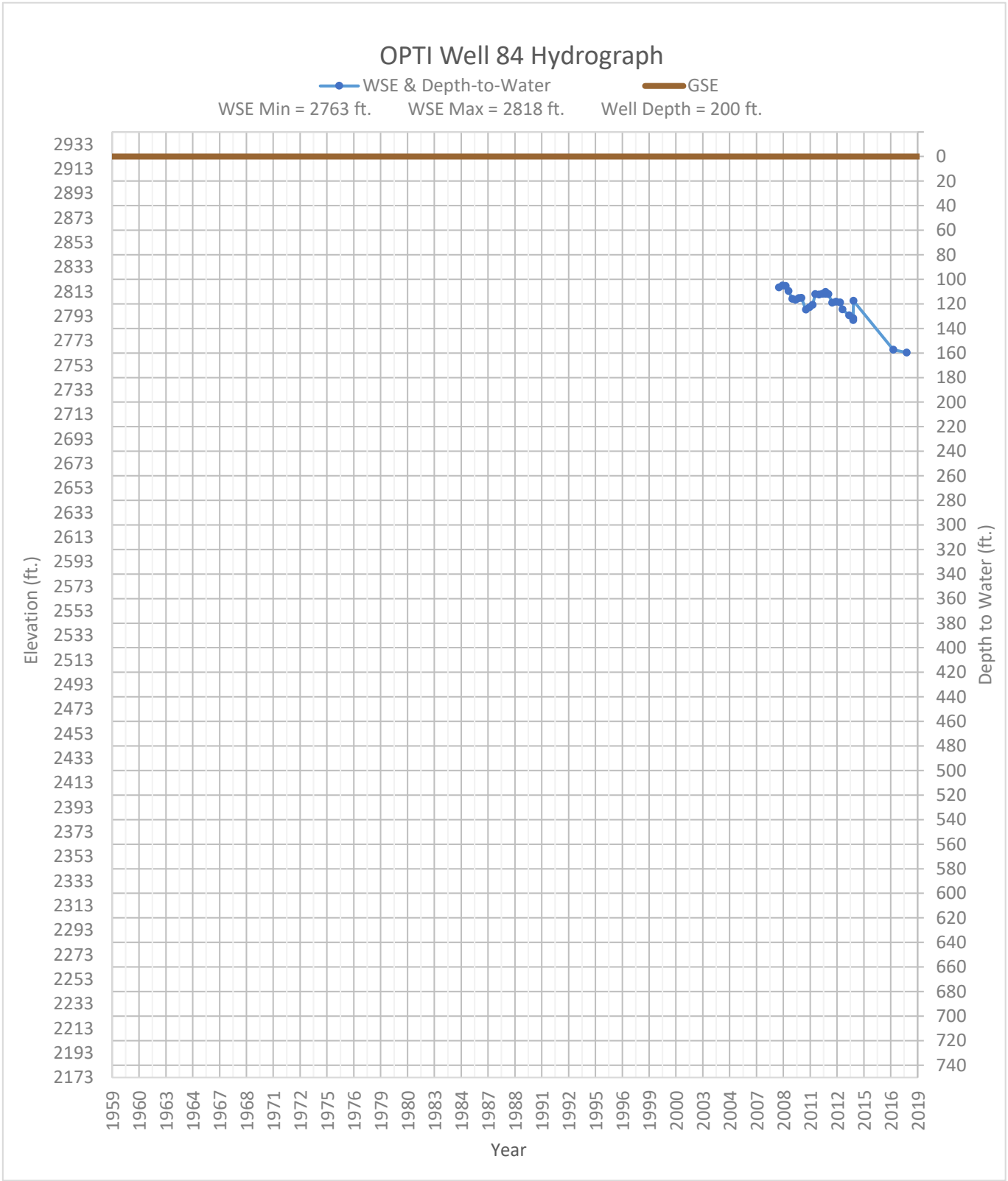
OPTI Well 84 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2763 ft.
WSE Max = 2818 ft.
Well Depth = 200 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2933
2913
2893
2873
2853
2833
2813
2793
2773
2753
2733
2713
2693
2673
2653
2633
2613
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2253
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2173
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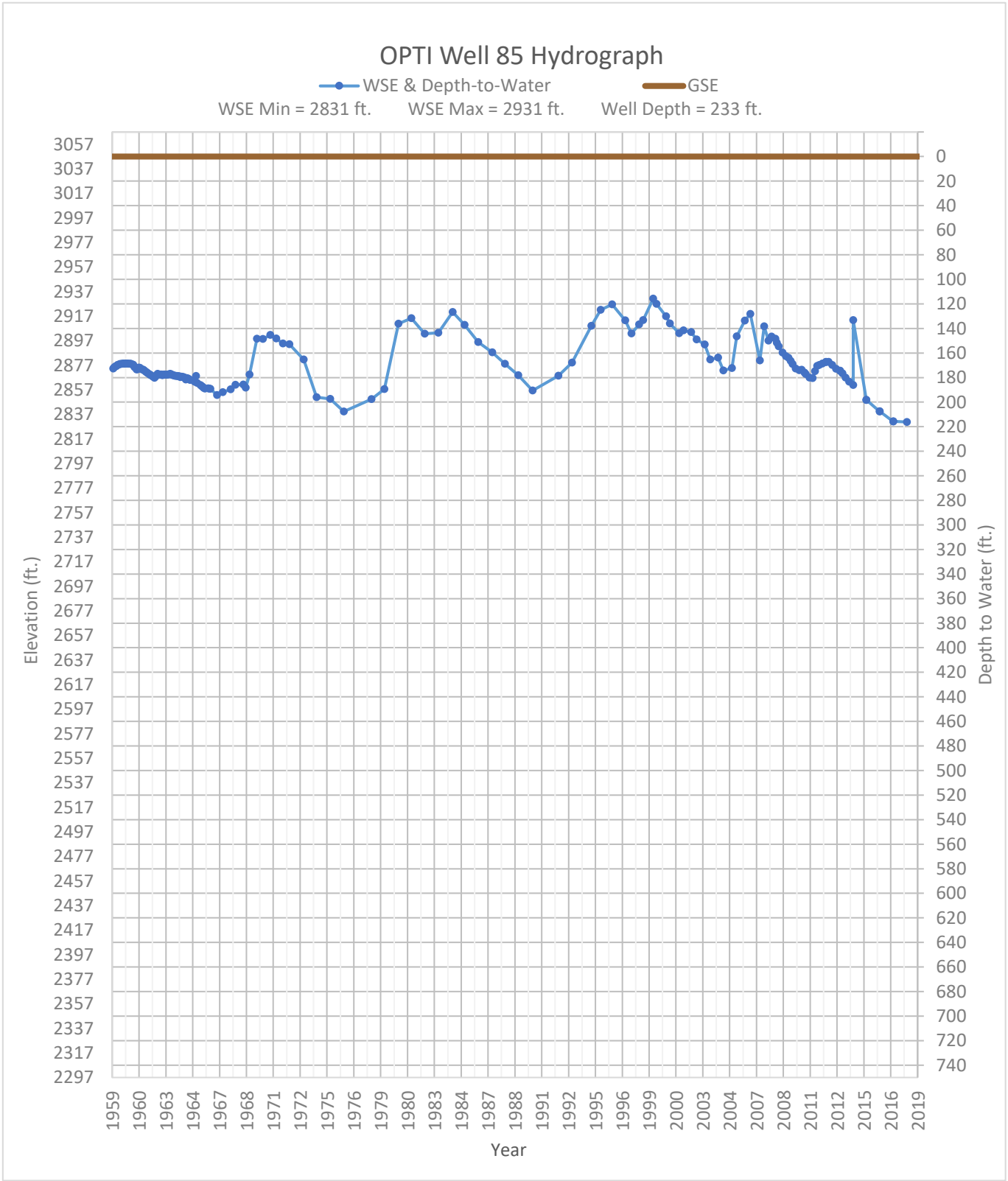
OPTI Well 85 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2831 ft.
WSE Max = 2931 ft.
Well Depth = 233 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
3057
3037
3017
2997
2977
2957
2937
2917
2897
2877
2857
2837
2817
2797
2777
2757
2737
2717
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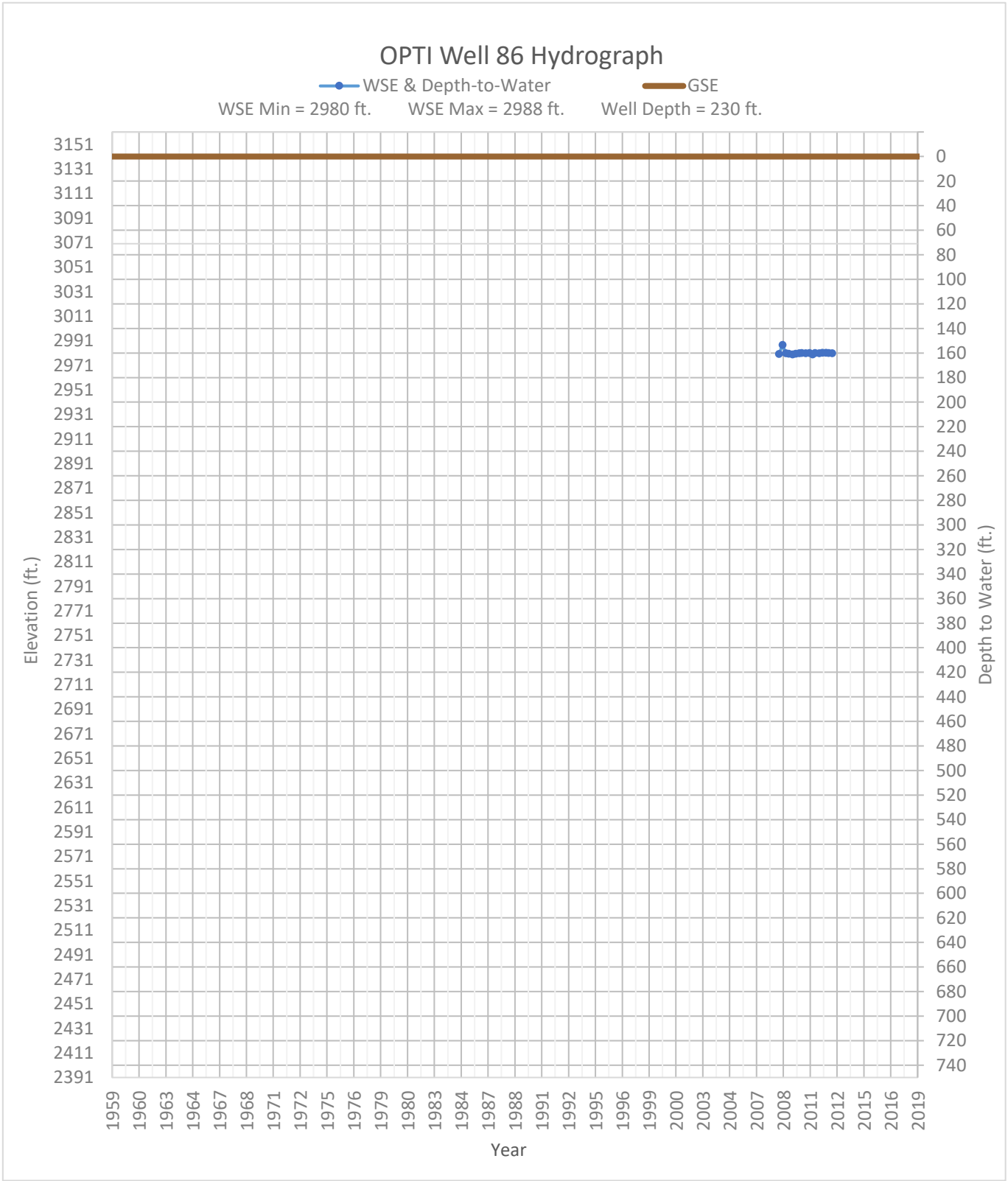
OPTI Well 86 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2980 ft.
WSE Max = 2988 ft.
Well Depth = 230 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
3151
3131
3111
3091
3071
3051
3031
3011
2991
2971
2951
2931
2911
2891
2871
2851
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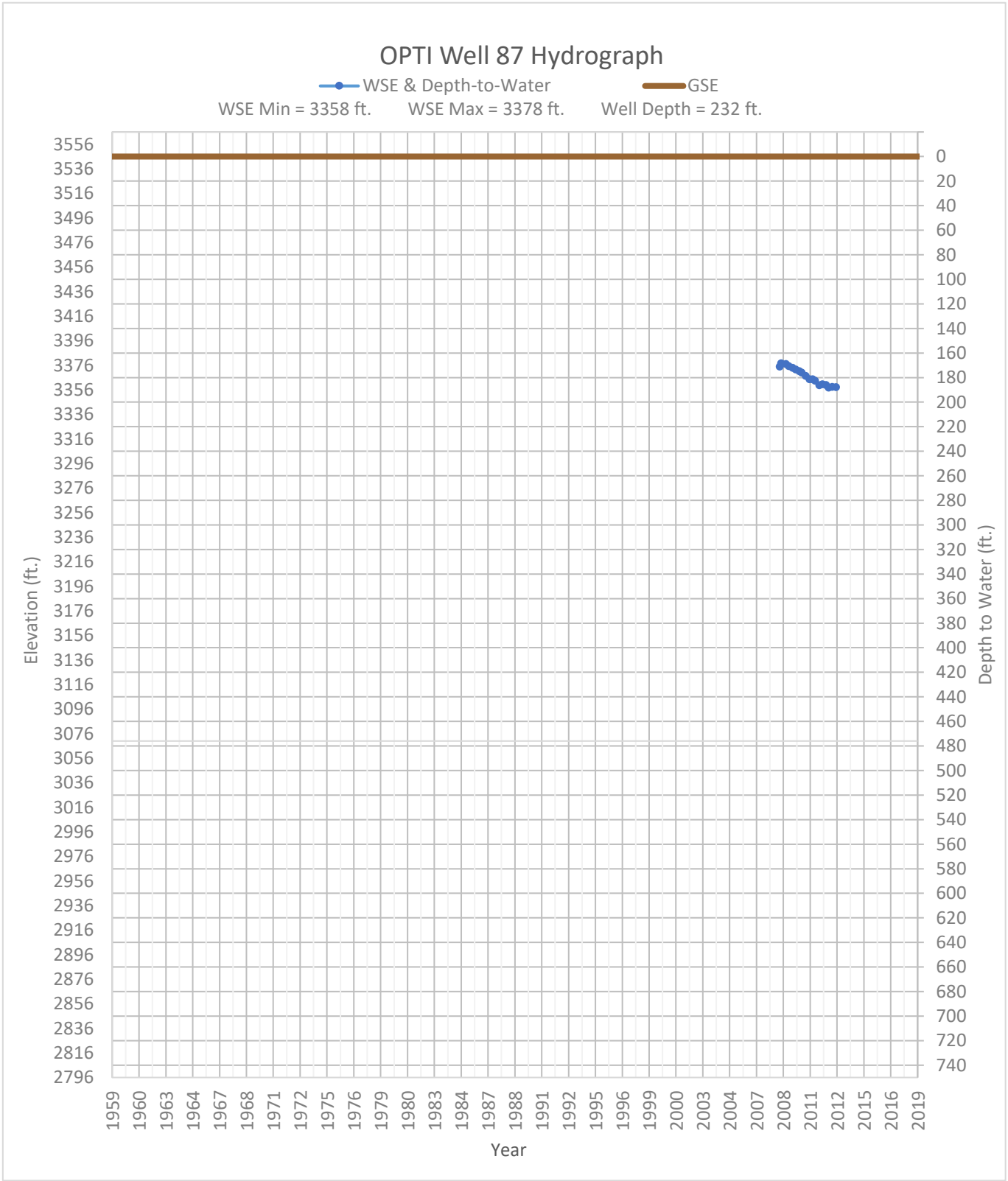
OPTI Well 87 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 3358 ft.
WSE Max = 3378 ft.
Well Depth = 232 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
3556
3536
3516
3496
3476
3456
3436
3416
3396
3376
3356
3336
3316
3296
3276
3256
3236
3216
3196
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3156
3136
3116
3096
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2996
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2019


OPTI Well 88 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 3276 ft.
WSE Max = 3322 ft.
Well Depth = 400 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
3559
3539
3519
3499
3479
3459
3439
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3259
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3199
3179
3159
3139
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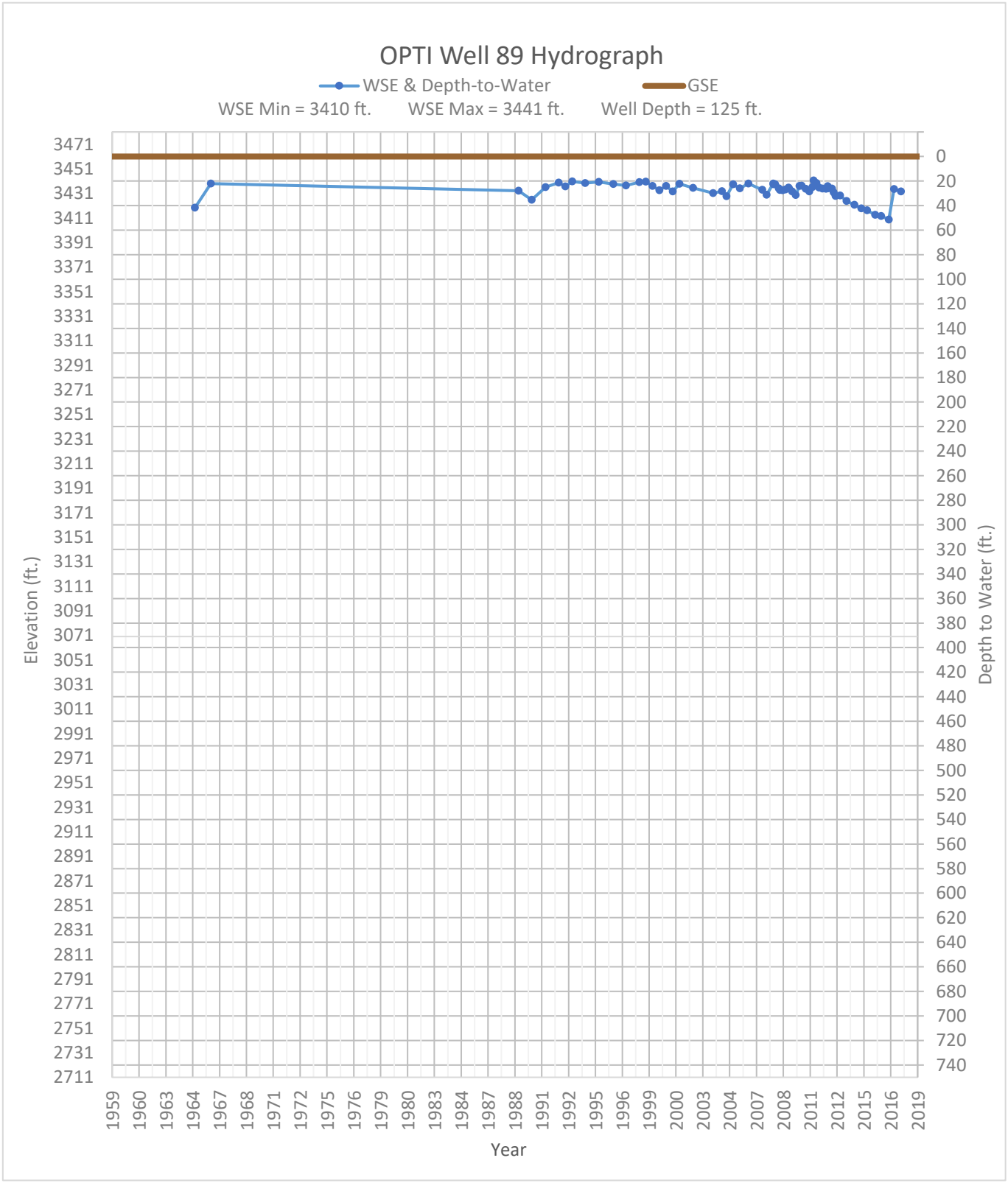
OPTI Well 89 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 3410 ft.
WSE Max = 3441 ft.
Well Depth = 125 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
3471
3451
3431
3411
3391
3371
3351
3331
3311
3291
3271
3251
3231
3211
3191
3171
3151
3131
3111
3091
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3051
3031
3011
2991
2971
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2711
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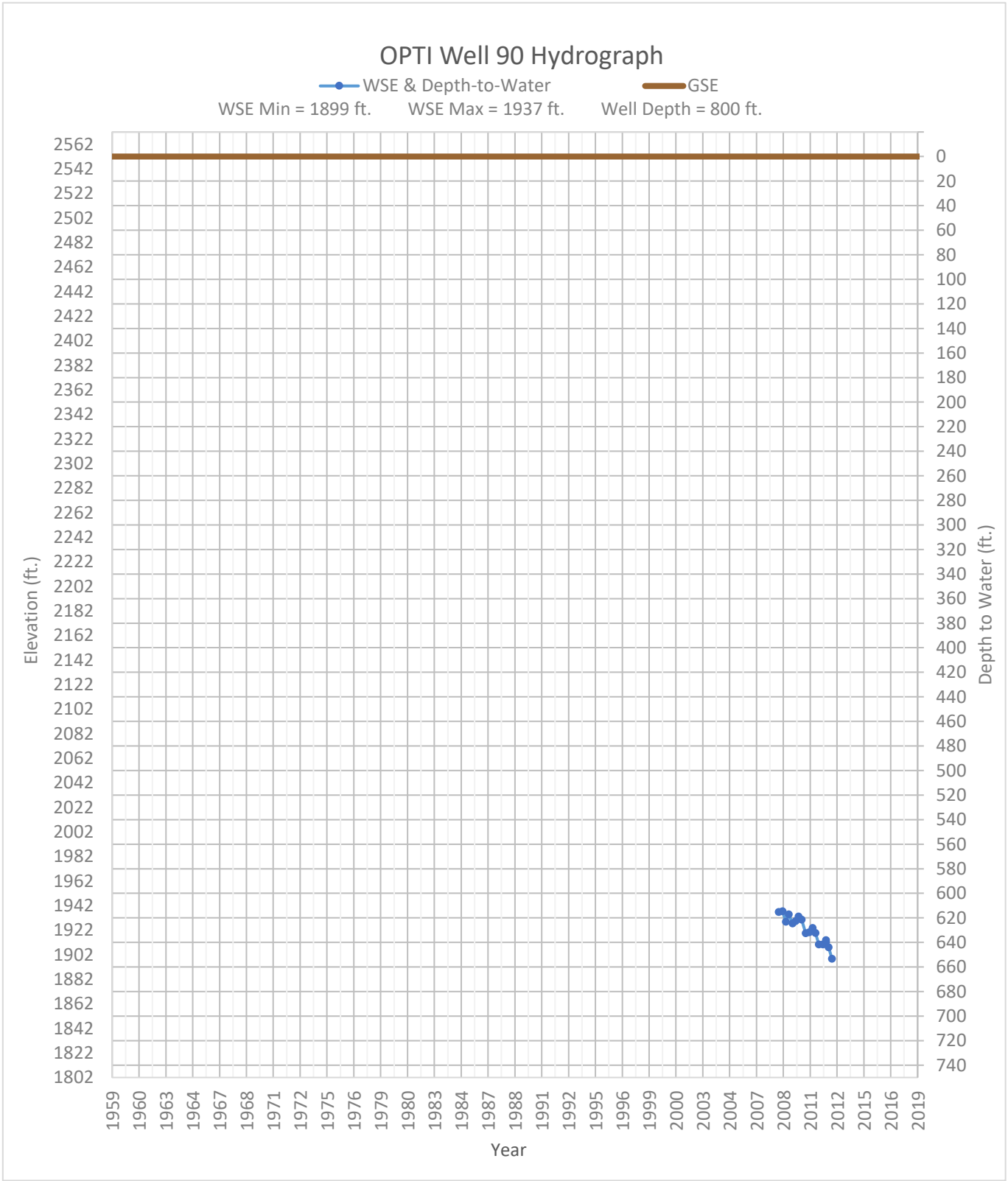
OPTI Well 90 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 1899 ft.
WSE Max = 1937 ft.
Well Depth = 800 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2562
2542
2522
2502
2482
2462
2442
2422
2402
2382
2362
2342
2322
2302
2282
2262
2242
2222
2202
2182
2162
2142
2122
2102
2082
2062
2042
2022
2002
1982
1962
1942
1922
1902
1882
1862
1842
1822
1802
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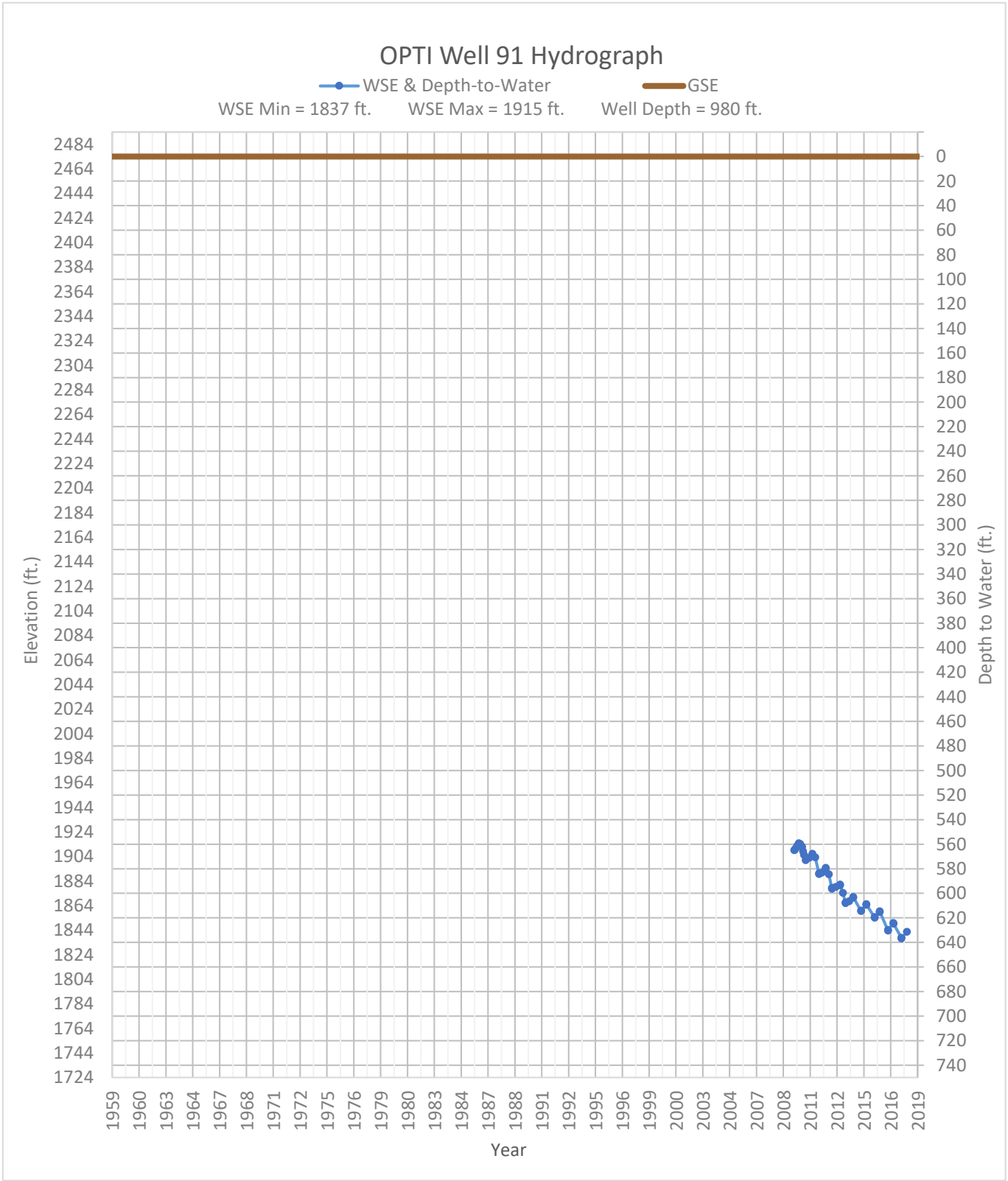
OPTI Well 91 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 1837 ft.
WSE Max = 1915 ft.
Well Depth = 980 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2484
2464
2444
2424
2404
2384
2364
2344
2324
2304
2284
2264
2244
2224
2204
2184
2164
2144
2124
2104
2084
2064
2044
2024
2004
1984
1964
1944
1924
1904
1884
1864
1844
1824
1804
1784
1764
1744
1724
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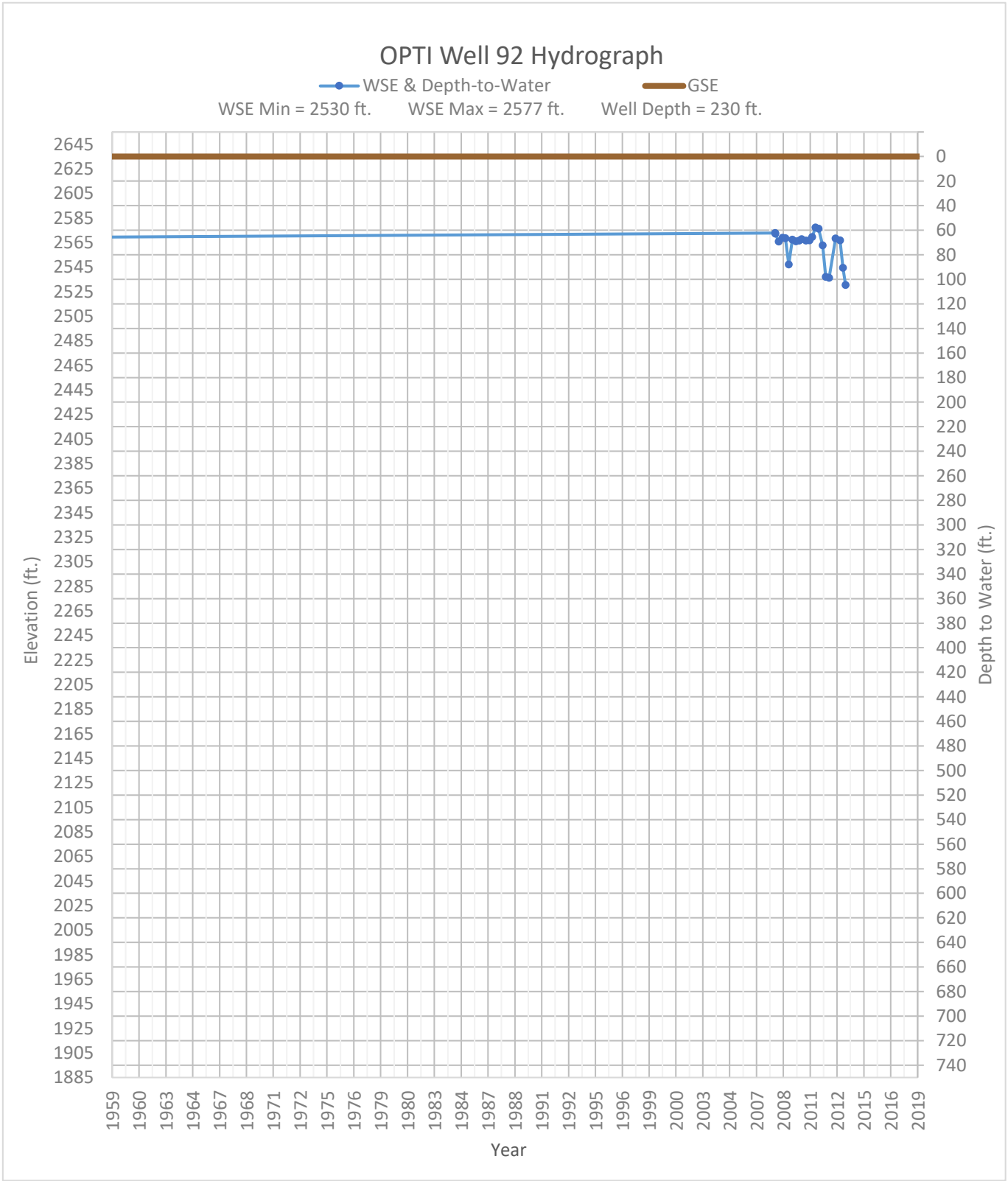
OPTI Well 92 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2530 ft.
WSE Max = 2577 ft.
Well Depth = 230 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2645
2625
2605
2585
2565
2545
2525
2505
2485
2465
2445
2425
2405
2385
2365
2345
2325
2305
2285
2265
2245
2225
2205
2185
2165
2145
2125
2105
2085
2065
2045
2025
2005
1985
1965
1945
1925
1905
1885
0
20
40
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160
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280
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320
340
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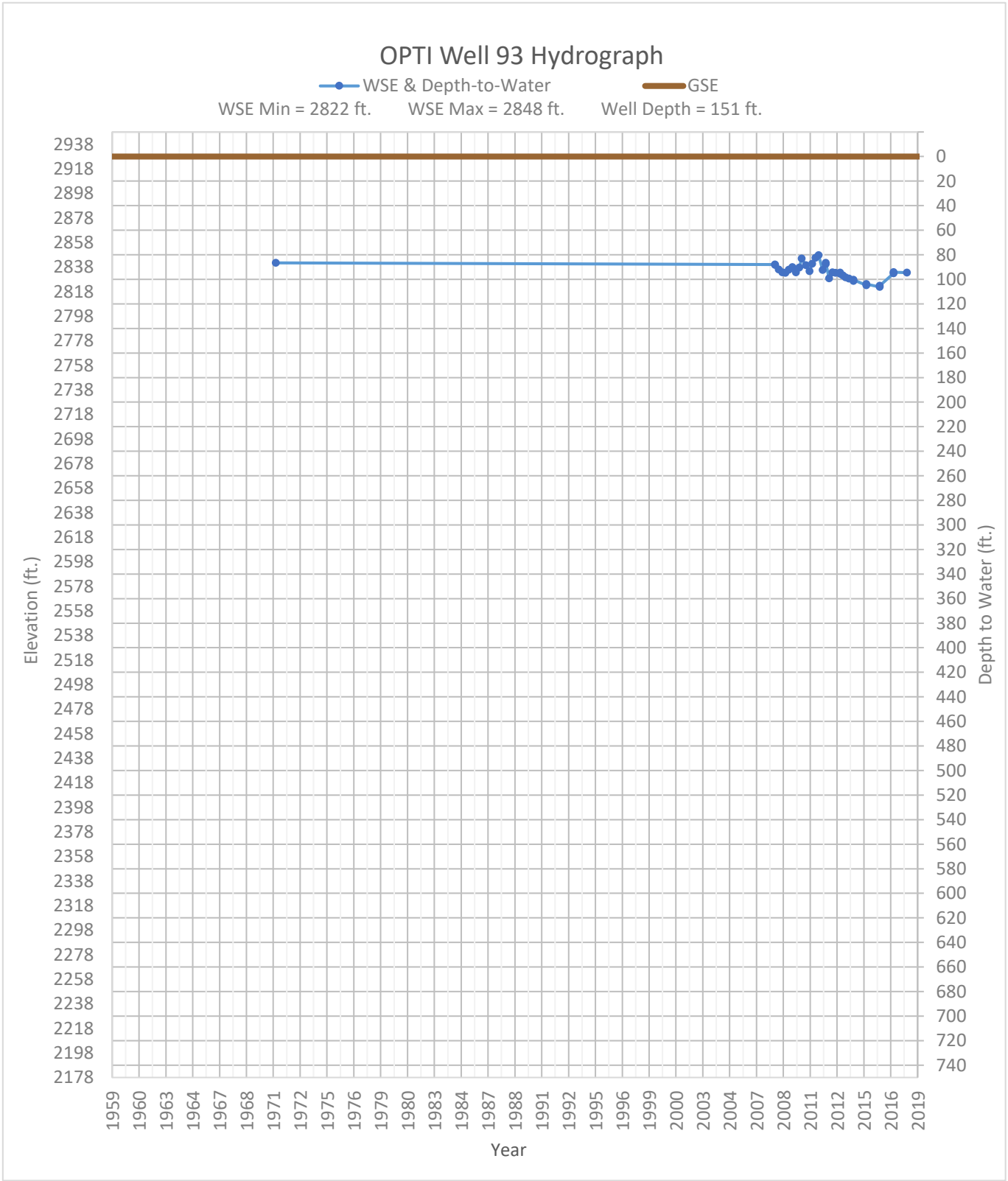
OPTI Well 93 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2822 ft.
WSE Max = 2848 ft.
Well Depth = 151 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2938
2918
2898
2878
2858
2838
2818
2798
2778
2758
2738
2718
2698
2678
2658
2638
2618
2598
2578
2558
2538
2518
2498
2478
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2358
2338
2318
2298
2278
2258
2238
2218
2198
2178
0
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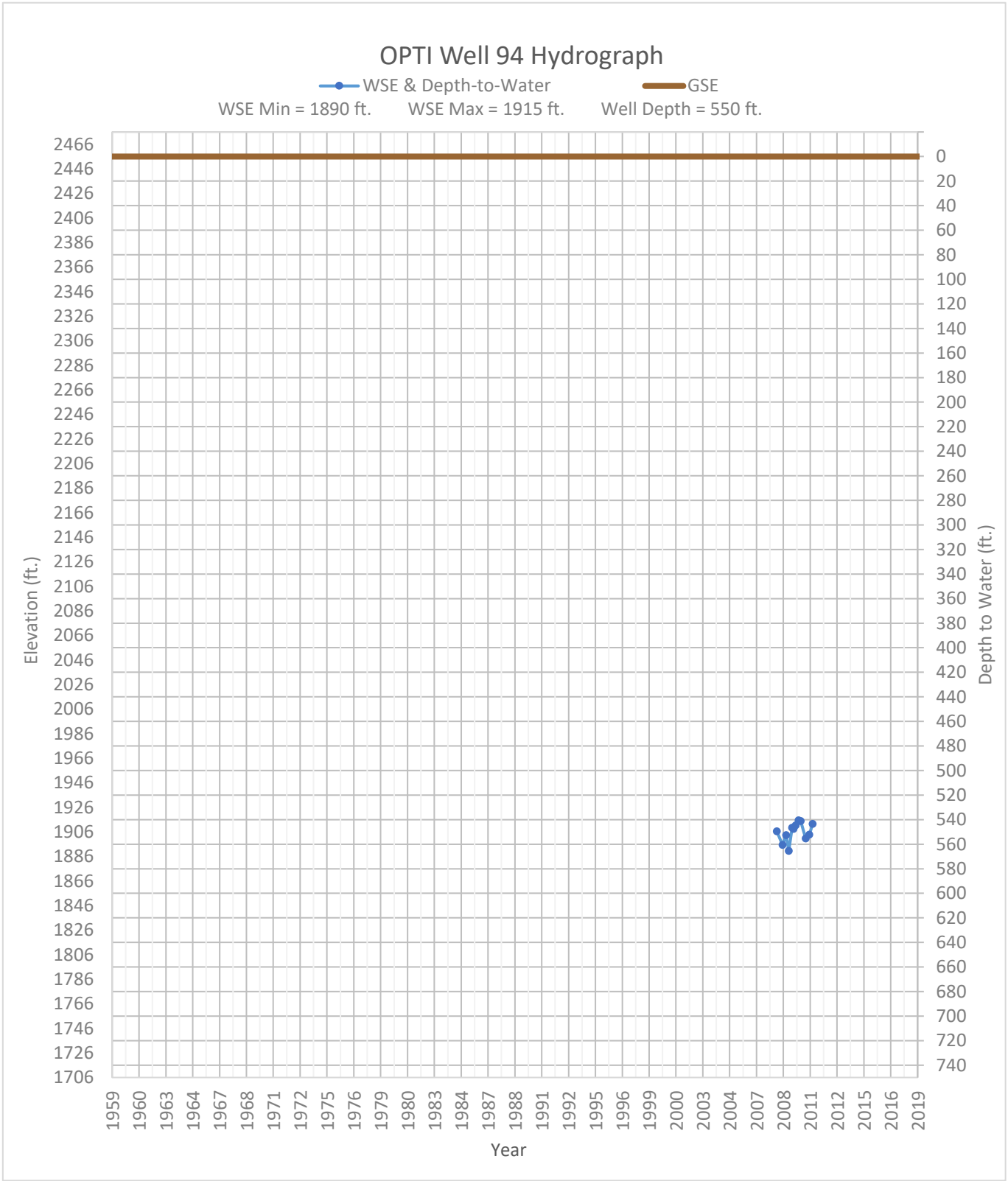
OPTI Well 94 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 1890 ft.
WSE Max = 1915 ft.
Well Depth = 550 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2466
2446
2426
2406
2386
2366
2346
2326
2306
2286
2266
2246
2226
2206
2186
2166
2146
2126
2106
2086
2066
2046
2026
2006
1986
1966
1946
1926
1906
1886
1866
1846
1826
1806
1786
1766
1746
1726
1706
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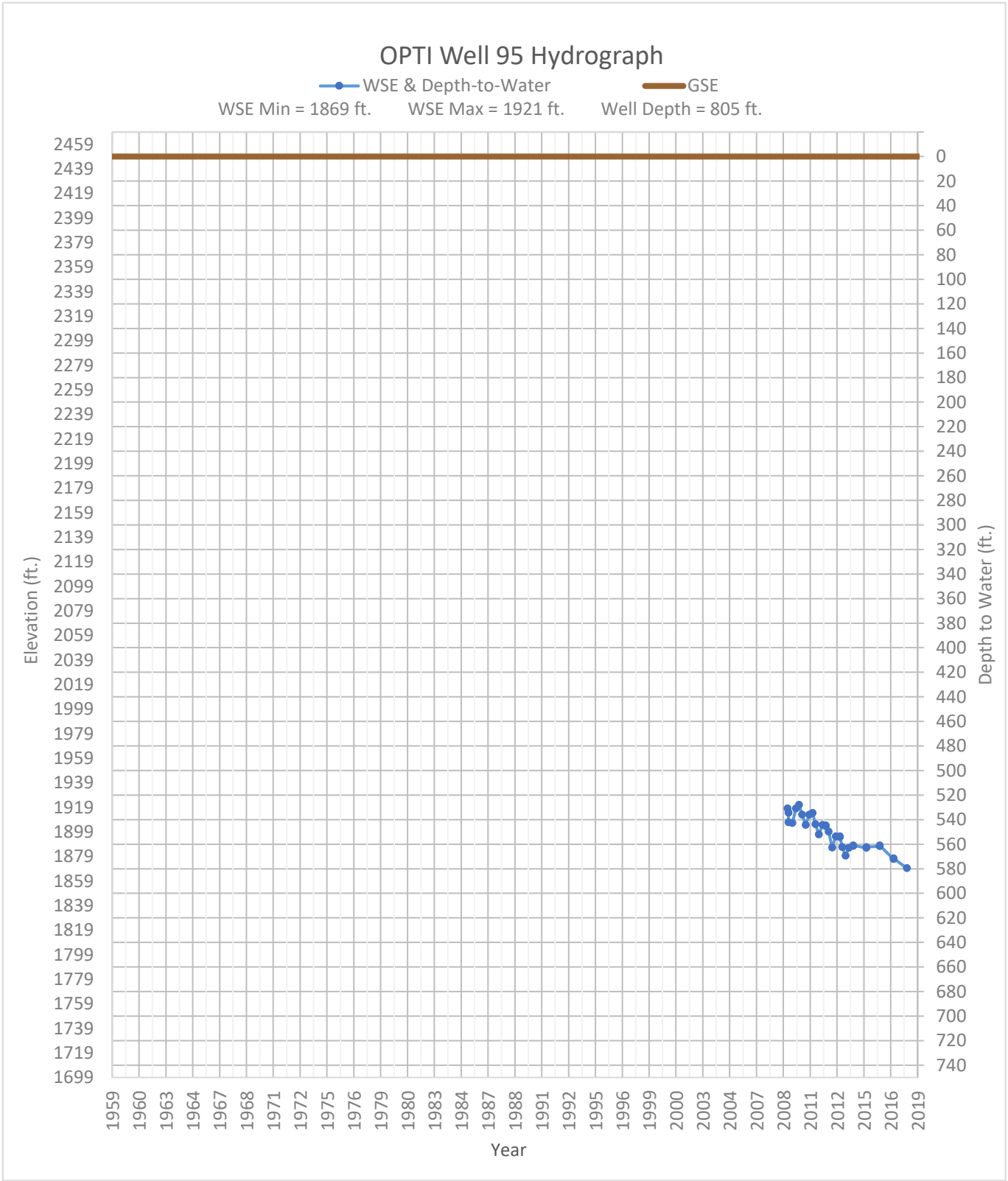
OPTI Well 95 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 1869 ft.
WSE Max = 1921 ft.
Well Depth = 805 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2459
2439
2419
2399
2379
2359
2339
2319
2299
2279
2259
2239
2219
2199
2179
2159
2139
2119
2099
2079
2059
2039
2019
1999
1979
1959
1939
1919
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1799
1779
1759
1739
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1699
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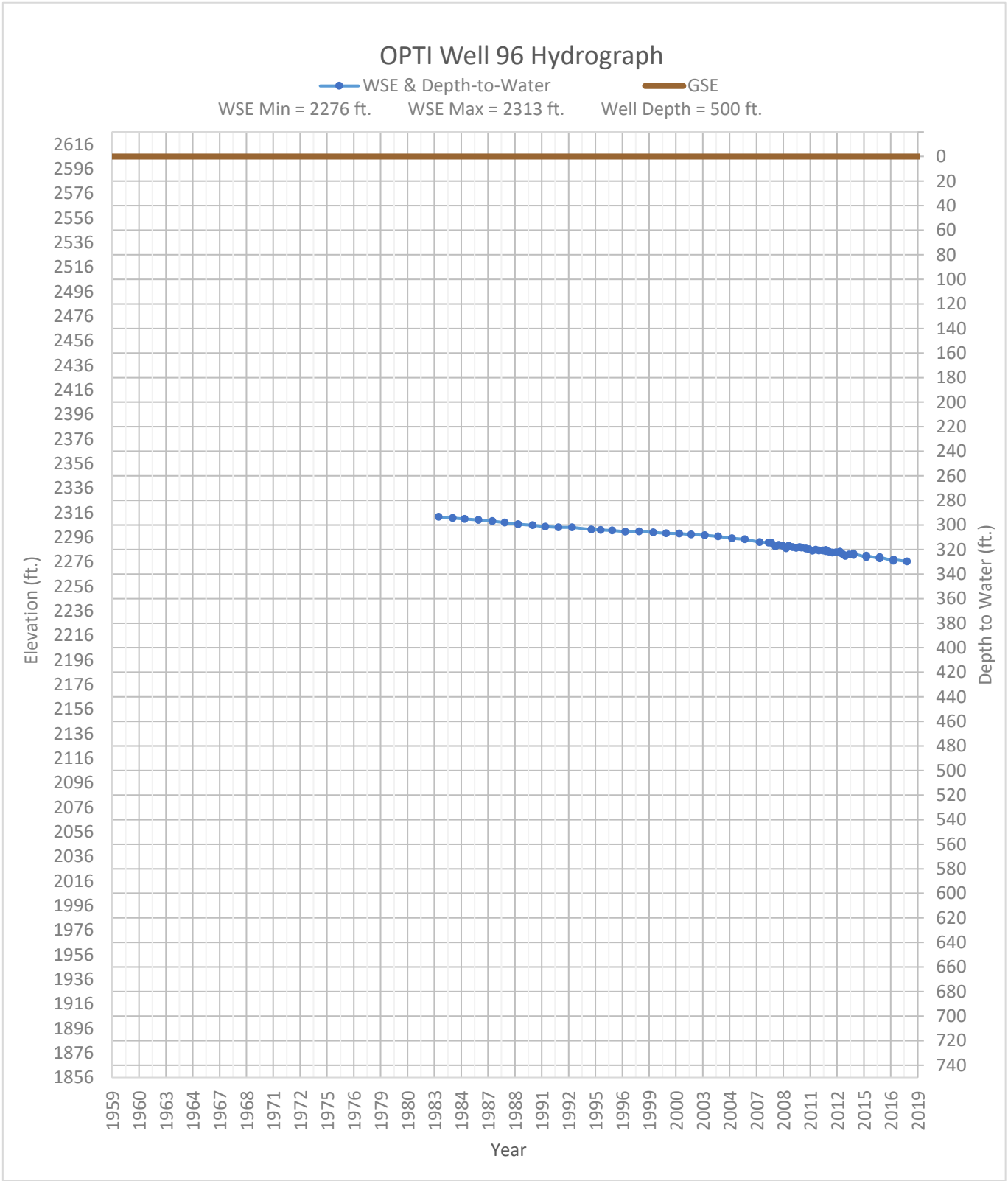
OPTI Well 96 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2276 ft.
WSE Max = 2313 ft.
Well Depth = 500 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2616
2596
2576
2556
2536
2516
2496
2476
2456
2436
2416
2396
2376
2356
2336
2316
2296
2276
2256
2236
2216
2196
2176
2156
2136
2116
2096
2076
2056
2036
2016
1996
1976
1956
1936
1916
1896
1876
1856
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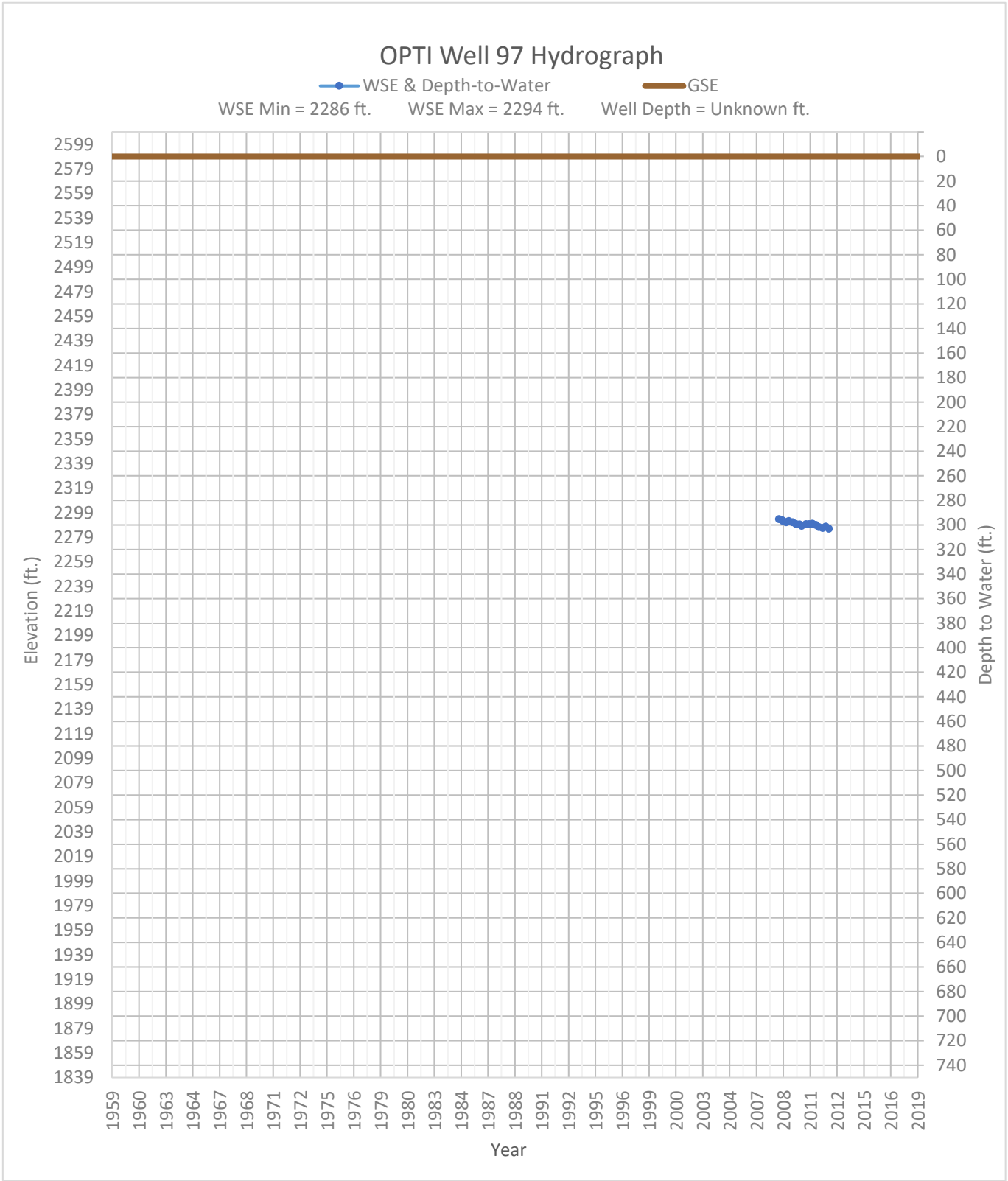
OPTI Well 97 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2286 ft.
WSE Max = 2294 ft.
Well Depth = Unknown ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2599
2579
2559
2539
2519
2499
2479
2459
2439
2419
2399
2379
2359
2339
2319
2299
2279
2259
2239
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2179
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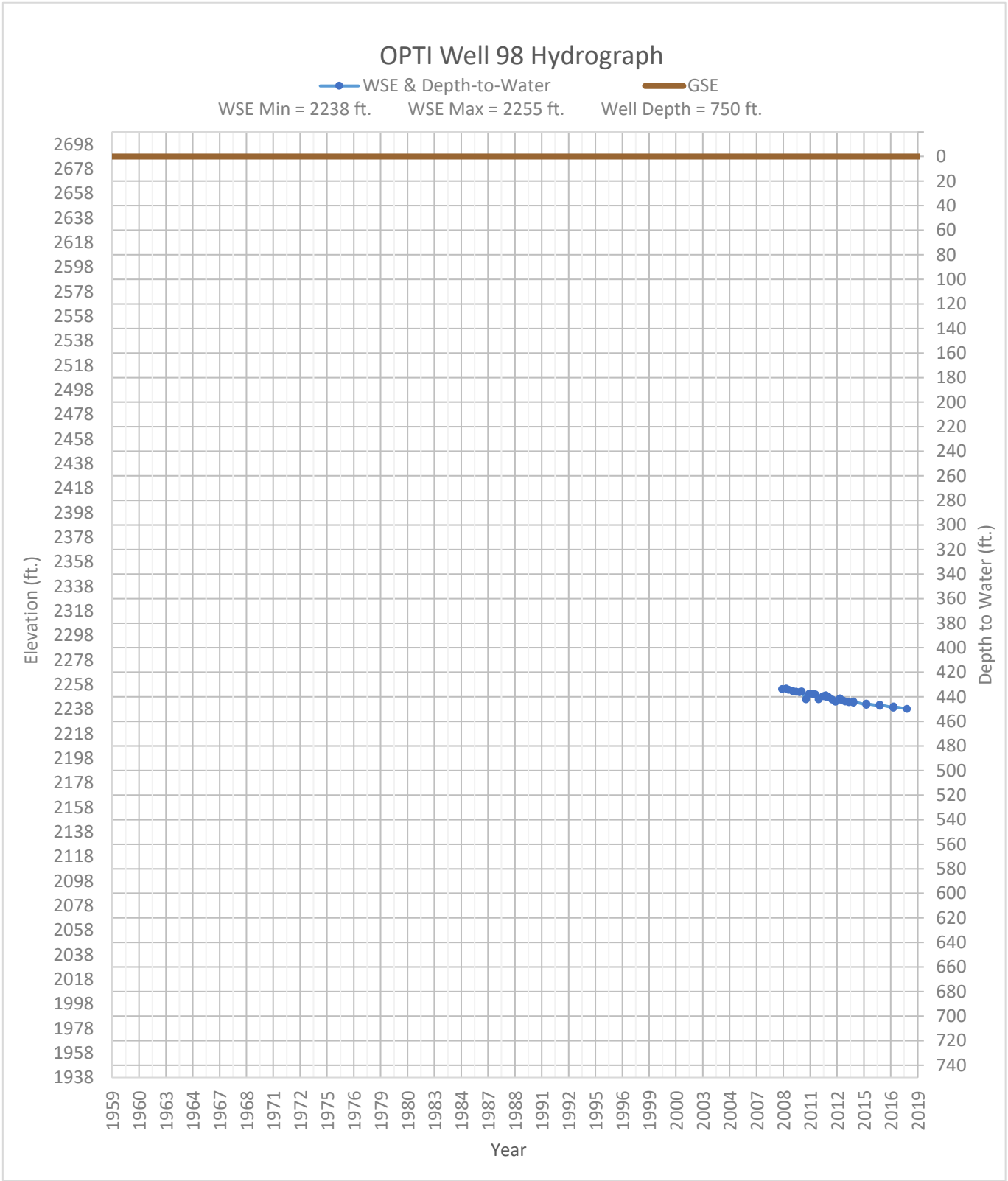
OPTI Well 98 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2238 ft.
WSE Max = 2255 ft.
Well Depth = 750 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2698
2678
2658
2638
2618
2598
2578
2558
2538
2518
2498
2478
2458
2438
2418
2398
2378
2358
2338
2318
2298
2278
2258
2238
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2198
2178
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2138
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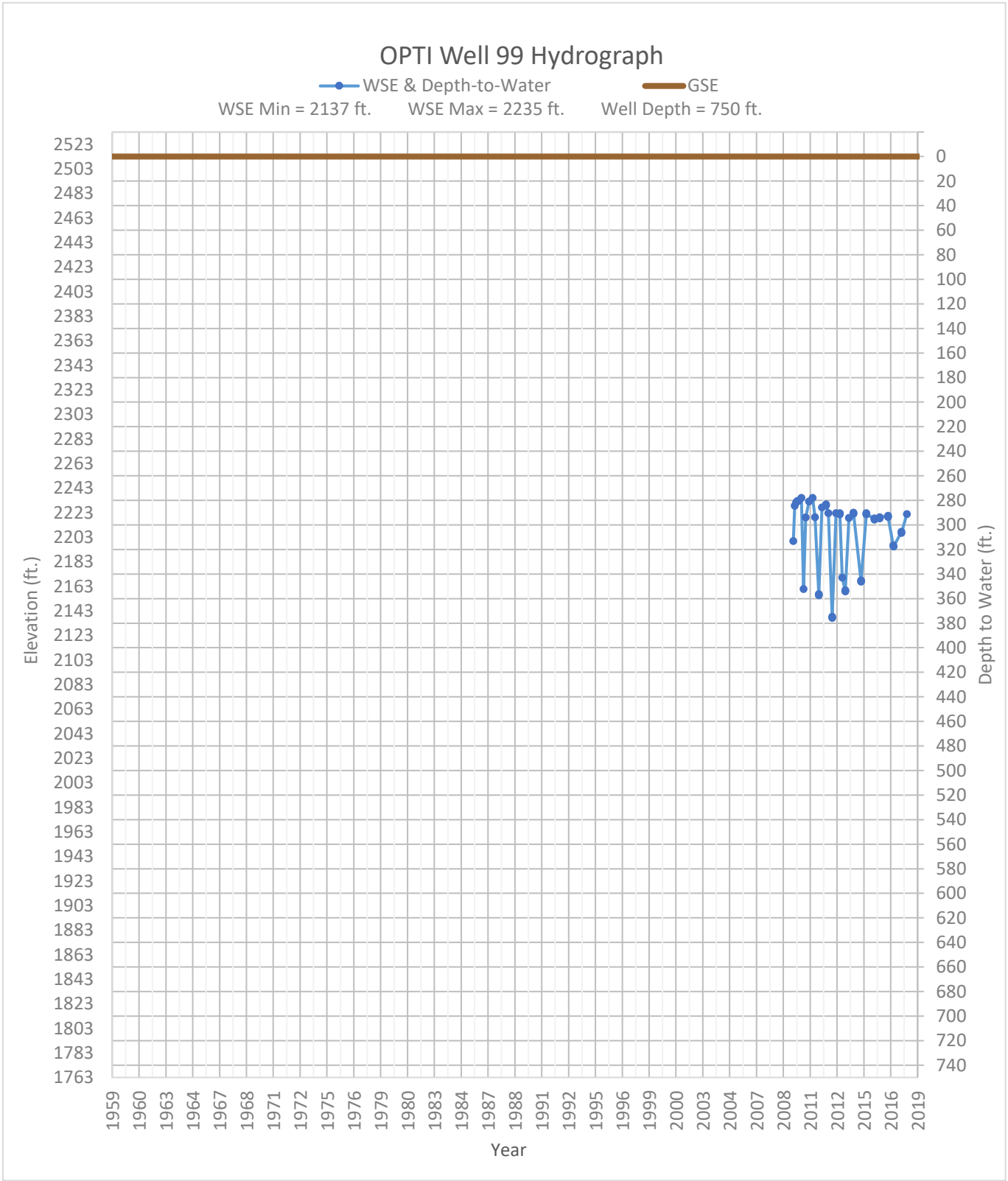
OPTI Well 99 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2137 ft.
WSE Max = 2235 ft.
Well Depth = 750 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2523
2503
2483
2463
2443
2423
2403
2383
2363
2343
2323
2303
2283
2263
2243
2223
2203
2183
2163
2143
2123
2103
2083
2063
2043
2023
2003
1983
1963
1943
1923
1903
1883
1863
1843
1823
1803
1783
1763
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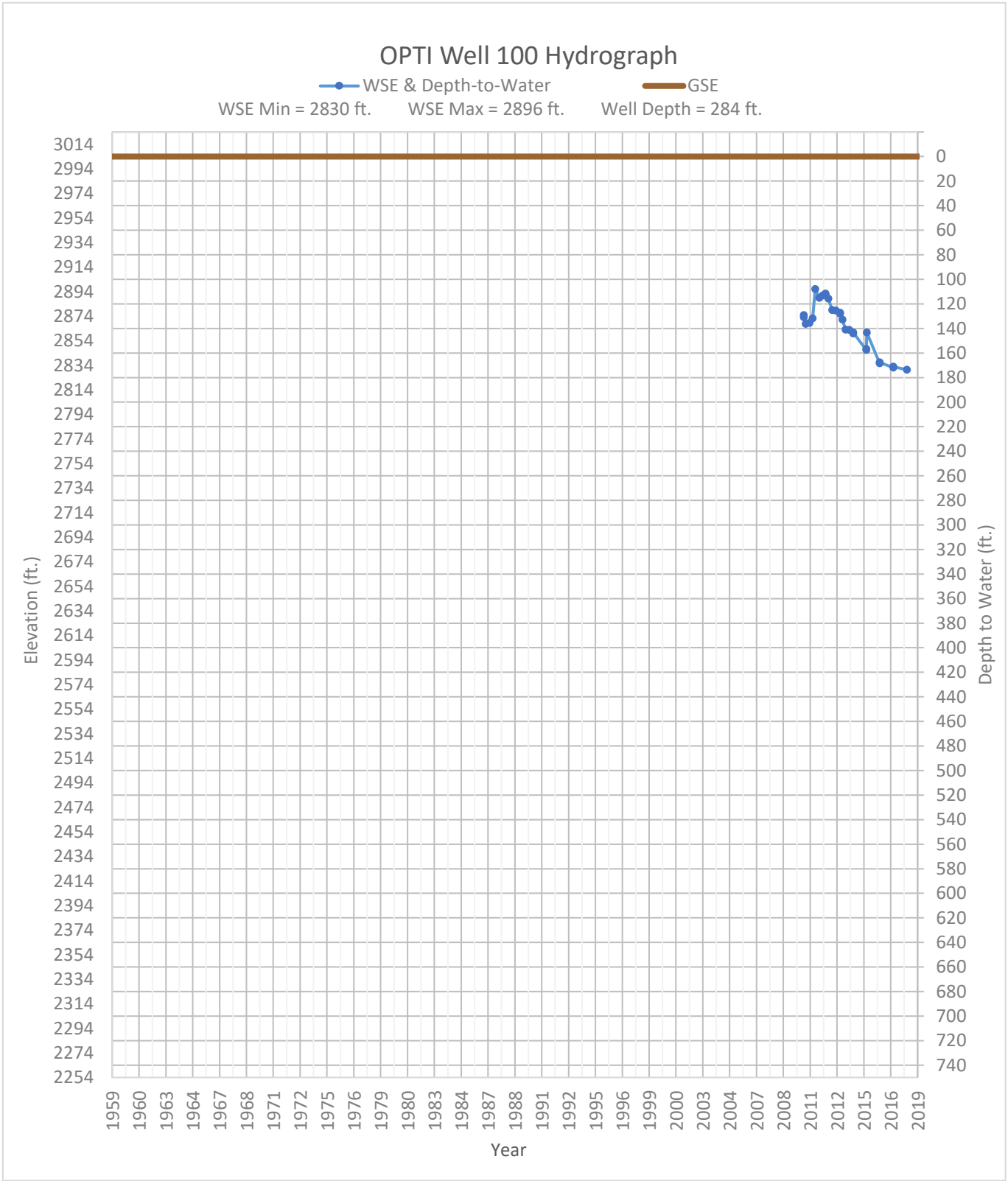
OPTI Well 100 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2830 ft.
WSE Max = 2896 ft.
Well Depth = 284 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
3014
2994
2974
2954
2934
2914
2894
2874
2854
2834
2814
2794
2774
2754
2734
2714
2694
2674
2654
2634
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2594
2574
2554
2534
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2474
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2374
2354
2334
2314
2294
2274
2254
0
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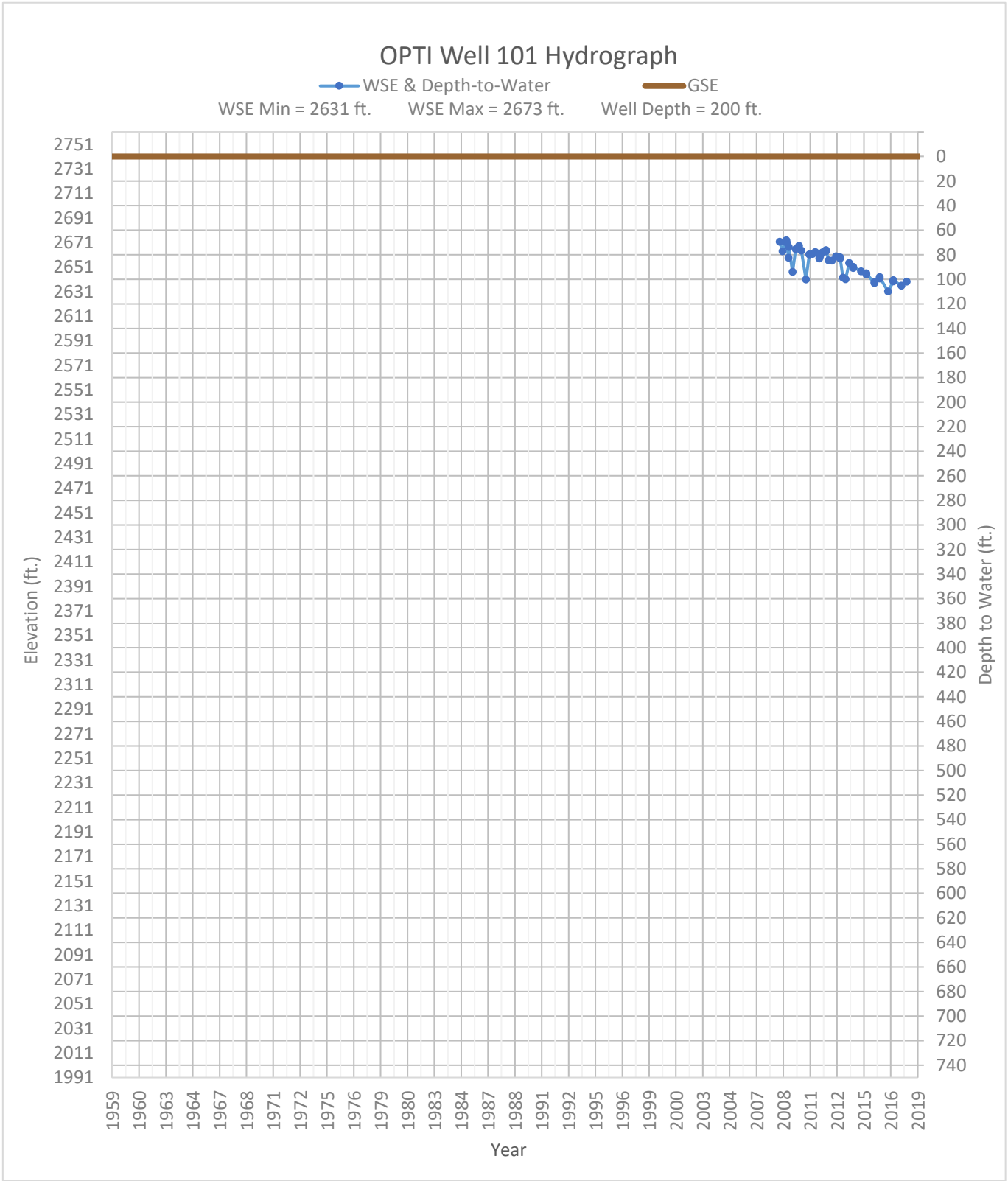
OPTI Well 101 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2631 ft.
WSE Max = 2673 ft.
Well Depth = 200 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2751
2731
2711
2691
2671
2651
2631
2611
2591
2571
2551
2531
2511
2491
2471
2451
2431
2411
2391
2371
2351
2331
2311
2291
2271
2251
2231
2211
2191
2171
2151
2131
2111
2091
2071
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2031
2011
1991
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2008
2011
2012
2015
2016
2019


OPTI Well 102 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 1802 ft.
WSE Max = 1861 ft.
Well Depth = Unknown ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2056
2036
2016
1996
1976
1956
1936
1916
1896
1876
1856
1836
1816
1796
1776
1756
1736
1716
1696
1676
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1376
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1336
1316
1296
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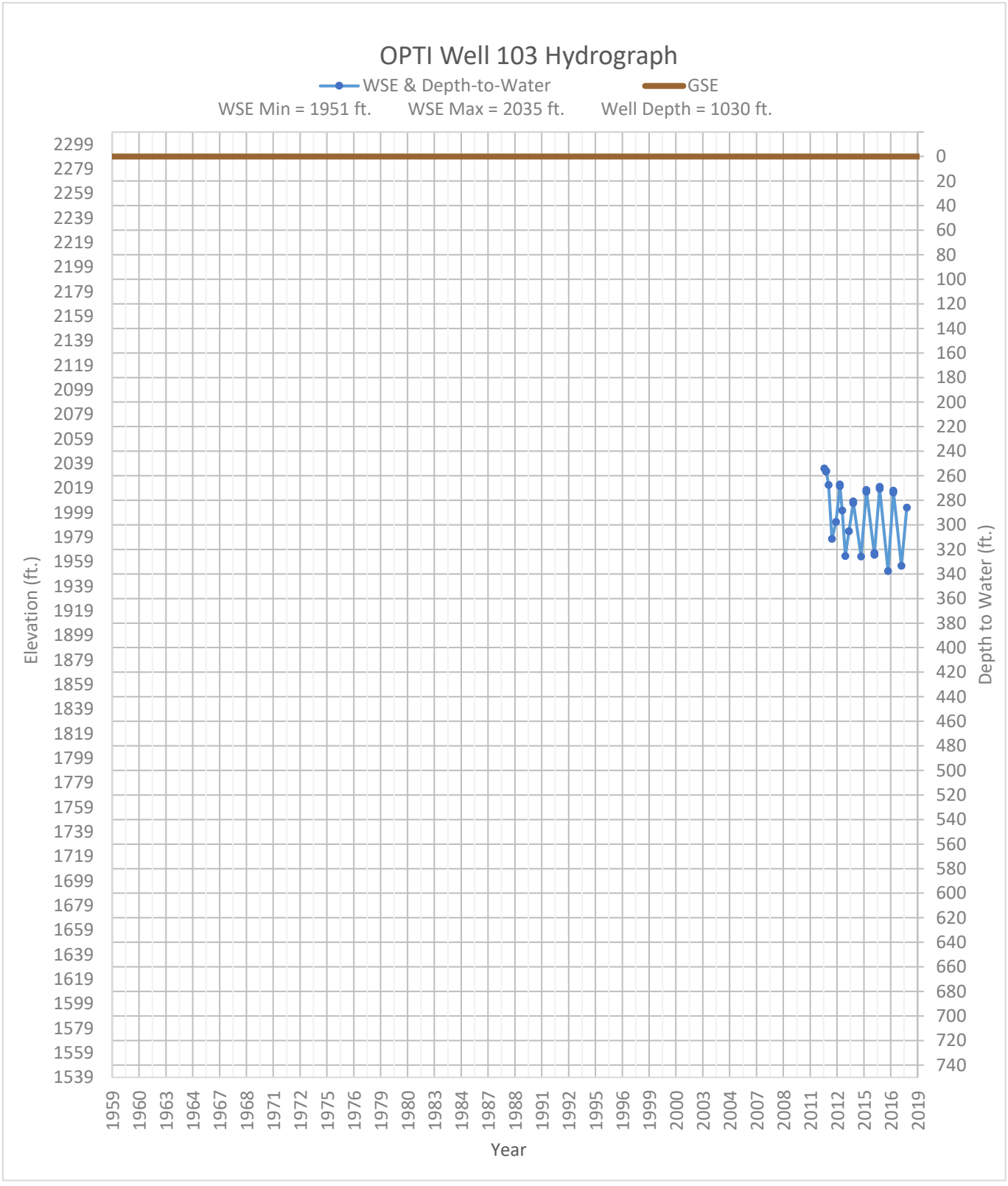
OPTI Well 103 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 1951 ft.
WSE Max = 2035 ft.
Well Depth = 1030 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2299
2279
2259
2239
2219
2199
2179
2159
2139
2119
2099
2079
2059
2039
2019
1999
1979
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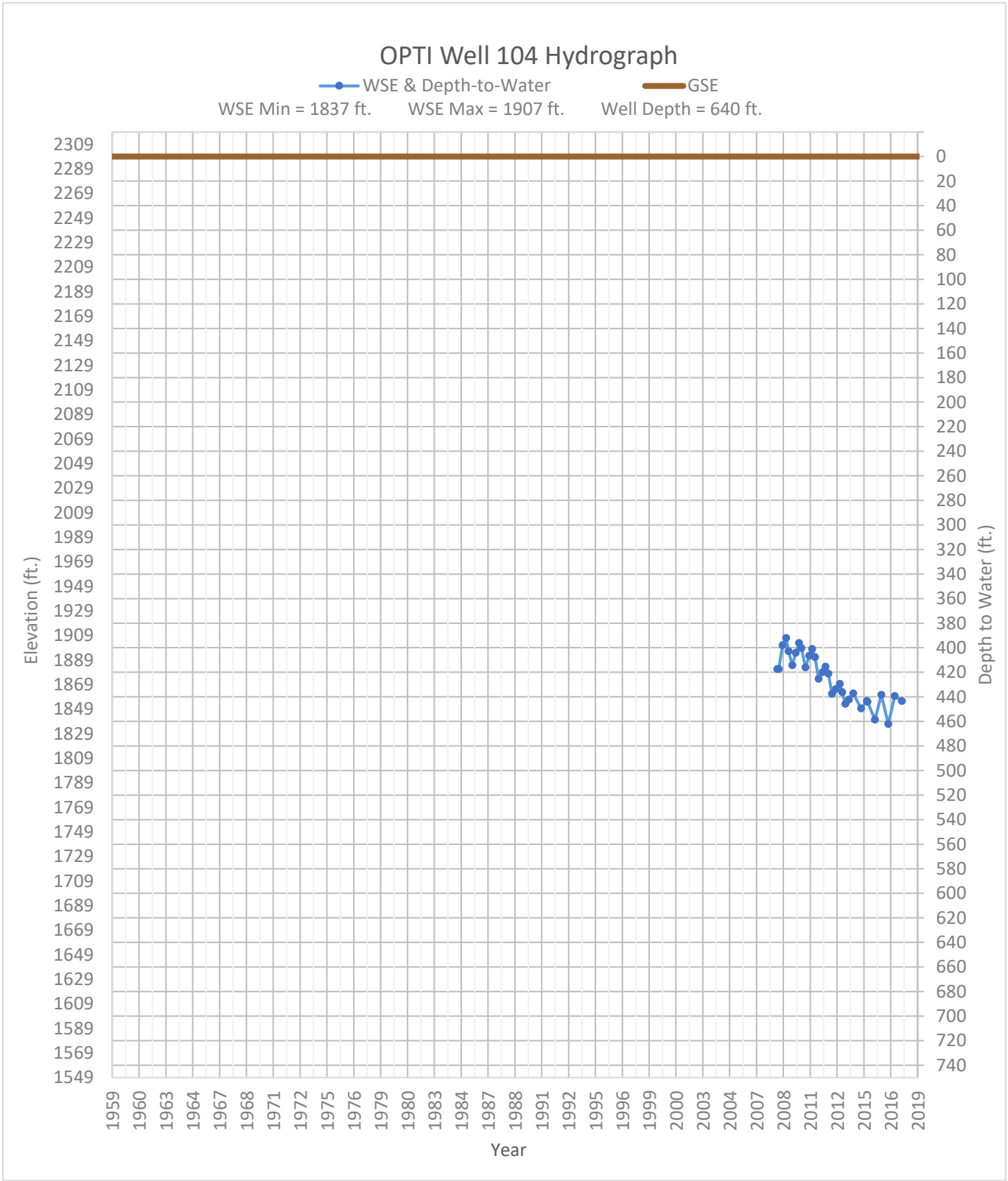
OPTI Well 104 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 1837 ft.
WSE Max = 1907 ft.
Well Depth = 640 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2309
2289
2269
2249
2229
2209
2189
2169
2149
2129
2109
2089
2069
2049
2029
2009
1989
1969
1949
1929
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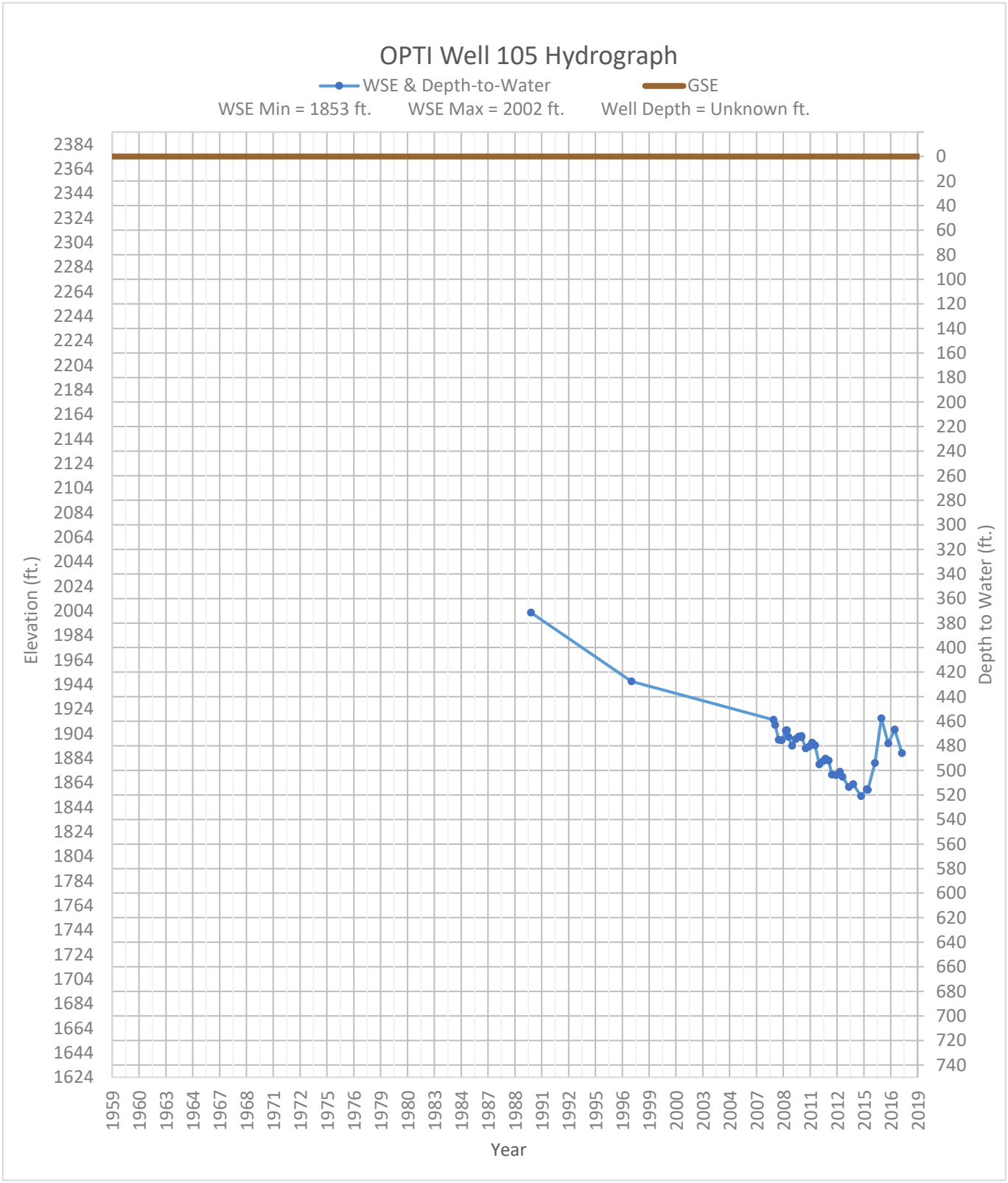
OPTI Well 105 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 1853 ft.
WSE Max = 2002 ft.
Well Depth = Unknown ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2384
2364
2344
2324
2304
2284
2264
2244
2224
2204
2184
2164
2144
2124
2104
2084
2064
2044
2024
2004
1984
1964
1944
1924
1904
1884
1864
1844
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1804
1784
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1744
1724
1704
1684
1664
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1624
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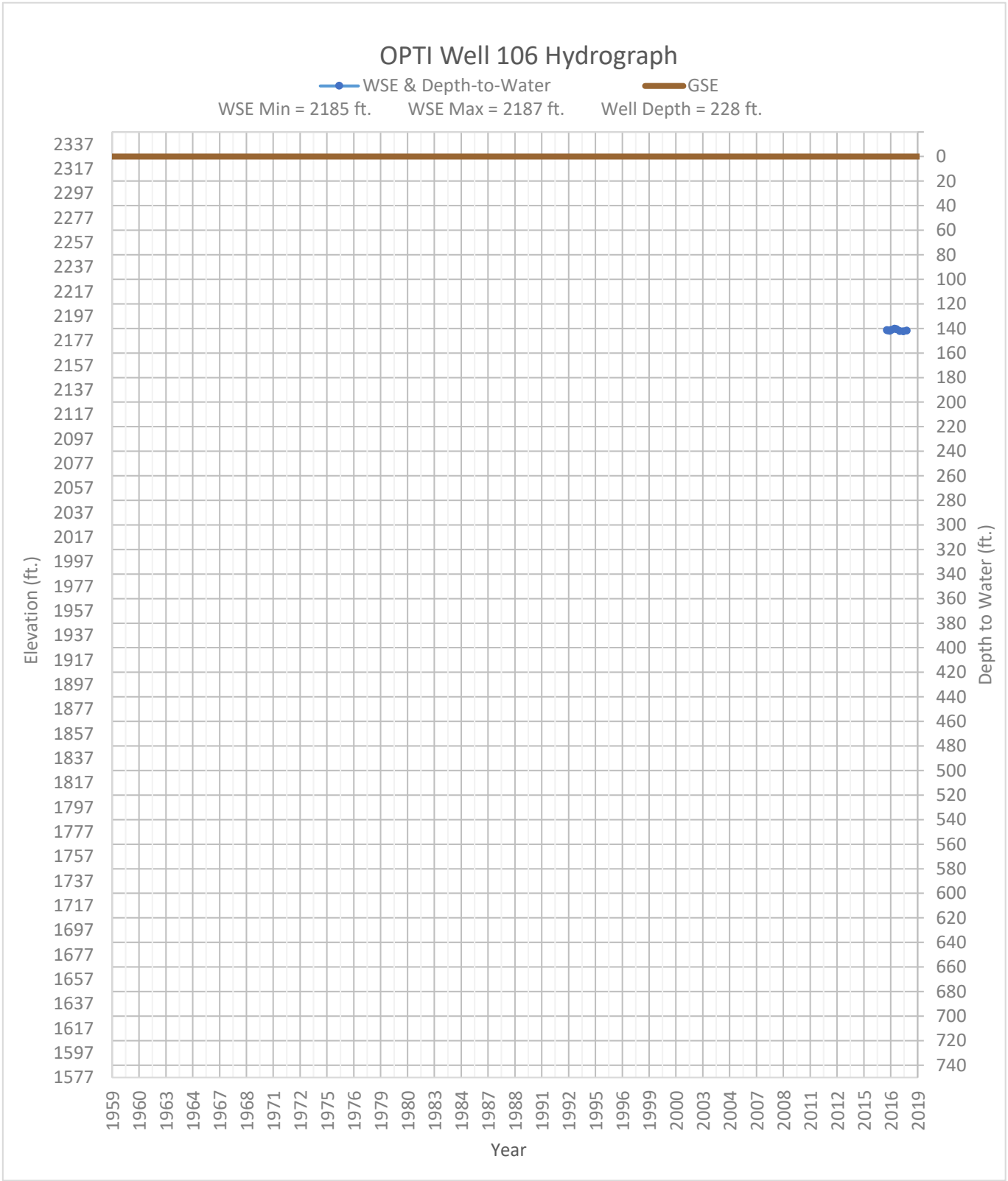
OPTI Well 106 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2185 ft.
WSE Max = 2187 ft.
Well Depth = 228 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2337
2317
2297
2277
2257
2237
2217
2197
2177
2157
2137
2117
2097
2077
2057
2037
2017
1997
1977
1957
1937
1917
1897
1877
1857
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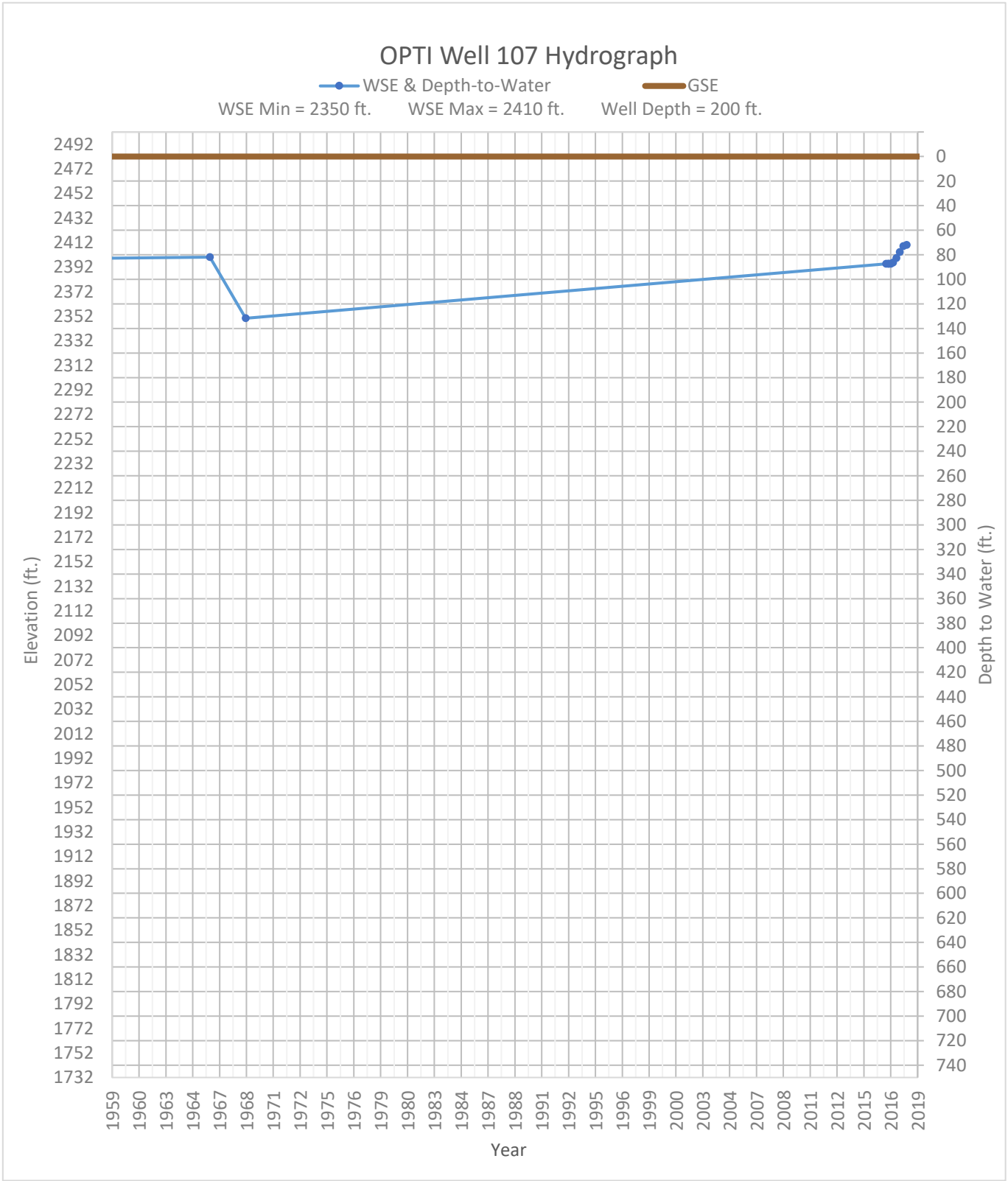
OPTI Well 107 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2350 ft.
WSE Max = 2410 ft.
Well Depth = 200 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2492
2472
2452
2432
2412
2392
2372
2352
2332
2312
2292
2272
2252
2232
2212
2192
2172
2152
2132
2112
2092
2072
2052
2032
2012
1992
1972
1952
1932
1912
1892
1872
1852
1832
1812
1792
1772
1752
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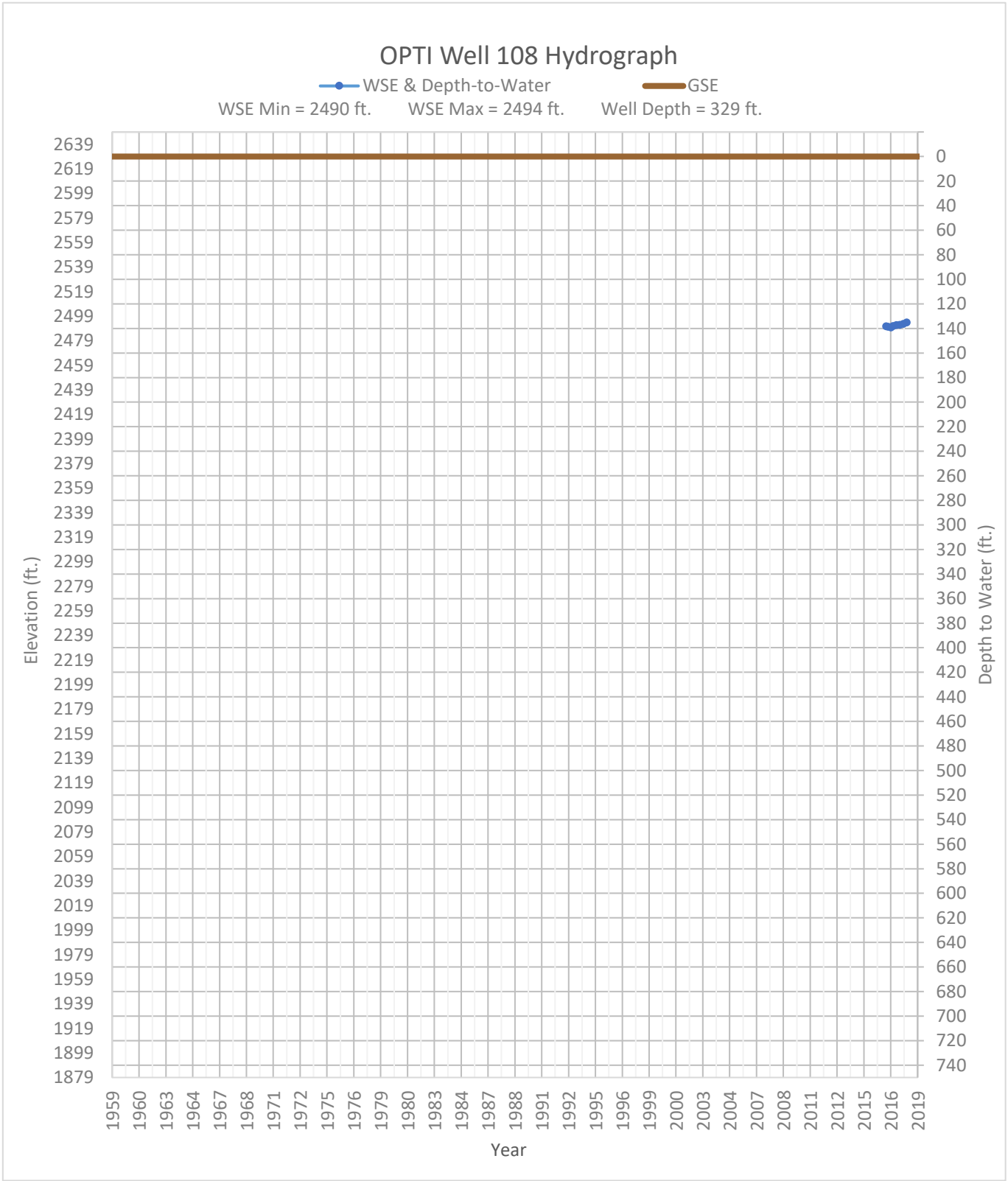
OPTI Well 108 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2490 ft.
WSE Max = 2494 ft.
Well Depth = 329 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2639
2619
2599
2579
2559
2539
2519
2499
2479
2459
2439
2419
2399
2379
2359
2339
2319
2299
2279
2259
2239
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2179
2159
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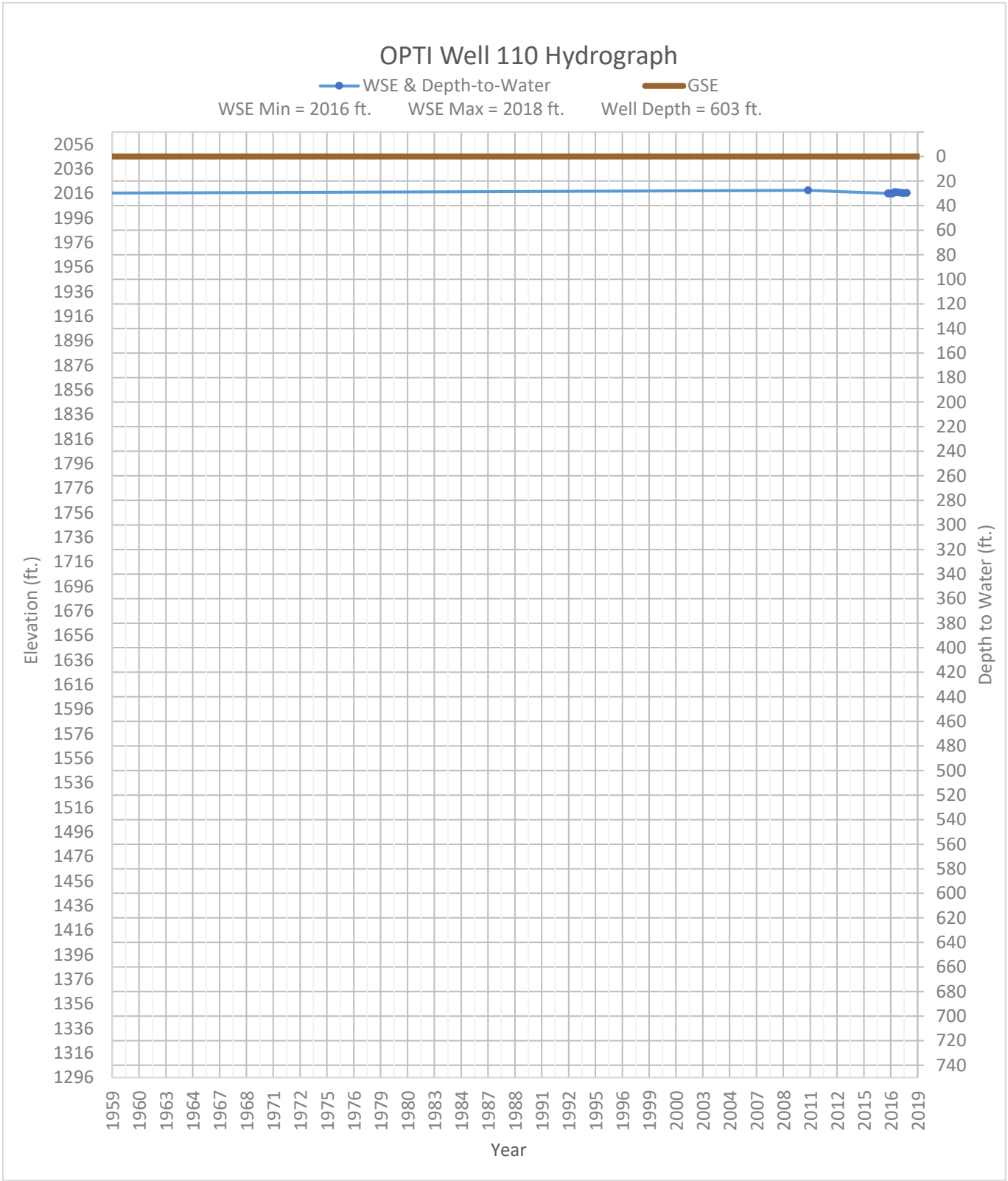
OPTI Well 110 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2016 ft.
WSE Max = 2018 ft.
Well Depth = 603 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2056
2036
2016
1996
1976
1956
1936
1916
1896
1876
1856
1836
1816
1796
1776
1756
1736
1716
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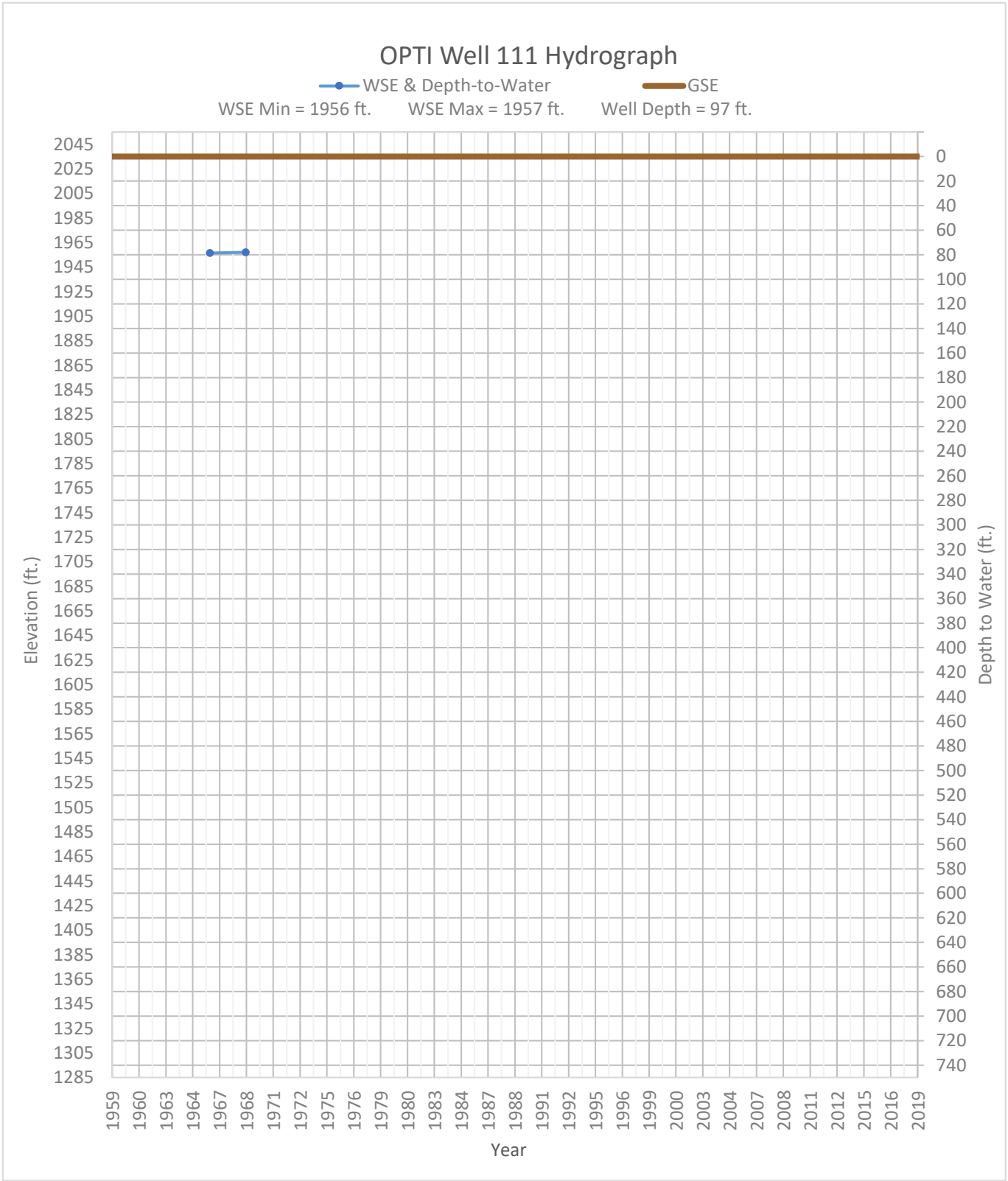
OPTI Well 111 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 1956 ft.
WSE Max = 1957 ft.
Well Depth = 97 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2045
2025
2005
1985
1965
1945
1925
1905
1885
1865
1845
1825
1805
1785
1765
1745
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1365
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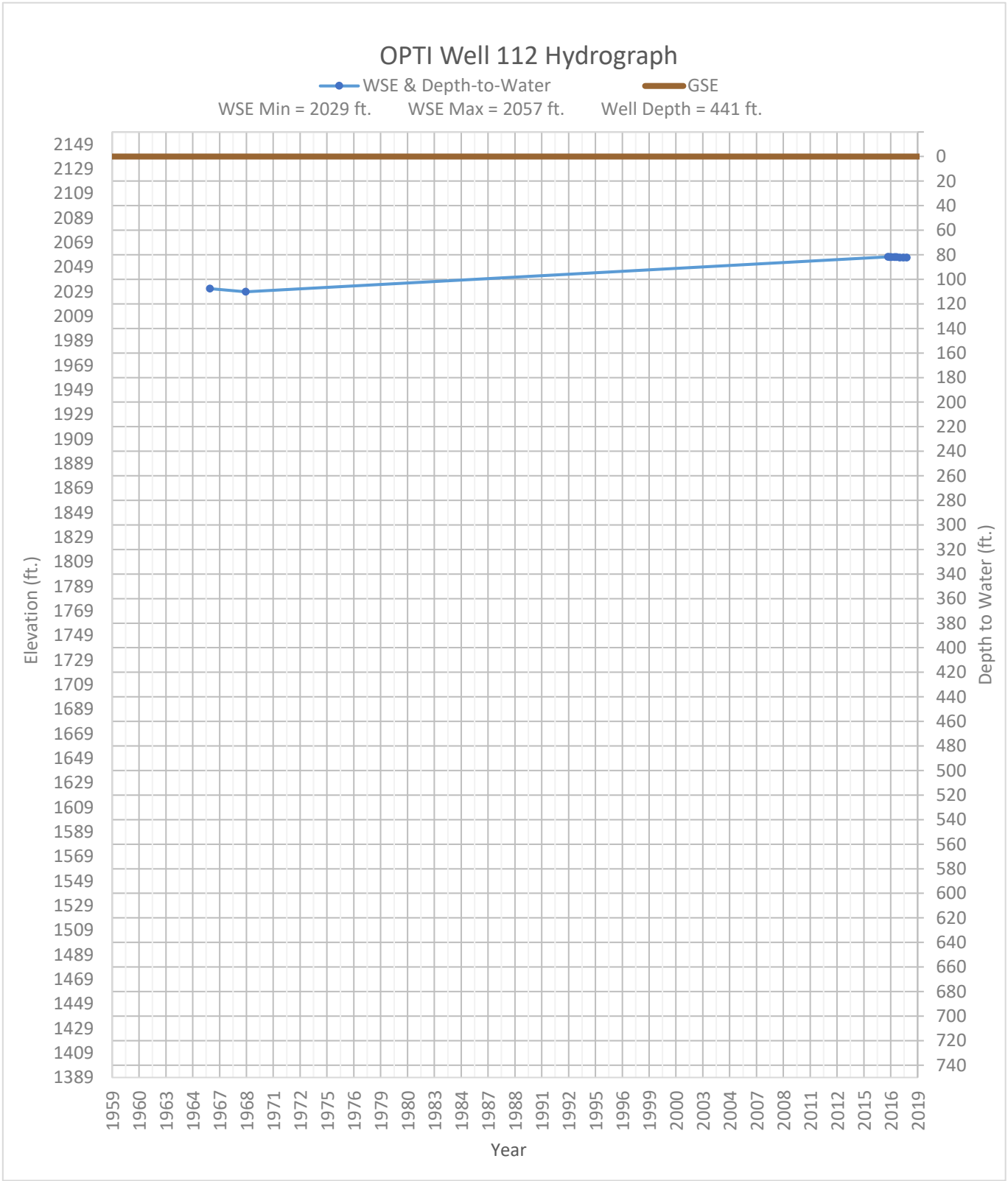
OPTI Well 112 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2029 ft.
WSE Max = 2057 ft.
Well Depth = 441 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2149
2129
2109
2089
2069
2049
2029
2009
1989
1969
1949
1929
1909
1889
1869
1849
1829
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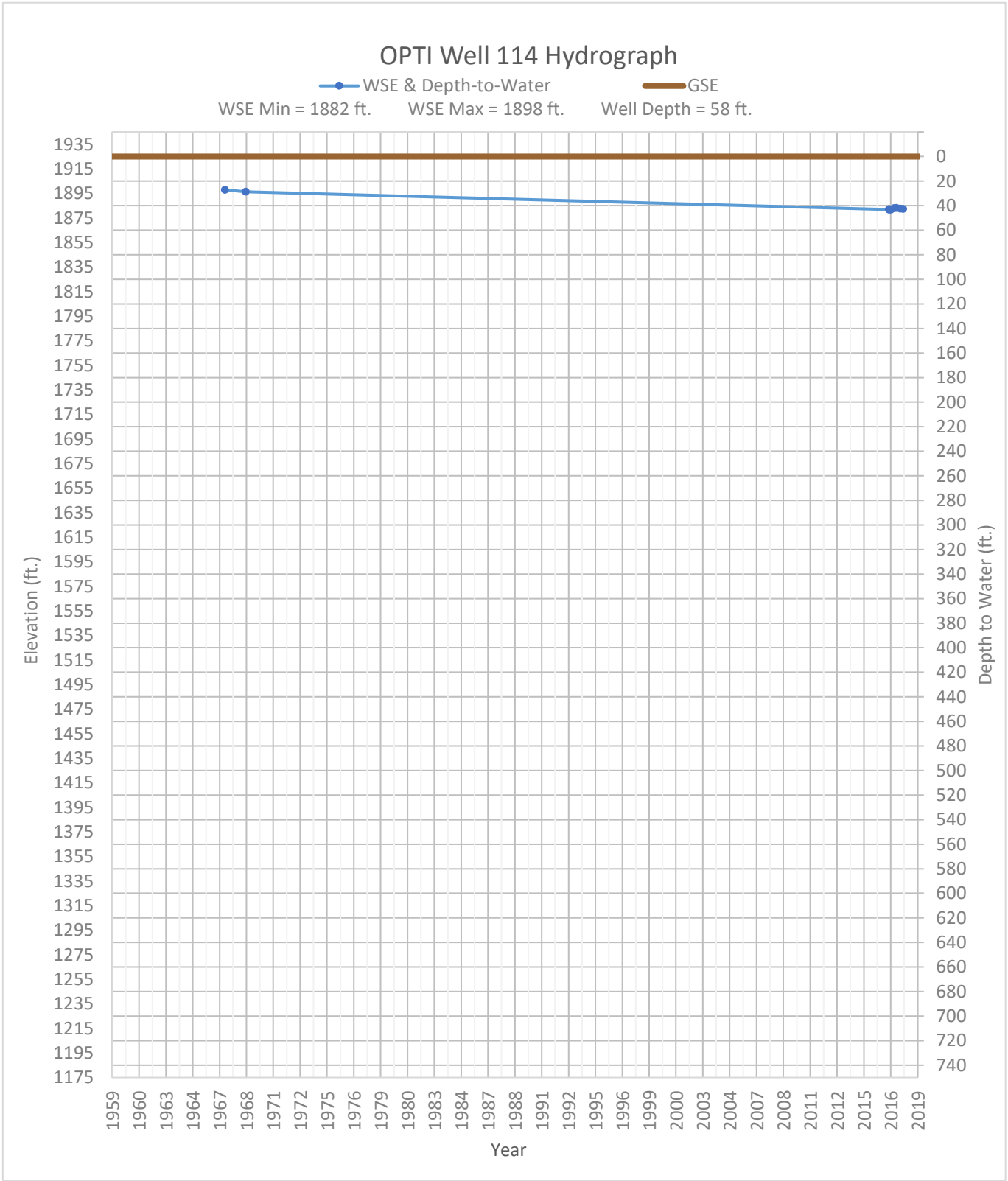
OPTI Well 114 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 1882 ft.
WSE Max = 1898 ft.
Well Depth = 58 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
1935
1915
1895
1875
1855
1835
1815
1795
1775
1755
1735
1715
1695
1675
1655
1635
1615
1595
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1255
1235
1215
1195
1175
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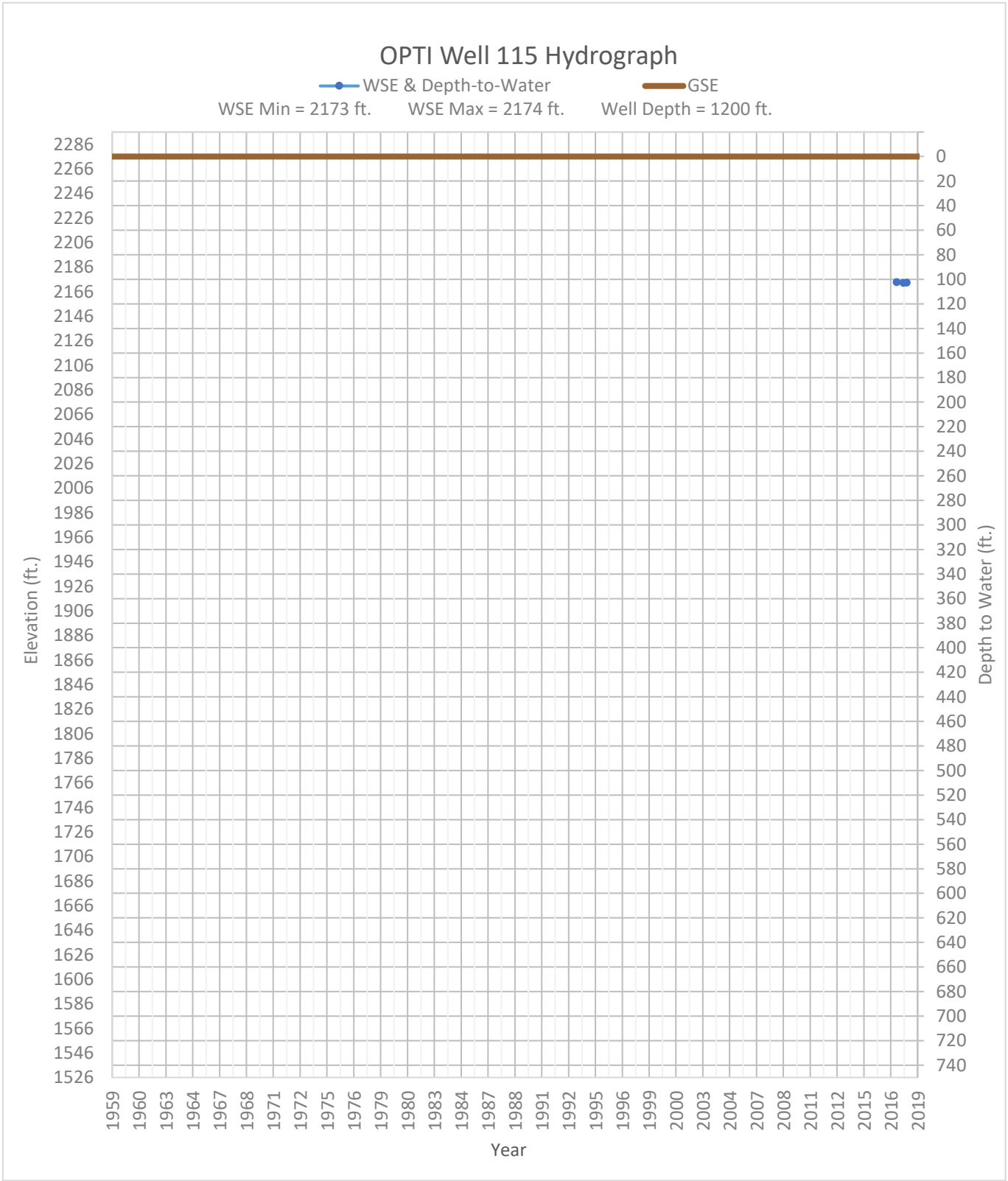
OPTI Well 115 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2173 ft.
WSE Max = 2174 ft.
Well Depth = 1200 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2286
2266
2246
2226
2206
2186
2166
2146
2126
2106
2086
2066
2046
2026
2006
1986
1966
1946
1926
1906
1886
1866
1846
1826
1806
1786
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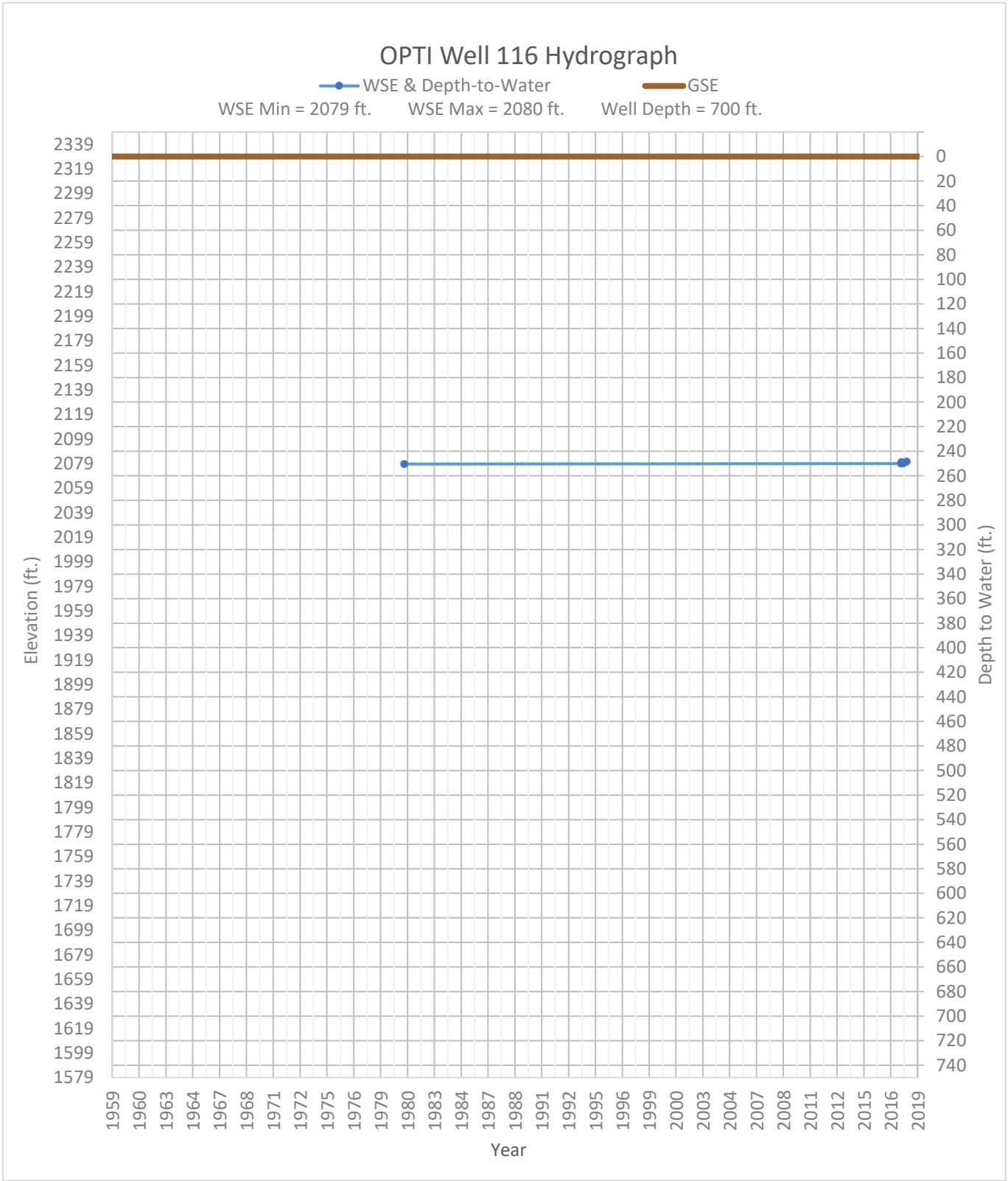
OPTI Well 116 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2079 ft.
WSE Max = 2080 ft.
Well Depth = 700 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2339
2319
2299
2279
2259
2239
2219
2199
2179
2159
2139
2119
2099
2079
2059
2039
2019
1999
1979
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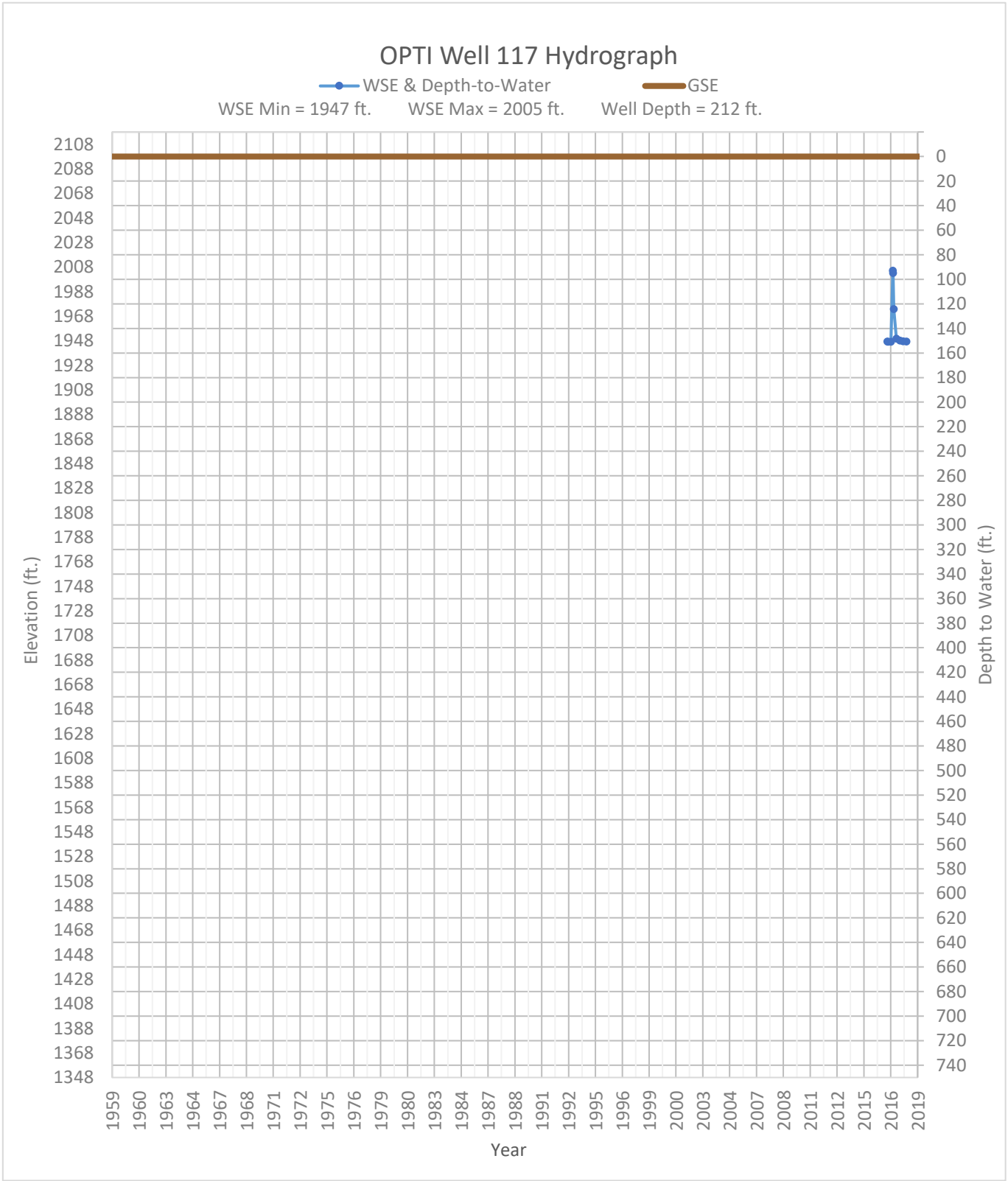
OPTI Well 117 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 1947 ft.
WSE Max = 2005 ft.
Well Depth = 212 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2108
2088
2068
2048
2028
2008
1988
1968
1948
1928
1908
1888
1868
1848
1828
1808
1788
1768
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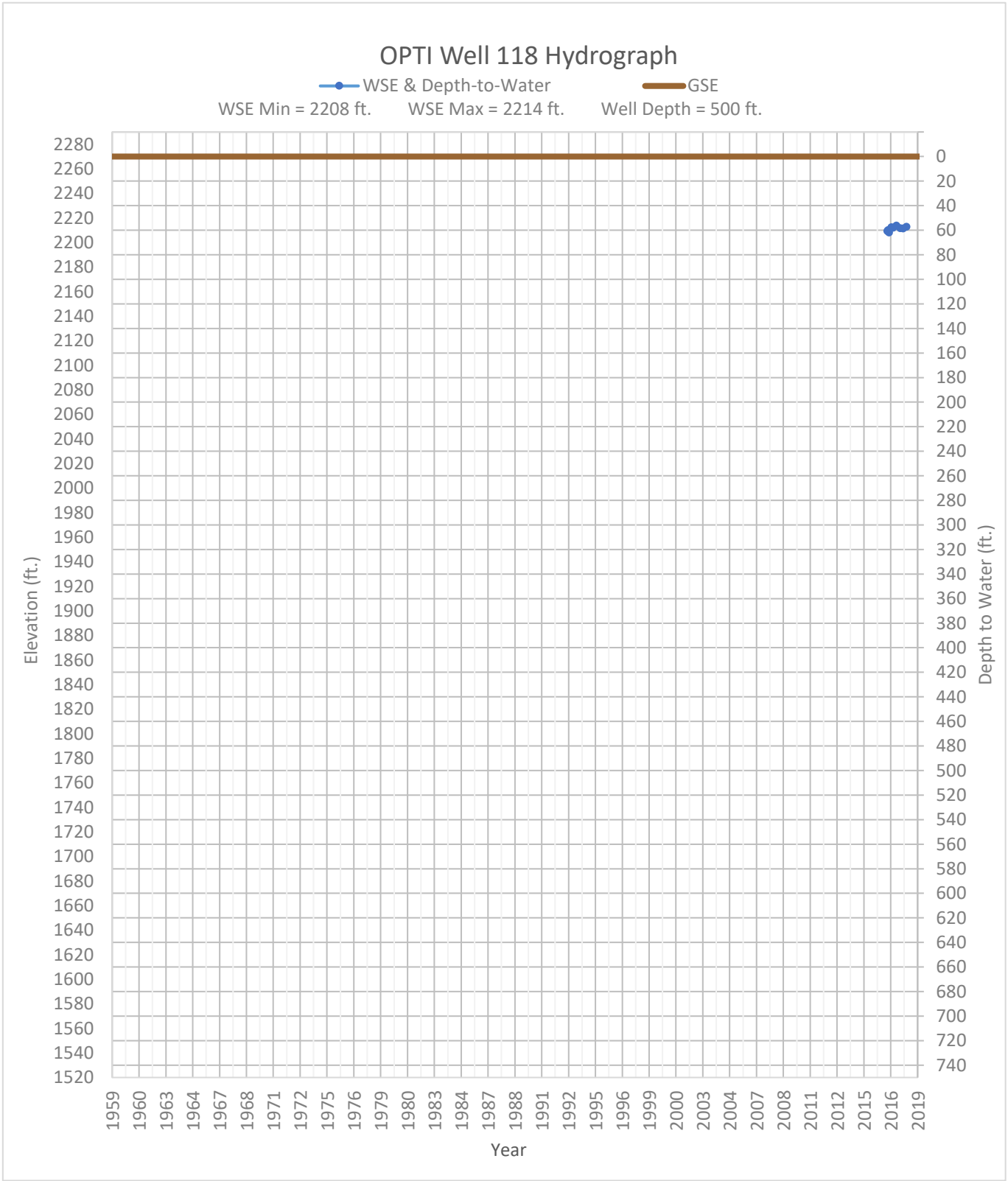
OPTI Well 118 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2208 ft.
WSE Max = 2214 ft.
Well Depth = 500 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2280
2260
2240
2220
2200
2180
2160
2140
2120
2100
2080
2060
2040
2020
2000
1980
1960
1940
1920
1900
1880
1860
1840
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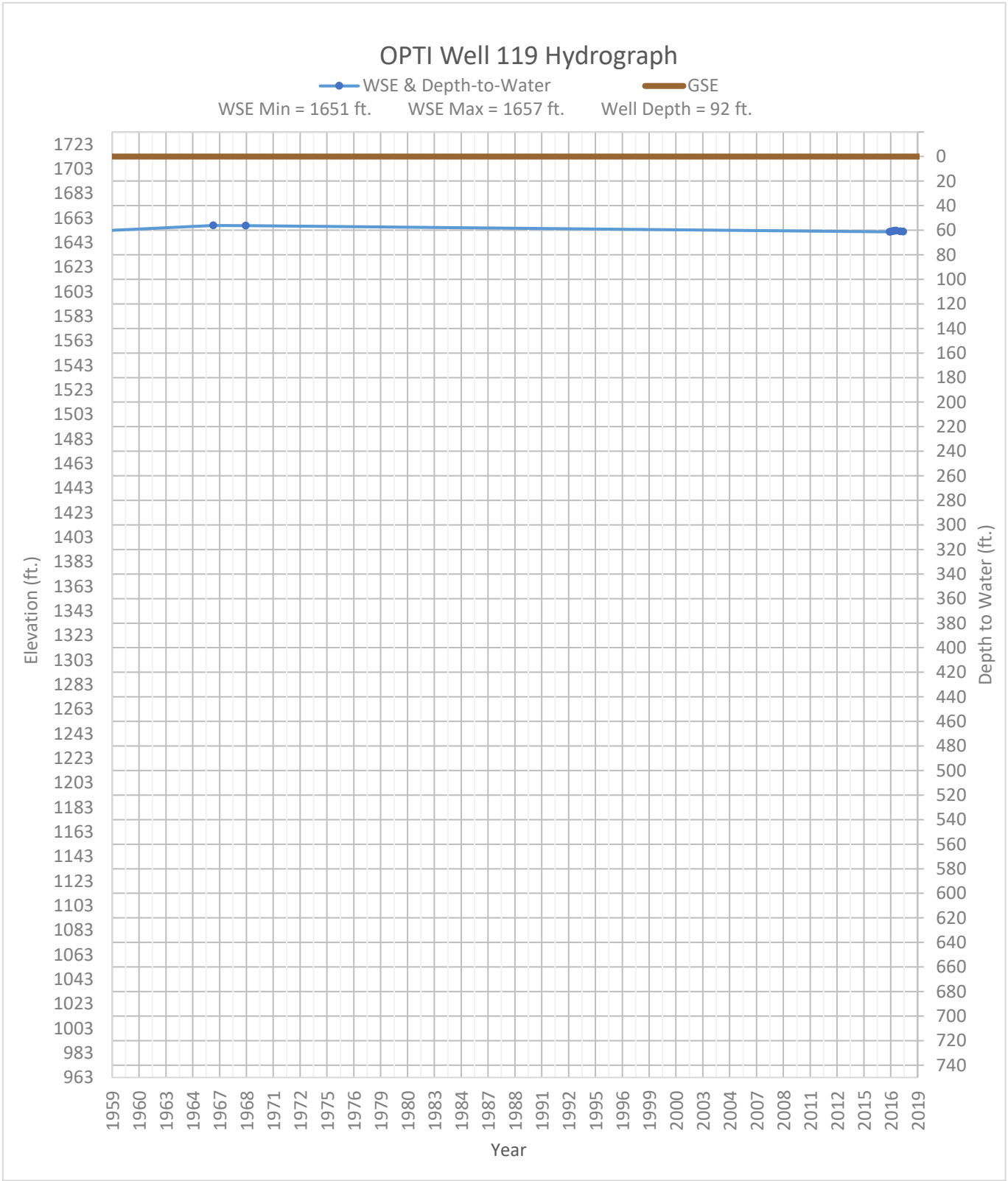
OPTI Well 119 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 1651 ft.
WSE Max = 1657 ft.
Well Depth = 92 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
1723
1703
1683
1663
1643
1623
1603
1583
1563
1543
1523
1503
1483
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1443
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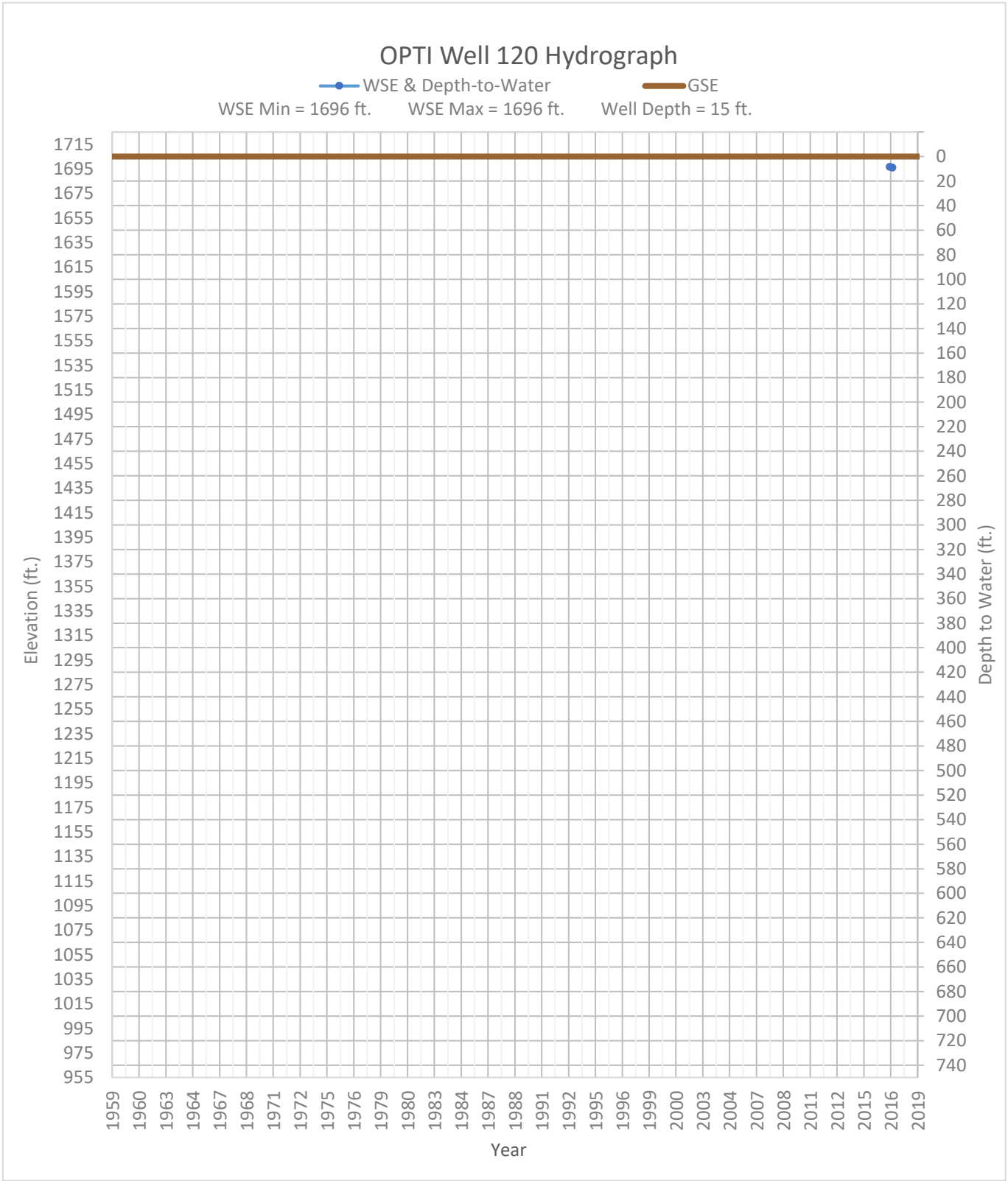
OPTI Well 120 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 1696 ft.
WSE Max = 1696 ft.
Well Depth = 15 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
1715
1695
1675
1655
1635
1615
1595
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1495
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1015
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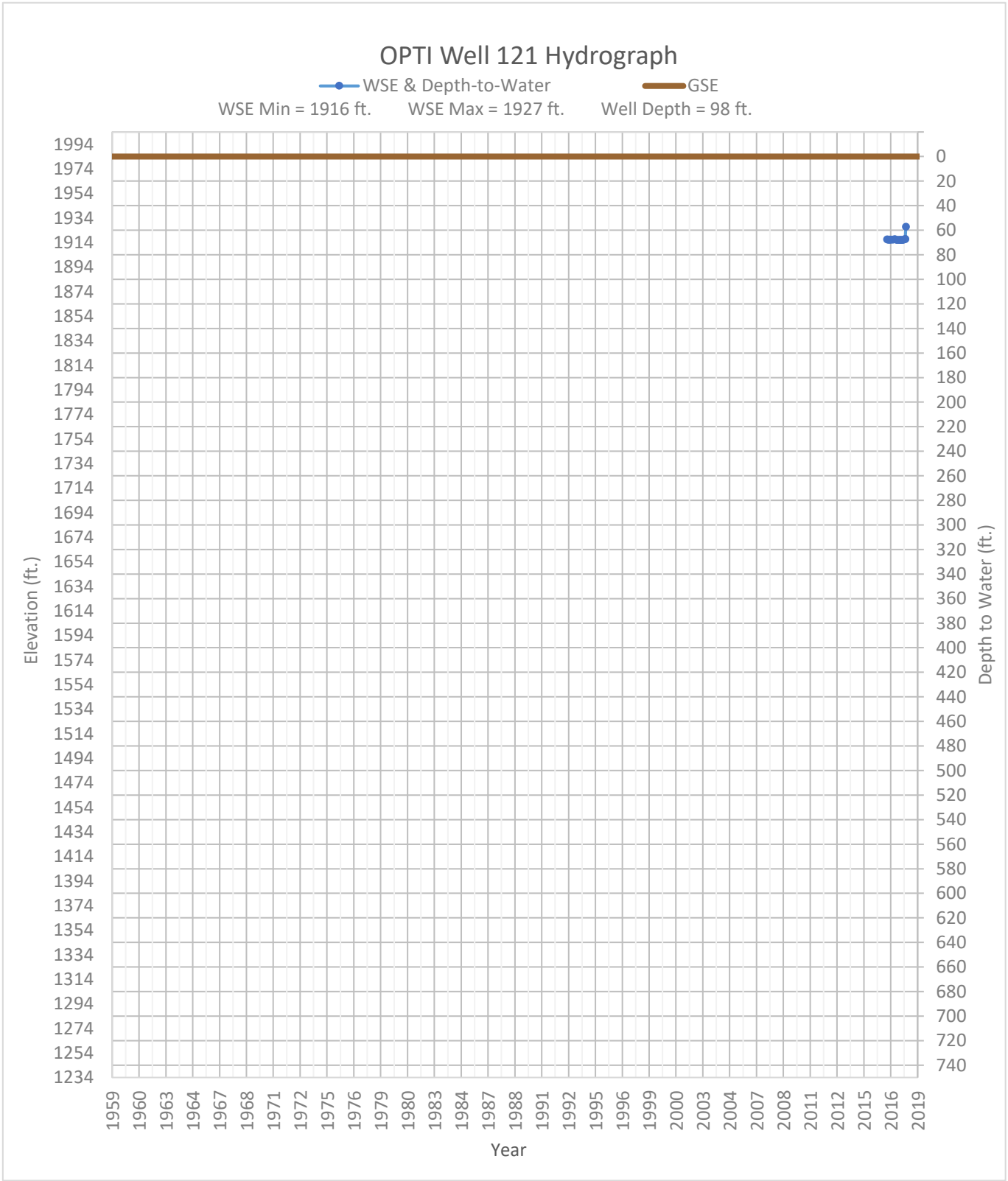
OPTI Well 121 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 1916 ft.
WSE Max = 1927 ft.
Well Depth = 98 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
1994
1974
1954
1934
1914
1894
1874
1854
1834
1814
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1734
1714
1694
1674
1654
1634
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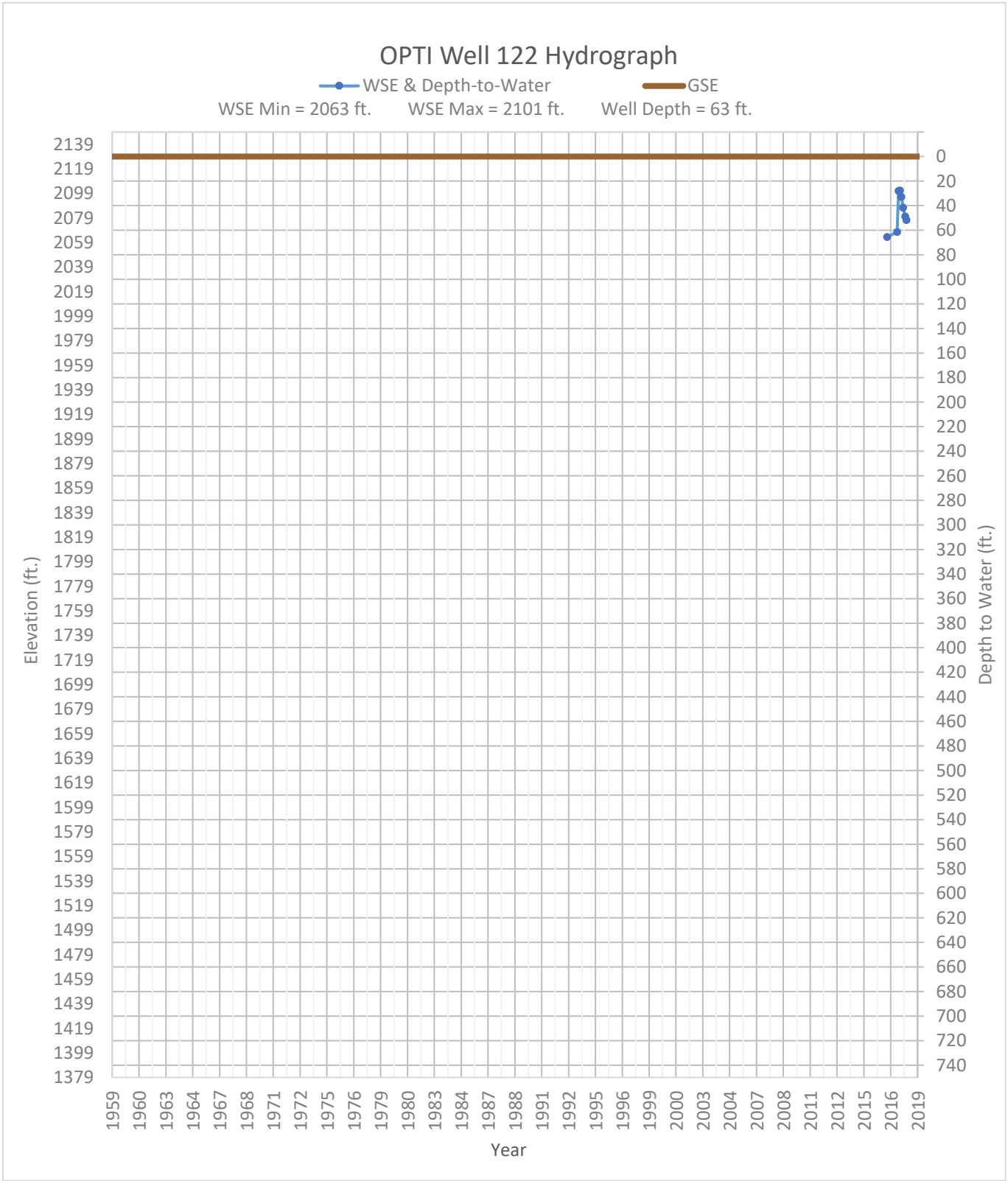
OPTI Well 122 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2063 ft.
WSE Max = 2101 ft.
Well Depth = 63 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2139
2119
2099
2079
2059
2039
2019
1999
1979
1959
1939
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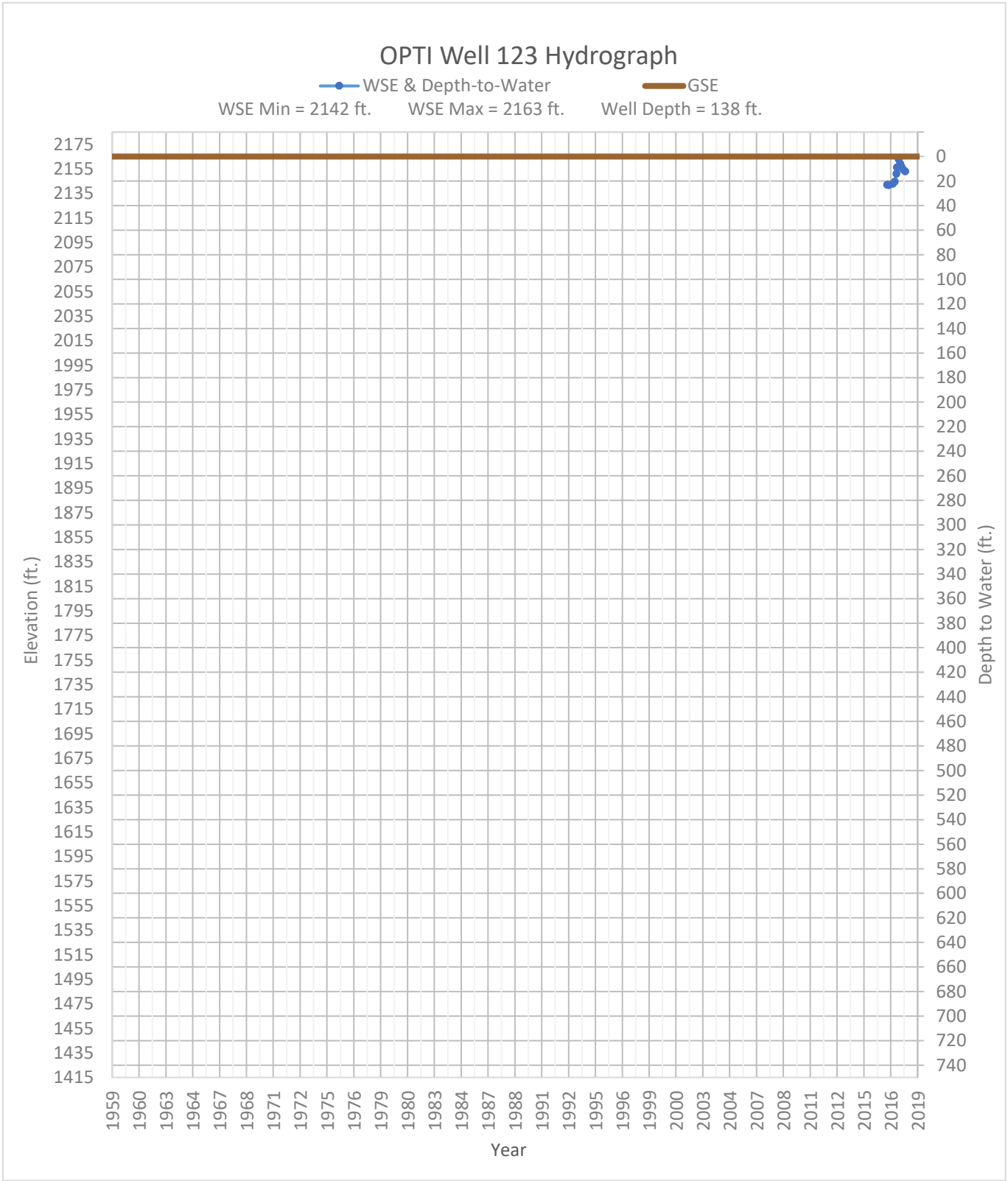
OPTI Well 123 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2142 ft.
WSE Max = 2163 ft.
Well Depth = 138 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2175
2155
2135
2115
2095
2075
2055
2035
2015
1995
1975
1955
1935
1915
1895
1875
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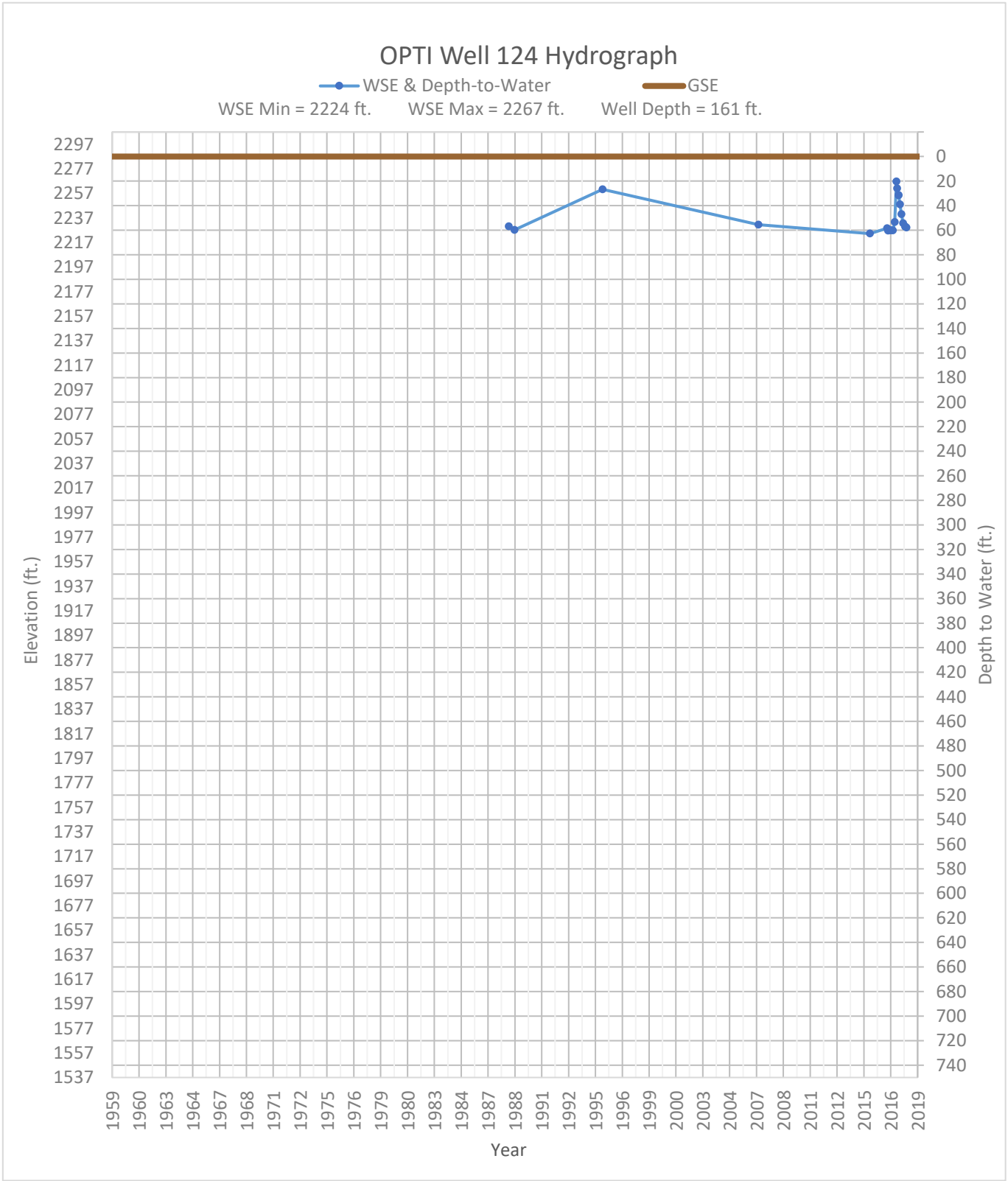
OPTI Well 124 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2224 ft.
WSE Max = 2267 ft.
Well Depth = 161 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2297
2277
2257
2237
2217
2197
2177
2157
2137
2117
2097
2077
2057
2037
2017
1997
1977
1957
1937
1917
1897
1877
1857
1837
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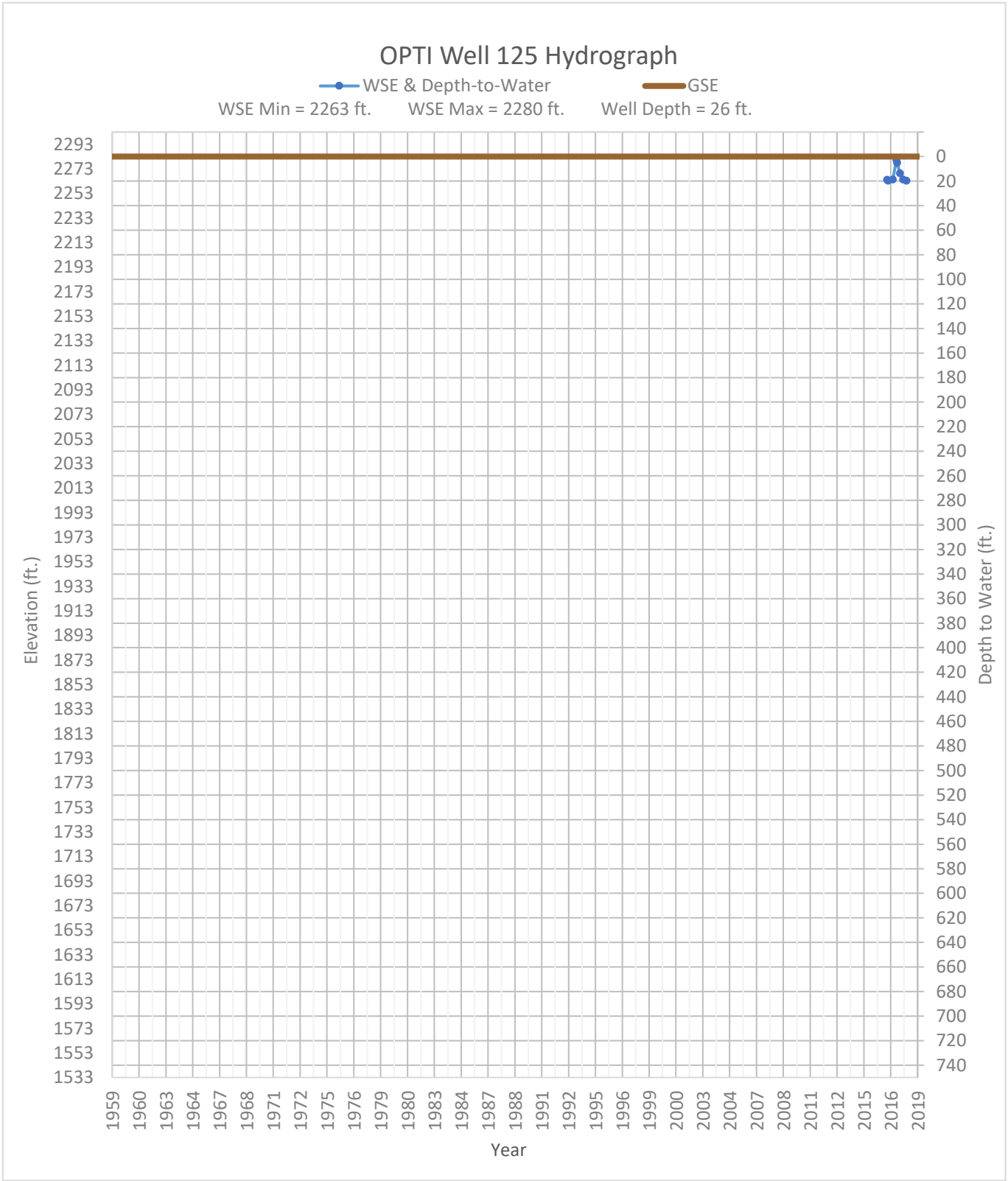
OPTI Well 125 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2263 ft.
WSE Max = 2280 ft.
Well Depth = 26 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2293
2273
2253
2233
2213
2193
2173
2153
2133
2113
2093
2073
2053
2033
2013
1993
1973
1953
1933
1913
1893
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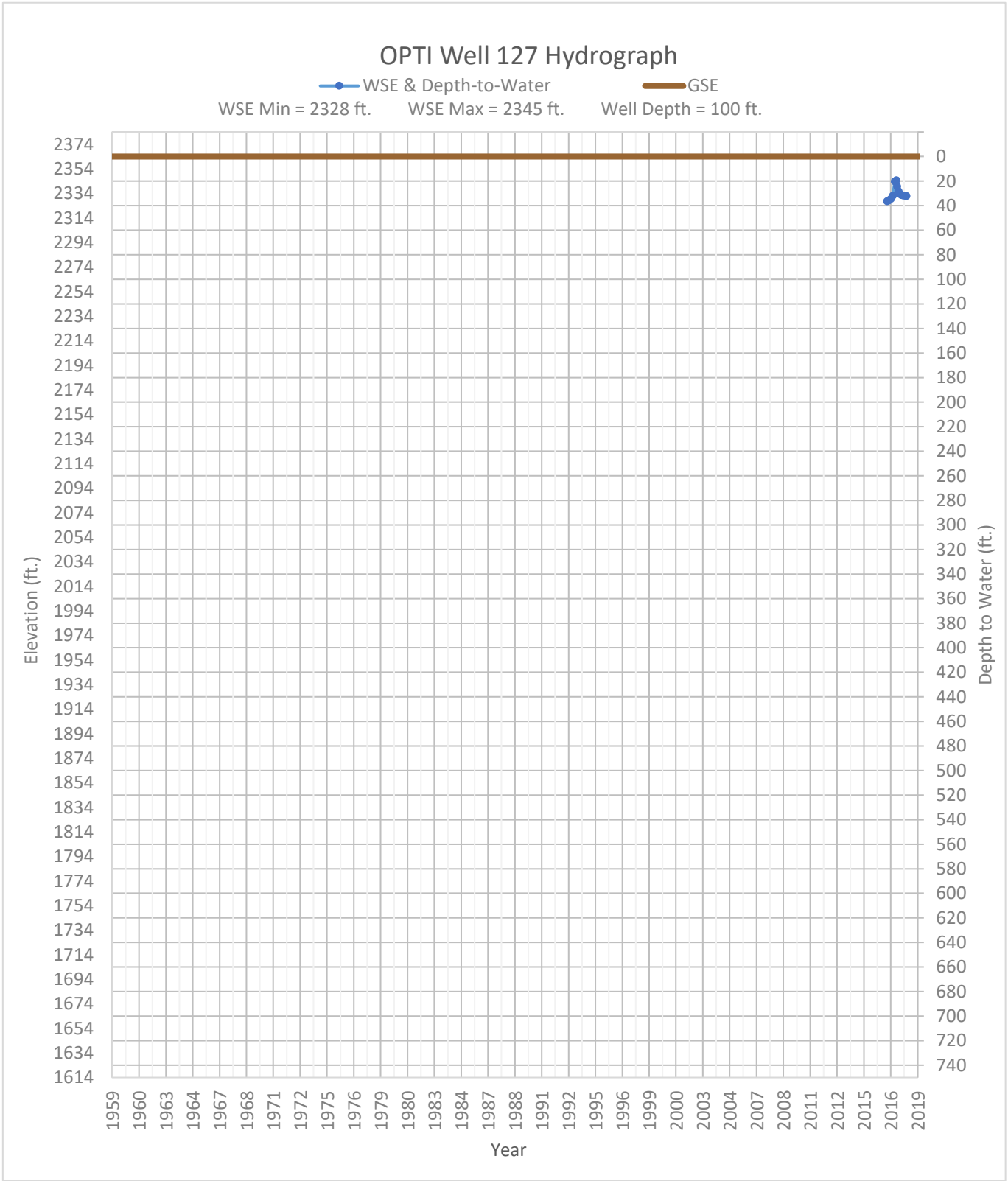
OPTI Well 127 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 2328 ft.
WSE Max = 2345 ft.
Well Depth = 100 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
2374
2354
2334
2314
2294
2274
2254
2234
2214
2194
2174
2154
2134
2114
2094
2074
2054
2034
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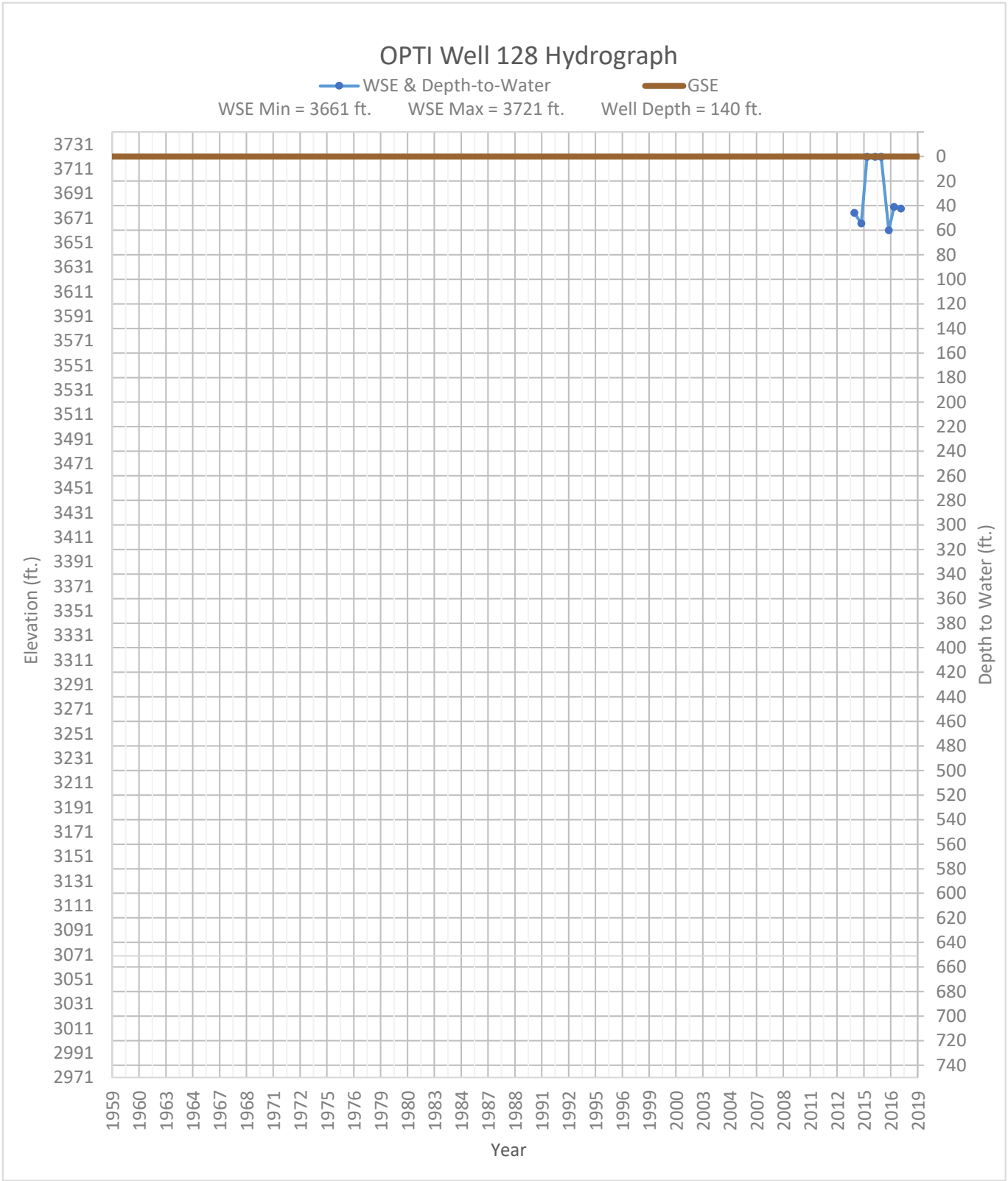
OPTI Well 128 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 3661 ft.
WSE Max = 3721 ft.
Well Depth = 140 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
3731
3711
3691
3671
3651
3631
3611
3591
3571
3551
3531
3511
3491
3471
3451
3431
3411
3391
3371
3351
3331
3311
3291
3271
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3171
3151
3131
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2991
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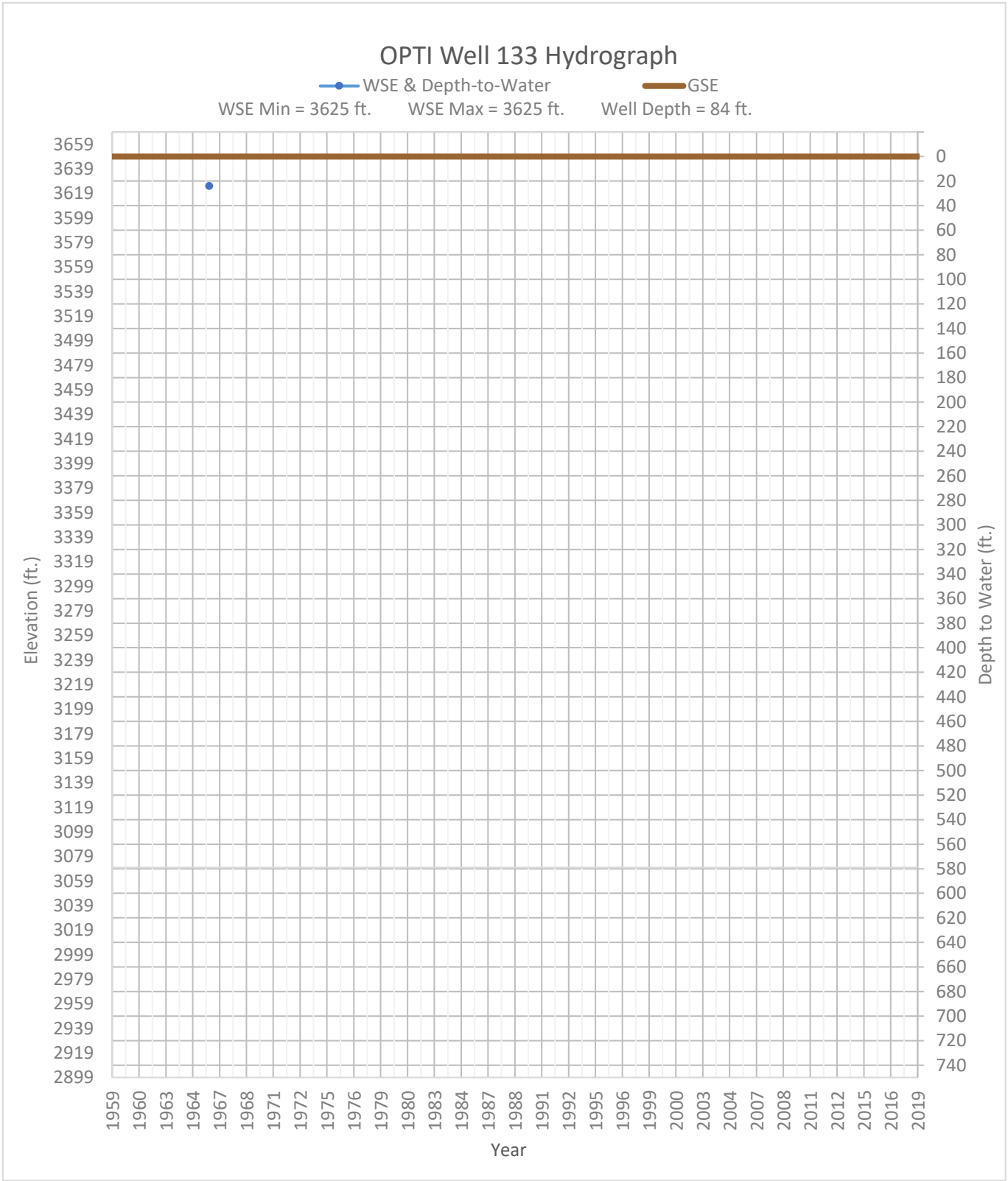
OPTI Well 133 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 3625 ft.
WSE Max = 3625 ft.
Well Depth = 84 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
3659
3639
3619
3599
3579
3559
3539
3519
3499
3479
3459
3439
3419
3399
3379
3359
3339
3319
3299
3279
3259
3239
3219
3199
3179
3159
3139
3119
3099
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3019
2999
2979
2959
2939
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2899
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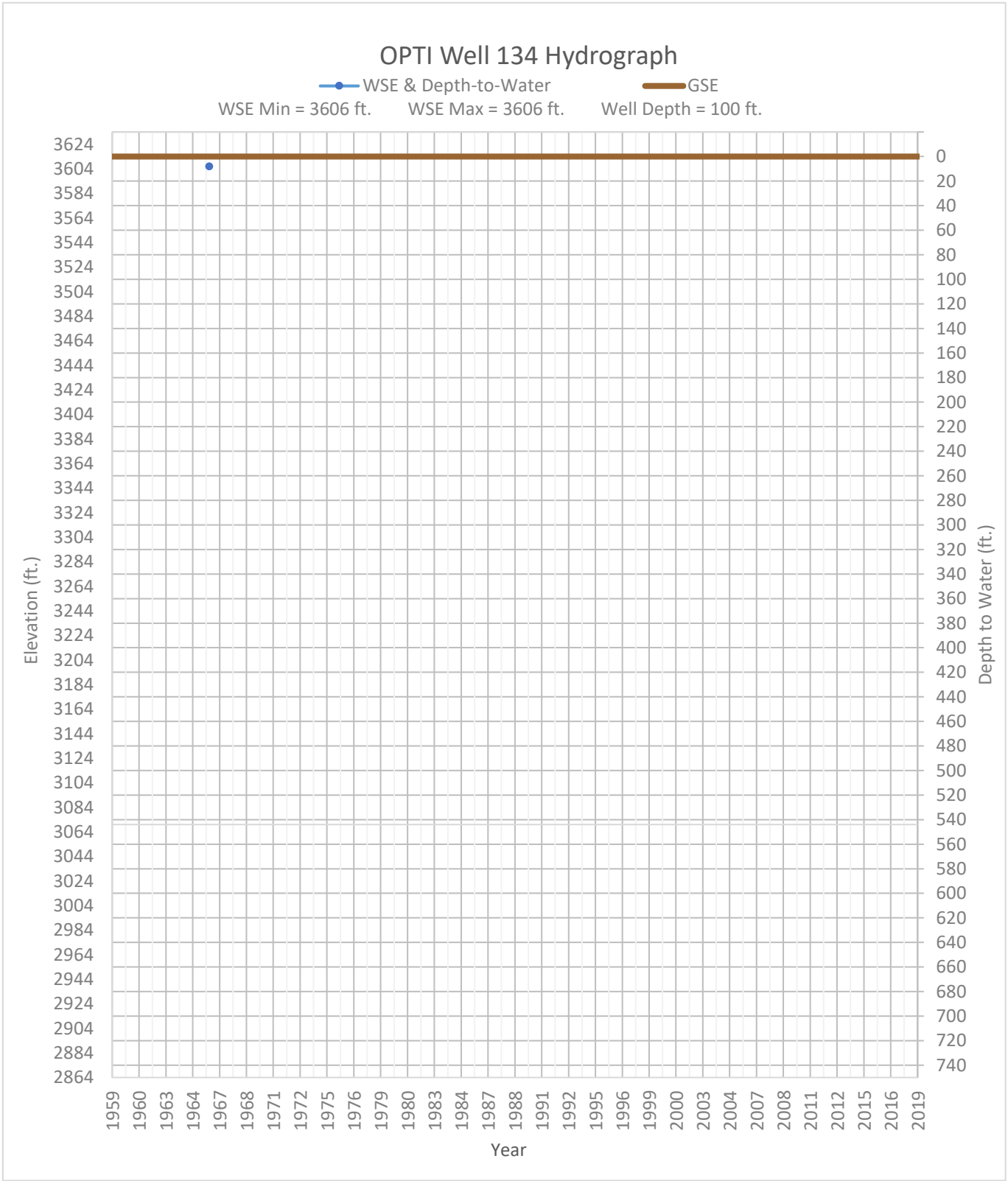
OPTI Well 134 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 3606 ft.
WSE Max = 3606 ft.
Well Depth = 100 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
3624
3604
3584
3564
3544
3524
3504
3484
3464
3444
3424
3404
3384
3364
3344
3324
3304
3284
3264
3244
3224
3204
3184
3164
3144
3124
3104
3084
3064
3044
3024
3004
2984
2964
2944
2924
2904
2884
2864
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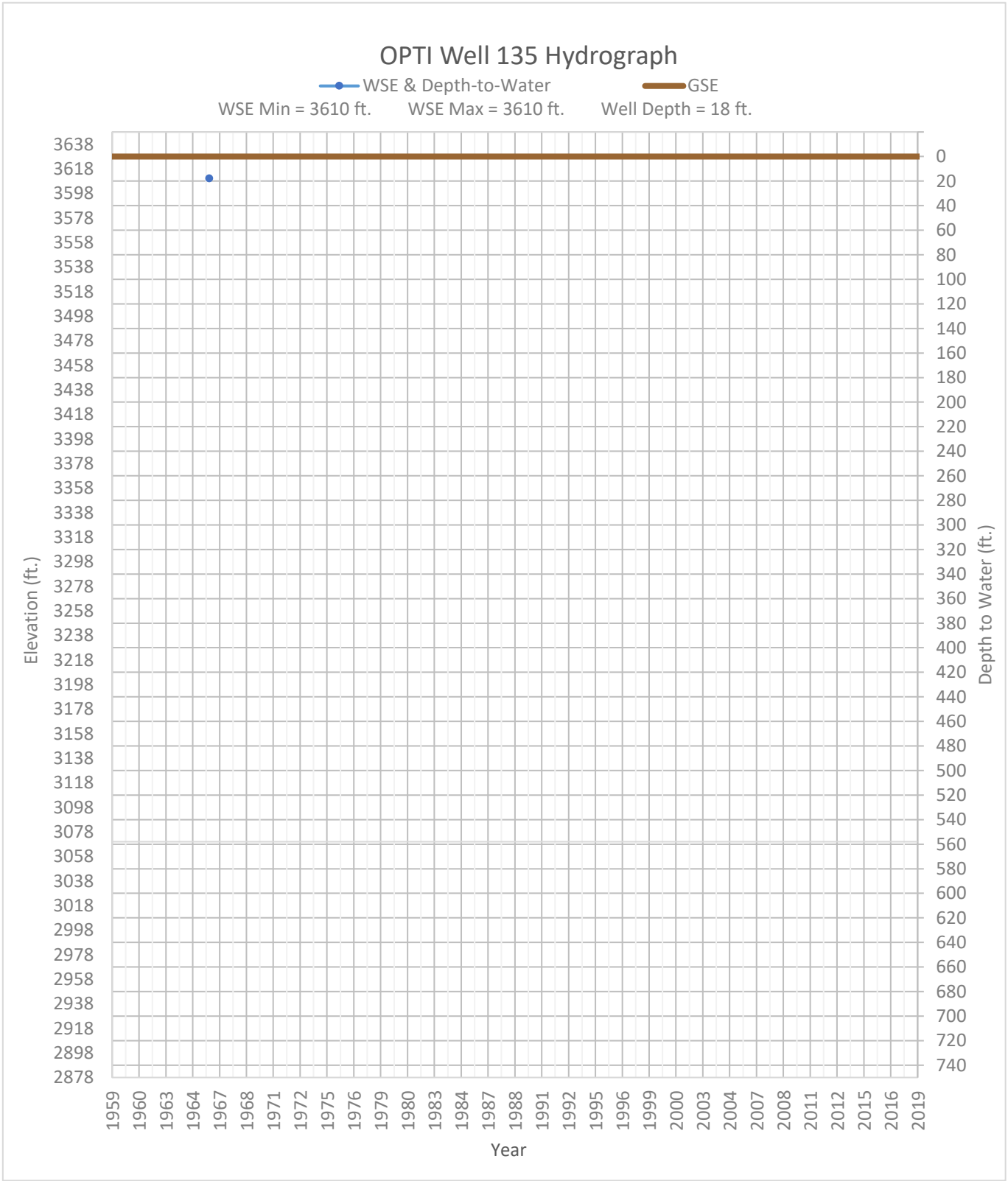
OPTI Well 135 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 3610 ft.
WSE Max = 3610 ft.
Well Depth = 18 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
3638
3618
3598
3578
3558
3538
3518
3498
3478
3458
3438
3418
3398
3378
3358
3338
3318
3298
3278
3258
3238
3218
3198
3178
3158
3138
3118
3098
3078
3058
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3018
2998
2978
2958
2938
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2898
2878
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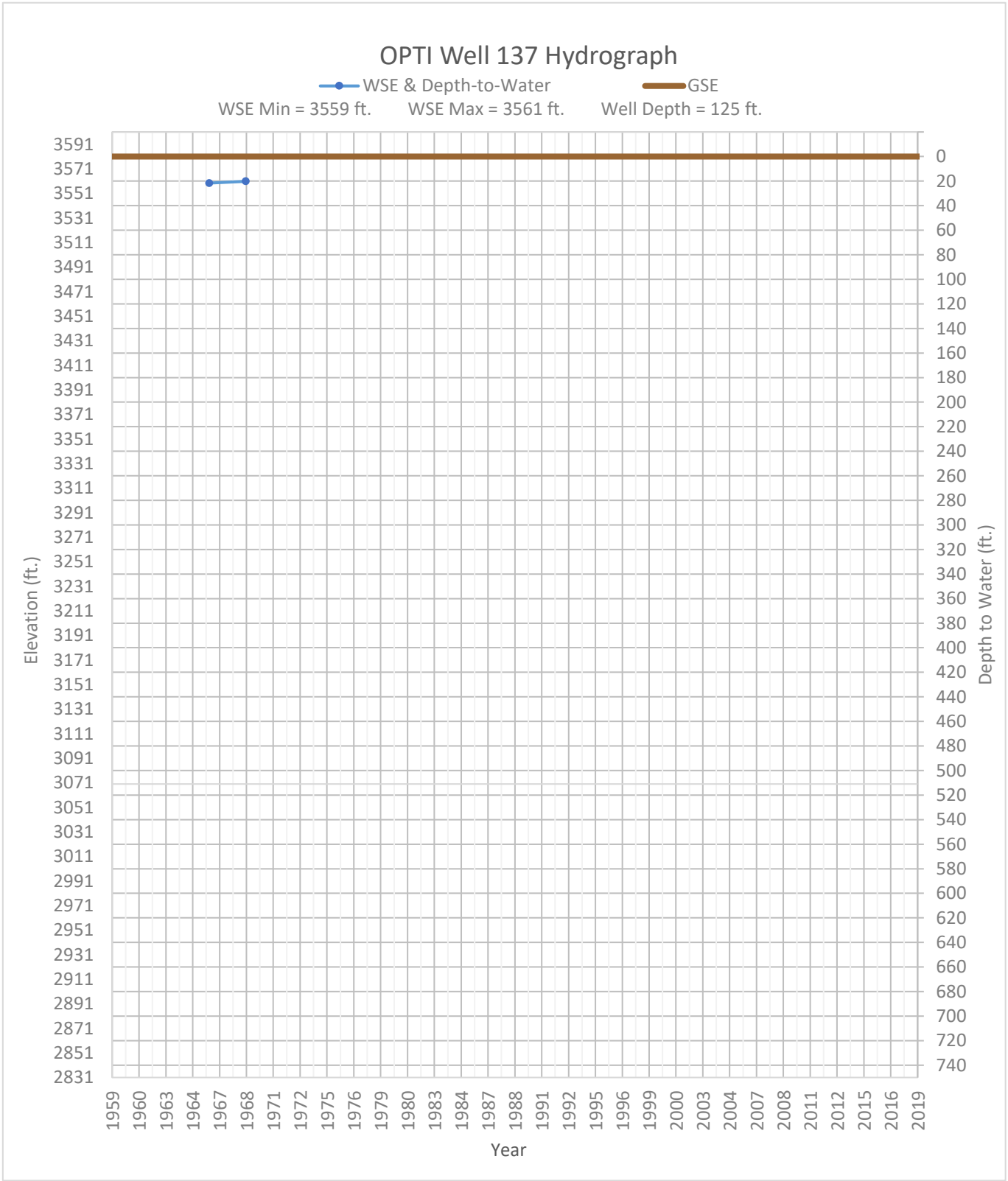
OPTI Well 137 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 3559 ft.
WSE Max = 3561 ft.
Well Depth = 125 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
3591
3571
3551
3531
3511
3491
3471
3451
3431
3411
3391
3371
3351
3331
3311
3291
3271
3251
3231
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3171
3151
3131
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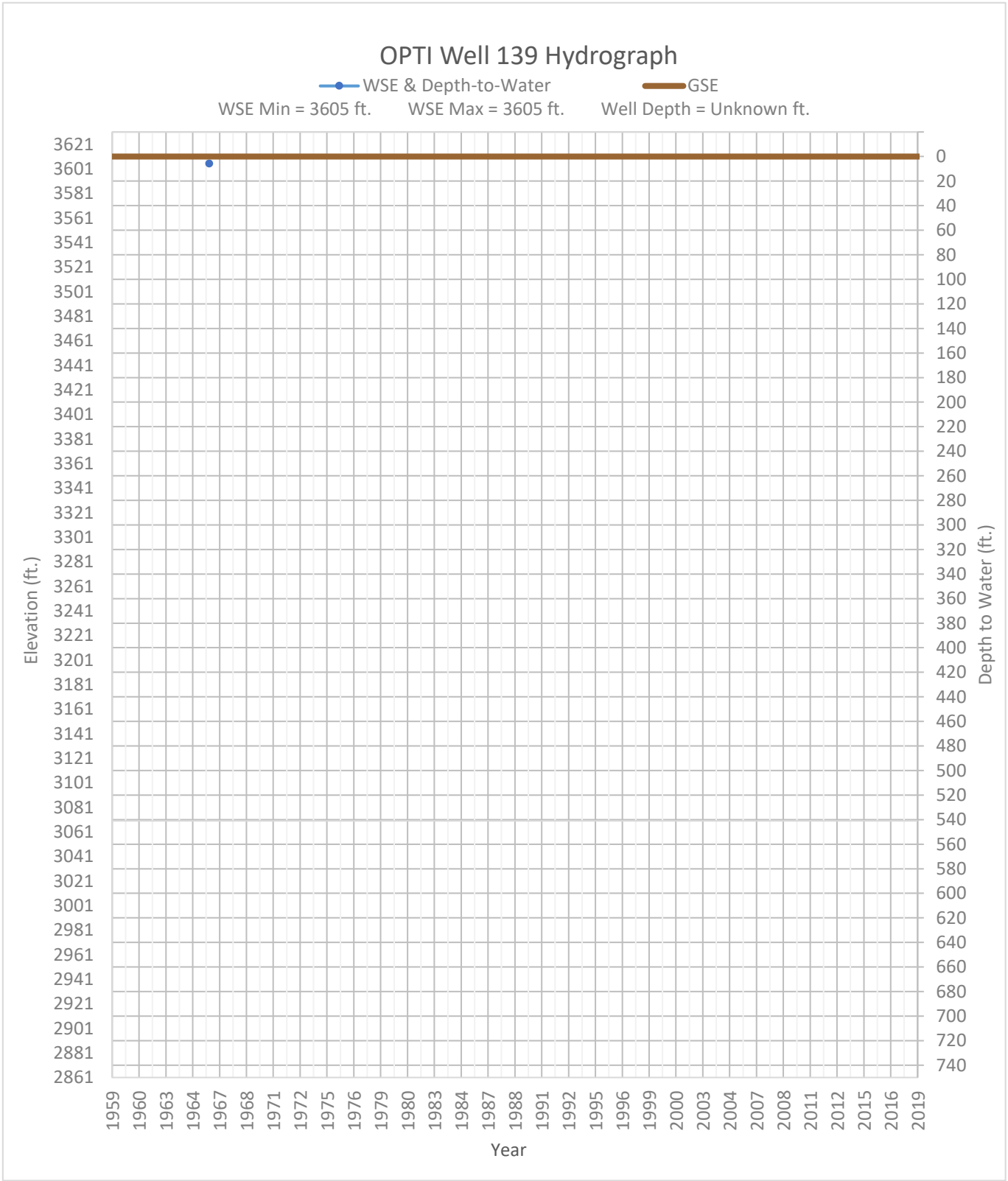
OPTI Well 139 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 3605 ft.
WSE Max = 3605 ft.
Well Depth = Unknown ft.
Elevation (ft.)
Depth to Water (ft.)
Year
3621
3601
3581
3561
3541
3521
3501
3481
3461
3441
3421
3401
3381
3361
3341
3321
3301
3281
3261
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3201
3181
3161
3141
3121
3101
3081
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2861
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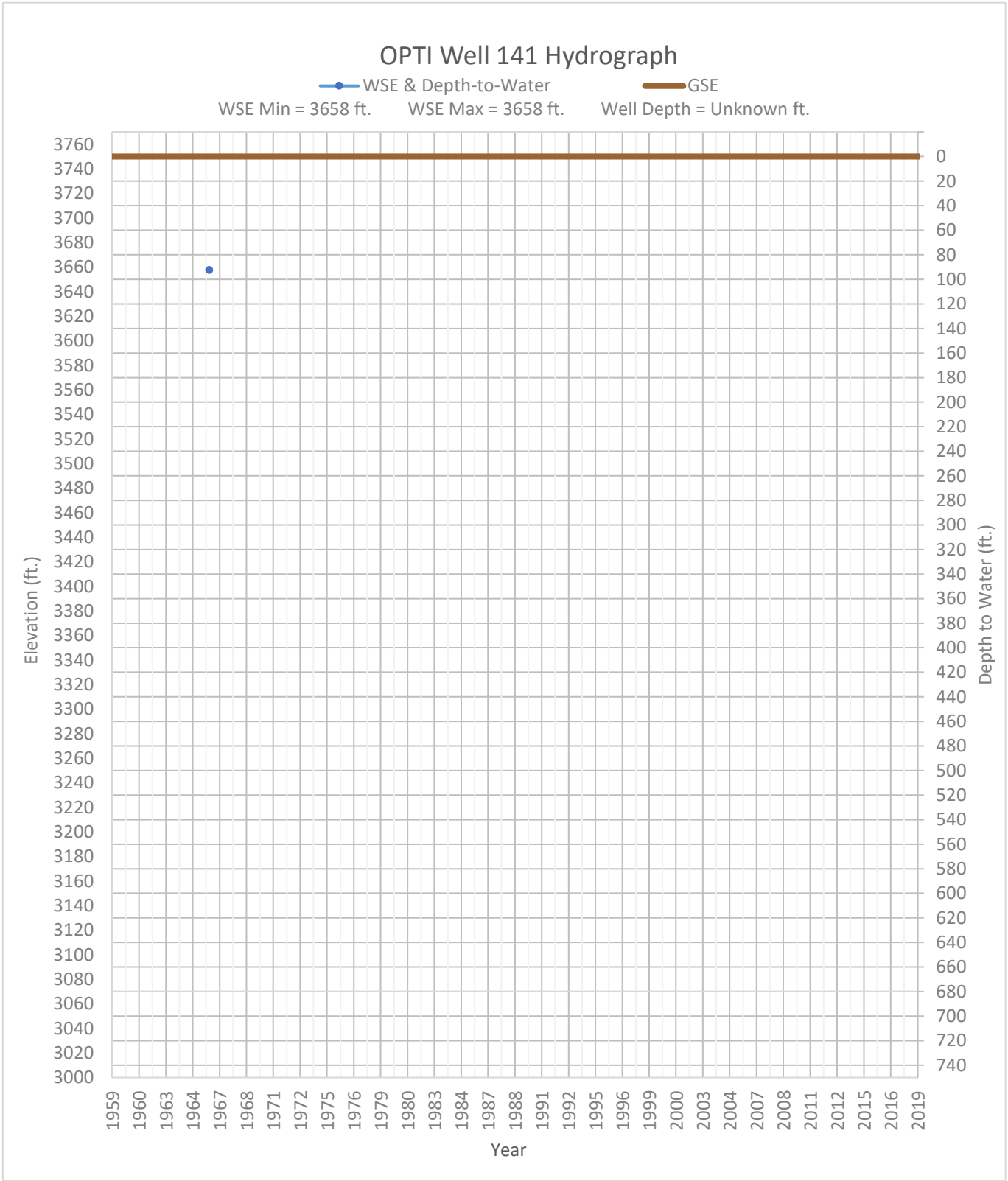
OPTI Well 141 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 3658 ft.
WSE Max = 3658 ft.
Well Depth = Unknown ft.
Elevation (ft.)
Depth to Water (ft.)
Year
3760
3740
3720
3700
3680
3660
3640
3620
3600
3580
3560
3540
3520
3500
3480
3460
3440
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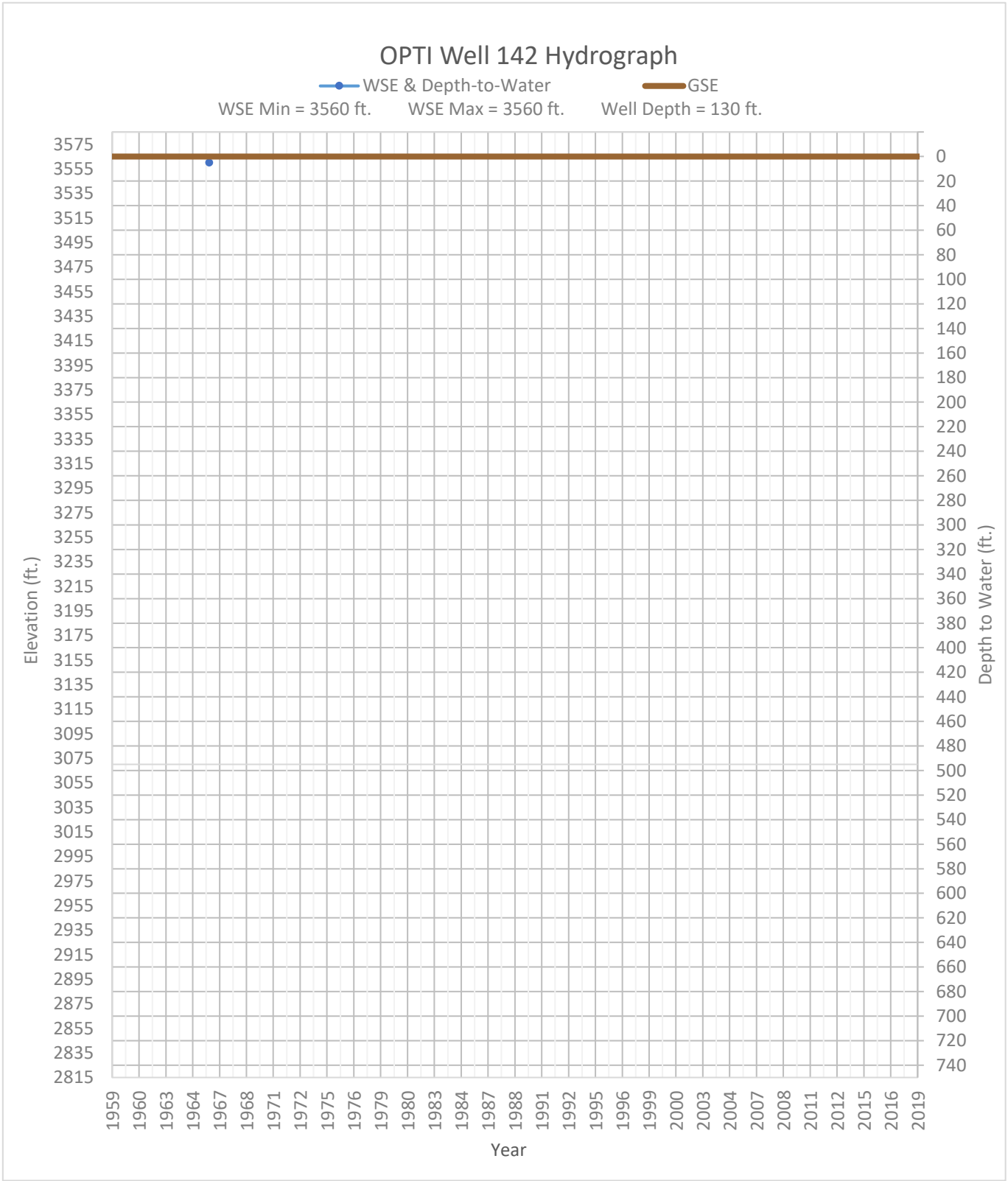
OPTI Well 142 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 3560 ft.
WSE Max = 3560 ft.
Well Depth = 130 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
3575
3555
3535
3515
3495
3475
3455
3435
3415
3395
3375
3355
3335
3315
3295
3275
3255
3235
3215
3195
3175
3155
3135
3115
3095
3075
3055
3035
3015
2995
2975
2955
2935
2915
2895
2875
2855
2835
2815
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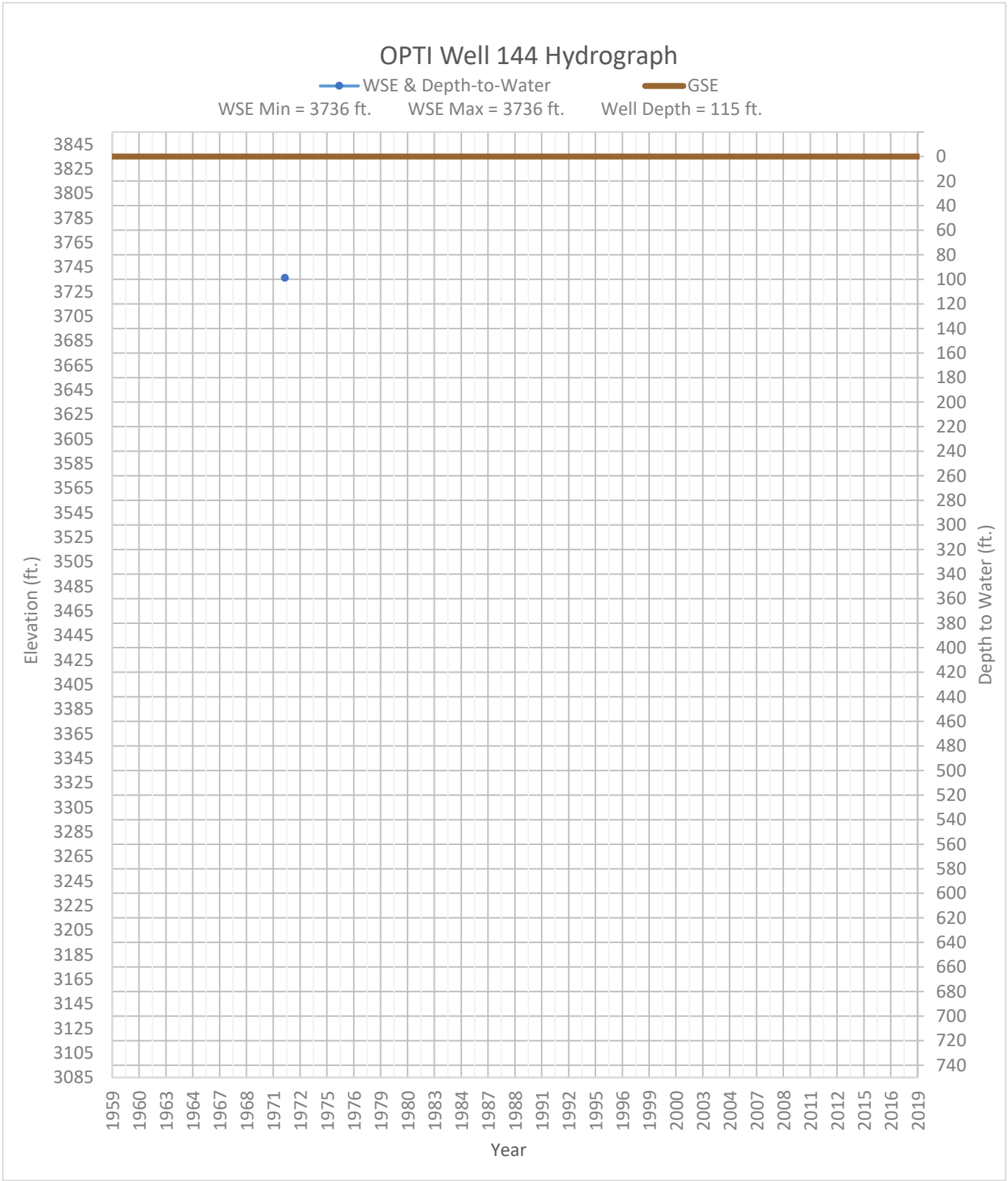
OPTI Well 144 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 3736 ft.
WSE Max = 3736 ft.
Well Depth = 115 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
3845
3825
3805
3785
3765
3745
3725
3705
3685
3665
3645
3625
3605
3585
3565
3545
3525
3505
3485
3465
3445
3425
3405
3385
3365
3345
3325
3305
3285
3265
3245
3225
3205
3185
3165
3145
3125
3105
3085
0
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80
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180
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220
240
260
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320
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1959
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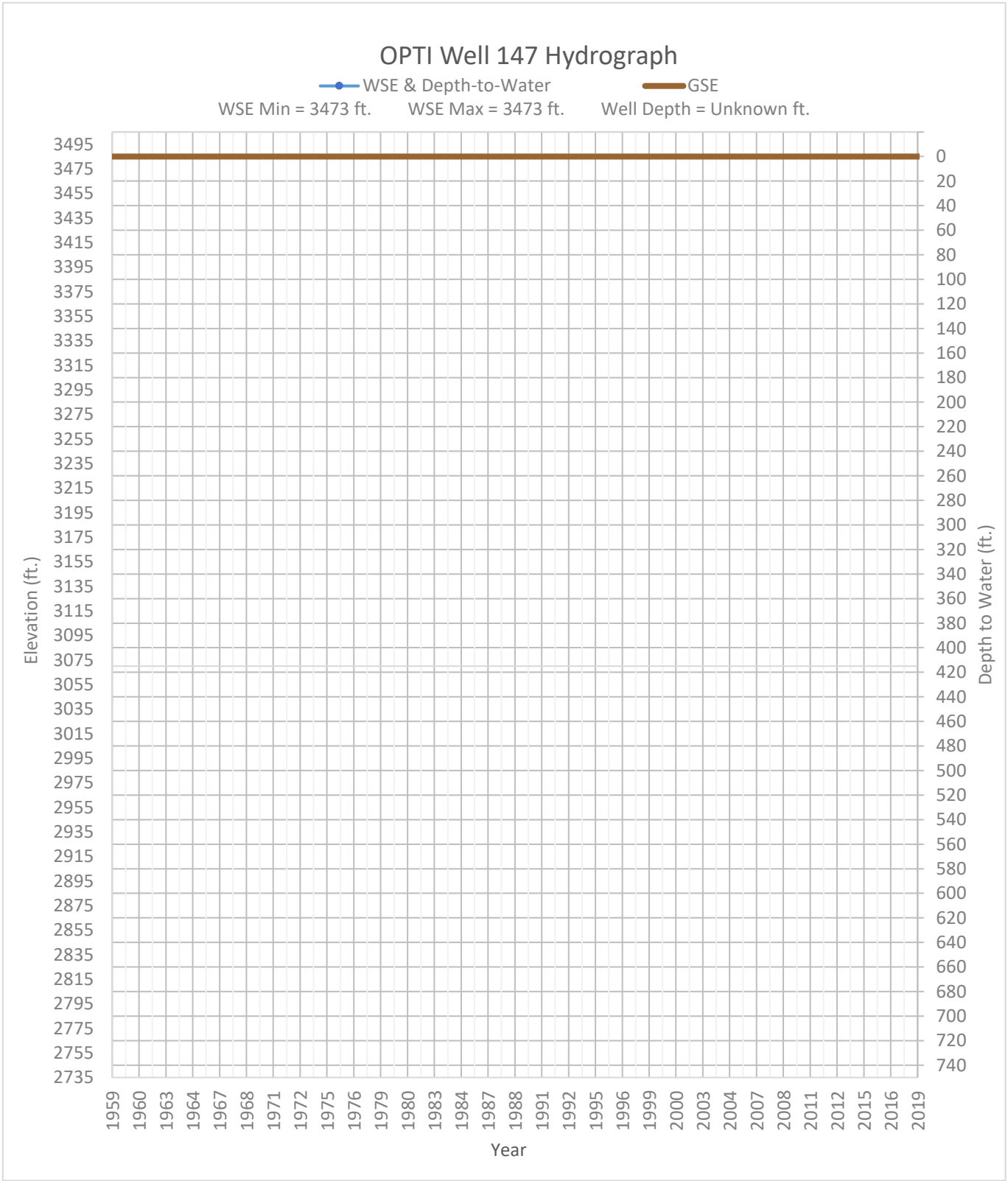
OPTI Well 147 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 3473 ft.
WSE Max = 3473 ft.
Well Depth = Unknown ft.
Elevation (ft.)
Depth to Water (ft.)
Year
3495
3475
3455
3435
3415
3395
3375
3355
3335
3315
3295
3275
3255
3235
3215
3195
3175
3155
3135
3115
3095
3075
3055
3035
3015
2995
2975
2955
2935
2915
2895
2875
2855
2835
2815
2795
2775
2755
2735
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160
180
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260
280
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1959
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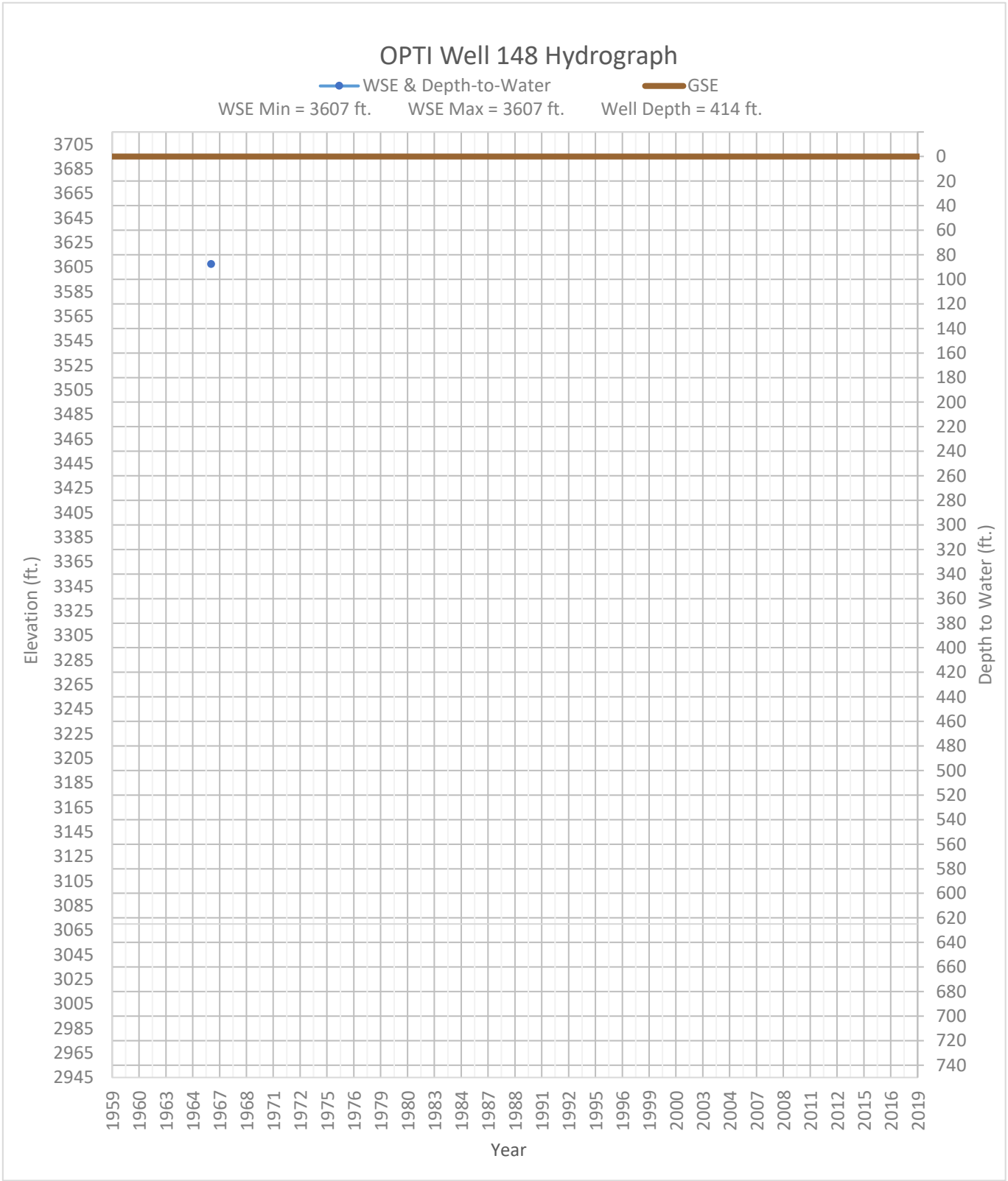
OPTI Well 148 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 3607 ft.
WSE Max = 3607 ft.
Well Depth = 414 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
3705
3685
3665
3645
3625
3605
3585
3565
3545
3525
3505
3485
3465
3445
3425
3405
3385
3365
3345
3325
3305
3285
3265
3245
3225
3205
3185
3165
3145
3125
3105
3085
3065
3045
3025
3005
2985
2965
2945
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1959
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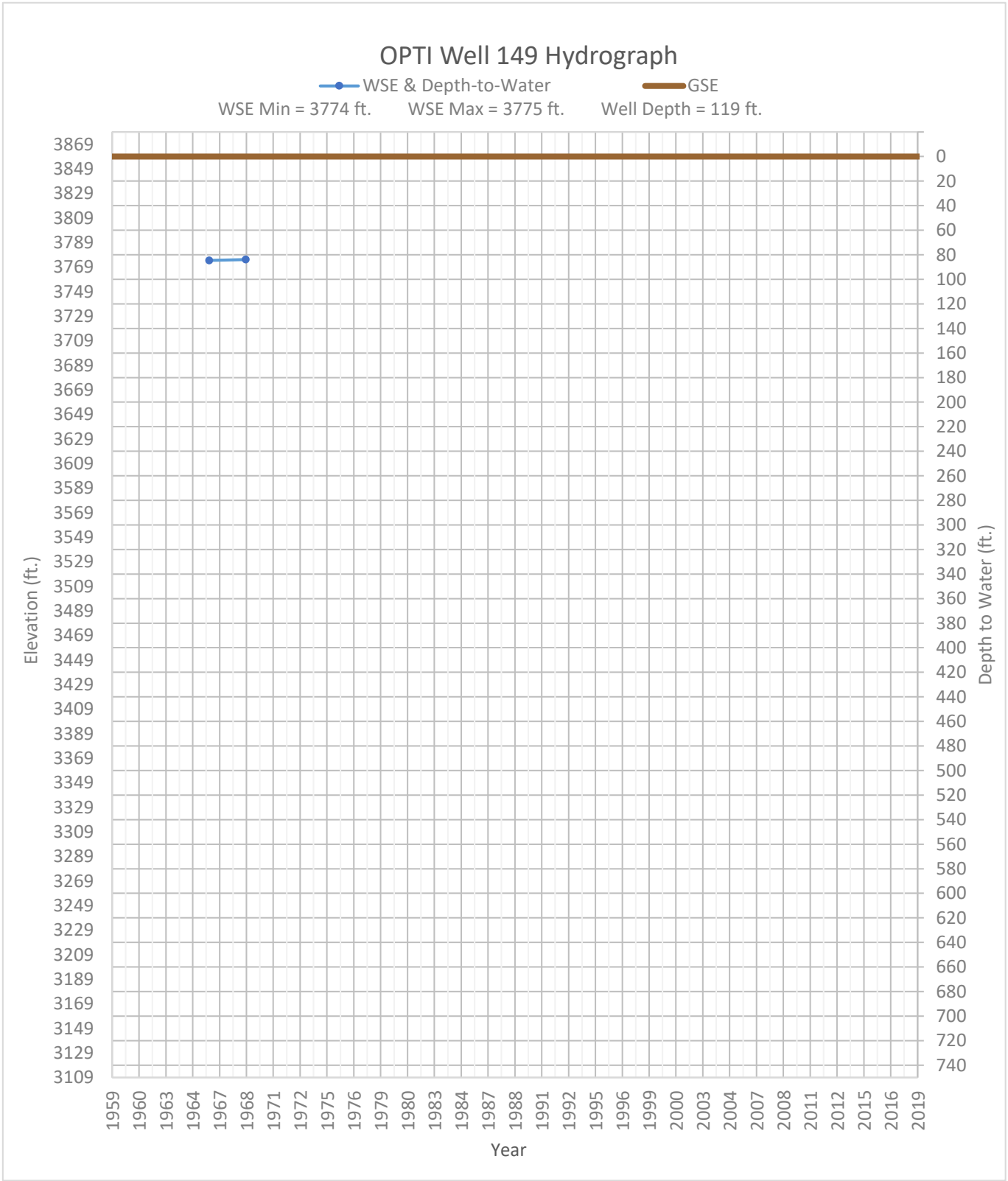
OPTI Well 149 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 3774 ft.
WSE Max = 3775 ft.
Well Depth = 119 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
3869
3849
3829
3809
3789
3769
3749
3729
3709
3689
3669
3649
3629
3609
3589
3569
3549
3529
3509
3489
3469
3449
3429
3409
3389
3369
3349
3329
3309
3289
3269
3249
3229
3209
3189
3169
3149
3129
3109
0
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120
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160
180
200
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240
260
280
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1959
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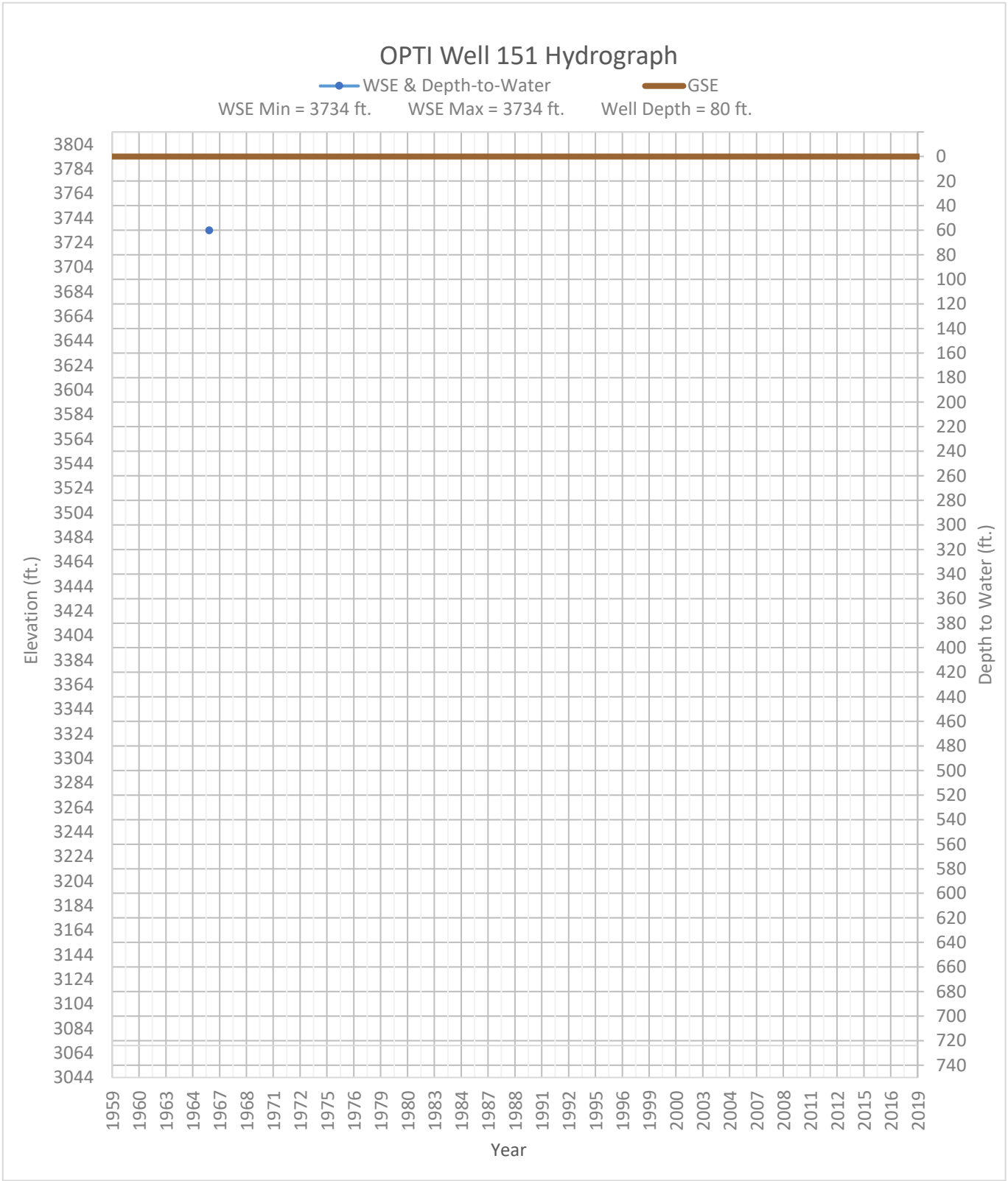
OPTI Well 151 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 3734 ft.
WSE Max = 3734 ft.
Well Depth = 80 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
3804
3784
3764
3744
3724
3704
3684
3664
3644
3624
3604
3584
3564
3544
3524
3504
3484
3464
3444
3424
3404
3384
3364
3344
3324
3304
3284
3264
3244
3224
3204
3184
3164
3144
3124
3104
3084
3064
3044
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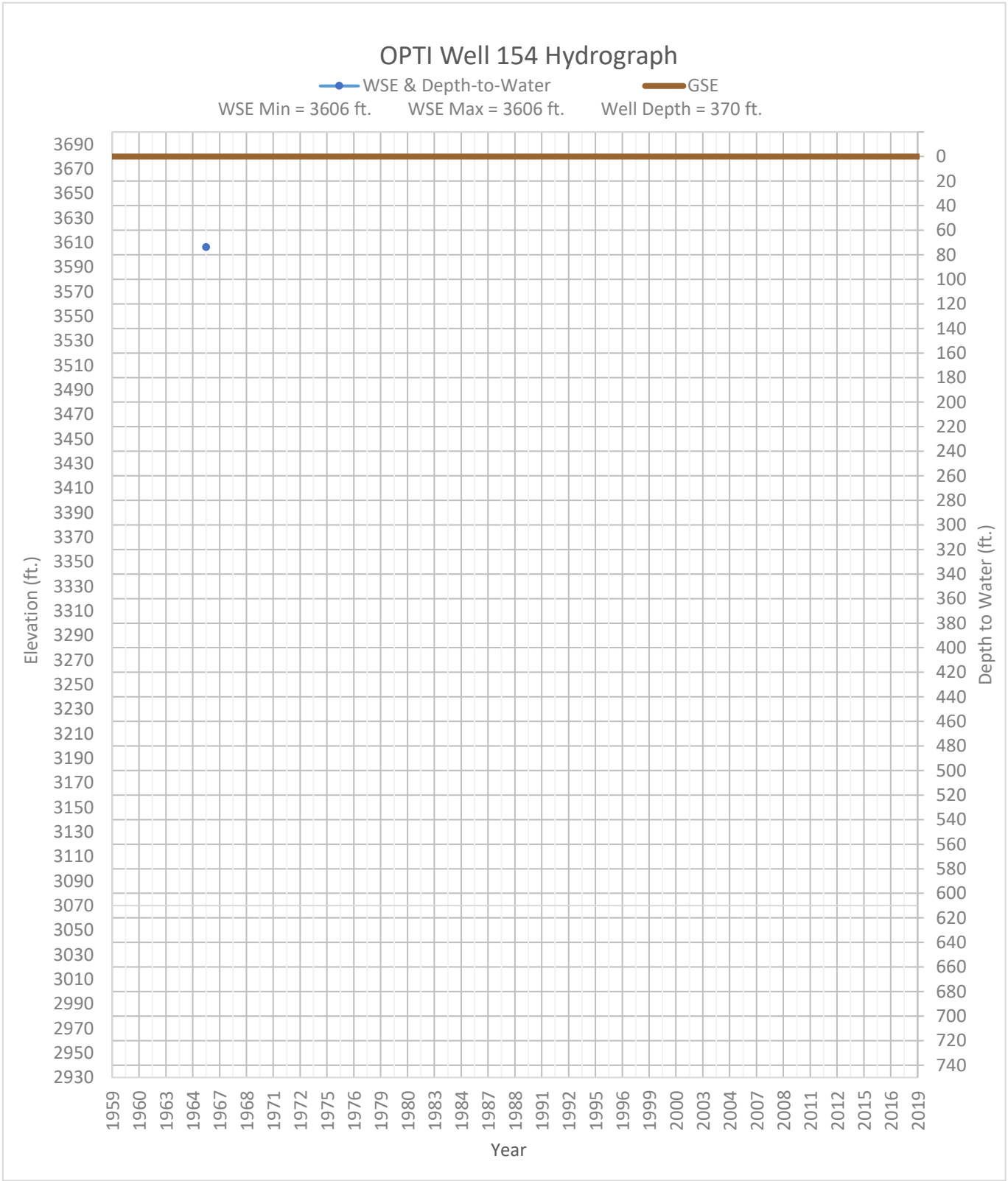
OPTI Well 154 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 3606 ft.
WSE Max = 3606 ft.
Well Depth = 370 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
3690
3670
3650
3630
3610
3590
3570
3550
3530
3510
3490
3470
3450
3430
3410
3390
3370
3350
3330
3310
3290
3270
3250
3230
3210
3190
3170
3150
3130
3110
3090
3070
3050
3030
3010
2990
2970
2950
2930
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1959
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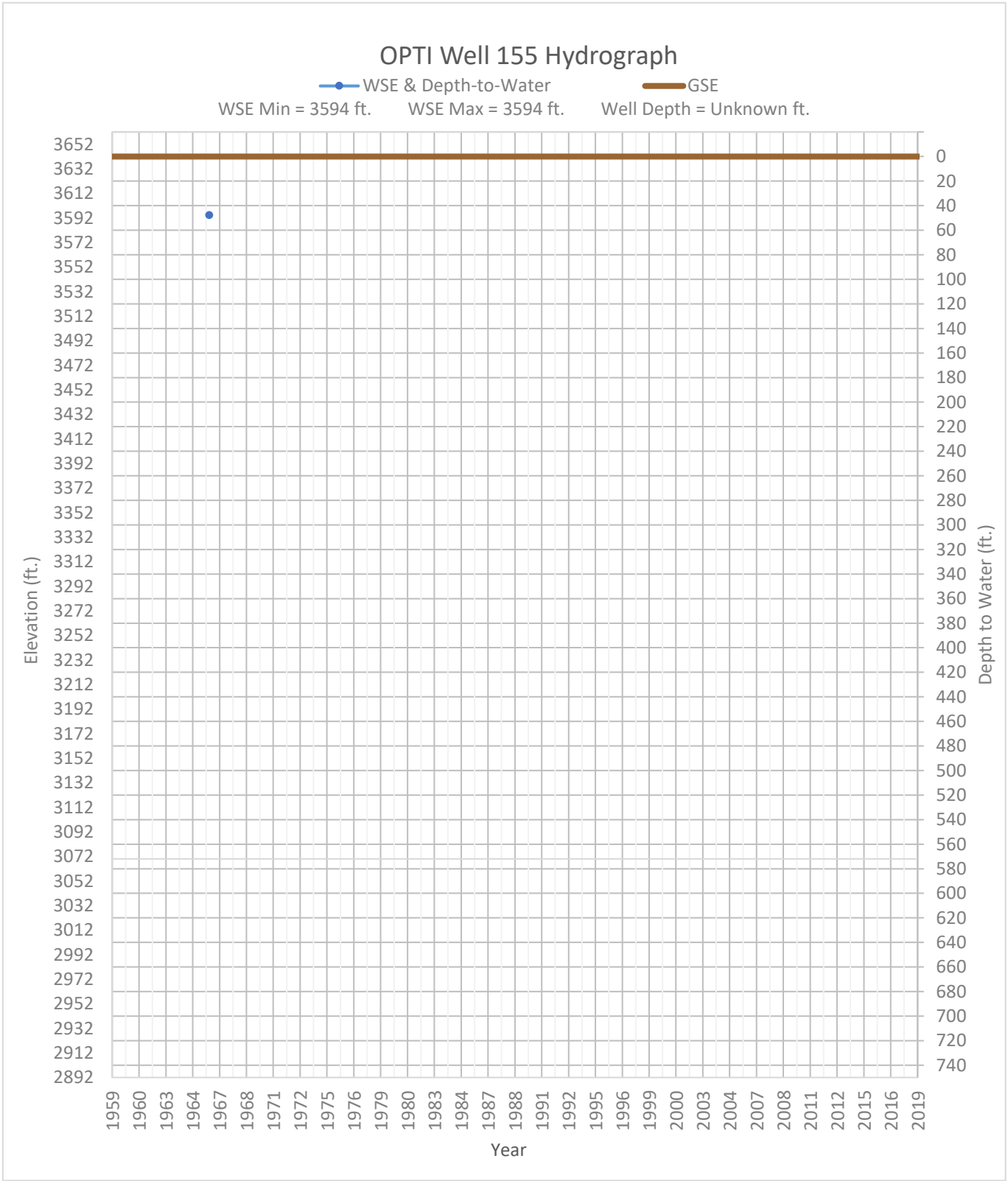
OPTI Well 155 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 3594 ft.
WSE Max = 3594 ft.
Well Depth = Unknown ft.
Elevation (ft.)
Depth to Water (ft.)
Year
3652
3632
3612
3592
3572
3552
3532
3512
3492
3472
3452
3432
3412
3392
3372
3352
3332
3312
3292
3272
3252
3232
3212
3192
3172
3152
3132
3112
3092
3072
3052
3032
3012
2992
2972
2952
2932
2912
2892
0
20
40
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120
140
160
180
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240
260
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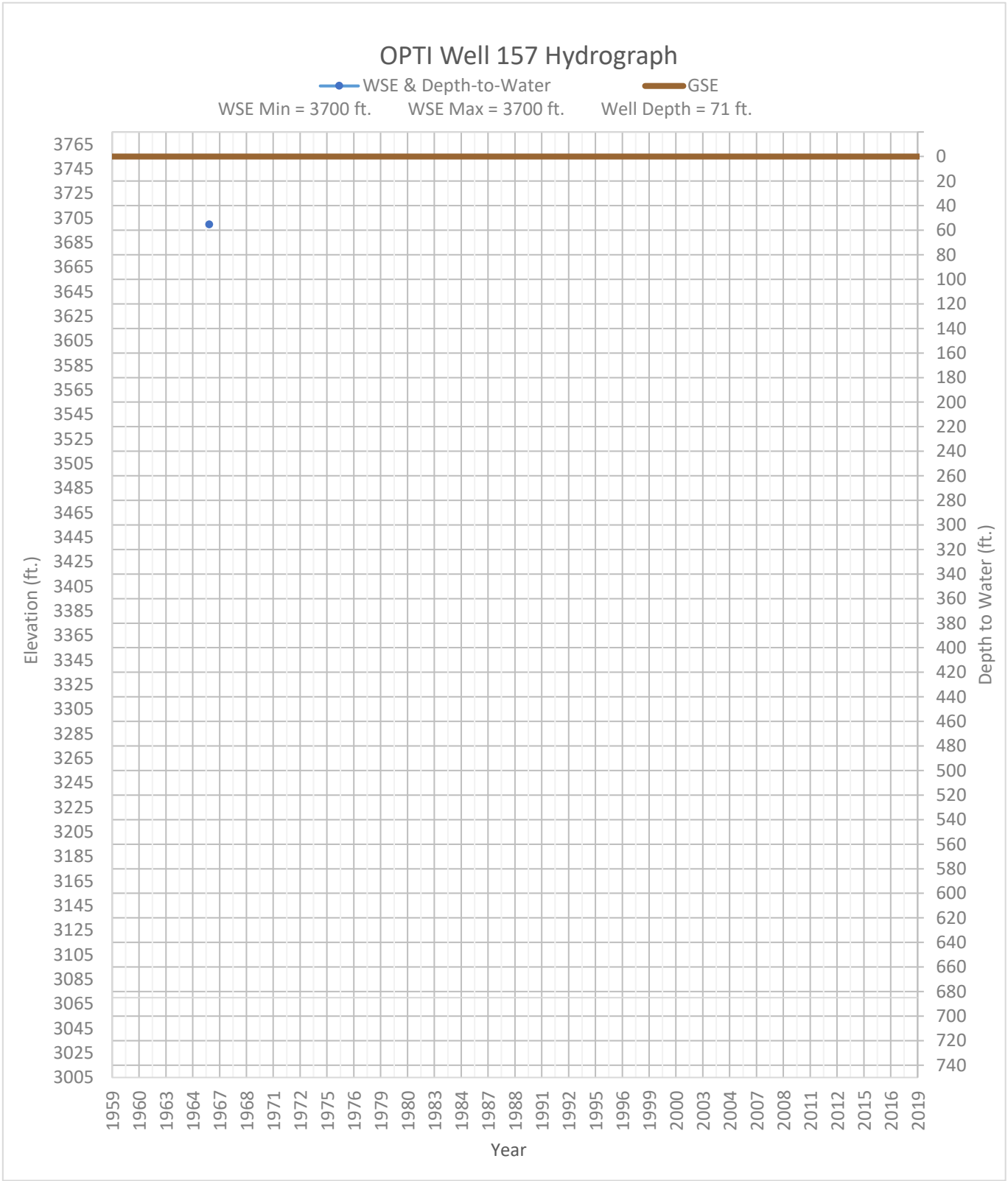
OPTI Well 157 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 3700 ft.
WSE Max = 3700 ft.
Well Depth = 71 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
3765
3745
3725
3705
3685
3665
3645
3625
3605
3585
3565
3545
3525
3505
3485
3465
3445
3425
3405
3385
3365
3345
3325
3305
3285
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3225
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3185
3165
3145
3125
3105
3085
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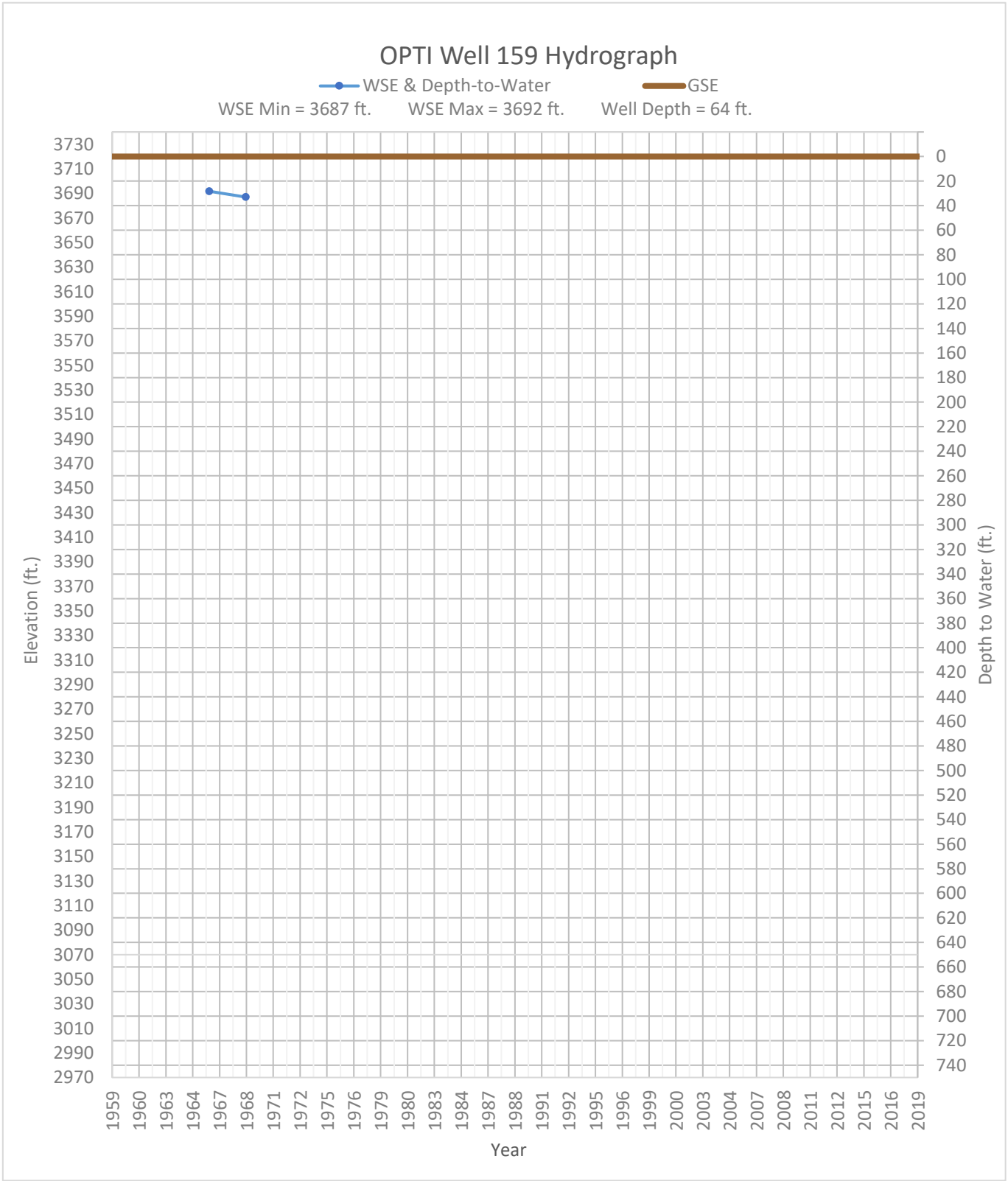
OPTI Well 159 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 3687 ft.
WSE Max = 3692 ft.
Well Depth = 64 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
3730
3710
3690
3670
3650
3630
3610
3590
3570
3550
3530
3510
3490
3470
3450
3430
3410
3390
3370
3350
3330
3310
3290
3270
3250
3230
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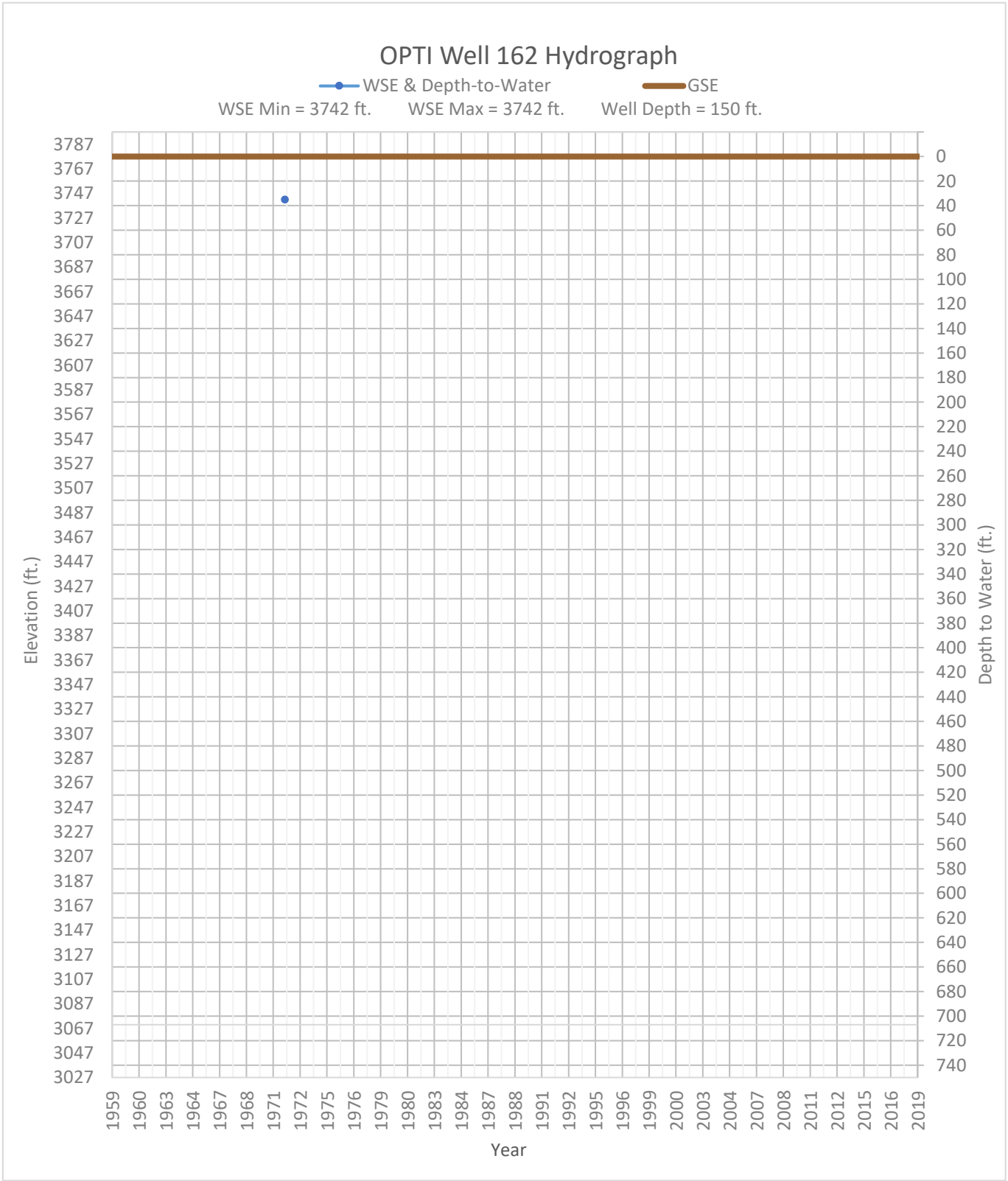
OPTI Well 162 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 3742 ft.
WSE Max = 3742 ft.
Well Depth = 150 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
3787
3767
3747
3727
3707
3687
3667
3647
3627
3607
3587
3567
3547
3527
3507
3487
3467
3447
3427
3407
3387
3367
3347
3327
3307
3287
3267
3247
3227
3207
3187
3167
3147
3127
3107
3087
3067
3047
3027
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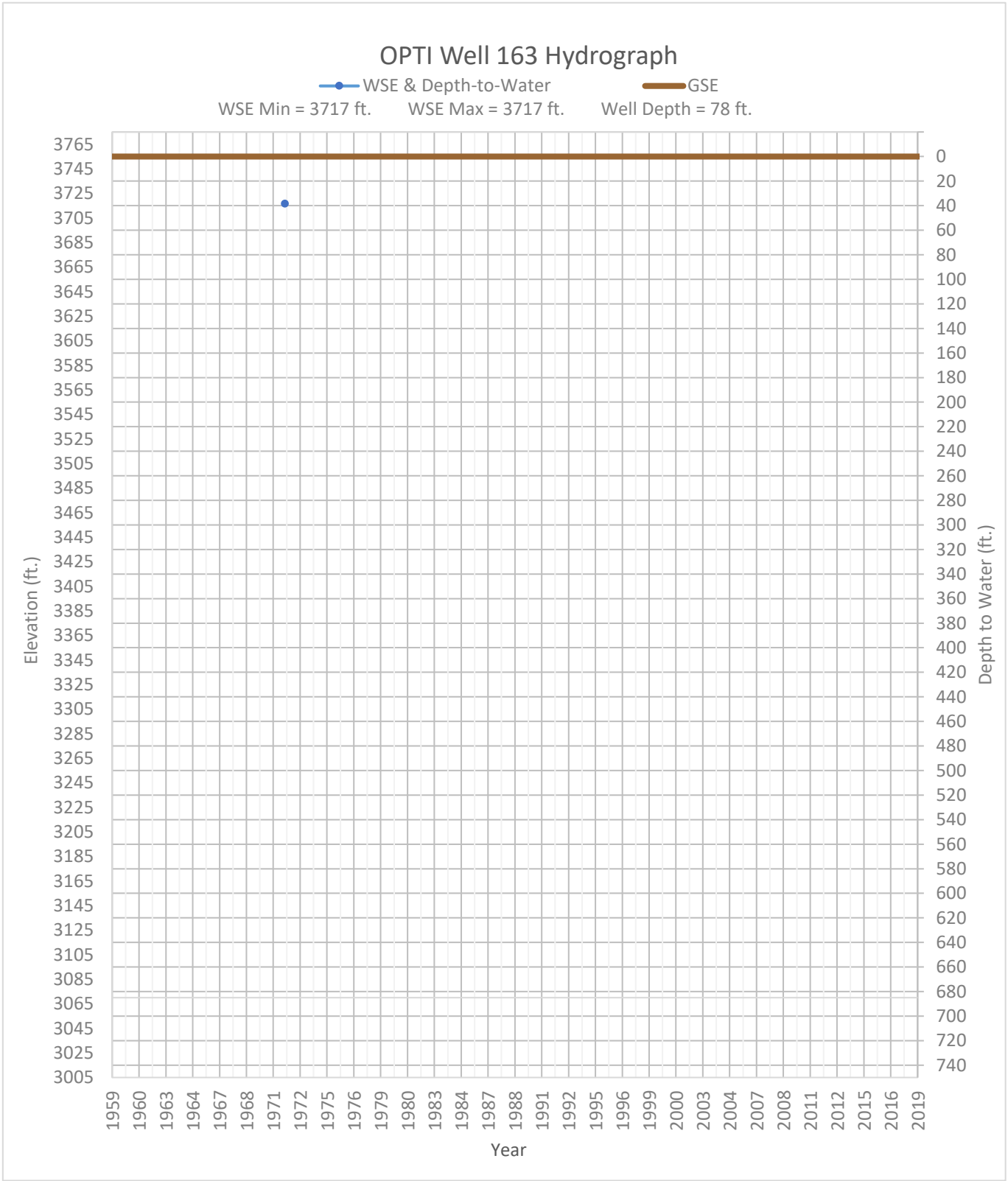
OPTI Well 163 Hydrograph
WSE & Depth-to-Water
GSE
WSE Min = 3717 ft.
WSE Max = 3717 ft.
Well Depth = 78 ft.
Elevation (ft.)
Depth to Water (ft.)
Year
3765
3745
3725
3705
3685
3665
3645
3625
3605
3585
3565
3545
3525
3505
3485
3465
3445
3425
3405
3385
3365
3345
3325
3305
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3265
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