

December 28, 2018

California Department of Motor Vehicles
 Occupational Licensing Compliance Section
 2415 1st Ave., Mail Station S441
 Sacramento, CA 95818

RE: Autonomous Vehicle Tester Program Annual Disengagement Report

Dear Sir or Madam:

Enclosed please find the disengagement report for Cruise’s registered autonomous vehicles. We provide this report as required by California Code of Regulations Title 13, Article 3.7, Section 227.46.

Cruise continues to be proud to be an active participant in the California Autonomous Vehicle Tester Program, and we strive to be exemplary in our dedication to safety. Safety is paramount at all stages of our program, from design to development, validation, and eventually, deployment. Our processes are developed with the benefit of numerous resources, including 100-plus years of automotive and engineering experience from our General Motors colleagues, engineering standards, and best practices from the aerospace, medical, and defense industries. We are constantly striving to find ways to improve our work and are bringing the best people together to help.

This report covers the period from December 1, 2017 to November 30, 2018. It captures (1) miles Cruise autonomous test vehicles drove in autonomous mode on public roads in California during that time period and (2) those instances in which autonomous mode was deactivated when a failure of the autonomous technology was detected or when the safe operation of the vehicle required that the autonomous vehicle test driver disengage the autonomous mode and take immediate manual control of the vehicle.

Cruise continued to build and improve its self-driving vehicle program over this last year. The table below summarizes the total autonomous miles driven in California as well as the qualifying disengagements. All our driving in this period was done on urban streets in San Francisco. Detailed information is provided in the DMV form and tables accompanying this letter.

	2017	2018
Autonomous Miles on California Public Roads	129,764	447,621
Number of Disengagements	105	86
Miles / Disengagement	1,236	5,205

For our public-road development, we seek to learn as much as possible while operating safely. San Francisco is our home because it allows us to improve more quickly. We experience more complexity on a per-mile basis here (think pedestrians, cars, cyclists, and racoons), providing the richest data for our object detection, prediction, and response functions. Not only is San Francisco difficult on its own, but we actively tailor our testing to find the hardest situations and get better at navigating them. Alongside all those miles, we are constantly working with the local government and San Francisco's residents, and we appreciate the community's support.

We drove all our miles this year in the purpose-built Cruise AV, a 100% electric vehicle based on the Chevrolet Bolt platform. Cruise AVs have a steering wheel, brake pedal, and accelerator pedal. Trained operators (called "Autonomous Vehicle Trainers," or "AVTs") were in the vehicle for every ride. Those AVTs can take over immediately by tapping the brake or accelerator, moving the steering wheel, or pressing a button on the dash. The AVTs are regularly trained on the rules of the road, safe driving practices, how to monitor the test vehicle, and when to take over from autonomous mode, and we maintain a consistent refresh process so AVTs remain up-to-date. As noted above, safety underlies all our testing, and it's the core motivation behind our improvements.

There are four causes of the disengagements included in this report: to address perception, planning, or controls, and because of other road users behaving poorly. Examples of the first three include events such as the AV taking too long to identify that the road was clear, the AV planning turns too tightly, and the AV accelerating too quickly. Examples of other road users behaving poorly include events such as other vehicles not yielding to the AV, other vehicles running stop signs, and other vehicles drifting into the AV's lane. Cruise regularly reviews autonomous mode disengagements to assess which events are required to be reported. Most of our disengagements do not involve a failure of the autonomous technology and do not require an immediate takeover of control by the driver. As our self-driving technology continues to grow more advanced over time, the number and nature of disengagements reported pursuant to California Code of Regulations Title 13, Article 3.7, Section 227.46 may also change.

Through our work in the California DMV's program, Cruise has the potential to increase roadway safety, reduce greenhouse gas emissions, and make transportation more accessible to more people. We look forward to continuing to improve and continuing to be a part of the community here. Please feel free to contact me if you have any questions regarding the report.

Sincerely,

A handwritten signature in black ink, appearing to read "Albert Boniske", is positioned above the printed name.

Albert Boniske

Vice President, Product Integrity



ANNUAL REPORT OF AUTONOMOUS VEHICLE DISENGAGEMENT

Instructions: Print as many pages as needed. Submit completed report to: Department of Motor Vehicles, Autonomous Vehicle Program, P.O. BOX 932342, MS L224, Sacramento, CA 94232-3420

SECTION 1 — MANUFACTURER INFORMATION

NAME OF MANUFACTURER GM Cruise LLC			AVT NUMBER AVT008	
BUSINESS MAILING ADDRESS 1201 Bryant Street	CITY San Francisco	STATE CA	ZIP CODE 94103	TELEPHONE NUMBER (415) 335-4097

SECTION 2 — DISENGAGEMENT EVENT DETAIL Use one row for each disengagement event.

DATE	VIN NUMBER	DISENGAGEMENT INITIATED BY (AV System, Test Driver, Remote Operator, or Passenger)	DISENGAGEMENT LOCATION (Interstate, Freeway, Highway, Rural Road, Street, or Parking Facility)	DESCRIPTION OF FACTS CAUSING DISENGAGEMENT *
				*See attached.
	VEHICLE IS CAPABLE OF OPERATING WITHOUT A DRIVER <input type="checkbox"/> YES <input type="checkbox"/> NO	DRIVER PRESENT <input type="checkbox"/> YES <input type="checkbox"/> NO		
	VEHICLE IS CAPABLE OF OPERATING WITHOUT A DRIVER <input type="checkbox"/> YES <input type="checkbox"/> NO	DRIVER PRESENT <input type="checkbox"/> YES <input type="checkbox"/> NO		
	VEHICLE IS CAPABLE OF OPERATING WITHOUT A DRIVER <input type="checkbox"/> YES <input type="checkbox"/> NO	DRIVER PRESENT <input type="checkbox"/> YES <input type="checkbox"/> NO		
	VEHICLE IS CAPABLE OF OPERATING WITHOUT A DRIVER <input type="checkbox"/> YES <input type="checkbox"/> NO	DRIVER PRESENT <input type="checkbox"/> YES <input type="checkbox"/> NO		
	VEHICLE IS CAPABLE OF OPERATING WITHOUT A DRIVER <input type="checkbox"/> YES <input type="checkbox"/> NO	DRIVER PRESENT <input type="checkbox"/> YES <input type="checkbox"/> NO		
	VEHICLE IS CAPABLE OF OPERATING WITHOUT A DRIVER <input type="checkbox"/> YES <input type="checkbox"/> NO	DRIVER PRESENT <input type="checkbox"/> YES <input type="checkbox"/> NO		
	VEHICLE IS CAPABLE OF OPERATING WITHOUT A DRIVER <input type="checkbox"/> YES <input type="checkbox"/> NO	DRIVER PRESENT <input type="checkbox"/> YES <input type="checkbox"/> NO		

*** Additional information regarding the causes of the disengagement may be submitted as an attachment. If an attachment is provided, indicate the specific attachment number for the disengagement event.**

Car name	Date	VIN #	initiated by	location	Discription of facts causing disengagement
orca	2017-12-01	1G1FX6S0XH40277EX	Test Driver	Street	Other road user behaving poorly.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
honeybadger	2017-12-04	1G1FX6S08H40259EX	Test Driver	Street	Other road user behaving poorly.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
seladang	2017-12-09	1G1FX6S08H40265EX	Test Driver	Street	Other road user behaving poorly.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
zeus	2017-12-15	1G1FX6S0XH40283EX	Test Driver	Street	Precautionary takeover to address planning.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
manatee	2017-12-19	1G1FX6S04H40229EX	Test Driver	Street	Other road user behaving poorly.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
caiman	2017-12-21	1G1FX6S07H40262EX	Test Driver	Street	Other road user behaving poorly.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
craig	2018-01-02	1G1FX6S09H40245EX	Test Driver	Street	Other road user behaving poorly.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
scorpion	2018-01-11	1G1FX6S02H40252EX	Test Driver	Street	Precautionary takeover to address planning.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
condor	2018-01-18	1G1FX6S01H40289EX	Test Driver	Street	Other road user behaving poorly.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
		1G1FX6S03H40278EX	Test Driver		

Car name	Date	VIN #	initiated by	location	Discription of facts causing disengagement
fennec	2018-01-22	Vehicle is capable of operating without a driver? No	Driver present? Yes	Street	Precautionary takeover to address planning.
kokako	2018-01-22	1G1FX6S05H40244EX	Test Driver	Street	Precautionary takeover to address perception.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
kokako	2018-01-26	1G1FX6S05H40244EX	Test Driver	Street	Other road user behaving poorly.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
hippo	2018-01-29	1G1FX6S01H40266EX	Test Driver	Street	Other road user behaving poorly.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
aries	2018-01-31	1G1FX6S03H40249EX	Test Driver	Street	Other road user behaving poorly.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
kysa	2018-02-08	1G1FX6S06H40247EX	Test Driver	Street	Other road user behaving poorly.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
goose	2018-02-15	1G1FX6S07H40285EX	Test Driver	Street	Precautionary takeover to address planning.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
shrimp	2018-02-20	1G1FX6S05H40273EX	Test Driver	Street	Other road user behaving poorly.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
pickle	2018-02-21	1G1FX6S05H40267EX	Test Driver	Street	Other road user behaving poorly.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
pickle	2018-02-27	1G1FX6S05H40267EX	Test Driver	Street	Precautionary takeover to address planning.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		

Car name	Date	VIN #	initiated by	location	Discription of facts causing disengagement
steelhead	2018-02-28	1G1FX6S07H40204EX	Test Driver	Street	Precautionary takeover to address planning.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
andromeda	2018-03-02	1G1FX6S07H40198EX	Test Driver	Street	Precautionary takeover to address planning.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
steelhead	2018-03-06	1G1FX6S07H40204EX	Test Driver	Street	Other road user behaving poorly.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
octopus	2018-03-14	1G1FX6S0XH40254EX	Test Driver	Street	Other road user behaving poorly.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
aries	2018-03-20	1G1FX6S03H40249EX	Test Driver	Street	Precautionary takeover to address planning.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
snaildarter	2018-03-23	1G1FX6S05H40209EX	Test Driver	Street	Other road user behaving poorly.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
baboon	2018-04-06	1G1FX6S00H40228EX	Test Driver	Street	Precautionary takeover to address planning.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
teal	2018-04-07	1G1FX6S00H40263EX	Test Driver	Street	Other road user behaving poorly.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
chimpanzee	2018-04-11	1G1FX6S07H40227EX	Test Driver	Street	Other road user behaving poorly.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
		1G1FX6S07H40227EX	Test Driver		

Car name	Date	VIN #	initiated by	location	Discription of facts causing disengagement
chimpanzee	2018-04-20	Vehicle is capable of operating without a driver? No	Driver present? Yes	Street	Other road user behaving poorly.
baboon	2018-05-17	1G1FX6S02H40275EX	Test Driver	Street	Precautionary takeover to address planning.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
bear	2018-05-17	1G1FX6S00H40228EX	Test Driver	Street	Precautionary takeover to address planning.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
lobster	2018-05-27	1G1FX6S09H40239EX	Test Driver	Street	Other road user behaving poorly.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
snaildarter	2018-05-29	1G1FX6S05H40209EX	Test Driver	Street	Other road user behaving poorly.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
littlekern	2018-05-30	1G1FX6S00H40205EX	Test Driver	Street	Other road user behaving poorly.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
chinchilla	2018-05-30	1G1FX6S02H40281EX	Test Driver	Street	Other road user behaving poorly.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
towhee	2018-06-08	1G1FX6S05H40221EX	Test Driver	Street	Precautionary takeover to address controls.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
andromeda	2018-06-09	1G1FX6S07H40198EX	Test Driver	Street	Other road user behaving poorly.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
lobster	2018-06-11	1G1FX6S09H40239EX	Test Driver	Street	Other road user behaving poorly.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		

Car name	Date	VIN #	initiated by	location	Discription of facts causing disengagement
condor	2018-06-13	1G1FX6S01H40289EX	Test Driver	Street	Other road user behaving poorly.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
craig	2018-06-13	1G1FX6S09H40245EX	Test Driver	Street	Other road user behaving poorly.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
kokako	2018-06-28	1G1FX6S05H40244EX	Test Driver	Street	Precautionary takeover to address planning.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
toaster	2018-06-28	1G1FX6S07H40279EX	Test Driver	Street	Precautionary takeover to address planning.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
craig	2018-06-29	1G1FX6S09H40245EX	Test Driver	Street	Other road user behaving poorly.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
sawfish	2018-07-06	1G1FX6S06H40276EX	Test Driver	Street	Precautionary takeover to address planning.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
chuckwalla	2018-07-07	1G1FX6S09H40222EX	Test Driver	Street	Other road user behaving poorly.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
honeybadger	2018-07-11	1G1FX6S08H40259EX	Test Driver	Street	Other road user behaving poorly.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
baboon	2018-07-12	1G1FX6S00H40228EX	Test Driver	Street	Other road user behaving poorly.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
		1G1FX6S05H40238EX	Test Driver		

Car name	Date	VIN #	initiated by	location	Discription of facts causing disengagement
kagu	2018-07-12	Vehicle is capable of operating without a driver? No	Driver present? Yes	Street	Other road user behaving poorly.
bluefin	2018-07-13	1G1FX6S01H40208EX	Test Driver	Street	Precautionary takeover to address planning.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
gorilla	2018-07-18	1G1FX6S02H40223EX	Test Driver	Street	Precautionary takeover to address planning.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
hugs	2018-07-19	1G1FX6S04H40258EX	Test Driver	Street	Precautionary takeover to address planning.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
crayfish	2018-07-23	1G1FX6S04H40206EX	Test Driver	Street	Precautionary takeover to address perception.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
snaildarter	2018-07-26	1G1FX6S05H40209EX	Test Driver	Street	Other road user behaving poorly.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
lobster	2018-08-01	1G1FX6S09H40239EX	Test Driver	Street	Precautionary takeover to address planning.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
aries	2018-08-08	1G1FX6S07H40210EX	Test Driver	Street	Precautionary takeover to address planning.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
towhee	2018-08-08	1G1FX6S05H40221EX	Test Driver	Street	Precautionary takeover to address planning.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
loggerhead	2018-08-08	1G1FX6S0XH40260EX	Test Driver	Street	Precautionary takeover to address planning.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		

Car name	Date	VIN #	initiated by	location	Discription of facts causing disengagement
honu	2018-08-08	1G1FX6S03H40249EX	Test Driver	Street	Other road user behaving poorly.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
bear	2018-08-11	1G1FX6S02H40275EX	Test Driver	Street	Precautionary takeover to address planning.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
seladang	2018-08-13	1G1FX6S08H40265EX	Test Driver	Street	Other road user behaving poorly.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
oatmeal	2018-08-14	1G1FX6S02H40269EX	Test Driver	Street	Other road user behaving poorly.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
andromeda	2018-08-15	1G1FX6S07H40198EX	Test Driver	Street	Precautionary takeover to address planning.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
loggerhead	2018-08-22	1G1FX6S07H40210EX	Test Driver	Street	Precautionary takeover to address planning.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
chimpanzee	2018-08-22	1G1FX6S07H40227EX	Test Driver	Street	Other road user behaving poorly.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
fireboltz	2018-09-01	5G21A6S04K40064EX	Test Driver	Street	Other road user behaving poorly.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
luna	2018-09-09	5G21A6S06K40047EX	Test Driver	Street	Other road user behaving poorly.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
		5G21A6S08K40094EX	Test Driver		

Car name	Date	VIN #	initiated by	location	Discription of facts causing disengagement
fox	2018-10-02	Vehicle is capable of operating without a driver? No	Driver present? Yes	Street	Precautionary takeover to address planning.
chameleon	2018-10-03	5G21A6S03K40113EX	Test Driver	Street	Other road user behaving poorly.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
capuchin	2018-10-12	5G21A6S01K40118EX	Test Driver	Street	Precautionary takeover to address planning.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
chameleon	2018-10-18	5G21A6S03K40113EX	Test Driver	Street	Precautionary takeover to address planning.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
jupiter	2018-10-19	5G21A6S02K40075EX	Test Driver	Street	Precautionary takeover to address planning.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
sequoia	2018-10-25	5G21A6S06K40053EX	Test Driver	Street	Precautionary takeover to address planning.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
pongo	2018-10-27	5G21A6S00K40121EX	Test Driver	Street	Other road user behaving poorly.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
bingo	2018-10-28	5G21A6S07K40079EX	Test Driver	Street	Precautionary takeover to address planning.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
bamboo	2018-11-01	5G21A6S07K40091EX	Test Driver	Street	Other road user behaving poorly.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
hawk	2018-11-03	5G21A6S09K40080EX	Test Driver	Street	Precautionary takeover to address planning.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		

Car name	Date	VIN #	initiated by	location	Discription of facts causing disengagement
alpaca	2018-11-05	5G21A6S09K40039EX	Test Driver	Street	Precautionary takeover to address planning.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
sequoia	2018-11-06	5G21A6S06K40053EX	Test Driver	Street	Other road user behaving poorly.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
gibbon	2018-11-07	5G21A6S02K40110EX	Test Driver	Street	Other road user behaving poorly.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
swan	2018-11-13	5G21A6S06K40082EX	Test Driver	Street	Other road user behaving poorly.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
blitzen	2018-11-14	5G21A6S04K40116EX	Test Driver	Street	Precautionary takeover to address planning.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
neptune	2018-11-15	5G21A6S03K40090EX	Test Driver	Street	Precautionary takeover to address perception.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
fireboltz	2018-11-15	5G21A6S04K40064EX	Test Driver	Street	Other road user behaving poorly.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
gordita	2018-11-16	5G21A6S01K40089EX	Test Driver	Street	Precautionary takeover to address planning.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
daisy	2018-11-28	5G21A6S05K40067EX	Test Driver	Street	Precautionary takeover to address planning.
		Vehicle is capable of operating without a driver? No	Driver present? Yes		
		5G21A6S03K40049EX	Test Driver		

Car name	Date	VIN #	initiated by	location	Discription of facts causing disengagement
cupcake	2018-11-29	Vehicle is capable of operating without a driver? No	Driver present? Yes	Street	Precautionary takeover to address planning.

Total # of miles tested in autonomous mode December 2017 to November 2018: 447,621													
VIN #	Annual total of disengagements	December	January	February	March	April	May	June	July	August	September	October	November
1G1FX6S00H40205EX	1	92.44	1,865.95	1,119.83	445.23	1,044.81	978.14	691.84					
1G1FX6S03H40278EX	1	254.33	1,570.75	697.7	115.12	784.68	849.12	1,153.43	1,081.88	1,507.10	904.23		
1G1FX6S09H40222EX	1	398.58	1,304.04	625.97	855.04	773.4	1,057.04	1,003.19	1,552.66	1,094.31			
1G1FX6S09H40239EX	3	274.64	1,290.21	943.15	486.06	791.02	1,289.27	935.63	1,398.21	1,349.41	276.16		
1G1FX6S02H40275EX	2	182.43	1,281.57	919.08	184.38	900.09	775.62	638.5	1,189.00	1,597.49	109.42		
1G1FX6S01H40289EX	2	278.3	1,266.44	539.73	941.11	692.56	995.78	1,418.07	1,400.15	838.12			
1G1FX6S09H40251EX	0	446.11	1,266.36	356.79									
1G1FX6S05H40244EX	3	483.58	1,119.25	701.57	85.42	801.33	61.62	553.57	1,303.84	1,266.14	301.01		
1G1FX6S05H40273EX	1	293.59	1,108.89	634.38	409.54	1,082.80	753.68	1,110.46	1,496.67	1,580.46	323		
1G1FX6S08H40259EX	2	484.47	1,086.25	1,208.86	560.6	672.71	1,422.48	915.32	1,527.54	1,047.24	870.99		
1G1FX6S02H40281EX	1	312.92	1,084.43	594.68	553.57	981.44	609.3	1,005.32	999.35	1,619.84	235.21		
1G1FX6S07H40279EX	1	104.65	1,076.68	1,002.26	576.67	925.54	1,081.99	1,310.52	421.41	1,511.57	1,052.76		
1G1FX6S02H40252EX	1	396.65	1,043.62	977	1,032.16	369.17	321.99						
1G1FX6S02H40246EX	0	238.43	1,009.74	1,283.51	299.75	901.65	900.76	1,146.48	1,137.77	1,792.62	600.5		
1G1FX6S05H40209EX	3	542.77	984.69	1,011.53	801.08	113.41	309	565.55	723.9	289.76	12.2		
1G1FX6S00H40263EX	1	300.49	961.49	755.13	803.84	1,010.85	1,494.78	1,102.22	1,481.83	497.44	278.99		
1G1FX6S06H40247EX	1	488.79	960.81	560.03									
1G1FX6S05H40267EX	2	214.32	860.86	1,145.11	709.57	351.73	1,258.20	1,239.85	1,730.19	1,297.74	814.72		
1G1FX6S07H40285EX	1	229.13	838.67	860.18	339.99	118.64	1,029.87	606.95	226.44	1,402.47	775.01		
1G1FX6S07H40204EX	2	226.09	812.35	1,042.97	749.36								
1G1FX6S04H40258EX	1	293.88	807.92	12.76		270.26	416.69	270.71	566.23	367.32	106.12		
1G1FX6S09H40245EX	3	317.83	795.81	657.9	352.74	622.35	330.91	1,162.97	1,406.58	1,434.54	71.74		
1G1FX6S0XH40254EX	1	327.49	784.31	450.13	577.95	312.48	178.84	494.03	513.56	748.01	103.86		
1G1FX6S07H40262EX	1	363.98	749.83	589.37	706.81	803.59	1,510.81	1,022.62	1,424.65	1,443.56	618.45		
1G1FX6S05H40238EX	1	211.64	688.9	60.23	754.45	595.65	466.08	550.26	788.43	1,088.65	263.94		
1G1FX6S06H40230EX	0	468.67	681.64	1,190.55	1,003.55	575.52	1,066.58	599.38	1,681.96	320.66			
1G1FX6S05H40221EX	2	763.76	635.84	391.69	281.13	132.18	286.3	552.12	617.89	620.29	74.97		
1G1FX6S01H40266EX	1	39.47	595.19	399.2	125.65								
1G1FX6S03H40249EX	3	413.34	498.87	328.89	487.96	341.96	441.45	529.53	469.49	411.78			
1G1FX6S02H40223EX	1	518.83	471.94	320.97	137.03	416.85	547.58	451.11	683.12	577.64	158.43		
1G1FX6S09H40280EX	0	58.46	456.81	580.82	526.67	357.66	774.97	704.34	746.5	653.91	246.76		
1G1FX6S08H40242EX	0	307.55	451.03	91.85	496.78	347.34	84.89	265.62	314.37	364.88	20.96		
1G1FX6S0XH40277EX	1		446.5	498.27				265.4	296.84				
1G1FX6S03H40232EX	0		431.9	408.96	451.38	348.01	210.53	203.44	728.15	230.79			
1G1FX6S0XH40283EX	1	775.89	430.43	48.9	35.16			119.23	680.27	232.09			
1G1FX6S04H40206EX	1	529.41	405.83	317.15	15.09	90.94	29.02	335.63	679.45	221.8	76.56		
1G1FX6S0XH40248EX	0	445.24	404.86	236.09	315.34	238.91	216.1	364.09	275.11	592.25	65.18		

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1G1FX6S01H40272EX	0	388.71	402.69	208		0.53	256.13	404.54	612.87	606.36	21.17		
1G1FX6S00H40234EX	0	305.73	399.96	69.97	614.71	699.94	1,045.32	931.54	1,236.33	1,386.60	799.68		
1G1FX6S03H40255EX	0	281.97	335.01	323.26	363.57	594.62	700.09	904.83	1,763.85	1,361.51	726.01		
1G1FX6S09H40268EX	0	222.28	287.77	254.82	595.44	298.68	24.81	225.75		0.19			
1G1FX6S01H40208EX	1	213.53	277.66	40.75	122.17		730.82	842.47	1,259.75				
1G1FX6S08H40265EX	2	207.72	242.48	360.54	522.71	499.43	1,039.17	1,007.29	1,615.14	1,666.53	748.09		
1G1FX6S08H40236EX	3	173.1	210.26	213.24	739.91	1,427.81	682.78	1,116.64	1,290.51	1,474.79	197.38		
1G1FX6S04H40229EX	1	159.66	179.24										
1G1FX6S03H40290EX	0	147.21	113.09	4.45	618.87	1,027.18	516.71	227.21		179.56	999.32		
1G1FX6S06H40282EX	0	81.36	44.69		532.01	734.04	206.65	179.62	434.88				
1G1FX6S02H40269EX	1	64.04	13.66	345.61	416.22	44.13	276.16	497.37	811.46	540.37	180.34		
1G1FX6S0XH40260EX	1	54.67	12.6		333.87	174.98	418.06	536.78	496.98	588.4	38.38		
1G1FX6S06H40276EX	1		8.57	109.28	379.3	576.95	655.76	338.23	1,563.74	1,212.93	416.95		
1G1FX6S03H40261EX	0			614.5	107.82								
5G21A6S05K40119EX	0										62.2	1,550.15	2,000.19
5G21A6S01K40095EX	0									2	393.77	795.3	1,898.78
5G21A6S0XK40112EX	0										58.06	805.73	1,848.31
5G21A6S02K40110EX	1										44.71	541.19	1,811.64
5G21A6S07K40085EX	0									25.56	145.88	1,190.16	1,794.55
5G21A6S07K40108EX	0										12.72	728.73	1,772.10
5G21A6S03K40090EX	1									5.17	218.05	931.63	1,751.14
5G21A6S03K40078EX	0									1.87	480	1,386.04	1,729.97
5G21A6S08K40094EX	1										45.86	1,053.92	1,695.40
5G21A6S00K40109EX	0										50.72	1,065.01	1,693.43
5G21A6S0XK40060EX	0									78.24	612.26	1,692.93	1,077.10
5G21A6S00K40086EX	0										131.63	959.14	1,686.78
5G21A6S00K40121EX	1										9.88	404.71	1,680.51
5G21A6S03K40061EX	0										257.84	1,183.38	1,669.92
5G21A6S04K40116EX	1										56.51	1,129.14	1,668.56
1G1FX6S08H40184EX	0							66.56	1,613.34	927.59			
5G21A6S00K40115EX	0										210.39	821.14	1,589.95
1G1FX6S08H40207EX	0			423.01	386.44	1,211.19	1,127.88	1,378.80	1,577.67	1,258.39	809.67		
1G1FX6S00H40257EX	0				674.42	593.78	1,133.12	1,044.22	1,553.00	1,074.16	109.32		
1G1FX6S07H40198EX	0			462.17	1,042.40	1,152.14	290.17	1,084.13	1,113.08	1,540.25	764.2		
5G21A6S0XK40025EX	0								63.09	214.24	33.15	491.99	1,530.59
1G1FX6S0XH40196EX	0							531.09	1,528.35	1,462.87	849.83		
5G21A6S02K40098EX	0										216.1	1,520.11	1,454.63

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5G21A6S03K40113EX	2										41.67	1,497.36	1,299.68
5G21A6S06K40082EX	1									8.97	309.02	265.56	1,497.03
1G1FX6S07H40210EX	2							179.67	1,458.24	1,470.54	767.38		
5G21A6S01K40020EX	0									0.83	601.58	979.88	1,450.69
5G21A6S03K40084EX	0										331.87	1,233.12	1,437.04
5G21A6S09K40039EX	1									52.01	278.9	1,409.66	419.81
5G21A6S04K40093EX	0										229.45	1,384.04	1,073.41
5G21A6S04K40122EX	0										42.26	704.71	1,330.59
5G21A6S05K40050EX	0									1.15	399.98	1,257.06	1,003.82
5G21A6S06K40111EX	0										41.41	1,254.52	
5G21A6S09K40074EX	0									40.36	48.02	699.33	1,209.46
5G21A6S09K40045EX	0								0.36	135.94	198.61	61.87	1,190.83
5G21A6S0XK40083EX	0										142.19	496.61	1,179.72
5G21A6S05K40102EX	0										58.75	1,175.79	1,086.98
5G21A6S00K40092EX	0									1.06	272.8	1,158.86	770.51
5G21A6S08K40071EX	0										81.56	577.49	1,153.79
5G21A6S04K40087EX	0									1.86	459.39	1,129.38	125.14
1G1FX6S08H40271EX	0								8.89	1,029.34	490.43		
5G21A6S08K40117EX	0										3.84	935.98	1,015.16
5G21A6S04K40029EX	0								13.02	421.04	2.58	433.59	1,009.64
5G21A6S00K40040EX	0									156.2	512.68	1,007.62	941.33
5G21A6S04K40064EX	2									310.86	962.65	272.68	200.21
1G1FX6S03H40226EX	0				9.51			474.48	950.39	785.14	689.94		
5G21A6S05K40073EX	0										185	563.16	943.88
5G21A6S02K40052EX	0									34.56	251.32	903.57	701.15
5G21A6S07K40091EX	1										106.85	403.07	842.88
5G21A6S08K40100EX	0										59.94	654.16	786.05
5G21A6S06K40053EX	2									3.68		552.12	753.17
5G21A6S01K40043EX	0								1.67	431.71	52.35	379.56	750.91
1G1FX6S04H40212EX	0				307.61			749.69					
5G21A6S06K40099EX	0										74.98	745.69	492.14
1G1FX6S00H40228EX	3			51.72	633.48	620.42	565.33	469.92	744.15	651.94	163.19		
5G21A6S09K40068EX	0									206.73	77.55	683.23	209.57
5G21A6S09K40080EX	1									5.45	157.31	676.01	663.29
5G21A6S06K40030EX	0								14.98	663.74	142.42		292.27
5G21A6S01K40037EX	0								1.64	288.45	561.15	613.39	94.21
5G21A6S07K40056EX	0									65.66	83.61	595.25	201.91

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5G21A6S06K40047EX	1									132.98	116.54		572.85
5G21A6S01K40066EX	0									49.59	46.63	558.18	441.21
5G21A6S06K40076EX	0										7.55	545.89	437.89
5G21A6S07K40079EX	1										24.87	539.92	416.41
5G21A6S03K40049EX	1									47.63	297.46	526.37	467.42
5G21A6S04K40058EX	0									41.13	89.65	386.82	520.91
5G21A6S08K40059EX	0										45.57	506.62	16.23
5G21A6S06K40105EX	0										52.28	483.1	34.87
5G21A6S07K40114EX	0										22.51	362.04	479.42
1G1FX6S07H40227EX	3				26.2	269.35	87.45	343.58	453.68	429.03	294.21		
5G21A6S02K40046EX	0								0.88	148.38	51.86	450.82	402.57
5G21A6S01K40101EX	0										3.36	40.4	444.68
5G21A6S05K40038EX	0									16.05	443.9	173.82	155.78
1G1FX6S05H40250EX	0						431.16						
5G21A6S01K40118EX	1										28.47	429.2	
5G21A6S01K40089EX	1										18.66	419.55	372.66
1G1FX6S06H40218EX	0				411.81								
5G21A6S08K40065EX	0									4.07			390.7
5G21A6S00K40034EX	0								115.62	383.74	150.02	293.74	18.33
5G21A6S08K40042EX	0									1.82	338.4	265	227.07
5G21A6S0XK40031EX	0									140.56	323.82		6.58
1G1FX6S0XH40219EX	0				306.36		3.54	2.98					
5G21A6S09K40051EX	0									11.45	2.9	7.21	293.63
1G1FX6S04H40264EX	0			9.22	280.45	163.49							
5G21A6S07K40120EX	0										53.65	280.11	17.84
5G21A6S0XK40106EX	0										183.95	274.81	35.35
5G21A6S04K40070EX	0										107.27	256.86	76.83
5G21A6S02K40075EX	1									1.83	109.91	243.72	242.69
5G21A6S02K40081EX	0										224.24	241.75	
5G21A6S05K40067EX	1									65.37	208.63	20.87	161.31
5G21A6S04K40041EX	0									69.53	199.5	122.97	23.93
5G21A6S02K40069EX	0									47.53	196.48		
1G1FX6S01H40237EX	0			67.68	149.8								
1G1FX6S03H40203EX	0						147.83						
5G21A6S07K40033EX	0								56.91	120.36			
5G21A6S03K40026EX	0								99.01	1.72			
5G21A6S07K40027EX	0								98.09				

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5G21A6S09K40016EX	0								92.33				
5G21A6S0XK40077EX	0										50.07	7.52	26
5G21A6S05K40096EX	0										43.24	61.53	44.31
5G21A6S09K40103EX	0										3.03	8.8	49.15
5G21A6S09K40097EX	0										55.95		4.53
5G21A6S02K40104EX	0										3.76	47.29	53.48
1G1FX6S02H40188EX	0			13.42									
5G21A6S01K40072EX	0									1.96	10.12		
5G21A6S08K40088EX	0										9.18		
5G21A6S05K40015EX	0							8.08	6.06				
5G21A6S05K40044EX	0								1.63	4.08			
5G21A6S0XK40048EX	0									2.35			
5G21A6S05K40021EX	0									1.93			
1G1FX6S08H40323EX	0							0.58	0.11				