DNA Appendix I - MAINTENANCE PROCEDURES AND TROUBLESHOOTING FOR THE MISEQ FGX INSTRUMENT AND LOCI TESTED IN THE FORENSEQ DNA SIGNATURE PREP KIT – PRIMER SET B

1. Computer Troubleshooting

1.1 Ensure the server is connected by verifying it can connect to the internet. A red X may indicate that it has lost internet connection.

1.2 If the screen freezes during a standby wash the Windows operating system may have frozen since it had been idle. Perform a power cycle by the following:

1.2.1 Close the MiSeq FGx Control software by clicking the "X" in the upper right corner.

1.2.2 Go to the Start menu and select "Shut Down".

1.2.3 The FGx screen will turn black after the operating systems shut down. After that, reach around to the lower right back side of the instrument and flip the toggle to the power switch to "OFF."

1.2.4 After flipping the power switch off, wait a minute to let everything power down completely. Then flip the power switch back to the "ON" position.

1.2.5 Everything should power back up and the MiSeq FGx Control Software will automatically launch and start re-initializing (this may take a few minutes).

1.2.6 After re-initializing, a new standby wash can be launched.

2. Maintenance Frequency

2.1. The following maintenance activities should be performed at the intervals shown in the table below. It is essential to perform regular washes to maintain the fluidics system and ensure the continued performance of the instrument by flushing out any remaining reagents, preventing salt accumulation and crystallization and to prevent any cross-contamination.

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Table 6 Maintenance During Normal Operation

Activity	Daily	Monthly	As Needed
Post-Run Wash	After every run		
Maintenance Wash		X	
Standby Wash			To prepare for idle (≥ 7 days unused)
Instrument Shutdown			X

Table 7 Maintenance During Idle (≥ 7 days unused)

Activity	Daily	Monthly	As Needed
Standby Wash		X	
Instrument Shutdown			X

3. Post-Run Wash

3.1. An instrument wash must always be performed following the completion of a sequencing run or following preventative maintenance. Follow the software prompts to load the wash components and perform the wash. The post-run wash takes approximately 30 minutes. The software cannot proceed to the run setup for a subsequent run until a wash has been performed.

3.2. Leave the used flow cell on the instrument – a flow cell must be loaded on the instrument to perform the wash.

3.3. Prepare fresh wash solution with Tween 20 and nuclease-free water, as follows:

3.3.1. Add 5 mL 100% Tween 20 to 45 mL nuclease-free water. These volumes result in 10% Tween 20.

3.3.2. Add 25 mL 10% Tween 20 to 475 mL nuclease-free water. These volumes result in 0.5% Tween 20 wash solution.

3.3.3. Invert several times to mix.

3.4. Prepare fresh sodium hypochlorite wash solution with nuclease-free water, as follows:

3.4.1. Add 30 µL of 6% sodium hypochlorite (use bleach bottle under the sink and note percentage for your calculation) to 870 µL of nuclease-free water. These volumes result in a 1:30 sodium hypochlorite dilution. Use $M_1V_1 = M_2V_2$ to calculate how much of our stock bleach you will need.

3.4.2. Add 50 µL of the 1:30 sodium hypochlorite dilution to 950 µL of nuclease-free water in a MiSeq wash tube. This results in a 0.01% sodium hypochlorite wash solution.

3.4.3. Mix the dilution and water mixture well by pipetting up and down.

3.5. Prepare the wash components with fresh 0.5% Tween 20 wash following as follows:

3.5.1. Add 6 mL wash solution to each reservoir of the wash tray.

3.5.2. Add 350 mL wash solution to the 500 mL wash bottle.

3.6. Insert the MiSeq wash tube containing 0.01% sodium hypochlorite wash solution into position 17 of the wash tray until the neck of the tube is flush with the tray. The tube displaces the Tween 20 and nuclease-free wash solution from position 17.

3.7. From the post-run wash screen, select “Start Wash”. The software automatically raises the sippers in the reagent chiller. Wait several seconds to make sure the sippers are fully raised before continuing.

3.8. Open the reagent compartment door and reagent chiller door. Slide the used reagent cartridge from the chiller.

3.9. Slide the wash tray into the reagent chiller until it stops. Close the reagent chiller door.

3.10. Raise the sipper handle in front of the SBS Solution (PR2) bottle and waste bottle until it locks into place.

3.11. Remove the SBS Solution (PR2) bottle and replace it with the wash bottle.

NOTE: Discard the any remaining SBS Solution (PR2) in the bottle down the sink after each run. Do not reuse any remaining solution.

3.12. Remove the waste bottle and discard the contents appropriately in the sink. Return the waste bottle to the reagent compartment.

3.13. Slowly lower the sipper handle, making sure the sippers lower into the wash and waste bottles.

3.14. Close the reagent compartment door and select "Next." The post-run wash will now begin.

3.15. When the wash is complete, leave the used flow cell, wash tray, and wash bottle containing the remaining wash solution on the instrument. A small amount of wash solution remains in the MiSeq wash tube in position 17. Leave the sippers in the down position in the unused wash solution and wash bottle to prevent the sippers from drying out and air from entering the system.

4. Maintenance Wash

4.1. A maintenance wash should be performed every seven days during normal operation, before shutting down the instrument and when resuming normal operation after idle. A maintenance wash takes approximately 90 minutes. A maintenance wash consists of three washes, with the first two consisting of 0.5% Tween 20 and the third wash using nuclease-free water.

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4.2. Make sure that a used flow cell is loaded on the instrument.

4.3. From the Welcome screen, select “Perform Wash”.

4.4. From the Wash Options screen, select “Maintenance Wash.” The software automatically raises the sippers in the reagent chiller.

4.5. Prepare fresh wash solution with Tween 20 and nuclease-free water, as follows:

4.5.1. Add 5 mL 100% Tween 20 to 45 mL nuclease-free water. These volumes result in 10% Tween 20.

4.5.2. Add 25 mL 10% Tween 20 to 475 mL nuclease-free water. These volumes result in 0.5% Tween 20 wash solution.

4.5.3. Invert several times to mix.

4.6. Prepare the wash components with fresh 0.5% Tween 20 wash following as follows:

4.6.1. Add 6 mL wash solution to each reservoir of the wash tray.

4.6.2. Add 350 mL wash solution to the 500 mL wash bottle.

4.7. Load the wash tray and wash bottle onto the instrument

4.7.1. Open the reagent compartment door and reagent chiller door and slide the used reagent cartridge or wash tray from the chiller.

4.7.2. Slide the wash tray into the reagent chiller until it stops. Close the reagent chiller door.

4.7.3. Raise the sipper handle in front of the SBS Solution (PR2) bottle and waste bottle until it locks into place.

4.7.4. Remove the SBS Solution (PR2) bottle and replace it with the wash bottle.

NOTE: Discard the any remaining SBS Solution (PR2) in the bottle down the sink after each run. Do not reuse any remaining solution.

4.7.5. Remove the waste bottle and discard the contents appropriately. Return the waste bottle to the reagent compartment.

4.7.6. Slowly lower the sipper handle, making sure the sippers lower into the wash and waste bottles.

4.7.7. Close the reagent compartment door.

4.8. Select "Next" to begin the first wash.

4.9. Perform the second wash by preparing fresh wash solution with Tween 20 and nuclease-free water, as follows:

4.9.1. Add 5 mL 100% Tween 20 to 45 mL nuclease-free water. These volumes result in 10% Tween 20.

4.9.2. Add 25 mL 10% Tween 20 to 475 mL nuclease-free water. These volumes result in 0.5% Tween 20 wash solution.

4.9.3. Invert several times to mix.

NOTE: Always use fresh wash solution for each wash step. Reusing wash solution from the previous wash can return waste to fluidics lines.

4.10. When the first wash is complete, remove the wash tray and bottle and discard the remaining wash solution down the sink.

4.11. Refill the wash components with fresh 0.5% Tween 20 wash following as follows:

4.11.1. Add 6 mL wash solution to each reservoir of the wash tray.

4.11.2. Add 350 mL wash solution to the 500 mL wash bottle.

4.12. Load the wash tray and wash bottle onto the instrument

4.12.1. Open the reagent compartment door and reagent chiller door and slide the wash tray into the reagent chiller until it stops. Close the reagent chiller door.

4.12.2. Load the wash bottle and slowly lower the sipper handle, making sure that the sippers lower into the wash and waste bottles. Close the reagent compartment door.

4.13. Select “Next” to begin the second wash.

4.14. Begin the final wash step by removing the wash tray and wash bottle. Discard any remaining wash solution down the sink.

4.15. Refill the wash components with nuclease-free water as follows:

4.15.1. Add 6 mL nuclease-free water to each reservoir of the wash tray.

4.15.2. Add 350 mL nuclease-free water to the 500 mL wash bottle.

4.16. Load the wash tray and wash bottle onto the instrument

4.16.1. Open the reagent compartment door and reagent chiller door and slide the wash tray into the reagent chiller until it stops. Close the reagent chiller door.

4.16.2. Load the wash bottle and slowly lower the sipper handle, making sure that the sippers lower into the wash and waste bottles. Close the reagent compartment door.

4.17. Select "Next" to begin the final wash.

4.18. When the wash is complete, leave the used flow cell, wash tray, and wash bottle containing the remaining wash solution on the instrument.

NOTE: The sippers remain in the down position, which is normal. Leave the unused wash solution in the wash tray and bottle to prevent the sippers from drying out and air from entering the system.

5. Standby Wash

5.1. A standby wash is performed to prepare the instrument to sit idle for at least seven days. This will flush each position of any residual reagents and accumulated salts. When the wash is complete, the instrument automatically enters standby mode. Leaving standby mode requires a maintenance wash. A standby wash consists of two washes taking approximately 2.5 hours. The first wash consists of 0.5% Tween 20 and the second wash uses nuclease-free water. A powercycle should be performed prior to starting the standby wash. Make sure that a used flow cell is loaded on the instrument.

5.2. From the Welcome screen, select "Perform Wash."

5.3. From the Wash Options screen, select "Standby Wash." The software automatically raises the sippers in the reagent chiller.

5.4. Prepare fresh wash solution with Tween 20 and nuclease-free water, as follows:

5.4.1. Add 5 mL 100% Tween 20 to 45 mL nuclease-free water. These volumes result in 10% Tween 20.

5.4.2. Add 25 mL 10% Tween 20 to 475 mL nuclease-free water. These volumes result in 0.5% Tween 20 wash solution.

5.4.3. Invert several times to mix.

5.5. Prepare the wash components with fresh 0.5% Tween 20 wash following as follows:

5.5.1. Add 6 mL wash solution to each reservoir of the wash tray.

5.5.2. Add 350 mL wash solution to the 500 mL wash bottle.

5.6. Load the wash tray and wash bottle onto the instrument

5.6.1. Open the reagent compartment door and reagent chiller door and slide the used reagent cartridge or wash tray from the chiller.

5.6.2. Slide the wash tray into the reagent chiller until it stops. Close the reagent chiller door.

5.6.3. Raise the sipper handle in front of the SBS Solution (PR2) bottle and waste bottle until it locks into place.

5.6.4. Remove the SBS Solution (PR2) bottle and replace it with the wash bottle.

NOTE: Discard any remaining SBS Solution (PR2) in the bottle down the sink after each run. Do not reuse any remaining solution.

5.6.5. Remove the waste bottle and discard the contents appropriately. Return the waste bottle to the reagent compartment.

5.6.6. Slowly lower the sipper handle, making sure the sippers lower into the wash and waste bottles.

5.6.7. Close the reagent compartment door.

5.7. Select “Next” to begin the first wash.

5.8. Begin the final wash step by removing the wash tray and wash bottle. Discard any remaining wash solution down the sink.

5.9. Refill the wash components with nuclease-free water as follows:

5.9.1. Add 6 mL nuclease-free water to each reservoir of the wash tray.

5.9.2. Add 350 mL nuclease-free water to the 500 mL wash bottle.

5.10. Load the wash tray and wash bottle onto the instrument

5.10.1. Open the reagent compartment door and reagent chiller door and slide the wash tray into the reagent chiller until it stops. Close the reagent chiller door.

5.10.2. Load the wash bottle and slowly lower the sipper handle, making sure that the sippers lower into the wash and waste bottles. Close the reagent compartment door.

5.11. Select “Next” to begin the second wash.

5.12. When the second wash is complete, leave the used flow cell, wash tray, and wash bottle containing the remaining wash solution on the instrument.

NOTE: The sippers remain in the down position, which is normal. Leave the unused wash solution in the wash tray and bottle to prevent the sippers from drying out and air from entering the system.

5.13. Repeat the standby wash every 30 days the instrument remains in standby mode.

6. Shutting Down the Instrument

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6.1. It is best to always leave the instrument on. However, if the instrument must be turned off, use the following procedures to shut down Windows and prepare the fluidics lines.

6.2. Perform a maintenance wash.

6.3. Remove the waste bottle and discard the contents appropriately down the sink. Return the waste bottle to the reagent compartment.

6.4. Close the reagent compartment door.

6.5. From the Manage Instrument screen, select “Shut Down.” This command shuts down the software.

6.6. Toggle the power switch to the ‘Off’ position.

NOTE: Any time the instrument is turned off, wait a minimum of 1 minute before turning the power switch back to the ‘On’ position.

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Figure 1: ForenSeq™ DNA Signature (DPMB) loci list

Autosomal STRs

The following loci are detected using DNA Primer Mix A or DNA Primer Mix B.

Table 2 Autosomal STRs

Locus	Repeat Range (repeats)	Amplicon Length Range (bp)	Chromosome	2800M Control Alleles
D1S1656	7–21.3	133–192	1	12,13
TPOX	4–16	61–109	2	11,11
D2S441	7–17	137–177	2	10,14
D2S1338	10–33.1	110–203	3	22,25
D3S1358	8–22	138–194	3	17,18
D4S2408	8–13	98–118	4	9,9
FGA	12.2–53	150–312	4	20,23
D5S818	4–20	98–162	5	12,12
CSF1PO	5–17	72–120	5	12,12
D6S1043	8–26	154–226	6	12,20
D7S820**	5–21.1	118–183	7	8,11
D8S1179	6–20	82–138	8	14,15
D9S1122	8–15	104–132	9	12,12
D10S1248	7–20	124–176	10	13,15
TH01	3–14	96–140	11	6,9.3
vWA	11–26	135–195	12	16,19
D12S391	13–28	229–289	12	18,23
D13S317	5–17	138–186	13	9,11
PentaE	5–28.4	362–481	15	7,14
D16S539	4–17	132–184	16	9,13
D17S1301	9–15	130–154	17	11,12
D18S51	6–40	136–272	18	16,18
D19S433	4–27	148–240	19	13,14
D20S482	9–17	125–157	20	14,15
D21S11	12–41.2	147–265	21	29,31.2
PentaD	1.1–19	209–298	21	12,13
D22S1045*	8–19	201–245	22	16,16

* Interpret locus D22S1045 with caution. Elevated n-1 repeat stutter might be observed, particularly with decreased marker coverage. Heterozygote imbalance might be observed regardless of marker coverage. Consider multilocus genotype when determining the presence of a DNA mixture. For more information, see *Interpretation Examples for D22S1045 and DYS392* on page 38.

** A low-level plus .1 base pair artifact might be observed at locus D7S820 with a single T addition at the end of the STR repeat sequence of the parent allele (e.g., 8,8.1 or 11,11.1).

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Y Haplotype Markers

The following loci are detected using DNA Primer Mix A or DNA Primer Mix B.

Table 4 Y Haplotype Markers

Locus	Repeat Range (repeats)	Amplicon Length Range (bp)	Chromosome	2800M Control Alleles
DYF387S1	30–44	207–263	Y	37,38
DYS19	9–19	269–309	Y	14
DYS385a-b	7–28	232–316	Y	13,16
DYS389I	9–17	236–268	Y	14
DYS389II	24–34	283–323	Y	31
DYS390	17–28	290–334	Y	24
DYS391	5–16	119–163	Y	10
DYS392*	6–17	318–362	Y	13
DYS437	10–18	194–226	Y	14
DYS438	6–16	129–179	Y	9
DYS439	6–17	167–211	Y	12
DYS448	14–26	330–402	Y	19
DYS460	7–14	348–376	Y	11
DYS481	17–32	129–174	Y	22
DYS505	9–15	162–186	Y	11
DYS522	8–17	298–334	Y	12
DYS533	7–17	186–226	Y	12
DYS549	10–14	210–226	Y	13
DYS570	10–26	142–206	Y	17
DYS576	10–25	163–223	Y	18
DYS612	26–33	275–296	Y	29
DYS635	15–30	242–302	Y	21
DYS643	7–15	141–181	Y	10
Y-GATA-H4	8–15	159–187	Y	11

* Interpret the locus DYS392 with caution. Elevated n-1 repeat stutter might be observed, particularly with decreased marker coverage. Consider multilocus genotype when determining the presence of a DNA mixture. For more information, see *Interpretation Examples for D22S1045 and DYS392* on page 38.

X Haplotype Markers

The following loci are detected using DNA Primer Mix A or DNA Primer Mix B.

Table 5 X Haplotype Markers

Locus	Repeat Range (repeats)	Amplicon Length Range (bp)	Chromosome	2800M Control Alleles
DXS10074	7–22	184–244	X	21
DXS10103	14–21	157–185	X	18
DXS10135	15.3–34	239–312	X	28
DXS7132	11–20	175–211	X	13
DXS7423	10–18	188–220	X	15
DXS8378	8–14	434–458	X	12
HPRTB	8–17	193–229	X	12

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Identity Informative SNPs

The following loci are detected using DNA Primer Mix A or DNA Primer Mix B.

Table 3 Identity Informative SNPs

Locus	Amplicon Length (bp)	Chromosome	Amplicon Start Position	Amplicon End Position	2800M Control Alleles
rs10495407	109	1	238439234	238439342	G
rs1294331	85	1	233448359	233448443	GA
rs1413212	64	1	242806767	242806830	G
rs1490413	98	1	4367256	4367353	A
rs560681	90	1	160786641	160786730	AG
rs891700	115	1	239881850	239881964	AG
rs1109037	118	2	10085691	10085808	G
rs12997453	100	2	182413195	182413294	A
rs876724	119	2	114945	115063	C
rs907100	115	2	239563542	239563656	CG
rs993934	120	2	124109120	124109239	C
rs1355366	119	3	190806041	190806159	AG
rs1357617	120	3	961696	961815	AT
rs2399332	157	3	110300999	110301155	AC
rs4364205	98	3	32417576	32417673	G
rs6444724	120	3	193207306	193207425	T
rs1979255	102	4	190318007	190318108	G
rs2046361	120	4	10968994	10969113	A
rs279844	167	4	46329584	46329750	AT
rs6811238	120	4	169663541	169663660	G
rs13182883	169	5	136633252	136633420	AG
rs159606	104	5	17374845	17374948	A
rs251934	97	5	174778619	174778715	T
rs338882	157	5	178690599	178690755	C
rs717302	110	5	2879333	2879442	G
rs13218440	170	6	12059928	12060097	AG
rs1336071	120	6	94537182	94537301	G
rs214955	120	6	152697629	152697748	G
rs727811	115	6	165045254	165045368	A
rs321198	165	7	137029715	137029879	T
rs6955448	120	7	4310285	4310404	CT
rs737681	120	7	155990742	155990861	T
rs917118	109	7	4456953	4457061	C
rs10092491	116	8	28411037	28411152	CT
rs2056277	104	8	139399038	139399141	C
rs4606077	151	8	144656710	144656860	CT
rs763869	85	8	1375576	1375660	CT
rs1015250	117	9	1823702	1823818	G
rs10776839	103	9	137417271	137417373	G
rs1360288	119	9	128967994	128968112	C
rs1463729	99	9	126881396	126881494	GA
rs7041158	115	9	27985907	27986021	C
rs3780962	94	10	17193284	17193377	T
rs735155	170	10	3374133	3374302	A

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rs740598	120	10	118506839	118506958	AG
rs826472	153	10	2406511	2406663	T
rs964681	105	10	132698394	132698498	CT
rs10488710	118	11	115207134	115207251	CG
rs1498553	111	11	5708981	5709091	CT
rs2076848	118	11	134667502	134667619	AT
rs901398	90	11	11096173	11096262	T
rs10773760	99	12	130761623	130761721	AG
rs2107612	103	12	888262	888364	AG
rs2111980	94	12	106328186	106328279	G
rs2269355	65	12	6945881	6945945	C
rs2920816	157	12	40862976	40863132	T
rs1058083	76	13	100038193	100038268	AG
rs1335873	109	13	20901665	20901773	T
rs1886510	116	13	22374646	22374761	CT
rs354439	170	13	106938320	106938489	T
rs1454361	118	14	25850765	25850882	AT
rs4530059	170	14	104769099	104769268	G
rs722290	101	14	53216686	53216786	G
rs873196	114	14	98845506	98845619	CT
rs1528460	115	15	55210664	55210778	T
rs1821380	118	15	39313343	39313460	G
rs8037429	63	15	53616876	53616938	T
rs1382387	89	16	80106318	80106406	GT
rs2342747	104	16	5868645	5868748	AG
rs430046	119	16	78016980	78017098	C
rs729172	104	16	5606153	5606256	C
rs740910	113	17	5706552	5706664	A
rs8078417	143	17	80461847	80461989	CT
rs938283	98	17	77468433	77468530	T
rs9905977	170	17	2919324	2919493	G
rs1024116	98	18	75432317	75432414	A
rs1493232	75	18	1127945	1128019	A
rs1736442	153	18	55225698	55225850	G
rs9951171	119	18	9749789	9749907	G
rs576261	76	19	39559780	39559855	AC
rs719366	170	19	28463281	28463450	T
rs1005533	158	20	39487066	39487223	A
rs1031825	126	20	4447416	4447541	C
rs1523537	117	20	51296076	51296192	C
rs445251	119	20	15124865	15124983	CG
rs221956	97	21	43606933	43607029	C
rs2830795	114	21	28608089	28608202	A
rs2831700	79	21	29679639	29679717	A
rs722098	101	21	16685561	16685661	AG
rs914165	156	21	42415865	42416020	AG
rs1028528	78	22	48362256	48362333	AG
rs2040411	68	22	47836378	47836445	A
rs733164	120	22	27816711	27816830	AG
rs987640	120	22	33559450	33559569	AT

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Phenotypic Informative SNPs

The following loci are detected when using DNA Primer Mix B. These loci are not present when using DNA Primer Mix A.

Table 6 Phenotypic Informative SNPs

Locus	Amplicon Length (bp)	Chromosome	Amplicon Start Position	Amplicon End Position	2800M Control Alleles
rs28777	92	5	33958916	33959007	A
rs12203592	110	6	396273	396382	C
rs4959270	161	6	457655	457815	AC
rs683	120	9	12709246	12709365	AC
rs1042602	113	11	88911659	88911771	AC
rs1393350	99	11	89010977	89011075	G
rs12821256	119	12	89328278	89328396	CT
rs12896399	73	14	92773627	92773699	G
rs2402130	120	14	92801169	92801288	A
rs1800407	119	15	28230246	28230364	G
N29insA	112	16	89985688	89985799	C
rs1110400	173	16	89986044	89986216	T
rs11547464	173	16	89986044	89986216	G
rs1805005	213	16	89985774	89985986	G
rs1805006	213	16	89985774	89985986	C
rs1805007	173	16	89986044	89986216	C
rs1805008	173	16	89986044	89986216	C
rs1805009	227	16	89986484	89986710	G
rs201326893_Y152OCH	173	16	89986044	89986216	C
rs2228479	213	16	89985774	89985986	G
rs885479	173	16	89986044	89986216	G
rs2378249	118	20	33218028	33218145	A

Ancestry Informative SNPs

The following loci are detected when using DNA Primer Mix B. These loci are not present when using DNA Primer Mix A.

Table 7 Ancestry Informative SNPs

Locus	Amplicon Length (bp)	Chromosome	Amplicon Start Position	Amplicon End Position	2800M Control Alleles
rs2814778	120	1	159174650	159174769	A
rs3737576	98	1	101709521	101709618	A
rs7554936	106	1	151122413	151122518	CT
rs10497191	101	2	158667153	158667253	C
rs1834619	84	2	17901444	17901527	G
rs1876482	120	2	17362526	17362645	C
rs260690	115	2	109579681	109579795	A
rs3827760	108	2	109513546	109513653	T
rs6754311	98	2	136707920	136708017	CT
rs798443	84	2	7968221	7968304	A
rs12498138	119	3	121459545	121459663	G

DNA Appendix I - MAINTENANCE PROCEDURES AND TROUBLESHOOTING FOR THE MISEQ FGX INSTRUMENT AND LOCI TESTED IN THE FORENSEQ DNA SIGNATURE PREP KIT – PRIMER SET B

rs1919550	117	3	121364112	121364228	A
rs1229984	120	4	100239288	100239407	G
rs3811801	114	4	100244261	100244374	C
rs4833103	95	4	38815462	38815556	AC
rs7657799	116	4	105375396	105375511	T
rs7722456	114	5	170202901	170203014	T
rs870347	119	5	6844995	6845113	T
rs16891982*	108	5	33951621	33951728	G
rs192655	70	6	90518235	90518304	AG
rs3823159	119	6	136482701	136482819	A
rs917115	71	7	28172543	28172613	T
rs1462906	84	8	31896545	31896628	C
rs1871534	71	8	145639652	145639722	C
rs2196051	120	8	122124216	122124335	T
rs6990312	111	8	110602270	110602380	G
rs3814134	104	9	127267664	127267767	T
rs4918664	168	10	94920962	94921129	A
rs1079597	167	11	113296227	113296393	G
rs174570	120	11	61597179	61597298	C
rs2238151	113	12	112211753	112211865	CT
rs671	136	12	112241658	112241793	G
rs1572018	116	13	41715225	41715340	AG
rs2166624	71	13	42579949	42580019	AG
rs7326934	96	13	49070482	49070577	G
rs7997709	85	13	34847693	34847777	T
rs9522149	119	13	111827125	111827243	C
rs200354	165	14	99375246	99375410	G
rs12439433	100	15	36219979	36220078	G
rs1426654	92	15	48426457	48426548	A
rs1800414	116	15	28196969	28197084	A
rs735480	108	15	45152321	45152428	T
rs12913832*	119	15	28365523	28365641	AG
rs459920	78	16	89730800	89730877	T
rs11652805	119	17	62987113	62987231	T
rs17642714	118	17	48726060	48726177	AT
rs2593595	102	17	41056210	41056311	TC
rs4411548	158	17	40658440	40658597	G
rs4471745	67	17	53568849	53568915	G
rs2042762	83	18	35277568	35277650	A
rs3916235	120	18	67578894	67579013	AG
rs4891825	106	18	67867615	67867720	AG
rs7226659	149	18	40488180	40488328	G
rs7251928	200	19	4077044	4077243	A
rs310644	89	20	62159472	62159560	A
rs2024566	88	22	41697312	41697399	A

* Also used for phenotype prediction.