



**LAKE STEVENS
SEWER DISTRICT**
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1106 Vernon Road · Suite A
Lake Stevens, WA 98258
(425) 334-8588 · Fax (425) 335-5947
Web Address: lkstevenssewer.org

August 16, 2021

Eleanor Ott, PSNGP Permit Writer
Department of Ecology
Water Quality Program
PO BOX 47600
Olympia, WA 98504-7600

RE: Draft Nutrient General Permit Comments

To whom it may concern:

The Lake Stevens Sewer District (permit WA0020893) appreciates the opportunity to comment on the Draft Puget Sound Nutrient General Permit (PSNGP) dated July 16, 2021. The District takes its mission very seriously, which is: "Meeting the challenge of protecting the environment and providing quality sewer service to the community." To that end, the District shares Ecology's concern for nutrients' contribution to depleting dissolved oxygen levels in the Salish Sea and implementing reasonable effective solutions supported by sound scientific data.

The District owns and operates a moderately sized, 5.01 MGD maximum month design flow, publicly owned domestic wastewater treatment plant within the PSNGP Proposed Facility Coverage list, which has been identified as a dominant contributor of total inorganic nitrogen (TIN) discharged into Washington Waters of the Salish Sea. It is somewhat concerning that the PSNGP is being used to "determine the scale of reductions necessary to meet numeric water quality standards for DO" (PSNGP Fact Sheet p.30) while simultaneously imposing limits for TIN with associated penalties and forced engineering expenditures. If the general permit is to be used to collect the necessary data to complete modeling, it is the District's opinion is that these studies should be complete in order to establish long-term criteria to protect the receiving waters prior to imposing major changes to point sources.

The customer base served by the District treatment facility is also of moderate size. The District operates within the City of Lake Stevens, City of Marysville, and Snohomish County which are required to complete comprehensive plans under the Growth Management Act (GMA). As such, the District has been growing and is expected to grow to accommodate the expected increase in population. The District invested in a new approximately \$120 million treatment plant facility, accepted by Ecology in 2013, that was expected to meet water quality requirements for 20-30 years, with phased capacity upgrades as population increased. There is a real possibility and high concern from the District that the changes needed to reduce the TIN to meet the PSNGP will affect the plant's capacity and reduce the District's ability to accommodate the increased growth in its service area. The comprehensive plan is central in the GMA planning for utilities to support growth. However, the PSNGP has an aggressive timeline that does not allow for vetted planning for necessary utility expansion in our area, nor for the adequate collection of funds through general facilities charges to support the capital improvements that will be required to meet the PSNGP requirements. RCW 57.08.005(11) indicates that a District connection charge be established based on a 10-year "look-ahead" to receive revenue based on future capital improvement projects (CIPs). Within the framework of the statute and comprehensive planning

guidelines, any capital expenditures not forecasted in the comprehensive plan are unfunded and impossible to recover funds from the previous planning period. Due to these limitations, it is easier to plan and minimize rate impacts with a longer implementation period and very difficult with shorter periods.

A static total yearly amount of inorganic nitrogen does not account for any growth that has occurred in the data utilized for setting the action level or going forward. For example, data from 2016 through 2020 was used to set Lake Stevens Sewer District's action level, but the District has grown by over 2,000 connections since 2016. The District is also expected to take growth of another approximately 10,000 people in its service area over the next ten years. In addition, the facility has exceeded the set TIN limit two of the five years used to set the parameter and is expected to exceed again in 2021. The expected process performance for a Modified Ludzak-Ettinger (MLE) treatment facility design, as ours, ranges from 8 to 10 mg/L for effluent total nitrogen. Hence, our facility will need to alter its designed processing at additional engineering and capital improvements to comply with a 3 mg/L TIN limit.

The data set used for calculating the TIN Action Level for the Lake Stevens Sewer District was incomplete. Upon detailed review of the nitrate and nitrite analysis data used, three data points were missing from the set used by ecology resulting in a skewed statistical sampling lower than expected. The November 2016, April 2017, and April 2020 results have since been updated on the respective DMR through the WQWebDMR portal for consideration in the TIN Action Level calculation.

The PSNGP required Environmental Justice (EJ) Review (S4.E.5. d) is an overly burdensome analysis for each district/municipality to perform separately. Ecology has suggested that publicly available data may be used for this study and that Ecology does not intend on setting rates, but that is unclear from the draft permit language and requiring this information implies some level of review and recommendation criteria that Ecology will be using that could affect rate structure. It would seem more effective to have a coordinated study covering all effected permittees than to have individual permittees perform an EJ Review.

The District is also generally concerned with the speed at which the General Nutrient Permit will be implemented. The demand for testing equipment, laboratory accreditation, engineering support, and any additional operator training will bring undue pressure on the District. For example, the District's laboratory is not currently accredited to test Total Organic Carbon, TKN, or Nitrate plus Nitrite Nitrogen in final effluent. In addition, we have not historically been testing total Ammonia, Nitrate plus Nitrite Nitrogen, or TKN in the influent. Some flexibility with testing methods and laboratory scope expansion would be appreciated.

The rate base would be challenged to take on additional significant capital improvements. It is a goal of the District to keep the rates within the generally accepted 2% of median household income. The District hopes that the Department of Ecology advocates and assist in making loans and grants available to assist in meeting these new requirements that could be attainable for Districts of moderate size to meet the challenges of this general permit.

The District also recognizes and accepts that there is a general order to ever increasing stringency in regulatory elements imposed to maintain water quality and is concerned with the possibility that additional regulatory requirements for the next element of concern has not been considered with the customer in mind. It has been suggested that some of the laboratory analysis for carbon required in the PSNGP may be a foreshadow of another regulation by

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Ecology. The speed at which the PSNGP regulations will require implementation of optimization and capital improvements will require engineering. It would be ideal to combine, or at a minimum not interfere with, additional engineering costs to account for the next regulation on the horizon.

Overall, the District cares deeply about protecting our receiving waters and respectfully request that Ecology please consider that costs of treating wastewater have and are expected to increase in years to come. Wastewater treatment plant point-sources are easy targets for regulation, but at what cost? Each increase in maintenance and operations and capital improvements comes with corresponding pressure applied on ratepayers. The water quality improvements need to be carefully weighed against the associated costs so that our receiving waters are healthy, and our costs are appropriate.

In addition to the comments above, Gray & Osborne, Inc. Consulting Engineers prepared a Technical Memorandum (attached to this letter) in which the action level set for the District is challenged in both method of calculation and resulting limits. This assessment suggests increasing the District's TIN action level from 118,000 lbs/year to between 129,000 and 141,000 lbs/year.

Thank you for this opportunity to comment on the Draft Puget Sound Nutrient General Permit.

Sincerely,



Mariah Low
General Manager
Lake Stevens Sewer District

Attached: Gray & Osborne, Inc. Technical Memorandum

TECHNICAL MEMORANDUM

TO: MARIAH LOW, GENERAL MANAGER
JOHNATHAN DIX, ASSISTANT GENERAL
MANAGER
JAMES HEITZMAN, WWTP SUPERVISOR
JEFF BAISCH, SENIOR WWTP OPERATOR

FROM: JAY SWIFT, P.E.
KOTA NISHIGUCHI, E.I.T.

DATE: AUGUST 10, 2021

SUBJECT: TOTAL INORGANIC NITROGEN ACTION
LEVEL EVALUATION, JUNE 2021 DRAFT
PUGET SOUND NUTRIENT GENERAL
PERMIT
LAKE STEVENS SEWER DISTRICT,
SNOHOMISH COUNTY, WASHINGTON
G&O #20408.07

The following memorandum notes findings from investigation into the total inorganic nitrogen (TIN) action level determination provided in the Draft Puget Sound Nutrient General Permit (Draft Permit) issued in June 2021. These analyses were done to assist with the evaluation of wastewater treatment capital and operating improvements in the Lake Stevens Sewer District General Sewer/Wastewater Facility Plan (G&O 20408.07), as well as to assist the District with the development of review comments to be submitted to Ecology regarding the Draft Permit.

SUMMARY

The Draft Permit and Fact Sheet indicate that the calculated action level (AL) is meant to represent predicted 99th percentile plant effluent TIN loads based on historical observations. Calculation of AL assumes that if a facility behaves over the course of the permit cycle in a manner similar to its historical record, it can be assumed that “there is only a 1% chance of exceeding AL by chance in any year.”

District staff routinely analyze effluent ammonia and nitrate concentrations in house and record this data on their plant process data sheets, but do not submit this nitrate data on their monthly discharge monitoring reports (DMRs). Effluent nitrate/nitrite concentrations are also analyzed once a month at the Everett wastewater treatment plant (WWTP) laboratory and these data are reported on the District’s DMRs.



Technical Memorandum – Total Inorganic Nitrogen Action Level Evaluation,
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Calculations of annual effluent TIN load were separately determined using the more complete WWTP process data and show that annual loading has surpassed the proposed action levels for 3 of the past 4 years, as shown in Table 1. This would appear to conflict with the intent of the action level determination (1 percent chance of exceedance) as described in the Draft Permit.

TABLE 1
Historical Effluent TIN Loads and Proposed Action Levels

Year	Annual Effluent TIN Load (lb/yr)⁽¹⁾
2017	136,891
2018	115,320
2019	129,513
2020 ⁽²⁾	132,960
Draft Permit Proposed Action Limit	Annual Effluent TIN Load (lb/yr)
AL	118,000

- (1) Annual averages of TIN loadings calculated from process data (507 data points) are summarized in Table 1. Annual averages for TIN loadings calculated from DMR data (109 data points) ranged from 106,500 to 129,100 lb/yr.
- (2) December 2020 represented by one datum for nitrate, available from DMR.

Based on a review of the data and calculations, data-input assumptions appear to have misrepresented the distribution of historical loadings, which resulted in a lower proposed action level than appropriate. Two alternative approaches to data input, which rely on actual measurements and minimize assumptions in the data input, are shown herein and resulted in a higher range of action levels (AL between 129,000 and 141,000 lb/yr).

It is recommended that the higher AL (141,000 lb/yr) be applied because:

1. The derivation of this value more accurately captures the variability in the relevant data (more data points are used), particularly for nitrate concentrations, which are the primary cause of the variability.
2. The resulting AL of 141,000 lb/yr would appear to be more consistent with the stated intent of the action levels – that “there is only a 1% chance of exceeding AL by chance in any year.” The use of a 129,000 lb/yr AL, which the WWTP has exceeded 3 out of the last 4 years, is not reasonably consistent with the stated intent of a 1 percent chance of exceedance.



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DATA INPUT AND CALCULATIONS FOR DRAFT PERMIT PROPOSED ACTION LEVEL

The data used to calculate the AL in the Draft Permit uses data available through DMRs, ranging from January 2016 to November 2020. The action level calculator shared by the Washington State Department of Ecology (Ecology) requires inputs of daily effluent TIN load and the associated date. In general, all other data provided in the input file appears to be unused and is organized in the calculator to provide additional context.

Apparent Assumptions Made for Draft Permit Calculation

The data input file used for the Draft Permit action level calculation shows that input loads were calculated with *daily* flows and *daily* effluent ammonia concentrations; however, these were used in conjunction with *monthly* reported effluent nitrate (single-day composite measurement per month reported via DMR), illustrated as follows:

$$\begin{aligned} \text{Daily TIN Load} &= \text{Daily TIN Conc.} * \text{Daily Flow} * 8.34 \\ &= (\text{Daily Ammonia Conc.} + \text{Monthly Reported Nitrate}) * \text{Daily Flow} * 8.34 \end{aligned}$$

with concentrations noted in mg/L and flows in MGD

This approach to providing daily TIN load inputs implies an assumption that daily variations in flow and ammonia concentrations have greater impact on effluent TIN than variations in effluent nitrate. In the Draft Permit calculation, each monthly reported effluent nitrate concentration is used as an average representative value for the entire month. This assumption is a misrepresentation of historical effluent TIN. Based on plant data, it is rare for effluent ammonia concentrations to be greater than effluent nitrate concentrations. Additionally, nitrate concentrations are typically an order of magnitude greater than ammonia concentrations; starting from 2017, the average ammonia concentration was 1.22 mg/L while nitrate was 14.5 mg/L, meaning that effluent TIN is primarily comprised of nitrate. Consequently, variations in effluent nitrate loadings tend to be primarily responsible for variations in effluent TIN. The Draft Permit's calculation does not accurately reflect that daily variations in nitrate values have significant impact on daily TIN loads. (Note: Nitrite concentrations measured in Lake Stevens effluent have been less than 0.1 percent of nitrate concentrations, so nitrate concentrations are assumed to equal nitrate plus nitrite in these data.)

The above approach to estimating daily TIN load provides a set of data inputs that maximizes the use of available ammonia measurements despite the fact that effluent TIN is comprised primarily of nitrate, for which fewer data points are available in the DMR data set. The apparent assumption is that a larger data set with approximated TIN values is more representative than a smaller data set, consisting of more accurate representations



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of the distribution of historical TIN loadings. Bootstrapping used to determine AL randomly resamples data points from the data input to create multiple simulated data sets, all consisting of a variety of combinations of data points from the original data input. Individual data points from the original data input are being used multiple times to holistically represent the data and create simulated observations. Because of the resampling of data used in bootstrapping, the benefit of bootstrapping is dependent on the accuracy of the original data input, not only the mean values but also the variability in the data. The Draft Permit data input had introduced approximated values, whose inaccuracies likely propagated through the simulated observations and reduced variability and narrowed confidence intervals.

Alternative Approaches to Data Input

Two alternative approaches are presented to data input: (1) maximize the use of plant process data, and (2) refine usage of DMR data.

Alternative 1 – Maximize Use of Plant Process Data

Based on a review of available data (DMRs and plant process data), the following changes were applied as an alternative approach to data input:

- Whenever available in plant process data, flow, ammonia, and nitrate concentrations measured for the same date were used to calculate daily effluent TIN loads.
- DMR nitrate data were only used when the lack of plant process data would result in missing a month of TIN load. The DMR nitrate data points were used in conjunction with the flow and ammonia concentration of the date for which nitrate was reported; this limits the quantity of approximated TIN loads in the data input. Notably, much of the input data for 2016 consists of this approach due to the limited nitrate data in 2016.
- Lastly, as a note, the Draft Permit calculation for AL included data input for November 2016 for which the reported nitrate concentration was 1.3 mg/L; plant process data shows that nitrate ranged from 12.6 to 21.3 mg/L during this period. This misinput of data likely had some influence on the Draft Permit AL determinations. As discussed above, November 2016 inputs have been replaced with TIN loads calculated with available plant process data.



Technical Memorandum – Total Inorganic Nitrogen Action Level Evaluation,
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Due to the inclusion of plant process data, the data input described above consists of 597 data points, compared to 476 data points used for the Draft Permit action level determination. For this alternative approach for data input, a large majority of data points consist of TIN loads calculated from plant process data that accurately represent flow, ammonia, and nitrate. Therefore, this alternative approach is believed to increase the quantity and quality of input data.

As shown on Figure 1, with these revised assumptions, Ecology’s Action Level Calculator returns an AL of 141,000 lb/yr. Based on Figure 1, the action level appears plausible according to Ecology’s intent (1 percent exceedance chance) for the action level; unlike the Draft Permit’s proposed AL, the alternative AL has not been exceeded by the WWTP multiple times in recent history.

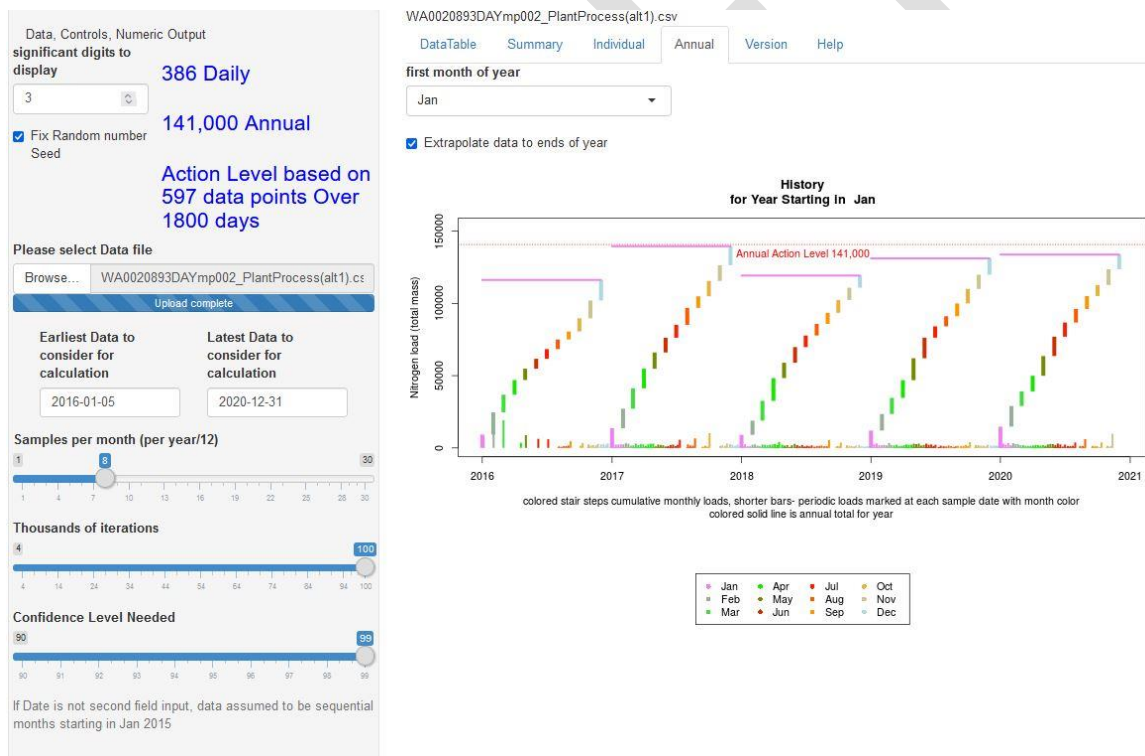


FIGURE 1

Revised Action Level (AL) Calculation, Alternative 1 – Screen Capture



Technical Memorandum – Total Inorganic Nitrogen Action Level Evaluation,
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Alternative 2 – Refine Usage of DMR Data

Another approach to data input consists of continuing the use of reported nitrate data but removing the data points that approximate TIN concentration based on assumptions of constant nitrate levels throughout the month. In turn, data used in the original Draft Permit calculation would be used without the assumptions that are believed to have perhaps misrepresented the historical distribution of TIN loadings. The following changes were applied to the original data input:

- Whenever available in DMR data, flow, ammonia, and nitrate concentrations measured for the same date were used to calculate daily effluent TIN loads.
- For any month of DMR data that did not allow for a calculation of daily effluent TIN (e.g., no ammonia measurement for corresponding nitrate measurement), plant process data was used to represent TIN loads for the month. Here, the use of plant process data followed its use for the first alternative approach. This method was applicable for data for August 2016 and August 2018.
- For the previously discussed reasons, November 2016 inputs have been replaced with TIN loads calculated with available plant process data.

The TIN action level calculation resulting from the revisions above is shown on Figure 2. The calculator returns an AL of 129,000 lb/yr.



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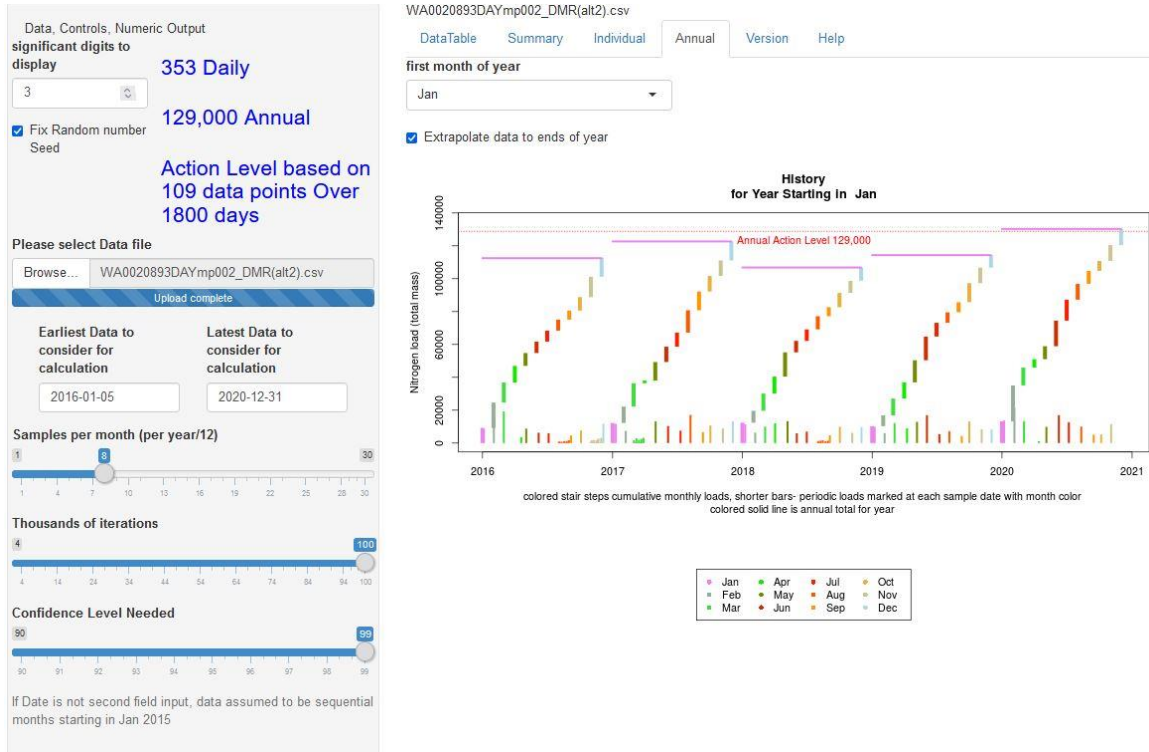


FIGURE 2

Revised Action Level (AL) Calculation, Alternative 2 – Screen Capture

DISCUSSION

The historical TIN loads calculated from plant process data, shown in Table 1, suggest that the AL of 129,000 lb/yr has been surpassed 3 of the past 4 years. Conversely, the historical TIN loads calculated from DMR data, shown on Figure 2, suggest that the AL was approached but not exceeded. Therefore, there is a discrepancy between historical observations made from plant process data and DMR data. However, both data sets result in higher action levels that better represent historical TIN loads than the proposed action level in the Draft Permit.

It is recommended that the higher AL (141,000 lb/yr) be applied because:

1. The derivation of this value more accurately captures the variability in the relevant data (more data points are used), particularly for nitrate concentrations, which are the primary cause of the variability.



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2. The resulting AL of 141,000 lb/yr would appear to be more consistent with the stated intent of the action levels – that “there is only a 1% chance of exceeding AL by chance in any year.” The use of a 129,000 lb/yr AL, which the WWTP has exceeded 3 out of the last 4 years, is not reasonably consistent with the stated intent of a 1 percent chance of exceedance.

DRAFT

ATTACHMENT A
DRAFT PERMIT ACTION LEVEL

DRAFT

Data, Controls, Numeric Output

significant digits to display

323 Daily

118,000 Annual

Action Level based on 476 data points Over 1760 days

Fix Random number Seed

Please select Data file

Browse... WA0020893DAYmp002.csv

Upload complete

Earliest Data to consider for calculation

2016-01-05

Latest Data to consider for calculation

2020-12-31

Samples per month (per year/12)



Thousands of iterations



Confidence Level Needed



If Date is not second field input, data assumed to be sequential months starting in Jan 2015

WA0020893DAYmp002.csv

DataTable

Summary

Individual

Annual

Version

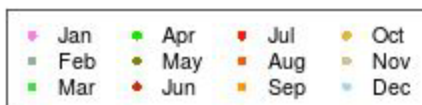
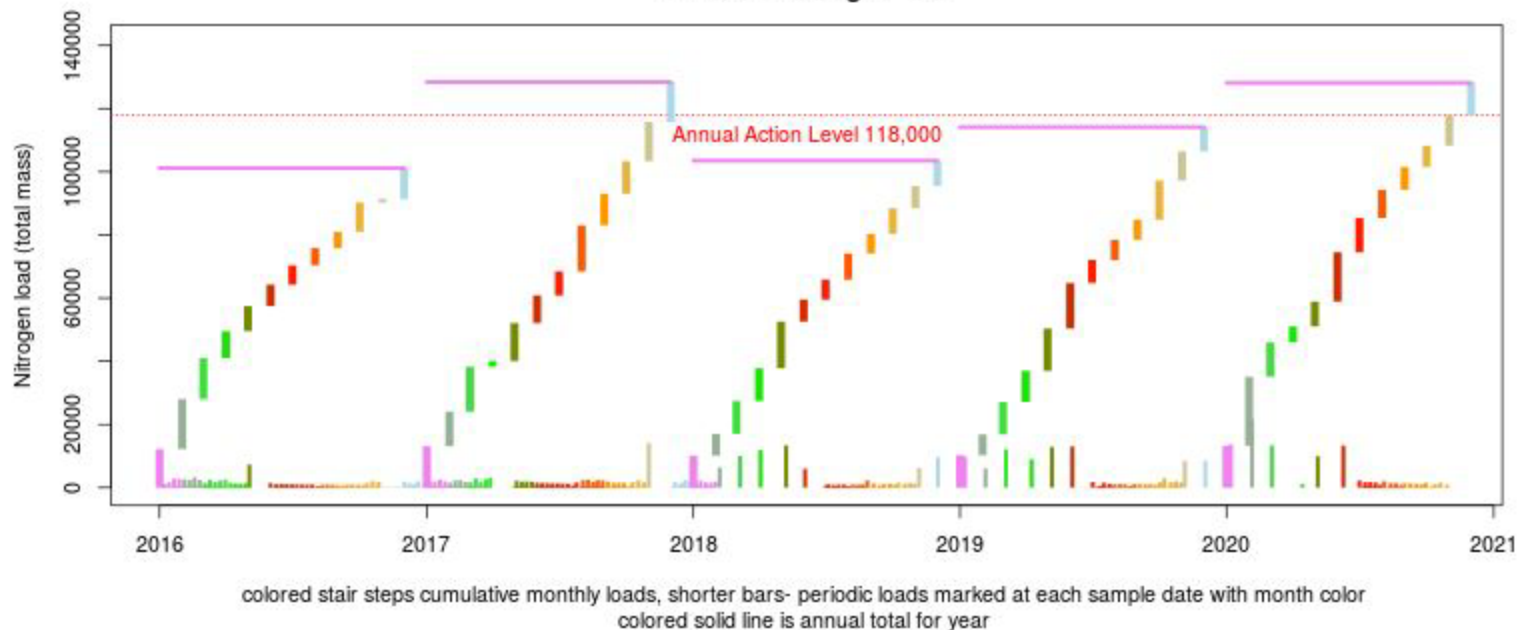
Help

first month of year

Jan

Extrapolate data to ends of year

History for Year Starting in Jan



load	POS	Q2	Qave	AMM	NIT	Ammonia	Nitrate...Nitrite
297.7915428	1/5/2016	2.511	3.12294	0.02	14.2	0.02	14.2
294.321936	1/6/2016	2.48	3.12294	0.03	14.2	0.03 NA	
285.1466016	1/7/2016	2.401	3.12294	0.04	14.2	0.04 NA	
291.3959304	1/11/2016	2.372	3.12294	0.53	14.2	0.53 NA	
375.6497796	1/13/2016	3.141	3.12294	0.14	14.2	0.14 NA	
347.337648	1/14/2016	2.814	3.12294	0.6	14.2	0.6 NA	
367.565484	1/19/2016	3.082	3.12294	0.1	14.2	0.1 NA	
360.1724076	1/20/2016	3.037	3.12294	0.02	14.2	0.02 NA	
577.66176	1/21/2016	4.81	3.12294	0.2	14.2	0.2 NA	
389.583918	1/26/2016	3.285	3.12294	0.02	14.2	0.02 NA	
403.9338888	1/27/2016	3.406	3.12294	0.02	14.2	0.02 NA	
548.1451656	1/28/2016	4.622	3.12294	0.02	14.2	0.02 NA	
540.1277568	2/2/2016	2.848	2.97866	0.04	22.7	0.04	22.7
539.0345496	2/3/2016	2.836	2.97866	0.09	22.7	0.09 NA	
529.550385	2/4/2016	2.791	2.97866	0.05	22.7	0.05 NA	
487.312038	2/9/2016	2.565	2.97866	0.08	22.7	0.08 NA	
482.7523932	2/10/2016	2.541	2.97866	0.08	22.7	0.08 NA	
492.0355638	2/11/2016	2.591	2.97866	0.07	22.7	0.07 NA	
731.411328	2/16/2016	3.86	2.97866	0.02	22.7	0.02 NA	
725.356905	2/17/2016	3.823	2.97866	0.05	22.7	0.05 NA	
651.453246	2/18/2016	3.435	2.97866	0.04	22.7	0.04 NA	
511.0405056	2/23/2016	2.697	2.97866	0.02	22.7	0.02 NA	
490.765632	2/24/2016	2.59	2.97866	0.02	22.7	0.02 NA	
482.2887726	2/25/2016	2.533	2.97866	0.13	22.7	0.13 NA	
392.567136	3/1/2016	2.92	3.07742	0.02	16.1	0.02	16.1
379.6608192	3/2/2016	2.824	3.07742	0.02	16.1	0.02 NA	
374.4147924	3/3/2016	2.761	3.07742	0.16	16.1	0.16 NA	
446.8126644	3/7/2016	3.303	3.07742	0.12	16.1	0.12 NA	
511.4128032	3/9/2016	3.804	3.07742	0.02	16.1	0.02 NA	
493.7867136	3/10/2016	3.648	3.07742	0.13	16.1	0.13 NA	
424.086498	3/15/2016	3.135	3.07742	0.12	16.1	0.12 NA	
398.7514128	3/16/2016	2.966	3.07742	0.02	16.1	0.02 NA	
376.7031216	3/17/2016	2.802	3.07742	0.02	16.1	0.02 NA	
362.1391464	3/22/2016	2.692	3.07742	0.03	16.1	0.03 NA	
387.7272672	3/23/2016	2.884	3.07742	0.02	16.1	0.02 NA	
443.9235216	3/24/2016	3.302	3.07742	0.02	16.1	0.02 NA	
401.7091104	3/29/2016	2.988	3.07742	0.02	16.1	0.02 NA	
377.000109	3/30/2016	2.799	3.07742	0.05	16.1	0.05 NA	
363.3934824	3/31/2016	2.703	3.07742	0.02	16.1	0.02 NA	
281.613444	4/7/2016	2.492	2.43637	0.15	13.4	0.15 NA	
272.5110846	4/12/2016	2.433	2.43637	0.03	13.4	0.03 NA	
264.19452	4/13/2016	2.35	2.43637	0.08	13.4	0.08 NA	
264.8093448	4/14/2016	2.366	2.43637	0.02	13.4	0.02 NA	
256.862826	4/19/2016	2.295	2.43637	0.02	13.4	0.02	13.4
260.5562784	4/20/2016	2.328	2.43637	0.02	13.4	0.02 NA	
245.7824688	4/21/2016	2.196	2.43637	0.02	13.4	0.02 NA	

278.895438	4/26/2016	2.49	2.43637	0.03	13.4	0.03	NA	
269.8458708	4/27/2016	2.411	2.43637	0.02	13.4	0.02	NA	
271.972404	4/28/2016	2.43	2.43637	0.02	13.4	0.02	NA	
252.483492	5/3/2016	2.29	2.22839	0.02	13.2	0.02		13.2
239.484768	6/1/2016	2.192	2.1628	0.4	12.7	0.4	NA	
224.899776	6/7/2016	2.12	2.1628	0.02	12.7	0.02		12.7
223.125858	6/8/2016	2.082	2.1628	0.15	12.7	0.15	NA	
216.2008224	6/9/2016	2.038	2.1628	0.02	12.7	0.02	NA	
236.4630192	6/14/2016	2.229	2.1628	0.02	12.7	0.02	NA	
236.8873584	6/15/2016	2.233	2.1628	0.02	12.7	0.02	NA	
227.6579808	6/16/2016	2.146	2.1628	0.02	12.7	0.02	NA	
229.143168	6/21/2016	2.16	2.1628	0.02	12.7	0.02	NA	
226.7032176	6/22/2016	2.137	2.1628	0.02	12.7	0.02	NA	
222.77808	6/23/2016	2.1	2.1628	0.02	12.7	0.02	NA	
218.9590272	6/28/2016	2.064	2.1628	0.02	12.7	0.02	NA	
223.308504	6/29/2016	2.105	2.1628	0.02	12.7	0.02	NA	
216.943416	6/30/2016	2.045	2.1628	0.02	12.7	0.02	NA	
214.6772712	7/5/2016	2.254	2.09394	0.02	11.4	0.02		11.4
203.819592	7/6/2016	2.14	2.09394	0.02	11.4	0.02	NA	
194.771526	7/7/2016	2.045	2.09394	0.02	11.4	0.02	NA	
195.0572544	7/12/2016	2.048	2.09394	0.02	11.4	0.02	NA	
194.0095836	7/13/2016	2.037	2.09394	0.02	11.4	0.02	NA	
189.533172	7/14/2016	1.99	2.09394	0.02	11.4	0.02	NA	
202.39095	7/19/2016	2.125	2.09394	0.02	11.4	0.02	NA	
198.8669664	7/20/2016	2.088	2.09394	0.02	11.4	0.02	NA	
187.8188016	7/21/2016	1.972	2.09394	0.02	11.4	0.02	NA	
187.3425876	7/26/2016	1.967	2.09394	0.02	11.4	0.02	NA	
191.0570568	7/27/2016	2.006	2.09394	0.02	11.4	0.02	NA	
200.2956084	7/28/2016	2.103	2.09394	0.02	11.4	0.02	NA	
174.3753888	8/2/2016	2.026	2.05555	0.02	10.3	0.02	NA	
179.1121752	8/3/2016	2.073	2.05555	0.06	10.3	0.06	NA	
178.0763472	8/4/2016	2.069	2.05555	0.02	10.3	0.02	NA	
176.0967648	8/6/2016	2.046	2.05555	0.02	10.3	10.3	NA	10.3
185.436564	8/9/2016	2.078	2.05555	0.4	10.3	0.4	NA	
175.3169748	8/10/2016	2.033	2.05555	0.04	10.3	0.04	NA	
170.3301552	8/11/2016	1.979	2.05555	0.02	10.3	0.02	NA	
183.1544064	8/16/2016	2.128	2.05555	0.02	10.3	0.02	NA	
178.1444016	8/17/2016	2.046	2.05555	0.14	10.3	0.14	NA	
178.7080188	8/18/2016	2.033	2.05555	0.24	10.3	0.24	NA	
174.8057328	8/23/2016	2.031	2.05555	0.02	10.3	0.02	NA	
175.9227924	8/24/2016	2.042	2.05555	0.03	10.3	0.03	NA	
169.555536	8/25/2016	1.97	2.05555	0.02	10.3	0.02	NA	
179.023104	8/30/2016	2.08	2.05555	0.02	10.3	0.02	NA	
176.9154192	8/31/2016	2.028	2.05555	0.16	10.3	0.16	NA	
151.2088704	9/1/2016	1.988	2.2469	0.08	9.04	0.08	NA	
166.988484	9/6/2016	2.21	2.2469	0.02	9.04	0.02		9.04
180.2143896	9/7/2016	2.359	2.2469	0.12	9.04	0.12	NA	

182.3362524	9/8/2016	2.361	2.2469	0.22	9.04	0.22	NA	
180.5746776	9/12/2016	2.356	2.2469	0.15	9.04	0.15	NA	
186.1528032	9/13/2016	2.352	2.2469	0.45	9.04	0.45	NA	
183.5477208	9/14/2016	2.283	2.2469	0.6	9.04	0.6	NA	
176.9937318	9/19/2016	2.241	2.2469	0.43	9.04	0.43	NA	
167.6860416	9/20/2016	2.176	2.2469	0.2	9.04	0.2	NA	
166.7092608	9/21/2016	2.154	2.2469	0.24	9.04	0.24	NA	
164.082828	9/27/2016	2.093	2.2469	0.36	9.04	0.36	NA	
175.3558392	9/28/2016	2.308	2.2469	0.07	9.04	0.07	NA	
174.0944142	9/29/2016	2.247	2.2469	0.25	9.04	0.25	NA	
274.7339448	10/4/2016	2.401	2.80587	0.02	13.7	0.02		13.7
275.8703532	10/5/2016	2.378	2.80587	0.21	13.7	0.21	NA	
267.1325352	10/6/2016	2.316	2.80587	0.13	13.7	0.13	NA	
298.7923428	10/9/2016	2.598	2.80587	0.09	13.7	0.09	NA	
276.5647416	10/10/2016	2.417	2.80587	0.02	13.7	0.02	NA	
248.6154	10/11/2016	2.168	2.80587	0.05	13.7	0.05	NA	
362.0961954	10/17/2016	3.153	2.80587	0.07	13.7	0.07	NA	
342.534225	10/18/2016	2.987	2.80587	0.05	13.7	0.05	NA	
347.5598256	10/19/2016	2.964	2.80587	0.36	13.7	0.36	NA	
303.6834192	10/25/2016	2.654	2.80587	0.02	13.7	0.02	NA	
392.17599	10/26/2016	3.335	2.80587	0.4	13.7	0.4	NA	
367.6468824	10/27/2016	3.213	2.80587	0.02	13.7	0.02	NA	
39.7197504	11/1/2016	3.608	3.4292	0.02	1.3	0.02	NA	
33.9291216	11/3/2016	3.082	3.4292	0.02	1.3	0.02	NA	
32.6631096	11/7/2016	2.967	3.4292	0.02	1.3	0.02	NA	
30.5714376	11/8/2016	2.777	3.4292	0.02	1.3	0.02		1.3
31.6282824	11/9/2016	2.873	3.4292	0.02	1.3	0.02	NA	
47.7451656	11/15/2016	4.337	3.4292	0.02	1.3	0.02	NA	
40.512384	11/16/2016	3.68	3.4292	0.02	1.3	0.02	NA	
36.2312952	11/17/2016	3.242	3.4292	0.04	1.3	0.04	NA	
39.0206916	11/20/2016	3.366	3.4292	0.09	1.3	0.09	NA	
34.2427056	11/21/2016	3.019	3.4292	0.06	1.3	0.06	NA	
35.8499904	11/22/2016	3.232	3.4292	0.03	1.3	0.03	NA	
42.3398448	11/29/2016	3.846	3.4292	0.02	1.3	0.02	NA	
43.099452	11/30/2016	3.915	3.4292	0.02	1.3	0.02	NA	
378.547596	12/1/2016	3.745	3.18406	0.02	12.1	0.02	NA	
337.9131144	12/6/2016	3.343	3.18406	0.02	12.1	0.02		12.1
321.9717882	12/7/2016	3.167	3.18406	0.09	12.1	0.09	NA	
310.585353	12/8/2016	3.055	3.18406	0.09	12.1	0.09	NA	
312.6429144	12/13/2016	3.093	3.18406	0.02	12.1	0.02	NA	
299.4013296	12/14/2016	2.962	3.18406	0.02	12.1	0.02	NA	
295.7750976	12/15/2016	2.888	3.18406	0.18	12.1	0.18	NA	
290.6073	12/19/2016	2.875	3.18406	0.02	12.1	0.02	NA	
292.9601808	12/20/2016	2.884	3.18406	0.08	12.1	0.08	NA	
315.443403	12/27/2016	3.113	3.18406	0.05	12.1	0.05	NA	
301.8421974	12/28/2016	2.969	3.18406	0.09	12.1	0.09	NA	
321.7885584	12/29/2016	3.142	3.18406	0.18	12.1	0.18	NA	

448.4749932	1/3/2017	2.913	2.83858	0.86	17.6	0.86	NA	
411.132393	1/4/2017	2.793	2.83858	0.05	17.6	0.05	NA	
402.2043396	1/5/2017	2.737	2.83858	0.02	17.6	0.02	NA	
417.5747928	1/10/2017	2.742	2.83858	0.66	17.6	0.66		17.6
416.1666672	1/11/2017	2.824	2.83858	0.07	17.6	0.07	NA	
398.7137994	1/12/2017	2.611	2.83858	0.71	17.6	0.71	NA	
441.4402032	1/17/2017	3.004	2.83858	0.02	17.6	0.02	NA	
580.3158816	1/18/2017	3.717	2.83858	1.12	17.6	1.12	NA	
513.149358	1/19/2017	3.49	2.83858	0.03	17.6	0.03	NA	
397.953108	1/24/2017	2.705	2.83858	0.04	17.6	0.04	NA	
421.4528928	1/25/2017	2.736	2.83858	0.87	17.6	0.87	NA	
400.5878808	1/26/2017	2.726	2.83858	0.02	17.6	0.02	NA	
376.950903	1/31/2017	2.555	2.83858	0.09	17.6	0.09	NA	
294.0251988	2/1/2017	2.551	3.23468	0.02	13.8	0.02	NA	
298.182105	2/2/2017	2.509	3.23468	0.45	13.8	0.45	NA	
338.3998368	2/7/2017	2.936	3.23468	0.02	13.8	0.02		13.8
375.5131704	2/8/2017	3.258	3.23468	0.02	13.8	0.02	NA	
468.7497834	2/9/2017	3.989	3.23468	0.29	13.8	0.29	NA	
374.3735928	2/14/2017	3.062	3.23468	0.86	13.8	0.86	NA	
477.6253782	2/15/2017	4.129	3.23468	0.07	13.8	0.07	NA	
468.034128	2/16/2017	4.02	3.23468	0.16	13.8	0.16	NA	
383.2787112	2/21/2017	3.311	3.23468	0.08	13.8	0.08	NA	
376.2047232	2/22/2017	3.264	3.23468	0.02	13.8	0.02	NA	
355.1123628	2/23/2017	3.081	3.23468	0.02	13.8	0.02	NA	
375.3705564	2/28/2017	3.087	3.23468	0.78	13.8	0.78	NA	
473.7123336	3/1/2017	3.092	3.55358	0.47	17.9	0.47		17.9
340.1003628	3/2/2017	3.014	3.55358	0.03	13.5	0.03		13.5
480.4100208	3/7/2017	3.702	3.55358	0.46	15.1	0.46		15.1
530.6626908	3/8/2017	3.498	3.55358	0.39	17.8	0.39		17.8
588.8735556	3/9/2017	3.586	3.55358	0.19	19.5	0.19		19.5
348.35346	3/14/2017	3.825	3.55358	0.02	10.9	0.02		10.9
414.1465524	3/15/2017	4.379	3.55358	0.04	11.3	0.04		11.3
387.139464	3/16/2017	3.83	3.55358	0.02	12.1	0.02		12.1
440.508375	3/21/2017	3.375	3.55358	0.15	15.5	0.15		15.5
469.8085464	3/22/2017	3.188	3.55358	0.77	16.9	0.77		16.9
523.2518502	3/23/2017	3.077	3.55358	0.49	19.9	0.49		19.9
286.2184584	3/28/2017	3.358	3.55358	0.02	10.2	0.02		10.2
529.6879116	3/29/2017	4.002	3.55358	0.17	15.7	0.17		15.7
1.299789	4/4/2017	3.117	3.26913	0.04	0.01	0.04		0.01
0.8128998	4/5/2017	3.249	3.26913	0.02	0.01	0.02	NA	
0.7863786	4/6/2017	3.143	3.26913	0.02	0.01	0.02	NA	
3.848076	4/11/2017	3.076	3.26913	0.14	0.01	0.14	NA	
0.9415026	4/12/2017	3.763	3.26913	0.02	0.01	0.02	NA	
0.9400014	4/13/2017	3.757	3.26913	0.02	0.01	0.02	NA	
0.7150716	4/18/2017	2.858	3.26913	0.02	0.01	0.02	NA	
0.746847	4/19/2017	2.985	3.26913	0.02	0.01	0.02	NA	
10.3042368	4/20/2017	3.861	3.26913	0.31	0.01	0.31	NA	

0.773118	4/25/2017	3.09	3.26913	0.02	0.01	0.02	NA	
0.8446752	4/26/2017	3.376	3.26913	0.02	0.01	0.02	NA	
30.0914706	4/27/2017	3.193	3.26913	1.12	0.01	1.12	NA	
375.9531888	5/2/2017	2.828	2.92835	0.04	15.9	0.04		15.9
391.2814416	5/3/2017	2.947	2.92835	0.02	15.9	0.02	NA	
439.6107408	5/4/2017	3.311	2.92835	0.02	15.9	0.02	NA	
380.9251632	5/9/2017	2.869	2.92835	0.02	15.9	0.02	NA	
411.46224	5/10/2017	2.8	2.92835	1.72	15.9	1.72	NA	
378.9994572	5/11/2017	2.842	2.92835	0.09	15.9	0.09	NA	
481.5669456	5/16/2017	3.627	2.92835	0.02	15.9	0.02	NA	
403.5077148	5/18/2017	3.022	2.92835	0.11	15.9	0.11	NA	
387.0934272	5/23/2017	2.844	2.92835	0.42	15.9	0.42	NA	
372.2919288	5/24/2017	2.783	2.92835	0.14	15.9	0.14	NA	
377.4730704	5/25/2017	2.843	2.92835	0.02	15.9	0.02	NA	
349.5276486	5/30/2017	2.621	2.92835	0.09	15.9	0.09	NA	
343.3117632	5/31/2017	2.576	2.92835	0.08	15.9	0.08	NA	
308.556648	6/1/2017	2.58	2.41167	0.04	14.3	0.04	NA	
296.5849116	6/6/2017	2.473	2.41167	0.08	14.3	0.08		14.3
291.439632	6/7/2017	2.42	2.41167	0.14	14.3	0.14	NA	
301.6771488	6/8/2017	2.526	2.41167	0.02	14.3	0.02	NA	
290.4508416	6/13/2017	2.432	2.41167	0.02	14.3	0.02	NA	
305.2600128	6/14/2017	2.556	2.41167	0.02	14.3	0.02	NA	
289.3759824	6/15/2017	2.423	2.41167	0.02	14.3	0.02	NA	
280.9625904	6/20/2017	2.346	2.41167	0.06	14.3	0.06	NA	
290.034342	6/21/2017	2.41	2.41167	0.13	14.3	0.13	NA	
275.1170844	6/22/2017	2.302	2.41167	0.03	14.3	0.03	NA	
276.9553872	6/27/2017	2.319	2.41167	0.02	14.3	0.02	NA	
275.283384	6/28/2017	2.305	2.41167	0.02	14.3	0.02	NA	
276.3582432	6/29/2017	2.314	2.41167	0.02	14.3	0.02	NA	
252.5989176	7/4/2017	2.298	2.21252	0.08	13.1	0.08	NA	
262.93518	7/5/2017	2.325	2.21252	0.46	13.1	0.46	NA	
257.53086	7/6/2017	2.35	2.21252	0.04	13.1	0.04	NA	
268.4092224	7/11/2017	2.453	2.21252	0.02	13.1	0.02		13.1
239.5221312	7/12/2017	2.189	2.21252	0.02	13.1	0.02	NA	
241.4917056	7/13/2017	2.207	2.21252	0.02	13.1	0.02	NA	
242.004282	7/18/2017	2.21	2.21252	0.03	13.1	0.03	NA	
252.8781408	7/19/2017	2.172	2.21252	0.86	13.1	0.86	NA	
228.5800512	7/20/2017	2.089	2.21252	0.02	13.1	0.02	NA	
251.3819448	7/23/2017	2.268	2.21252	0.19	13.1	0.19	NA	
264.798336	7/24/2017	2.42	2.21252	0.02	13.1	0.02	NA	
232.3417248	7/25/2017	2.032	2.21252	0.61	13.1	0.61	NA	
466.155126	8/1/2017	2.11	2.08839	0.19	26.3	0.19	NA	
459.819228	8/2/2017	2.09	2.08839	0.08	26.3	0.08	NA	
470.282592	8/3/2017	2.08	2.08839	0.81	26.3	0.81	NA	
488.150208	8/8/2017	2.08	2.08839	1.84	26.3	1.84		26.3
454.26312	8/9/2017	2.04	2.08839	0.4	26.3	0.4	NA	
489.504624	8/10/2017	2.23	2.08839	0.02	26.3	0.02	NA	

481.62666	8/15/2017	2.15	2.08839	0.56	26.3	0.56	NA	
456.578304	8/16/2017	2.08	2.08839	0.02	26.3	0.02	NA	
467.14008	8/17/2017	2.09	2.08839	0.5	26.3	0.5	NA	
456.578304	8/21/2017	2.08	2.08839	0.02	26.3	0.02	NA	
463.163568	8/22/2017	2.11	2.08839	0.02	26.3	0.02	NA	
468.266814	8/23/2017	2.11	2.08839	0.31	26.3	0.31	NA	
470.462736	8/28/2017	2.14	2.08839	0.06	26.3	0.06	NA	
459.5757	8/29/2017	2.06	2.08839	0.45	26.3	0.45	NA	
452.70354	8/30/2017	2.06	2.08839	0.05	26.3	0.05	NA	
353.6281764	9/4/2017	2.253	2.09257	0.42	18.4	0.42	NA	
331.3905672	9/5/2017	2.156	2.09257	0.03	18.4	0.03	NA	
324.4506864	9/6/2017	2.104	2.09257	0.09	18.4	0.09	NA	
317.52882	9/12/2017	2.058	2.09257	0.1	18.4	0.1		18.4
331.9788708	9/13/2017	2.161	2.09257	0.02	18.4	0.02	NA	
310.0108104	9/14/2017	2.018	2.09257	0.02	18.4	0.02	NA	
330.1353972	9/19/2017	2.149	2.09257	0.02	18.4	0.02	NA	
316.9238364	9/20/2017	2.063	2.09257	0.02	18.4	0.02	NA	
319.4973936	9/21/2017	2.073	2.09257	0.08	18.4	0.08	NA	
316.6165908	9/26/2017	2.061	2.09257	0.02	18.4	0.02	NA	
316.462968	9/27/2017	2.06	2.09257	0.02	18.4	0.02	NA	
309.0890736	9/28/2017	2.012	2.09257	0.02	18.4	0.02	NA	
303.697764	10/3/2017	2.055	2.291	0.02	17.7	0.02		17.7
301.6287768	10/4/2017	2.041	2.291	0.02	17.7	0.02	NA	
302.9686812	10/5/2017	2.042	2.291	0.09	17.7	0.09	NA	
293.352828	10/6/2017	1.985	2.291	0.02	17.7	0.02	NA	
340.2006096	10/8/2017	2.302	2.291	0.02	17.7	0.02	NA	
315.6683328	10/9/2017	2.136	2.291	0.02	17.7	0.02	NA	
307.739328	10/10/2017	2.08	2.291	0.04	17.7	0.04	NA	
313.3614888	10/16/2017	2.118	2.291	0.04	17.7	0.04	NA	
319.7234076	10/17/2017	2.161	2.291	0.04	17.7	0.04	NA	
392.003352	10/18/2017	2.62	2.291	0.24	17.7	0.24	NA	
354.839895	10/24/2017	2.397	2.291	0.05	17.7	0.05	NA	
347.8854192	10/25/2017	2.354	2.291	0.02	17.7	0.02	NA	
332.9591544	10/26/2017	2.253	2.291	0.02	17.7	0.02	NA	
320.1018768	10/31/2017	2.166	2.291	0.02	17.7	0.02	NA	
414.41877	11/1/2017	3.165	NA	0.1	15.6	NA	NA	
380.37489	12/5/2017	2.905	3.134	0.1	15.6	0.1		15.6
383.3993076	12/6/2017	2.798	3.134	0.83	15.6	0.83	NA	
356.378208	12/7/2017	2.72	3.134	0.11	15.6	0.11	NA	
326.8124076	12/12/2017	2.477	3.134	0.22	15.6	0.22	NA	
344.3555976	12/13/2017	2.468	3.134	1.13	15.6	1.13	NA	
321.5850624	12/14/2017	2.416	3.134	0.36	15.6	0.36	NA	
508.4053992	12/17/2017	3.756	3.134	0.63	15.6	0.63	NA	
536.4227952	12/20/2017	4.076	3.134	0.18	15.6	0.18	NA	
491.8404912	12/21/2017	3.502	3.134	1.24	15.6	1.24	NA	
382.8240144	12/26/2017	2.844	3.134	0.54	15.6	0.54	NA	
361.6736076	12/27/2017	2.707	3.134	0.42	15.6	0.42	NA	

371.6627592	12/28/2017	2.714	3.134	0.82	15.6	0.82	NA	
270.9926208	1/2/2018	3.077	3.624	0.16	10.4	0.16	NA	
242.8064232	1/3/2018	2.794	3.624	0.02	10.4	0.02	NA	
246.807288	1/4/2018	2.73	3.624	0.44	10.4	0.44	NA	
405.161787	1/9/2018	4.357	3.624	0.75	10.4	0.75		10.4
358.7835474	1/10/2018	4.047	3.624	0.23	10.4	0.23	NA	
442.9448226	1/11/2018	4.959	3.624	0.31	10.4	0.31	NA	
286.5185316	1/16/2018	3.297	3.624	0.02	10.4	0.02	NA	
297.8158956	1/17/2018	3.427	3.624	0.02	10.4	0.02	NA	
320.3237208	1/18/2018	3.686	3.624	0.02	10.4	0.02	NA	
318.4118592	1/23/2018	3.664	3.624	0.02	10.4	0.02	NA	
332.9246268	1/24/2018	3.831	3.624	0.02	10.4	0.02	NA	
306.2454672	1/25/2018	3.524	3.624	0.02	10.4	0.02	NA	
380.19975	1/30/2018	4.375	3.624	0.02	10.4	0.02	NA	
317.3690256	1/31/2018	3.652	3.624	0.02	10.4	0.02	NA	
228.4586208	2/6/2018	4.476	3.74	0.02	6.1	0.02		6.1
358.1107596	3/6/2018	2.838	3.08394	1.43	13.7	1.43		13.7
343.471224	4/3/2018	2.98	3.5245	0.12	13.7	0.12		13.7
515.054214	5/8/2018	2.67	2.55	0.13	23	0.13		23
212.47401	6/3/2018	2.51	2.47	0.05	10.1	0.05		10.1
226.1617848	7/1/2018	2.532	2.2261	0.41	10.3	0.41		10.3
292.3565316	7/4/2018	2.359	2.2261	4.56	10.3	4.56	NA	
209.4534288	7/5/2018	2.376	2.2261	0.27	10.3	0.27	NA	
293.7262932	7/10/2018	2.162	2.2261	5.99	10.3	5.99	NA	
200.316375	7/11/2018	2.135	2.2261	0.95	10.3	0.95	NA	
190.992672	7/12/2018	2.202	2.2261	0.1	10.3	0.1	NA	
193.5106848	7/16/2018	2.214	2.2261	0.18	10.3	0.18	NA	
221.226006	7/18/2018	2.185	2.2261	1.84	10.3	1.84	NA	
187.5839472	7/19/2018	2.106	2.2261	0.38	10.3	0.38	NA	
186.880635	7/24/2018	2.165	2.2261	0.05	10.3	0.05	NA	
183.7966698	7/25/2018	2.117	2.2261	0.11	10.3	0.11	NA	
187.9336434	7/26/2018	2.173	2.2261	0.07	10.3	0.07	NA	
187.1017284	7/31/2018	2.153	2.2261	0.12	10.3	0.12	NA	
234.5098746	8/3/2018	2.063	2.15	1.53	12.1	1.53	NA	
240.157806	8/4/2018	2.17	2.15	1.17	12.1	1.17	NA	
256.7745888	8/5/2018	2.284	2.15	1.38	12.1	1.38	NA	
238.0621308	8/6/2018	2.174	2.15	1.03	12.1	1.03	NA	
236.0910552	8/7/2018	2.156	2.15	1.03	12.1	12.1	NA	12.1
260.0018352	8/11/2018	2.264	2.15	1.67	12.1	1.67	NA	
264.5167776	8/12/2018	2.374	2.15	1.26	12.1	1.26	NA	
277.3256832	8/13/2018	2.208	2.15	2.96	12.1	2.96	NA	
268.58553	8/16/2018	2.221	2.15	2.4	12.1	2.4	NA	
264.9157632	8/19/2018	2.256	2.15	1.98	12.1	1.98	NA	
261.569088	8/21/2018	2.178	2.15	2.3	12.1	2.3	NA	
264.6155232	8/25/2018	2.128	2.15	2.81	12.1	2.81	NA	
292.3872228	8/26/2018	2.278	2.15	3.29	12.1	3.29	NA	
328.4865792	8/27/2018	2.104	2.15	6.62	12.1	6.62	NA	

197.377776	9/3/2018	2.28	2.37	1.35	9.03	1.35	NA	
171.216864	9/4/2018	2.184	2.37	0.37	9.03	0.37		9.03
217.6592382	9/5/2018	2.103	2.37	3.38	9.03	3.38	NA	
175.6676718	9/11/2018	2.287	2.37	0.18	9.03	0.18	NA	
173.098368	9/12/2018	2.256	2.37	0.17	9.03	0.17	NA	
184.330263	9/13/2018	2.405	2.37	0.16	9.03	0.16	NA	
187.8719274	9/17/2018	2.399	2.37	0.36	9.03	0.36	NA	
179.16822	9/18/2018	2.31	2.37	0.27	9.03	0.27	NA	
180.0524268	9/19/2018	2.263	2.37	0.51	9.03	0.51	NA	
202.1967948	9/25/2018	2.422	2.37	0.98	9.03	0.98	NA	
212.7697464	9/26/2018	2.371	2.37	1.73	9.03	1.73	NA	
243.468369	9/27/2018	2.237	2.37	4.02	9.03	4.02	NA	
284.6178456	10/2/2018	2.564	2.46	4.66	8.65	4.66		8.65
336.1150104	10/3/2018	2.522	2.46	7.33	8.65	7.33	NA	
346.957344	10/4/2018	2.43	2.46	8.47	8.65	8.47	NA	
270.1761348	10/7/2018	2.651	2.46	3.57	8.65	3.57	NA	
261.6731712	10/8/2018	2.668	2.46	3.11	8.65	3.11	NA	
220.3940076	10/9/2018	2.479	2.46	2.01	8.65	2.01	NA	
225.0046098	10/16/2018	2.181	2.46	3.72	8.65	3.72	NA	
253.9226424	10/17/2018	2.242	2.46	4.93	8.65	4.93	NA	
275.2520256	10/18/2018	2.218	2.46	6.23	8.65	6.23	NA	
207.847395	10/23/2018	2.121	2.46	3.1	8.65	3.1	NA	
233.891964	10/24/2018	2.174	2.46	4.25	8.65	4.25	NA	
281.031312	10/25/2018	2.92	2.46	2.89	8.65	2.89	NA	
196.960776	10/30/2018	2.567	2.46	0.55	8.65	0.55	NA	
211.4149968	10/31/2018	2.674	2.46	0.83	8.65	0.83	NA	
238.735836	11/6/2018	3.078	2.954	0.36	8.94	0.36		8.94
261.201294	12/2/2018	3.026	2.94	1.53	8.82	1.53		8.82
351.537255	1/8/2019	3.225	2.88	1.27	11.8	1.27		11.8
215.8685568	2/5/2019	2.652	2.93	1.52	8.24	1.52		8.24
347.3586648	3/5/2019	2.506	2.68	4.52	12.1	4.52		12.1
321.0836616	4/9/2019	2.553	2.76	0.28	14.8	0.28		14.8
460.591929	5/7/2019	2.471	2.47	1.65	20.7	1.65		20.7
483.913488	6/4/2019	2.32	2.35	1.01	24	1.01		24
176.5896588	7/1/2019	2.154	2.17	0.03	9.8	0.03	NA	
257.678061	7/2/2019	2.771	2.17	1.35	9.8	1.35	NA	
193.9255164	7/9/2019	2.157	2.17	0.98	9.8	0.98		9.8
192.72072	7/10/2019	2.18	2.17	0.8	9.8	0.8	NA	
193.289508	7/11/2019	2.166	2.17	0.9	9.8	0.9	NA	
245.9613618	7/14/2019	2.253	2.17	3.29	9.8	3.29	NA	
221.0897304	7/16/2019	2.114	2.17	2.74	9.8	2.74	NA	
257.376987	7/17/2019	2.121	2.17	4.75	9.8	4.75	NA	
214.87176	7/23/2019	2.147	2.17	2.2	9.8	2.2	NA	
250.67538	7/24/2019	2.15	2.17	4.18	9.8	4.18	NA	
227.8417944	7/25/2019	2.141	2.17	2.96	9.8	2.96	NA	
204.9318144	7/30/2019	2.133	2.17	1.72	9.8	1.72	NA	
206.4818034	7/31/2019	2.151	2.17	1.71	9.8	1.71	NA	

207.5549112	8/1/2019	2.067	2.12	1.34	10.7	1.34	NA	
207.797355	8/6/2019	2.085	2.12	1.25	10.7	1.25		10.7
213.0742398	8/7/2019	2.089	2.12	1.53	10.7	1.53	NA	
214.1195754	8/8/2019	2.089	2.12	1.59	10.7	1.59	NA	
195.79401	8/13/2019	2.115	2.12	0.4	10.7	0.4	NA	
205.003872	8/14/2019	2.16	2.12	0.68	10.7	0.68	NA	
202.0525128	8/15/2019	2.076	2.12	0.97	10.7	0.97	NA	
194.7013032	8/20/2019	2.077	2.12	0.54	10.7	0.54	NA	
220.7807334	8/21/2019	2.147	2.12	1.63	10.7	1.63	NA	
205.2104538	8/22/2019	2.123	2.12	0.89	10.7	0.89	NA	
225.9652944	8/25/2019	2.273	2.12	1.22	10.7	1.22	NA	
200.039904	8/27/2019	2.104	2.12	0.7	10.7	0.7	NA	
206.0957448	8/28/2019	2.134	2.12	0.88	10.7	0.88	NA	
248.4465984	9/2/2019	2.288	2.441	3.76	9.26	3.76	NA	
192.8454864	9/3/2019	2.198	2.441	1.26	9.26	1.26	NA	
202.46601	9/4/2019	2.111	2.441	2.24	9.26	2.24	NA	
204.106488	9/10/2019	2.36	2.441	1.11	9.26	1.11		9.26
186.103764	9/11/2019	2.277	2.441	0.54	9.26	0.54	NA	
202.5242232	9/12/2019	2.278	2.441	1.4	9.26	1.4	NA	
210.1656648	9/17/2019	2.548	2.441	0.63	9.26	0.63	NA	
250.5722976	9/18/2019	2.544	2.441	2.55	9.26	2.55	NA	
231.0808836	9/19/2019	2.401	2.441	2.28	9.26	2.28	NA	
199.799712	9/24/2019	2.576	2.441	0.04	9.26	0.04	NA	
192.0170742	9/25/2019	2.473	2.441	0.05	9.26	0.05	NA	
207.2249808	9/26/2019	2.666	2.441	0.06	9.26	0.06	NA	
203.7623796	9/30/2019	2.561	2.441	0.28	9.26	0.28	NA	
374.4908532	10/1/2019	2.391	2.58	1.08	17.7	1.08		17.7
415.0807992	10/2/2019	2.361	2.58	3.38	17.7	3.38	NA	
395.1786402	10/6/2019	2.571	2.58	0.73	17.7	0.73	NA	
410.5365	10/7/2019	2.75	2.58	0.2	17.7	0.2	NA	
422.0818956	10/8/2019	2.682	2.58	1.17	17.7	1.17	NA	
364.97925	10/15/2019	2.334	2.58	1.05	17.7	1.05	NA	
371.648748	10/16/2019	2.462	2.58	0.4	17.7	0.4	NA	
368.9927082	10/17/2019	2.487	2.58	0.09	17.7	0.09	NA	
501.945402	10/22/2019	3.385	2.58	0.08	17.7	0.08	NA	
434.4367716	10/23/2019	2.938	2.58	0.03	17.7	0.03	NA	
408.116232	10/24/2019	2.76	2.58	0.03	17.7	0.03	NA	
348.134952	10/29/2019	2.332	2.58	0.2	17.7	0.2	NA	
367.2470628	10/30/2019	2.346	2.58	1.07	17.7	1.07	NA	
337.783761	10/31/2019	2.269	2.58	0.15	17.7	0.15	NA	
303.422544	11/5/2019	2.232	2.52	0.3	16	0.3		16
242.6563866	12/3/2019	2.311	2.94	0.09	12.5	0.09		12.5
472.0600962	1/7/2020	3.531	3.42	0.13	15.9	0.13		15.9
797.7063216	2/5/2020	6.911	3.64	0.04	13.8	0.04		13.8
319.89738	3/3/2020	3.17	2.83	0.1	12	0.1		12
53.5046862	4/14/2020	2.477	2.6	2.22	0.37	2.22		0.37
283.265181	5/5/2020	2.715	2.72	0.31	12.2	0.31		12.2

606.3091596	6/9/2020	3.306	3.035	12.9	9.09	12.9		9.09
372.7031742	7/1/2020	2.649	2.45	0.07	16.8	0.07	NA	
363.0695568	7/7/2020	2.579	2.45	0.08	16.8	0.08		16.8
352.2295584	7/8/2020	2.502	2.45	0.08	16.8	0.08	NA	
347.0410776	7/9/2020	2.471	2.45	0.04	16.8	0.04	NA	
460.916772	7/14/2020	2.74	2.45	3.37	16.8	3.37	NA	
349.1330832	7/15/2020	2.424	2.45	0.47	16.8	0.47	NA	
346.6213254	7/16/2020	2.401	2.45	0.51	16.8	0.51	NA	
351.550599	7/21/2020	2.455	2.45	0.37	16.8	0.37	NA	
338.114025	7/22/2020	2.375	2.45	0.27	16.8	0.27	NA	
327.4650126	7/23/2020	2.333	2.45	0.03	16.8	0.03	NA	
331.057968	7/28/2020	2.36	2.45	0.02	16.8	0.02	NA	
331.4788044	7/29/2020	2.363	2.45	0.02	16.8	0.02	NA	
322.7815188	7/30/2020	2.301	2.45	0.02	16.8	0.02	NA	
302.720733	8/2/2020	2.415	2.295	0.03	15	0.03	NA	
294.5714688	8/3/2020	2.336	2.295	0.12	15	0.12	NA	
292.5233316	8/4/2020	2.329	2.295	0.06	15	0.06	NA	
286.7357052	8/11/2020	2.289	2.295	0.02	15	0.02		15
286.6201128	8/12/2020	2.282	2.295	0.06	15	0.06	NA	
286.6104384	8/13/2020	2.288	2.295	0.02	15	0.02	NA	
289.8770496	8/18/2020	2.311	2.295	0.04	15	0.04	NA	
288.6147072	8/19/2020	2.304	2.295	0.02	15	0.02	NA	
282.3513672	8/20/2020	2.254	2.295	0.02	15	0.02	NA	
277.8417624	8/25/2020	2.218	2.295	0.02	15	0.02	NA	
269.0730864	8/26/2020	2.148	2.295	0.02	15	0.02	NA	
276.213294	8/27/2020	2.205	2.295	0.02	15	0.02	NA	
290.1279168	8/30/2020	2.313	2.295	0.04	15	0.04	NA	
289.8096624	8/31/2020	2.312	2.295	0.03	15	0.03	NA	
240.627348	9/1/2020	2.34	2.37	0.03	12.3	0.03	NA	
243.854928	9/7/2020	2.358	2.37	0.1	12.3	0.1	NA	
234.8217072	9/8/2020	2.278	2.37	0.06	12.3	0.06	NA	
228.1213512	9/9/2020	2.213	2.37	0.06	12.3	0.06	NA	
243.2009052	9/15/2020	2.346	2.37	0.13	12.3	0.13		12.3
237.735036	9/16/2020	2.31	2.37	0.04	12.3	0.04	NA	
237.735036	9/17/2020	2.31	2.37	0.04	12.3	0.04	NA	
241.337082	9/22/2020	2.345	2.37	0.04	12.3	0.04	NA	
265.222425	9/23/2020	2.575	2.37	0.05	12.3	0.05	NA	
253.3692	9/24/2020	2.45	2.37	0.1	12.3	0.1	NA	
255.8481816	9/28/2020	2.486	2.37	0.04	12.3	0.04	NA	
249.154581	9/29/2020	2.419	2.37	0.05	12.3	0.05	NA	
247.1915952	9/30/2020	2.398	2.37	0.06	12.3	0.06	NA	
185.122146	10/6/2020	2.374	2.68	0.29	9.06	0.29		9.06
182.580948	10/7/2020	2.354	2.68	0.24	9.06	0.24	NA	
185.554992	10/8/2020	2.32	2.68	0.53	9.06	0.53	NA	
218.57472	10/11/2020	2.88	2.68	0.04	9.06	0.04	NA	
206.9624376	10/12/2020	2.724	2.68	0.05	9.06	0.05	NA	
213.3445392	10/13/2020	2.808	2.68	0.05	9.06	0.05	NA	

277.614414	10/18/2020	3.63	2.68	0.11	9.06	0.11	NA	
251.2572618	10/19/2020	3.307	2.68	0.05	9.06	0.05	NA	
227.172426	10/20/2020	2.99	2.68	0.05	9.06	0.05	NA	
195.1099632	10/27/2020	2.568	2.68	0.05	9.06	0.05	NA	
193.8029184	10/28/2020	2.548	2.68	0.06	9.06	0.06	NA	
190.912608	10/29/2020	2.51	2.68	0.06	9.06	0.06	NA	
330.608025	11/3/2020	2.883	3.05	0.15	13.6	0.15		13.6

ATTACHMENT B
REVISED PERMIT ACTION LEVEL ALTERNATIVE 1

DRAFT

first month of year

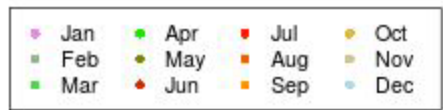
Jan

Extrapolate data to ends of year

**History
for Year Starting In Jan**



colored stair steps cumulative monthly loads, shorter bars- periodic loads marked at each sample date with month color
colored solid line is annual total for year



Data, Controls, Numeric Output

significant digits to display

386 Daily

141,000 Annual

Action Level based on 597 data points Over 1800 days

3

Fix Random number Seed

Please select Data file

Browse... WA0020893DAYmp002_PlantProcess(alt1).csv

Upload complete

Earliest Data to consider for calculation

2016-01-05

Latest Data to consider for calculation

2020-12-31

Samples per month (per year/12)



Thousands of iterations



Confidence Level Needed



If Date is not second field input, data assumed to be sequential months starting in Jan 2015

load	POS	Q2	Qave	AMM	NIT	Ammonia	Nitrate...Nitrite
297.7915428	1/5/2016	2.511	3.12294	0.02	14.2	0.02	14.2
540.1277568	2/2/2016	2.848	2.97866	0.04	22.7	0.04	22.7
392.567136	3/1/2016	2.92	3.07742	0.02	16.1	0.02	16.1
256.862826	4/19/2016	2.295	2.43637	0.02	13.4	0.02	13.4
252.483492	5/3/2016	2.29	2.22839	0.02	13.2	0.02	13.2
224.899776	6/7/2016	2.12	2.1628	0.02	12.7	0.02	12.7
214.6772712	7/5/2016	2.254	2.09394	0.02	11.4	0.02	11.4
187.8928608	8/2/2016	2.026	2.05555	0.02	11.1	0.02	11.1
241.3519272	8/3/2016	2.073	2.05555	0.06	13.9	0.06	13.9
202.2339912	8/4/2016	2.069	2.05555	0.02	11.7	0.02	11.7
221.830656	8/9/2016	2.078	2.05555	0.4	12.4	0.4	12.4
221.0960688	8/10/2016	2.033	2.05555	0.04	13	0.04	13
157.1262672	8/11/2016	1.979	2.05555	0.02	9.5	0.02	9.5
167.1816384	8/16/2016	2.128	2.05555	0.02	9.4	0.02	9.4
203.7398616	8/17/2016	2.046	2.05555	0.14	11.8	0.14	11.8
248.2244208	8/18/2016	2.033	2.05555	0.24	14.4	0.24	14.4
173.1118788	8/23/2016	2.031	2.05555	0.02	10.2	0.02	10.2
213.3894084	8/24/2016	2.042	2.05555	0.03	12.5	0.03	12.5
254.990496	8/25/2016	1.97	2.05555	0.02	15.5	0.02	15.5
205.043904	8/30/2016	2.08	2.05555	0.02	11.8	0.02	11.8
275.0138352	8/31/2016	2.028	2.05555	0.16	16.1	0.16	16.1
166.988484	9/6/2016	2.21	2.2469	0.02	9.04	0.02	9.04
300.7655868	10/4/2016	2.401	2.80587	0.02	15	0.02	15
248.9575068	10/9/2016	2.598	2.80587	0.09	11.4	0.09	11.4
224.1545136	10/10/2016	2.417	2.80587	0.02	11.1	0.02	11.1
363.4461912	10/25/2016	2.654	2.80587	0.02	16.4	0.02	16.4
628.59414	10/26/2016	3.335	2.80587	0.4	22.2	0.4	22.2
501.6289824	10/27/2016	3.213	2.80587	0.02	18.7	0.02	18.7
418.8628224	11/1/2016	3.608	3.4292	0.02	13.9	0.02	13.9
414.3465456	11/3/2016	3.082	3.4292	0.02	16.1	0.02	16.1
337.0239036	11/7/2016	2.967	3.4292	0.02	13.6	0.02	13.6
354.8139576	11/8/2016	2.777	3.4292	0.02	15.3	0.02	15.3
323.9502864	11/9/2016	2.873	3.4292	0.02	13.5	0.02	13.5
456.4727196	11/15/2016	4.337	3.4292	0.02	12.6	0.02	12.6
537.709824	11/16/2016	3.68	3.4292	0.02	17.5	0.02	17.5
576.9968952	11/17/2016	3.242	3.4292	0.04	21.3	0.04	21.3
401.1551676	11/20/2016	3.366	3.4292	0.09	14.2	0.09	14.2
369.1162236	11/21/2016	3.019	3.4292	0.06	14.6	0.06	14.6
391.6544064	11/22/2016	3.232	3.4292	0.03	14.5	0.03	14.5
433.6626528	11/29/2016	3.846	3.4292	0.02	13.5	0.02	13.5
516.540402	11/30/2016	3.915	3.4292	0.02	15.8	0.02	15.8
506.604126	12/1/2016	3.745	3.18406	0.02	16.2	0.02	16.2
432.7072224	12/6/2016	3.343	3.18406	0.02	15.5	0.02	15.5
514.7850822	12/7/2016	3.167	3.18406	0.09	19.4	0.09	19.4
496.579863	12/8/2016	3.055	3.18406	0.09	19.4	0.09	19.4
346.1772204	12/13/2016	3.093	3.18406	0.02	13.4	0.02	13.4

353.7481056	12/14/2016	2.962	3.18406	0.02	14.3	0.02	14.3
529.4085216	12/15/2016	2.888	3.18406	0.18	21.8	0.18	21.8
283.41405	12/19/2016	2.875	3.18406	0.02	11.8	0.02	11.8
451.7070768	12/20/2016	2.884	3.18406	0.08	18.7	0.08	18.7
377.753211	12/27/2016	3.113	3.18406	0.05	14.5	0.05	14.5
341.4605334	12/28/2016	2.969	3.18406	0.09	13.7	0.09	13.7
413.5035384	12/29/2016	3.142	3.18406	0.18	15.6	0.18	15.6
426.7071929	1/3/2017	2.913	2.83858	0.864	16.7	0.864	16.7
390.168135	1/4/2017	2.793	2.83858	0.05	16.7	0.05	16.7
304.0500456	1/5/2017	2.737	2.83858	0.02	13.3	0.02	13.3
458.7376968	1/10/2017	2.742	2.83858	0.66	19.4	0.66	19.4
510.3753072	1/11/2017	2.824	2.83858	0.07	21.6	0.07	21.6
470.5737414	1/12/2017	2.611	2.83858	0.71	20.9	0.71	20.9
268.5720192	1/17/2017	3.004	2.83858	0.02	10.7	0.02	10.7
636.1154856	1/18/2017	3.717	2.83858	1.12	19.4	1.12	19.4
469.489458	1/19/2017	3.49	2.83858	0.03	16.1	0.03	16.1
415.9106292	1/24/2017	2.705	2.83858	0.036	18.4	0.036	18.4
560.6213386	1/25/2017	2.736	2.83858	0.869	23.7	0.869	23.7
491.5954453	1/26/2017	2.726	2.83858	0.023	21.6	0.023	21.6
517.6522491	1/31/2017	2.555	2.83858	0.093	24.2	0.093	24.2
402.4230561	2/1/2017	2.551	3.23468	0.015	18.9	0.015	18.9
484.3732889	2/2/2017	2.509	3.23468	0.448	22.7	0.448	22.7
382.5240413	2/7/2017	2.936	3.23468	0.022	15.6	0.022	15.6
356.438623	2/8/2017	3.258	3.23468	0.018	13.1	0.018	13.1
658.3788654	2/9/2017	3.989	3.23468	0.29	19.5	0.29	19.5
430.4785576	2/14/2017	3.062	3.23468	0.857	16	0.857	16
498.2868942	2/15/2017	4.129	3.23468	0.07	14.4	0.07	14.4
558.4894344	2/16/2017	4.02	3.23468	0.158	16.5	0.158	16.5
383.3339387	2/21/2017	3.311	3.23468	0.082	13.8	0.082	13.8
319.0390272	2/22/2017	3.264	3.23468	0.02	11.7	0.02	11.7
319.1386068	2/23/2017	3.081	3.23468	0.02	12.4	0.02	12.4
532.4185944	2/28/2017	3.087	3.23468	0.78	19.9	0.78	19.9
473.6349718	3/1/2017	3.092	3.55358	0.467	17.9	0.467	17.9
340.0500893	3/2/2017	3.014	3.55358	0.028	13.5	0.028	13.5
480.5026448	3/7/2017	3.702	3.55358	0.463	15.1	0.463	15.1
530.5459975	3/8/2017	3.498	3.55358	0.386	17.8	0.386	17.8
588.9632773	3/9/2017	3.586	3.55358	0.193	19.5	0.193	19.5
348.3853605	3/14/2017	3.825	3.55358	0.021	10.9	0.021	10.9
414.256115	3/15/2017	4.379	3.55358	0.043	11.3	0.043	11.3
387.0116952	3/16/2017	3.83	3.55358	0.016	12.1	0.016	12.1
440.5365225	3/21/2017	3.375	3.55358	0.151	15.5	0.151	15.5
469.7553706	3/22/2017	3.188	3.55358	0.768	16.9	0.768	16.9
523.3031746	3/23/2017	3.077	3.55358	0.492	19.9	0.492	19.9
286.1064355	3/28/2017	3.358	3.55358	0.016	10.2	0.016	10.2
529.7880416	3/29/2017	4.002	3.55358	0.173	15.7	0.173	15.7
486.2088395	3/30/2017	4.186	3.55358	0.027	13.9	0.027	13.9
364.8507723	4/4/2017	3.117	3.26913	0.035	14	0.035	14

309.3083739	4/5/2017	3.249	3.26913	0.015	11.4	0.015	11.4
299.2170573	4/6/2017	3.143	3.26913	0.015	11.4	0.015	11.4
555.2260591	4/11/2017	3.076	3.26913	0.143	21.5	0.143	21.5
562.4536532	4/12/2017	3.763	3.26913	0.022	17.9	0.022	17.9
483.0353861	4/13/2017	3.757	3.26913	0.016	15.4	0.016	15.4
241.0983078	4/18/2017	2.858	3.26913	0.015	10.1	0.015	10.1
249.3224235	4/19/2017	2.985	3.26913	0.015	10	0.015	10
570.2751054	4/20/2017	3.861	3.26913	0.31	17.4	0.31	17.4
286.440219	4/25/2017	3.09	3.26913	0.015	11.1	0.015	11.1
335.4768336	4/26/2017	3.376	3.26913	0.015	11.9	0.015	11.9
602.3620044	4/27/2017	3.193	3.26913	1.12	21.5	1.12	21.5
413.6428498	5/2/2017	2.828	2.92835	0.038	17.5	0.038	17.5
258.4374597	5/3/2017	2.947	2.92835	0.015	10.5	0.015	10.5
226.8468741	5/4/2017	3.311	2.92835	0.015	8.2	0.015	8.2
258.7754799	5/9/2017	2.869	2.92835	0.015	10.8	0.015	10.8
467.50704	5/10/2017	2.8	2.92835	1.72	18.3	1.72	18.3
459.6346138	5/11/2017	2.842	2.92835	0.092	19.3	0.092	19.3
327.1448817	5/16/2017	3.627	2.92835	0.015	10.8	0.015	10.8
413.4630894	5/18/2017	3.022	2.92835	0.105	16.3	0.105	16.3
370.3715604	5/23/2017	2.844	2.92835	0.415	15.2	0.415	15.2
530.1910555	5/24/2017	2.783	2.92835	0.143	22.7	0.143	22.7
372.7783676	5/25/2017	2.843	2.92835	0.022	15.7	0.022	15.7
183.3326072	5/30/2017	2.621	2.92835	0.087	8.3	0.087	8.3
186.372312	5/31/2017	2.576	2.92835	0.075	8.6	0.075	8.6
192.363768	6/1/2017	2.58	2.41167	0.04	8.9	0.04	8.9
391.4590836	6/6/2017	2.473	2.41167	0.08	18.9	0.08	18.9
414.554712	6/7/2017	2.42	2.41167	0.14	20.4	0.14	20.4
267.9702048	6/8/2017	2.526	2.41167	0.02	12.7	0.02	12.7
442.5724416	6/13/2017	2.432	2.41167	0.02	21.8	0.02	21.8
407.5818048	6/14/2017	2.556	2.41167	0.02	19.1	0.02	19.1
408.6021204	6/15/2017	2.423	2.41167	0.02	20.2	0.02	20.2
443.3574024	6/20/2017	2.346	2.41167	0.06	22.6	0.06	22.6
422.690382	6/21/2017	2.41	2.41167	0.13	20.9	0.13	20.9
459.4244124	6/22/2017	2.302	2.41167	0.03	23.9	0.03	23.9
240.2085132	6/27/2017	2.319	2.41167	0.02	12.4	0.02	12.4
240.680724	6/28/2017	2.305	2.41167	0.02	12.5	0.02	12.5
260.9192352	6/29/2017	2.314	2.41167	0.02	13.5	0.02	13.5
315.8444736	7/4/2017	2.298	2.21252	0.08	16.4	0.08	16.4
363.804561	7/5/2017	2.325	2.21252	0.462	18.3	0.462	18.3
268.3069323	7/11/2017	2.453	2.21252	0.015	13.1	0.015	13.1
416.7200095	8/1/2017	2.109	2.08839	0.192	23.5	0.192	23.5
322.117488	8/2/2017	2.09	2.08839	0.08	18.4	0.08	18.4
493.2383753	8/3/2017	2.082	2.08839	0.806	27.6	0.806	27.6
502.7520468	8/8/2017	2.083	2.08839	1.84	27.1	1.84	27.1
497.588953	8/9/2017	2.036	2.08839	0.404	28.9	0.404	28.9
331.9212414	8/10/2017	2.234	2.08839	0.015	17.8	0.015	17.8
526.1913749	8/15/2017	2.149	2.08839	0.559	28.8	0.559	28.8

341.5067787	8/16/2017	2.077	2.08839	0.015	19.7	0.015	19.7
408.63915	8/17/2017	2.085	2.08839	0.5	23	0.5	23
197.9230869	8/21/2017	2.079	2.08839	0.015	11.4	0.015	11.4
207.7162068	8/22/2017	2.108	2.08839	0.015	11.8	0.015	11.8
330.4837507	8/23/2017	2.107	2.08839	0.307	18.5	0.307	18.5
317.5116563	9/12/2017	2.058	2.09257	0.099	18.4	0.099	18.4
221.9500431	9/13/2017	2.161	2.09257	0.015	12.3	0.015	12.3
178.7358744	9/14/2017	2.018	2.09257	0.02	10.6	0.02	10.6
270.9368512	9/19/2017	2.149	2.09257	0.017	15.1	0.017	15.1
278.4697227	9/20/2017	2.063	2.09257	0.015	16.17	0.015	16.17
298.6989431	9/21/2017	2.073	2.09257	0.077	17.2	0.077	17.2
168.7074831	9/26/2017	2.061	2.09257	0.015	9.8	0.015	9.8
194.396226	9/27/2017	2.06	2.09257	0.015	11.3	0.015	11.3
186.5105892	9/28/2017	2.012	2.09257	0.015	11.1	0.015	11.1
351.6004305	10/3/2017	2.055	2.291	0.015	20.5	0.015	20.5
281.4531075	11/1/2017	2.325	NA	0.015	14.5	0.015	14.5
350.8231842	11/2/2017	2.37	NA	0.049	17.7	0.049	17.7
255.1031444	11/6/2017	2.507	NA	0.301	11.9	0.301	11.9
343.4371968	11/7/2017	2.368	NA	1.19	16.2	1.19	16.2
262.9916251	11/8/2017	2.331	NA	0.028	13.5	0.028	13.5
504.7145322	11/15/2017	3.505	NA	0.366	16.9	0.366	16.9
458.2640015	11/16/2017	2.846	NA	0.407	18.9	0.407	18.9
301.0808805	11/19/2017	2.837	NA	0.325	12.4	0.325	12.4
330.6635194	11/20/2017	3.084	NA	0.056	12.8	0.056	12.8
434.3143738	11/21/2017	3.656	NA	0.044	14.2	0.044	14.2
375.6583698	11/28/2017	3.878	NA	0.015	11.6	0.015	11.6
346.862685	11/29/2017	3.35	NA	0.015	12.4	0.015	12.4
517.058316	11/30/2017	3.56	NA	0.015	17.4	0.015	17.4
409.3996746	12/5/2017	2.905	3.134	0.098	16.8	0.098	16.8
581.6561863	12/6/2017	2.798	3.134	0.826	24.1	0.826	24.1
431.1926784	12/7/2017	2.72	3.134	0.108	18.9	0.108	18.9
314.3968414	12/12/2017	2.477	3.134	0.219	15	0.219	15
484.3208136	12/13/2017	2.468	3.134	1.13	22.4	1.13	22.4
450.4608806	12/14/2017	2.416	3.134	0.356	22	0.356	22
370.5125731	12/17/2017	3.756	3.134	0.628	11.2	0.628	11.2
505.7603515	12/20/2017	4.076	3.134	0.178	14.7	0.178	14.7
500.6024952	12/21/2017	3.502	3.134	1.24	15.9	1.24	15.9
231.0938273	12/26/2017	2.844	3.134	0.543	9.2	0.543	9.2
239.7611556	12/27/2017	2.707	3.134	0.42	10.2	0.42	10.2
294.6593057	12/28/2017	2.714	3.134	0.818	12.2	0.818	12.2
245.2277921	1/2/2018	3.077	3.624	0.156	9.4	0.156	9.4
203.2629971	1/3/2018	2.794	3.624	0.023	8.7	0.023	8.7
255.9601044	1/4/2018	2.73	3.624	0.442	10.8	0.442	10.8
394.2969104	1/9/2018	4.357	3.624	0.751	10.1	0.751	10.1
429.7639613	1/10/2018	4.047	3.624	0.233	12.5	0.233	12.5
488.5214047	1/11/2018	4.959	3.624	0.312	11.5	0.312	11.5
209.3895027	1/16/2018	3.297	3.624	0.015	7.6	0.015	7.6

226.2200397	1/17/2018	3.427	3.624	0.015	7.9	0.015	7.9
221.7980466	1/18/2018	3.686	3.624	0.015	7.2	0.015	7.2
226.5857904	1/23/2018	3.664	3.624	0.015	7.4	0.015	7.4
230.5231461	1/24/2018	3.831	3.624	0.015	7.2	0.015	7.2
241.4401644	1/25/2018	3.524	3.624	0.015	8.2	0.015	8.2
288.7985625	1/30/2018	4.375	3.624	0.015	7.9	0.015	7.9
256.3013772	1/31/2018	3.652	3.624	0.015	8.4	0.015	8.4
433.8047664	2/1/2018	3.726	3.74	1.76	12.2	1.76	12.2
265.6018116	2/6/2018	4.476	3.74	0.015	7.1	0.015	7.1
371.831027	2/7/2018	4.059	3.74	0.484	10.5	0.484	10.5
475.4747424	2/8/2018	3.736	3.74	1.06	14.2	1.06	14.2
301.3590695	2/13/2018	3.021	3.74	0.261	11.7	0.261	11.7
333.3962371	2/14/2018	3.196	3.74	0.608	11.9	0.608	11.9
317.7421906	2/15/2018	2.998	3.74	0.308	12.4	0.308	12.4
219.8915893	2/20/2018	3.461	3.74	0.018	7.6	0.018	7.6
247.7146633	2/21/2018	3.294	3.74	0.017	9	0.017	9
232.8798049	2/22/2018	2.989	3.74	0.042	9.3	0.042	9.3
320.2037916	2/27/2018	2.996	3.74	0.015	12.8	0.015	12.8
477.1397567	2/28/2018	3.186	3.74	0.457	17.5	0.457	17.5
467.8955506	3/1/2018	3.196	3.08394	0.154	17.4	0.154	17.4
384.1465716	3/6/2018	2.838	3.08394	1.43	14.8	1.43	14.8
334.4517725	3/7/2018	2.767	3.08394	0.393	14.1	0.393	14.1
429.0894972	3/8/2018	3.49	3.08394	0.742	14	0.742	14
345.45114	3/13/2018	3	3.08394	0.807	13	0.807	13
483.9915504	3/14/2018	3.005	3.08394	0.612	18.7	0.612	18.7
353.4791239	3/15/2018	2.938	3.08394	0.026	14.4	0.026	14.4
452.6957338	3/20/2018	2.624	3.08394	0.186	20.5	0.186	20.5
390.2512264	3/21/2018	2.621	3.08394	0.053	17.8	0.053	17.8
438.6572703	3/22/2018	2.931	3.08394	0.045	17.9	0.045	17.9
694.5531734	3/27/2018	3.729	3.08394	0.533	21.8	0.533	21.8
741.9287686	3/28/2018	3.478	3.08394	0.478	25.1	0.478	25.1
474.2308314	3/29/2018	3.174	3.08394	0.015	17.9	0.015	17.9
385.721664	4/3/2018	2.98	3.5245	0.12	15.4	0.12	15.4
549.5934733	4/4/2018	3.306	3.5245	0.533	19.4	0.533	19.4
531.903516	4/5/2018	3.56	3.5245	0.015	17.9	0.015	17.9
566.9058955	4/10/2018	3.506	3.5245	0.288	19.1	0.288	19.1
725.049576	4/11/2018	3.534	3.5245	0.7	23.9	0.7	23.9
671.0012302	4/12/2018	3.557	3.5245	0.519	22.1	0.519	22.1
425.5922016	4/15/2018	4.92	3.5245	0.072	10.3	0.072	10.3
603.4125942	4/16/2018	5.265	3.5245	0.442	13.3	0.442	13.3
590.5414889	4/17/2018	4.573	3.5245	0.684	14.8	0.684	14.8
272.13832	4/24/2018	2.833	3.5245	0.018	11.5	0.018	11.5
301.5945244	4/25/2018	2.797	3.5245	0.029	12.9	0.029	12.9
434.1614265	4/26/2018	2.705	3.5245	0.945	18.3	0.945	18.3
478.4953236	5/1/2018	2.66	2.55	0.069	21.5	0.069	21.5
373.262121	5/2/2018	2.71	2.55	0.015	16.5	0.015	16.5
322.006566	5/3/2018	2.66	2.55	0.015	14.5	0.015	14.5

550.571355	5/8/2018	2.67	2.55	0.125	24.6	0.125	24.6
453.9081112	5/9/2018	2.661	2.55	0.053	20.4	0.053	20.4
375.6913545	5/10/2018	2.695	2.55	0.015	16.7	0.015	16.7
287.1764075	5/15/2018	2.683	2.55	0.034	12.8	0.034	12.8
240.8323369	5/16/2018	2.573	2.55	0.023	11.2	0.023	11.2
227.730789	5/17/2018	2.546	2.55	0.025	10.7	0.025	10.7
228.7512797	5/20/2018	2.657	2.55	0.223	10.1	0.223	10.1
496.714554	5/22/2018	2.513	2.55	1.7	22	1.7	22
306.9655762	5/23/2018	2.433	2.55	0.028	15.1	0.028	15.1
244.1749338	5/29/2018	2.478	2.55	0.015	11.8	0.015	11.8
432.3225816	5/30/2018	2.444	2.55	1.11	20.1	1.11	20.1
568.6573622	5/31/2018	2.409	2.55	0.704	27.6	0.704	27.6
406.3225816	6/5/2018	2.386	2.47	0.019	20.4	0.019	20.4
273.1086873	6/6/2018	2.423	2.47	0.015	13.5	0.015	13.5
383.7866756	6/7/2018	2.381	2.47	0.627	18.7	0.627	18.7
225.4209426	6/12/2018	2.646	2.47	0.015	10.2	0.015	10.2
268.2179862	6/13/2018	2.722	2.47	0.015	11.8	0.015	11.8
231.7475248	6/14/2018	2.667	2.47	0.019	10.4	0.019	10.4
247.5974196	6/19/2018	3.03	2.47	0.298	9.5	0.298	9.5
202.379274	6/20/2018	2.35	2.47	0.826	9.5	0.826	9.5
524.34414	6/21/2018	2.206	2.47	12.6	15.9	12.6	15.9
346.4417318	6/25/2018	3.088	2.47	0.752	12.7	0.752	12.7
247.1715792	6/26/2018	2.184	2.47	0.27	13.3	0.27	13.3
225.4481143	6/27/2018	2.124	2.47	0.227	12.5	0.227	12.5
320.3382991	6/28/2018	2.261	2.47	0.788	16.2	0.788	16.2
245.0613924	7/1/2018	2.532	2.2261	0.405	11.2	0.405	11.2
418.2705156	7/4/2018	2.359	2.2261	4.56	16.7	4.56	16.7
304.6090925	7/5/2018	2.376	2.2261	0.272	15.1	0.272	15.1
445.1873652	7/10/2018	2.162	2.2261	5.99	18.7	5.99	18.7
231.3031446	7/12/2018	2.202	2.2261	0.095	12.5	0.095	12.5
202.7061353	7/16/2018	2.214	2.2261	0.178	10.8	0.178	10.8
283.183866	7/18/2018	2.185	2.2261	1.84	13.7	1.84	13.7
172.3454745	7/24/2018	2.165	2.2261	0.045	9.5	0.045	9.5
176.6637347	7/25/2018	2.117	2.2261	0.106	9.9	0.106	9.9
178.908479	7/26/2018	2.173	2.2261	0.072	9.8	0.072	9.8
187.1017284	7/31/2018	2.153	2.2261	0.12	10.3	0.12	10.3
204.3296497	8/1/2018	2.177	2.15	0.454	10.8	0.454	10.8
257.962872	8/2/2018	2.12	2.15	1.69	12.9	1.69	12.9
230.2112551	8/7/2018	2.156	2.15	0.303	12.5	0.303	12.5
331.1407008	8/8/2018	2.121	2.15	4.22	14.5	4.22	14.5
288.8735808	8/9/2018	2.209	2.15	1.48	14.2	1.48	14.2
140.764655	8/14/2018	2.017	2.15	0.268	8.1	0.268	8.1
281.33322	8/15/2018	2.212	2.15	4.15	11.1	4.15	11.1
280.641834	8/21/2018	2.178	2.15	3.05	12.4	3.05	12.4
225.3171096	8/22/2018	2.134	2.15	1.46	11.2	1.46	11.2
238.2084144	8/23/2018	2.046	2.15	1.96	12	1.96	12
201.9661104	8/28/2018	2.168	2.15	1.07	10.1	1.07	10.1

192.460929	8/29/2018	2.05	2.15	0.857	10.4	0.857	10.4
285.556596	8/30/2018	2.026	2.15	5.6	11.3	5.6	11.3
208.21644	9/3/2018	2.28	2.37	1.35	9.6	1.35	9.6
194.4039989	9/4/2018	2.184	2.37	0.373	10.3	0.373	10.3
269.7501276	9/5/2018	2.103	2.37	3.38	12	3.38	12
187.4107754	9/25/2018	2.422	2.37	0.978	8.3	0.978	8.3
184.4927262	9/26/2018	2.371	2.37	1.73	7.6	1.73	7.6
233.5803816	9/27/2018	2.237	2.37	4.02	8.5	4.02	8.5
277.1335296	10/2/2018	2.564	2.46	4.66	8.3	4.66	8.3
396.0604284	10/3/2018	2.522	2.46	7.33	11.5	7.33	11.5
414.849114	10/4/2018	2.43	2.46	8.47	12	8.47	12
262.4378658	10/7/2018	2.651	2.46	3.57	8.3	3.57	8.3
251.6601672	10/8/2018	2.668	2.46	3.11	8.2	3.11	8.2
201.656196	10/23/2018	2.121	2.46	3.1	8.3	3.1	8.3
258.36903	10/24/2018	2.174	2.46	4.25	10	4.25	10
352.872072	10/25/2018	2.92	2.46	2.89	11.6	2.89	11.6
225.8412202	10/30/2018	2.567	2.46	0.549	10	0.549	10
261.5703056	10/31/2018	2.674	2.46	0.829	10.9	0.829	10.9
292.7719303	11/1/2018	3.313	2.954	0.896	9.7	0.896	9.7
258.1940902	11/6/2018	3.078	2.954	0.358	9.7	0.358	9.7
268.8833347	11/7/2018	2.904	2.954	0.402	10.7	0.402	10.7
261.8537822	11/8/2018	2.648	2.954	0.857	11	0.857	11
245.6734817	11/13/2018	2.409	2.954	0.928	11.3	0.928	11.3
306.975384	11/14/2018	2.487	2.954	3.2	11.6	3.2	11.6
346.5752886	11/15/2018	2.551	2.954	4.19	12.1	4.19	12.1
289.975545	11/18/2018	2.727	2.954	3.15	9.6	3.15	9.6
233.1248508	11/19/2018	2.498	2.954	1.69	9.5	1.69	9.5
238.555275	11/20/2018	2.335	2.954	1.65	10.6	1.65	10.6
289.9839684	11/27/2018	3.535	2.954	0.636	9.2	0.636	9.2
387.0400512	11/28/2018	3.296	2.954	2.48	11.6	2.48	11.6
374.4983592	11/29/2018	3.114	2.954	2.72	11.7	2.72	11.7
243.7207374	12/4/2018	2.593	2.94	1.17	10.1	1.17	10.1
229.0257408	12/5/2018	2.524	2.94	1.38	9.5	1.38	9.5
224.700033	12/6/2018	2.465	2.94	1.03	9.9	1.03	9.9
219.2813682	12/11/2018	2.719	2.94	1.67	8	1.67	8
215.781654	12/12/2018	2.735	2.94	1.26	8.2	1.26	8.2
270.0098352	12/13/2018	2.753	2.94	2.96	8.8	2.96	8.8
288.5426496	12/16/2018	3.516	2.94	2.44	7.4	2.44	7.4
261.1474176	12/19/2018	2.878	2.94	1.98	8.9	1.98	8.9
265.0822296	12/21/2018	2.908	2.94	2.33	8.6	2.33	8.6
214.3806174	12/25/2018	2.791	2.94	2.81	6.4	2.81	6.4
226.2497718	12/26/2018	2.743	2.94	3.29	6.6	3.29	6.6
300.3651	12/27/2018	2.625	2.94	6.62	7.1	6.62	7.1
205.499268	1/1/2019	3.042	2.88	1.4	6.7	1.4	6.7
187.438581	1/2/2019	2.827	2.88	1.25	6.7	1.25	6.7
241.6654278	1/3/2019	2.889	2.88	1.93	8.1	1.93	8.1
381.123405	1/8/2019	3.225	2.88	1.27	12.9	1.27	12.9

492.8793216	1/9/2019	3.452	2.88	1.22	15.9	1.22	15.9
484.8658326	1/10/2019	3.347	2.88	1.17	16.2	1.17	16.2
297.2376	1/15/2019	2.64	2.88	1.9	11.6	1.9	11.6
416.40786	1/16/2019	2.67	2.88	4.5	14.2	4.5	14.2
604.688364	1/17/2019	2.562	2.88	10.1	18.2	10.1	18.2
236.7951347	1/22/2019	2.657	2.88	1.886	8.8	1.886	8.8
318.221874	1/23/2019	2.895	2.88	2.68	10.5	2.68	10.5
365.3396214	1/24/2019	2.743	2.88	2.77	13.2	2.77	13.2
304.1451216	1/29/2019	2.491	2.88	3.64	11	3.64	11
336.323427	1/30/2019	2.497	2.88	2.75	13.4	2.75	13.4
355.0958496	1/31/2019	2.487	2.88	3.02	14.1	3.02	14.1
223.8309216	2/5/2019	2.652	2.93	1.52	8.6	1.52	8.6
210.9328614	2/6/2019	2.547	2.93	1.23	8.7	1.23	8.7
428.936208	2/7/2019	2.426	2.93	10.3	10.9	10.3	10.9
226.6904574	2/12/2019	2.657	2.93	1.83	8.4	1.83	8.4
268.183125	2/13/2019	3.125	2.93	1.39	8.9	1.39	8.9
328.705254	2/14/2019	3.326	2.93	2.15	9.7	2.15	9.7
264.0450922	2/19/2019	3.393	2.93	0.531	8.8	0.531	8.8
542.649189	2/20/2019	3.335	2.93	5.71	13.8	5.71	13.8
679.57656	2/21/2019	3.134	2.93	9.9	16.1	9.9	16.1
431.941527	2/26/2019	2.895	2.93	2.79	15.1	2.79	15.1
337.8565775	2/27/2019	2.719	2.93	0.599	14.3	0.599	14.3
351.5386728	3/5/2019	2.506	2.68	4.52	12.3	4.52	12.3
439.42626	3/6/2019	2.509	2.68	6.4	14.6	6.4	14.6
350.297514	3/7/2019	2.655	2.68	1.62	14.2	1.62	14.2
660.2637888	3/12/2019	3.528	2.68	6.74	15.7	6.74	15.7
440.9361169	3/13/2019	3.126	2.68	0.613	16.3	0.613	16.3
422.1290333	3/14/2019	2.952	2.68	0.946	16.2	0.946	16.2
352.466748	3/19/2019	2.658	2.68	2.2	13.7	2.2	13.7
406.957806	3/20/2019	2.615	2.68	1.86	16.8	1.86	16.8
275.6120968	3/21/2019	2.618	2.68	0.323	12.3	0.323	12.3
441.316104	3/26/2019	2.515	2.68	2.64	18.4	2.64	18.4
305.2709716	3/27/2019	2.451	2.68	0.134	14.8	0.134	14.8
288.4589994	3/28/2019	2.47	2.68	0.103	13.9	0.103	13.9
272.4383932	4/2/2019	2.339	2.76	0.766	13.2	0.766	13.2
340.475913	4/3/2019	2.313	2.76	1.15	16.5	1.15	16.5
369.7871933	4/4/2019	2.278	2.76	0.264	19.2	0.264	19.2
346.6340856	4/9/2019	2.553	2.76	0.28	16	0.28	16
457.8269271	4/11/2019	2.815	2.76	0.301	19.2	0.301	19.2
387.6894787	4/16/2019	3.091	2.76	0.139	14.9	0.139	14.9
443.8649081	4/17/2019	2.943	2.76	0.084	18	0.084	18
438.3441617	4/18/2019	2.987	2.76	0.196	17.4	0.196	17.4
331.423727	4/23/2019	2.828	2.76	0.252	13.8	0.252	13.8
485.4381651	4/24/2019	2.765	2.76	0.251	20.8	0.251	20.8
453.8749597	4/25/2019	2.639	2.76	0.022	20.6	0.022	20.6
432.8661911	4/30/2019	2.507	2.76	0.403	20.3	0.403	20.3
590.3750475	5/1/2019	2.525	2.47	0.335	27.7	0.335	27.7

577.9770287	5/2/2019	2.449	2.47	0.198	28.1	0.198	28.1
487.382511	5/7/2019	2.471	2.47	1.65	22	1.65	22
594.3931344	5/8/2019	2.586	2.47	2.36	25.2	2.36	25.2
526.22064	5/9/2019	2.4	2.47	1.19	25.1	1.19	25.1
323.0375568	5/14/2019	2.296	2.47	6.17	10.7	6.17	10.7
421.7558016	5/15/2019	2.324	2.47	8.56	13.2	8.56	13.2
590.882328	5/16/2019	2.567	2.47	10.4	17.2	10.4	17.2
703.590756	5/21/2019	2.474	2.47	15.7	18.4	15.7	18.4
440.698944	5/22/2019	2.359	2.47	2.3	20.1	2.3	20.1
323.6911626	5/23/2019	2.405	2.47	0.338	15.8	0.338	15.8
252.7796204	5/28/2019	2.423	2.47	0.109	12.4	0.109	12.4
462.2254848	5/29/2019	2.448	2.47	2.84	19.8	2.84	19.8
413.1921645	5/30/2019	2.325	2.47	0.109	21.2	0.109	21.2
509.8989264	6/4/2019	2.32	2.35	0.753	25.6	0.753	25.6
534.2828513	6/5/2019	2.326	2.35	0.342	27.2	0.342	27.2
586.148544	6/6/2019	2.4	2.35	0.284	29	0.284	29
516.9910539	6/11/2019	2.381	2.35	0.335	25.7	0.335	25.7
510.8707449	6/12/2019	2.439	2.35	0.115	25	0.115	25
431.6450734	6/13/2019	2.297	2.35	0.032	22.5	0.032	22.5
337.0054305	6/18/2019	2.315	2.35	0.155	17.3	0.155	17.3
534.763719	6/19/2019	2.319	2.35	0.05	27.6	0.05	27.6
470.553642	6/20/2019	2.21	2.35	0.03	25.5	0.03	25.5
396.2743911	6/25/2019	2.335	2.35	0.049	20.3	0.049	20.3
503.6409907	6/26/2019	2.256	2.35	0.068	26.7	0.068	26.7
468.5208671	6/27/2019	2.226	2.35	0.037	25.2	0.037	25.2
304.8395267	6/30/2019	2.353	2.35	0.034	15.5	0.034	15.5
243.1116839	7/1/2019	2.154	2.17	0.033	13.5	0.033	13.5
308.520369	7/2/2019	2.771	2.17	1.35	12	1.35	12
219.0566803	7/9/2019	2.157	2.17	0.977	11.2	0.977	11.2
203.6839836	7/10/2019	2.18	2.17	0.803	10.4	0.803	10.4
225.8777578	7/11/2019	2.166	2.17	0.904	11.6	0.904	11.6
223.4133378	7/14/2019	2.253	2.17	3.29	8.6	3.29	8.6
226.3789584	7/16/2019	2.114	2.17	2.74	10.1	2.74	10.1
259.145901	7/17/2019	2.121	2.17	4.75	9.9	4.75	9.9
213.081162	7/23/2019	2.147	2.17	2.2	9.7	2.2	9.7
245.29608	7/24/2019	2.15	2.17	4.18	9.5	4.18	9.5
227.8417944	7/25/2019	2.141	2.17	2.96	9.8	2.96	9.8
229.8367224	7/30/2019	2.133	2.17	1.72	11.2	1.72	11.2
226.2150774	7/31/2019	2.151	2.17	1.71	10.9	1.71	10.9
207.5549112	8/1/2019	2.067	2.12	1.34	10.7	1.34	10.7
218.230695	8/6/2019	2.085	2.12	1.25	11.3	1.25	11.3
225.2698218	8/7/2019	2.089	2.12	1.53	11.4	1.53	11.4
224.5729314	8/8/2019	2.089	2.12	1.59	11.3	1.59	11.3
240.1775885	8/15/2019	2.076	2.12	0.972	12.9	0.972	12.9
196.4681656	8/20/2019	2.077	2.12	0.542	10.8	0.542	10.8
242.2679094	8/21/2019	2.147	2.12	1.63	11.9	1.63	11.9
238.9223351	8/22/2019	2.123	2.12	0.894	12.6	0.894	12.6

225.9652944	8/25/2019	2.273	2.12	1.22	10.7	1.22	10.7
217.587264	8/27/2019	2.104	2.12	0.7	11.7	0.7	11.7
231.0123288	8/28/2019	2.134	2.12	0.88	12.1	0.88	12.1
235.8525312	9/2/2019	2.288	2.441	3.76	8.6	3.76	8.6
204.5775312	9/3/2019	2.198	2.441	1.26	9.9	1.26	9.9
230.480904	9/10/2019	2.36	2.441	1.11	10.6	1.11	10.6
243.7389603	9/11/2019	2.277	2.441	0.535	12.3	0.535	12.3
269.778984	9/12/2019	2.278	2.441	1.4	12.8	1.4	12.8
293.9556766	9/17/2019	2.548	2.441	0.633	13.2	0.633	13.2
374.479344	9/18/2019	2.544	2.441	2.55	15.1	2.55	15.1
275.9354052	9/19/2019	2.401	2.441	2.28	11.5	2.28	11.5
284.3815901	9/24/2019	2.576	2.441	0.037	13.2	0.037	13.2
436.1943182	9/25/2019	2.473	2.441	0.049	21.1	0.049	21.1
501.6756697	9/26/2019	2.666	2.441	0.063	22.5	0.063	22.5
360.4928137	9/30/2019	2.561	2.441	0.278	16.6	0.278	16.6
394.4317932	10/1/2019	2.391	2.58	1.08	18.7	1.08	18.7
340.2559872	10/2/2019	2.361	2.58	3.38	13.9	3.38	13.9
268.7557828	10/6/2019	2.571	2.58	0.734	11.8	0.734	11.8
265.95426	10/7/2019	2.75	2.58	0.196	11.4	0.196	11.4
499.0093884	10/22/2019	3.385	2.58	0.076	17.6	0.076	17.6
458.9886974	10/23/2019	2.938	2.58	0.032	18.7	0.032	18.7
403.5585888	10/24/2019	2.76	2.58	0.032	17.5	0.032	17.5
301.4381911	10/29/2019	2.332	2.58	0.199	15.3	0.199	15.3
377.0298828	10/30/2019	2.346	2.58	1.07	18.2	1.07	18.2
362.4410294	10/31/2019	2.269	2.58	0.153	19	0.153	19
286.7249966	11/5/2019	2.232	2.52	0.303	15.1	0.303	15.1
347.6172882	11/6/2019	2.282	2.52	0.065	18.2	0.065	18.2
308.3957861	11/7/2019	2.264	2.52	0.033	16.3	0.033	16.3
301.7105255	11/12/2019	2.301	2.52	0.022	15.7	0.022	15.7
401.9089368	11/13/2019	2.254	2.52	1.48	19.9	1.48	19.9
333.3875385	11/14/2019	2.281	2.52	0.025	17.5	0.025	17.5
403.6107138	11/19/2019	3.019	2.52	0.03	16	0.03	16
358.9805799	11/20/2019	2.829	2.52	0.015	15.2	0.015	15.2
360.0025218	11/21/2019	2.598	2.52	0.015	16.6	0.015	16.6
273.4093777	11/24/2019	2.881	2.52	0.079	11.3	0.079	11.3
250.5751749	11/25/2019	2.679	2.52	0.015	11.2	0.015	11.2
302.1103701	11/26/2019	2.607	2.52	0.095	13.8	0.095	13.8
279.2957663	12/3/2019	2.311	2.94	0.091	14.4	0.091	14.4
279.5549819	12/4/2019	2.423	2.94	0.034	13.8	0.034	13.8
321.619198	12/5/2019	2.351	2.94	0.103	16.3	0.103	16.3
379.3479024	12/10/2019	2.564	2.94	0.24	17.5	0.24	17.5
400.915843	12/11/2019	2.566	2.94	0.034	18.7	0.034	18.7
421.6413768	12/12/2019	2.884	2.94	0.03	17.5	0.03	17.5
345.3212028	12/16/2019	2.716	2.94	0.445	14.8	0.445	14.8
394.6689828	12/17/2019	2.595	2.94	0.136	18.1	0.136	18.1
390.665983	12/18/2019	2.553	2.94	0.148	18.2	0.148	18.2
470.6262	12/22/2019	4.125	2.94	0.08	13.6	0.08	13.6

274.1828626	12/25/2019	2.983	2.94	0.321	10.7	0.321	10.7
360.479403	12/26/2019	2.853	2.94	2.25	12.9	2.25	12.9
296.219703	12/30/2019	2.65	2.94	0.503	12.9	0.503	12.9
299.309623	12/31/2019	2.833	2.94	0.568	12.1	0.568	12.1
225.1342968	1/2/2020	2.947	3.42	0.06	9.1	0.06	9.1
473.3852805	1/7/2020	3.531	3.42	0.175	15.9	0.175	15.9
527.2237919	1/8/2020	3.607	3.42	0.126	17.4	0.126	17.4
591.286351	1/9/2020	3.449	3.42	0.156	20.4	0.156	20.4
486.7551679	1/14/2020	3.341	3.42	0.169	17.3	0.169	17.3
451.8507917	1/15/2020	3.228	3.42	0.084	16.7	0.084	16.7
430.3983935	1/16/2020	3.201	3.42	0.022	16.1	0.022	16.1
464.0624615	1/21/2020	3.271	3.42	0.111	16.9	0.111	16.9
572.7685569	1/22/2020	3.545	3.42	0.073	19.3	0.073	19.3
671.5293274	1/23/2020	3.676	3.42	0.904	21	0.904	21
495.398477	1/28/2020	3.681	3.42	0.037	16.1	0.037	16.1
446.2545516	1/29/2020	3.445	3.42	0.032	15.5	0.032	15.5
462.267018	1/30/2020	3.335	3.42	0.02	16.6	0.02	16.6
432.6980067	2/3/2020	3.401	3.64	0.255	15	0.255	15
515.0403196	2/4/2020	3.874	3.64	0.041	15.9	0.041	15.9
650.6580604	2/6/2020	6.699	3.64	0.046	11.6	0.046	11.6
475.0850976	2/11/2020	3.512	3.64	0.12	16.1	0.12	16.1
467.892715	2/12/2020	3.261	3.64	0.204	17	0.204	17
530.757183	2/13/2020	3.35	3.64	0.097	18.9	0.097	18.9
339.8396544	2/18/2020	3.04	3.64	0.104	13.3	0.104	13.3
454.5344702	2/19/2020	2.972	3.64	0.538	17.8	0.538	17.8
510.828336	2/20/2020	2.82	3.64	0.52	21.2	0.52	21.2
287.6027399	2/25/2020	2.759	3.64	0.399	12.1	0.399	12.1
317.188548	2/26/2020	2.7	3.64	0.186	13.9	0.186	13.9
364.0745018	2/27/2020	2.651	3.64	0.867	15.6	0.867	15.6
359.5012044	3/3/2020	3.17	2.83	0.098	13.5	0.098	13.5
358.4384549	3/4/2020	3.062	2.83	0.036	14	0.036	14
409.3544218	3/5/2020	3.288	2.83	0.028	14.9	0.028	14.9
369.8903424	3/10/2020	2.944	2.83	0.165	14.9	0.165	14.9
295.6655934	3/11/2020	2.865	2.83	0.074	12.3	0.074	12.3
290.0876846	3/12/2020	2.808	2.83	0.087	12.3	0.087	12.3
325.9525536	3/17/2020	2.616	2.83	1.14	13.8	1.14	13.8
293.9749753	3/18/2020	2.626	2.83	0.723	12.7	0.723	12.7
269.364436	3/19/2020	2.594	2.83	0.251	12.2	0.251	12.2
364.5789717	3/24/2020	2.605	2.83	0.981	15.8	0.981	15.8
316.5470352	3/25/2020	2.614	2.83	1.02	13.5	1.02	13.5
294.4468859	3/26/2020	2.546	2.83	0.567	13.3	0.567	13.3
365.423355	3/31/2020	2.825	2.83	1.11	14.4	1.11	14.4
325.0226269	4/1/2020	2.741	2.6	0.518	13.7	0.518	13.7
311.8634163	4/2/2020	2.715	2.6	0.573	13.2	0.573	13.2
382.5748986	4/7/2020	2.567	2.6	3.07	14.8	3.07	14.8
398.2643568	4/8/2020	2.532	2.6	2.06	16.8	2.06	16.8
401.377095	4/9/2020	2.575	2.6	3.69	15	3.69	15

328.8782256	4/14/2020	2.477	2.6	2.22	13.7	2.22	13.7
354.7475712	4/15/2020	2.508	2.6	2.36	14.6	2.36	14.6
391.866993	4/16/2020	2.555	2.6	1.49	16.9	1.49	16.9
361.2888	4/21/2020	2.375	2.6	2.84	15.4	2.84	15.4
364.956732	4/22/2020	2.898	2.6	1.3	13.8	1.3	13.8
322.9209886	4/23/2020	2.791	2.6	0.473	13.4	0.473	13.4
376.2781152	4/28/2020	2.587	2.6	1.34	16.1	1.34	16.1
400.8136446	4/29/2020	2.507	2.6	4.17	15	4.17	15
389.977983	4/30/2020	2.565	2.6	1.53	16.7	1.53	16.7
308.2178772	5/5/2020	2.715	2.72	0.312	13.3	0.312	13.3
317.7327413	5/6/2020	2.869	2.72	0.179	13.1	0.179	13.1
306.8096682	5/7/2020	2.702	2.72	0.315	13.3	0.315	13.3
400.73283	5/12/2020	3.11	2.72	7.85	7.6	7.85	7.6
472.870494	5/13/2020	2.589	2.72	15.1	6.8	15.1	6.8
471.767112	5/14/2020	2.481	2.72	15.1	7.7	15.1	7.7
409.8867306	5/19/2020	2.599	2.72	9.01	9.9	9.01	9.9
465.599682	5/20/2020	2.621	2.72	11.9	9.4	11.9	9.4
555.228828	5/21/2020	2.541	2.72	18.5	7.7	18.5	7.7
449.204076	5/26/2020	2.602	2.72	12.5	8.2	12.5	8.2
509.162004	5/27/2020	2.609	2.72	13.5	9.9	13.5	9.9
521.81712	5/28/2020	2.64	2.72	13.3	10.4	13.3	10.4
605.901	6/2/2020	2.906	3.035	15.1	9.9	15.1	9.9
602.872746	6/3/2020	2.791	3.035	15.3	10.6	15.3	10.6
411.6410496	6/4/2020	2.624	3.035	7.31	11.5	7.31	11.5
639.671328	6/9/2020	3.306	3.035	12.9	10.3	12.9	10.3
448.040646	6/10/2020	2.955	3.035	7.78	10.4	7.78	10.4
602.621712	6/11/2020	3.036	3.035	12.8	11	12.8	11
474.4157292	6/16/2020	3.689	3.035	6.52	8.9	6.52	8.9
520.285896	6/17/2020	3.354	3.035	9	9.6	9	9.6
488.2830642	6/18/2020	3.163	3.035	8.01	10.5	8.01	10.5
321.9513552	6/23/2020	2.868	3.035	2.66	10.8	2.66	10.8
233.5525677	6/24/2020	2.859	3.035	0.495	9.3	0.495	9.3
228.6358792	6/25/2020	2.753	3.035	0.158	9.8	0.158	9.8
253.6304755	6/29/2020	2.572	3.035	0.024	11.8	0.024	11.8
308.0377832	6/30/2020	2.571	3.035	0.166	14.2	0.166	14.2
377.0333356	7/1/2020	2.649	2.45	0.066	17	0.066	17
399.5270745	7/7/2020	2.579	2.45	0.075	18.5	0.075	18.5
364.8330331	7/8/2020	2.502	2.45	0.084	17.4	0.084	17.4
270.7291352	7/9/2020	2.471	2.45	0.037	13.1	0.037	13.1
406.072932	7/14/2020	2.74	2.45	3.37	14.4	3.37	14.4
322.831859	7/15/2020	2.424	2.45	0.469	15.5	0.469	15.5
272.5713161	7/16/2020	2.401	2.45	0.512	13.1	0.512	13.1
353.5366449	7/21/2020	2.455	2.45	0.367	16.9	0.367	16.9
241.09689	7/22/2020	2.375	2.45	0.272	11.9	0.272	11.9
292.5198455	7/23/2020	2.333	2.45	0.034	15	0.034	15
307.439088	7/28/2020	2.36	2.45	0.02	15.6	0.02	15.6
366.9521604	7/29/2020	2.363	2.45	0.02	18.6	0.02	18.6

316.9284651	7/30/2020	2.301	2.45	0.015	16.5	0.015	16.5
311.5148627	8/11/2020	2.289	2.295	0.018	16.3	0.018	16.3
353.2697566	8/12/2020	2.282	2.295	0.062	18.5	0.062	18.5
280.7904528	8/13/2020	2.288	2.295	0.015	14.7	0.015	14.7
297.6250931	8/18/2020	2.311	2.295	0.042	15.4	0.042	15.4
348.0862464	8/19/2020	2.304	2.295	0.015	18.1	0.015	18.1
259.7369401	8/20/2020	2.254	2.295	0.017	13.8	0.017	13.8
301.833824	8/25/2020	2.218	2.295	0.017	16.3	0.017	16.3
281.6131104	8/26/2020	2.148	2.295	0.02	15.7	0.02	15.7
318.5831628	8/27/2020	2.205	2.295	0.024	17.3	0.024	17.3
260.8882438	9/15/2020	2.346	2.37	0.134	13.2	0.134	13.2
316.6846452	9/16/2020	2.31	2.37	0.038	16.4	0.038	16.4
276.1887744	9/17/2020	2.31	2.37	0.036	14.3	0.036	14.3
309.787632	9/22/2020	2.345	2.37	0.04	15.8	0.04	15.8
374.6400975	9/23/2020	2.575	2.37	0.045	17.4	0.045	17.4
306.474567	9/24/2020	2.45	2.37	0.099	14.9	0.099	14.9
183.3440413	9/28/2020	2.486	2.37	0.043	8.8	0.043	8.8
232.9141407	9/29/2020	2.419	2.37	0.045	11.5	0.045	11.5
197.1732959	9/30/2020	2.398	2.37	0.059	9.8	0.059	9.8
199.7735244	10/6/2020	2.374	2.68	0.29	9.8	0.29	9.8
165.6971184	10/7/2020	2.354	2.68	0.24	8.2	0.24	8.2
186.328944	10/8/2020	2.32	2.68	0.53	9.1	0.53	9.1
274.779648	10/11/2020	2.88	2.68	0.04	11.4	0.04	11.4
260.0320594	10/12/2020	2.724	2.68	0.046	11.4	0.046	11.4
337.3624742	10/27/2020	2.568	2.68	0.052	15.7	0.052	15.7
358.1953939	10/28/2020	2.548	2.68	0.056	16.8	0.056	16.8
269.2453908	10/29/2020	2.51	2.68	0.062	12.8	0.062	12.8
359.3889563	11/3/2020	2.883	3.05	0.147	14.8	0.147	14.8
337.7727022	11/4/2020	2.924	3.05	0.051	13.8	0.051	13.8
296.9462338	11/5/2020	2.981	3.05	0.044	11.9	0.044	11.9
411.4354186	11/8/2020	2.731	3.05	0.064	18	0.064	18
444.3234246	11/11/2020	2.755	3.05	0.038	19.3	0.038	19.3
376.4131231	11/12/2020	2.713	3.05	0.036	16.6	0.036	16.6
313.537	12/8/2020	2.883	3.05	0.14	12.9	0.14	12.9

ATTACHMENT C
REVISED PERMIT ACTION LEVEL ALTERNATIVE 2

DRAFT

Data, Controls, Numeric Output

significant digits to display

353 Daily

129,000 Annual

Action Level based on 109 data points Over 1800 days

Fix Random number Seed

Please select Data file

Browse... WA0020893DAYmp002_DMR(alt2).csv

Upload complete

Earliest Data to consider for calculation

2016-01-05

Latest Data to consider for calculation

2020-12-31

Samples per month (per year/12)



Thousands of iterations



Confidence Level Needed



If Date is not second field input, data assumed to be sequential months starting in Jan 2015

WA0020893DAYmp002_DMR(alt2).csv

DataTable Summary Individual Annual Version Help

first month of year

Jan

Extrapolate data to ends of year

History for Year Starting In Jan



colored stair steps cumulative monthly loads, shorter bars- periodic loads marked at each sample date with month color
colored solid line is annual total for year



load	POS	Q2	Qave	AMM	NIT	Ammonia	Nitrate...Nitrite
297.7915428	1/5/2016	2.511	3.12294	0.02	14.2	0.02	14.2
540.1277568	2/2/2016	2.848	2.97866	0.04	22.7	0.04	22.7
392.567136	3/1/2016	2.92	3.07742	0.02	16.1	0.02	16.1
256.862826	4/19/2016	2.295	2.43637	0.02	13.4	0.02	13.4
252.483492	5/3/2016	2.29	2.22839	0.02	13.2	0.02	13.2
224.899776	6/7/2016	2.12	2.1628	0.02	12.7	0.02	12.7
214.6772712	7/5/2016	2.254	2.09394	0.02	11.4	0.02	11.4
187.8928608	8/2/2016	2.026	2.05555	0.02	11.1	0.02	11.1
241.3519272	8/3/2016	2.073	2.05555	0.06	13.9	0.06	13.9
202.2339912	8/4/2016	2.069	2.05555	0.02	11.7	0.02	11.7
221.830656	8/9/2016	2.078	2.05555	0.4	12.4	0.4	12.4
221.0960688	8/10/2016	2.033	2.05555	0.04	13	0.04	13
157.1262672	8/11/2016	1.979	2.05555	0.02	9.5	0.02	9.5
167.1816384	8/16/2016	2.128	2.05555	0.02	9.4	0.02	9.4
203.7398616	8/17/2016	2.046	2.05555	0.14	11.8	0.14	11.8
248.2244208	8/18/2016	2.033	2.05555	0.24	14.4	0.24	14.4
173.1118788	8/23/2016	2.031	2.05555	0.02	10.2	0.02	10.2
213.3894084	8/24/2016	2.042	2.05555	0.03	12.5	0.03	12.5
254.990496	8/25/2016	1.97	2.05555	0.02	15.5	0.02	15.5
205.043904	8/30/2016	2.08	2.05555	0.02	11.8	0.02	11.8
275.0138352	8/31/2016	2.028	2.05555	0.16	16.1	0.16	16.1
166.988484	9/6/2016	2.21	2.2469	0.02	9.04	0.02	9.04
274.7339448	10/4/2016	2.401	2.80587	0.02	13.7	0.02	13.7
418.8628224	11/1/2016	3.608	3.4292	0.02	13.9	0.02	13.9
414.3465456	11/3/2016	3.082	3.4292	0.02	16.1	0.02	16.1
337.0239036	11/7/2016	2.967	3.4292	0.02	13.6	0.02	13.6
354.8139576	11/8/2016	2.777	3.4292	0.02	15.3	0.02	15.3
323.9502864	11/9/2016	2.873	3.4292	0.02	13.5	0.02	13.5
456.4727196	11/15/2016	4.337	3.4292	0.02	12.6	0.02	12.6
537.709824	11/16/2016	3.68	3.4292	0.02	17.5	0.02	17.5
576.9968952	11/17/2016	3.242	3.4292	0.04	21.3	0.04	21.3
401.1551676	11/20/2016	3.366	3.4292	0.09	14.2	0.09	14.2
369.1162236	11/21/2016	3.019	3.4292	0.06	14.6	0.06	14.6
391.6544064	11/22/2016	3.232	3.4292	0.03	14.5	0.03	14.5
433.6626528	11/29/2016	3.846	3.4292	0.02	13.5	0.02	13.5
516.540402	11/30/2016	3.915	3.4292	0.02	15.8	0.02	15.8
337.9131144	12/6/2016	3.343	3.18406	0.02	12.1	0.02	12.1
417.5747928	1/10/2017	2.742	2.83858	0.66	17.6	0.66	17.6
338.3998368	2/7/2017	2.936	3.23468	0.02	13.8	0.02	13.8
473.7123336	3/1/2017	3.092	3.55358	0.47	17.9	0.47	17.9
340.1003628	3/2/2017	3.014	3.55358	0.03	13.5	0.03	13.5
480.4100208	3/7/2017	3.702	3.55358	0.46	15.1	0.46	15.1
530.6626908	3/8/2017	3.498	3.55358	0.39	17.8	0.39	17.8
588.8735556	3/9/2017	3.586	3.55358	0.19	19.5	0.19	19.5
348.35346	3/14/2017	3.825	3.55358	0.02	10.9	0.02	10.9
414.1465524	3/15/2017	4.379	3.55358	0.04	11.3	0.04	11.3

387.139464	3/16/2017	3.83	3.55358	0.02	12.1	0.02	12.1
440.508375	3/21/2017	3.375	3.55358	0.15	15.5	0.15	15.5
469.8085464	3/22/2017	3.188	3.55358	0.77	16.9	0.77	16.9
523.2518502	3/23/2017	3.077	3.55358	0.49	19.9	0.49	19.9
286.2184584	3/28/2017	3.358	3.55358	0.02	10.2	0.02	10.2
529.6879116	3/29/2017	4.002	3.55358	0.17	15.7	0.17	15.7
1.299789	4/4/2017	3.117	3.26913	0.04	0.01	0.04	0.01
375.9531888	5/2/2017	2.828	2.92835	0.04	15.9	0.04	15.9
296.5849116	6/6/2017	2.473	2.41167	0.08	14.3	0.08	14.3
268.4092224	7/11/2017	2.453	2.21252	0.02	13.1	0.02	13.1
488.150208	8/8/2017	2.08	2.08839	1.84	26.3	1.84	26.3
317.52882	9/12/2017	2.058	2.09257	0.1	18.4	0.1	18.4
303.697764	10/3/2017	2.055	2.291	0.02	17.7	0.02	17.7
317.7633408	11/7/2017	2.368	2.999	1.19	14.9	1.19	14.9
380.37489	12/5/2017	2.905	3.134	0.1	15.6	0.1	15.6
405.161787	1/9/2018	4.357	3.624	0.75	10.4	0.75	10.4
228.4586208	2/6/2018	4.476	3.74	0.02	6.1	0.02	6.1
358.1107596	3/6/2018	2.838	3.08394	1.43	13.7	1.43	13.7
343.471224	4/3/2018	2.98	3.5245	0.12	13.7	0.12	13.7
515.054214	5/8/2018	2.67	2.55	0.13	23	0.13	23
212.47401	6/3/2018	2.51	2.47	0.05	10.1	0.05	10.1
226.1617848	7/1/2018	2.532	2.2261	0.41	10.3	0.41	10.3
204.3296497	8/1/2018	2.177	2.15	0.454	10.8	0.454	10.8
257.962872	8/2/2018	2.12	2.15	1.69	12.9	1.69	12.9
230.2112551	8/7/2018	2.156	2.15	0.303	12.5	0.303	12.5
331.1407008	8/8/2018	2.121	2.15	4.22	14.5	4.22	14.5
288.8735808	8/9/2018	2.209	2.15	1.48	14.2	1.48	14.2
140.764655	8/14/2018	2.017	2.15	0.268	8.1	0.268	8.1
281.33322	8/15/2018	2.212	2.15	4.15	11.1	4.15	11.1
280.641834	8/21/2018	2.178	2.15	3.05	12.4	3.05	12.4
225.3171096	8/22/2018	2.134	2.15	1.46	11.2	1.46	11.2
238.2084144	8/23/2018	2.046	2.15	1.96	12	1.96	12
201.9661104	8/28/2018	2.168	2.15	1.07	10.1	1.07	10.1
192.460929	8/29/2018	2.05	2.15	0.857	10.4	0.857	10.4
285.556596	8/30/2018	2.026	2.15	5.6	11.3	5.6	11.3
171.216864	9/4/2018	2.184	2.37	0.37	9.03	0.37	9.03
284.6178456	10/2/2018	2.564	2.46	4.66	8.65	4.66	8.65
238.735836	11/6/2018	3.078	2.954	0.36	8.94	0.36	8.94
261.201294	12/2/2018	3.026	2.94	1.53	8.82	1.53	8.82
351.537255	1/8/2019	3.225	2.88	1.27	11.8	1.27	11.8
215.8685568	2/5/2019	2.652	2.93	1.52	8.24	1.52	8.24
347.3586648	3/5/2019	2.506	2.68	4.52	12.1	4.52	12.1
321.0836616	4/9/2019	2.553	2.76	0.28	14.8	0.28	14.8
460.591929	5/7/2019	2.471	2.47	1.65	20.7	1.65	20.7
483.913488	6/4/2019	2.32	2.35	1.01	24	1.01	24
193.9255164	7/9/2019	2.157	2.17	0.98	9.8	0.98	9.8
207.797355	8/6/2019	2.085	2.12	1.25	10.7	1.25	10.7

204.106488	9/10/2019	2.36	2.441	1.11	9.26	1.11	9.26
374.4908532	10/1/2019	2.391	2.58	1.08	17.7	1.08	17.7
303.422544	11/5/2019	2.232	2.52	0.3	16	0.3	16
242.6563866	12/3/2019	2.311	2.94	0.09	12.5	0.09	12.5
472.0600962	1/7/2020	3.531	3.42	0.13	15.9	0.13	15.9
797.7063216	2/5/2020	6.911	3.64	0.04	13.8	0.04	13.8
319.89738	3/3/2020	3.17	2.83	0.1	12	0.1	12
53.5046862	4/14/2020	2.477	2.6	2.22	0.37	2.22	0.37
283.265181	5/5/2020	2.715	2.72	0.31	12.2	0.31	12.2
606.3091596	6/9/2020	3.306	3.035	12.9	9.09	12.9	9.09
363.0695568	7/7/2020	2.579	2.45	0.08	16.8	0.08	16.8
286.7357052	8/11/2020	2.289	2.295	0.02	15	0.02	15
243.2009052	9/15/2020	2.346	2.37	0.13	12.3	0.13	12.3
185.122146	10/6/2020	2.374	2.68	0.29	9.06	0.29	9.06
330.608025	11/3/2020	2.883	3.05	0.15	13.6	0.15	13.6
313.537	12/8/2020	2.883	3.05	0.14	12.9	0.14	12.9